RUTHERFORD COUNTY SCHOOL SYSTEM
2240 Southpark Drive
Murfreesboro, TN 37128

MARCH 8, 2023
5:30 P.M.

AGENDA

1. **CALL TO ORDER**

2. **PLEDGE OF ALLEGIANCE**

3. **MOMENT OF SILENCE**

4. **APPROVAL OF AGENDA**

   Recommended Approval---motion to approve the agenda as presented.

5. **APPROVAL OF CONSENT AGENDA (TAB 1)**

   A. Minutes: February 23, 2023 Board Meeting Minutes

   B. Community Use of Facilities

Fees

Christiana Elementary	Top-Notch Basketball, gym, practice, 2/14/23 – 5/30/23, $750
John Colemon Elementary	Mad Skillz Sportz, gym, practice, 3/13/23 – 5/25/23, $90 per week
Siegel High	Sozo Dance Academy, classroom, dance recital, 5/24/23 – 5/27/23, $3555.00
Blackman High	Go Investment Corporation, stadium, soccer match, 3/11/23, $1200
Eagleville	Murfreesboro Obedience Training Club, classroom $ campus, dog trial, 5/28/23 – 5/29/23, $1,093
Smyrna Middle	North Rutherford Soccer/Stones River FC, stadium, tournament, 3/18/23 – 3/19/23, $2500
Christiana Middle	Hwy 231 South Church of Christ, auditorium, worship & dinner, 3/19/23, $620.25

No Fees

Rockvale High	County Commission, lecture hall, meeting, 3/8/23, no fees

Eagleville	National MS Society, cafeteria & gym showers, 10/6/2023 – 10/8/2023, no fees
Eagleville	Brigade Basketball Club, gym, practice, 3/1/2023 – 7/31/2023, no fees
Oakland High	National Football Academies, classroom & track, drills & instruction, 3/17/23 – 3/19/23, no fees

***Note: Facility use prior to 9/15/22 has been granted pending Board action. A certificate of insurance with $2,000,000.00 limits ($1,000,000.00 if approved) is required by each user. Each group must forward any renewals of insurance to the Board on time; otherwise, approval is terminated at the end of the policy period. All approvals are for no more than a 1-year period.**

C. Nepotism: Rachel Taylor - Blackman High - Part time Custodian
Erika Shanklin - LaVergne High - Certified Position Transfer
Cristina Calixtro – Oakland Middle – Food Services

D. Routine Bids: Bid #3652 – London, England Trip (Stewarts Creek Choir and Theater Trip)

E. School Salary Supplements and Contract Payments:

Name	Amount	School	Funded By	Description
Ariel Jones	NTE $1,980.56	Blackman Middle	School Funds - Track	Assistant Track Coach
Kelan Flowers	NTE $800.00	LaVergne Middle	Use of Facilities - Universal Sports League	Supervision
Marcus Bryson	NTE $5,000.00	Oakland High	School Funds - Indoor Facility	Manage the Indoor Facility
Kevin Creasy	NTE $7,000.00	Oakland High	Oakland Football Boosters	Summer Football Coaching and Conditioning
Tyler Eady	NTE $1,500.00	Oakland High	Oakland Football Boosters	Football Conditioning
Kevin Wright *6	NTE $1,285.00	Oakland High	School Funds - Basketball, Swimming, + Softball	Bus Driver
Sasha Sloan	NTE $1,500.00	Oakland Middle	School Funds - Girls Soccer	Assistant Girls Soccer Coach
Josh Carroll	NTE $3,500.00	Siegel High	School Funds - Track & Field	Assistant Track & Field Coach
Donna Pearson	NTE $1,000.00	Siegel High	School Funds - Track & Field	Concessions Manager
Cora Proctor	NTE $3,000.00	Siegel High	School Funds - Track & Field	Assistant Track & Field Coach
Brittany Smith	NTE $700.00	Siegel High	School Funds - Track & Field	Working meets + prepping
Shane Young	NTE $2,500.00	Siegel High	School Funds - Track & Field	Assistant Track & Field Coach

Justin Morton *1	NTE $200.00	Thurman Francis	School Funds - Boys Soccer	Mowing Smyrna Middle School Soccer Field
Jordan Burchfield	NTE $1,500.00	Blackman High	School Funds - Boys Basketball	Assistant Boys Basketball Coach
Daniel Eschenfelder	NTE $1,500.00	Blackman High	School Funds - Tennis	Assistant Tennis Coach
James Earle III	NTE $2,000.00	Central Magnet	School Funds - HS Tennis	Assistant HS Tennis Coach
Forest Freeman	NTE $1,100.00	Oakland High	School Funds - Boys + Girls Basketball	Keeping Scorebooks for Boys and Girls Basketball
Kenitra Green	NTE $500.00	Oakland Middle	School Funds - Track & Field	Assistant Track & Field Coach
Charlie Mitchell	NTE $2,500.00	Stewarts Creek High	School Funds - Baseball	Assistant Baseball Coach
Jamonn Brady *1	NTE $200.00	Thurman Francis	School Funds - Boys Soccer	Lining field, moving goals / nets at Smyrna Middle Soccer Field
Dennis Jungman	NTE $2,000.00	Whitworth Buchanan	School Funds - Baseball	Assistant Baseball Coach
Bradley Jackson	NTE $3,000.00	Various Schools	School Funds - Track	Meet Timing

**Unless listed as an hourly rate

1. Approved previously for an amount $500
2. Overtime rate for special events
3. Anticipate amounts over $500 this school year
4. Amend prior approval
5. Less than $500 but part of event total
6. Must have the approval of the Transportation Dept.

F. Non-Faculty Volunteer Coaches:

According to Tennessee Secondary School Athletic Association (TSSAA) guidelines, Board of Education approval is required to allow non-faculty volunteer coaches to participate in the school athletic programs.

The following non-faculty volunteer coaches are for the 2022-23 school year:

Name	School	Sport
Dominic Swader	**Central Magnet**	**Ultimate Frisbee**
Robert Parks	**LaVergne High**	**Baseball**
Jason Aaron	**Oakland Middle**	**Softball**
Hassan Malik	**Siegel High**	**Boys Tennis**
Tyler Moseley	**Smyrna Middle**	**Baseball**
Charles Mitchell	**Stewarts Creek High**	**Baseball**
Kevin Krahenbuhl	**Whitworth-Buchanan**	**Baseball**

Recommended Approval---motion to approve the consent agenda items as presented.

6. VISITORS

7. RUTHERFORD PROUD

Eagleville High School - Paige Martin

Browns Chapel Stem Club – Tammy Anselmo and Darcy Oliveras

Rutherford County Central Office – Dr. Kay Martin

8. SPOTLIGHT

2023 RCS Art Show

March is national Youth Art Month, and Rutherford County Schools has a tradition of celebrating the arts in our schools with a district-wide art show. Student artwork is selected from each school to be on display at the Rutherford County Schools Central Office for the coming year. The artwork is selected based on creativity, craftsmanship, and perseverance through the creative process. Youth Art Month provides an opportunity to recognize the valuable skills taught in art programs, including problem solving, creativity, observation, and communication.

The 2023 Art Show can also be viewed in a virtual gallery available on the Rutherford County Schools Fine Arts website.

Artist Name	School
Daina Campechano-Rayo	Barfield Elementary School
Hailey Giacomino	Blackman Elementary School
Elijah Brown	Blackman High School
Abby Lugos	Blackman High School
Miku Shelton	Blackman Middle School
Rayah Tedder	Brown's Chapel Elementary School
Adahia Garcia	Buchanan Elementary School
Isabella Silva	Cedar Grove Elementary School
Victoria Gravitt	Central Magnet School
Kaylih Barton	Central Magnet School
Isobel Carrigan	Christiana Elementary School
Daylin Malone	Christiana Middle School
Timothy Junior Henderson	David Youree Elementary School
Genevieve Montero-Moraless	David Youree Elementary School
Lucy Houston	Eagleville School
Mirabelle Smith	Eagleville School
Emmaline Whitt	Eagleville School
Emilyn Arvidson	Eagleville School
Natalie Garcia	Holloway High School
Hazel de Clerca	Homer Pittard Campus School
Luz Rodriguez	John Colemon Elementary School

Kyra Thurmon	Kittrell Elementary School
Georgia Ward	Lascassas Elementary School
Jeansy Gonzalez	LaVergne High School
Kielyn Thompson	LaVergne High School
Jasmine Shono	LaVergne High School
Tyrice Thaxton	LaVergne Lake Elementary School
Ana Linares	LaVergne Middle School
Jose Rios	LaVergne Middle School
Scarlett Wood	McFadden School of Excellence
Cayla Snyder	Oakland High School
Amon Aizawa	Oakland High School
Brenyn Crimson	Oakland Middle School
Faith Richardson	Plainview Elementary School
Guadalupe Manriquez	Riverdale High School
Jessie Fenner	Riverdale High School
Meara Edwar Labib	Riverdale High School
Chloe Schenk	Riverdale High School
Paul Armour III	Rock Springs Elementary School
Jada Griffin	Rock Springs Middle School
Harper Ward	Rockvale Elementary School
Alessandra Bonilla	Rockvale High School
Kylie McKinney	Rockvale High School
Kadence Barnett	Rockvale High School
Adison Shaw	Rockvale High School
Isabella Blunkall	Rockvale Middle School
Andrea Olivo Diaz	Rocky Fork Elementary School
Michael Romero Alas	Rocky Fork Middle School
Kailah Mendez	Roy Waldron School
Siyanne Dersu	Roy Waldron School
Ava Riggan	Rutherford County Virtual School
Rosa Stockdale	Siegel High School
Krista Marren	Siegel High School
Cate Goolsby	Siegel Middle School
Cannon Shuler	Smyrna Elementary School
Aurora Brewer	Smyrna High School
Annabelle Rand	Smyrna High School
Corwin Ritter	Smyrna High School
Lamiah Booker	Smyrna Middle School
Genevieve Carlin	Smyrna Primary School
Hunter Roberson	Stewarts Creek Elementary School
Brianna Keo	Stewarts Creek High School
Nathan Cooper	Stewarts Creek Middle School
Mehrail Ayoub	Stewartsboro Elementary School
Layla Cartwright	Thurman Francis Arts Academy
Celeste Adkins	Thurman Francis Arts Academy
Caitlyn Marks	Thurman Francis Arts Academy
Kenley Chitwood	Walter Hill Elementary School
David Flack	Whitworth-Buchanan Middle School
Ja'Kilen Bell	Wilson Elementary School

9. CURRICULUM AND INSTRUCTION (TAB 2)

Rutherford County Schools Online Teaching Contract

The Curriculum and Instruction Department is requesting permission to continue the Rutherford County Schools Online Teaching Contract from June 1 - July 21, 2023. The contract outlines an agreement between Rutherford County Schools and teachers to provide instruction in online courses for the duration of summer school. Teachers will receive a base pay for each course and an additional payment per student in the course each term. A copy of the contract is attached.

Recommended Approval---motion to approve the use of the Rutherford County Schools Online Teaching Contract to use as an agreement between Rutherford County Schools and teachers. General Purpose funds from the Curriculum and Instruction Department will pay 100% of this contract as presented.

10. HUMAN RESOURCES (TAB 3)

Under the direct supervision of the Assistant Superintendent of Human Resources and Support Services, the Recruiter Manager will perform a variety of tasks associated with the recruitment and retainment of employees. The Recruiter Manager job description has been updated for approval.

Recommended Approval---motion to approve the updated job description of the Human Resources Recruiter Manager position as presented

11. LEGAL (TAB 4)

Policy Adoption - Second of Two Readings

The policies below are recommended on the second and final reading.

a. **Policy 1.106: Code of Ethics**
   Adds language requiring Board Members to publicly disclose any personal interest in real estate matters involving the Board.

b. **Policy 2.200: Annual Operating Budget**
   Changes the date the proposed budget must be submitted to the County Commission.

c. **Policy 3.204: Pandemic/Epidemic Emergency Cleaning**
   Proposal to sunset the policy.

d. **Policy 3.2041: Pandemic/Epidemic Face Covering/Mask Requirement**
   Proposal to sunset the policy.

e. Policy 3.208: Facilities Planning
Changes timeline to present annual assessment of facility needs to Board.

f. Policy 3.211: Energy Use and Conservation
Updates language regarding energy use.

g. Policy 3.601: Student Insurance Program
Proposal to sunset the policy.

h. Policy 4.603: Promotion and Retention
Updates language for third grade retention to comply with state law.

i. Policy 4.604: Credit for Prior Courses
Updates language to comply with state requirements.

j. Policy 4.605: Graduation Requirements
Updates credits required to graduate early in compliance with state law.

k. Policy 5.109: Evaluation
Adds language requiring the Director of Schools to establish procedures for a local level grievance process to align with state law.

l. Policy 6.300: Code of Conduct
Removes THC from zero tolerance offenses in compliance with state law.

m. Policy 6.309: Zero Tolerance Offenses
Removes THC from zero tolerance offenses in compliance with state law.

n. Policy 6.319: Alternative Education
Updates language regarding exceptions for assignment to alternative school.

o. Policy 6.413: Prevention and Treatment of Sports Related Concussions
Removes physician's assistant (P.A.) from list of health care providers authorized to give written clearance to return to athletic activity after a concussion to align with TSSAA policy.

New Policies

p. Policy 6.604: Name, Image, and Likeness (NIL)
New policy to address agreements for student athletes for use of their name, image, and likeness.

Recommended Approval---motion to adopt the above policies on the second and final reading as presented.

12. FINANCIAL MATTERS (TAB 5)

Fund 177 Capital Projects Budget Amendment

This amendment budgets $150,000 from 34685-Committed for Capital Projects Fund Balance to Education Capital Projects 91300-335-Maint. & Repair Serv.- Bldgs. to replace fire alarm system at Rocky Fork Middle School. This project is being pulled from fund balance because it is a new project & an emergency replacement due to the system being struck by lightning.

Recommended Approval---motion to amend $150,000 from 34685-Committed for Capital Projects Fund Balance to Education Capital Projects 91300-335-Maint. & Repair Serv.- Bldgs. to replace fire alarm system at Rocky Fork Middle School as presented.

13. FACILITIES AND CONSTRUCTION (TAB 6)

1. Request for Riverdale High Annex Bid

On Thursday March 3, 2023 Purchasing and Engineering and Construction received bids for the site work and construction of the Annex for Riverdale High School. All bids have been reviewed and Engineering and Construction recommends Robert S. Biscan & Company base bid plus Alternate #1-3 for a Total Bid of $49,605,200.00. Engineering recommends motion to approve the request and move forward to Health and Education to request funding in the amount of $56,305,200.00.

Breakdown:		
Construction	**$**	**49,605,200.00**
Constr. Related Contracts	**$**	**1,000,000.00**
FFE	**$**	**2,000,000.00**
Design	**$**	**2,200,000.00**
Site	**$**	**1,500,000.00**
Total Request	**$**	**56,305,200.00**

Recommended Approval---motion to send to Health and Education for Robert S. Biscan & Company for $49,605,200.00 and a total project request for funding $56,305,200.00 as presented.

2. Oakland and Riverdale Addition Project Updates

There was no new information on this item at this time.

3. CMTA ESPC Update

There was no new information on this item at this time.

4. **John L. Batey Property**

   Engineering and Construction has received all the requested reports for the Batey Property located at the corner of Blackman and Baker. These reports have shown what we would consider to be normal Rutherford County property characteristics. The traffic study has shown normal requested road improvements for turning lanes and vehicular stacking. Soil reports indicate good soils for a private operation salt filtration sewer system. Engineering and Construction recommends the purchase of the Batey Property for utilization for two schools. The property is under two contracts. One contract is for 59.1 acres. The second is for the house and 2.29 acres. The parcel consisting of 59.1 acres has appraised for $4,500,000. The house and surrounding 2.29 acres have appraised for $730,000. Both contracts have been amended to provide for the purchase of the properties at the appraised prices.

   Recommended Approval---motion to amend the Batey contracts to extend the Inspection Periods to May 15, 2023 as presented.

5. **Rockvale High Baseball Barn**

   Rockvale Administration is requesting to allow baseball to purchase a 12 x 20 storage building to be located near the baseball dugout. Engineering and Construction has reviewed the request and recommends approval at no cost to the Board.

   Recommended Approval---motion to approve the Rockvale High Baseball Barn at no cost to the Board as presented.

6. **Lavergne High Library Request**

   Principal Theowauna Hatchet has received a donation of library book shelving units from the Ingram Company. Dr Hatchett has requested assistance from maintenance to transport from the current location and deliver to LaVergne High School along with removal of the old units from the library. Engineering and Construction has reviewed the request and recommends approval by the Board. The shelving units are to be donated by the Ingram Company and relocated by Rutherford County Schools staff.

   Recommended Approval---motion to approve the Ingram donation to LHS Library as presented.

7. **3.76 Acres Rock Springs Elementary Parcel Property**

Scott Butler, a local home builder, requested the school system sell a parcel consisting of approximately 3.7 acres at Rock Springs Elementary school. Title to the parcel is held by the Rutherford County Board of Education. The prior Board of Education voted to sell the property, and the property was advertised for public bids through GovDeals.com. The highest bidder was Scott Butler who bid $346,000. The property was advertised for sale subject to reservations of drainage and utility easements needed to serve the school. The sale of the property was advertised to be contingent upon final approval by the Board. The proceeds of the sale can be reserved for use for future capital projects of the school system such as future schools or school additions. The Board needs to determine whether it wishes to proceed with the sale of the property to Scott Butler for $346,000.

Recommended Approval---motion to move to close on the sale of the 3.76 acres at Rock Springs Elementary to Scott Butler for $346,000 subject to the Board of Education reserving easements for drainage and utilities needed to serve the school with buyer to pay the auction buyer's premium and costs and for the proceeds of the sale be reserved for use only for the construction of future schools or school additions.

14. FINANCIAL REPORT

15. INSURANCE UPDATE

16. DIRECTORS UPDATE

17. TENNESSEE LEGISLATIVE NETWORK (TLN) UPDATE

18. FEDERAL RELATIONS NETWORK (FRN) UPDATE

19. GENERAL DISCUSSION

20. ADJOURNMENT

RUTHERFORD COUNTY SCHOOL SYSTEM
2240 Southpark Drive
Murfreesboro, TN 37128

Minutes of February 23, 2023

Board Members Present
Tammy Sharp, Board Chair
Caleb Tidwell, Vice-Chair
Coy Young
Shelia Bratton
Claire Maxwell
Katie Darby
Frances Rosales
Dr. James Sullivan, Director of Schools

1. CALL TO ORDER

The Board Chair called the meeting to order at 5:30 P.M.

2. PLEDGE OF ALLEGIANCE

The Pledge of Allegiance was led by JoAnne Robichaud.

3. MOMENT OF SILENCE

A Moment of Silence was observed to remember the Smyrna High School Family.

4. APPROVAL OF AGENDA

Motion made by Mr. Young, seconded by Mrs. Maxwell, to approve the agenda as presented.

Vote: All yes

Motion passes.

5. APPROVAL OF CONSENT AGENDA

A. Minutes: January 31, 2023 Policy Committee Meeting Minutes
February 9, 2023 Board Meeting Minutes

B. Community Use of Facilities

Fees

Smyrna High	Achieving Success Martial Arts, gym, tournament, 3/17/23 – 3/18/23, $984
Blackman High	Prep Redzone, stadium/track , football tournament, 3/25/23 – 3/26/23, $2300
Riverdale High	U.S. Eastern Wado-Ryu Federation, gym, martial arts tournament, 3/25/23, $290
Christiana Middle	Warrior Wrestling Club, gym & cafeteria, training & wrestling, 2/27/23 – 5/5/23, $684
Whitworth-Buchanan Middle	Newport Grammar School, gym, basketball practice, 2/9/23 *retro review
Oakland High	Sports Leisure and Entertainment RPG, indoor football facility 2/23/23 & 3/2/23, $115 per hour

No Fees

Eagleville	Rockvale Pack 328, cafeteria, banquet, 3/14/23, no fees
Christiana Middle	Girl Scouts Service Unit 153, cafeteria, meeting, 4/30/23, no fees

***Note: Facility use prior to 9/15/22 has been granted pending Board action. A certificate of insurance with $2,000,000.00 limits ($1,000,000.00 if approved) is required by each user. Each group must forward any renewals of insurance to the Board on time; otherwise, approval is terminated at the end of the policy period. All approvals are for no more than a 1-year period.**

C. Routine Bids: RFP #23-01 – Live Captioning Services (Central Magnet)
RFP #23-03 – Transformational Leader Administrator Toolkit
Bid #3640 – Lawn Care Services
Bid #3642 – Paint
Bid #3643 – Tech. Parts and Multimedia Equip.
Bid #3644 – Floor Machines
Bid #3653 – Calculators
Bid #3654 – SIM Trainers
Bid #3655 – MA Lighting GrandMA3 on PC Command Console
Bid #3656 – Classroom Furniture

D. School Salary Supplements and Contract Payments:

Name	Amount	School	Funded By	Description
Jack Bounds *1	NTE $75.00	Blackman Middle	School Funds - Band	Work at Percussion Fest

Alexis Derryberry *1	NTE $75.00	Blackman Middle	School Funds - Band	Work at Percussion Fest
Chris Lowry *1	NTE $75.00	Blackman Middle	School Funds - Band	Work at Percussion Fest
Larry Smith *4	No Change	All Schools	School Funds - Track	Amend prior approval to include track meet timing at all schools
Keith Dudek *1	NTE $100.00	Blackman Middle	School Funds - Band	Work at Percussion Fest
Ed Freytag *1	NTE $150.00	Blackman Middle	School Funds - Band	Work at Percussion Fest
Andrew Arnold	NTE $1,500.00	Central Magnet	School Funds - JV Baseball	JV Baseball Coach
Katie Harrah	$25/lesson	Rocky Fork Middle	School Funds - Band	Private lessons
Daniel Minea	NTE $1,000.00	Stewarts Creek High	School Funds - Tennis	Assistant Tennis Coach

**Unless listed as an hourly rate

1. Approved previously for an amount $500
2. Overtime rate for special events
3. Anticipate amounts over $500 this school year
4. Amend prior approval
5. Less than $500 but part of event total
6. Must have the approval of the Transportation Dept.

E. Non-Faculty Volunteer Coaches:

According to Tennessee Secondary School Athletic Association (TSSAA) guidelines, Board of Education approval is required to allow non-faculty volunteer coaches to participate in the school athletic programs.

The following non-faculty volunteer coaches are for the 2022-23 school year:

Name	School	Sport
Katie Harrah	**Rocky Fork Middle School**	**Band**
Dan Eschenfelder	**Blackman High School**	**Tennis**
Katye Cherry	**Blackman High School**	**Softball**
Dennis Jungman	**Whitworth-Buchanan**	**Baseball**

Motion made by Mrs. Maxwell, seconded by Mrs. Bratton, to approve the consent agenda items as presented.

Vote: All yes

Motion passes.

6. VISITORS

Mr. Chase Williams spoke as a visitor at the Board meeting.

7. RUTHERFORD PROUD

Dr. Sullivan recognized several staff members as well as a student as recipients of the Rutherford Proud Award.

JoAnne Robichaud – Purchasing Agent Rutherford County Board of Education

Isaac Oglesby – Senior at Riverdale High School
Will Kriesky – Riverdale High School
Megan Turnbow – Riverdale High School
David Cowan – Riverdale High School

8. SPOTLIGHT

Jenna Stitzel presented on Coordinated School Health.

9. TRAVIS MANION FOUNDATION (TMF)

Members of the Travis Manion Foundation presented Tuesday at the Work Session on the TMF Character Education Programs and the possibility of using this program throughout Rutherford County Schools.

10. SPRINGS PUBLIC SCHOOLS – EMPOWER ACADEMY UPDATE

Dr. Bullard and members of Springs Public Schools presented updates.

11. HUMAN RESOURCES

Elementary Cafeteria Monitors

The Cafeteria Monitor duties and responsibilities include assisting in maintaining safe mealtime standards by monitoring and assisting students, assigning seats, resolving problems, directing students into orderly lines and proper disposal of trays, and organizing classes for dismissal. These positions were previously funded from the Centralized Cafeteria Fund 143 and will continue to be funded in the same manner. These positions are only allocated to RCS Elementary Schools. Job description is included.

Motion made by Mrs. Rosales, seconded by Mr. Tidwell, to approve the Elementary Cafeteria Monitor positions that will be under the direct supervision of the school principal and will assist elementary students and cafeteria staff with certain tasks during lunch periods. The funding for these positions will be from the Centralized Cafeteria Fund 143 and the hourly rate has been budgeted to reflect such through a previously approved budget amendment.

Vote: All yes

Motion passes.

12. CURRICULUM AND INSTRUCTION

Rutherford County Schools will have nine high schools using Murphy Center on the Middle Tennessee State University campus to conduct their graduation ceremonies for the upcoming Class of 2023. The nine high schools include: Rockvale, Smyrna, Blackman, LaVergne, Riverdale, Stewarts Creek, Oakland, Siegel, and Central Magnet. A proposed agreement between RCS and MTSU is attached*. Payment is due no later than 30 days after the billing date.

Motion made by Mrs. Bratton, seconded by Mrs. Darby, to approve graduation agreement with Middle Tennessee State University and Rutherford County Schools concerning the graduation ceremonies for the RCS graduating class of 2023 as presented.

Vote: All yes

Motion passes.

13. LEGAL

1. Out of County Transfer

The Board has been requested to admit a transfer student from another school system under discipline. The student was expelled for possession of a handgun on school property, robbery, and reckless endangerment. According to Policy 6.318, the Board may deny admission of any student (except those in state custody) when a student transfers from another school system while under suspension or expulsion.

The Director of Schools' recommendation is to deny admission.

Motion made by Mr. Tidwell, seconded by Mrs. Maxwell to deny the admission of the out-of-county student as presented.

Vote: All Yes

Motion passes.

2. Policy Adoption - First Reading of Two Reading

The policies below are recommended on the first reading. These policies will be brought to the next scheduled board meeting for a second and final reading.

Policy Changes

a. **Policy 1.106: Code of Ethics**
Adds language requiring Board Members to publicly disclose any personal interest in real estate matters involving the Board.

b. Policy 2.200: Annual Operating Budget
Changes the date the proposed budget must be submitted to the County Commission.

c. Policy 3.204: Pandemic/Epidemic Emergency Cleaning
Proposal to sunset the policy.

d. Policy 3.2041: Pandemic/Epidemic Face Covering/Mask Requirement
Proposal to sunset the policy.

e. Policy 3.208: Facilities Planning
Changes timeline to present annual assessment of facility needs to Board.

f. Policy 3.211: Energy Use and Conservation
Updates language regarding energy use.

g. Policy 3.601: Student Insurance Program
Proposal to sunset the policy.

h. Policy 4.603: Promotion and Retention
Updates language for third grade retention to comply with state law.

i. Policy 4.604: Credit for Prior Courses
Updates language to comply with state requirements.

j. Policy 4.605: Graduation Requirements
Updates credits required to graduate early in compliance with state law.

k. Policy 5.109: Evaluation
Adds language requiring the Director of Schools to establish procedures for a local level grievance process to align with state law.

l. Policy 6.300: Code of Conduct
Removes THC from zero tolerance offenses in compliance with state law.

m. Policy 6.309: Zero Tolerance Offenses
Removes THC from zero tolerance offenses in compliance with state law.

n. Policy 6.319: Alternative Education
Updates language regarding exceptions for assignment to alternative school.

o. Policy 6.413: Prevention and Treatment of Sports Related Concussions
Removes physician's assistant (P.A.) from list of health care providers authorized to give written clearance to return to athletic activity after a concussion to align with TSSAA policy

New Policies

p. Policy 6.604: Name, Image, and Likeness (NIL)
New policy to address agreements for student athletes for use of their name, image, and likeness.

Motion made by Mr. Tidwell, seconded by Mrs. Rosales, to adopt the above policies on the first of two readings as presented.

Vote: All yes

Motion passes.

14. FACILITIES AND CONSTRUCTION

1. Request for Smyrna High Annex Bid

On Thursday February 9, 2023 Purchasing and Engineering and Construction received bids for the site work and construction of the Annex for Smyrna High. All bids have been reviewed and Engineering and Construction recommends RG Anderson's base bid plus Alternate #1 for a total bid of $30,120,000.00. Engineering request to also include the existing buildings 282,000 square footage of roof recover system with minimal additional insulation, a high-density cover board and a new membrane above the existing roof system at a cost of $3,500,000.00.

Engineering and Construction recommends a motion to approve the request and move forward to Health and Education for funding in the amount of $38,420,000.00.

Breakdown:	
RG Anderson Construction	**$ 30,120,000.00**
Constr. Related Contracts	**$ 1,000,000.00**
FFE	**$ 1,800,000.00**
Design	**$ 2,000,000.00**
Existing Roof	**$ 3,500,000.00**
Total Request	**$ 38,420,000.00**

Motion made by Mrs. Maxwell, seconded by Mrs. Bratton, to approve the recommendation of RG Andersons base bid plus Alternate #1 for a total bid of $30,120,000.00 and move forward to Health and Education for funding in the amount of $38,420,000.00 as presented.

Vote: All yes except Mr. Tidwell who abstained from the vote. Mr. Tidwell, as previously stated, works for Pinnacle Building Services which could potentially work on

this particular project. Mr. Tidwell is an employee and has no ownership in the company but in an effort of good faith has decided to abstain from discussion or voting on this item.

Motion passes.

2. **Oakland and Riverdale Addition Project Updates**

No new updates at this time.

3. **CMTA ESPC Update**

The Board held discussion on updates regarding the Oakland and Riverdale addition projects as well as the CMTA ESPC updates.

15. FINANCIAL REPORT

Dr. Sullivan and Brian Runion discussed information on Fund 177 and 189 at the work session. Discussion on Fund 141 was held at Thursday's Board meeting.

16. INSURANCE UPDATE

There will be a meeting on Thursday at 1:00 P.M. to discuss voluntary plans for 2024.

17. DIRECTORS UPDATE

Dr. Sullivan discussed updated information on the Student Discipline Guides with Board Members. Three key areas of importance being staffing, space and training.

18. TENNESSEE LEGISLATIVE NETWORK (TLN) UPDATE

Mrs. Rosales discussed information on the Legal and Legislative Conference that was held February 16-17th that was very informative. Mrs. Rosales is also planning to discuss the 3rd Grade Retention with several Legislatures.

19. FEDERAL RELATIONS NETWORK (FRN) UPDATE

There were no new updates.

20. GENERAL DISCUSSION

Blackman Middle will have a percussion fest on March 18th. JazzFest planning has begun and is going well. The Arts Committee held a meeting and will be putting out a needs assessment to gather information to help fund needs of the Arts.

21. ADJOURNMENT

22. EXECUTIVE SESSION

There was an executive session immediately following the Work Session on Tuesday, February 21, 2023. There being no further business, the board meeting adjourned at approximately 6:42 P.M.

_____ _____

Tammy Sharp, Board Chairman **Date**

_____ _____

Dr. James Sullivan, Director of Schools **Date**

Bid # 3652
London, England Choir and Theater Trip
Stewarts Creek High School
(March 21, 2025 - March 26, 2025)

Item #	Description	EF Educational Tours	World Strides
1	Quad Occupancy (75-90 Paying Passengers)	**$ 2,999.00**	$ 3,458.00
2	Quad Occupancy (91-120 Paying Passengers)	**$ 2,999.00**	$ 3,458.00

Mailed to 12 vendors
10 vendors did not respond

Recommend: Motion to award to EF Educational Tours for overall lowest and best bid.

To be funded through Stewarts Creek High

Rutherford County Schools Online Teaching Contract
Summer 2023

Name: _____ **Date:**_____

Position Title: Rutherford County Online Instructor **Regular School Assignment:**_____

Course(s): _____

Teacher Pay:

Pay is for an eight-week course period as follows:

a) Teachers will receive a base pay for the first course per term of $500. A term is defined as one four-week session where students can earn a ½ credit. Terms may be extended for grading purposes on an as-needed basis if there are registered students with a 504 or Individualized Education Program. Students may also request a one-week extension at the cost of $50. Teachers will receive a rate of an $50 per week for any term extensions.
b) If a teacher is teaching more than one course in the same term, the teacher will receive an additional base pay of $100 per course.
c) Additionally, teachers will receive a payment of $125 per student per term.
d) In the instance of a teacher creating a new online course, the teacher will be paid $2500 per ½ credit upon its approved completion.

The term dates for the 2023 summer sessions are:

Term 1 (½ Credit) : June 1 – June 23, 2023	Term 2 (½ Credit): June 26 - July 21, 2023

If a teacher finds it necessary to discontinue teaching an online course during that teaching period, and another teacher is hired to complete the course for the student(s), the original teacher and the replacement teacher pay will be prorated for the number of weeks each teacher has worked. The original teacher must notify the RCS Online Learning Specialist if they need to resign, or any pay will be forfeited for time served.

Teaching Responsibilities:

I have read and understand this contract and the RCS Online Faculty Handbook and agree to its requirements and responsibilities. I am available to teach in the terms outlined for my course(s) on the attached schedule of course offerings for the 2023 summer sessions.

Teacher Signature:_____ Date:_____

Print Name: _____ RCS Email Username: _____

RUTHERFORD COUNTY BOARD OF EDUCATION JOB DESCRIPTION

Job Title: Recruitment Manager

Term of Employment: 12 Months, Full-time

Immediate Supervisor: Assistant Superintendent of Human Resources and Student Services

POSITION DESCRIPTION:

The job of the Recruitment Manager was established for the purpose of performing managerial, professional, technical, and analytical duties in support of the District's recruitment goals. Responsibilities include the recruitment of top talent for employment within the guidelines of Board rules, policies, and procedures as well as applicable state and federal laws and regulations. This job reports to the Assistant Superintendent of Human Resources.

ESSENTIAL FUNCTIONS:

- Develops, plans, implements and manages system-wide recruiting activities designed to enhance the District's ability to attract and retain a diverse, high-performing workforce, with a focus on recruiting qualified professional teaching and support candidates.
- Collaborates with senior staff, school leadership and stakeholders to identify hiring priorities and meet current and future staffing needs.
- Determines staffing needs by collecting and analyzing demographic as well as local, state, and national market data.
- Maintains and analyzes recruitment and retention data and use data to develop a comprehensive recruitment plan.
- Develops recruitment and retention strategies to achieve required staffing levels and for critical shortage areas.
- Projects future district employment needs and develops plans to meet those needs within budgetary guidelines.
- Monitors operational, organizational and technology changes to ensure recruitment goals support the Districts strategic plan.
- Explores social media and other technical and/or non-traditional options to optimize recruitment results.
- Develops recruitment programs, brochures, videos, displays and other related material in order to promote Rutherford County Schools to interested parties.
- Develops and manages recruiting materials, including related information on the District's website.
- Develops and maintains a positive relationship with the business community and a network of other contacts to source candidates and develop and enhance recruiting programs and strategies.

- Builds relationships with Educator Preparation Programs (EPP) to place student teachers, Interns, and practicum students.
- Maintains and develops the "Grow your Own" teacher occupation apprenticeship program within RCS.
- Communicates with prospective employees both verbally and in writing.
- Expands the District's presence throughout the region via partnerships with colleges and universities.
- Coordinates and participates in recruitment trips to colleges and universities, job fairs, and other appropriate events.
- Writes and places recruitment information and position advertisements in various media.
- Maintains accurate recruiting, retention, and related records.
- Keeps abreast of legislative, procedural, and other changes related to recruitment and retention of employees.
- Compiles and presents information on a variety of topics.
- May lead the work of other employees.
- Attends and participates in a variety of cross-functional meetings, workshops, conferences, and/or seminars.

Working Environment:
Generally, the job requires 80% sitting, 10% walking, and 10% standing.
Physical Requirements: occasional lifting, carrying, pushing, and/or pulling; some stooping, kneeling, crouching, and/or crawling; and significant fine finger dexterity.

Up to 25% travel may be required to support recruiting activities

---

QUALIFICATIONS:

Minimum experience: Job related experience in professional staffing or recruiting.
Minimum education: Bachelor's degree in relevant field.

The ideal candidate will have the following education, experience, skills, knowledge, abilities and/or competencies:

- Knowledge of human resources laws and regulations and how they translate to recruitment best practices.
- Knowledge of recruiting methods and strategies.
- Ability to perform advanced math, prepare spreadsheets with advanced formulas, diagrams, graphs, etc.
- Ability to prioritize tasks and to delegate them when appropriate.
- Ability to function well in a high-paced and at times stressful environment.
- Ability to adapt to changing work priorities; communicate with diverse groups; and work as part of a team.
- Skill in reviewing and interpreting highly technical information and data and drawing meaningful conclusions.
- Skill in setting goals and objectives.
- Skill in problem determination and resolution.
- Ability to review data and create/develop and maintain accurate reports.
- Ability to plan, implement, and evaluate program services.
- Ability to establish, implement, and/or modify policies and procedures within established guidelines.
- Ability to present content to colleagues, potential candidates, community organizations, and other stakeholders.
- Ability to use judgment in interpreting and applying procedures and precedents to specific cases.
- Ability to lead and/or coordinate the work of others, as assigned.
- Ability to communicate effectively, both orally and in writing.
- Ability to establish and maintain effective working relationships.

Rutherford County Board of Education

Monitoring:	Descriptor Term:	Descriptor Code:	Issued Date:
Review: Annually, in September	**Code of Ethics**	**1.106**	**01/15/09**
		Rescinds: **1-42**	Issued:

CODE OF ETHICS

RUTHERFORD COUNTY BOARD OF EDUCATION

Section 1. Definitions.

(1) "School district" means the Rutherford County Board of Education, which was duly created by a public or private act of the General Assembly; and which includes all boards, committees, commissions, authorities, corporations or other instrumentalities appointed or created by the school district or an official of the school district.

(2) "Officials and employees" means and includes any official, whether elected or appointed, officer, employee or servant, or any member of any board, agency, commission, authority or corporation (whether compensated or not), or any officer, employee or servant thereof, of the school district.

(3) "Personal interest" means, for the purpose of disclosure of personal interests in accordance with this Code of Ethics, a financial interest of the official or employee, or a financial interest of the official's or employee's spouse or child living in the same household, in the matter to be voted upon, regulated, supervised, or otherwise acted upon in an official capacity.

Section 2. Disclosure of personal interest in voting matters. An official or employee with the responsibility to vote on a measure shall disclose during the meeting at which the vote takes place, before the vote and to be included in the minutes, any personal interest that affects or that would lead a reasonable person to infer that it affects the official's or employee's vote on the measure. In addition, the official or employee may, to the extent allowed by law, recuse himself or herself from voting on the measure.

Section 3. Disclosure of personal interest in non-voting matters. An official or employee who must exercise discretion relative to any matter other than casting a vote and who has a personal interest in the matter that affects or that would lead a reasonable person to infer that it affects the exercise of the discretion shall disclose, before the exercise of the discretion when possible, the interest on the attached disclosure form and file the disclosure form with the school district's central office. In addition, the official or employee may, to the extent allowed by law, recuse himself or herself from the exercise of discretion in the matter.

Section 4. Acceptance of gifts and other things of value. An official or employee, or an official's or employee's spouse or child living in the same household, may not accept, directly or indirectly, any gift, money, gratuity, or other consideration or favor of any kind from anyone other than the school district

that a reasonable person would understand was intended to influence the vote, official action or judgment of the official or employee in executing decision-making authority affecting the school district.

It shall not be considered a violation of this policy for an official or employee to receive entertainment, food, refreshments, meals, health screenings, amenities, foodstuffs, or beverages that are provided in connection with a conference sponsored by an established or recognized statewide association of school board officials or by an umbrella or affiliate organization of such statewide association of school board officials.

Section 5. Real Estate Matters. Without limiting any other provision of this Policy or any other Policy, for contracts with the Board for the purchase, sale, acquisition, or disposition of land or interests in land, no Board member may vote, take any action as a Board Member, or participate in discussion on any matter related thereto in which the Board Member is directly interested or has a personal interest without first publicly disclosing the same. For the purpose of defining "directly interested" on matters involving the purchase, sale, acquisition, or disposition of land or interests in land, "directly interested" means any contract with the board member or with any business in which the board member is a sole proprietor, partner, member, shareholder, or the holder or recipient of any financial interest.

Section 6. Ethics Complaints. The school district may create a School District Ethics Committee (the "Ethics Committee") consisting of three members who will be appointed to one-year terms by the Chairman of the Board of Education with confirmation by the board of education. At least two members of the committee shall be members of the board of education. The Ethics Committee shall convene as soon as practicable after its appointment and elect a chair and a secretary. The records of the Ethics Committee shall be maintained by the secretary and shall be filed in the office of the director of schools, where they shall be open to public inspection.

Questions and complaints regarding violations of this Code of Ethics or of any violation of state law governing ethical conduct should be directed to the chair of the Ethics Committee. Complaints shall be in writing and signed by the person making the complaint, and shall set forth in reasonable detail the facts upon which the complaint is based.

The School District Ethics Committee may investigate any credible complaint against an official or employee charging any violation of this Code of Ethics, or may undertake an investigation on its own initiative when it acquires information indicating a possible violation, and make recommendations for action to end or seek retribution for any activity that, in the Committee's judgment, constitutes a violation of this Code of Ethics. If a member of the Committee is the subject of a complaint, such member shall recuse himself or herself from all proceedings involving such complaint.

The Committee may:

(1) refer the matter to the Board Attorney for a legal opinion and/or recommendations for action;
(2) in the case of an official, refer the matter to the school board body for possible public censure if the board body finds such action warranted;

(3) in the case of an employee, refer the matter to the official responsible for supervision of the employee for possible disciplinary action if the official finds discipline warranted;
(4) in a case involving possible violation of state statutes, refer the matter to the district attorney for possible ouster or criminal prosecution;

The interpretation that a reasonable person in the circumstances would apply shall be used in interpreting and enforcing this Code of Ethics. When a violation of this Code of Ethics also constitutes a violation of a personnel policy or a civil service policy, the violation shall be dealt with as a violation of the personnel or civil service provisions rather than as a violation of this Code of Ethics.

Legal Reference:

1. Tenn. Code Ann. § 2-10-122, et seq.

Cross References:

Rutherford County Board of Education

Monitoring:	Descriptor Term:	Descriptor Code:	Issued Date:
Review: Annually, in September	**Annual Operating Budget**	**2.200**	**07/07/22**
		Rescinds: **2.200**	Issued: **11/15/16**

General

All school system budgets are the operational plans stated in financial terms which describe the programs to be conducted during the fiscal year beginning July 1 ending June 30 the following year.[1]

Central Office

PREPARATION PROCEDURES

Budget planning shall include an analysis of previous staffing, curriculum and facilities, and projections requiring additional staffing, curriculum modifications, and additional facilities.

The budget proposal should be balanced, consistent with board policy and contract conditions, to include provisions for:

- Programs to meet the needs of the entire student body;
- Staffing arrangements adequate for proposed programs;
- Maintenance of the district's equipment and facilities; and
- Efficiency and economy.

Budget preparation shall be the responsibility of the director of schools.[2] The director of schools will establish procedures for the involvement of staff, including requests from department heads and principals, all of whom shall seek advice and suggestions from other staff and faculty members.

The director of schools and the chairman of the board shall develop a budget preparation calendar no later than January 1 of the current school year. The calendar shall be used as a guide for coordinating the budgetary activities of individuals and groups, collecting budget data, reviewing budget problems, and making budget decisions.

HEARING AND REVIEWS

The proposed budget will be available for inspection by various interested citizens or groups in the office of the director of schools.

FINAL ADOPTION PROCEDURE

The board shall submit a proposed budget in accordance with the budget timeline established by the board and county commission.[3] If a budget timeline is not agreed upon, the board shall submit a proposed budget to the County Commission no later than May ~~1st~~ 15th.[3] If the proposed budget is

rejected, the board shall submit a revised budget proposal within ten (10) business days after receiving notice of the rejection.[4]

Within thirty (30) days after the beginning of each fiscal year, the director of schools or his/her designee shall submit to the Commissioner of Education a complete and certified copy of its entire school budget for the current school year.[5]

Legal References

1. *Tennessee Internal School Uniform Accounting Policy Manual*, Section 4-42
2. TCA 49-2-203(a)(9)
3. TCA 5-9-402(d)(4)
4. TCA 5-9-402(d)(5)(C)
5. TCA 49-2-301(b)(1)(X); TRR/MS 0520-01-02-.13(2)(a)

Cross References

Role of the Board of Education 1.101
Executive Committee 1.301

Rutherford County Board of Education

Monitoring:	Descriptor Term:	Descriptor Code:	Issued Date:
Review: Annually, in October	**Pandemic/Epidemic Emergency Cleaning**	**3.204**	**07/09/20**
		Rescinds:	Issued:

During a period of declared pandemic or epidemic, the Director of Schools and/or his/her designee shall develop guidance documents that establish expected practices for all employees and bus contractors. Guidance shall be designed in conjunction with all relevant Department Heads and it shall be in line with Centers for Disease Control and Prevention (CDC), State, Local, and Board policies and guidelines to the greatest extent possible.

The Director of Transportation will provide a guidance document to all bus contractors for distribution to all drivers. Maintaining a clean bus in line with CDC, State, Local and Board policies during a pandemic/epidemic shall be considered a required safety condition under Board Policy 3.405.

Cross References

Emergency Preparedness Plan 3.202
Care of School Property 6.311
Contracted Bus Service 3.405

Rutherford County Board of Education

Monitoring:	Descriptor Term:	Descriptor Code:	Issued Date:
Review: Annually, in April	**Pandemic/Epidemic Face Covering/Mask Requirement**	**3.2041**	**07/28/20**
		Rescinds:	Issued:

During active periods of a declared pandemic/epidemic related to COVID-19, the below provisions shall apply:

General:

1. All persons on Rutherford County Board of Education property unable to practice social distancing of at least six feet in all direction must wear a face covering or a mask.
2. Individuals medically unable to comply must speak with the supervisor of the property to discuss possible alternatives.
3. Face coverings/masks must comply with building-specific dress codes.
4. No children under the age of two will be required to wear a face covering or mask.
5. This policy shall automatically expire on the last day of the 2020-2021 school year, or earlier if deemed appropriate by the Director of Schools.
6. The Director of Schools may create procedures that allow accommodations and alternatives for the mask requirement when necessary for instruction and/or safety.

Faculty/Staff/Contractors: All faculty, staff, and contractors are required to wear cloth face coverings or masks when social distancing of a minimum of six feet in all directions is not possible. Faculty, staff, and contractors who have a legitimate medical condition related to this requirement should contact their supervisor to discuss alternatives.

Visitors: All visitors, with the exception of children under the age of two, are required to wear a cloth face covering or mask when social distancing of a minimum of six feet in all directions is not possible. Visitors with a legitimate medical limitation should contact the supervisor of the building they seek to visit to discuss alternatives.

Students: All students are required to wear cloth face coverings or masks when social distancing of a minimum of six feet in all directions in not possible. Students with a legitimate medical condition that impacts this requirement may be afforded alternatives. The parents/guardians of the student should contact his/her school's Section 504 Coordinator and/or Special Education Case Manager for further assistance.

Legal References

1. TCA 49-6-4215; TCA 49-1-302(2)(j)
2. TCA 49-2-203(a)(2)

Cross References

Discipline Procedures 6.313
Suspension/Expulsion/Remand 6.316
Crisis Management 3.203
Role of the Board of Education 1.101

Rutherford County Board of Education

Monitoring:	Descriptor Term:	Descriptor Code:	Issued Date:
Review: Annually, in October	**Facilities Planning**	**3.208**	**12/12/13**
		Rescinds:	Issued:

The director of schools shall present an annual assessment of facility needs to the Board by the end of ~~December~~ February. The needs assessment shall include a review of each school site. Each principal shall prepare the assessment for his/her school with input from staff, parents and community leaders.

The individual school needs assessment shall include the following information:

1. building, site and utility deficiencies
2. maintenance issues
3. number of classrooms with class sizes
4. population and enrollment projections
5. community needs
6. other information as directed

The system-wide needs assessment shall include the following information:

1. individual school assessments
2. system-wide population growth projections
3. industrial and business forecasts
4. other information as deemed necessary

ASBESTOS[1]

The director of schools shall maintain an Asbestos Management Plan for all buildings leased, owned, or otherwise used as school buildings and maintain and update the plan to keep it current with ongoing operations and maintenance, periodic surveillance, inspection, re-inspection, and response action activities.

The director of schools shall:

A. annually publish a notification on the Asbestos Management Plan availability and the status of asbestos activities;

B. educate and train maintenance and custodial staff about asbestos and how to deal with it, in accordance with state and federal statutes;

C. notify short-term or temporary workers on the locations of the building materials containing asbestos;

D. post warning labels in routine maintenance areas where asbestos was previously identified or assumed;

E. follow set plans and procedures designed to minimize the disturbance of building materials containing asbestos; and

F. survey the condition of these materials every six (6) months to assure that they remain in good condition.

The director of schools shall designate an Asbestos Hazard Emergency Response Act (AHERA) Manager as the designated Asbestos Program Coordinator. All inquiries regarding the asbestos plan and asbestos-related issues should be directed to the AHERA Manager.

Legal References:
1. 40 C.F.R. § 763.91-93

Rutherford County Board of Education

Monitoring:	Descriptor Term:	Descriptor Code:	Issued Date:
Review: Annually, in October	**Energy Use and Conservation**	**3.211**	**08/15/13**
		Rescinds: **3.211**	Issued: **03/14/13**

PURPOSE

The Rutherford County Board of Education is responsible for the efficient use of all natural resources required by the District. ~~In keeping with this responsibility,~~ the District shall provide leadership in developing a realistic energy use ethic, by increasing awareness of energy needs and their associated costs in the operation of District facilities, in order to conserve on energy while maintaining a comfortable environment.

STATEMENT OF POLICY

The District's success in achieving an effective energy use, conservation and efficiency program requires and depends upon cooperation at all levels. Therefore, every employee, student, school volunteer and contractor is expected to contribute to and actively participate in the District's energy conservation and efficiency program, and to be an "energy saver" as well as an "energy consumer."

~~Implementation of~~ the District's energy use and conservation ~~policy~~ shall be the joint and collective responsibility of the District's Board of Education, administration, teachers, staff, students and volunteers. While primary accountability and responsibility for management and administration of the District's energy conservation ~~and efficiency program shall~~ lies with the District's Director of Schools or his/her designee, the District's administrative staff shall assist the Director of Schools or Designee as needed in implementing, managing, directing, monitoring, evaluating ~~and reporting~~ District conservation and efficiency in the use of energy.

The District shall, under the supervision and direction of its Director of Schools or designee, maintain accurate records of energy consumption and associated costs at each school site and shall periodically provide information on the goals and progress of the District's energy conservation ~~program~~. The judicious use and management of various energy systems at each school facility shall be the joint responsibility of the administrative, instructional and custodial staff of each such facility, acting in concert with the District's Engineering Department and its Assistant Superintendent of Engineering.

The District's Director of Schools or designee shall develop, in cooperation with and with assistance from such others as may be necessary, and shall thereafter disseminate, the appropriate short and long range administrative guidelines ~~or regulations~~ necessary to implement and administer the District's energy awareness, management and conservation programs.

The Director of Schools shall monitor compliance with the following:

(1) Maintenance of the learning environment shall always take precedence over energy

conservation measures;

(2) The District shall amend its policies and action plans to as required to strive for continuing compliance with the most recent adoption of the American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHARE) Standards 90.1 (minimum standard for energy efficiency), 62.1 (minimum standard for indoor air quality) and 55 (minimum standard for human comfort).

~~**ENERGY SAVINGS CALCULATIONS**~~

~~Proceeds from the Energy Efficiency Fund will be utilized to implement energy conservation measures. A percentage of the energy savings recognized will be re-invested into the facilities to continue developing energy conservation strategies and upgrade equipment. Energy savings will be calculated on a school year basis. Total energy consumption (electricity, water, gas, demand factors, etc.) will be analyzed and compared to previous years of operation to determine savings. Climatic temperature extremes, facility size, and student census will be included in the energy conservation savings analysis to establish baseline indices.~~

~~These calculations will become effective in the 2013-2014 fiscal year.~~

Rutherford County Board of Education

Monitoring:	Descriptor Term:	Descriptor Code:	Issued Date:
Review: Annually, in October	**Student Insurance Program**	**3.601**	**01/15/09**
		Rescinds: **5-22**	Issued: **01/15/09**

Group accident insurance shall be permitted for the students in the various schools subject to the following conditions:

1. It shall not be the responsibility of the school to handle premiums.

2. Claims shall be made directly to the insurance company by the parent or guardian and not to the school, but accident reports made out by school personnel shall be available for purposes of information.

3. One group accident insurance company shall provide coverage for the entire county. The choice of the company shall be made annually by a majority vote of the principals. This shall be approved by the director of schools and authorized by the Board of Education.

Files will be maintained in the principal's office listing students subscribing to the plan.

The principal shall ensure that each student, before participating in interscholastic athletics, either purchases the insurance policy offered or presents a statement signed by the parent(s) which assures the school that the parent(s) has personal insurance or is willing to accept all financial responsibilities related to participation and travel. Forms for such permission and agreements will be furnished by the principal and will be kept on file in the principal's office.

Cross References:

Interscholastic Athletics 4.301

Rutherford County Board of Education

Monitoring:	Descriptor Term:	Descriptor Code:	Issued Date:
Review: Annually, in November	**Promotion and Retention**	**4.603**	**06/05/19**
		Rescinds: **4.603**	Issued: **01/05/09**

General

All promotion and retention decisions shall be made on a case-by-case basis and comply with state and federal law. All decisions shall be made in consultation with a student's IEP and/or 504 team, if applicable.[1]

Students who have difficulty in achieving the requirements for promotion may be considered for retention. Schools shall identify these students by February 1st. Factors used to identify students for retention shall include:[2]

1. Ability to perform at the current grade level;
2. Results of local assessments, screening, or monitoring tools;
3. State assessments, as applicable;
4. Home Literacy Reports;[3]
5. Overall academic achievement of the student;
6. Likelihood of success with more difficult material if promoted to the next grade;
7. Attendance record; and
8. The student's maturity.

Students may be identified for retention after the February 1st deadline if the delay in identifying a student is due to:[4]

1. Date of enrollment;
2. Additional information acquired after results of local assessment, screening, or monitoring are released; or
3. Other extenuating circumstances.

PROMOTION PLANS[5]

When a student is identified for retention, the student's parent(s)/guardian(s) shall be notified within fifteen (15) calendar days, and an individualized promotion plan shall be developed to help the student avoid retention. The plan shall be developed in coordination with the student's teachers, IEP or 504 team, if applicable, and may also include input from the student's parent(s)/guardian(s), school counselor, or other appropriate school personnel.

Promotion plans shall incorporate evidence-based strategies, including expectations and measurements that will verify whether a student has made sufficient progress to be promoted to the next grade level, and be tailored to the student's learning needs. Promotion plans for students in third and fourth grade will include additional requirements for promoting students in these grades. A copy of the plan will be provided to the student's parent(s)/guardian(s), and the school shall offer the opportunity for a parent-teacher conference to discuss the plan. If a student is not making progress on the promotion plan, then the strategies shall be modified. Parent(s)/guardian(s) shall be provided with any changes to the promotion plan.

A student who demonstrates sufficient academic progress according to his/her promotion plan shall be promoted to the next grade level unless retention is required per additional requirements for students in third and fourth grade.[6]

If a student has not demonstrated sufficient academic progress according to his/her promotion plan by the end of the school year, the student shall be eligible to enroll in a summer reading or learning program, if available. Parent(s)/guardian(s) shall be notified of a decision for retention at least ten (10) calendar days prior to the start of the next school year if the student was enrolled in a summer program. However, if the student wasn't enrolled in a summer program, the parent(s)/guardian(s) shall be notified of a decision for retention at least thirty (30) calendar days prior to the start of the next school year.[7]

RETENTION[6]

A student may be retained when such retention is in the best interests of the student or when retention is required per additional requirements for students in third and fourth grade.

Decision of Retention – General[8]

If a student is retained, the Director of Schools/designee shall develop an individualized academic remediation plan within thirty (30) calendar days after the beginning of the next school year. A copy of the plan shall be provided to the student's parent(s)/guardian(s) within ten (10) calendar days of its development. The plan shall include at least one of the following strategies:

1. Adjustment to the current instructional strategies or materials;

2. Additional instructional time;

3. Individual tutoring;

4. Modification to the student's classroom assignment to ensure the student receives instruction from a teacher with a level of overall effectiveness of above expectations (level 4) or significantly above expectations (level 5); or

5. Attendance or truancy interventions.

A student shall not be retained more than once in any grade. The progress of students who are retained shall be closely monitored and reported to parent(s)/guardian(s) at least three (3) times during the school year in which the student is retained. The Director of Schools shall develop procedures to ensure appropriate recordkeeping of students who are retained.

Decision of Retention – Third Grade[9]

Third grade students shall not be promoted to the next grade unless they are determined to be proficient (i.e., receive a performance level rating of "on track" or "mastered") in English language arts (ELA) based on the student's most recent TCAP test.

Students who are not proficient in ELA may still be promoted if the following conditions are met:

1. A student in third grade receiving a performance level rating of "approaching" on the ELA portion of the student's most recent TCAP test may be promoted if:

    a. The student is an English language learner and has received less than two (2) full years of ELA instruction;
    b. The student was previously retained in grades K-3;
    c. The student is retested before the next school year and scores proficient in ELA;
    d. The student attends a learning loss bridge camp before the next school year, maintains a ninety percent (90%) attendance rate, and demonstrates adequate growth on the post-test at the end of the camp; or
    e. The student receives tutoring for the entirety of the next school year in accordance with state law.

2. A student in third grade receiving a performance level rating of "below" on the ELA portion of the student's most recent TCAP test may be promoted if:

    a. The student is an English language learner and has received less than two (2) full years of ELA instruction;
    b. The student was previously retained in grades K-3;
    c. The student is retested before the next school year and scores proficient in ELA; or
    d. The student attends a learning loss bridge camp before the next school year, maintains a ninety percent (90%) attendance rate, and receives tutoring for the entirety of the next school year in accordance with state law.

Decision of Retention – Fourth Grade[9]

Students in the following categories shall show adequate growth in the following ways before being promoted to the fifth grade:

1. A student who is promoted to the fourth grade due to receiving tutoring for the entirety of the next school year in accordance with state law or because of attending a learning loss bridge camp must maintain a ninety percent (90%) attendance rate; and

2. A student receiving tutoring for the entirety of the next school year in accordance with state law shall be required to show adequate growth on the fourth grade ELA portion of TCAP before the student may be promoted to fifth grade.

A student shall not be retained more than once in fourth grade.

Decision of Retention – Students with Disabilities[10]

Retention and promotion decisions shall be made on a case-by-case basis and in consultation with the student's IEP and/or 504 team to determine whether the student's performance on the ELA portion of TCAP was due to the student's disability. The school district shall not retain a student with a disability or a suspected disability that impacts their ability to read.

APPEALS[7,11]

When a student is identified for retention, the parent(s)/guardian(s) shall be notified about the decision to retain the student and provided with information on the right to appeal the decision. Appeals shall be made to a committee appointed by the principal within five (5) business days. The student and his/her parent(s)/guardian(s) shall be provided written or actual notice of the appeal hearing and shall be given the opportunity to address the committee. The committee shall conduct a hearing within five (5) business days to determine if the student will be promoted and issue such decision within five (5) business days. Upon notification of the committee decision, the principal shall send written notification to the Director of Schools/designee and the parent(s)/guardian(s). The notification shall advise parent(s)/guardian(s) of their right to appeal such action within five (5) business days to the Director of Schools/designee.

The appeal shall be heard no later than ten (10) business days after the request for appeal is received. A decision shall be issued within five (5) business days.

Within five (5) business days of the Director of Schools/designee rendering a decision, the student's parent(s)/guardian(s) may request a hearing by the Board, and the Board shall review the record. Following the review, the Board may affirm or overturn the decision of the Director of Schools/designee. The action of the Board shall be final.

For students where retention is required per the additional requirements for students in third and fourth grade, parent(s)/guardian(s) may appeal this decision directly to the Department of Education in accordance with state law.[12]

Legal References

1. 20 USCA § 1400 *et seq.*; 29 U.S.C. § 794 (Section 504); TRR/MS 0520-01-03-.16; TCA 49-6-3115
2. TRR/MS 0520-01-03-.16(5)
3. TCA 49-1-905(e)
4. TRR/MS 0520-01-03-.16(4)
5. TRR/MS 0520-01-03-.16(6)
6. TRR/MS 0520-01-03-.16(6)(f)
7. TRR/MS 0520-01-03-.16(6)(e)
8. TRR/MS 0520-01-03-.16(6)(g)
9. TRR/MS 0520-01-03-.16(7)
10. 29 U.S.C. § 794 (Section 504); 20 USCA § 1400 *et seq.*; TRR/MS 0520-01-03-.16(7)(e)
11. TRR/MS 0520-01-03-.16(3); TRR/MS 0520-01-02-.17(7); TCA 49-6-3102(e)(1)
12. TRR/MS 0520-01-03-.16(7)(f)

Cross References

Credit Recovery 4.210
Grading System 4.600
Reporting Student Progress 4.601
Attendance 6.200
Student Assignments 6.205
Homeless Students 6.503
Student Records 6.600

Rutherford County Board of Education

Monitoring:	Descriptor Term:	Descriptor Code:	Issued Date:
Review: Annually, in December	**Credit for Prior Courses**	**4.604**	**01/30/20**
		Rescinds:	Issued:

Students enrolled in grades nine (9) through twelve (12) who have taken the equivalent of a high school level course in middle school may earn high school credit for graduation, except in American History, under the following guidelines:[1]

1. Students shall be given the same comprehensive examination for the course as required for students in grades nine (9) through twelve (12) who earn credit for graduation;

~~2. The examination shall provide evidence that a student has mastered all of the terminal objectives in the applicable curriculum framework adopted by the State Board of Education and shall be scored and graded on the same scale as for students who are enrolled in the course;~~

~~3. Students must have earned a grade of "B" or better in the course in order to qualify to take the examination; and~~

~~4. Students must score a "B" or better on the examination in order to receive credit toward high school graduation.~~

2. Students must successfully complete the high school course evident by a passing grade in the course prior to grade nine (9) in order to receive credit.

3. If a student attains an industry credential as promoted by the Department of Education while completing the high school course prior to grade nine (9), the industry credential shall be included for student performance, accountability measures, grading and high school graduation with honors and distinction purposes.

The Director of Schools shall develop procedures ~~for:~~ and guidelines to ensure that proper credit is given.

~~1. Making application for credit;~~

~~2. Administering and scoring the examination; and~~

3. ~~Recordkeeping to ensure that proper credit is given.~~

Legal References

1. TRR/MS 0520-01-03-.06(2); TCA 49-6-1202; State Board of Education Policy 2.102

Rutherford County Board of Education

Monitoring:	Descriptor Term:	Descriptor Code:	Issued Date:
Review: Annually, in December	**Graduation Requirements**	**4.605**	**05/04/21**
		Rescinds: **4.605**	Issued: **09/18/19**

General

To meet the requirements for graduation, a student shall have attained an approved attendance, conduct and subject matter record which covers a planned program of education, and such record shall be kept on file in the high school.

The program of studies shall include areas and content required by the State Board of Education and shall be flexible enough to facilitate progress from one stage of development to another, thus providing for more effective student adjustment.

Students shall earn five (5) units of credit in order to be classified as a sophomore, eleven (11) units of credit to be classified as a junior, and seventeen (17) units of credit to be classified as a senior.

Before high school graduation, every student seeking an RCS diploma shall:[1]

1. Achieve the RCS-required twenty-three units of credit;
2. Take the required end-of-course exams;
3. Have satisfactory records of attendance and conduct;
4. Take the ACT or SAT in the 11th grade if enrolled in a Tennessee public school during their 11th grade year;[2] and
5. Pass a United States civics test.[3]

The curriculum for homebound students is an integral part of the general curriculum of each school; therefore, homebound students shall also have the same participatory privileges with the following stipulations:

1. The medical verification of the physical disability of the student to participate is provided to the homebound teacher; and
2. The principal of the school be notified by May 1st of the current year by the homebound teacher of the student's intent to participate in graduation rehearsals and exercises.

Students who have completed all graduation requirements will be awarded a regular diploma. Students who complete all graduation requirements, but have not passed the proficiency test, will be awarded a certificate of attendance.

Any enrolling or transferring students in grades eleven (11) or twelve (12) that are in the care of or exiting the custody of the Department of Children's Services shall only be required to meet the minimum requirements for graduation established by the State Board of Education

SPECIAL EDUCATION STUDENTS[4]

Special education students who earn the State-required twenty-two credit minimum shall be awarded a regular high school diploma.

Students who have received the diplomas listed below shall continue to make progress towards a regular high school diploma until the end of the school year in which they turn twenty-two (22) years old.

Special Education Diploma

A special education diploma shall be awarded to students who have not met the requirements for a regular high school diploma[5] but have:

1. Completed four (4) years of high school;
2. Made satisfactory progress on their IEP; and
3. Maintained satisfactory records of attendance and conduct.

Occupational Diploma

Special education students who do not meet the requirements for a regular high school diploma may be awarded an occupational diploma if the student has:[1,4]

1. Completed at least four (4) years of high school;
2. Made satisfactory progress on their IEP;
3. Maintained satisfactory records of attendance and conduct;
4. Completed the occupational diploma Skills, Knowledge, and Experience Mastery Assessment (SKEMA); and
5. Has two (2) years of paid or non-paid work experience.

The decision to attain an occupational diploma shall be made at the conclusion of the student's 10th grade year or two (2) academic years prior to the expected graduation date.

Alternate Academic Diploma

Special education students who do not meet the requirements for a regular high school diploma may be awarded an alternate academic diploma if the student has:[4]

1. Completed at least four (4) years of high school;
2. Participated in the high school alternate assessment;
3. Earned the State-required twenty-two credit minimum;
4. Made satisfactory progress on their IEP;
5. Maintained satisfactory records of attendance and conduct; and
6. Completed a transition assessment that measures postsecondary education and training, employment, independent living, and community involvement.

STUDENT LOAD

All full-time students in grades 9-12 shall be enrolled each semester in subjects that produce a minimum of five (5) units of credit for graduation per year. Students with hardships and gifted students may appeal this requirement to the Director of Schools and then to the Board.[6]

EARLY GRADUATION[7]

High school students shall be permitted to complete an early graduation program. Students intending to graduate early shall inform the school principal of this intent prior to the beginning of 9th grade or as soon thereafter as the intent is known.

In order to graduate early, students shall meet the following requirements:

1. Earn the required ~~eighteen (18)~~ seventeen (17) credits;
2. Achieve a benchmark score for each required end-of-course exam;
3. Attain a cumulative GPA of at least 3.2 on a 4.0 scale;
4. Meet the minimum ACT or SAT benchmark score;
5. Obtain a qualifying benchmark score on a world language proficiency assessment; and
6. Complete at least two (2) types of the following courses:
    a. AP;
    b. IB;
    c. Dual enrollment; or
    d. Dual credit.

The Director of Schools shall develop administrative procedures to ensure that the early graduation program is conducted in accordance with state law.

Legal References

1. TCA 49-6-6001; State Board of Education Policy 2.103; TRR/MS 0520-01-03-.06
2. TCA 49-6-6001(b); State Board of Education Policy 2.103
3. TCA 49-6-408; State Board of Education Policy 2.103
4. TRR/MS 0520-01-03-.06; State Board of Education Policy 2.103
5. TCA 49-6-6005; State Board of Education Policy 2.103
6. TRR/MS 0520-01-03-.06
7. TCA 49-6-8103; State Board of Education Policy 2.103

Cross References

Class Size Ratios 4.201
Honor Roll, Awards, & Class Ranking 4.602

Rutherford County Board of Education

Monitoring:	Descriptor Term:	Descriptor Code:	Issued Date:
Review: Annually, in February	**Evaluation**	**5.109**	**06/16/11**
		Rescinds: **5.109**	Issued: **12/03/09**

The evaluation of performance and its effectiveness must be a cooperative and shared endeavor on the part of the director of schools and administrative and supervisory personnel.

The Board shall use a state-approved model for evaluating administrative and supervisory personnel and shall approve standard forms to be used in evaluating support personnel.

The director of schools is responsible for ensuring that all administrative and supervisory personnel are evaluated annually.

LICENSED TEACHING PERSONNEL

The Board shall use guidelines developed by the State Board of Education for implementation of an approved evaluation system. Annual evaluation shall be made of apprentice teachers who have not gained tenure and a professional license. Professionally licensed educators will be evaluated pursuant to statutory requirements. [1]

If the state-approved model is not used, the Board shall submit to the Commissioner of Education for approval, an evaluation plan with implementation procedures, validation procedures and training plans. The evaluation plan shall be reviewed at least annually for improvement and revision. All changes in the evaluation system shall be submitted by July 1 prior to the proposed implementation year.

The Board shall annually submit for state review and approval, the evaluations and recommendations of all apprentice teachers who are in their **final** apprentice year.[2] Evaluation deadlines for first and second year apprentice teachers and professionally licensed teachers shall be May 1.[3]

Teachers shall be evaluated for the following purposes:

1. Accountability - to assure that evaluation considers the effectiveness in the classroom and in the school.
2. Professional Growth - to provide a focus for professional growth in an area(s) which has the greatest capacity for facilitating student performance.
3. Cohesive School Structure - to increase and focus the dialogue within schools on the goal(s) of improved services to students.[4]

Evaluations will be conducted by a school administrator and/or designee(s). All evaluators shall be trained and certified through state-sanctioned training in the evaluation procedures before conducting evaluations. The principal shall be responsible for the final evaluation decision.[4]

Evaluations shall use multiple data sources which include but are not limited to:

1. Classroom or position observations including planning and reflecting information and/or review;
2. Review of previous evaluations and an educator self-assessment;
3. Conferences;
4. Examination of professional growth;
5. Review of indicators of student progress; and
6. Examination of assessment techniques, results and applications.

As part of the evaluation process, a growth plan shall be developed for all teachers. The plan shall be developed collaboratively by the teacher and the immediate supervisor and/or principal. The plan shall include identified area(s) for growth, action plan, and progress reporting procedures. [4]

Local Level Grievance Procedure

The Director of Schools shall develop procedures, consistent with state law, for processing evaluation grievances.[2]

Legal References:

Cross References:

1. TRR/MS 0520-2-.1-.01
2. TRR/MS 0520-2-1-.03
3. TRR/MS 0520-2-1-.02 (1)(c)
4. TRR/MS 0520-2-1-.02

Job Descriptions 5.103

Rutherford County Board of Education

Monitoring:	Descriptor Term:	Descriptor Code:	Issued Date:
Review: Annually, in March	**Code of Conduct**	**6.300**	**08/18/22**
		Rescinds: **6.300**	Issued: **08/12/21**

The Board delegates to the Director of Schools the responsibility of developing specific codes of conduct which are appropriate for each level of school.[1] Codes of conduct for students in pre-kindergarten or kindergarten shall utilize alternative disciplinary practices such as restorative practices, RTI^{2}B, multi-teared system of supports, and behavior intervention plans. Exclusionary discipline shall only be used as a measure of last resort.[2] The development of each code shall involve principals and staff members of each level and shall be based on evidence-based behavior support and interventions.[3]

The following levels of misbehavior and disciplinary procedures and options are standards designed to protect all members of the educational community in the exercise of their rights and duties and to maintain a safe learning environment where orderly learning is possible and encouraged.[4] These misbehaviors apply to student conduct on school buses, on school property, and while students are on school-sponsored outings. Staff members have the authority to enforce the code of conduct[3] and shall ensure that disciplinary measures are implemented in a manner that:[5]

1. Balances accountability with an understanding of traumatic behavior;

2. Teaches school and classroom rules while reinforcing that violent or abusive behavior is not allowed at school;

3. Minimizes disruptions to education with an emphasis on positive behavioral supports and behavioral intervention plans;

4. Creates consistent rules and consequences; and

5. Models respectful, non-violent relationships.

In order to ensure that these goals are accomplished, the school district shall utilize the following trauma-informed discipline practices: restorative practices, RTI^{2}B, multi-tiered system of supports, and behavior intervention plans.

MISBEHAVIORS: LEVEL I

This level includes minor misbehavior on the part of the student which impedes orderly classroom guidelines or interferes with the orderly operation of the school, but which can usually be handled by an individual staff member.

Examples (not an exclusive listing)

- Classroom disturbances

- Classroom tardiness
- Cheating and lying
- Abusive language
- Failure to do assignments or carry out directions
- Wearing, while on the grounds of a public school during the regular school day, clothing that exposes underwear or body parts in an indecent manner that disrupts the learning environment[6]
- Victimization of any student (harassment (sexual, racial, ethnic, religious), bullying, cyber-bullying, and/or hazing)

Disciplinary Procedures

- The staff member intervenes immediately.
- The staff member determines what offense was committed and its severity.
- The staff member determines who committed the offense and if he/she understands the nature of the offense.
- The staff member employs appropriate disciplinary options.
- The record of the offense and disciplinary action shall be maintained by the staff member.

Disciplinary Options (not an exclusive listing)

- Verbal reprimand
- Special assignment
- Restricting activities
- Counseling
- Withdrawal of privileges
- Issuance of demerits
- Strict supervised study
- Detention
- In-school suspension
- Community service
- Reteaching of expectations
- Restorative practices
- Behavior contract
- Mediation
- Mentoring

MISBEHAVIORS: LEVEL II

This level includes misbehavior whose frequency or seriousness tends to disrupt the learning climate of the school. These misbehaviors do not represent a direct threat to the health and safety of others but have educational consequences serious enough to require corrective action on the part of administrative personnel.

Examples (not an exclusive listing)

- Continuation of unmodified Level I misbehaviors
- School or class tardiness
- School or class truancy
- Using forged notes or excuses
- Disruptive classroom behavior
- Possession of a personal communication device when not authorized, if not drug related
- Victimization of any student (harassment (sexual, racial, ethnic, religious), bullying, cyber-bullying, and/or hazing)

Disciplinary Procedures

- The student is referred to the principal for appropriate disciplinary action.
- The principal meets with the student and the staff member.
- The principal hears the accusation made by the staff member and allows the student the opportunity to explain his/her conduct.
- The principal takes appropriate disciplinary action and notifies the staff member of the action.
- The record of offense and disciplinary action shall be maintained by the principal.

Disciplinary Options (not an exclusive listing)

- Teacher/schedule change
- Mediation
- Modified probation
- Behavior modification programs
- Peer counseling
- Referral to outside agency
- Transfer
- Detention
- Suspension from school-sponsored activities or from riding school bus
- In-school suspension
- Out-of-school suspension
- Referral for RTI^{2}B
- Revision
- Reteaching of expectations
- Referral to Tier 2 behavioral supports
- Restorative practices
- Review and revision of a behavior plan
- Behavior contract
- Mentoring
- Community Service

MISBEHAVIORS: LEVEL III

This level includes acts directly against persons or property but whose consequences do not seriously endanger the health or safety of others in the school.

Examples (not an exclusive listing)

- Continuation of unmodified Level I and II misbehaviors
- Fighting
- Vandalism (minor)
- Use, possession, sale, distribution, and/or being under the influence of tobacco, alcohol, or a non-THC vape product
- Use, possession, sale, or distribution of drug paraphernalia
- Stealing
- Threats to others (including staff)
- Victimization of any student (harassment (sexual, racial, ethnic, religious), bullying, cyber-bullying, and/or hazing)
- Elopement from classroom/school building
- Possession of fireworks not deemed an explosive by law enforcement

Disciplinary Procedures

- The student is referred to the principal for appropriate disciplinary action.
- The principal meets with the student and the staff member.
- The principal hears the accusation and allows the student the opportunity to explain his/her conduct.
- The principal takes appropriate disciplinary action.
- The principal may refer the incident to the Director of Schools and make recommendations for consequences.
- If the student's program is to be changed, adequate notice shall be given to the student and his/her parent(s)/guardian(s) of the charges against him, his/her right to appear at a hearing, and his/her right to be represented by a person of his/her choosing.
- Any change in school assignment is appealable to the Board.
- The record of offense and disciplinary action shall be maintained by the principal.

Disciplinary Options (not an exclusive listing)

- In-school suspension
- Detention
- Restitution from loss, damage, or stolen property
- Out-of-school suspension
- Social adjustment classes
- Transfer
- Referral to Tier 2 or 3 behavioral supports
- Restorative practices
- Review and revision of a behavior plan

- Behavior contract
- Mentoring
- Community Service
- Development of a safety plan

MISBEHAVIORS: LEVEL IV

This level of misbehavior includes acts which result in violence to another's person or property or which pose a threat to the safety of others in the school. These acts are so serious that they usually require administrative actions which result in the immediate removal of the student from the school, the intervention of law enforcement authorities, and/or action by the Board.

If a student's action poses a threat to the safety of others in the school, a teacher, principal, school employee, or school bus driver may use reasonable force when necessary to prevent bodily harm or death to another person.[7]

Examples (not an exclusive listing)

- Continuation of unmodified Level I, II, and III behaviors
- Death threats
- Extortion
- Vandalism
- Theft/possession/sale of stolen property
- Arson
- Sexual misconduct not resulting in a charge deemed a zero tolerance in Policy 6.309.
- Marketing/Possession/distribution/sale/transfer of any substance which is represented to be or is substantially similar in color, shape, size or markings to a controlled substance
- Possession/use/sale/transfer of alcoholic beverages
- Possession/distribution of any drug paraphernalia
- Use/transfer of unauthorized substances
- Victimization of any student (harassment (sexual, racial, ethnic, religious), bullying, cyber-bullying, and/or hazing)
- Off-campus criminal behavior that results in the student being legally charged and/or convicted with a felony or with what would have been a felony if the student were an adult, and the student's continued presence in school poses a danger to persons or property, or disrupts the educational process.[6]

Disciplinary Procedures

- The principal confers with appropriate staff members and with the student.
- The principal hears the accusations and allows the student the opportunity to explain his/her conduct.
- The parent(s)/guardian(s) are notified.
- Law enforcement officials are contacted.
- The incident is reported, and recommendations are made to the Director of Schools.

- If the student's placement is to be changed, adequate notice of the charges shall be given to the student and his/her parent(s)/guardian(s) and his/her right to appear at a hearing.

Disciplinary Options (not an exclusive listing)

- Other hearing authority or Board action which results in appropriate placement
- Long-term out-of-school suspension
- Expulsion up to one (1) year
- Alternative schools
- Other hearing authority or Board action which results in appropriate placement

MISBEHAVIORS: LEVEL V (ZERO TOLERANCE OFFENSES)

The below offenses have been deemed zero tolerance offenses under state law and by Board Policy. Except offenses deemed reasoned judgment offenses, notated with an asterisk, the below offenses shall result in an expulsion for a period of not less than one (1) calendar year, subject to modification by the Director of Schools on a case-by-case basis.[8] Reasoned judgment offenses allow the principal to take into consideration intent and other factors to determine the appropriate level of discipline. For additional information, see Board Policy 6.309.

- Unlawfully using or being under the influence of any narcotic or stimulant drug, prescription drug, or any other controlled substance, controlled substance analogue, or legend drug (~~including marijuana/THC~~)[9]
- Possessing unlawfully any narcotic or stimulant drug, prescription drug, or any other controlled substance, controlled substance analogue, or legend drug (~~including marijuana/THC~~)[9]
- Sale/distribution/transfer of any narcotic or stimulant drug, prescription drug or any other controlled substance, controlled substance analogue, or legend drug (~~including marijuana/THC~~)[9]
- Possession of a firearm[10]
- Assault that results in bodily injury[11] upon any teacher, principal, administrator, any other employee of the school, or a school resource officer
- Aggravated assault[12]
- Bomb threat
- Possession of substances or devices deemed to be explosives by law enforcement
- Students charged with committing an on-campus violent felony listed in Board Policy 6.309
- Possession/use/transfer of dangerous weapons other than firearms.*
- Possession/use/transfer of other instruments and substances with the intent to do harm to self or others or in a manner that renders the item dangerous.*

Disciplinary Procedures

- The principal confers with appropriate staff members and with the student.

- The principal hears the accusations and allows the student the opportunity to explain his/her conduct.
- The parent(s)/guardian(s) are notified.
- Law enforcement officials are contacted.[13]
- The incident is reported, and recommendations are made to the Director of Schools.
- If the student's placement is to be changed, adequate notice of the charges shall be given to the student and his/her parent(s)/guardian(s) and his/her right to appear at a hearing.

Disciplinary Options

- For zero tolerance offenses, expulsion for no less than one (1) year. Student may make application for modification to the Director of Schools.
- For reasoned judgement offenses marked with an asterisk:
  - Suspension
  - Remandment
  - Expulsion up to one (1) year, with ability to apply for modification.

ADDITIONAL GUIDELINES:

1. A student shall not be suspended solely because charges are pending against him/her in juvenile or other court, unless the charge is one identified in Policy 6.309 as a zero-tolerance offense.
2. A principal shall not impose successive short-term suspensions that cumulatively exceed ten (10) days for the same offense.
3. A teacher or other school official shall not reduce or authorize the reduction of a student's grade because of discipline problems except in deportment or citizenship.
4. A student shall not be denied the passing of a course or grade promotion solely on the basis of absences except as provided by Board Policy.
5. A student shall not be denied the passing of a course or grade promotion solely on the basis of failure to:
   a. Pay any activity fee;
   b. Pay a library or other school fine; or
   c. Make restitution for lost or damaged school property.

Legal References

1. TCA 49-6-4005
2. TCA 49-6-3024
3. TCA 49-6-2801
4. TCA 49-6-4002
5. TCA 49-6-4109
6. TCA 49-6-4009
7. TCA 49-6-4008
8. TCA 49-6-3401(g)(2); TCA 49-6-3402
9. TCA 39-17-454; TCA 53-10-101
10. 18 USCA § 921(a)(3); 20 USCA § 7961
11. TCA 39-13-101(a)(1)
12. TCA 39-13-102
13. TCA 49-6-4209; TCA 39-17-13-12; 20 USCA § 7961(h)(1)

Cross References

Traffic and Parking Controls 3.403
Procedural Due Process 6.302
Student Discrimination, Harassment, Bullying, Cyber-bullying, and Intimidation 6.304
Title IX & Sexual Harassment 6.3041
Interference/Disruption of School Activities 6.306
Bus Safety and Conduct 6.308
Zero Tolerance Offenses 6.309
Dress Code 6.310
Corporal Punishment 6.314
Detention 6.315
Suspension 6.316
Safe Relocation of Students 6.4081

Rutherford County Board of Education

Monitoring:	Descriptor Term:	Descriptor Code:	Issued Date:
Review: Annually, in March	**Zero Tolerance Offenses**	**6.309**	**05/04/21**
		Rescinds: **6.309**	Issued: **01/30/20**

ZERO TOLERANCE OFFENSES[1]

State law and/or the Rutherford County Board of Education has classified certain offenses as requiring a mandatory minimum of one (1) calendar year suspension upon a determination by the Principal that a student has committed one (1) of these offenses, commonly referred to as zero tolerance offenses. These offenses are threats to the health and safety of staff and students and intolerably disruptive to the educational process. The following are offenses that automatically result in a suspension of not less than one (1) calendar year, except as otherwise prohibited by federal law for students with disabilities. On a case-by-case basis, the Director of Schools may modify the suspension through a request for modification:

1. **DRUGS.**[2] Students shall not unlawfully possess, handle, transmit, use, be under the influence of, share, or sell any drugs, or any controlled substances, on school grounds, at school-sponsored events, or on school buses. "Drug" means any controlled substance, controlled substance analogue, marijuana, ~~THC~~, legend drug or any other substance whose possession or use is regulated in any manner by any governmental authority. Exception: Use of tobacco products is not a zero tolerance offense. See Board Policy 1.803 (Tobacco/Free Schools).

2. **FIREARMS.**[3] Students shall not possess, handle, transmit, use, or attempt to use firearms on school grounds, at school-sponsored events, or on school buses. This zero tolerance policy applies irrespective of whether the firearm is loaded or unloaded.

3. **ASSAULT OF EMPLOYEE/SRO.** Students shall not commit aggravated assault[4] or assault that results in bodily injury upon any teacher, principal, administrator, any other employee of the school, or school resource officer.[4]

4. **BOMB THREATS.** Students shall not make, aid, or encourage the making of a bomb threat or bomb threat hoax.

5. **POSSESSION OF EXPLOSIVES.** Any student found in possession of any destructive device, which includes any explosive, incendiary device or poison gas, including bombs, grenades, rockets, missiles, mines or similar devices shall be subject to the zero tolerance policy. Possession of fireworks altered or modified to constitute an explosive may be considered a zero tolerance offense only if the altered fireworks are identified as an explosive by law enforcement officials. For general possession of fireworks not deemed an explosive by law enforcement, see Board Policy 6.300.

6. **ON-CAMPUS FELONIES.**[5] Any student who commits any of the following felonies on school grounds, at school-sponsored events, or on school buses and is subsequently charged with said felony will be subject to the zero tolerance policy. These crimes inherently create a serious risk to the health and safety of staff and students, and extraordinarily disrupt the educational process. Off-Campus criminal behavior is addressed in Board Policy 6.300:

    a. Rape (including aggravated)
    b. Murder (including attempted)
    c. Robbery (including aggravated or especially aggravated)
    d. Kidnapping (including aggravated)
    e. Aggravated Assault (Student does not have to be charged to be a zero tolerance if elements of TCA 39-13-102 met)
    f. Felony Reckless Endangerment
    g. Sexual Battery (including aggravated)
    h. Carjacking

REASONED JUDGMENT OFFENSES

State law and the Rutherford County Board of Education has identified other zero tolerance offenses that, depending on the individual circumstances, may warrant a reasoned judgment by the Principal in assigning discipline. These offenses may result in suspension, remandment, or expulsion up to one (1) year. Students subject to expulsion may apply for modification to the Director of Schools utilizing the same process as zero tolerance offenses listed above:

1. **WEAPONS OTHER THAN FIREARMS.** State law allows the school administrator to use reasoned judgment when determining the punishment for the possession, use, handling and/or transmission of items that may be classified as weapons other than firearms. The definition of a weapon is broad since any object that could be used to inflict harm or injury to another falls into that category. In determining punishment, the Principal will consider the object determined to be the weapon, the circumstances surrounding the incident, and the intent of the student charged with the weapons offense when making his/her decision. The Principal may assign punishment, including remandment or suspension up to one (1) calendar year based on these considerations. If a student is suspended for the maximum time of one (1) year, the student and/or his/her parent/guardians may make application for modification to the Director of Schools.

2. **OTHER INSTRUMENTS AND SUBSTANCES.** Students are further forbidden to be in possession of or use any instruments or substances, including but not limited to nonprescription drugs, chemicals, inhalants, pencils, scissors, razors or compasses, with the intent to do harm to self or others or in a manner which renders the item dangerous in school buildings or on school grounds, or on any grounds used for school purposes at any time, or in school vehicles and/or buses or off the school grounds at a school-sponsored activity, function or event.

NOTIFICATION

When it is determined that a student has violated this policy, the principal of the school shall notify the student's parent(s)/guardian(s) and the criminal justice or juvenile delinquency system as required by law.[6]

Legal References

1. TCA 49-6-3401(g); TCA 39-17-1309; TCA 49-6-4209; 18 USC 921
2. TCA 49-6-4202; TCA 53-10-101
3. 18 USC 921
4. TCA 49-6-3401(g)(1)(B)
5. TCA 49-6-3401(a)(14)
6. TCA 49-6-4209; TCA 39-17-1312; 20 USCA § 7961(h)(1)

Cross References

Drug-Free Schools 6.307
Discipline Procedures 6.313
Suspension/Expulsion/Remand 6.316

Rutherford County Board of Education

Monitoring:	Descriptor Term:	Descriptor Code:	Issued Date:
Review: Annually, in March	**Alternative Education**	**6.319**	**09/03/20**
		Rescinds: **6.319**	Issued: **06/07/18**

General[1]

The Board shall operate an alternative school and/or program for students in grades seven through twelve (7-12) who have been suspended or expelled from the regular school program. Additional grades may also be served at the election of the Board.

An alternative school is a short-term intervention program designed to provide educational services outside the regular school program for students who have been suspended or expelled. The alternative school is located in a separate facility from the regular school program.

An alternative program is a short-term intervention program designed to provide educational services outside the regular school program for students who have been suspended or expelled. Alternative programs may be located within the regular school or be a self-contained program within a school. Alternative programs shall include, but are not limited to, the following: in-school suspension, night school, Saturday school, school-specific programs, etc.

The alternative school and/or program shall be operated in accordance with state laws and the rules of the State Board of Education, and instruction shall proceed as nearly as practicable in accordance with the instructional program at the student's regular school. The Director of Schools shall develop procedures that provide appropriate educational opportunities for all students assigned to the alternative school or program. These educational opportunities shall adhere to Tennessee's academic standards.[2]

ASSIGNMENT

Students who have been suspended for more than ten (10) days or expelled shall be assigned to the alternative school or program if there is staff and space available.[3] Availability of staff and space shall be determined at the time the disciplinary decision is rendered. The Director of Schools/designee shall make this determination by evaluating factors including, but not limited to, the following:

1. Level of supervision available;

2. Safety considerations; and

3. Type of infraction.

~~Students who have committed zero tolerance offenses are not required to be assigned to alternative schools or programs.~~[4]

The Director of Schools/designee is not required to assign a student to the alternative school or program if the student committed one of the following:

1. A zero tolerance offense;[4] or

2. An offense of violence or threatened violence, or an offense that threatened the safety of other students at the school, if the location of the alternative school or program is on the same grounds as the school from which the student was disciplined.[5]

Prior to the assignment of the student to the alternative school or program, the Director of Schools/designee shall provide written notice to the student's parent/guardian stating the reason for the student's placement.

Placement in an alternative education setting shall be reserved for students who significantly disrupt the educational process. If a student has an active Individualized Education Plan, a 504 plan, or is suspected of having a disability, all state and federal laws and rules and regulations related to special education shall be followed. The Director of Schools/designee shall develop procedures regarding placement of students in the program, taking into consideration the impact of exclusionary discipline practices.[6]

The Director of Schools/designee shall monitor and regularly evaluate the academic progress of each student enrolled in the alternative school.

REMOVAL[7]

A student may be removed from the alternative school or program if:

1. He/she violates the rules of the alternative school or program; or

2. He/she is not benefitting from the assignment and all interventions have been exhausted unsuccessfully.

ADDITIONAL OFFENSES[8]

Any new disciplinary offense committed during a student's original suspension or expulsion period shall be treated as a new and separate offense. These offenses shall not constitute an extension of the original suspension or expulsion.

TRANSITION PLAN[9]

The Director of Schools/designee shall develop procedures regarding the implementation of transition plans for the integration of students assigned to the alternative school.

Legal References

1. TCA 49-6-3402(a); Public Acts of 2020, Chapter No. 603; TRR/MS 0520-01-02-.09
2. TRR/MS 0520-01-02-.09(9)(a)
3. Public Acts of 2020, Chapter No. 603
4. Public Acts of 2020, Chapter No. 603; TRR/MS 0520-01-02-.09(6)(a)
5. TRR/MS 0520-01-02-.09(9)(i)
6. TRR/MS 0520-01-02-.09(9)(h)
7. Public Acts of 2020, Chapter No. 603
8. TRR/MS 0520-01-02-.09(9)(g)(2)
9. TRR/MS 0520-01-02-.09(m)

Cross References

Special Education 4.202
Suspension 6.316
Student Disciplinary Hearing Authority 6.317
Special Education Students 6.500

Rutherford County Board of Education

Monitoring:	Descriptor Term:	Descriptor Code:	Issued Date:
Review: Annually, in April	**Prevention and Treatment of Sports Related Concussions**	**6.413**	**11/15/16**
		Rescinds: **6.413**	Issued: **02/20/14**

A concussion is a traumatic brain injury caused by a direct or indirect blow to the head or body. In order to ensure the safety of students that participate in interscholastic athletics, it is imperative that student athletes, coaches, and parents are educated about the nature and treatment of sports related concussions. The board recognizes that concussions can be a serious health issue and should be treated as such.

The board adopts the guidelines and other pertinent information and forms developed by the Tennessee Department of Health to inform and educate coaches, school administrators, student athletes, and parent(s) / guardian(s) of the nature, risk and symptoms of concussions and head injuries. These guidelines and materials may be viewed on the Department of Health's website and shall be made available to interested parties through the Central Office.

This policy shall govern all activities and those individuals involved in those activities which constitute an organized athletic game or competition against another team or in practice or preparation for an organized game or competition. It does not govern those activities or individuals involved in those activities which are entered into for instructional purposes only or those that are incidental to a nonathletic program or lesson.

REQUIRED TRAINING [1]

The director of schools shall ensure that each school's athletic director and coaches, employed or volunteer, annually complete the ***Concussion in Sports – What You Need to Know*** online course. This course may be accessed online at www.nfhslearn.com.

Prior to the annual initiation of practice or competition, the following persons must review and sign a concussion and head injury information sheet approved by the Tennessee Department of Health: the director of schools, licensed healthcare professionals (if appointed), each school athletic director, and each coach, employed or volunteer.

In addition, prior to the annual initiation of practice or competition, all student athletes and their parent(s) / guardian(s) shall review the concussion and head injury information sheet approved by the Tennessee Department of Health. A form confirming this review shall be signed and returned by the student athlete, if the athlete is eighteen (18) years of age or older; or by the student athlete's parent(s) / guardian(s), for athletes younger than eighteen (18) years of age.

All documentation of the completion of a concussion recognition and head injury safety education course program and signed concussion and head injury information sheets shall be maintained by the director of schools or his/her designee for a period of three (3) years.

Removal from Athletics [1]

Any student athlete who shows signs, symptoms and/or behaviors consistent with a concussion during an athletic activity or competition shall be immediately removed for evaluation by a licensed healthcare professional, if available, and if not, by the coach or other designated individuals.

No student athlete who has been removed from an athletic activity or competition due to a concussion or suspected concussion shall be allowed to return to any supervised team activities involving physical exertion, including games, competitions, or practices, until the student athlete has been evaluated by and received written clearance on forms approved by the Department of Health from a licensed health care provider for a full or graduated return. "Health care provider" means a Tennessee licensed medical doctor (M.D.), osteopathic physician (D.O.), a clinical neuropsychologist with concussion training~~, or a physician's assistant (P.A.) with concussion training who is a member of a health care team supervised by a Tennessee licensed medical doctor or osteopathic physician.~~[2]

This requirement for clearance prior to a student athlete returning to an athletic activity shall not apply if there is a legitimate explanation other than a concussion for the signs, symptoms, and/or behaviors observed.

The director of schools or his/her designee shall ensure that all protocols approved by the Tennessee Department of Health or required by law relative to the provisions of this policy are followed and implemented within each school.

Legal References

1. TCA 68-55-502
2. Public Chapter No. 948

Rutherford County Board of Education

Monitoring:	Descriptor Term:	Descriptor Code:	Issued Date:
Review: Annually, in October	**Name, Image, and Likeness (NIL)**	**6.604**	Click here to enter a date.
		Rescinds:	Issued:

All student athletes must adhere to TSSAA rules regarding payment and representation. This extends to name, image, and likeness agreements. Payments provided to student athletes through private agreements shall not be the responsibility of the school district.

Legal References:
1.

Rutherford County Schools
2022/23 Fund 177 Budget
Major Capital Projects
Budget Amendment

3/8/2023
Amendment #5
Capital Projects

Object	Description	Amended Budget	Decrease	Increase	Amended Budget
34685	**Comm for Capital Proj.**	4,404,575	150,000	-	4,254,575

Revenues:		Original Budget	Decrease	Increase	Amended Budget
	Total County Property Taxes	15,849,788	-	-	**15,849,788**
	Total Local Taxes	2,623,470	-	-	**2,623,470**
Total Revenue & Operating Transfers		18,473,258	-	-	18,473,258

Object	Description	Amended Budget	Increase	Decrease	Amended Budget
91300	Education Capital Projects				
335	Maint. & Repair Serv. - Bldgs.	21,400,363	150,000	-	21,550,363
399	Other Contracted Services	826,821		-	826,821
732	Building Purchases	1,600,000		-	1,600,000
	Total Education Capital Projects	23,827,184	150,000	-	23,977,184
	Total Expenditures	24,390,632	150,000	-	24,540,632

This amendment budgets $150,000 from 34685 - Committed for Capital Projects Fund Balance to Education Capital Projects 91300-335 - Maint. & Repair Serv. - Bldgs. to replace the fire alarm system at Rocky Fork Middle School. This project is being pulled from Fund Balance because it is a new project and an emergency replacement due to the system being struck by lightning.

Recommended Motion: To amend $150,000 from 34685 - Committed for Capital Projects Fund Balance to Education Capital Projects 91300-335 - Maint. & Repair Serv. - Bldgs. to replace the fire alarm system at Rocky Fork Middle School.

_____
Director of Schools

_____
Chairman of the Board

Capital Projects 2022-2023 - Fund 177
2/24/2023

Carry Over Projects			Prog	Location	Amended Budget 1/31/2023	Amendment #5 Internal	Amendment #5 from Fund Bal	Budget after Amendments
Life Safety - Security								
ReKey to Primus - Door Replacement			814	MULTI	887.56			887.56
				Total	**887.56**	-	-	**887.56**
Restroom Restoration								
			815	MULTI	79,201.01			79,201.01
				Total	**79,201.01**	-	-	**79,201.01**
Stewartsboro	Clocks		811	SB3	200.00			200.00
					200.00	-	-	**200.00**
Bleachers and Seats								
RHS - Gym			821	RH1	5,869			5,869.30
Blackman High - Auditorium			821	BH1	136,812			136,812.28
				Total	**142,682**	-	-	**142,681.58**
ADA Required Renovations								
Multiple Schools			821	Multi	50,075			50,075.00
Eagleville - replace door knobs			822-2	EH1	30,000			30,000.00
				Total	**80,075**	-	-	**80,075.00**
BAS Graphic Interface								
Multiple Schools				Multi	40,437			40,436.98
				Total	**40,437**	-	-	**40,436.98**
Misc Items								
High School Shop Air			829	Multi	4,382			4,381.57
Secondary Backup Server			821	ADM	143,027			143,026.87
				Total	**147,408**	-	-	**147,408.44**
Paving/Seal Coating/Striping								
Central Magnet front lot - Floods			821	CMS	149,609			149,608.80
Oakland High			822	OH1	411,456			411,456.40
				Total	**561,065**	-	-	**561,065.20**
Major Roofing								
LaVergne Middle			821	LV2	29,255			29,255.46
				Total	**29,255**	-	-	**29,255.46**
Life Safety - Security								
Buchanan Elementary			823	BU3	45,000			45,000.00
Cedar Grove			822	CG3	45,000			45,000.00
Eagleville			822-1	EH1	75,000			75,000.00
Lavergne High			825	LH1	176,650			176,650.00
Oakland High			824-1	OH1	133,625			133,625.00
Riverdale High			823-1	RH1	71,060			71,060.00
Smyrna High			823	SH1	272,860			272,860.00
Smyrna West			821	SWA	16,165			16,165.00
Stewartsboro			823	SB3	45,000			45,000.00
Thurman Francis			823	TF3	45,000			45,000.00
Walter Hill			822	WH3	45,000			45,000.00
				Total	**970,360**	-	-	**970,360.00**
Restroom Restoration								
Smyrna High			822	SH1	4,986			4,985.63
LaVergne High			824	LH1	2,346			2,346.01
Smyrna Primary			821	SP4	34,414			34,414.00
Thurman Francis			824	TF3	26,095			26,095.00
				Total	**67,841**	-	-	**67,840.64**
Canoples - Walkways								
Eagleville			821	EH1	23,144			23,144.00
					23,144	-	-	**23,144.00**
HVAC Replacement								
Eagleville	($5,275 fr OHS Restroom)		823	EH1	290,275			290,275.00
				Total	**290,275**	-	-	**290,275.00**
Turf for Football Field					-			
Smyrna High School	(188,962.78 from Fund Balance	399	824	SH1	826,821			826,820.69
				Total	-	-	-	**826,820.69**

Capital Projects 2022-2023 - Fund 177
2/24/2023

				Amended Budget 1/31/2023	Amendment #5 Internal	Amendment #5 from Fund Bal	Budget after Amendments
Furniture Replacement							
Human Resources / Staff Attorney		822	ADM	19,122			19,122.40
Blackman High	(from Smyrna High - correction)	823	BH1	22,570			22,570.35
Oakland High		825	OH1	14,162			14,161.64
Riverdale		826	RH1	71,269			71,269.00
Rock Springs Elementary		821	RS3	3,773			3,773.39
Rockvale High		823	RO1	40,151			40,151.43
Roy Waldron Annex		821	RW7	2,929			2,929.10
Smyrna High	(to Blackman High - correction)	825	SH1	184			184.48
Stewartsboro		824	SB3	1,334			1,334.44
Thurman Francis		825	TF3	1,036			1,035.66
Whitworth Buchanan		822	WB2	12,868			12,867.74
							-
			Total	**189,400**	**-**	**-**	**189,399.63**
School Requests							
Blackman Elementary	Siding on remaining portables	823	BL3	12,813			12,812.50
Blackman Middle	Access Reader	821	BL2	15,859			15,859.13
Blackman High	Sidewalk covering A Hall to CDC/dock	822	BH1	10,313			10,313.47
Cedar Grove	clean and epoxy bathroom floors	821	CG3	41,500			41,500.00
Holloway	Bleacher replacement	822	HO1	54,912			54,912.00
LaVergne Middle	Renovate / Repair stage	822	LV2	10,370			10,370.00
McFadden	Renovate main hall floor	823	MC3	6,552			6,552.00
	Epoxy Restrooms	822	MC3	39,830			39,830.00
Oakland High	Renovate tile floors ($16,402.50 to Oakland High curr yr flooring)	823	OH1	37,200			37,200.00
	Rekey internal doors	824-2	OH1	75,000			75,000.00
Riverdale	C Hall and Lecture hall flooring renovate	824	RH1	7,430			7,430.00
	Rekey internal doors	823-2	RH1	75,000			75,000.00
	Ceiling grids and tiles replaced	825	RH1	12,198			12,197.50
Siegel High	Auditorium carpet renovation	824	SG1	13,130			13,130.00
Smyrna Elementary	Additional Playground equipment	821	SE4	49,782			49,781.97
Smyrna Middle	SMS Marquee	821	SM2	23,123			23,123.00
Smyrna Primary	Replace classroom doors in original build	822	SP4	40,000			40,000.00
Stewarts Creek Middle	Clock Replacement	822	SC2	28,450			28,450.00
Wilson Elementary	Avigilon card readers	822	WL3	23,576			23,576.42
			Schools Total	**577,038**	**-**	**-**	**577,037.99**
Total Capital Projects carried over to 2022/2023				**4,026,089.18**	**-**	**-**	**4,026,089.18**
2022 / 2023 Projects							
Major HVAC							
John Coleman Annex				750,000			750,000.00
LaVergne High Weight Room				450,000			450,000.00
OHS Main Gym hallway				75,000			75,000.00
OHS / Pool	(Amend 95,000 to OH1 Pool Deck + Walls))	733	OH1	155,000			155,000.00
Rockvale Elementary		731	RO3	4,500,000			4,500,000.00
Stewartsboro		731	SB3	4,000,000			4,000,000.00
				-			-
				9,930,000	**-**	**-**	**9,930,000.00**
Bleachers and Seats							
Blackman High Visitor Bleachers	(Amend from Fund Balance) + ($22,282 to SC1 Auditorium)	731	BH1	250,000	(22,282.00)		227,718.00
Stewarts Creek High Auditorium	($22,282 fr BH1 + $1,389 fr SP4 seats + $12,604 fr High School Shop Air)	731	SC1	65,000	36,275.00		101,275.00
Smyrna Primary	($1,389 to SC1 Auditorium)	731	SP4	45,000	(1,389.00)		43,611.00
				-			-
				360,000	**12,604.00**	**-**	**372,604.00**
Screen and Recoat Various Floors							
		731	MULTI	125,000			125,000.00
				125,000	**-**	**-**	**125,000.00**
ADA Required Renovations							
Daniel McKee		732	DMA	-			-
John Coleman		731	JCK				-
Walter Hill		731	WH3				-
Holloway		732	HO1				-
Smyrna West		732	SWA				-
Holloway Chair Lift	($200,000 fr Smyrna West Roof + $200,000 from Daniel McKee roof)				400,000.00		400,000.00
				75,000			75,000.00
				75,000	**400,000.00**	**-**	**475,000.00**

Capital Projects 2022-2023 - Fund 177
2/24/2023

					Amended Budget 1/31/2023	Amendment #5 Internal	Amendment #5 from Fund Bal	Budget after Amendments
Misc Items								
McFadden Interior	($11,914.78 fr Roy Waldron playground)		734	MC3	50,000	11,914.78		61,914.78
Smyrna Mid Fence / Smyrna Rec	(Amend 102,000 to LaVergne Lake playground		731	SM2	73,000			73,000.00
High School Shop Doors					25,000			25,000.00
High School Shop Air	($12,604 to Stewarts Creek Auditorium)				35,000	(12,604.00)		22,396.00
Rockvale High - Sewer Repair	(Amend from Fund Balance)				24,470			24,470.00
Buchanan Sewer Tap Fees	(from Rockvale Sewer Repair)		731	BU3	19,720			19,720.00
Daniel McKee Sewer Tap Fees	(from Rockvale Sewer Repair)		733	DMA	2,370			2,370.00
Oakland High Pool Deck + Walls	(Amend from Oakland High Pool HVAC)		731	OH1	95,000			95,000.00
10 Portables	(from Fund Balance)	732	734	MULTI	1,600,000			1,600,000.00
					-			-
					1,924,560	**(689.22)**	-	**1,923,870.78**
Paving / Seal Coating / Striping								
John Coleman Virtual Parking			732	JCK	200,000			200,000.00
LHS Driveway Patch			731	LH1	35,000			35,000.00
					235,000	-	-	**235,000.00**
Major Roofing								
McFadden Annex			732	MC3	25,000			25,000.00
Daniel McKee	($200,000 to Holloway chair lift)		731	DMA	350,000	(200,000.00)		150,000.00
	($2,307.98 to SH1 field house roof)							
David Youree	($403,098.02 to Walter Hill Roof)		731	DY4	1,700,000	(405,406.00)		1,294,594.00
Holloway			731	HO1	500,000			500,000.00
McFadden			731	MC3	250,000			250,000.00
Smyrna High Field House	($2,307.98 from David Youree roof)		733	SH1	80,000	2,307.98		82,307.98
Smyrna West			731	SWA	350,000	(200,000.00)		150,000.00
Walter Hill	($403,098.02 from David Youree Roof)		732	WH3	800,000	403,098.02		1,203,098.02
					-			-
					4,055,000	**(400,000.00)**	-	**3,655,000.00**
Life Safety-Security								
Camera Program / DVR			732	MULTI	75,000			75,000.00
Access Controls - Keying					75,000			75,000.00
Test all Fire Dampers		399	733	MULTI	35,000			35,000.00
Replace Fire Alarm System at Rocky Fork Middle **(from Fund Balance)**					-		150,000.00	**150,000.00**
Re-key to Primus - Door Replacement					-			-
Blackman Elementary					45,000			45,000.00
Blackman Middle					45,000			45,000.00
Cedar Grove					65,000			65,000.00
Central Magnet					2,810			2,810.00
Christiana Elementary					50,000			50,000.00
Christiana Middle					50,000			50,000.00
Daniel McKee					25,000			25,000.00
					-			-
					467,810	-	**150,000.00**	**617,810.00**
Restroom Restoration								
Oakland High	($5,275 to Eagleville HVAC)	($15,410 to OH1 floor)			54,725	(15,410.00)		39,315.00
Riverdale					60,000			60,000.00
Smyrna High	($29,285.58 to HP3 playground)				30,714	(8,755.00)		21,959.42
	$8,755 to Smyrna Elementary - update restrooms)							
LaVergne High			734	LH1	60,000			60,000.00
Thurman Francis					60,000			60,000.00
					-			-
					265,439	**(24,165.00)**	-	**241,274.42**
Playgrounds								
Kittrell Pre-K	($3,074.90 from Kittrell Pre-K gate)		732	KT3	120,000	3,074.90		123,074.90
Homer Pittard Campus	($29,285.58 fr SH1 restrooms)		731	HP3	354,286			354,285.58
Roy Waldron	($11,915 to McFadden Interior)		731	RW7	300,000	(11,914.78)		288,085.22
LaVergne Lake Pre-K Playground	(Amend $102,000 from SM2 fence)		731	LL3	102,000	8,931.75		110,931.75
	(Amend $8,931.75 from LL3 Badge Access)				-			-
					876,286	**91.87**	-	**876,377.45**
	Total of 2022/2023 Projects listed above				**18,314,095**	**(12,158)**	**150,000**	**18,451,937**

Capital Projects 2022-2023 - Fund 177
2/24/2023

2022/2023 School Requests

				Amended Budget 1/31/2023	Amendment #5 Internal	Amendment #5 from Fund Bal	Budget after Amendments
Blackman Elementary	Lobby Flooring			940			940.00
	Classroom Blinds ($14,060 from flooring)	731	BL3	34,060			34,060.00
	Awning to Portables ($5,060 from RH1)	732	BL3	40,060			40,060.00
Browns Chapel	Caulk Classroom Cracks			7,500			7,500.00
	Re-fence playground			20,000			20,000.00
	Patch playground rubber	731	BC3	20,000	(2,346.25)		17,653.75
	($2,346.25 to Thurman Francis awning)						
Buchanan Elementary	Restroom Renovation			25,000			25,000.00
	Locker Replacement			15,000			15,000.00
Cedar Grove	Badge Access - Gym			7,500			7,500.00
	Badge Access - Exit Door to Portables			7,500			7,500.00
	Clean and Epoxy bathroom floors	731	CG3	30,000			30,000.00
Central Magnet	Seal and restripe parking lots ($2,370.60 fr sidewalks)	732	CMS	22,371			22,370.60
	Awning	731	CMS	15,000			15,000.00
	Sidewalks ($2,370.60 to Seal and Restripe)	733	CMS	12,629			12,629.40
Christiana Elementary	Awning ($1,920.36 fr CH2 awning)	731	CH3	6,000	1,920.36		7,920.36
Christiana Middle	Awning ($1,920.36 to CH3 awning)	731	CH2	25,000	(1,920.36)		23,079.64
	Access card readers	732	CH2	15,000			15,000.00
David Youree	Rebuild ramps top all portables	732	DY4	25,000			25,000.00
	Remove carpet and tile portables 8 & 9			15,000			15,000.00
Eagleville	Baseball / Football parking lights - MTEMC			5,000			5,000.00
Holloway High	Office reflooring			15,000			15,000.00
	Secure vestibule	733	HO1	30,000			30,000.00
Kittrell	Pre-K gate ($3,074.90 to KT3 Playground)	731	KT3	5,000	(3,074.90)		1,925.10
Lascassas	Repair / Replace playground bridge			15,000			15,000.00
LaVergne High	Office renovation flooring and paint	732	LH1	50,000			50,000.00
	Library carpet	735	LH1	25,000			25,000.00
	Paint auditorium	733	LH1	15,000			15,000.00
LaVergne Lake	Badge access 2 locations ($8,931.75 to LL3 playground))	732	LL3	15,000	(8,931.75)		6,068.25
	SPED Tables			20,000			20,000.00
LaVergne Middle	Sand repair gyn floor ($3,150 fr OM2 concrete)	731	LV2	30,000	3,150.00		33,150.00
McFadden	Interior paint (from epoxy)	733	MC3	23,458			23,458.00
	Epoxy restrooms (to paint)			46,542			46,542.00
Oakland High	Gym paint	734	OH1	35,000			35,000.00
	Floor / Ceiling ($15,410 fr OH1 restrooms)	732	OH1	70,000	15,410.00		85,410.00
	($16,402.50 fr Oakland Prior yr flooring)						
Oakland Middle	Concrete between main building / Annex ($3,150 to LV2 floor)	731	OM2	10,000	(3,150.00)		6,850.00
Riverdale	Awnings - 2 ($9,211 to BL3 + TF3)	731	RI1	25,789	(9,752.62)		16,036.38
	- (1,103.22 to Stewarts Creek High walkway)						
	- (8,649.40 to Riverdale Ceiling Grids)						
	Floor and ceiling C Hall and lecture	732	RH1	70,000			70,000.00
	Bottle filling stations	733	RH1	25,000			25,000.00
	Ceiling grids and tiles replaced	734	RH1	40,000	8,649.40		48,649.40
	($8,649.40 fr Riverdale awnings)						
Rock Springs Middle	Portable awning path	732	RS2	20,000			20,000.00
	Portable clean and paint	731	RS2	15,000			15,000.00
Rockvale Elementary	Gym goal replacement - 6			15,000			15,000.00
Rockvale High	Bus concrete	731	RO1	40,000			40,000.00
Rocky Fork Middle	Clay for Ball Fields			10,000			10,000.00
Siegel High	Choir carpet			15,000			15,000.00
	Band carpet			20,000			20,000.00
Siegel Middle	Replace all school exterior signage	731	SG2	25,000			25,000.00
Smyrna Elementary	Library Carpet ($25,000 to restrooms)			25,000	(25,000.00)		-
	Update Restrooms ($25,000 fr library + $8,755 fr SH1 restrooms)			30,000	33,755.00		63,755.00
Smyrna High	Classroom tile due to leaks			8,625			8,624.86
	($6,375.14 to Seal Coat and stripe)						
	Ceiling Tile			10,000			10,000.00
	Seal Coat and strip parking lots ($36,375.14 fr tile + weight room)	732	SH1	71,375			71,375.14
	Construct 2nd floor weight room in gym			-			-
	(move all to seal coat and stripe)						
	Awnings	731	SH1	15,000			15,000.00
Smyrna Middle	Gym Lights	732	SM2	20,000			20,000.00
	Office Renovation			5,000			5,000.00
Smyrna Primary	Renovate front office			20,000			20,000.00
	Sink replacement			16,000			16,000.00
	Exterior Lighting	732	SP4	15,000			15,000.00
Stewarts Creek Elementary	Additional Parking	731	SC3	30,000			30,000.00
Stewarts Creek High	Seal R-stripe Parking lots			50,000			50,000.00
	Awning to Portables ($1,103.22 fr RH1 awnings)	732	SC1	15,000	1,103.22		16,103.22

Capital Projects 2022-2023 - Fund 177
2/24/2023

					Amended Budget 1/31/2023	Amendment #5 Internal	Amendment #5 from Fund Bal	Budget after Amendments
Stewarts Creek Middle	Storage Building		732	SC2	10,000			10,000.00
	Additional exterior lighting				2,500			2,500.00
Thurman Francis	Awning (4,151 from RH1 awnings)		731	TF3	34,151	2,346.25		36,497.25
	($2,346.25 fr Browns Chapel playground patch)							
	New Marquee				25,000			25,000.00
Whitworth Buchanan	Additional Campus Lighting				10,000			10,000.00
	Total of 2022 / 2023 School Requests				**1,487,000**	**12,158**	-	**1,499,158**
	2022 / 2023 New Projects Total				19,801,095	0	150,000.00	19,951,095
Total Capital Projects (including Carry Over)					23,827,184.18	0.00	150,000.00	23,977,184.18

PHASE I ENVIRONMENTAL SITE ASSESSMENT REPORT

BATEY FARM
5104 BAKER ROAD
MURFREESBORO, RUTHERFORD COUNTY, TN

PREPARED FOR:

RUTHERFORD COUNTY BOARD OF EDUCATION.
2240 SOUTHPARK DR.
MURFREESBORO, TENNESSEE 37128

PREPARED BY:

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
117 SEABOARD LANE, SUITE E-100
FRANKLIN, TENNESSEE 37067

CEC PROJECT 328-093

FEBRUARY 1, 2023

February 3, 2023

Mr. J. Sam Vance, P.E.
Rutherford County Board of Education.
2240 Southpark Dr.
Murfreesboro, Tennessee 37128

Dear Mr. Vance:

Subject: Report of Phase I Environmental Site Assessment
Batey Farm
5104 Baker Road
Murfreesboro, Tennessee 37129
CEC Project 328-093

Civil & Environmental Consultants, Inc. (CEC) is pleased to submit the attached Phase I Environmental Site Assessment (ESA) report for the above referenced Subject Property. This Phase I ESA was performed at your request in accordance with our agreed upon proposal, dated date December 2, 2023.

CEC appreciates the opportunity to be of service to you. If you have any questions or require additional services, please feel free to contact us at 615-483-0330.

Sincerely,

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.

Victoria Gallagher, QHP
Assistant Project Manager

Jose Garcia, QHP
Senior Project Manager

EXECUTIVE SUMMARY

The Executive Summary below is an overview of the results of this Phase I Environmental Site Assessment (ESA) and should not be considered apart from the entire report, which contains the rationale and qualifications used by Civil & Environmental Consultants, Inc. (CEC) in making the opinions and conclusions presented herein.

PROPERTY NAME/ADDRESS:	5104 Baker Road Murfreesboro, Rutherford County, Tennessee
INTENDED USER(S):	Rutherford County Board of Education
PROPERTY/TAX ID(S):	071-030.00-000 071-030.01-000
PROPERTY OWNER(S):	John L Batey Jr. et ux Melissa W
PROPERTY DESCRIPTION:	
Land Area:	071-030.00-000 (±72.19-acres) 071-030.01-000 (±2.29-acres)
Improvements:	071-030.01-000 (One 3,629 ft^2 single family structure, shed and associated driveway)
CURRENT USE:	Agricultural, residential
HISTORIC USE:	Agricultural, residential
ADJACENT PROPERTY USE:	North: Residential East: Residential, construction beyond Blackman Road South: Residential and agricultural beyond Baker Road West: Residential and agricultural beyond John Locke Lane
SIGNIFICANT DATA GAPS:	None identified
RECOGNIZED ENVIRONMENTAL CONDITIONS (RECS):	None identified

TABLE OF CONTENTS

FIGURES

APPENDICES

1.0 INTRODUCTION

This report documents the results of a Phase I ESA for 5104 Baker Road in Murfreesboro, Rutherford County, Tennessee (the Subject Property). CEC conducted this assessment for Collier Engineering Consultants, Inc. on behalf of the Rutherford County Board of Education in accordance with our proposal for a Phase I ESA, dated December 2, 2022. CEC understands that Rutherford County Board of Education. will be the user[1] of this Phase I ESA.

1.1 PURPOSE

The purpose of this Phase I ESA is to identify, to the extent feasible pursuant to the process prescribed herein, recognized environmental conditions (RECs) in connection with the Subject Property in accordance with ASTM International (ASTM) E1527-13 "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process" (the "Standard"). In doing so, this Phase I ESA may permit the user to satisfy one of the requirements to qualify for the innocent landowner, contiguous property owner, or bona fide prospective purchaser limitations on liability (hereinafter, the "landowner liability protections") available under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended (42 U.S.C. §9601). No sampling or testing of materials, soil, water, air, or other environmental media was performed.

As defined by the Standard, migration refers to the movement of hazardous substances or petroleum products in any form, including solids and liquids at the surface or subsurface, and vapors in the subsurface. We consider this definition when providing our opinion regarding RECs at the Subject Property. However, note that our consideration of the potential for migration of hazardous substances or petroleum products in the vapor phase as they relate to a REC is not meant to satisfy the requirements of ASTM E2600-10 "Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions."

1.2 SCOPE OF SERVICES

CEC performed the following scope of services in order to meet the purpose of this Phase I ESA.

[1] The term user is defined in the Standard as "the party seeking to use Practice E 1527 to complete an environmental site assessment of the property. A user may include, without limitation, a potential purchaser of property, a potential tenant of property, an owner of property, a lender, or a property manager." The user is also the party that intends to use the Phase I ESA to satisfy one of the requirements to qualify for the landowner liability protections under CERCLA.

1.2.1 Records Review

The purpose of the records review is to identify, obtain, and review reasonably ascertainable records from standard sources that will help identify RECs in connection with the Subject Property. The records review consisted of the following:

(1) Standard Environmental Record Sources: A review of records obtained through a search of reasonably ascertainable government agency databases was performed to determine if the Subject Property and/or properties within prescribed search distances are listed in databases indicative of conditions or activities that may have a negative impact on the Subject Property. The sources and approximate minimum search distances included in the search were those set forth in the Standard.

(2) Physical Setting Sources: A review of the current USGS 7.5-Minute Topographic Map showing the area of the Subject Property and other regional geology and soil maps described in Section 4.3 to gain a general understand its physical setting.

(3) Historical Use Information: A review of select reasonably ascertainable historical resources to develop a history of the previous uses of the Subject Property, its adjoining properties, and properties in the surrounding area to identify the likelihood of past uses having led to RECs in connection with the Subject Property. CEC utilized various historical resources to identify the obvious uses of the Subject Property back to its first developed use, or back to 1940, whichever was earlier, as described in Section 4.4, and to the extent practical based on the available resources.

1.2.2 Subject Property Reconnaissance

A reconnaissance was performed by a CEC Environmental Professional (EP) to obtain information indicating the likelihood of RECs in connection with the Subject Property. The reconnaissance consisted of a visit to observe the interior and exterior portions of the Subject Property and evaluate its current and former uses. The current uses of adjoining properties were identified to the extent that they were visually and/or physically observable from the Subject Property or from public areas during the reconnaissance.

1.2.3 Interviews

CEC's EP conducted interviews with the individuals listed in Section 6.0 in order to obtain information indicating RECs in connection with the Subject Property.

1.2.4 Report

After completion of the above tasks, CEC prepared this Phase I ESA report describing the scope of services performed, the findings that include the identification of RECs and opinions of the impact of the RECs on the property, and whether additional appropriate investigations would be necessary.

1.2.5 Non-Scope Considerations and Additional Services

Unless otherwise explicitly stated, the scope of services for this Phase I ESA does not include the collection and analysis of any environmental media. In accordance with the Standard, issues considered beyond the scope of this Phase I ESA include asbestos-containing materials, radon, lead-based paint, lead in drinking water, wetlands, regulatory compliance, cultural and historic resources, industrial hygiene, health and safety, ecological resources, endangered species, indoor air quality, biological agents, PCB-containing building materials, controlled substances, and mold. In addition, issues regarding ionizing radiation, oil/gas production, mineral rights and mining, and geotechnical suitability are also considered beyond the scope of this ESA.

No additional services beyond the scope defined in the Standard were requested by Rutherford County Board of Education. as part of the Phase I ESA.

1.3 SIGNIFICANT ASSUMPTIONS

CEC completed this Phase I ESA using the following significant assumptions:

- The information obtained from presumably knowledgeable parties (e.g., Subject Property owner, manager, user, tenants, etc.), regulatory agencies, or other sources was assumed to be accurate and reliable.

- The obtained regulatory database information was assumed to accurately reflect the information contained in the regulatory agency records, unless it was obviously contradicted by other data.

- Shallow groundwater flow was assumed to mimic area topography as depicted on the local USGS 7.5-minute topographic map and as observed during the reconnaissance. Within the scope of this ESA, no subsurface data was obtained to evaluate the actual groundwater flow direction beneath the Subject Property. Local factors, such as underground utilities, heterogeneous subsurface features, and seasonal fluctuations, among other factors may influence the actual direction of groundwater flow at and near the Subject Property. Site-

specific groundwater flow can only be determined through the installation of piezometers into the transmissive zone being evaluated.

1.4 LIMITATIONS AND EXCEPTIONS

CEC performed this Phase I ESA consistent with professional standards and in accordance with the scope and limitations defined in the Standard. This report presents CEC's field observations, results and opinions as they existed on the date of the reconnaissance, and is subject to modification by CEC, if CEC or any other party develops subsequent information. Limiting conditions encountered as part of this ESA, if any, are discussed in the corresponding sections of this report.

Performance of this Phase I ESA is intended to reduce, but not eliminate, uncertainty of environmental conditions associated with the property. Therefore, the information and comments made in this report should not be construed to warrant or guarantee the property, or express or imply, without limitation, warranties as to its marketability or fitness for a particular use. Furthermore, the information that is provided in this report is not intended, nor should it be construed to be, legal advice. The review of site-specific documentation was limited to those items referenced in this report.

It should be noted that this report is time sensitive and has specific limitations related to the viability of the information contained herein. Specific to Phase I ESAs, the Standard imposes a "shelf life"[2] on the reports and components thereof, as well as specific user obligations. It is the responsibility of the user to verify the continued viability of the report.

1.5 SPECIAL TERMS AND CONDITIONS

There are no special terms or conditions associated with this Phase I ESA.

[2] According to the Standard, the shelf life, or "continued viability," of the ESA is "Subject to Section 4.8, an environmental site assessment meeting or exceeding this practice and completed less than 180 days prior to the date of acquisition of the property or (for transactions not involving an acquisition) the date of the intended transaction is presumed to be valid. If within this period, the assessment will be used by a different user than the user for whom the assessment was originally prepared, the subsequent user must also satisfy the user's Responsibilities in Section 6. Subject to Section 4.8 and the user's Responsibilities set forth in Section 6, an environmental site assessment meeting or exceeding this practice and for which the information was collected or updated within one year prior to the date of acquisition of the property or (for transactions not involving an acquisition) the date of the intended transaction may be used provided that the following components of the inquiries were conducted or updated within 180 days of the date of purchase or the date of the intended transaction: (i) interviews with owners, operators, and occupants; (ii) searches for recorded environmental cleanup liens; (iii) reviews of federal, tribal, state, and local government records; (iv) visual inspections of the property and of adjoining properties; and (v) the declaration by the environmental professional responsible for the assessment or update."

1.6 USER RELIANCE

This report is intended for the sole use of Rutherford County Board of Education. The scope of services performed in execution of this evaluation may not be appropriate to satisfy the needs of others, and use of this document or the findings, conclusions, or recommendations contained herein by others is at their sole risk. Reliance by Rutherford County Board of Education on the facts, conclusions, and recommendations presented in this report is subject to the agreed upon specific scope of services and contractual terms and conditions, including explicit indemnification statements and limitations on CEC's financial liability.

This report and its findings shall not, in whole or in part, be disseminated or conveyed to another party, nor used by another party in whole or in part, without prior written consent of CEC, except as permitted by the Standard.

2.0 SUBJECT PROPERTY DESCRIPTION

2.1 LOCATION AND LEGAL DESCRIPTION

The Subject Property is located at 5104 Baker Road, Murfreesboro, Rutherford County, Tennessee and consists of two parcels totaling approximately 74.48-acres. Parcels 071-030.00-000 and 071-030.01-000 are both owned by John L. Batey Jr et ux Melissa W.

A Site Location Map and Site Vicinity Map are attached as Figures 1 and 2, respectively. Property information obtained from the Rutherford County GIS website is provided in Appendix A.

2.2 SUBJECT PROPERTY AND VICINITY GENERAL CHARACTERISTICS

The Subject Property is comprised of an approximately 74.48-acre rectangle-shaped parcel of land occupied by a single residential structure, shed, and farmland. The Subject Property is generally located as 35° 53' 36.06"N, 86° 30' 1.65"W which is north of Baker Road, west of Blackman Road and east of John Locke Lane. The land use in the immediate vicinity of the Subject Property consists of residential and agricultural properties.

The topography of the Subject Property and the vicinity consists of relatively level land, but drains generally to the east

2.3 CURRENT USE OF THE SUBJECT PROPERTY

The Subject Property is currently farmland with one residential structure and shed zoned for agricultural residential and medium density residential use.

2.4 DESCRIPTION OF STRUCTURES, ROADS, AND OTHER IMPROVEMENTS

The Subject Property includes an approximately 3,629 square foot single-family residence, equipment shed, and paved driveway.

2.5 CURRENT USES OF THE ADJOINING PROPERTIES

The adjoining properties are occupied as follows:

North: Residential
East: Residential, construction and residential beyond Blackman Road
South: Agricultural and residential beyond Baker Road
West: Agricultural and residential beyond John Locke Lane

3.0 USER PROVIDED INFORMATION

Mr. Trey Lee, Assistant Superintendent Engineering and Construction, as representative of the user, completed a user questionnaire. Mr. Lee provided the following information indicating the extent of his knowledge pertaining to the Subject Property. A copy of the completed user questionnaire is provided in Appendix C. The following sections summarize the information provided.

3.1 TITLE RECORDS

CEC was not provided with any information with respect to title records, nor was CEC engaged to perform a title search for the Subject Property.

3.2 ENVIRONMENTAL LIENS OR ACTIVITY AND USE LIMITATIONS

When asked if he is aware of environmental liens against the Subject Property Activity, or any AULs, such as engineering controls, land use restrictions, or institutional controls in place at the Subject Property that have been filed or recorded under federal, tribal, state, or local law, Mr. Lee replied “no”.

The Subject Property is not identified in the federal, state, or tribal institutional or engineering controls registries in the EDR Radius Map Report (Section 4.1).

3.3 SPECIALIZED KNOWLEDGE

When asked if he has specialized knowledge or experience related to the Subject Property or nearby properties, Mr. Lee replied “yes”.

3.4 COMMONLY KNOWN OR REASONABLY ASCERTAINABLE INFORMATION

When asked if he knows about past uses of the Subject Property, Ms. Lee said “yes”.

3.5 VALUATION REDUCTION FOR ENVIRONMENTAL ISSUES

Mr. Lee indicated that the purchase price for the Subject Property does not reasonably reflect its fair market value.

3.6 OWNER, PROPERTY MANAGER, AND OCCUPANT INFORMATION

Parcels 071-030.00-000 and 071-030.01-000 are both owned by John L. Batey Jr. et ux Melissa W.

The Subject Property is currently residentially occupied.

3.7 REASON FOR PERFORMING PHASE I ESA

CEC was engaged by Rutherford County Board of Education. to perform this Phase I ESA as part of their due diligence prior to a transaction involving the Subject Property and to satisfy one of the requirements to qualify for one of the landowner liability protections under CERCLA.

3.8 INTENDED USE OF THE SUBJECT PROPERTY

Mr. Lee indicated the intended use of the Subject Property is a middle school with associated athletic fields.

3.9 PROCEEDINGS INVOLVING THE SUBJECT PROPERTY

Mr. Lee was asked if he was aware of any pending, threatened, or past litigation relevant to hazardous substances or petroleum products in, on, or from the Subject Property; any pending, threatened, or past administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the Subject Property; or any notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products. Mr. Batey replied “no”.

3.10 QUESTIONS ABOUT HELPFUL DOCUMENTS

Mr. Lee was asked if they knew of the existence of the following documents with respect to the Subject Property to which he had the following responses:

- Previous ESA reports: No.
- Environmental compliance audit reports: No.
- Environmental permits [i.e., solid waste disposal permits, hazardous waste disposal permits, wastewater permits, National Pollutant Discharge Elimination System (NPDES) permits, underground injection permits, etc.]: No.
- Registrations for underground storage tanks (USTs) and ASTs: No.
- Registrations for underground injection system: No.
- Safety Data Sheets (SDS): No.

- Community right-to-know plan (SARA Title III): No.
- Safety plans; preparedness and prevention plans; spill prevention, countermeasure, and control plans; facility response plans; etc.: No.
- Reports regarding hydrogeologic conditions on the Subject Property or surrounding area.: hydrologic determination.: No.
- Notices or other correspondence from any government agency relating to past or current violations of environmental laws with respect to the Subject Property or relating to environmental liens encumbering the Subject Property: No.
- Hazardous waste generator notices or reports: No.
- Risk assessments: No.
- Geotechnical studies: preliminary geotechnical study
- Recorded AULs: No.

None of the available reports were provided to CEC for review.

4.0 RECORDS REVIEW

4.1 ENVIRONMENTAL RECORD SOURCES

4.1.1 Government Environmental Databases

CEC contracted with Environmental Data Resources, Inc. (EDR) of Shelton, Connecticut to conduct a search of reasonably ascertainable environmental record sources published by Federal, State, and/or Tribal regulatory agencies with jurisdiction over the Subject Property. EDR also searches their proprietary databases of historical auto station, dry cleaner, and manufactured gas plant locations. The search of each database was conducted using the approximate minimum search distances from the Subject Property defined by the Standard. The results of EDR's search were used to evaluate if the Subject Property and/or properties within prescribed search distances are listed as having a past or present record of actual or potential environmental impact. Please note that regulatory listings include only those properties, which are known to the regulatory agencies at the time of publication to be 1) contaminated, 2) in the process of evaluation for potential contamination, or 3) regulated. Inclusion of a property in a government database list does not necessarily indicate that the property has an environmental problem.

EDR plotted the locations of the listed properties identified in the search relative to the Subject Property and provided the regulatory information available for each in a Radius Map Report, dated January 17, 2023. Refer to Appendix D for a copy of EDR's Radius Map Report. The results of the search are summarized in the following sections.

4.1.1.1 Subject Property Listings

The Subject Property was not listed on the databases included in the EDR Radius Map Report.

4.1.1.2 Non-Subject Property Listings

No non-Subject Property listings were identified within the EDR standard search radius.

Please refer to EDR's Radius Map Report in Appendix D for additional details.

4.1.1.3 Orphan Listings

Not all sites or facilities identified in the database records can be accurately located in relation to the Subject Property due to incomplete information being supplied to the regulatory agencies. These sites are referred to as "orphan sites" by EDR. The "Orphan Summary" section of the EDR Radius Map Report identified two (2) orphan sites. All of the orphan sites identified were either

found not to be within the EDR search radius, could not be identified within the EDR search radius, or did not appear to warrant further investigation due to the type of record or materials involved.

4.1.1.4 EDR High-Risk Historical Records

EDR also searched their high-risk historical records databases for historic auto station, dry cleaner, and manufactured gas plant (MGP) locations. No High-Risk Historical Records were identified within one mile of the Subject Property.

4.1.2 Local Fire Department

CEC submitted a public records form for records associated with the Subject Property to the Rutherford County Fire-Rescue Department on January 23, 2023, to determine if information is maintained on file regarding potential environmental concerns at the Subject Property. The Rutherford County Fire-Rescue Department responded on January 24, 2023, indicating that they do not have any hard/electronic records regarding any fires, open fire violations, building code violations, zoning code violations, chemical spills, HAZMAT responses, chemical use or storage, or other information that may indicate these sites are contaminated or have any environmental concerns associated with them. A record of communication with the Rutherford County Fire-Rescue Department is included in Appendix E.

4.1.3 State Environmental Regulatory Agency

Based on the evaluation of the government environmental database listings described in Section 4.1.1, CEC determined there were no listings for the Subject Property, nor the adjacent properties, and a review of regulatory agency files was not warranted.

4.1.4 Local Department of Public Works

The local department of public works was not contacted as part of this Phase I ESA, but sewer and water service, if available, would be provided by Consolidated Utility District. Electric service is provided by Middle Tennessee Electric.

4.1.4 Natural Gas Utility

Natural gas would be supplied to the Subject Property by Atmos Energy, if available.

4.2 PHYSICAL SETTING SOURCES

CEC reviewed information from various physical setting sources to evaluate the general characteristics of the subsurface geology in the vicinity of the Subject Property. This information

was reviewed to evaluate how those characteristics may influence movement of potential subsurface impacts identified on or near the Subject Property. It was not the intent of this review to evaluate the geotechnical conditions of the Subject Property or to assess geologic concerns such as foundation conditions, faulting, subsidence, mining, or oil/gas wells.

4.2.1 Topography

Review of the 7.5-minute Topographic Quadrangle Map of "Smyrna and Walterhill, Tennessee" (U.S. Geological Survey; 2022) indicates that the ground surface of the Subject Property is mapped at an elevation of approximately 600 – 610 feet above mean sea level (amsl). The topography of the Subject Property and the vicinity consists of level land that drains generally to the east. The 2019 topographic map, provided by EDR, depicts the approximate location of the Subject Property and is presented as Figure 1.

4.2.2 Geology

The USGS Geologic Map of the Smryna and Walterhill Quadrangles dated 1966 and 1964 indicates the site is underlain by the Ridleys Limestone formation. The Ridley formation is comprised of a brownish gray to yellowish-brown, cryptocrystalline to very-fine grained, medium- to thick-bedded limestone, with minor amounts of magnesian limestone as small irregular mottlings and thin band, and thin lenses of chert locally. The total thickness is approximately 100 feet. The Subject Property lies within the Central Basin physiographic province of Middle Tennessee which is bound by the Highland Rim.

According to the EDR Radius Map Report (Appendix D), the dominant soil types at the Subject Property are Harpeth silt loam, Lomond silt loam, and Cumberland silt loam, which are characterized as being moderately well and well drained and having moderate infiltration rates. Minimum depth to bedrock is expected to be >0 inches. Bradyville silt loam is also listed as a dominant soil for the Subject Property and is characterized as having slow infiltration rates due to the presence of layers impeding the downward movement of water and soils with moderately fine or fine textures. Minimum depth to bedrock is expected to be >127 inches.

4.2.3 Hydrogeology

Stormwater at the site primarily flows to the east toward an intermittent tributary of Overall Creek.

According to the EDR Radius Map Report, there are six (6) water wells within one mile of the Subject Property. None of the wells are identified as public water supply wells. Three (3) of the wells are residential water wells. The remaining water wells identified include one (1) irrigation or farm well and two (2) wells with no reported use.

Based on the topographic gradient in the vicinity of the Subject Property, shallow groundwater is anticipated to flow east across the Subject Property toward a tributary of Overall Creek. Note that actual groundwater characteristics cannot be determined without a Subject Property-specific subsurface investigation.

4.3 HISTORICAL USE INFORMATION ON THE SUBJECT PROPERTY AND ADJOINING PROPERTIES

CEC reviewed the readily available historic resources described in the following sections to ascertain the historic uses of the Subject Property and adjoining properties to evaluate the potential presence of activities that could present RECs. A 1957 topographic map and 1951 aerial photograph were the earliest documents reviewed.

4.3.1 Local Assessor's Tax Files

Ownership information was obtained from the Rutherford County GIS website web page (Appendix A). No title commitment or current property deed were provided by Rutherford County Board of Education Please note that property usage cannot always be determined from ownership information.

A summary of information obtained online is as follows:

- The Subject Property is comprised of two parcels of land identified as Parcel 071-030.00-000 and 071-030.01-000in local property records.
- Both parcels are owned by John L. Batey Jr. et ux Melissa W.
- The Subject Property is comprised of approximately 74.48 acres of land.
- Improvements to the Subject Property include an approximately 3,629 square-foot single family structure, shed and associated driveway.

4.3.2 Aerial Photographs

Historic aerial photographs from 1951, 1953, 1975, 1985, 1987, 1997, 2007, 2010, 2014 and 2018 were reviewed to evaluate past land uses at the Subject Property and adjoining properties. Note that the scale, resolution, and/or quality of the aerial photographs limited our ability to discern specific Subject Property and vicinity features relative to historic uses. Copies of the aerial photographs are included in Appendix F, including an outline of the approximate Subject Property boundary. A summary of observations from the aerial photography is provided below.

YEAR RANGE	DESCRIPTION/CHANGES FROM PREVIOUS YEAR
SUBJECT PROPERTY	
1951 – 1975	The Subject Property appears to be agriculturally developed with a residential structure located at the western corner of the property.
1985 – 1997	The Subject Property appears to be agriculturally developed with a residential structure located at the western corner of the property and a residential structure near the center of the property.
2007 – 2018	The Subject Property appears to be agriculturally developed with a residential structure near the center of the property. The residential structure at the western corner of the property has been removed.
ADJOINING PROPERTIES	
1951 – 1997	Properties to the north and west appear to be agriculturally developed and land to the south and east appear to be residential and agriculturally developed.
2007 – 2018	Adjoining properties appear to be residential and agriculturally developed.

4.3.3 Historical Topographic Maps

Historic USGS topographic maps dated 1916, 1950, 1957, 1975/1979, 1981/1983/1984, 1998, 2013, 2016, and 2019 were reviewed for indications of past site use that could represent RECs in connection with the Subject Property. Some details are difficult to distinguish due to the map scale. Copies of the historic topographic maps, including an outline of the approximate Subject Property location, are provided in Appendix G. A summary of observations from the topographic maps is provided below.

YEAR RANGE	DESCRIPTION/CHANGES FROM PREVIOUS YEAR
SUBJECT PROPERTY	
1916 – 1950	No structures are depicted on the Subject Property. The majority of the Subject Property is located on the unmapped portion of the map.
1957 – 1979	Two structures are depicted on the topographic maps.
1983 – 1998	Three structures are depicted on the topographic maps.
2013 – 2019	The topographic maps do not provide the same level of detail as earlier maps; therefore, minor features such as

YEAR RANGE	DESCRIPTION/CHANGES FROM PREVIOUS YEAR
	residential and commercial structures are not depicted. The road configuration in the area matches the current layout.
ADJOINING PROPERTIES	
1916 – 1950	No structures are depicted on property to the north and west. Three structures are depicted near the southeast property boundary. Blackman Road is depicted to east of the Subject Property.
1957 – 1998	No structures are depicted on property to the north. Three structures are depicted near the southeast corner and two to three structures as well as a pond are depicted near the southwest corner. Blackman Road is depicted to east, and Brown Chapel Road is depicted to the south of the Subject Property.
2013 – 2019	Structures are not depicted on this topographic map. Only contour lines, road names and community names. Baker Road formerly labeled Brown Chapel Road is present to the south of the Subject Property.

4.3.4 Fire Insurance Maps

CEC engaged EDR to search their library for Sanborn Fire Insurance Maps available for the Subject Property. According to EDR, no Sanborn maps were found for the vicinity of the Subject Property. A letter from EDR indicating the lack of coverage is attached as Appendix H.

4.3.5 Local Street Directories

CEC contracted with EDR to prepare a street directory abstract for the Subject Property and surrounding addresses. EDR's City Directory Abstract indicated that street directories were available for the Subject Property for the years 1992 through 2017. In accordance with the Standard, the directories were reviewed in 5-year intervals, unless otherwise stated in this Section.

The Subject Property was listed as a residence belonging to John L. Batey Jr. and Batey Farm from 1992 to 2017.

Further review of the abstract revealed potentially adjoining properties with the following listings:

- 4995 Baker Road – Toombs, Timothy G (2010 – 2017)
  Barnes, Anthony (2000)
  Spurgeon, Bobby J (1992 – 1995)
- 5001 Baker Road – Gosart, Alan W (2010 – 2017)
  Adams, Frank W (1992 – 2005)
- 5007 Baker Road – Davis, Wendell K (1992 – 2017)
- 5013 Baker Road – Whitt, Brandon M (2017)
  Case, Berry S (2014)
  Case, Andrew S (2010)
  Farmer, Norman R (1992 – 2000)
- 5027 Baker Road – Clark, Alee R (2010 – 2017)
  Clark, Gale J (1995 – 2005)
- 5101 Baker Road – Jones Jo A (2010 – 2017)
  Jones, Harry A (1992 – 2005)
- 5113 Baker Road – Checchin, Richard F (2017)
  Occupant Unknown (2010 – 2014)
  Checchin, Richard C (1995 – 2005)
- 5129 Baker Road – Brewster, Billy W (2017)
  Lewis, James W (2000 – 2014)
  Craft, Jessica (1995)
  Goforth, April (1995)
  Furches, Tim M (1992)
- 5135 Baker Road – Bryson, Audra L (2014 – 2017)
  McCloud, Gerald F (1992 – 2010)

The City Directory Abstract is attached as Appendix K.

4.3.6 Previous Reports

CEC was not provided with previous environmental reports pertaining to the Subject Property.

4.4 HISTORICAL USE SUMMARY

4.4.1 Summary of the Historical Use of the Subject Property

The Subject Property appears to have been residential and agriculturally developed dating back to the earliest records reviewed (1951). From the 1950s to present the Subject Property appears to have remained unchanged in its use.

4.4.2 Summary of the Historical Use of the Adjacent Properties

The surrounding properties consisted of agriculturally developed land and a few residential structures from 1951 until 2007 when the land to the north was heavily developed with residential properties.

5.0 SUBJECT PROPERTY RECONNAISSANCE

5.1 METHODOLOGY AND LIMITING CONDITIONS

On January 16, 2023, Victoria Gallagher, an EP with CEC, performed a reconnaissance to observe the Subject Property and adjoining properties for potential evidence and/or practices that could represent RECs.

At the time of the reconnaissance, the visibility at the Subject Property was good and weather conditions did not interfere with the observations. The following methodology was used when performing the reconnaissance:

- Observed the exterior portions of the Subject Property by traversing the grounds in a random pattern and traveling the perimeter.
- Observed readily accessible portions of the interior of the Subject Property shed but did not enter the residential structure.
- Observed land use and types of operations of the immediate adjacent properties from the Subject Properties and public areas.

A Site Location Map and Site Map are attached as Figures 1 and 2, respectively. Photographs are attached as Appendix B.

5.2 GENERAL SUBJECT PROPERTY SETTING

The Subject Property is comprised of a rectangular shaped tract of land located in a suburban to rural setting that consists of relatively level land but drains generally to the east. The Subject Property is comprised of two parcels totaling approximately 74.48-acres of land and is comprised of a single-family structure, shed, and farmland. The Subject Property is located north of Baker Road, west of Blackman Road and east of John Locke Lane.

5.3 SUBJECT PROPERTY WIDE OBSERVATIONS

The following conditions were specifically assessed for their potential to indicate RECs and may include conditions inside or outside structures on the Subject Property.

5.3.1 Hazardous Substances and Petroleum Products

Hazardous substances and petroleum products were not observed on the Subject Property.

5.3.2 Storage Tanks

5.3.2.1 Underground Storage Tanks (USTs)

The Subject Property was observed for the presence of USTs. No obvious visual evidence indicating the current presence of USTs (i.e., vent pipes, fill ports, etc.) was noted.

5.3.2.2 Aboveground Storage Tanks (ASTs)

The Subject Property was observed for the presence of ASTs. No ASTs were noted, nor was obvious visual evidence indicating the historical presence of AST (i.e., secondary containments, concrete saddles, etc.).

5.3.3 Odors

No obvious strong, pungent, or noxious odors were noted during the reconnaissance.

5.3.4 Pools of Liquid

Pools or sumps of liquid were not observed during the reconnaissance.

5.3.5 Drums and Containers

No drums were observed during the reconnaissance. Multiple consumer-sized containers of hazardous materials and petroleum products were observed in the shed area; however, all containers appeared to be in good condition and no evidence of stains or leaking was observed, so the containers observed on the Subject Property do not appear to represent a REC.

5.3.6 Unidentified Substance Containers

CEC did not observe open or damaged containers containing unidentified substances at the Subject Property.

5.3.7 Suspect Polychlorinated Biphenyl (PCB) Containing Equipment

The Subject Property and immediate vicinity were viewed for the presence of potential PCB containing equipment, such as electrical transformers, capacitors, and hydraulic equipment. No suspect PCB containing equipment was observed at the time of reconnaissance.

5.3.7.1 Transformers

CEC did not observe transformers at the Subject Property during the site reconnaissance.

5.3.7.2 Other Potential PCB-Containing Equipment

No other major classes of equipment known or suspected to contain PCB fluids (e.g., hydraulic systems, floor-mounted compressors, etc.) were observed at the Subject Property during the site reconnaissance.

5.4 INTERIOR OBSERVATIONS

The Subject Property is currently developed with a single-family structure and shed. The interior of the shed was observed, however; the residence was not entered at the time of the site reconnaissance. The shed was used as storage for equipment and household items. Multiple consumer-sized containers of hazardous materials and petroleum products were observed in the shed area; however, all containers appeared to be in good condition and no evidence of stains or leaking was observed.

5.5 EXTERIOR OBSERVATIONS

The following exterior conditions at the Subject Property were specifically assessed for their potential to indicate RECs.

5.5.1 Pits, Ponds, Lagoons, and Surface Waters

CEC did not identify pits, ponds, or lagoons within the Subject Property.

5.5.2 Stained Surfaces and Distressed Vegetation

CEC did not encounter visual evidence of stressed vegetation at the Subject Property.

5.5.3 Solid Waste

No solid waste was observed on the Subject Property at the time of reconnaissance.

5.5.4 Wastewater

If sewer service is available, it would be provided by Consolidated Utility District. The residence is currently connected to a septic tank located in the grassed area.

5.5.5 Storm Water

Storm water on the Subject Property generally sheet flows to the east.

5.5.6 Wells

No onsite wells were reported by EDR. However, two wells were observed near the residential structure on the Subject Property. According to Mr. Batey, the wells were used for irrigation.

5.6 ADJACENT PROPERTY OBSERVATIONS

The current uses of adjoining properties were identified to the extent that they could be observed during the site visit from the Subject Property or public areas. As discussed in Section 2.5, the adjoining properties are currently occupied as follows:

North: Residential

East: Residential, construction and residential beyond Blackman Road

South: Agricultural and residential beyond Baker Road

West: Agricultural and residential beyond John Locke Lane

A Site Location Map and Site Map are attached as Figures 1 and 2, respectively. Photographs are attached as Appendix B.

6.0 INTERVIEWS

CEC attempted to interview various individuals familiar with the Subject Property, as identified to us, and/or government officials in order to evaluate historical uses and identify potential RECs. The individuals interviewed were asked to provide responses in good faith and to the best of their knowledge. The following sections identify the individuals interviewed and summarize the information each provided; however, additional information provided by these individuals may be presented in other sections of this report. Records of communication are included in Appendix E.

6.1 INTERVIEW WITH OWNER/OWNER REPRESENTATIVE

The two parcels included in the Subject Property are currently owned by Mr. Batey.

The owner completed the User Questionnaire.

6.2 INTERVIEWS WITH CURRENT OCCUPANTS

The property is currently occupied by the property owner, Mr. John Batey, Jr. Mr. Batey completed the User Questionnaire, as such additional interviews were not performed.

6.3 GOVERNMENT OFFICIALS

CEC submitted a public records form for records associated with the Subject Property to the Rutherford County Fire-Rescue Department on January 23, 2023, to determine if information is maintained on file regarding potential environmental concerns at the Subject Property. The Rutherford County Fire-Rescue Department responded on January 24, 2023, indicating that they do not have any hard/electronic records regarding any fires, open fire violations, building code violations, zoning code violations, chemical spills, HAZMAT responses, chemical use or storage, or other information that may indicate these sites are contaminated or have any environmental concerns associated with them. A record of communication with the Rutherford County Fire-Rescue Department is included in Appendix E.

6.4 OTHER INTERVIEWS

No other parties were interviewed as part of this Phase I ESA.

7.0 EVALUATION

7.1 FINDINGS

Based upon the information gathered as part of this Phase I ESA, the following is a summary of CEC's findings:

- The Subject Property consists of an approximately 74.48-acre residential and agriculturally developed tract of land that includes two parcels (071-030.00-000 and 071-030.01-000) owned by John L. Batey Jr. et ux Melissa W.

- Review of historical sources indicate that the Subject Property been residential and agriculturally developed since the earliest sources reviewed (1957 topographic map and 1951 aerial photograph).

- The Subject Property and adjoining properties were not included in the government databases searched by EDR. Zero non-adjoining properties were mapped by EDR.

- The surrounding properties consists of residential properties and farmland to the south and west, a residential subdivision to the north, and residential properties, construction, and farmland to the east. The property is bound by Baker Road to the south, John Locke Lane to the west, and Blackman Road to the east.

7.2 OPINIONS

Based on the findings of this ESA, CEC offers the following opinions relative to the potential for environmental impact on the Subject Property by the conditions identified:

- No evidence of onsite RECs or RECs resulting from conditions on adjoining properties was identified during the course of this Phase I ESA.

7.3 SIGNIFICANT DATA GAPS

Based upon the information gathered during the interviews, a review of records and maps, and observations made during the site visit, the following data gaps were identified during the course of this Phase I ESA:

- Historical sources were not reviewed on 5-year intervals dating back to 1940. Historical sources on 5-year intervals were either not available or not reasonably ascertainable.

- Multiple consumer-sized containers of hazardous materials and petroleum products were observed in the shed area; however, all containers appeared to be in good condition and no evidence of stains or leaking was observed, so the containers observed on the Subject Property do not appear to represent a REC.

- Limitations experienced during the reconnaissance included, but may not be limited to, the presence of vegetation that inhibited observations of the ground surface and interior of the residential structure was not observed at the Subject Property.

In our opinion, these data gaps do not materially affect our ability to provide an opinion regarding the environmental condition of the Subject Property, and we consider the potential for these data gaps to result in information representing RECs, or altering any identified RECs, to be low based on the known history of the property, historical sources reviewed, and the type and quantity of chemicals expected to be associated with the current business activities.

7.4 CONCLUSIONS

CEC has performed a Phase I ESA in conformance with the scope and limitations of ASTM Practice E 1527-13 for the Subject Property. Any exception to, or deletions from, this practice are described in Sections 1.4 and 8.0 of this report. The ESA has revealed no RECs in connection with the Subject Property.

8.0 DEVIATIONS

CEC has performed this Phase I ESA in general conformance with the scope and limitations of the Standard with no identified deletions and no additions.

9.0 ADDITIONAL SERVICES

No additional services were requested during the performance of this Phase I ESA.

10.0 REFERENCES

- **Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*;*** ASTM; 2013
- ***CEC's Proposal for Phase I Environmental Site Assessment;*** December 2, 2022
- ***"Smyrna and Walterhill" 7.5 Minute Topographic Quadrangle Map;*** United States Geological Survey, 2022
- ***The EDR Radius Map Report;*** Environmental Data Resources, Inc.; Inquiry Number 7225785.2s; January 17, 2023
- ***The EDR Aerial Photo Decade Package;*** Environmental Data Resources, Inc.; Inquiry Number 7225785.5; January 17, 2023
- ***The EDR Historical Topographic Map Report;*** Environmental Data Resources, Inc.; Inquiry Number 7225785.4; January 17, 2023
- ***The EDR Certified Sanborn® Map Report;*** Environmental Data Resources, Inc.; Inquiry Number 7225785.3; January 17, 2023
- ***The EDR City Directory Abstract;*** Environmental Data Resources, Inc.; Inquiry Number 7225785.6; January 19, 2023

11.0 QUALIFICATIONS AND SIGNATURES OF ENVIRONMENTAL PROFESSIONALS

This report was prepared by Victoria Gallagher and reviewed by Jose Garcia, both EPs with CEC. Their qualifications are attached as Appendix J.

We declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental Professional as defined in 40 CFR 312.10 and we have the specific qualifications based on the education, training, and experience to assess a property of the nature, history, and setting of the Subject Property. We have developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

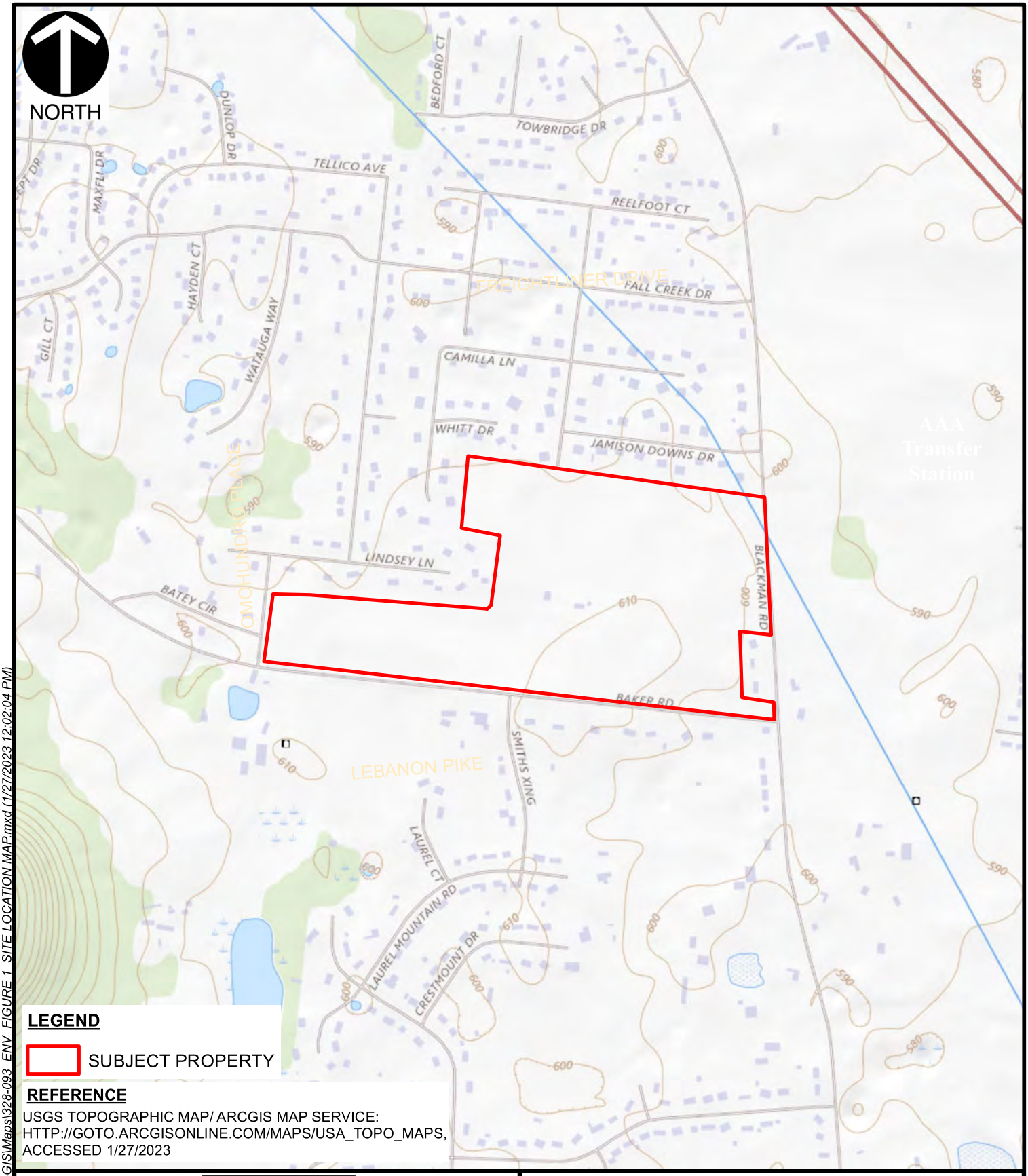
Prepared by:

Victoria Gallagher, QHP
Assistant Project Manager

Reviewed by:

Jose Garcia, QHP
Senior Project Manager

FIGURES



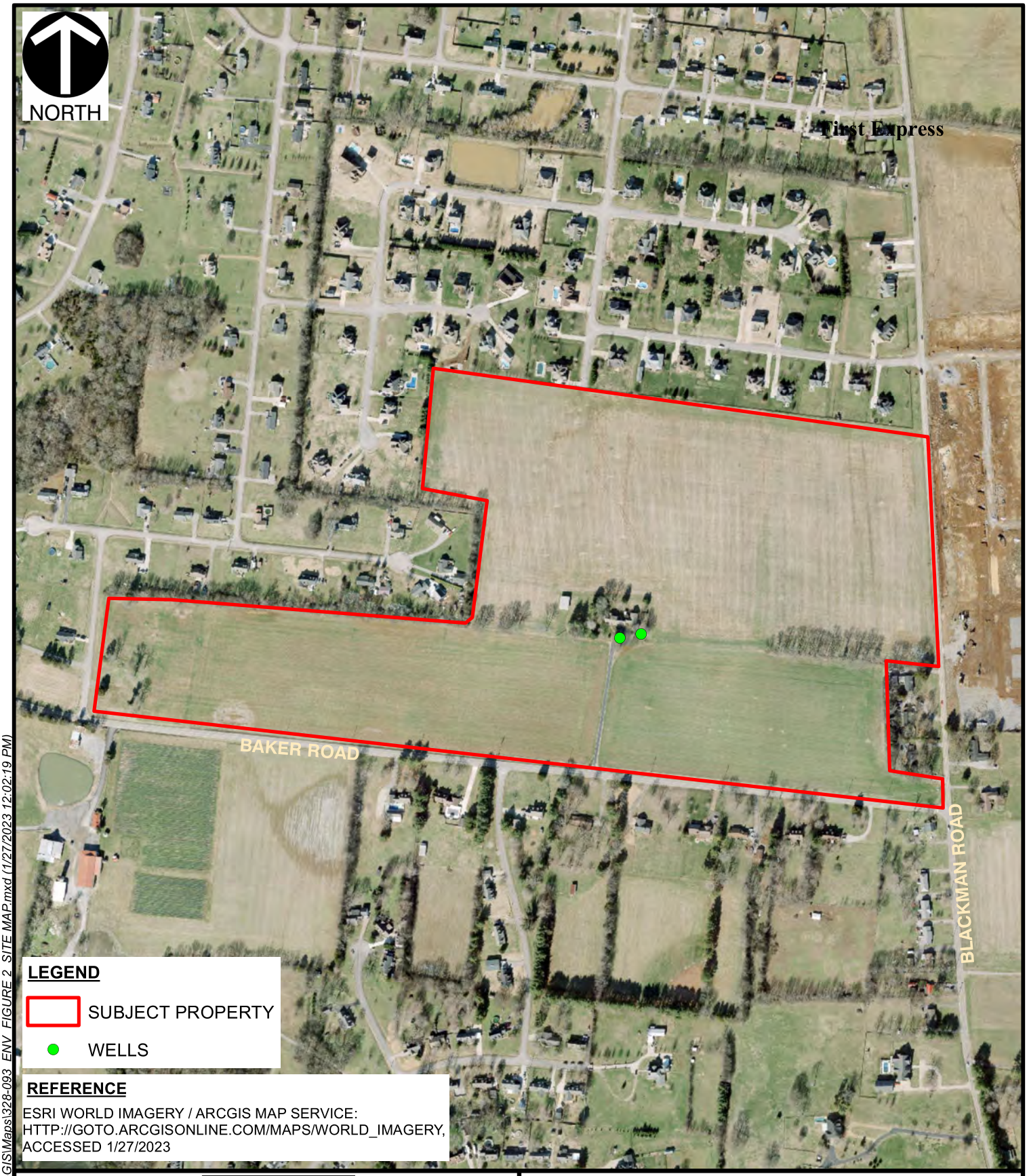
Civil & Environmental Consultants, Inc.
117 Seaboard Lane, Ste. E100 Franklin, Tennessee
615-333-7797 • 800-763-2326
www.cecinc.com

BATEY FARM SITE
5104 BAKER ROAD
MURFREESBORO, TENNESSEE

SITE VICINITY MAP
PHASE I ENVIRONMENTAL SITE ASSESSMENT

DRAWN BY:	VMG	CHECKED BY:	HOB	APPROVED BY:	* Hand signature on file JVG	FIGURE NO:	1
DATE:	1/27/2023	SCALE:	1:10,000	PROJECT NO:	328-093		

\\SVR-NASH.P:\320-000\328-093\-GIS\Maps\328-093_ENV_FIGURE 1_SITE LOCATION MAP.mxd (1/27/2023 12:02:04 PM)



\\SVR-NASH\P:\320-000\328-093\I-GIS\Maps\328-093_ENV_FIGURE 2_SITE MAP.mxd (1/27/2023 12:02:19 PM)

Civil & Environmental Consultants, Inc.
117 Seaboard Lane, Ste. E100 Franklin, Tennessee
615-333-7797 • 800-763-2326
www.cecinc.com

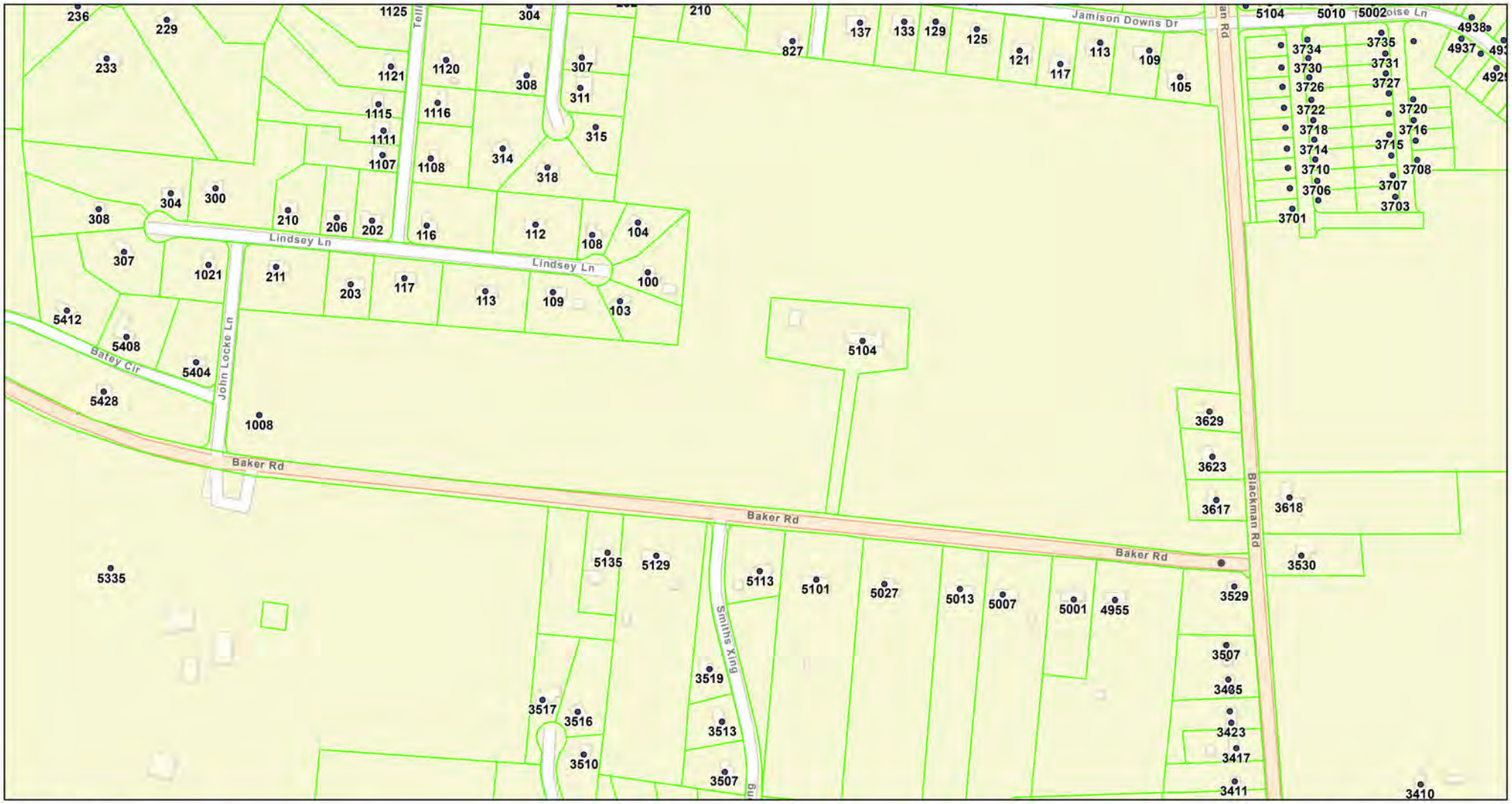
BATEY FARM SITE
5104 BAKER ROAD
MURFREESBORO, TENNESSEE

SITE MAP
PHASE I ENVIRONMENTAL SITE ASSESSMENT

DRAWN BY:	VMG	CHECKED BY:	HOB	APPROVED BY:	* Hand signature on file JVG	FIGURE NO:	2
DATE:	1/27/2023	SCALE:	1:6,000	PROJECT NO:	328-093		

APPENDIX A
LEGAL DESCRIPTION AND ASSESSING INFORMATION

Batey Farm



January 31, 2023

- Site Address Points
- ParcelsCAMA

ESN Boundaries

- Eagleville
- LaVergne
- Murfreesboro
- Smryna
- Rutherford County
- Ground Control Network

1:4,514

0 0.04 0.09 0.18 mi

0 0.05 0.1 0.2 km

APPENDIX B
PHOTOGRAPHS

Photo 1: Southern view from the 1504 Baker Road driveway toward Baker Road.

Photo 2: Northern view of 1504 Baker Road single-family residence.

Photo 3: General view of a well near the residential structure.

Photo 4: View of shed near the central portion of the Subject Property.

Photo 5: View of a 5-gallon container of hydraulic oil stored in the shed.

Photo 6: General view of the western portion of the Subject Property from the 1504 Baker Road driveway.

Photo 7: General view of the northwestern portion of the Subject Property and adjoining properties.

Photo 8: General view of the eastern portion of the property toward Blackman Road.

APPENDIX C
USER PROVIDED INFORMATION

ASTM E 1527-13
USER QUESTIONNAIRE

In order to qualify for one of the Landowner Liability Protections (LLPs*) offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001 (the "Brownfields Amendments"), the user must provide the following information (if available) to the environmental professional. Failure to provide this information could result in a determination that "all appropriate inquiries" is not complete.

(1) Environmental cleanup liens that are filed or recorded against the site (40 CFR 312.25).
Are you aware of any environmental liens against the property that are filed or recorded under federal, tribal, state, or local law?

NONE

(2) *Activity and land use limitations that are in place on the site or that have been filed or recorded in a registry* (40 CFR 312.26).
Are you aware of any AULs, such as engineering controls, land use restrictions, or institutional controls that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state, or local law?

NO

(3) Specialized knowledge or experience of the person seeking to qualify for LLP (40 CFR 312.28).
As the user of this ESA 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 an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business?

YES

***(4) Relationship of the purchase price to the fair market value of the property if it were not contaminated* (40 CFR 312.29).**
Does the purchase price being paid for this property reasonably reflect the fair market value of the property? 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?

NO

(5) Commonly known or reasonable ascertainable information about the property (40 CFR 312.30).
Are you aware of commonly known or reasonable ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases? For example, as user,

a. Do you know the past uses of the property? YES

b. Do you know of specific chemicals that are present or once were present at the property?

NONE

c. Do you know of spills or other chemical releases that have taken place at the property?

(NONE / (YES) I would have known

d. Do you know of any environmental cleanups that have taken place at the property?

NONE

(6) The degree of obviousness of the presence or likely presence of contamination at the property, and the ability to detect the contamination by appropriate investigation (40 CFR 312.31).
As the user of this ESA, based on your knowledge and experience related to the property are there any obvious indicators that point to the presence or likely presence of contamination at the property?

NO

The American Society for Testing and Materials (ASTM), Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process E 1527-13 (the "Standard") also requires that the following be asked of the "user."

Questions about Helpful Documents: Do you know whether any of the following documents exist? If so, identify the title of the report, when it was prepared, and by what firm, and/or provide a copy if within reasonable time and cost constraints. *Note that even partial information may be useful.*

- Previous environmental site assessment reports, NONE
- Environmental compliance audit reports, NONE
- Environmental permits (i.e., solid waste disposal permits, hazardous waste disposal permits, wastewater permits, NPDES permits, underground injection permits, etc.), NONE
- Registrations for underground and above ground storage tanks, NONE
- Registrations for underground injection systems, NONE
- Material safety data sheets (MSDS), NONE
- Community right-to-know plan (Sara Title III), NONE
- Safety plans; preparedness and prevention plans; spill prevention, countermeasure, and control plans; etc., NONE
- Reports regarding hydrogeologic conditions on the property or surrounding area, NONE
- Notices or other correspondence from any government agency relating to past or current violations of environmental laws with respect to the property or relating to environmental liens encumbering the property, NONE
- Hazardous waste generator notices or reports, NONE
- Geotechnical studies, NONE
- Risk assessments, and NONE
- Recorded activity use limitations (AULs). NONE

Proceedings Involving the Property: Do you know of:

- any pending, threatened, or past litigation relevant to hazardous substances or petroleum products in, on, or from the property; NO
- any pending, threatened, or past administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the property; and NO
- any notices from any governmental entity regarding any possible violation of environmental laws, environmental liens, or possible liability relating to hazardous substances or petroleum products. NO

Prepared by: John L. BATEY, JR (Printed Name)

Signature: John L Batey Jr.

Date: Jan. 6, 2023

Company:

Property Name and Location:

5104 BAKER Rd
MURFREESBORO, TN
37129

Trey Lee, Assistant Superintendent
Engineering and Construction
Acknowledged by (printed name)

Signature

February 2, 2023
Date

Rutherford County Bd of Education
Representing

*Landowner Liability Protections, or LLPs, is the term used to describe the three types of potential defenses to Superfund liability in EPA's *Interim Guidance Regarding Criteria Landowners Must Meet in Order to Qualify for Bona Fide Prospective Purchaser, Contiguous Property Owner, or Innocent Landowner Limitations on CERCLA Liability* ("*Common Elements*" Guide) issued on March 6, 2003.

APPENDIX D
EDR RADIUS MAP REPORT

Batey Farm Site
1008 John Locke Lane
Murfreesboro, TN 37129

Inquiry Number: 7225785.2s
January 17, 2023

EDR Summary Radius Map Report

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

TABLE OF CONTENTS

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E1527-21), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

1008 JOHN LOCKE LANE
MURFREESBORO, TN 37129

COORDINATES

Latitude (North):	35.8933510 - 35ˆ 53' 36.06''
Longitude (West):	86.5004600 - 86ˆ 30' 1.65''
Universal Tranverse Mercator:	Zone 16
UTM X (Meters):	545084.1
UTM Y (Meters):	3972034.8
Elevation:	606 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property:	TP
Source:	U.S. Geological Survey
Target Property:	NE
Source:	U.S. Geological Survey
Target Property:	SE
Source:	U.S. Geological Survey
Target Property:	SW
Source:	U.S. Geological Survey

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140617, 20140711
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
1008 JOHN LOCKE LANE
MURFREESBORO, TN 37129

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION

NO MAPPED SITES FOUND

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

SURROUNDING SITES: SEARCH RESULTS

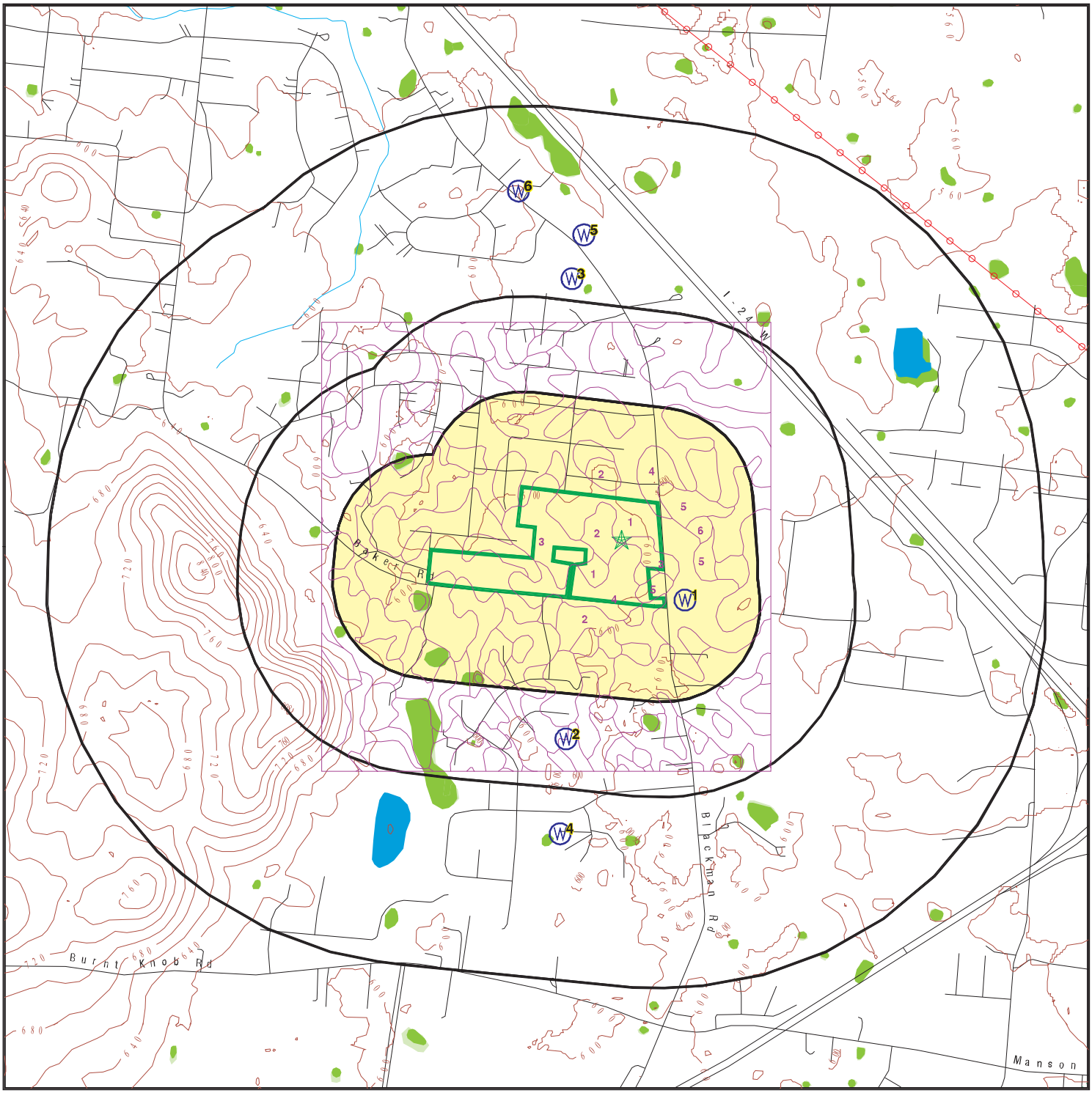
Surrounding sites were not identified.

Unmappable (orphan) sites are not considered in the foregoing analysis.

Count: 2 records. ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
MURFREESBORO	S108858684	BARRETT'S TEXACO	I-24 & US 231		LUST
RUTHERFORD COUNTY	S123319295	3581 N. LAMAR, MT JULIET	I-24, EXIT 66B, GO 4 MILES AND		SWM COMPLAINTS

OVERVIEW MAP - 7225785.2S



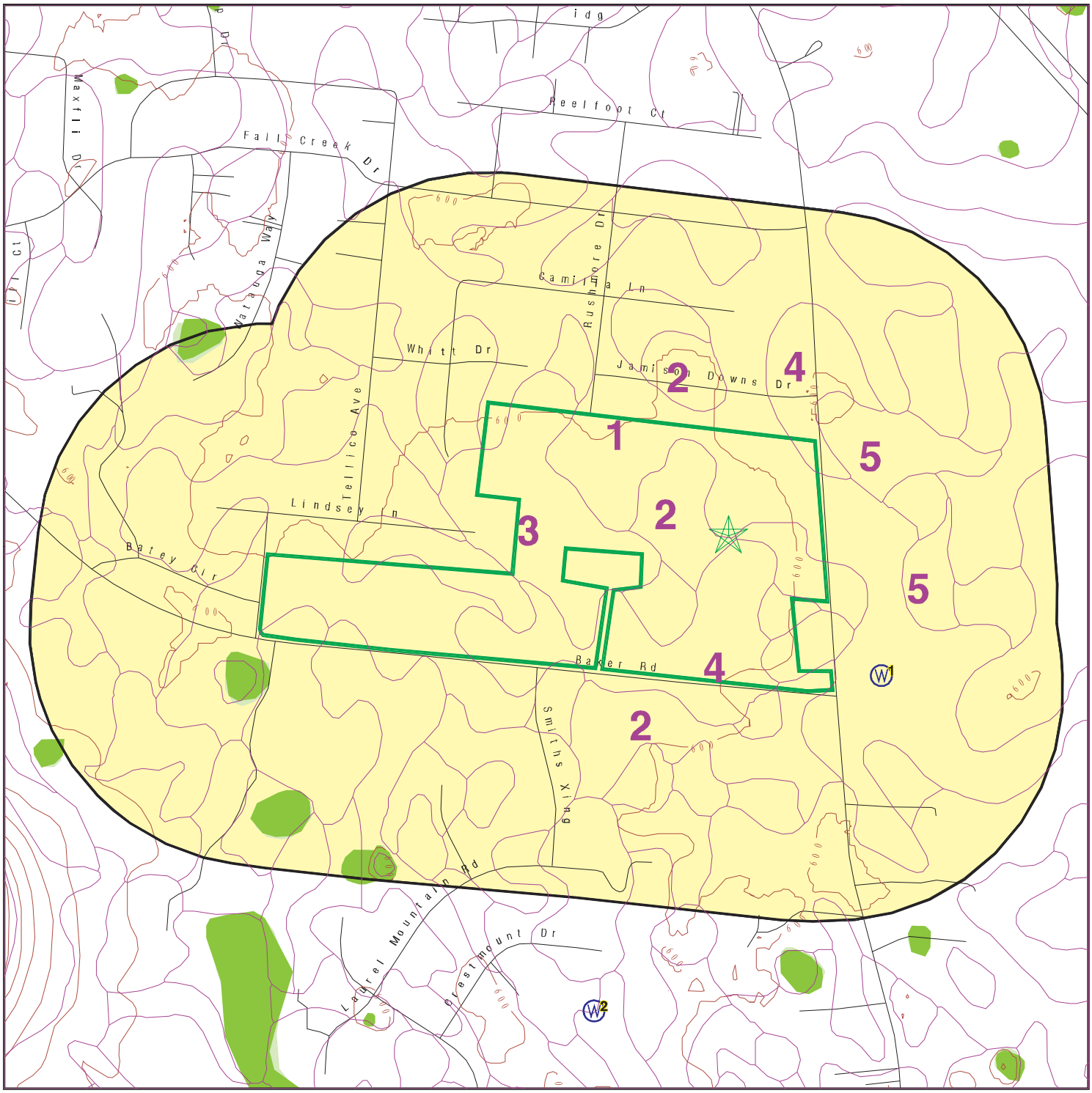
0 1/4 1/2 1 Miles

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Special Flood Hazard Area (1%)
- 0.2% Annual Chance Flood Hazard
- National Wetland Inventory
- State Wetlands

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Batey Farm Site	CLIENT:	Civil & Env Consultants
ADDRESS:	1008 John Locke Lane Murfreesboro TN 37129	CONTACT:	Tori Gallagher
LAT/LONG:	35.893351 / 86.50046	INQUIRY #:	7225785.2s
		DATE:	January 17, 2023 10:27 am

DETAIL MAP - 7225785.2S



0 1/8 1/4 1/2 Miles

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Special Flood Hazard Area (1%)
- 0.2% Annual Chance Flood Hazard
- National Wetland Inventory
- State Wetlands

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Batey Farm Site	CLIENT: Civil & Env Consultants
ADDRESS: 1008 John Locke Lane Murfreesboro TN 37129	CONTACT: Tori Gallagher
LAT/LONG: 35.893351 / 86.50046	INQUIRY #: 7225785.2s DATE: January 17, 2023 10:27 am

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Lists of Federal NPL (Superfund) sites								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	1.000		0	0	0	0	NR	0
Lists of Federal Delisted NPL sites								
Delisted NPL	1.000		0	0	0	0	NR	0
Lists of Federal sites subject to CERCLA removals and CERCLA orders								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Lists of Federal CERCLA sites with NFRAP								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Lists of Federal RCRA facilities undergoing Corrective Action								
CORRACTS	1.000		0	0	0	0	NR	0
Lists of Federal RCRA TSD facilities								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Lists of Federal RCRA generators								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-VSQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROLS	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	TP		NR	NR	NR	NR	NR	0
Lists of state- and tribal (Superfund) equivalent sites								
SHWS	1.000		0	0	0	0	NR	0
Lists of state and tribal landfills and solid waste disposal facilities								
SWF/LF	0.500		0	0	0	NR	NR	0
SWM COMPLAINTS	0.500		0	0	0	NR	NR	0
Lists of state and tribal leaking storage tanks								
LUST	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
INDIAN LUST	0.500		0	0	0	NR	NR	0
LUST TRUST	0.500		0	0	0	NR	NR	0
HIST_LUST CO	0.500		0	0	0	NR	NR	0
Lists of state and tribal registered storage tanks								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		0	0	NR	NR	NR	0
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
State and tribal institutional control / engineering control registries								
ENG CONTROLS	0.500		0	0	0	NR	NR	0
INST CONTROL	0.500		0	0	0	NR	NR	0
Lists of state and tribal voluntary cleanup sites								
INDIAN VCP	0.500		0	0	0	NR	NR	0
SRP	0.500		0	0	0	NR	NR	0
VCP	0.500		0	0	0	NR	NR	0
Lists of state and tribal brownfield sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
SWRCY	0.500		0	0	0	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	TP		NR	NR	NR	NR	NR	0
CDL	TP		NR	NR	NR	NR	NR	0
PRIORITYCLEANERS	0.500		0	0	0	NR	NR	0
DEL SHWS	1.000		0	0	0	0	NR	0
US CDL	TP		NR	NR	NR	NR	NR	0
Local Lists of Registered Storage Tanks								
HIST UST	0.250		0	0	NR	NR	NR	0
Local Land Records								
LIENS	TP		NR	NR	NR	NR	NR	0
LIENS 2	TP		NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
Records of Emergency Release Reports								
HMIRS	TP		NR	NR	NR	NR	NR	0
SPILLS	TP		NR	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.250		0	0	NR	NR	NR	0
FINDS	TP		NR	NR	NR	NR	NR	0
DOCKET HWC	TP		NR	NR	NR	NR	NR	0
ECHO	TP		NR	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
PFAS NPL	0.250		0	0	NR	NR	NR	0
PFAS FEDERAL SITES	0.250		0	0	NR	NR	NR	0
PFAS TSCA	0.250		0	0	NR	NR	NR	0
PFAS RCRA MANIFEST	0.250		0	0	NR	NR	NR	0
PFAS ATSDR	0.250		0	0	NR	NR	NR	0
PFAS WQP	0.250		0	0	NR	NR	NR	0
PFAS NPDES	0.250		0	0	NR	NR	NR	0
PFAS ECHO	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
PFAS ECHO FIRE TRAINING	0.250		0	0	NR	NR	NR	0
PFAS PART 139 AIRPORT	0.250		0	0	NR	NR	NR	0
AQUEOUS FOAM NRC	0.250		0	0	NR	NR	NR	0
PFAS	0.250		0	0	NR	NR	NR	0
AIRS	TP		NR	NR	NR	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
LEAD	TP		NR	NR	NR	NR	NR	0
NPDES	TP		NR	NR	NR	NR	NR	0
VAPOR	0.500		0	0	0	NR	NR	0
MINES MRDS	TP		NR	NR	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LF	TP		NR	NR	NR	NR	NR	0
RGA LUST	TP		NR	NR	NR	NR	NR	0
- Totals --		0	0	0	0	0	0	0

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

MAP FINDINGS

Map ID Direction Distance Elevation	Site	Database(s)	EDR ID Number EPA ID Number

NO SITES FOUND

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

St	Acronym	Full Name	Government Agency	Gov Date	Arvl. Date	Active Date
TN	AIRS	Listing of Permitted Sources	Department of Environment & Conservation	10/24/2022	10/24/2022	01/11/2023
TN	AST	Aboveground Storage Tanks	Department of Environment and Conservation	10/01/1999	10/12/1999	11/05/1999
TN	BROWNFIELDS	Superfund VOAP Listing	Department of Environment & Conservation	09/26/2022	09/27/2022	12/12/2022
TN	CDL	Registry of Contaminated Properties	Department of Environment & Conservation	10/03/2022	10/26/2022	01/11/2023
TN	DEL SHWS	Deleted State Hazardous Waste Sites	Department of Environment & Conservation	09/26/2022	09/27/2022	12/12/2022
TN	DRYCLEANERS	Registered Facilities List	Dept. of Environment & Conservation	09/07/2022	10/10/2022	12/29/2022
TN	ENG CONTROLS	Engineering Control Sites	Department of Environment & Conservation	08/08/2022	08/09/2022	10/27/2022
TN	HIST UST	Underground Storage Tank Database	Department of Environment & Conservation	07/29/2022	08/09/2022	10/27/2022
TN	HIST_LUST CO	Leaking Underground Storage Tanks Sites	Department of Environmental Conservation, Col	10/18/1994	10/24/1994	12/30/1994
TN	INST CONTROL	Institutional Control Sites	Department of Environment & Conservation	08/08/2022	08/09/2022	10/27/2022
TN	LEAD CERT	Lead Safe Housing Registry	Department of Environment & Conservation	02/25/2019	02/26/2019	06/13/2019
TN	LIENS	Liens Information	Department of Environment & Conservation	03/10/2015	04/07/2015	04/30/2015
TN	LUST	Fund Eligible Leaking Underground Storage Tank Sites	Department of Environment and Conservation	07/29/2022	08/09/2022	10/28/2022
TN	LUST TRUST	LUST TRUST Fund Database	Department of Environment & Conservation	07/29/2022	08/09/2022	10/28/2022
TN	NPDES	Permitted Facility Listing	Department of Environment & Conservation	05/16/2022	05/17/2022	08/05/2022
TN	PFAS	PFAS Contamination Site Location Listing	Department of Environment & Conservation	03/07/2022	08/10/2022	10/28/2022
TN	PRIORITY CLEANERS	DCERP Remediation Sites Listing	Department of Environment & Conservation	10/10/2022	10/10/2022	12/29/2022
TN	RGA LF	Recovered Government Archive Solid Waste Facilities List	Department of Environment and Conservation		07/01/2013	01/15/2014
TN	RGA LUST	Recovered Government Archive Leaking Underground Storage Tan	Department of Environment and Conservation		07/01/2013	01/03/2014
TN	SHWS	Promulgated Sites	Department of Environment & Conservation	09/26/2022	09/27/2022	12/12/2022
TN	SPILLS	State Spills	Department of Environment & Conservation	01/05/2015	01/06/2015	02/10/2015
TN	SPILS	Statewide Petroleum Incident Logging Section	Department of Environment & Conservation	08/16/2022	08/16/2022	11/03/2022
TN	SRP	State Remediation Program List	Department of Environemtn & Conservation	09/26/2022	09/27/2022	12/12/2022
TN	SWF/LF	Solid Waste Disposal Facilities	Department of Environment and Conservation	09/06/2022	09/06/2022	11/23/2022
TN	SWM COMPLAINTS	Solid Waste Management Complaints	Department of Environment & Conservation	09/02/2022	09/07/2022	11/23/2022
TN	SWRCY	Recycling Facilities Listing	Department of Environment & Conservation	09/06/2022	09/06/2022	11/23/2022
TN	UST	Facility and Tank Report	Department of Environment and Conservation	07/29/2022	08/09/2022	10/27/2022
TN	VAPOR	VOC Sites Listing	Department of Environment & Conservation	09/29/2022	09/29/2022	12/14/2022
TN	VCP	Voluntary Cleanup, Oversight and Assistance Program Sites	Department of Environmental & Conservation	09/26/2022	09/27/2022	12/12/2022
US	2020 COR ACTION	2020 Corrective Action Program List	Environmental Protection Agency	09/30/2017	05/08/2018	07/20/2018
US	ABANDONED MINES	Abandoned Mines	Department of Interior	09/13/2022	09/14/2022	12/05/2022
US	AQUEOUS FOAM NRC	Aqueous Foam Related Incidents Listing	Environmental Protection Agency	02/23/2022	03/31/2022	11/08/2022
US	BRS	Biennial Reporting System	EPA/NTIS	12/31/2019	03/02/2022	03/25/2022
US	COAL ASH DOE	Steam-Electric Plant Operation Data	Department of Energy	12/31/2020	11/30/2021	02/22/2022
US	COAL ASH EPA	Coal Combustion Residues Surface Impoundments List	Environmental Protection Agency	01/12/2017	03/05/2019	11/11/2019
US	CONSENT	Superfund (CERCLA) Consent Decrees	Department of Justice, Consent Decree Library	09/30/2022	10/21/2022	01/10/2023
US	CORRACTS	Corrective Action Report	EPA	11/21/2022	11/21/2022	12/05/2022
US	DEBRIS REGION 9	Torres Martinez Reservation Illegal Dump Site Locations	EPA, Region 9	01/12/2009	05/07/2009	09/21/2009
US	DOCKET HWC	Hazardous Waste Compliance Docket Listing	Environmental Protection Agency	05/06/2021	05/21/2021	08/11/2021
US	DOD	Department of Defense Sites	USGS	06/07/2021	07/13/2021	03/09/2022
US	DOT OPS	Incident and Accident Data	Department of Transporation, Office of Pipeli	01/02/2020	01/28/2020	04/17/2020
US	Delisted NPL	National Priority List Deletions	EPA	10/27/2022	11/01/2022	11/15/2022
US	ECHO	Enforcement & Compliance History Information	Environmental Protection Agency	09/25/2022	09/30/2022	12/22/2022
US	EDR Hist Auto	EDR Exclusive Historical Auto Stations	EDR, Inc.			
US	EDR Hist Cleaner	EDR Exclusive Historical Cleaners	EDR, Inc.			
US	EDR MGP	EDR Proprietary Manufactured Gas Plants	EDR, Inc.			
US	EPA WATCH LIST	EPA WATCH LIST	Environmental Protection Agency	08/30/2013	03/21/2014	06/17/2014

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

St	Acronym	Full Name	Government Agency	Gov Date	Arvl. Date	Active Date
US	ERNS	Emergency Response Notification System	National Response Center, United States Coast	12/12/2022	12/14/2022	12/19/2022
US	FEDERAL FACILITY	Federal Facility Site Information listing	Environmental Protection Agency	08/25/2022	09/06/2022	12/05/2022
US	FEDLAND	Federal and Indian Lands	U.S. Geological Survey	04/02/2018	04/11/2018	11/06/2019
US	FEMA UST	Underground Storage Tank Listing	FEMA	10/14/2021	11/05/2021	02/01/2022
US	FINDS	Facility Index System/Facility Registry System	EPA	08/03/2022	08/25/2022	10/24/2022
US	FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fu	EPA/Office of Prevention, Pesticides and Toxi	04/09/2009	04/16/2009	05/11/2009
US	FTTS INSP	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fu	EPA	04/09/2009	04/16/2009	05/11/2009
US	FUDS	Formerly Used Defense Sites	U.S. Army Corps of Engineers	08/11/2022	08/11/2022	09/30/2022
US	FUELS PROGRAM	EPA Fuels Program Registered Listing	EPA	08/11/2022	08/11/2022	09/30/2022
US	FUSRAP	Formerly Utilized Sites Remedial Action Program	Department of Energy	07/26/2021	07/27/2021	10/22/2021
US	HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing	Environmental Protection Agency	10/19/2006	03/01/2007	04/10/2007
US	HIST FTTS INSP	FIFRA/TSCA Tracking System Inspection & Enforcement Case Lis	Environmental Protection Agency	10/19/2006	03/01/2007	04/10/2007
US	HMIRS	Hazardous Materials Information Reporting System	U.S. Department of Transportation	09/19/2022	09/19/2022	09/30/2022
US	ICIS	Integrated Compliance Information System	Environmental Protection Agency	11/18/2016	11/23/2016	02/10/2017
US	IHS OPEN DUMPS	Open Dumps on Indian Land	Department of Health & Human Serivces, Indian	04/01/2014	08/06/2014	01/29/2015
US	INDIAN LUST R1	Leaking Underground Storage Tanks on Indian Land	EPA Region 1	04/28/2021	06/11/2021	09/07/2021
US	INDIAN LUST R10	Leaking Underground Storage Tanks on Indian Land	EPA Region 10	04/20/2022	06/13/2022	08/16/2022
US	INDIAN LUST R4	Leaking Underground Storage Tanks on Indian Land	EPA Region 4	06/02/2022	06/13/2022	08/31/2022
US	INDIAN LUST R5	Leaking Underground Storage Tanks on Indian Land	EPA, Region 5	04/11/2022	06/13/2022	08/16/2022
US	INDIAN LUST R6	Leaking Underground Storage Tanks on Indian Land	EPA Region 6	04/28/2022	06/13/2022	08/16/2022
US	INDIAN LUST R7	Leaking Underground Storage Tanks on Indian Land	EPA Region 7	04/14/2022	06/13/2022	08/16/2022
US	INDIAN LUST R8	Leaking Underground Storage Tanks on Indian Land	EPA Region 8	04/20/2022	06/13/2022	08/16/2022
US	INDIAN LUST R9	Leaking Underground Storage Tanks on Indian Land	Environmental Protection Agency	04/08/2022	06/13/2022	08/16/2022
US	INDIAN ODI	Report on the Status of Open Dumps on Indian Lands	Environmental Protection Agency	12/31/1998	12/03/2007	01/24/2008
US	INDIAN RESERV	Indian Reservations	USGS	12/31/2014	07/14/2015	01/10/2017
US	INDIAN UST R1	Underground Storage Tanks on Indian Land	EPA, Region 1	04/07/2022	06/13/2022	08/16/2022
US	INDIAN UST R10	Underground Storage Tanks on Indian Land	EPA Region 10	04/20/2022	06/13/2022	08/16/2022
US	INDIAN UST R4	Underground Storage Tanks on Indian Land	EPA Region 4	06/02/2022	06/13/2022	08/31/2022
US	INDIAN UST R5	Underground Storage Tanks on Indian Land	EPA Region 5	04/11/2022	06/13/2022	08/16/2022
US	INDIAN UST R6	Underground Storage Tanks on Indian Land	EPA Region 6	04/28/2022	06/13/2022	08/16/2022
US	INDIAN UST R7	Underground Storage Tanks on Indian Land	EPA Region 7	04/14/2022	06/13/2022	08/16/2022
US	INDIAN UST R8	Underground Storage Tanks on Indian Land	EPA Region 8	04/20/2022	06/13/2022	08/16/2022
US	INDIAN UST R9	Underground Storage Tanks on Indian Land	EPA Region 9	04/08/2022	06/13/2022	08/16/2022
US	INDIAN VCP R1	Voluntary Cleanup Priority Listing	EPA, Region 1	07/27/2015	09/29/2015	02/18/2016
US	INDIAN VCP R7	Voluntary Cleanup Priority Lisitng	EPA, Region 7	03/20/2008	04/22/2008	05/19/2008
US	LEAD SMELTER 1	Lead Smelter Sites	Environmental Protection Agency	10/27/2022	11/01/2022	11/15/2022
US	LEAD SMELTER 2	Lead Smelter Sites	American Journal of Public Health	04/05/2001	10/27/2010	12/02/2010
US	LIENS 2	CERCLA Lien Information	Environmental Protection Agency	10/27/2022	11/01/2022	11/15/2022
US	LUCIS	Land Use Control Information System	Department of the Navy	11/02/2022	11/08/2022	01/10/2023
US	MINES MRDS	Mineral Resources Data System	USGS	04/06/2018	10/21/2019	10/24/2019
US	MINES VIOLATIONS	MSHA Violation Assessment Data	DOL, Mine Safety & Health Admi	11/29/2022	11/30/2022	12/22/2022
US	MLTS	Material Licensing Tracking System	Nuclear Regulatory Commission	10/26/2022	11/22/2022	12/05/2022
US	NPL	National Priority List	EPA	10/27/2022	11/01/2022	11/15/2022
US	NPL LIENS	Federal Superfund Liens	EPA	10/15/1991	02/02/1994	03/30/1994
US	ODI	Open Dump Inventory	Environmental Protection Agency	06/30/1985	08/09/2004	09/17/2004
US	PADS	PCB Activity Database System	EPA	01/20/2022	01/20/2022	03/25/2022
US	PCB TRANSFORMER	PCB Transformer Registration Database	Environmental Protection Agency	09/13/2019	11/06/2019	02/10/2020

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

St	Acronym	Full Name	Government Agency	Gov Date	Arvl. Date	Active Date
US	PCS	Permit Compliance System	EPA, Office of Water	07/14/2011	08/05/2011	09/29/2011
US	PCS ENF	Enforcement data	EPA	12/31/2014	02/05/2015	03/06/2015
US	PCS INACTIVE	Listing of Inactive PCS Permits	EPA	11/05/2014	01/06/2015	05/06/2015
US	PFAS ATSDR	PFAS Contamination Site Location Listing	Department of Health & Human Services	06/24/2020	03/17/2021	11/08/2022
US	PFAS ECHO	Facilities in Industries that May Be Handling PFAS Listing	Environmental Protection Agency	01/03/2022	03/31/2022	11/08/2022
US	PFAS ECHO FIRE TRAINING	Facilities in Industries that May Be Handling PFAS Listing	Environmental Protection Agency	08/22/2018	03/31/2022	11/08/2022
US	PFAS FEDERAL SITES	Federal Sites PFAS Information	Environmental Protection Agency	02/23/2022	03/31/2022	11/08/2022
US	PFAS NPDES	Clean Water Act Discharge Monitoring Information	Environmental Protection Agency	01/03/2022	03/31/2022	11/08/2022
US	PFAS NPL	Superfund Sites with PFAS Detections Information	Environmental Protection Agency	02/23/2022	07/08/2022	11/08/2022
US	PFAS PART 139 AIRPORT	All Certified Part 139 Airports PFAS Information Listing	Environmental Protection Agency	08/22/2018	10/26/2022	11/08/2022
US	PFAS RCRA MANIFEST	PFAS Transfers Identified In the RCRA Database Listing	Environmental Protection Agency	01/03/2022	03/31/2022	11/08/2022
US	PFAS TSCA	PFAS Manufacture and Imports Information	Environmental Protection Agency	01/03/2022	03/31/2022	11/08/2022
US	PFAS WQP	Ambient Environmental Sampling for PFAS	Environmental Protection Agency	01/03/2022	03/31/2022	11/08/2022
US	PRP	Potentially Responsible Parties	EPA	10/27/2022	11/01/2022	11/15/2022
US	Proposed NPL	Proposed National Priority List Sites	EPA	10/27/2022	11/01/2022	11/15/2022
US	RAATS	RCRA Administrative Action Tracking System	EPA	04/17/1995	07/03/1995	08/07/1995
US	RADINFO	Radiation Information Database	Environmental Protection Agency	07/01/2019	07/01/2019	09/23/2019
US	RCRA NonGen / NLR	RCRA - Non Generators / No Longer Regulated	Environmental Protection Agency	11/21/2022	11/21/2022	12/05/2022
US	RCRA-LQG	RCRA - Large Quantity Generators	Environmental Protection Agency	11/21/2022	11/21/2022	12/05/2022
US	RCRA-SQG	RCRA - Small Quantity Generators	Environmental Protection Agency	11/21/2022	11/21/2022	12/05/2022
US	RCRA-TSDF	RCRA - Treatment, Storage and Disposal	Environmental Protection Agency	11/21/2022	11/21/2022	12/05/2022
US	RCRA-VSQG	RCRA - Very Small Quantity Generators (Formerly Conditionall	Environmental Protection Agency	11/21/2022	11/21/2022	12/05/2022
US	RMP	Risk Management Plans	Environmental Protection Agency	04/27/2022	05/04/2022	05/10/2022
US	ROD	Records Of Decision	EPA	10/27/2022	11/01/2022	11/15/2022
US	SCRD DRYCLEANERS	State Coalition for Remediation of Drycleaners Listing	Environmental Protection Agency	01/01/2017	02/03/2017	04/07/2017
US	SEMS	Superfund Enterprise Management System	EPA	10/27/2022	11/01/2022	11/15/2022
US	SEMS-ARCHIVE	Superfund Enterprise Management System Archive	EPA	10/27/2022	11/01/2022	11/15/2022
US	SSTS	Section 7 Tracking Systems	EPA	10/17/2022	10/18/2022	01/10/2023
US	TRIS	Toxic Chemical Release Inventory System	EPA	12/31/2018	08/14/2020	11/04/2020
US	TSCA	Toxic Substances Control Act	EPA	12/31/2016	06/17/2020	09/10/2020
US	UMTRA	Uranium Mill Tailings Sites	Department of Energy	08/30/2019	11/15/2019	01/28/2020
US	US AIRS (AFS)	Aerometric Information Retrieval System Facility Subsystem (	EPA	10/12/2016	10/26/2016	02/03/2017
US	US AIRS MINOR	Air Facility System Data	EPA	10/12/2016	10/26/2016	02/03/2017
US	US BROWNFIELDS	A Listing of Brownfields Sites	Environmental Protection Agency	02/23/2022	03/10/2022	03/10/2022
US	US CDL	Clandestine Drug Labs	Drug Enforcement Administration	07/29/2022	08/18/2022	10/24/2022
US	US ENG CONTROLS	Engineering Controls Sites List	Environmental Protection Agency	08/15/2022	08/17/2022	10/24/2022
US	US FIN ASSUR	Financial Assurance Information	Environmental Protection Agency	09/19/2022	09/20/2022	12/22/2022
US	US HIST CDL	National Clandestine Laboratory Register	Drug Enforcement Administration	07/29/2022	08/18/2022	10/24/2022
US	US INST CONTROLS	Institutional Controls Sites List	Environmental Protection Agency	08/15/2022	08/17/2022	10/24/2022
US	US MINES	Mines Master Index File	Department of Labor, Mine Safety and Health A	08/03/2022	08/17/2022	08/31/2022
US	US MINES 2	Ferrous and Nonferrous Metal Mines Database Listing	USGS	05/06/2020	05/27/2020	08/13/2020
US	US MINES 3	Active Mines & Mineral Plants Database Listing	USGS	04/14/2011	06/08/2011	09/13/2011
US	UXO	Unexploded Ordnance Sites	Department of Defense	11/09/2021	10/20/2022	01/10/2023

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

St	Acronym	Full Name	Government Agency	Gov Date	Arvl. Date	Active Date
CT	CT MANIFEST	Hazardous Waste Manifest Data	Department of Energy & Environmental Protecti	08/08/2022	08/08/2022	10/21/2022
NY	NY MANIFEST	Facility and Manifest Data	Department of Environmental Conservation	01/01/2019	10/29/2021	01/19/2022
PA	PA MANIFEST	Manifest Information	Department of Environmental Protection	06/30/2018	07/19/2019	09/10/2019
RI	RI MANIFEST	Manifest information	Department of Environmental Management	12/31/2020	11/30/2021	02/18/2022
VT	VT MANIFEST	Hazardous Waste Manifest Data	Department of Environmental Conservation	10/28/2019	10/29/2019	01/09/2020
WI	WI MANIFEST	Manifest Information	Department of Natural Resources	05/31/2018	06/19/2019	09/03/2019
US	AHA Hospitals	Sensitive Receptor: AHA Hospitals	American Hospital Association, Inc.			
US	Medical Centers	Sensitive Receptor: Medical Centers	Centers for Medicare & Medicaid Services			
US	Nursing Homes	Sensitive Receptor: Nursing Homes	National Institutes of Health			
US	Public Schools	Sensitive Receptor: Public Schools	National Center for Education Statistics			
US	Private Schools	Sensitive Receptor: Private Schools	National Center for Education Statistics			
TN	Daycare Centers	Sensitive Receptor: Child Care Listing	Department Of Human Services			
US	Flood Zones	100-year and 500-year flood zones	Emergency Management Agency (FEMA)			
US	NWI	National Wetlands Inventory	U.S. Fish and Wildlife Service			
TN	State Wetlands	Wetland Inventory	Department of Environment & Conservation			
US	Topographic Map		U.S. Geological Survey			
US	Oil/Gas Pipelines		Endeavor Business Media			
US	Electric Power Transmission Line Data		Endeavor Business Media			

STREET AND ADDRESS INFORMATION

GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

BATEY FARM SITE
1008 JOHN LOCKE LANE
MURFREESBORO, TN 37129

TARGET PROPERTY COORDINATES

Latitude (North):	35.893351 - 35ˆ 53’ 36.06’’
Longitude (West):	86.50046 - 86ˆ 30’ 1.66’’
Universal Tranverse Mercator:	Zone 16
UTM X (Meters):	545084.1
UTM Y (Meters):	3972034.8
Elevation:	606 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	13049714 SMYRNA, TN
Version Date:	2019
Northeast Map:	13049724 WALTERHILL, TN
Version Date:	2019
Southeast Map:	13049704 MURFREESBORO, TN
Version Date:	2019
Southwest Map:	13048576 ROCKVALE, TN
Version Date:	2019

EDR’s GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

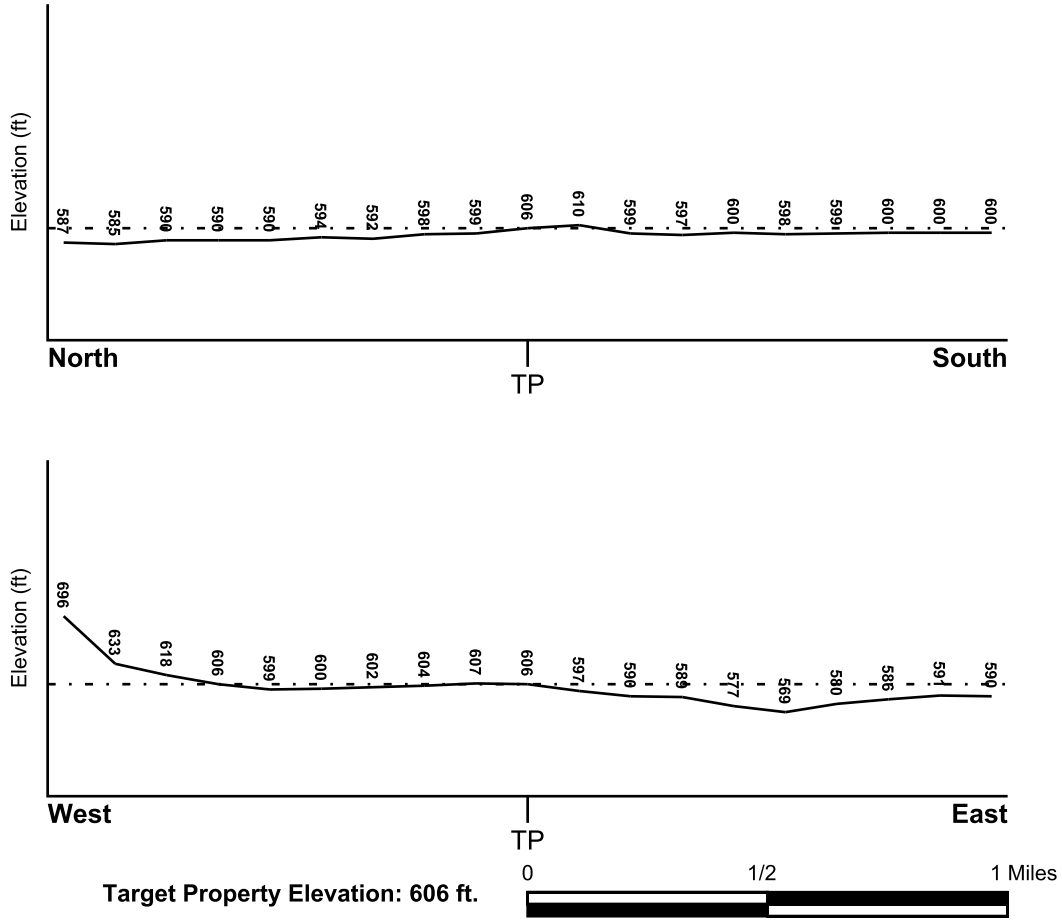
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General East

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Flood Plain Panel at Target Property	FEMA Source Type
47149C0120E	FEMA Q3 Flood data

Additional Panels in search area:	FEMA Source Type
47149C0140H	FEMA FIRM Flood data
47149C0117J	FEMA FIRM Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
SMYRNA	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

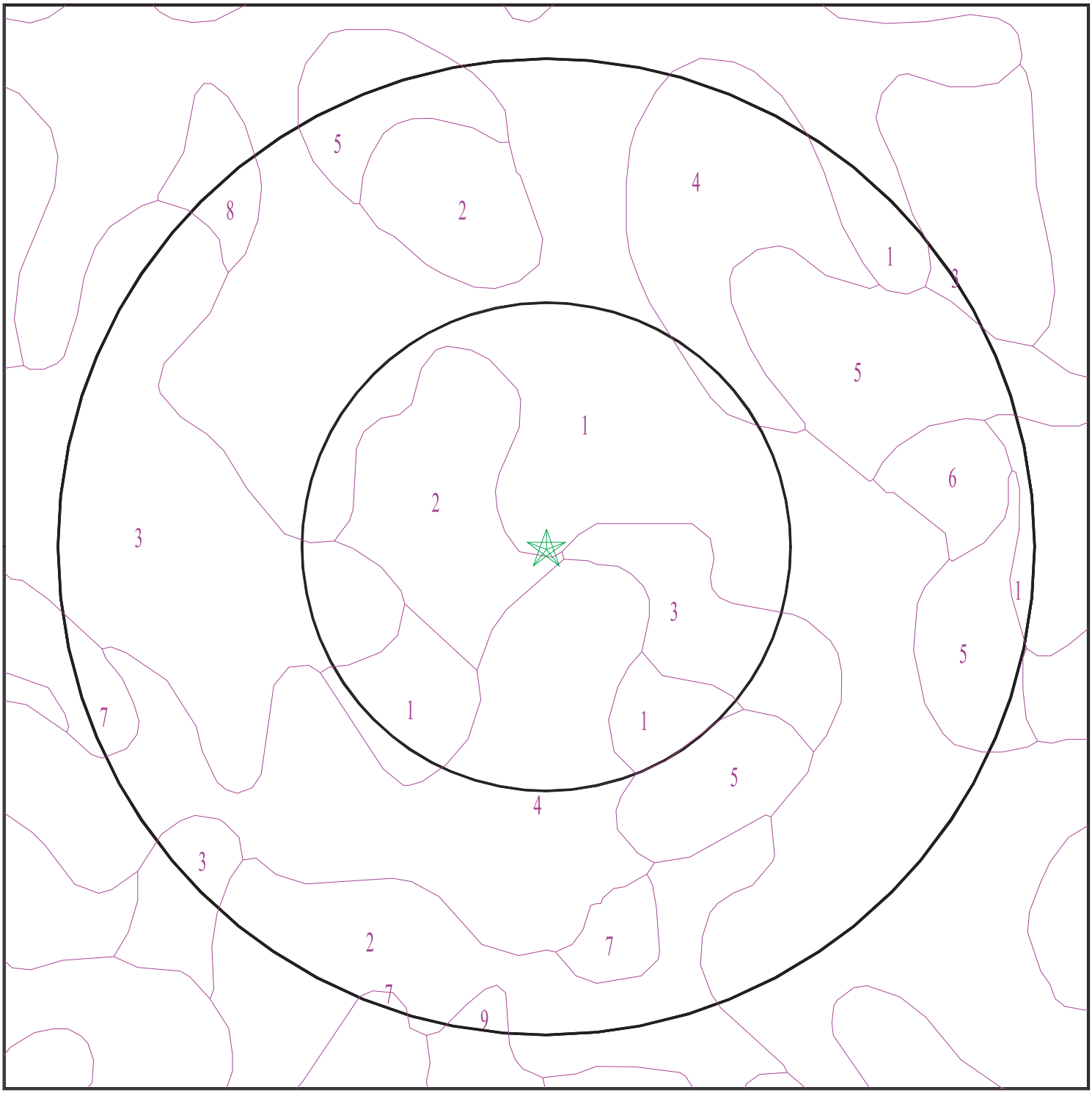
Era:	Paleozoic
System:	Ordovician
Series:	Middle Ordovician (Mohawkian)
Code:	O2 *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratified Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 7225785.2s



SITE NAME:	Batey Farm Site	CLIENT:	Civil & Env Consultants
ADDRESS:	1008 John Locke Lane Murfreesboro TN 37129	CONTACT:	Tori Gallagher
		INQUIRY #:	7225785.2s
LAT/LONG:	35.893351 / 86.50046	DATE:	January 17, 2023 10:28 am

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: HARPETH

Soil Surface Texture: silt loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	11 inches	silt loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6.5 Min: 5.1
2	11 inches	37 inches	silty clay loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6.5 Min: 5.1
3	37 inches	77 inches	silty clay loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6.5 Min: 5.1

Soil Map ID: 2

Soil Component Name: BRADYVILLE

Soil Surface Texture: silt loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 127 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	5 inches	silt loam	Not reported	Not reported	Max: 0.42 Min: 0	Max: Min:
2	5 inches	20 inches	silty clay loam	Not reported	Not reported	Max: 0.42 Min: 0	Max: Min:
3	20 inches	35 inches	clay	Not reported	Not reported	Max: 0.42 Min: 0	Max: Min:
4	35 inches	48 inches	clay	Not reported	Not reported	Max: 0.42 Min: 0	Max: Min:
5	48 inches	51 inches		Not reported	Not reported	Max: 0.42 Min: 0	Max: Min:

Soil Map ID: 3

Soil Component Name: LOMOND

Soil Surface Texture: silt loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	9 inches	silt loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6.5 Min: 5.1
2	9 inches	20 inches	silty clay loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6.5 Min: 5.1
3	20 inches	48 inches	silty clay loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6.5 Min: 5.1
4	48 inches	59 inches	silty clay loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6.5 Min: 5.1
5	59 inches	70 inches	clay	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6.5 Min: 5.1

Soil Map ID: 4

Soil Component Name: CUMBERLAND

Soil Surface Texture: silt loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	silt loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6.5 Min: 5.1
2	7 inches	14 inches	silty clay loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6.5 Min: 5.1
3	14 inches	40 inches	clay	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6.5 Min: 5.1

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
4	40 inches	64 inches	clay	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6.5 Min: 5.1

Soil Map ID: 5

Soil Component Name: BRADYVILLE

Soil Surface Texture: silt loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 127 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	5 inches	silt loam	Not reported	Not reported	Max: 0.42 Min: 0	Max: Min:
2	5 inches	20 inches	silty clay loam	Not reported	Not reported	Max: 0.42 Min: 0	Max: Min:
3	20 inches	35 inches	clay	Not reported	Not reported	Max: 0.42 Min: 0	Max: Min:
4	35 inches	48 inches	clay	Not reported	Not reported	Max: 0.42 Min: 0	Max: Min:
5	48 inches	51 inches		Not reported	Not reported	Max: 0.42 Min: 0	Max: Min:

Soil Map ID: 6

Soil Component Name: ROCK OUTCROP

Soil Surface Texture: silt loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 19 inches

Depth to Watertable Min: > 0 inches

No Layer Information available.

Soil Map ID: 7

Soil Component Name: ARRINGTON

Soil Surface Texture: silt loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Low

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 153 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	27 inches	silt loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 7.8 Min: 6.1

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	27 inches	57 inches	silt loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 7.8 Min: 6.1
3	57 inches	70 inches	silty clay loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 7.8 Min: 6.1

Soil Map ID: 8

Soil Component Name: CUMBERLAND

Soil Surface Texture: silt loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches	silt loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6.5 Min: 5.1
2	7 inches	14 inches	silty clay loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6.5 Min: 5.1
3	14 inches	40 inches	clay	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6.5 Min: 5.1
4	40 inches	64 inches	clay	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6.5 Min: 5.1

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Map ID: 9

Soil Component Name: HARPETH

Soil Surface Texture: silt loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	11 inches	silt loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6.5 Min: 5.1
2	11 inches	37 inches	silty clay loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6.5 Min: 5.1
3	37 inches	77 inches	silty clay loam	Not reported	Not reported	Max: 14.11 Min: 4.23	Max: 6.5 Min: 5.1

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

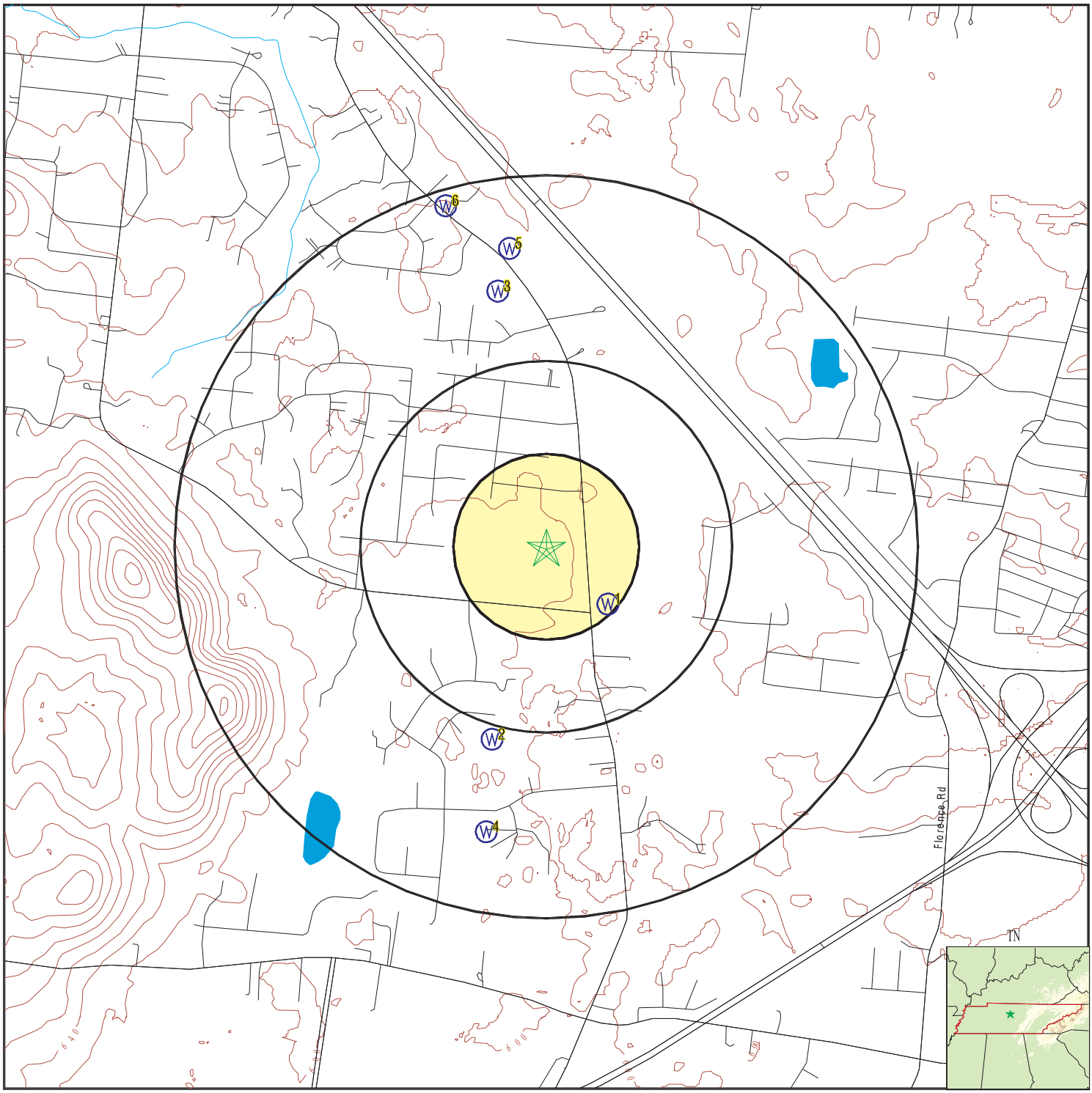
MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	TN8000000143850	1/8 - 1/4 Mile SE
2	TN8000000041565	1/2 - 1 Mile SSW
3	TN8000000041546	1/2 - 1 Mile North
4	TN8000000041557	1/2 - 1 Mile SSW
5	TN8000000041548	1/2 - 1 Mile North
6	TN8000000041545	1/2 - 1 Mile NNW

PHYSICAL SETTING SOURCE MAP - 7225785.2s



0 1/4 1/2 1 Miles

- County Boundary
- Major Roads
- Contour Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location
- Oil, gas or related wells

SITE NAME:	Batey Farm Site	CLIENT:	Civil & Env Consultants
ADDRESS:	1008 John Locke Lane Murfreesboro TN 37129	CONTACT:	Tori Gallagher
		INQUIRY #:	7225785.2s
LAT/LONG:	35.893351 / 86.50046	DATE:	January 17, 2023 10:28 am

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation		Database	EDR ID Number
1 **SE** **1/8 - 1/4 Mile** **Lower**	Click here for full text details	**TN WELLS**	**TN8000000143850**
2 **SSW** **1/2 - 1 Mile** **Higher**	Click here for full text details	**TN WELLS**	**TN8000000041565**
3 **North** **1/2 - 1 Mile** **Lower**	Click here for full text details	**TN WELLS**	**TN8000000041546**
4 **SSW** **1/2 - 1 Mile** **Higher**	Click here for full text details	**TN WELLS**	**TN8000000041557**
5 **North** **1/2 - 1 Mile** **Lower**	Click here for full text details	**TN WELLS**	**TN8000000041548**
6 **NNW** **1/2 - 1 Mile** **Lower**	Click here for full text details	**TN WELLS**	**TN8000000041545**

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

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

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 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%

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005, 2010 and 2015 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Environment & Conservation
Telephone: 651-532-0052

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

County Water Wells in Tennessee
Source: Department of Environment and Conservation
Telephone: 615-532-0160
Water well locations for the entire state.

Oil and Gas Well Database
Department of Environment & Conservation
Telephone: 615-687-7109
A listing of locations of oil and gas well permits issued across the state.

OTHER STATE DATABASE INFORMATION

RADON

State Database: TN Radon
Source: Department of Environment & Conservation
Telephone: 615-299-9725
Radon Test Results

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary faultlines, prepared in 1975 by the United State Geological Survey

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STREET AND ADDRESS INFORMATION

APPENDIX E
FILE REVIEW AND INTERVIEW DOCUMENTATION

From: Larry Farley <lfarley@rutherfordcountytn.gov>
Sent: Tuesday, January 24, 2023 3:12 PM
To: Gallagher, Tori
Subject: RE: Freedom of Information Act (FOIA) Request

I have search all our response documents and I have no record of any responses to 5104 Baker Road.

Larry Farley
Fire Rescue Chief
Rutherford County Fire-Rescue Department
2785 Barfield Road
Murfreesboro, TN 37128
Office 615-867-4626

From: Gallagher, Tori <tgallagher@cecinc.com>
Sent: Monday, January 23, 2023 4:30 PM
To: Larry Farley <lfarley@rutherfordcountytn.gov>
Subject: Freedom of Information Act (FOIA) Request

EXTERNAL EMAIL WARNING	Please do not open links, nor attachments, without verifying their authenticity.

Good Afternoon,

Our firm is conducting a Phase I Environmental Site Assessment of a property located north of the Baker Road and west of Blackman Road at 5104 Baker Road in Murfreesboro, TN 37129. This request is for information in Department records of incident responses to the property involving spills or releases of hazardous materials or petroleum products. Please search your records and let me know if any such incident responses are on record.

Thank you,
Tori

Tori Gallagher | *Assistant Project Manager*

Civil & Environmental Consultants, Inc.
117 Seaboard Lane, Suite E-100, Franklin, TN 37067
office 615.333.7797 **mobile** 931.808.9199
www.cecinc.com

WE OWN IT. Senior Leadership · Integrated Services
Personal Business Relationships

APPENDIX F
EDR AERIAL PHOTOGRAPHS

Batey Farm Site

1008 John Locke Lane

Murfreesboro, TN 37129

Inquiry Number: 7225785.5

January 17, 2023

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

01/17/23

Site Name:

Batey Farm Site
1008 John Locke Lane
Murfreesboro, TN 37129
EDR Inquiry # 7225785.5

Client Name:

Civil & Env Consultants
700 Cherrington Parkway
Moon Township, PA 15108
Contact: Tori Gallagher

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

Year	*Scale*	*Details*	*Source*
2018	1"=500'	Flight Year: 2018	USDA/NAIP
2014	1"=500'	Flight Year: 2014	USDA/NAIP
2010	1"=500'	Flight Year: 2010	USDA/NAIP
2007	1"=500'	Flight Year: 2007	USDA/NAIP
1997	1"=500'	Acquisition Date: January 01, 1997	USGS/DOQQ
1987	1"=500'	Flight Date: June 05, 1987	USDA
1985	1"=500'	Flight Date: April 25, 1985	USDA
1975	1"=500'	Flight Date: March 01, 1975	USGS
1953	1"=500'	Flight Date: October 17, 1953	USGS
1951	1"=500'	Flight Date: March 22, 1951	USGS

When delivered electronically by EDR, the aerial photo images included with this report are for ONE TIME USE ONLY. Further reproduction of these aerial photo images is prohibited without permission from EDR. For more information contact your EDR Account Executive.


INQUIRY #: 7225785.5
YEAR: 2018
= 500'
N
EDR


INQUIRY #: 7225785.5
YEAR: 2014
= 500'
N
EDR


INQUIRY #: 7225785.5
YEAR: 2010
= 500'
N
EDR


INQUIRY #: 7225785.5
YEAR: 2007
= 500'
N
EDR


INQUIRY #: 7225785.5
YEAR: 1997
= 500'
N
EDR


INQUIRY #: 7225785.5
YEAR: 1987
= 500'
N
EDR


INQUIRY #: 7225785.5
YEAR: 1985
= 500'
N
EDR


INQUIRY #: 7225785.5
YEAR: 1975
= 500'
N
EDR


INQUIRY #: 7225785.5
YEAR: 1953
= 500'
N
EDR


INQUIRY #: 7225785.5
YEAR: 1951
= 500'
N
EDR

APPENDIX G
EDR HISTORIC TOPOGRAPHIC MAPS

Batey Farm Site
1008 John Locke Lane
Murfreesboro, TN 37129

Inquiry Number: 7225785.4
January 17, 2023

EDR Historical Topo Map Report

with QuadMatch™

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

EDR Historical Topo Map Report

01/17/23

Site Name:	Client Name:
Batey Farm Site	Civil & Env Consultants
1008 John Locke Lane	333 Baldwin Road
Murfreesboro, TN 37129	Pittsburgh, PA 15205
EDR Inquiry # 7225785.4	Contact: Tori Gallagher

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Civil & Env Consultants were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:		*Coordinates:*	
P.O.#	328-093	**Latitude:**	35.893351 35° 53' 36" North
Project:	Batey Farm Site	**Longitude:**	-86.50046 -86° 30' 2" West
		UTM Zone:	Zone 16 North
		UTM X Meters:	545083.07
		UTM Y Meters:	3972234.85
		Elevation:	606.18' above sea level

Maps Provided:

2019	1916
2016	
2013	
1998	
1981, 1983, 1984	
1975, 1979	
1957	
1950	

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2019 Source Sheets

Smyrna
2019
7.5-minute, 24000

Walterhill
2019
7.5-minute, 24000

Rockvale
2019
7.5-minute, 24000

Murfreesboro
2019
7.5-minute, 24000

2016 Source Sheets

Smyrna
2016
7.5-minute, 24000

Walterhill
2016
7.5-minute, 24000

Rockvale
2016
7.5-minute, 24000

Murfreesboro
2016
7.5-minute, 24000

2013 Source Sheets

Smyrna
2013
7.5-minute, 24000

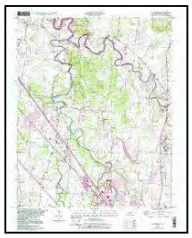
Walterhill
2013
7.5-minute, 24000

Rockvale
2013
7.5-minute, 24000

Murfreesboro
2013
7.5-minute, 24000

1998 Source Sheets

Smyrna
1998
7.5-minute, 24000
Aerial Photo Revised 1980

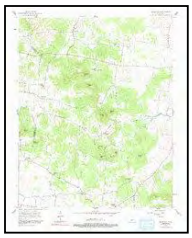


Walterhill
1998
7.5-minute, 24000
Aerial Photo Revised 1981

Topo Sheet Key

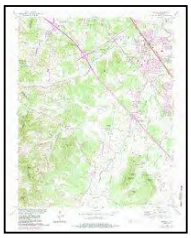
This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1981, 1983, 1984 Source Sheets



Rockvale
1981
7.5-minute, 24000
Aerial Photo Revised 1951

Murfreesboro
1983
7.5-minute, 24000
Aerial Photo Revised 1980



Smyrna
1983
7.5-minute, 24000
Aerial Photo Revised 1980

Walterhill
1984
7.5-minute, 24000
Aerial Photo Revised 1981

1975, 1979 Source Sheets

Walterhill
1975
7.5-minute, 24000
Aerial Photo Revised 1975

Murfreesboro
1975
7.5-minute, 24000
Aerial Photo Revised 1975

Smyrna
1979
7.5-minute, 24000
Aerial Photo Revised 1976

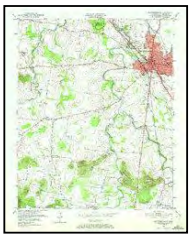
1957 Source Sheets

Smyrna
1957
7.5-minute, 24000
Aerial Photo Revised 1951

Rockvale
1957
7.5-minute, 24000
Aerial Photo Revised 1951

1950 Source Sheets

Walterhill
1950
7.5-minute, 24000
Aerial Photo Revised 1944



Murfreesboro
1950
7.5-minute, 24000
Aerial Photo Revised 1950

Topo Sheet Key

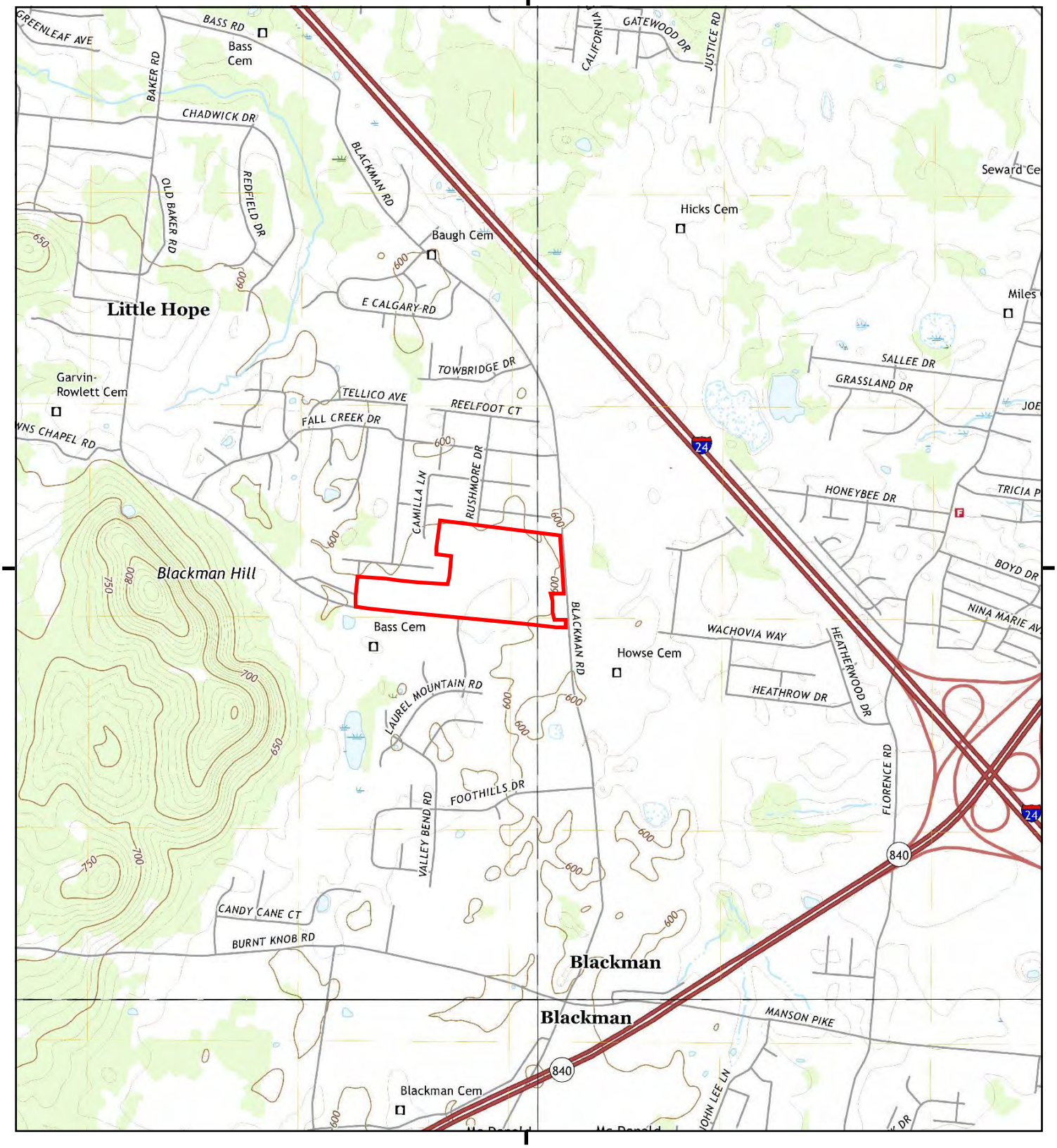
This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1916 Source Sheets

Murfreesboro
1916
15-minute, 62500

Historical Topo Map

2019



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

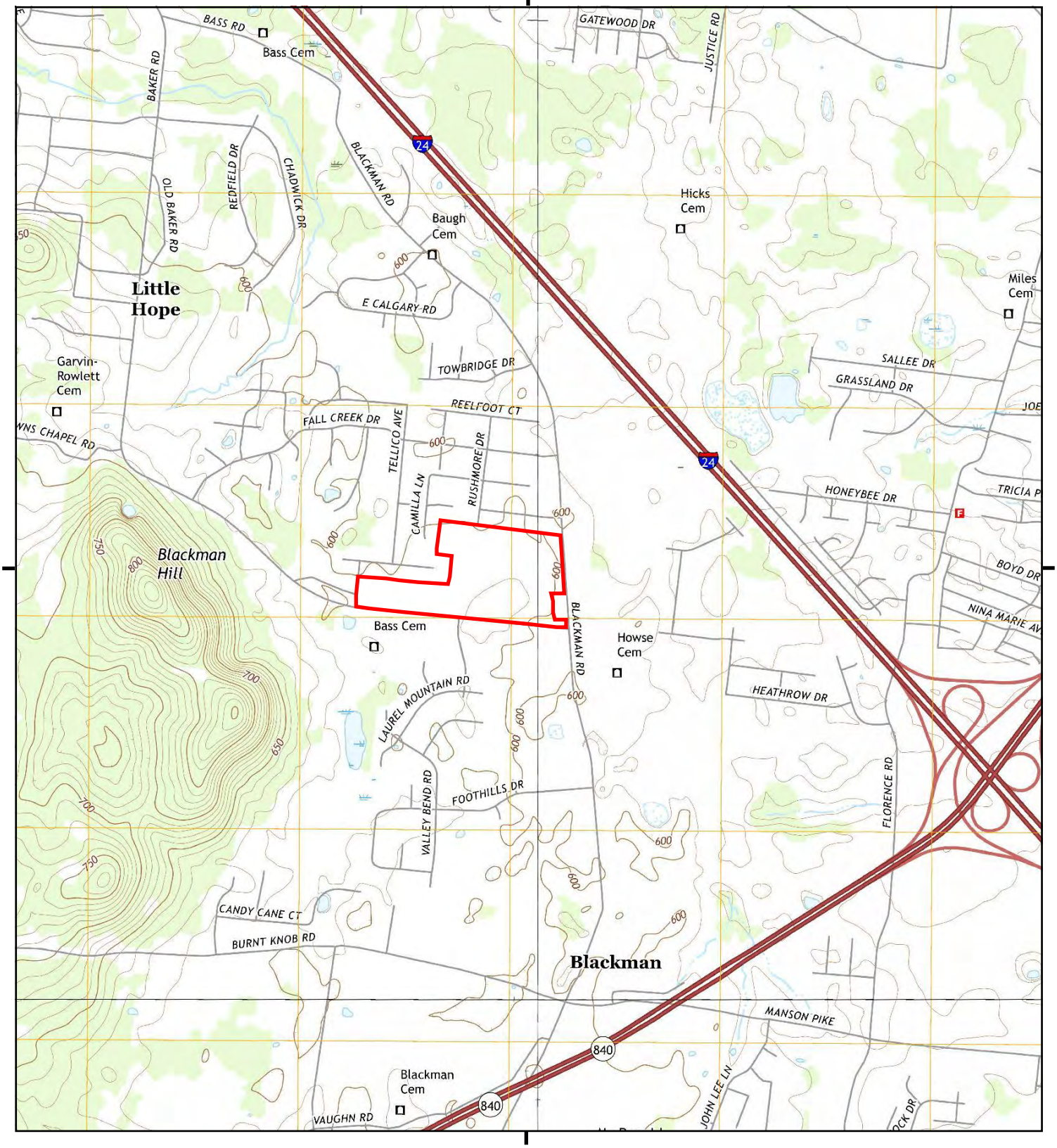
TP, Smyrna, 2019, 7.5-minute
NE, Walterhill, 2019, 7.5-minute
SE, Murfreesboro, 2019, 7.5-minute
SW, Rockvale, 2019, 7.5-minute

SITE NAME: Batey Farm Site
ADDRESS: 1008 John Locke Lane
Murfreesboro, TN 37129
CLIENT: Civil & Env Consultants

N

Historical Topo Map

2016



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

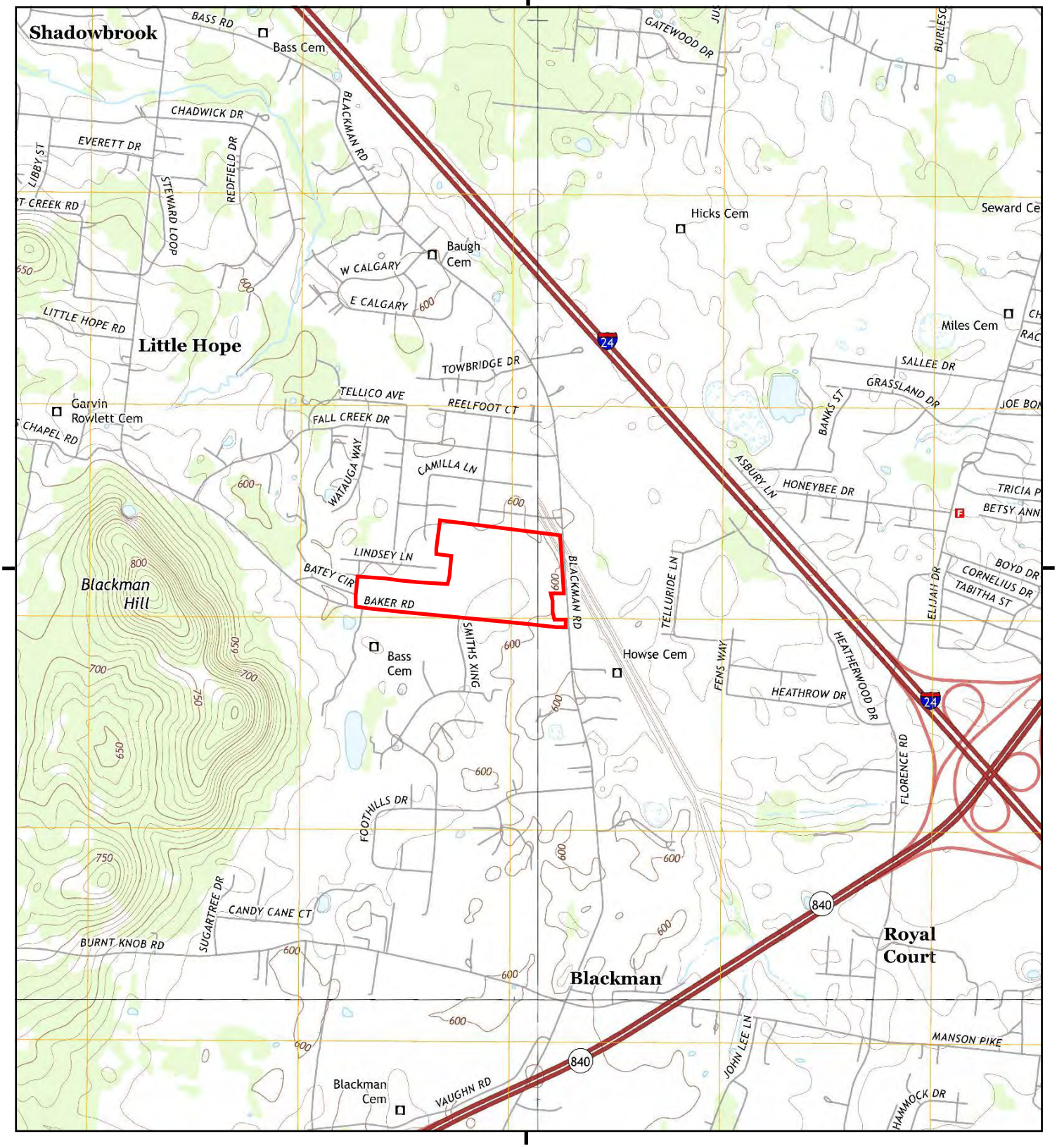
TP, Smyrna, 2016, 7.5-minute
NE, Walterhill, 2016, 7.5-minute
SE, Murfreesboro, 2016, 7.5-minute
SW, Rockvale, 2016, 7.5-minute

SITE NAME: Batey Farm Site
ADDRESS: 1008 John Locke Lane
Murfreesboro, TN 37129
CLIENT: Civil & Env Consultants

N

Historical Topo Map

2013



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

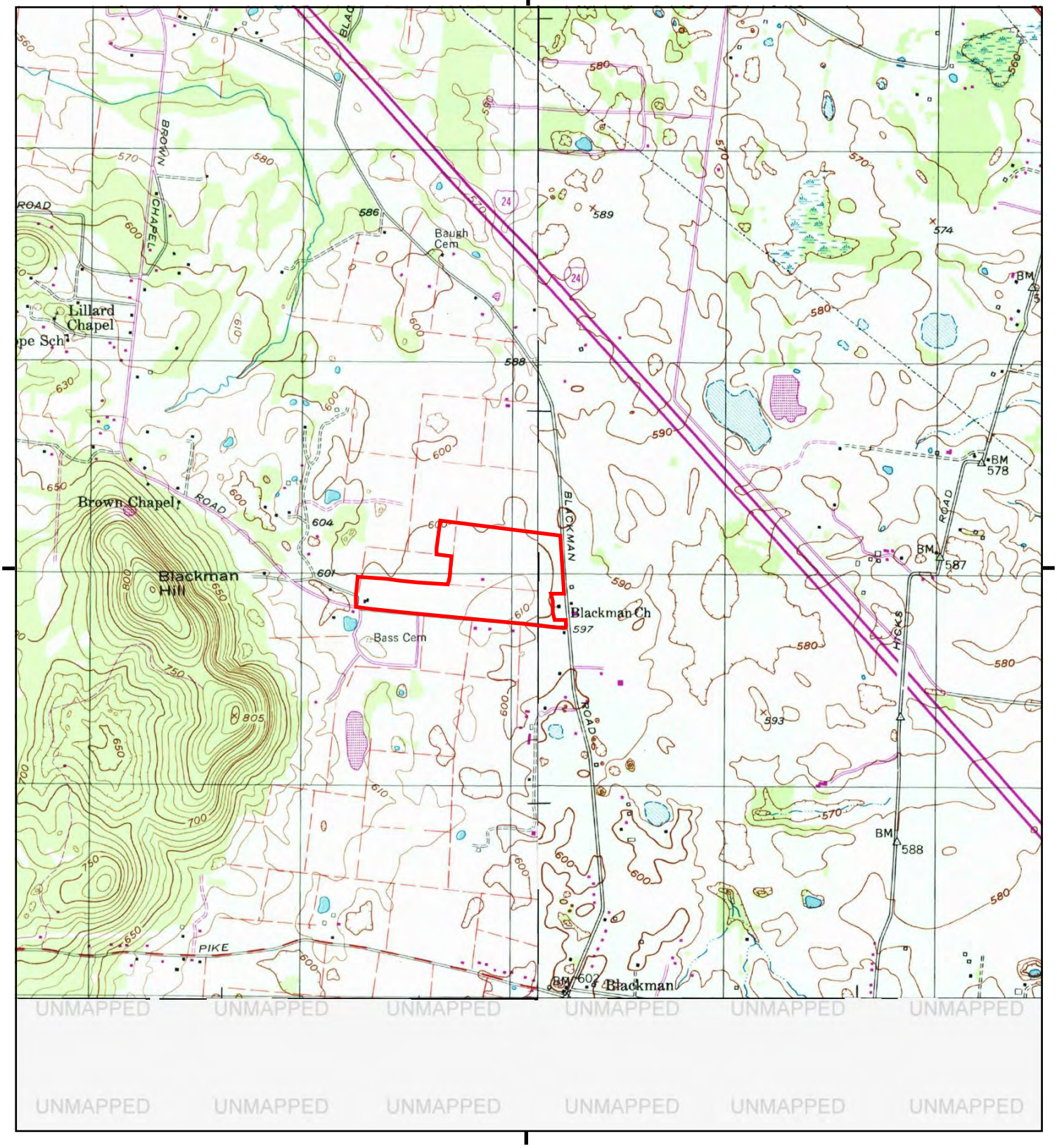
TP, Smyrna, 2013, 7.5-minute
NE, Walterhill, 2013, 7.5-minute
SE, Murfreesboro, 2013, 7.5-minute
SW, Rockvale, 2013, 7.5-minute

SITE NAME: Batey Farm Site
ADDRESS: 1008 John Locke Lane
Murfreesboro, TN 37129
CLIENT: Civil & Env Consultants

N

Historical Topo Map

1998



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

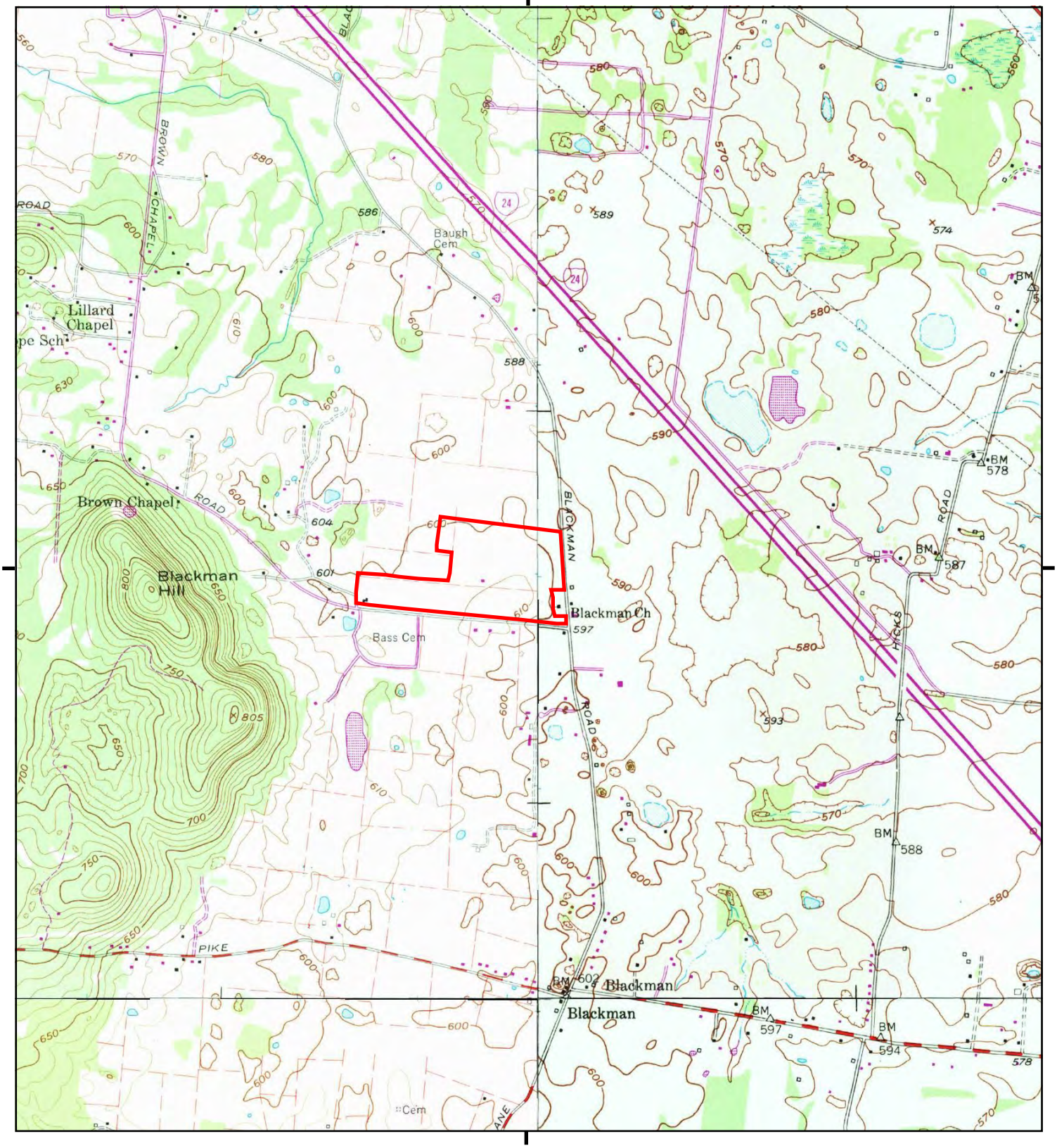
TP, Smyrna, 1998, 7.5-minute
NE, Walterhill, 1998, 7.5-minute

SITE NAME: Batey Farm Site
ADDRESS: 1008 John Locke Lane
Murfreesboro, TN 37129
CLIENT: Civil & Env Consultants

N

Historical Topo Map

1981, 1983, 1984



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

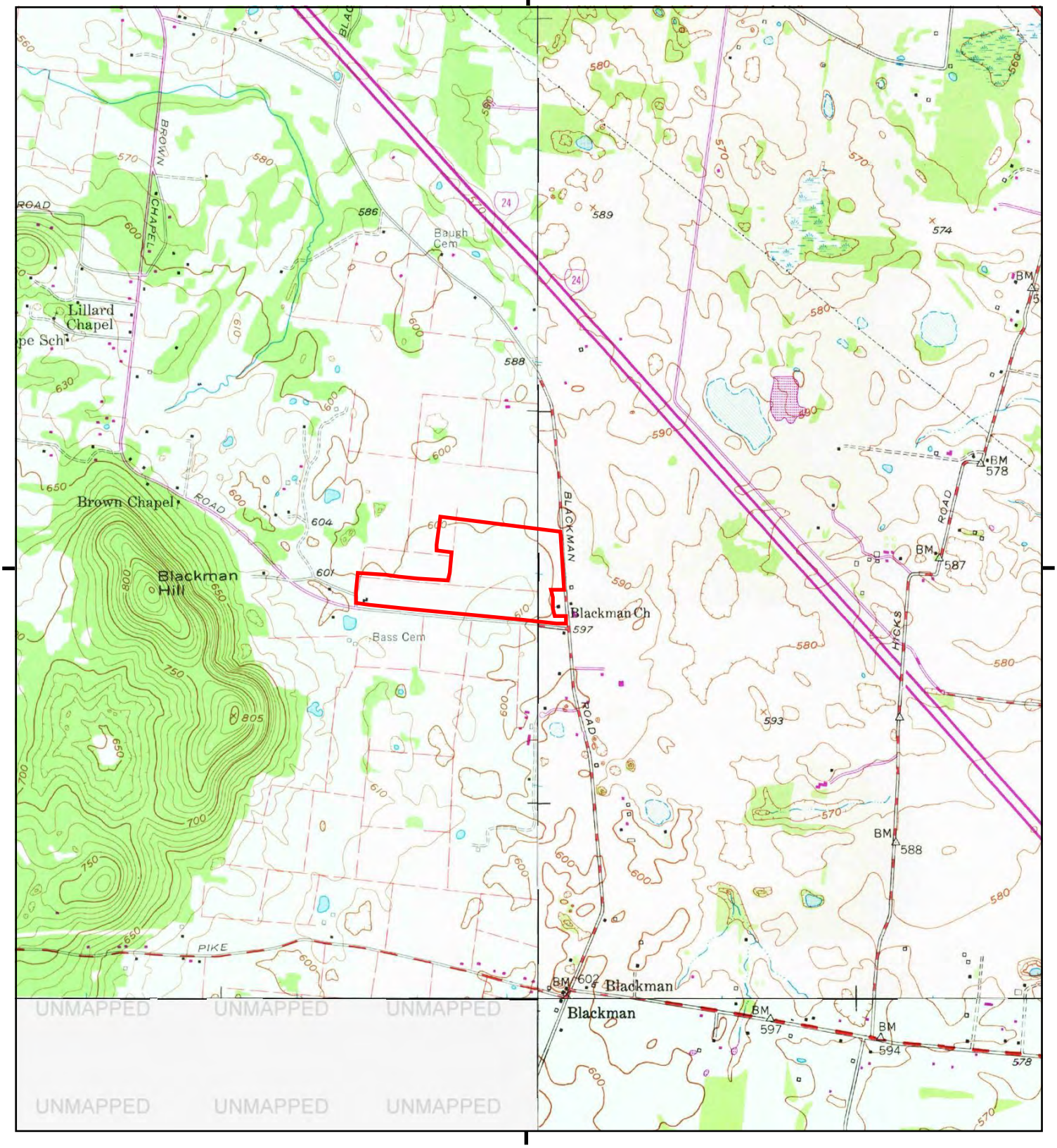
TP, Smyrna, 1983, 7.5-minute
NE, Walterhill, 1984, 7.5-minute
SE, Murfreesboro, 1983, 7.5-minute
SW, Rockvale, 1981, 7.5-minute

SITE NAME: Batey Farm Site
ADDRESS: 1008 John Locke Lane
Murfreesboro, TN 37129
CLIENT: Civil & Env Consultants

N

Historical Topo Map

1975, 1979



This report includes information from the following map sheet(s).

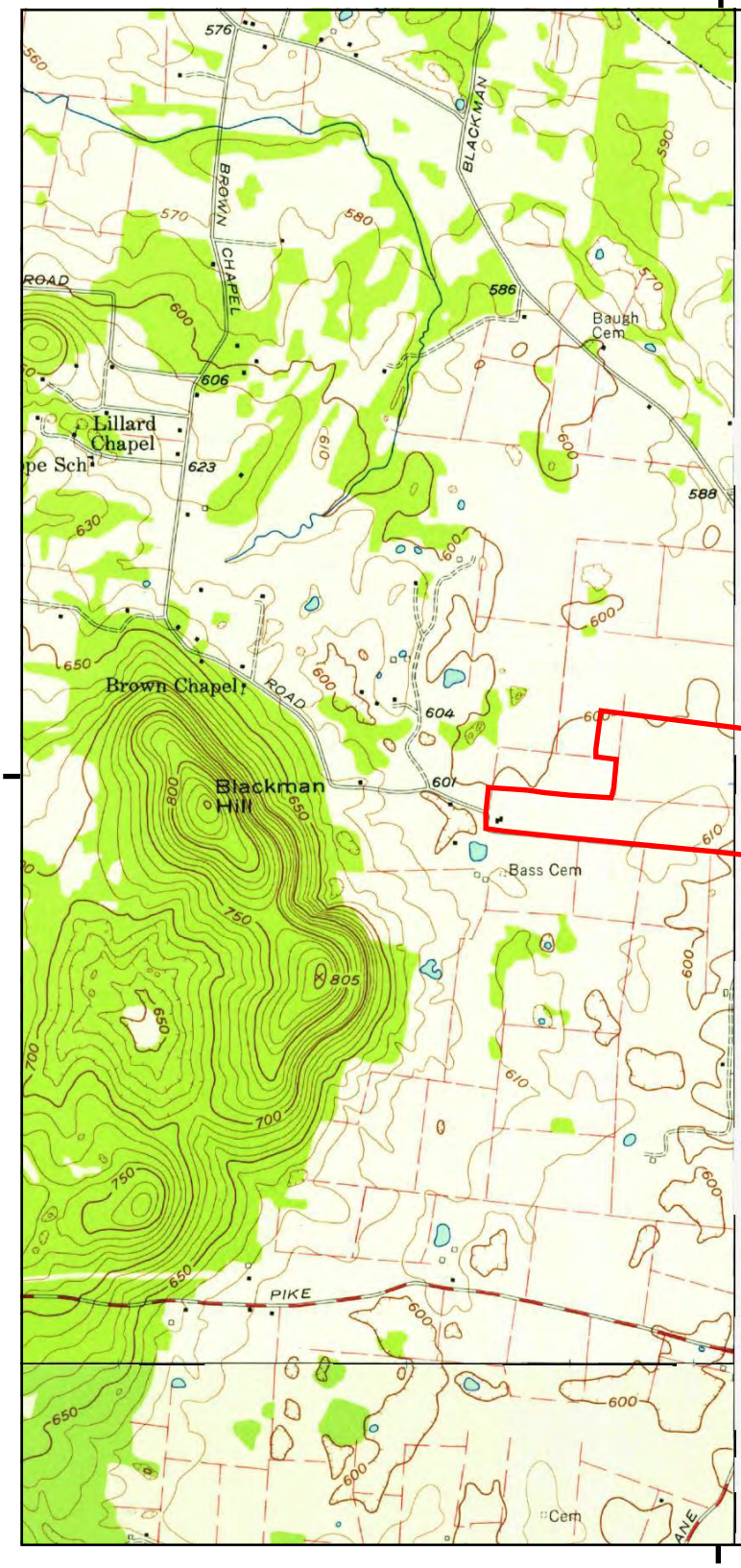
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Smyrna, 1979, 7.5-minute
NE, Walterhill, 1975, 7.5-minute
SE, Murfreesboro, 1975, 7.5-minute

SITE NAME: Batey Farm Site
ADDRESS: 1008 John Locke Lane
Murfreesboro, TN 37129
CLIENT: Civil & Env Consultants

N



This report includes information from the following map sheet(s).

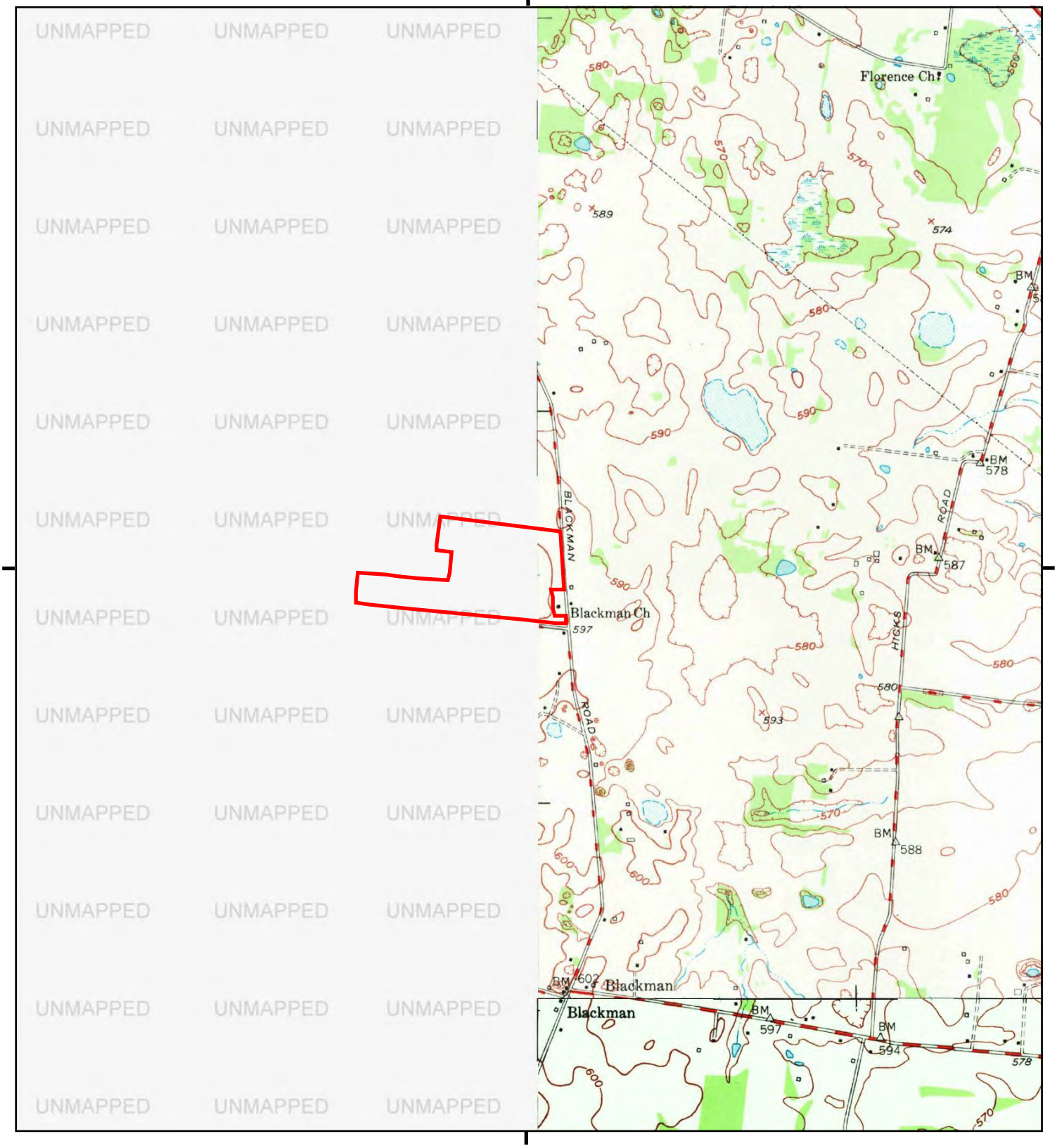
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Smyrna, 1957, 7.5-minute
SW, Rockvale, 1957, 7.5-minute

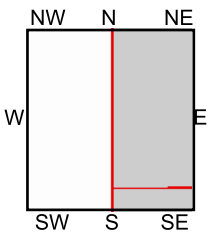
SITE NAME: Batey Farm Site
ADDRESS: 1008 John Locke Lane
Murfreesboro, TN 37129
CLIENT: Civil & Env Consultants

N



This report includes information from the following map sheet(s).

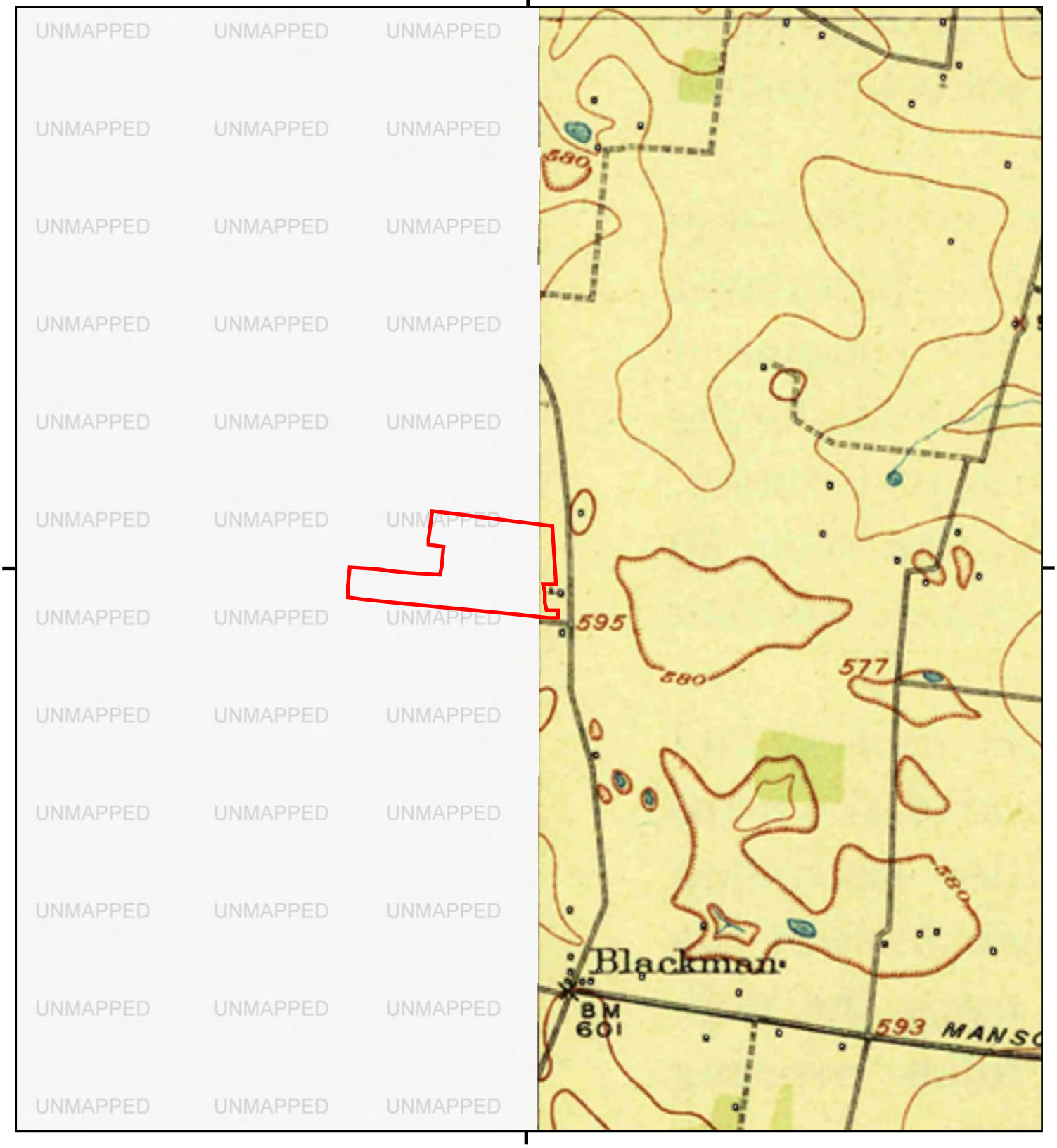
0 Miles 0.25 0.5 1 1.5



NE, Walterhill, 1950, 7.5-minute
SE, Murfreesboro, 1950, 7.5-minute

SITE NAME: Batey Farm Site
ADDRESS: 1008 John Locke Lane
Murfreesboro, TN 37129
CLIENT: Civil & Env Consultants

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

E, Murfreesboro, 1916, 15-minute

SITE NAME: Batey Farm Site
ADDRESS: 1008 John Locke Lane
Murfreesboro, TN 37129
CLIENT: Civil & Env Consultants

N

APPENDIX H
EDR SANBORN® MAP REPORT

Batey Farm Site
1008 John Locke Lane
Murfreesboro, TN 37129

Inquiry Number: 7225785.3
January 17, 2023

Certified Sanborn® Map Report

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

Certified Sanborn® Map Report

01/17/23

Site Name:

Batey Farm Site
1008 John Locke Lane
Murfreesboro, TN 37129
EDR Inquiry # 7225785.3

Client Name:

Civil & Env Consultants
333 Baldwin Road
Pittsburgh, PA 15205
Contact: Tori Gallagher

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by Civil & Env Consultants were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting www.edrnet.com/sanborn.

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 # 137C-4F81-AD42

PO # 328-093

Project Batey Farm Site

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

Sanborn® Library search results

Certification #: 137C-4F81-AD42

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™

Limited Permission To Make Copies

Civil & Env Consultants (the client) is permitted to make up to FIVE photocopies of this Sanborn Map transmittal and each fire insurance map accompanying this report solely for the limited use of its customer. No one other than the client is authorized to make copies. Upon request made directly to an EDR Account Executive, the client may be permitted to make a limited number of additional photocopies. This permission is conditioned upon compliance by the client, its customer and their agents with EDR's copyright policy; a copy of which is available upon request.

APPENDIX I
EDR CITY DIRECTORIES

Batey Farm Site
1008 John Locke Lane
Murfreesboro, TN 37129

Inquiry Number: 7225785.6
January 19, 2023

The EDR-City Directory Image Report

Environmental Data Resources Inc
6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

TABLE OF CONTENTS

SECTION

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

RECORD SOURCES

EDR's Digital Archive combines historical directory listings from sources such as Cole Information and Dun & Bradstreet. These standard sources of property information complement and enhance each other to provide a more comprehensive report.

EDR is licensed to reproduce certain City Directory works by the copyright holders of those works. The purchaser of this EDR City Directory Report may include it in report(s) delivered to a customer. Reproduction of City Directories without permission of the publisher or licensed vendor may be a violation of copyright.

Data by infoUSA®

RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

Year	Target Street	Cross Street	Source
2017	☑	☑	EDR Digital Archive
2014	☑	☑	EDR Digital Archive
2010	☑	☑	EDR Digital Archive
2005	☐	☑	EDR Digital Archive
2000	☐	☑	EDR Digital Archive
1995	☐	☑	EDR Digital Archive
1992	☐	☑	EDR Digital Archive
1988	☐	☐	Polk's City Directory
1983	☐	☐	Polk's City Directory
1978	☐	☐	Polk's City Directory
1973	☐	☐	Polk's City Directory
1969	☐	☐	Polk's City Directory
1964	☐	☐	Polk's City Directory

FINDINGS

TARGET PROPERTY STREET

1008 John Locke Lane
Murfreesboro, TN 37129

Year	CD Image	Source	
JOHN LOCKE LN			
2017	pg A2	EDR Digital Archive	
2014	pg A4	EDR Digital Archive	
2010	pg A6	EDR Digital Archive	
2005	-	EDR Digital Archive	Street not listed in Source
2000	-	EDR Digital Archive	Street not listed in Source
1995	-	EDR Digital Archive	Street not listed in Source
1992	-	EDR Digital Archive	Street not listed in Source
1988	-	Polk's City Directory	Street not listed in Source
1983	-	Polk's City Directory	Street not listed in Source
1978	-	Polk's City Directory	Street not listed in Source
1973	-	Polk's City Directory	Street not listed in Source
1969	-	Polk's City Directory	Street not listed in Source
1964	-	Polk's City Directory	Street not listed in Source

FINDINGS

CROSS STREETS

Year	*CD Image*	*Source*	
BAKER RD			
2017	pg. A1	EDR Digital Archive	
2014	pg. A3	EDR Digital Archive	
2010	pg. A5	EDR Digital Archive	
2005	pg. A7	EDR Digital Archive	
2000	pg. A8	EDR Digital Archive	
1995	pg. A9	EDR Digital Archive	
1992	pg. A10	EDR Digital Archive	
1988	-	Polk's City Directory	Street not listed in Source
1983	-	Polk's City Directory	Street not listed in Source
1978	-	Polk's City Directory	Street not listed in Source
1973	-	Polk's City Directory	Street not listed in Source
1969	-	Polk's City Directory	Street not listed in Source
1964	-	Polk's City Directory	Street not listed in Source

City Directory Images

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

BAKER RD 2017

4955	TOOMBS, TIMOTHY G
5001	GOSART, ALAN W
5007	DAVIS, WENDELL K
5013	WHITT, BRANDON M
5027	CLARK, ALEE R
5101	JONES, JO A
5104	BATEY, JOHN C
5113	CHECCHIN, RICHARD F
5129	BREWSTER, BILLY W
5135	BRYSON, AUDRA L
5568	CATO, WILLIAM G
5572	ENSEY, ASHLEE B
5576	MARSHALL, DARRELL G
5580	REYES, JOSE A
5820	THOMAS, IDA
6008	SCHEUERS, DAVID E
6017	MILLER, HALL D
6121	CHANEY, EDWARD T
6135	HOWSE, DANNY W
6143	YOUNG, SHIRLEY M
6163	HOWSE, ABDULHAMEED
6403	WALLACE, CLARENCE E
6418	SMITH, TAMMY Y
6421	PROGRESSIVE PRIMITIVE BAPTIST CHURCH
6502	MALONE, RANDALL
6518	MANNING, EVELYN S
6728	FRALEY, DANNY D
6810	POLLARD, JAMES A
6818	PERRY, VERONICA L
7002	FITZGERALD, JASON P
7103	ST PATRICKS ANGLICAN CHURCH
7109	CANTRELL, DARRELL W
	CANTRELLS CONCRETE LLC
7110	BROWN, HARRY F
7136	BREWER, CHARLES S

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

JOHN LOCKE LN 2017

1021 DIEHL, JENNIFER L

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

BAKER RD 2014

4955	TOOMBS, TIMOTHY G
5001	GOSART, ALAN W
5007	DAVIS, WENDELL W
5013	CASE, BARRY S
5027	CLARK, ALEE R
5101	JONES, JO A
5104	BATEY, JOHN L
5113	OCCUPANT UNKNOWN,
5129	LEWIS, JAMES W
5135	BRYSON, AUDRA L
5336	BATEY, JOHN
5537	SMOTHERMAN, LARRY
5568	CATO, WILLIAM G
5572	ENSEY, ASHLEE B
5576	GARTRELL, WALTER C
5580	REYES, JOSE A
5820	PHILLIPS, ETHEL F
6017	MILLER, HALL D
6121	CHANEY, LARUE L
6135	HOWSE, DANNY W
6143	YOUNG, SHIRLEY M
6159	DAVENPORT, CARLIE
6163	HOWSE, ABDULHAMEED
6403	WALLACE, CLARENCE E
6418	HOWSE, RAYMOND L
6421	PROGRESSIVE PRIMITIVE BAPTIST CHURCH
6502	HICKS, ANTOINE
6518	MANNING, EVELYN S
6728	FRALEY, DANNY D
6738	OCCUPANT UNKNOWN,
6810	POLLARD, JAMES E
6818	PERRY, VERONICA L
7013	JOHNSON, ROBERT
7014	OCCUPANT UNKNOWN,
7076	BROWN, JOE E
7103	OCCUPANT UNKNOWN, ST PATRICKS ANGLICAN CHURCH
7109	OCCUPANT UNKNOWN,
7110	OCCUPANT UNKNOWN,
7136	OCCUPANT UNKNOWN,
7142	BREWER, CHARLES S

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

JOHN LOCKE LN 2014

1021 DIEHL, JENNIFER L

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

BAKER RD 2010

4955	TOOMBS, TIMOTHY G
5001	GOSART, ALAN W
5007	DAVIS, WENDELL W
5013	CASE, ANDREW S
5027	CLARK, ALEE R
5101	JONES, JOANN A
5104	BATEY, JOHN L
5113	OCCUPANT UNKNOWN,
5129	LEWIS, JAMES W
5135	MCCLOUD, GERALD F
5537	OCCUPANT UNKNOWN,
5568	CATO, AMY
5572	ENSEY, ASHLEE B
5576	GARTRELL, WALTER C
5580	REYES, JOSE A
5820	PHILLIPS, NEWTON
6017	HOWSE, BRACK E
6121	OCCUPANT UNKNOWN,
6135	HOWSE, DANNY W
6143	YOUNG, SHIRLEY M
6159	DAVENPORT, CARLIE
6163	HOWSE, ABDULHAMEED
6403	WALLACE, CLARENCE E
6418	HOWSE, JAMES T
6421	PROGRESSIVE PRIMITIVE BAPTIST
6502	HICKS, MILLER J
6518	HICKS, DOROTHY W
6728	FRALEY, DANNY D
6738	OCCUPANT UNKNOWN,
6810	POLLARD, JAMES E
7002	LEE, KEITH D
7013	OCCUPANT UNKNOWN,
7014	OCCUPANT UNKNOWN,
7076	BROWN, JOE E
7103	OCCUPANT UNKNOWN,
7109	CANTRELL, DAVID
7110	BROWNLOW, RUSSELL R
7136	BREWER, TAMMY
7142	BREWER, CHARLES S

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

JOHN LOCKE LN 2010

1021 CAMPBELL, NICHOLE

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

BAKER RD 2005

5001	ADAMS, FRANK W
5007	DAVIS, WENDELL W
5013	CASE, ANDREW S
5027	CLARK, GALE J
5101	JONES, HARRY F
5104	BATEY FARM
	BATEY, JOHN L
5113	CHECCHIN, RICHARD C
5129	LEWIS, JAMES W
5135	MCCLOUD, GERALD F
5537	OCCUPANT UNKNOWN,
5568	CATO, WILLIAM G
5572	HOVER, JUDSON
5576	GARTRELL, WALTER C
5580	POLEN, TINA M
5820	PHILLIPS, NEWTON
5924	OCCUPANT UNKNOWN,
6008	HAYNES, WALTER D
6017	HOWSE, BRACK E
6121	CHANEY, LARUE L
6135	HOWSE, DANNY W
6139	LILLARD CHAPEL UNITED METHODIST
6143	YOUNG, SHIRLEY M
6163	HOWSE, PEGGY A
6418	HOWSE, JOLAINE B
6502	HICKS, MITZI J
6728	FRALEY, DANNY D
6810	POLLARD, JAMES E
6818	SCHULTZ, LYNN M
7002	WILLARD, JOHN G
7013	OCCUPANT UNKNOWN,
7014	GAINES, GEORGE
7076	BROWN, JOE E
7103	HUGGINS, LARRY L
7109	WILLIAMS, NELSON L
7110	OCCUPANT UNKNOWN,
7136	OCCUPANT UNKNOWN,
7142	BREWER, CHARLES S

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

BAKER RD 2000

4955	BARNES, ANTHONY
5001	ADAMS, FRANK W
5007	DAVIS, WENDELL
5013	FARMER, NORMAN R
5027	CLARK, GALE A
5101	JONES, HARRY F
5104	BATEY, JOHN L
5113	CHECCHIN, RICHARD F
5129	LEWIS, JAMES W
5135	MCCLOUD, GERALD
5537	SMOTHERMAN, LARRY
6008	HAYNES, WALTER D
6017	MCCLAIN, MATTIE
6121	CHANEY, EDWARD T
6135	HOWSE, DANNY
6139	LILLARD CHAPEL UNITED METHODIST CHURCH
6143	YOUNG, SHIRLEY M
6163	OCCUPANT UNKNOWN,
6403	OCCUPANT UNKNOWN,
6404	OCCUPANT UNKNOWN,
6418	HOWSE, T L
6421	PROGRESSIVE PRIMITIVE BAPTIST CHURCH
6502	HICKS, SALLY M
6518	HICKS, DOROTHY M
6728	FRALEY, DANNY
6738	OCCUPANT UNKNOWN,
6810	OCCUPANT UNKNOWN,
6818	DUNAWAY, OPIE
7002	OCCUPANT UNKNOWN,

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

BAKER RD 1995

4955	SPURGEON, BOBBY J
5001	ADAMS, FRANK W JR
5007	DAVIS, WENDELL
5013	FARMER, NORMAN R
5027	CLARK, GALE J
5101	JONES, HARRY F
5104	BATEY, JOHN L JR
5113	CHECCHIN, RICHARD
5129	CRAFT, JESSICA
	GOFORTH, APRIL
5135	MCCLOUD, GERALD
5537	SMOTHERMAN, LARRY
6008	HAYNES, WALTER D
6121	CHANEY, EDWARD T
6128	HATHAWAY, BEAULAH
6135	CHURCH, LILLARD C
6139	LILLARD CHAPEL UNITED CHURCH
6143	YOUNG, SHIRLEY M
6404	HATHAWAY, ANNA
6418	HOWSE, T L
6421	PROGRESSIVE PRIMITIVE BAPTIST
6502	HICKS, JOE
6518	HICKS, JOHN W
6618	OCCUPANT UNKNOWNN
6728	FRALEY, DANNY
6738	BLASINGIM, BRENDA
6818	CONKLE, CRAIG S
7002	OCCUPANT UNKNOWNN
7013	FITNESS NETWORK
7014	SANDERS, LARRY
7103	HUGGINS, LARRY L
7109	WILLIAMS, NELSON L
7110	BROWNLOW, CLINTON R
7142	BREWER, CHARLES

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

BAKER RD 1992

4955	SPURGEON, BOBBY J
5001	ADAMS, FRANK W JR
5007	DAVIS, WENDELL
5013	FARMER, NORMAN R
5101	JONES, HARRY F
5104	BATEY, JOHN L JR
5129	FURCHES, TIM M
5135	MCCLOUD, GERALD
5518	RIGGS, ALAN
5537	SMOTHERMAN, LARRY
6404	HATHAWAY, ANNA
6418	HOWSE, T L
6502	HICKS, JOE
6518	HICKS, JOHN W
6728	FRALEY, DANNY
6738	BLASINGIM, LONNIE
6818	MITCHELL, JAMES
7014	SANDERS, LARRY
7103	HUGGINS, LARRY L
7109	WILLIAMS, NELSON L
7110	BROWNLOW, CLINTON R
7142	BREWER, CHARLES

APPENDIX J
QUALIFICATIONS OF CEC PERSONNEL

Jose Garcia, CHMM
Project Manager III

23 YEARS OF EXPERIENCE

EDUCATION

B.S., Biology, Middle Tennessee State University, 1997

CERTIFICATIONS

Visible Emissions Evaluator, Tennessee

Certified Hazardous Materials Manager, Institute of Hazardous Materials Management

Mr. Garcia has more than 23 years of managing ecological and environmental projects. These projects have included environmental regulatory compliance audits, new facility permitting, environmental plan preparation (SWPPP, SPCC), and environmental regulatory submittals (EPCRA Tier Two, Form R, and biennial hazardous waste reports). In addition, he has experience with water quality and aquatic resources alteration permitting and regulatory compliance, ecological assessments, aquatic impact mitigation and pollutant investigations.

Mr. Garcia has experience in wetland delineation, stream and wetland mitigation and studies of aquatic ecosystems; conducting rare, threatened, and endangered (RTE) species surveys, evaluating erosion control measures, mitigation plans; stream and reservoir water quality sampling; monitoring soil, sediment, and surface water. Mr. Garcia has experience managing Phase I Environmental Site Assessments & Phase II Sampling's throughout the United States, with experience in Europe and South America. Mr. Garcia has experience in the preparation of Environmental Assessments in accordance with the National Environmental Policy Act (NEPA).

PROJECT EXPERIENCE

TDOT Sediment Assessments, TN
Various sediment assessments, including SR-32 (Claiborne County). Conducted field surveys to determine sediment impacts to streams receiving runoff from roadway construction. Assisted with the construction activities to stabilize banks.

TDOT Ecological Assessments, TN
Conducted field surveys and prepared reports on numerous bridge replacements, roadway improvements and new alignments. Field surveys involved the identification and documentation of aquatic resources, wetlands, and threatened or endangered species and/or their critical habitat. Results were provided in the format requested by TDOT (Scope A, Form G, Form J, Form N, or Biological Assessment).

Wetland Assessments/Delineations/Permitting, Multiple Locations
Wetland assessments were performed for clients to determine whether properties designated as their project sites contained wetlands that may be impacted by the project. Wetland delineations were conducted on sites which were determined to have wetland related issues. Delineations were performed in accordance with the U.S. Army Corps of Engineers (USACE) 1987 delineation manual.

Wetland Assessment, Sandhu Consultants, Murfreesboro, TN
Wetland assessment was conducted on a 10-acre site with 3 acres of wetlands delineated in 2006. (Project Manager)

Wetland Assessment and Wetland Delineation, Warren County Industrial Board, Morrison, TN
Performed a wetland assessment and wetland delineation on a 300-acre site within a developing industrial park and delineated 50-acres of wetland in 2006. Prepared a Tennessee Department of Environment and Conservation (TDEC) 401 individual permit application for the impact to 0.3-acre of isolated wetlands, which included the preparation of onsite compensatory mitigation plan for loss of impacted wetland. Project Manager.

Wetland and Stream Assessment, Johns Manville, Etowah, TN
Performed a wetland and stream assessment on 1,000 linear feet of stream in 2006. Prepared a USACE Nationwide permit and a TDEC General Permit for the encapsulation of 200 linear feet of stream and the alteration of 0.45-acre of jurisdictional wetland. An onsite compensatory wetland plan was prepared and approved by TDEC and USACE. Project Manager.

Bi-County Solid Waste Management, Woodlawn, TN
Researched, wrote and performed NEPA environmental assessment (EA) on a 250-acre property in Tennessee on the Fort Campbell Military Reservation and a 430-acre undeveloped property owed by the Bi-County Solid Waste Management System in Trigg County, Kentucky. The sites were part of a land swap to increase the life of the Bi-County landfill, south of Fort Campbell and the work was completed in 2005.

59th Multi-functional Aviation Brigade Complex and 101st Airborne Division Road Realignment, USACE, Louisville District
Served as Project Manager for the preparation of an Environmental Assessment (EA) for the proposed 159th Multi-functional Aviation Brigade Complex and the 101st Airborne Division Road Realignment project in 2006. Performed field surveys and data-gathering on more than 200 acres regarding potential impacts to the human and natural environment. Direct, indirect and cumulative impacts were considered. The EA resulted in a Finding of No Significant Impact (FONSI).

Expansion of U.S. Highway 79, USACE, Louisville District, Stewart and Montgomery Counties, TN
Served as Project Manager for the preparation of an EA for properties to be acquired by the Fort Campbell Military Reservation (Fort Campbell) due to the realignment of Highway 79. Performed field surveys and data-gathering on more than 200 acres of property located south of the Fort Campbell boundary in 2006. Impacts to the human and natural environment were considered. Direct, indirect and cumulative impacts were considered. The EA resulted in a FONSI.

Armed Forces Reserve Center, USACE, Louisville District, Sioux Falls, SD
Researched, wrote and performed an EA, Biological Assessment (BA) and Environmental Baseline Survey (EBS) as part of the Base Realignment and Closure initiative to combine services and build troop readiness in 2006. Information regarding the potential impacts to human and natural resources was gathered. Contact was made with 15 tribal councils and several local agencies. The EA resulted in a FONSI.

Environmental Assessment, Naval Air Station Whiting Field, Evergreen, AL
Researched, wrote and performed an EA for runway extensions to the Evergreen, Alabama airport in 2006. Extensions to the runway were needed to accommodate the landing and take-off requirements of a new training aircraft. Performed field surveys and data-gathering on the areas of impacts. Coordinated with federal and state regulators, which included U.S. Fish and Wildlife Service Section 7 and Section 106 of the National Historic Preservation Act. The EA is currently in public comment.

Site Investigation, Choctaw Indian Reservation, Philadelphia, MS
Performed NEPA EIS site investigation on wetlands and living resource occurring on a 2,000-acre undeveloped portion of the reservation in 2005. This site was under consideration for development and construction of a university campus. Findings were written and incorporated into the ecological sections of the NEPA document submitted to the client.

Vegetation Survey, USACE, Louisville District, Fort Campbell, KY
Project Manager in conducting a vegetation survey of 5,200 acres of open field and grassland areas at the Fort Campbell Military Reservation in 2006. Surveys were conducted in spring and summer to identify species occurring during each blooming season. Data were used to categorize each field, based on dominate species, in accordance with the Nature Conservancy's Vegetation Classification System.

In-Stream Biosurveys, Various Clients, TN
Performed In-Stream Biosurveys on several properties throughout Tennessee. Projects included aquatic habitat and community assessments using routine assessment methodologies including Rapid Bio-assessment Protocol and Index Biotic Integrity sampling to assess benthic macro-invertebrate and fish communities. Clients include HMA Contractors, Oprymills Corporation, Zinifex (formerly Pasminco Zinc plant), and Johns Manville.

In-Stream Biosurvey and Fish Species Collection, Confidential Client, NY
Performed in-stream biosurvey and fish species collection in a polychlorinated biphenyl (PCB)-impacted steam in central New York State in 2006. Project included aquatic habitat and community assessments using routine assessment methodologies including Rapid Bio-assessment Protocol and Index Biotic Integrity sampling to assess for fish communities. Fish were collected utilizing electro-shocking techniques and subsequently identified and sorted based on species and size.

Rare, Threatened, and Endangered Species Investigations, Various Clients, TN
Performed RTE assessment surveys for state and federally listed flora and fauna on several properties throughout Tennessee. Projects included contacting state and federal agencies for listed species information, compiling lists of species with a geographical range which extended across site location, reviewing habitat requirements for these species, and comparing them to habitat types known to be found on or near the target properties. Fieldwork included walking the property and visually searching for listed species and assessing habitat types. Report of findings were prepared and submitted to the client.

Route 840 Stream Impact Mitigation, Williamson, Dickson, and Hickman Counties, TN
Member of the field crew locating appropriate sites on landowner property to mitigate more than 8,000 feet of stream impact resulting from culvert construction. Participated in design mitigation features, including cattle exclusion, alternate watering systems, and defined crossings. Completed in 2004.

Phase I/II ESAs, U.S. and International
Performed several Phase I and Phase II Environmental Site Assessments (ESAs) for the private sector in the U.S., England, Venezuela, and Mexico. All Phase I ESAs were in accordance with current American Society for Testing and Materials standards dealing with real estate transactions. Phase II ESAs included defining nature and extent of contamination, and recommendations for cleanup and/or removal of contamination from site.

SPCC Plans, Industrial Facilities (1998-Present), Multiple States
Prepares SPCC plans and release prevention, control, and countermeasure (RPCC) plans for industrial facilities in Alabama, Florida, Georgia, Louisiana, Mississippi, North Carolina, North Dakota, South Carolina, and Tennessee.

SWPPPs, Industrial Facilities (1998 - Present), Multiple States
Provides regulatory assistance, prepares permit applications, and develops SWPPPs, best management practices plans, and/or SPCC plans, as needed, for 31 transportation facilities in nine states, including sites in Memphis, Jackson, Nashville, Cookeville, Knoxville, Kingsport, and Chattanooga. Coordinate runoff characterization and pollutant analyses by identifying drainage area boundary for all outfalls at each facility, providing instructions to service center directors to collect samples at pertinent outfalls, provide sample kits, review analytical results, suggest additional best management practices as appropriate, complete monitoring reports, and estimate runoff volume using hydrologic model. Currently, coordinating development of a storm water pollution prevention plan for Averitt Aviation in Sparta, Tennessee.

United States Postal Service, New Main Post Office,, Port Huron, MI
Served as primary author for the preparation of an EA in compliance the National Environmental Policy Act of 1969 (NEPA) and the United States Postal Service facilities environmental guide for the proposed New Main Post Office project to be constructed in the Port Huron Township in 2008. Performed data-gathering and report preparation regarding potential impacts to the human and natural environment. Coordinated with federal and state regulators, which included the U.S. Fish and Wildlife Service (Section 7 requirements), and consulted with the Michigan State Historic Preservation Office in accordance with Section 106 of the National Historic Preservation Act. Direct, indirect and cumulative impacts were considered. The EA resulted in a Finding of No Significant Impact (FONSI).

Jose Garcia, CHMM
Project Manager III

Preconstruction Environmental Assessment, Tennessee State University, TN
Mr. Garcia served as project manager and primary author of a Preconstruction Environmental Assessment (PEA) in compliance with the National Environmental Policy Act of 1969 (NEPA) and the Special Terms and Conditions of the U.S Department of Agriculture - Cooperative State Research, Education, and Extension Service. The PEA was prepared for the Tennessee State University Agricultural IT Building via contract with the Tennessee Board of Regents. Mr. Garcia performed data-gathering and report preparation regarding potential impacts to the human and natural environment in 2009. Direct, indirect and cumulative impacts were considered. The PEA resulted in a Finding of No Significant Impact (FONSI).

Nashville Riverfront Development
CEC served as a sub-consultant to Hargreaves on the Nashville Riverfront Development Project. CEC was tasked with the investigation and preparation of a Soil Management Plan and an Ecological survey. CECs tasks were to coordinate with regulatory agencies on the plan and on future remediation and safety issues for the construction of the Cumberland Park. CEC was also tasked with providing guidance and recommendations regarding unforeseen environmental issues (i.e. USTs, buried sumps, contaminated soil, etc.). The Ecological scope involved preparing an Ecology report to document the area's natural and aquatic resources, including wetlands, stream, endangered species, and other sensitive resources. CEC also prepared permit coordination packages for the Corps of Engineers and TDEC and attended regular meetings with project team and regulatory agencies.

TDOT, City of Franklin, McEwen Drive Phase IV Widening D-Listed Categorical Exclusion Project, Franklin, TN
Mr. Garcia is currently serving as the project manager and primary author of a D-Listed Categorical Exclusion in compliance with the National Environmental Policy Act of 1969 (NEPA) and in accordance with the Federal Highway Administration and TDOT guidelines. The Categorical Exclusion is being prepared to address potential impacts associated with the widening of 1.5-miles existing roadway in a residential area of Franklin, Tennessee. CEC has conducted ecological and cultural resource surveys as well as data gathering in support of the NEPA document. CEC has coordinated with federal, state and local agencies regarding the project.

A.O Smith Federal Land Disposal, A.O. Smith Corporation, Ashland City, TN
Mr. Garcia is the primary author for the preparation of the NEPA EA document required as part of the Federal land disposal by the U.S. Army Corps of Engineers property to facilitate construction of a flood control levee around the A. O. Smith facility. Studies associated with the preparation of the EA document include wetland and stream assessments, endangered species surveys, Phase I environmental assessments, and cultural and archaeological surveys. CEC is also responsible for project design, permitting, and construction oversight for the proposed levee.

Corrections Corporation of America NEPA Environmental Assessments
Mr. Garcia served as project manager and primary author of an Environmental Assessments (EA) in compliance with the National Environmental Policy Act of 1969 (NEPA) and in accordance with the Bureau of Prisons guidance document. The EAs were prepared for Corrections Corporation of America for the facilities located in Texas, Ohio, New Mexico, Mississippi and Oklahoma. Performed data-gathering and report preparation regarding potential impacts to the human and natural environment. Coordinated with federal and state regulators, which included the U.S. Fish and Wildlife Service (Section 7 requirements), and consulted with the Ohio State Historic Preservation Office in accordance with Section 106 of the National Historic Preservation Act. Direct, indirect and cumulative impacts were considered. CEC coordinated with state and local agencies and representatives regarding the expansion of the prison. The EA resulted in a Finding of No Significant Impact (FONSI).

Nissan North America
Served as a team member performing a multi-media compliance audit of the Nissan North America Smyrna, Decherd, and Canton facilities. CEC performed an assessment of compliance with federal, state and/or local regulations which include, but are not limited to, air, wastewater, sewer, storm water, solid waste, hazardous waste, universal waste, used oil, community right-to-know reporting, underground storage tanks, hazardous materials handling, TSCA, emergency response, and other environmental regulations that were applicable to the NNA-Smyrna and NNA-Decherd operations. The audit included a review of data, monitoring activities, plans, recordkeeping, reporting, management systems, procedures, and personnel training established to comply with applicable environmental regulations and permit requirements.

Jose Garcia, CHMM
Project Manager III

Harlinsdale Farm Pedestrian Bridge and Walkway D-Listed Categorical Exclusion, City of Franklin, Franklin, TN
Role: Project Manager
Mr. Garcia is currently serving as the project manager and primary author of a D-Listed Categorical Exclusion in compliance with the National Environmental Policy Act of 1969 (NEPA) and in accordance with the Federal Highway Administration and TDOT guidelines. The Categorical Exclusion is being prepared to consider potential impacts associated with the construction of a 1.3-mile pedestrian walkway and bridge to connect the existing Ruby F. Lynch trail system to a trailhead parking lot within the Park at Harlinsdale Farm. CEC has conducted ecological, 4F, endangered species survey and cultural resource surveys as well as data gathering in support of the NEPA document. CEC coordinated with federal, tribal, state and local agencies regarding the project.

McEwen Drive Phase IV Widening D-Listed Categorical Exclusion Project, City of Franklin, Franklin, TN
Role: Project Manager
Mr. Garcia served as the project manager and primary author of a D-Listed Categorical Exclusion in compliance with the National Environmental Policy Act of 1969 (NEPA) and in accordance with the Federal Highway Administration and TDOT guidelines. The Categorical Exclusion is being prepared to consider potential impacts associated with the widening of 1.5-miles existing roadway in a residential area of Franklin, Tennessee. CEC has conducted ecological and cultural resource surveys as well as air and noise evaluations and data gathering in support of the NEPA document. CEC has coordinated with federal, tribal, state and local agencies regarding the project.

Confidential Client Multi-Media Compliance Audits at 31 Sites, Ice Miller LLP, State of Tennessee
Role: Project Manager
CEC was contracted to perform multi-media environmental compliance audits of 31 facilities across middle and east Tennessee to provide an evaluation of the facilities current compliance status in light of the departure of the Environmental Health and Safety (EH&S) Manger. CEC evaluated the facilities air permits, NPDES permits, and various inspection and document submittals that are required pursuant to the above noted permits. CEC reviewed the facilities Spill Prevention Control and Countermeasure (SPCC) Plans, and Storm Water Pollution Prevention Plans (SWPPP). CEC inspected EPCRA Section 312 Tier Two Chemical Inventory Reports, Discharge Monitoring Reports and similar agency submittals. In addition, CEC reviewed tank inspection record forms, housekeeping inspection records, and similar items.

TRAINING

ASTM E1527-13 Standard Practice for Environmental Site Assessment Training

38 Hr. Corps of Engineers Wetland Delineation Training

Tennessee Qualified Hydrologic Professional (QHP)

40-Hour Hazwoper Site Worker (29 CF 1910.120) with Annual 8 Hour Refreshers

Duke University Environmental Leadership Program Implementation of the National Environmental Policy Act

Duke University Environmental Leadership Program Socioeconomic Impact Analysis Under NEPA

Duke University Environmental Leadership Program - Preparing and Documenting Environmental Impact Analyses

Victoria M. Gallagher

Assistant Project Manager

8 YEARS OF EXPERIENCE

EDUCATION

B.S., Civil Engineering, Tennessee Technological University, 2015

B.S., Agricultural Environmental Engineering, Tennessee Technological University, 2014

CERTIFICATIONS

Asbestos Inspector, Tennessee

Asbestos Inspector, Kentucky

Asbestos Inspector, Indiana

Tennessee Qualified Hydrologic Professional, Tennessee Department of Environment & Conservation

Tennessee Erosion Prevention and Sediment Control Level 1 Certification, Tennessee Department of Environment & Conservation

Tennessee Erosion Prevention and Sediment Control Level 2 Certification, Tennessee Department of Environment & Conservation

10-hour Construction Safety, Occupational Safety & Health Administration

40-Hour OSHA HAZWOPER, Safety Unlimited, Inc.

Gas Vapor Barrier Inspector, EPRO Services, Inc.

Vapor Barrier Inspector, Land Science

PROJECT EXPERIENCE

Riverview Inn, Clarksville, TN*
Conducted a Phase I ESA, asbestos and lead sampling, hazardous waste evaluation, moisture mapping, and assisted with report preparation.

TSU Student Housing , Nashville, TN*
Assisted in the logging of borings, including rock samples.

Saint Thomas Satellite Hospital, Nashville, TN*
Conducted infiltration testing.

Nashville Fire Station No. 14, Nashville, TN*
Assisted in lead wipe services to determine lead background levels prior to/post restoration work and in lead air monitoring during restoration work of the Fire Station structure.

Cross Plains Industrial, Cross Plains, TN
Assisted as a Qualified Hydrologic Professional (QHP) with locating and delineating potential Waters of the United States and/or Waters of the States as well as a Threatened and Endangered species assessment, and Phase I ESA for the project area.

Verizon DT Franklin, Franklin, TN*
Assisted with the field assessment, asbestos and lead sampling, Phase I ESA & Phase II ESAs, Soil Management Plan, reporting, and overall project management.

Zimmer Station & Miami Fort Station CCR Groundwater Sampling, Moscow & Lawrenceburg, OH*
Coordinated sampling events at the at the William H. Zimmer Power Plant and Miami Fort Power Plant. Bladder pump and peristaltic pump sampling techniques were used to collect groundwater samples that are used for chemical and toxicity analysis for the surrounding ponds and former landfill. Additional activities included interacting with the client, laboratory, leading S&ME team members in the field as well as preparing data for statistical analysis. Responsibilities have included quality control of data collection and distribution and proposal and report preparation.

Victoria M. Gallagher
Assistant Project Manager

Modera Germantown Vapor Mitigation System (VMS), Nashville, TN
Directed client's contractors to adhere to the site-specific VMS design. Responsibilities included communicating with contractors on a routine basis, documenting site progress, quality control of barrier application, and certification of the system.

Confidential Client, Wisconsin
Assisted with site walks and recertifications of six SPCC plans for a large printing company.

Blue Oval, Stanton, TN*
Assited with the EPSC level 1 and 2 inspections for the entire site.

Living Earth (LETCO) - Nashville Sites, Nashville, TN *
Collected stormwater samples quarterly from the three Nashville sites, assisted with field engineering design/oversight to help the Nashville and Knoxville sites be compliant, wrote the Stormwater Pollution Prevention Plans for the six Tennessee sites, assisted with the Soil Pollution Prevention Plans for the three Nashville sites.

St. Thomas Hospital Campus, Nashville, TN*
Created a Boiler Variance plan to keep the site compliant.

Florida Power Line (FPL), Orlando, FL*
Assisted with wetland restoration and best management practices oversight of the powerline replacement along the FPL main corridor.
** Work performed prior to joining CEC*

TRAINING

D & D Wetland & Endangered Species Training (WEST) - Basic Wetland Delineation (40 Hours)

ASTM Phase I Environmental Site Assessment Processes

APPRAISAL REPORT – SALES COMPARISON APPROACH

OF

RESIDENTIAL DWELLING AND 2.29 ACRES LAND PARCEL
5104 BAKER ROAD
MURFREESBORO, TENNESSEE 37129
TAX MAP 071, PARCEL 030.01

OWNER: MELISSA AND JOHN L. BATEY, JR.

PREPARED FOR

RUTHERFORD COUNTY BOARD OF EDUCATION
C/O MR. TREY LEE
ASSISTANT SUPERINTENDENT ENGINEERING AND CONSTRUCTION
2240 SOUTHPARK DRIVE
MURFREESBORO, TENNESSEE 37128
PURCHASE ORDER NUMBER: BP 16232

APPRAISED BY

JOHNNY M. SULLIVAN, SRA

EFFECTIVE DATE AND INSPECTION DATE OF APPRAISAL

NOVEMBER 3, 2022

DATE OF REPORT

NOVEMBER 10, 2022

November 10, 2022

Rutherford County Board of Education
c/o Mr. Trey Lee
Assistant Superintendent Engineering and Construction
2240 Southpark Drive
Murfreesboro, Tennessee 37128

RE: Residential Dwelling and 2.29 Acres Land Parcel
5104 Baker Road
Murfreesboro, TN 37129
Tax Map 71 Parcel 030.01
Purchase Order Number: BP 16232

Dear Mr. Lee:

In accordance with a request from you, I have personally inspected and appraised the above referenced property for the purpose of rendering my opinion of the **current market value** of the **"fee simple" interest** of the subject property. The following report contains a **SUMMARY** of the methods of approach and data gathered in my investigation. The subject is currently a 2.29+/- acre land parcel with a single-family dwelling. The land is a small acreage home site mostly cleared with a scattering of mature residential use trees. The site is not typical as it has a long driveway connecting to a rectangular configuration; note enclosed tax map. This site has been subdivided from an agriculture use tract owned by the same owners. The road frontage on Baker Road is suitable for the driveway only, note enclosed tax map.

The following is an **Appraisal Report – Scope of Work includes processing only the Sales Comparison Approach.** The pertinent facts and data, which I believe applicable to the property, are summarized, and the reasons leading to my estimate of value are included. The appraisal assignment was not based on a requested minimum valuation, or a specific valuation, or the approval of a loan.

To the best of my knowledge this report conforms to the current requirements prescribed by the Uniform Standards of Professional Appraisal Practice of the Appraisal Standards Board of the Appraisal Foundation (as required by the Financial Institutions Reform and Recovery Act - FIRREA).

The person signing this report has the knowledge and experience necessary to complete the assignment competently and is duly licensed by the appropriate state to perform this level of appraisal under certificate number CG-493. This letter must remain attached to the report, which contains **24** pages, plus related exhibits, in order for the value opinion set forth to be considered valid.

Current economic conditions both nationally and locally are considered volatile and in an adjustment mode. Economists debate the time line for this condition; therefore, marketing periods for unique properties are difficult to predict. If properties such as the subject require "sell off", a market discount may become necessary; note secondary definition of market value within this report.

Based on my investigation, it is my opinion that the current market value of the **"fee simple" interest** of the subject property (dwelling, 2.29 +/- Acres, and outbuildings), relative to a six to twelve-month exposure and marketing period, as of November 3, 2022, Effective Date and Inspection Date of the Appraisal and the report date being November 10, 2022, subject to any limiting conditions and "**Hypothetical Conditions"** referenced within this report, in its **"As Is" condition,** is as follows:

SEVEN HUNDRED THIRTY THOUSAND DOLLARS

($730,000.00)

Residential Dwelling, Outbuildings, and 2.29+/- Acre Tract

Current market Valuation

Respectfully submitted,

_____

Johnny M. Sullivan, SRA
State Certified General
Real Estate Appraiser - CG-493

RESIDENTIAL DWELLING

_

This is an **Appraisal Report** and is intended to comply with the guidelines set forth under Standards Rule 2-2(a) of the Uniform Standards of Professional Appraisal Practice effective January 1, 2022. It presents discussions of the data, reasoning, and analyses that were used in the evaluation process to develop the appraiser's opinion of value. Supporting documentation concerning the data, reasoning, and analyses is retained in the appraiser's file. The depth of discussion contained in this report is specific to the needs of the client and for the intended use stated below. The appraiser is **NOT** responsible for unauthorized use of this report.

Furthermore, in accordance with prior agreement between the client and the appraiser, this report is the result of processing only the Sales Comparison Approach: Scope of Work. The intended user of this report is warned that the reliability of the value conclusion provided might be impacted to the degree there will be only one approach to value processed.

According to The Appraisal Foundation and its Director of Appraisal Issues, John S. Brenan, who stated the terminology "Summary Appraisal Report" is correct as long as the words "Appraisal Report" are within the phrase. I refer you to The Appraisal Foundation's 2014-15 USPAP, Q & A dated October 9, 2013, Item 10, Page 4.

IDENTIFICATION OF SUBJECT PROPERTY

Client:	Rutherford County Board of Education, c/o Mr. Trey Lee
Date of Report:	November 10, 2022
Owners:	Melissa and John L. Batey, Jr.
Effective Date of Appraisal:	November 3, 2022 (**current market value**)
Property Location:	**Residential Dwelling, outbuildings & 2.29+/- Acres Land Parcel** 5104 Baker Road Murfreesboro, TN 37129
Census Tract:	408.07/1
Zoning:	Medium Density Residential Use
Local Property Taxes:	**Local Property Taxes:** $131,125 Assessment @ $1.16162 **(Rutherford County)** Tax Rate per $100 equals $2,119®.

.

Property Address/Location: The subject property is located in Rutherford County, Tennessee and is addressed as 5104 Baker Road, Murfreesboro, TN 37129. The parcel is comprised of 2.29+/- Acres of residential zoned – agriculture use land improved with a single-family residential dwelling and agriculture use outbuildings. The subject is located outside the city limits of Murfreesboro, Tennessee in the community of Blackman, Tennessee. Highway 96 connects Blackman with Murfreesboro and on to the west to Franklin and Triune, Tennessee. These highways are considered major traffic arteries for this sector of Blackman and Rutherford County, Tennessee. The mailing address is 5104 Baker Road, Murfreesboro, TN 37129. The subject property is located approximately one mile north of the intersection of Blackman and Manson Pike with the Baker Road intersection 1/4th mile east. The Murfreesboro city limits is less than ½ mile east and south east.

The Rutherford County Property Assessor has identified the subject property as Tax Map 071 parcel 031.01, with the legal description recorded in Deed Book 261, page 591 of the Rutherford County Register's office. The ownership is listed as Melissa and John L. Batey, Jr.

Property Type: The subject property consists of a 2.29+/- acre tract of land improved with a single-family dwelling and agriculture use outbuilding or buildings. The subject is considered a cleared and wooded land parcel utilized as a small acreage home site. As referenced, the configuration is not typical as the driveway is the only road frontage. This distance is approximately 41 feet wide and 457 feet in length. This long driveway connects to the remainder of the 2.29 acres home site; again, note the enclosed tax map.

The property is utilized as a small acreage home site for the current owners. The subject is located within an area of Rutherford County, which has experienced accelerated residential growth during economic progression, however, has several large agricultures use land parcels. Current economic conditions may be in an adjustment mode due to increasing interest rates. The current inflation rate of between six and nine percent has created uncertainty in the stock market and the general economic conditions. Most economist are predicting a recession beginning now or maybe into the first and second quarter of 2023. This may change real estate markets nationally as well as locally.

This appraisal will address the subject property as one unit, not divided into different parts. The process of separating any part from the whole would require a different analysis. This action would take on a development mode. Development is typically considered to be a speculative venture performed by investors requiring a certain capitalized return for land, labor, and capital spent.

The subject is and has been utilized for residential purposes with this site reasonably suited for this utility. The previously described site configuration is not typical of most small acreage home sites. This may affect the marketability of the total; site and dwelling. However, the primary focus of this report will be the 2.29+/- acres, outbuildings, and single-family dwelling utilized as a single-family residence. This will be reflected in the Highest and Best Use analysis for the **current market value**. **This appraisal report does NOT represent any knowledge of specific crop yield production potential or any mature timber value for the subject property.**

Existing __X__ Proposed _____: To be appraised as an improved residential use land parcel per "Highest and Best Use".

Land Size: The enclosed tax map references the subject as being 2.29+/- Acres. The subject acreage tract has an irregular shape and has adequate entry along Baker Road. Refer to the enclosed tax map for size and parcel configuration. As referenced, the site configuration is not typical; however, the marketability may be affected but the current use of the subject property remains single-family.

Property Description/Improvements: The 2.29+/- acreage tract is improved with a single-family dwelling. The improvements include a Brick Veneer and siding dwelling containing approximately 3,499 square feet, with an unfinished basement area of 1,145 square feet; vehicle storage within a three-car garage of 1,042 square feet. There are other agriculture use storage structures referenced by your appraiser with the listed sizes estimated from the Property Assessor's Records: Farm Implement Shed 1,500 square feet and an "doll house" of +/-126 square feet. A visual view of these amenities deem these to be in good condition. The land area is considered mostly level to slightly rolling with a variance of elevations. There is a +/- 9,000 square foot asphalt drive serving the site and dwelling. There are residential use trees and landscaping surrounding the site. **I have no knowledge of any "timber cruse" completed and this report is not considering any value related to mature timber or agriculture crops that may be a portion of the subject property.**

Flood Hazard Insurance: Required _____ Not Required X
Confirmed By: Map 47149C0240119H Date 01-05-2007 Zone X___

Property Use: The subject property is currently considered a small acreage home site use land parcel with a one and one-half -story brick and siding dwelling including an unfinished basement area, attached garage storage, and referenced outbuildings. This is the most suitable and probable use for this parcel. The recent progression of the economy in this west sector of Rutherford County has created a regeneration of development in the subject neighborhood and most all of the areas within Rutherford County. However, please reference the previous statement concerning the economic outlook for the year 2023.

The subject appears to has a functioning septic system and this is assumed to be on the 2.29-acre site. **This is known as an "Extraordinary Assumption"; defined later in this report.** However, this would require a soil scientist and engineer's study. This analysis is strongly suggested.

The subject tract is further identified as follows:

Tax / Parcel Number	Owner of Record	Surveyed Acreage	Identifying Characteristics	Soil Types
71/30.01	Melissa & John L. Batey, Jr.	2.29+/-	+/-41 Feet Frontage on Baker Road; dwelling and outbuildings; small acreage home site	Appears to be conducive for septic systems
	Overall	2.29+/- Acres		**Per "Extraordinary Assumption"**

PROPERTY INTEREST APPRAISED

The current value estimate contained herein is that of the "**fee simple**" **interest** in the subject property.

PURPOSE OF APPRAISAL REPORT AND USE RESTRICTIONS

The purpose of this **Appraisal Report** is to render my opinion of the **current market value** of the "**fee simple**" **interest** of the subject property at its "Highest and Best Use". This report is solely for use by the Rutherford County Board of Education for asset acquisition by the client and for no other purpose. **There are NO Other Intended or Unintended Users or Uses.**

It is my understanding that this report will be used for internal purposes, limited to rendering a decision for asset acquisition by the client. The appraiser assumes no responsibility as to the legal ownership of said property and the **Appraisal Report** is made in "**fee simple**" terms. The appraiser is **NOT** responsible for misuse or improper communication of this report and/or the separation of the different parts of the whole. This is an **Appraisal Report**.

LISTING, CONTRACT AND SALES INFORMATION

The subject property **IS** currently under contract for purchase as of the effective date of the appraisal, November 3, 2022. As of the inspection date, November 3, 2022, there is No Known Listing Agreement. **The client and the owner have a contract agreement for the subject property. This Appraisal Report will be an aid for determining the sales price.**

EXPOSURE TIME / MARKETING TIME

Exposure Time / Marketing Time: Two related but different concepts that are often confused are Exposure Time and Marketing Time. USPAP specifically addresses the confusion. Exposure Time: Backward looking; ends on the effective value date. Based on factual, past events.

Marketing time is forward looking; starts on the effective value date. A forecast based on expectancies of future occurrences. Marketing time and exposure time are both influenced by price. That is, a prudent buyer could be enticed to acquire the property in less time if the price were less. Hence, the time span cited below coincides with the value opinion(s) formed herein. In the recent past, the volume of competitive properties offered for sale, sale prices, and vacancy rates have fluctuated little. Sale concessions have not been prevalent. The subject has several referenced marketing factors, which may extend the exposure period. In light thereof, an estimated exposure time for the subject is 6 to 12 months assuming competitive pricing and prudent marketing efforts. The Marketing Period is felt to also be 6 to 12 months.

DEFINITION OF MARKET VALUE

Market value as used within this report is as defined by the Office of the Controller of the Currency under 12 CFR, Part 34, Subpart C, included within the addendum. **This WILL BE the definition for this Appraisal Report.**

Probability of Value Change: The market value of the property appraised in this report is estimated as of the aforementioned date. Constantly changing economic, social, political, and physical conditions have varying affects upon real property values. Even after the passage of a relatively short period of time, property values may change substantially and require a review of the appraisal and re-certification.

Internal Revenue Service Definition of Market Value: The Internal Revenue Service (IRS) indicates the definition of value when applicable for the subject property as fair market value, defined as "the price at which the property would change hands between a willing buyer and a willing seller, neither being under any compulsion to buy or to sell and both having reasonable knowledge of the relevant facts." (IRC 20.2031-1 (b)). **This WILL NOT BE the definition for this Appraisal Report.**

Retrospective market value as defined by the Appraisal Institute: "An opinion of value that is likely to have occurred at a specified historic date, some time in the past. A retrospective value opinion is most frequently utilized in connection with appraisals for estate tax, condemnation, inheritance tax, and similar purposes."

Hypothetical Condition: a condition, directly related to a specific assignment, which is contrary to what is known by the appraiser to exist on the effective date of the assignment results, but is used for the purpose of analysis.

Extraordinary Assumption: an assignment-specific assumption as of the effective date regarding uncertain information used in an analysis **which, if found to be false, could alter the appraiser's opinions or conclusions.**

EFFECTIVE DATE

The effective date for this appraisal is November 3, 2022. The inspection date is November 3, 2022. The report date is November 10, 2022.

SCOPE OF LIMITED APPRAISAL

The scope of this **Appraisal Report** is the extent of the process of collecting, confirming, and reporting data contained within this **Appraisal Report**.

In developing my evaluation, consideration has been given to the property's zoning, surrounding improvements, and neighborhood environment. I have also considered its location in relation to similar competing developments in and around the subject. Your appraiser has also examined certain tax maps for the boundaries, improvement locations, and flood zone and soil classification data. The Rutherford County Planning and Engineering Department has been interviewed concerning zoning, utility placement, and allowable uses.

The work performed for this assignment included: preliminary analysis of the appraisal problem; inspection of the property being appraised; consideration of the highest and best use of the land and property as if improved and as if vacant; and when necessary collection and analysis of comparable agriculture and residential land suitable for single-family, agricultural, and possible development potential use and sales of similar use improved properties which would lead to completion of the Sales Comparison Approach to value as of the effective date of this report. If applicable, I have inspected the dwelling from an appraiser's perspective, as I am **NOT** a Home Inspector, Engineer, Plumbing or Electrical Contractor. If the client desires such an inspection, one or more of these professionals may be consulted. A complete visual inspection is defined as a visual interior and exterior inspection of readily observable areas.

No furnishings, plantings, or personal property were moved in order to obtain a better view of the subject. The client is encouraged to have a "home inspection" by a qualified individual.

The Income and Cost Approaches will **NOT** be processed; your appraiser will be estimating a value range for the subject property in preparation of this **Appraisal Report**, which presents the final value conclusions on the subject as of the referenced dates. Creditable results can be achieved by processing only the Sales Comparison Approach for properties such as the subject.

This **Appraisal Report**:

I. Identifies the real estate being evaluated;

II. States and defines the real property interest evaluated;

III. States the purpose and intended use of the evaluation;

IV. States and references a definition of the value to be estimated;

V. States the effective date of the evaluation and the date of the report;

VI. Summarizes the extent of the process of collecting, confirming and reporting data;

VII. States all assumptions and limiting conditions that affect the analyses, opinions, and conclusions;

VIII. Summarizes the evaluation procedures followed, the value conclusion, and references the existence of specific file information in support of the conclusion;

IX. Summarizes my opinion of the highest and best use of the real estate under evaluation, when such an opinion is necessary and appropriate;

X. States and explains the exclusion of any of the usual valuation approaches;

XI. Summarizes any additional information that may be appropriate to show compliance with, or clearly identifies and explains any permitted departures from the guidelines of Standard 1; and

XII. Includes a signed certification in accordance with Standards Rule 2-3.

SCOPE OF WORK PROCEDURE FOLLOWED

In preparing this **Appraisal Report**, the appraiser visually inspected the subject site and improvements, measured structures and collected improvement data from the assessor's office, reviewed the subject's neighborhood from the road right-of-way, received information from the owners and/or their agent, and gathered information from the subject's neighborhood or similar competitive neighborhoods in the area of comparable vacant residential and agricultural use land sales and improved sales of large and small acreage tracts with amenities suitable for residential and agricultural operations.

The Sales Comparison Approach is the only valuation method relied upon in this assignment. Per prior agreement with the client, the appraiser did not use the Income or Cost Approaches to value although for some properties these approaches would generally be considered meaningful. However, the subject property represents a residential and agriculture use property with improvements utilized for the owner's residential utility. The market area has adequate sales to represent the subject; therefore, the Income and Cost Approaches have been deemed to be **NON-SUPPORTIVE** and will **NOT** be processed. The appraiser was instructed to provide a value range estimate based on market activity of similar properties.

Because consideration was given to only one valuation method, this **Appraisal Report – has a Limited Methodology; processing only the Sales Comparison Approach**. Furthermore, this **Appraisal Report** sets forth only the appraiser's conclusions; however, the full extent of the process may not be apparent to the reader in the contents of the report. Therefore, the report format is considered to be **SUMMARIZED processing only the Sales Comparison Approach for this "Appraisal Report".**

SALES HISTORY OF THE SUBJECT PROPERTY

For residential use properties, a three-year history is necessary. There have been no sales of the subject property occurring for the three years prior to the effective date of the appraisal. There is a Warranty Deed dated November7, 1997, John L. Batey, Sr., and Annie J. Batey, to John L. Batey, Jr. and wife, Melissa W. Batey, sworn consideration $1,600.00; Record Book 261, Page 591, Rutherford County Register's Office. Currently, and as of the effective date of this appraisal, there **IS** a contract to purchase. This has been explained previous in the report.

IMMEDIATE NEIGHBORHOOD INFORMATION

Percentage Built-up: The neighborhood surrounding the subject is composed of variable uses with most emphasis placed on single-family residential complimented by commercial zoned lands necessary for proper community development; 60% residential ownership use, 10% commercial use, and 30% agricultural use. Commercial users are fronting the major roads such as Veterans Parkway, Franklin Road, and Manson Pike/Burnt Knob Road.

These are designed and zoned for retail and trade service users by the City of Murfreesboro and Rutherford County Planning Department. Most are considered local and sectional retail businesses and are located along main thoroughfares mostly east within the city limits of Murfreesboro, Tennessee.

Predominant Land Uses in Immediate Area: Predominant land use for the immediate area is low density residential, agriculture and lands considered development potential. Neighborhood commercial users have been defined fronting major thoroughfares, i.e., grocery stores, market and fuel sales, neighborhood retail, and office. There are a large number of single-lot subdivisions with most dwellings being located on 10,000 to 15,000 square foot subdivision lots. In all directions of the subject property are conventionally designed residential developments as well as cluster developments of medium density residential users. However, the demand for single-family building lots has been in a progressive mode as economic conditions for Rutherford County and Murfreesboro, Tennessee have been in a growing and positive mode. Residential building lots are in short supply producing above average demand for development potential land parcels. **Again, note previous comments concerning future economic conditions.**

Competitive Advantages/Disadvantages: Advantages include the location fronting Baker and Blackman Roads, the utilities in place, and the general demand for commercial and residential use properties in and around Rutherford County during economic progression. This property is located near the southwest section of Murfreesboro's city limits within six to seven miles of Murfreesboro's downtown business district. The use of the subject is supported by the residential ownership properties in the immediate area.

Disadvantages for the subject are limited to personal preference typically not recognized in the marketplace. However, the current trend of agricultural, general ownership, low density, single-family use land parcels in the immediate area supports this use with the subject suitable for agriculture and single-family home sites. An assortment of residential developments are possible. The site configuration has been referenced.

HIGHEST AND BEST USE:

Highest and best use is defined in The Dictionary of Real Estate Appraisal, **Fourth Edition (Chicago: Appraisal Institute, 2002)**, as:

> "That reasonable, probable, and legal use of vacant land or an improved property, which is physically possible, appropriately supported, financially feasible, and that results in the highest value. The four criteria the highest and best use must meet are:

- Legal permissibility
- Physical possibility
- Financial feasibility, and
- Maximum profitability

> The definition immediately above applies specifically to the highest and best use of land. It is to be recognized that in cases where a site has existing improvements on it, the highest and best use may very well be determined to be different from the existing use. The existing use will continue, however, unless and until land value in its highest and best use exceeds the total value of the property in its existing use.
>
> Also implied is that the estimation of highest and best use results from judgment and analytical skill, i.e., that the use concluded from analysis represents an opinion, not a fact to be found. In appraisal practice the concept of highest and best use represents the foundation upon which market value rest. In the context of most probable selling price (market value) another appropriate term to reflect highest and best use would be most probable use. In the context of investment value an alternative term would be most profitable use."

When considering this definition, consideration must be given to its legal use as well as its most profitable use. The legal usage is usually determined in accordance with the local zoning regulations. As stated previously, the zoning for the subject is Medium Density Residential. Any alternate zoning request must be approved from the Rutherford County Planning Commission. Zoning "**by right**" is RM. Any alternate zoning request must be approved from the Rutherford County Planning Commission.

Consideration must also be given to the neighborhood in which the property is located and the uses for which land is presently being utilized. Also, what is the demand for uses and what is the demand for possible future uses of the area? The vacant property in this area is suitable for single-family development with limited demand for multi-family and commercial use tracts. Since the subject site is considered vacant and zoned RM, agriculture use, single-family residential building lots or related community service activities could conceivably fill the definition of highest and best use.

In considering the property as if improved with certain improvements, the highest and best use would take on a different analysis. The single-family dwelling and agriculture use outbuilding currently are present and offering utility and are felt to offer contributory value to the subject property.

When analyzing vacant property with special zoning such as the subject, demand for this usage must be considered. Other support for judgment of highest and best use must also be considered. The contribution to the community, wealth maximization for the property owners, the most probable use, and the most profitable use are all factors involved in determining highest and best use.

Residential zoned properties typically produce the highest profit when ample demand exists. This classification also profits the community in providing residential building lots and employment opportunities for residents in the community. Wealth maximization to property owners is achieved when the demand for these residential use building lots exists. The most probable use is sometimes different than allowable uses under certain zoning. The key to all the answers of these judgment questions is demand. If proper demand does not exist, the highest and best use and/or most probable use would be different from allowable zoning.

Demand Analysis

Murfreesboro and Rutherford County have had a healthy housing market. During economic progression, this sector of Rutherford County has a robust demand for single-family building lots. The immediate area has several vacant land parcels ready for residential use. Typically, single-family residential properties are near the subject with retail, office, and travel service retail on the major thoroughfares and in the major cities within the county, i.e., Murfreesboro, Smyrna, and LaVergne. Residential development had also been successful during the past ten years post-recession of 2008. Previously referenced subdivisions in all directions of the subject property are considered successful with over 5,000 residential building lots developed during this period. South and east of this area within the city limits of Murfreesboro is another section of successful single-family developments as well as neighborhood retail users.

Again, **during economic progression**, steady interest in residential, industrial, and commercial users indicates a stable market. However, as mentioned, industrial/commercial use real estate acts as support units for the community and the residential housing market, i.e., residential developments need retail and industrial service buildings to house necessary community amenities such as employment centers, shopping, service, and dining centers. Government provided services such as schools and other uses are healthy for community progress. The recovery from the economic recession, which began in 2008, had slowed growth and demand in residential and commercial use properties in the county of Rutherford. However, a growth trend over the past ten years has renewed demand for single-family building lots. However, this demand is approaching the level of improvement established in the years from 2000 to 2007; note the “Building Permit” table within the addendum of this report.

This is reflective of certain sectors of LaVergne, Smyrna, Murfreesboro and Rutherford County, as the national economy is currently in an adjustment mode; recession probability, interest and inflation increases may decrease real estate demand. The financial markets, as well as the stock market, are currently in a volatile mode, however, the past ten years has overall been considered **progressive. *Note previous references to the future economic projections.** Many economists have estimated a recession is in the future for the year 2023. However, the subject neighborhood remains a popular chose for home buyers.

Building Permit Analysis.

Having any requests for permits indicates a continued demand for single-family dwellings. Refer to the Permit Chart issued by LaVergne, Smyrna, Murfreesboro and Rutherford County included in the addendum of this report. As the current permits are decreasing, the number remains positive.

Ample demand for first-time homebuyers remains steady with inventory also stable. The past five years has seen Rutherford County increasing its population at an annual rate of 3% to 5%. The population growth chart, also included in the addendum, represents a positive increase in residents and a projection for this continued increase into the twenty-first century. It is estimated Rutherford County will have over 392,000 persons by year-end of 2024.

The previous analysis established demand with a downturn in market activities possible for the 4th quarter of 2022 and an adjustment for the first quarters of 2023. This downturn may mirror the national economy and unsettled financial markets. Most economists seem to believe the local housing market should continue as a prevailing choice for residential habitation.

Rutherford County and the City of Murfreesboro's building permit requests may be in an adjustment mode, as interest and inflation rates seem to be increasing throughout the country. However, the subject remains viable as a single-family home site use for a variety of residential and support users.

Therefore, when considering the subject property in its highest and best use, the most probable use and the highest and best use are estimated to be the same with demand currently in a reasonable position. The subject would be most suited for single-family residential building site and other support users such as community use structure or development.

As If Vacant: The highest and best use as if vacant would be for continued agriculture use for the and/or residential single-family building site similar to the properties surrounding the subject property and within the general outlying neighborhoods situated along the periphery of Murfreesboro's city limits.

As If Improved: The highest and best use as if improved would be generally the uses listed above; i.e., development potential use with single-family residential dwellings or support facility uses. This conclusion is subject to the continued demand for residential housing and economic progression.

DESCRIPTION OF THE IMPROVEMENTS

As previously stated, the highest and best use of the subject site, as if vacant, has been determined to be a residential-use, single-family with certain amenities suited for a small acreage tract. The highest and best use definition states, "It is to be recognized that in cases where a site has existing improvements, the highest and best use may very well be determined to be different from the existing use. The existing use will continue, however, unless and until land value in its highest and best use exceeds the total value of the property in its existing use."

The subject is improved with a one- and one-half story, brick and siding dwelling containing approximately 3,499 square feet of living area; note enclosed Sketch-Addendum for the division of ground and upper-level area. There is an unfinished basement area totaling 1,145 square feet. This is typical of most basements in the market area; concrete block with concrete slab floor, limited lighting and exposed duct work from the HVAC system. The basement also serves as a tornado shelter with an outside entry for this purpose. The dwelling was constructed circa 1978 with an addition completed circa 1993. Typical improvements have occurred during the life of this dwelling. Deferred maintenance is typical to all dwellings of this age and considered to be of good construction quality and overall good condition. The dwelling is constructed over a concrete block foundation-basement area.

The dwelling has a wood frame support structure with the Brick-Veneer siding attached to this conventional framing; there is also some vinyl and aluminum soffits and guttering. The interior walls and ceiling are drywall with an assortment of wallpaper typical of the 1993 era. There is typical cabinet and mill work considered an average trim package. The gutters are aluminum metal with fiberglass roof shingles over plywood decking. Insulated fixed double insulated replacement windows, with central heating and cooling; there are Electric Baseboard Heaters in the upper level which seems to be for back-up, Oak hardwood floors, and ceramic tile, with carpeting in the bedrooms. The appliance package is suitable for this era and design dwelling. There is one masonry fireplace.

The dwelling floor plan consists of a total of a bonus-recreation room with a day room, one living-one dining room, and kitchen with eating area, two bedrooms and three baths on the ground level and two upstairs with an office room and one full bathroom. There is a large laundry room and three entry areas. (Note building sketch included in addenda). Again, this is considered a primary residence for the owner.

Additional features for the dwelling include three covered and/or open porches and one brick patio and arbor; again, note enclosed sketch. The automobile storage is an attached garage suitable for three vehicles totaling 1,042 square feet. There is an average condition wood pole framed implement shed of +/-1,440 square feet considered to be in average condition and a recreational "Doll House" of +/-126 square feet. There is also a long-paved asphalt driveway of over 9,000 square feet. As the dwelling is considered to be a combination of 44 and 29 years old it is considered to be in good overall condition. There are deferred maintenance items typical of its age and use.

An item of interest is the stairwell to the second level. These stairs are very narrow and have a severe turn near the first floor, see attached photograph. This item seems to not be building codes compliant. A professional in this field should inspect if the client is concerned. The steps to the basement also seem to be non-compliant.

SUMMARY OF MARKET INFORMATION

The research and analysis revealed several sales pertinent to this analysis. These sales are listed on the following pages. Other possible sales and supporting documentation of these comparables are retained in your appraiser's workfile and are **NOT** relative to this analysis.

SALES COMPARISON APPROACH – Residential Dwelling, with 2.29+- Acres

This report will consider the subject in its highest and best use. This tract is felt to represent the highest and best use analysis for residential use, agriculture and single-family with the land considered a small acreage home site. The site "As If Vacant" will be considered in order to establish a basis for site acreage adjustments in the market sales comparison of improved properties.

The Sales Comparison Approach involves direct comparison of the property being appraised to similar properties that have sold in the same or similar markets in order to derive a market value indication for the property being appraised assuming all improvements. This approach is also called the Market Data Approach. The Sales Comparison Approach, which relies on the principle of substitution, implies that a prudent person will not pay more to buy a property than it will cost to buy a comparable substitute property. The subject property **DOES** have a current contract for sale which has previously been explained.

Sales of residential-agriculture use properties with single-family dwellings in this market area of Murfreesboro, Tennessee and the surrounding area of Rutherford County were researched with emphasis given to sales of similar construction quality and amenities. These sales transactions were identified utilizing available real estate data information services provided by the local County Property Assessor, Register of Deeds transactions, and the Regional Real Estate Multiple Listing Service. My sort and selection criteria are listed below:

- Single-Family Executive dwellings of similar construction quality, situated on acreage tracts with similar accessory structures and amenities; One and one-half story Ranch Farm House or Similar Style Dwellings

- Sale date within the previous two years

These selection criteria resulted in several possible sales transactions within Rutherford County, which were reviewed for their applicability to the characteristics and location of the subject property. Therefore, surrounding and adjoining counties were researched for similar style, size and quality dwellings. This search revealed several sales in Williamson, Bedford, and Rutherford Counties. However, I have selected the most suitable and comparable sales as being from Rutherford County. This analysis resulted in the selection of four properties felt to support the appraisal process for the subject property.

The process of listing and analyzing these sales is necessary in order to interpret the local market for properties similar to the subject's characteristics, proximity, size, age, condition, and time of sale results in supporting the final value estimate from this approach. This process gives my analysis a firm-based foundation for my opinion and estimate of the subject's **Current market value**.

COMPARABLE MARKET SALES

COMPARABLE SALE NO. 1

Property Location:	5518 Batey Circle, Murfreesboro, TN 37129
Tax Map:	Map 071, Parcel 036.00
Grantor / Grantee:	Karen Laurer. / David Paladino
Sale Price / Market Duration	$750,000 / NA
Sale Date / Record Book/Page No.:	09-17-2021 / 2142/1049
History of Sale:	04-26-2019, $530,000, 1768/2964; 09-18-2018, $115,000, 1712/1260; 05-08-2018, $270,000, 1672/2332
Land Area / Land to Building Ratio:	2.70 Acres (117,612 Sq. Ft.)
Land Value Estimate:	$175,000

BUILDING DESCRIPTION

Building Description:	1 Story Single-Family Dwelling, Brick Exterior, Average Quality, Average Condition
Dwelling Area:	3,233 Sq. Ft., 3 Bedrooms, 4 Baths, Year Built: 1978
Garage/Car Storage:	Asphalt Driveway, 2 Car Attached Garage-650 SF
Additional Features:	Unfinished Basement, Covered rear porch w/fireplace
Sale Price per Square Foot:	Gross: $23.98

Comments: Additional features include: 15x29+/- In ground pool, 10x12 storage building, fence, irrigation system, 597 square feet of finished basement is included within the living area of 3,233. The remainder of the basement is unfinished; 245 square feet. Dwelling had a complete renovation after the sale dated 4-16-2019 and prior to this transaction.

COMPARABLE SALE NO. 2

Property Location:	8856 Rocky Fork Road, Smyrna, TN 37167
Tax Map:	Map 051, Parcel 034.00
Grantor / Grantee:	Rita L. Benson / John C. Fremont Etux Sarah E.
Sale Price / Market Duration	$785,000 / NA
Sale Date / Record Book/Page No.:	01-24-2022 / 2199/3909
History of Sale:	No Prior Sales for Past Three Years
Land Area / Land to Building Ratio:	5.51 Acres (240,015 Sq. Ft.)
Land Value Estimate:	$250,000

BUILDING DESCRIPTION

Building Description:	2 Story Single-Family Dwelling, Hardboard Exterior, Average Quality, Good Condition
Dwelling Area:	3,242 Sq. Ft., 3 Bedrooms, 2 Baths, Year Built: 1953
Garage/Car Storage:	Asphalt Driveway, 2 Car Carport-Detached
Additional Features:	2 Fireplaces, Covered Porch, Screened Patio, Storage Building
Sale Price per Square Foot:	Gross: $242.13

Comments: Additional features include: Farm Shop 440 sq. ft.; Storage Building 1,500 sq. ft.; 2 Car Carport-Detached 440 sq. ft.; Screened Patio w/fireplace 360 sq. ft.; Covered Porch 120 sq. ft. This dwelling has received a complete renovation.

COMPARABLE SALE NO. 3

Property Location:	2540 Blantons Point, Murfreesboro, TN 37129
Tax Map:	Map 079, Parcel 063.07
Grantor / Grantee:	Terry Parrott Etux Cynthia / Timothy & Eleanor Bunton Trusts
Sale Price / Market Duration	$750,000 / NA
Sale Date / Record Book/Page No.:	08-22-2022 / 2275/1784
History of Sale:	No Prior Sales for Past Three Years
Land Area / Land to Building Ratio:	1.49 Acres (64,904 Sq. Ft.)
Land Value Estimate:	$150,000

BUILDING DESCRIPTION

Building Description:	2 Story Single-Family Dwelling, Brick Exterior, Average Quality, Good Condition
Dwelling Area:	3,607 Sq. Ft., 3 Bedrooms, 2.5 Baths, Year Built: 1986
Garage/Car Storage:	Hard Service Driveway, 2 Car Garage-Attached
Additional Features:	1 Fireplace, Patio, Screened Deck, In-ground Pool
Sale Price per Square Foot:	Gross: $207.93

Comments: Additional features include: 2 Car Attached Garage 621 sq, ft., Stoop 24 sq. ft., Screened Deck 120 sq. ft., Salt Water in-ground pool 720 sq. ft., Porch 320 sq, ft.

COMPARABLE SALE NO. 4

Property Location:	3327 Blackman Road, Murfreesboro, TN 37129
Tax Map:	Map 071, Parcel 039.19
Grantor / Grantee:	Kevin Killets Etal Jennifer Killets / Terry Williams Etux Nancy
Sale Price / Market Duration	$840,000 / NA
Sale Date / Record Book/Page No.:	07-12-2021 / 2109/2072
History of Sale:	No Prior Sales for Past Three Years
Land Area / Land to Building Ratio:	6.6 Acres (287,495 Sq. Ft.)
Land Value Estimate:	$275,000

BUILDING DESCRIPTION

Building Description:	2 Story Single-Family Dwelling, Brick Exterior, Average Quality, Good Condition
Dwelling Area:	3,446 Sq. Ft., 4 Bedrooms, 3.5 Baths, Year Built: 2000
Garage/Car Storage:	Asphalt Driveway, 2 Car Garage-Attached
Additional Features:	1 Fireplace, Storage Building, Covered Patio
Sale Price per Square Foot:	Gross: $243.76

Comments: Additional features include: Asphalt Driveway, 2 Car Attached Garage 700 sq. ft., In-ground pool 448 sq. ft., Covered Patio 155 sq. ft.,

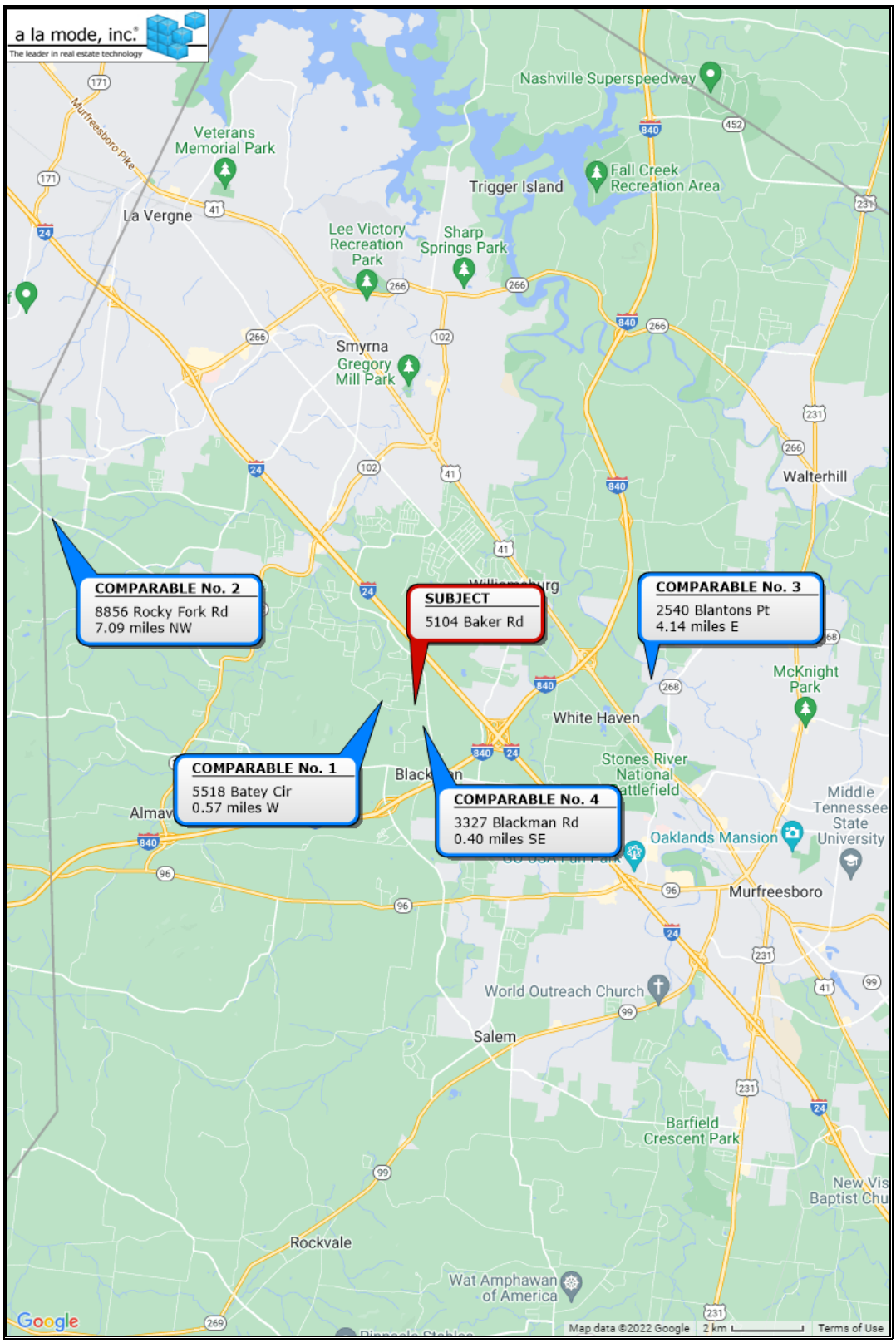
SUMMARY OF SINGLE-FAMILY DWELLINGS WITH ACREAGE TRACT

Comparable Sales Adjustment Grid

Subject Property: 5104 Baker Road
Murfreesboro, TN 37129

COMPARABLE NUMBERS

Subject / Location	Comparable Sales				
Melissa & John L. Batey, Jr.					
5104 Baker Road	1	2	3	4	5
Murfreesboro, TN 37129	Sale 1	Sale 2	Sale 3	Sale 4	Sale 5
Factors: / Comparable Address	5518 Batey Cir, Murfresboro	8856 Rocky Fork Rd., Smyrna	2540 Blantons Point, Murfreesboro	3327 Blackman Rd., Murfreesboro	
Date of Sale	09/17/21	01/24/22	08/22/22	07/12/21	
Location Adjustment					
Dwelling Size-Sq. Ft.-Bedroom-Baths, etc. 3,499-4 Bth	$20,000	$20,000	($5,000)	$0	
Site/Acreage--2.29 Acres	$0	($50,000)	$25,000	($100,000)	
Construction Quality-Good	$0	$0	$0	$0	
Age/Condition-44 & 20 years/good cond.	($50,000)	($50,000)	$0	($50,000)	
Asphalt/Concrete Driveway	$0	$0	$0	$0	
Add. Features: Porches, patios, 1-F/P-, Appli, Etc.	$0	($10,000)	$0	$0	
Add. Features: Unfin-Bsmt-1,145 SF w/Tornado Shelter	$25,000	$30,000	$30,000	$30,000	
Add. Features: Adjustment for Above Grade Garages, Barns,Sheds, pool, etc. *	($35,000)	$10,000	($35,000)	$0	
Add. Features: Closing Cost by Seller	$0	$0	$0	$0	
Total Dollar Adjustment	($40,000)	($50,000)	$15,000	($120,000)	
Overall Sales Price-Gross	$750,000	$785,000	$750,000	$840,000	
Adjusted Sales Price of Comparable	$710,000	$735,000	$765,000	$720,000	
Subj. Size 3,499 SF-Comp.Total Size- SF	3,233	3,242	3,607	3,446	
*Contribution of Value for these Amenities, includes sheds, Outbuildings, & other outside amenities					
Adjusted Sales Price per Square Foot Mean:			**$732,500**		
Adjusted Sales Price Per Sq. Ft. for Sales 1,2 & 3; Mean:			**$721,667**		



AREA MAP – COMPARABLE MARKET SALES & SUBJECT PROPERTY

COMPARABLE SALES ANALYSIS – Residential Dwelling, with 2.29+/- Acres

In Rutherford County, Tennessee sales of residential dwellings with 2.29+/- acre land parcels occur within this market area with adequate frequency. However, after the adjustment for the land contribution, which is supported by the land as if vacant analysis, these sales of residential dwellings are felt to best represent the subject property. The land sizes are various with the value differences adjusted accordingly. The major differences in amenities and features require market-derived adjustments. These dissimilarities have been addressed on the previous Adjustment Grid.

The comparable sales' building qualities are all considered similar to the subject as each represents existing single-family dwellings of similar marketability and amenities: one and one and one-half story ranch design dwellings. The adjustments are based on cost to simulate the comparable sales to the subject. The size only adjustment for the dwellings has been extracted from similar residential sales to equate to +/-$75 per square foot for size only difference. The quality adjustment is related to the differences and adjusted accordingly.

The additional features adjustments for the subject and comparable sales amenities are referenced from cost to construct less physical depreciation and market extraction through paired sales. The subject property has an unfinished basement area including an attached vehicle storage (three car attached garage), 1,440 square feet implement shed and other amenities necessary to allow this to be a residential use property. A thorough search of comparable properties revealed adequate sales of one and one and one-half story ranch dwellings on small acreage farm type properties similar to the subject occurring in Rutherford County. Therefore, these sales represent the subject in its location within Rutherford County.

The land value, location variables and improvements have been accounted for on the sales information page for each comparable. This extraction relates to the market response, size of tract, or land value relative to each comparable sale. Each sale has been reviewed and adjusted accordingly. The unit of measure is gross sales price to adjusted sales price to relate to the final indication of value.

The $30,000 adjustment for the unfinished basement area is related to the contribution of value the collective sum of the total for this amenity. This contribution is estimated from market factors related to the dwellings only. This contribution of value was estimated at +/-$20-$25 per square for the unfinished area, for the $30,000 value contribution as a collected sum.

All sales are located within Rutherford County even as the mailing address for these comparables is listed as: Murfreesboro and Smyrna, Tennessee. All comparables have similar dwelling designs. These sales have similar amenities as the subject with each considered a one and or one and one-half story ranch dwelling with a small amount of acreage. Each sale has similar

amenities, secondary buildings or amenities, and living areas as the subject. All sales seem to be very similar to the subject with each located within the west to northwestern section of Rutherford County. Sale one has a smaller unfinished basement area similar to the subject with the remaining sales not having this amenity.

The land adjustment is relative to market response. The largest adjustment for all comparables is the land differential, age/renovation, and/or the lack of basement area. The basement adjustment is for three of the comparables with the age/renovation adjustment also for three of the sales. The subject has a reasonable home site with this setting currently utilized for a small acreage home site utility and residential enjoyment. These comparables required a reasonable gross dollar adjustment and are utilized for location and desirability response. **Again, this appraisal does not represent any knowledge of specific crop yield production potential or any mature timber value for the subject property.**

The adjusted indication supports these comparables. All of the comparable sales have occurred within the years 2021 and 2022. Comparables one, two and four will be weighted with slightly greater emphasis as each is deemed to represent the subject property. These three comparables are independent of any subdivision restrictions. Sale three is located in a controlled subdivision. After the adjustment process, this sale produces the larges dollar indication The adjusted mean indication for these three comparables is +/-$721,667. Therefore, these comparables will receive weighted emphasis for the final indication of value. All comparables are considered representative of current market value conditions, as of the effective date of the appraisal, November 3, 2022. Therefore, the selection of comparables in this market area was necessary to represent the motivation of buyers and sellers of properties similar to the subject.

The adjustment grid is utilized to equate as best as possible each comparable sale to the subject. The adjustments have been explained and deemed to be market related. The calculated mean for all four sales is $732,500 with number one, two, and four calculating to $721,667. As previously stated, sales one, two and four are relied upon and deemed to provide the most support for the final indication as each sale has a similar design, style, and amenity package as the subject. However, a blending of each of these analytical factors will be considered for the final indication of value.

The subject is a distinct property with various amenities and features. The range of adjusted value per comparable sale is $710,000 to $765,000, which produces a +/-7% range. Again, the adjustment mean is calculated to $732,500. However, the comparables deserving most emphasis produce a range from $710,000 to $735,000 a +/-4% range. All comparables are felt to support the final opinion of current value as each has similar design, quality, and finish features. All sales are felt to be reliable indicators for the subject. However, emphasis is placed on the adjustment mean from the two analyses. This blended analysis is felt to best support the final value opinion. The final opinion, as indicated from the Sales Comparison, is listed below or on the following page..

When appraising real estate for the purpose of establishing a most probable selling price for the clients, the appraiser references in his/her opinion a range of possible sale prices. For the subject property this process produces an adjusted range from the Sales Comparison of $710,000 to $765,000. This range of possible value represents my opinion of current market value conditions pertaining to similar properties such as the subject. However, the final opinion of value must be announced. This reconciliation references the four most probable value opinions supported by the valuation approaches and/or approach processed. **However, as stated the final price could be within the referenced range.**

The definition of "Price" is different than "Value" as value expresses an economic concept and is never a fact but always an opinion and qualified by definition.

> "Price" as defined by the Dictionary of Real Estate Appraisal; 5th Edition, Appraisal Institute: "The amount asked, offered, or paid for a property. Once stated, price is a fact, whether it is publicly disclosed or retained in private. Because of the financial capabilities, motivations, or special interest of a given buyer or seller, the price paid for a property may or may not have any relation to the **value that might be ascribed to that property by others**." Also listed within the USPAP guidelines.

Final Conclusion: Based upon the preceding calculations supported by the Sales Comparison Analysis and the indication demonstrated in the marketplace, it is my opinion the **current "As Is" value** of the subject property in its current condition, assuming a 2.29+/- acre site, with the effective date being November 3, 2022, as improved, with the report date, November 10, 2022, subject to any limiting and "**Hypothetical Conditions**" listed, is:

SEVEN HUNDRED THIRTY THOUSAND DOLLARS

($730,000.00)

Final Analysis

The preceding analysis references many marketing factors related to valuation of real estate. The above referenced range of value offers the client an array of possibilities. The final value estimate of small acreage tract properties with a single-family dwelling is often difficult, as many factors affect market transactions. However, the final estimate of value represented in this analysis is felt to be supported by market transactions of local buyers and sellers.

It should be noted; current economic conditions may be in an adjustment mode (home mortgage rates are near 7%), requiring purchase prices of over $700,000 to be less in numbers over the past three to four years. Lending for such properties requires a very liquid loan transaction with typical loan to value ratios being at or below typical underwriting. Assuming quick sale; certain discounts may become necessary in order to attract qualified buyers.

Therefore, based upon the preceding analysis and the indication demonstrated in the marketplace, it is my opinion the **Current market value** of the subject property, as improved; assuming a 2.29+/- acre site, **subject to a six to twelve-month exposure and marketing period;** as of November 3, 2022 effective date and inspection date of the appraisal, and the report date being November 10, 2022, subject to the "**Hypothetical Conditions" so referenced**, is:

SEVEN HUNDRED THIRTY THOUSAND DOLLARS

($730,000.00)

Residential Dwelling, and 2.29+/- acre Tract
Current Market Valuation

Thank you for the opportunity to be of service to you in this matter. If further information is necessary, please call 615-895-6260.

Respectfully submitted,

Johnny M. Sullivan, SRA
State Certified General
Real Estate Appraiser - CG-493

A D D E N D U M

CERTIFICATE

I certify that, to the best of my knowledge and belief:

1. The statements of fact contained in this report are true and correct.

2. The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and are my personal, impartial, and unbiased professional analyses, opinions, and conclusions.

3. I have no present or prospective interest in the property that is the subject of this report, and no personal interest or bias with respect to the property or to the parties involved with this assignment.

4. My engagement in this assignment was not contingent upon developing or reporting predetermined results.

5. My compensation for completing this assignment is not contingent upon the development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this appraisal.

6. My analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the Uniform Standards of Professional Appraisal Practice and the Code of Ethics of the Appraisal Institute

7. The use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.

8. I have made a personal inspection of the property that is the subject of this report: Inside / outside / both / proposed improvements and/or vacant land.

9. No one provided significant professional assistance to the person signing this report.

10. As of the date of this report, I, Johnny M. Sullivan, SRA, have completed the requirements of the Continuing Education program for designated members of the Appraisal Institute.

11. I hereby certify that I am a Tennessee State Certified General Real Estate Appraiser and my certificate number is CG-493.

12. This appraisal was not made, nor was the appraisal rendered on the basis of a requested minimum valuation, specific valuation, or any amount, which would result in the approval of a loan.

13. The person signing this report has the knowledge and experience to complete the assignment competently and is duly licensed by the appropriate state to perform this level of appraisal.

14. I have / have not appraised this property or performed any other real estate related service in the three years prior to accepting this assignment.

11-03-2022 (Effective)
11-10-2022 (Report)

Johnny M. Sullivan, SRA **DATE**
State Certified General
Real Estate Appraiser – CG-493

Property: Melissa & John L. Batey, Jr.
Address: 5104 Baker Road
Murfreesboro, TN 37129

ADDITIONAL SCOPE OF WORK

If applicable, I have inspected the dwelling from an appraiser's perspective, as I am NOT a Home Inspector, Engineer, Plumbing or Electrical Contractor. If the client desires such an inspection, one or more of these professionals may be consulted.

A complete visual inspection is defined as a visual interior and exterior inspection of readily observable areas. No furnishings, plantings, ice, snow, or personal property were moved in order to obtain a better view of the subject. The appraiser is not a building or home inspector, contractor or a structural engineer. The appraiser is not a heat/air, electrical, or plumbing contractor or inspector. The client is encouraged to have a "home inspection" by a qualified individual.

GENERAL ASSUMPTIONS AND LIMITING CONDITIONS

This **Appraisal Report with the Scope of Work Limited to Processing Only the Sales Comparison Approach** and resulting estimate of value is subject to the following assumptions and limiting conditions:

1. The forecasts, projections, or operating estimates contained herein are based upon current market value conditions, anticipated short-term supply and demand factors, and a continued stable economy. Therefore, these forecasts are subject to changes in future conditions. Value estimates in this appraisal report are stated in United States currency as of the date of appraisal.

2. No responsibility is assumed for the legal description or for matters including legal or title considerations. Title to the property is assumed to be good and marketable and in Fee Simple Interest, unless otherwise stated in the report.

3. The property is appraised free and clear of all existing liens and encumbrances, including deed restrictions and developers' agreements, unless otherwise stated in this appraisal report.

4. Information, estimates, and opinions furnished to the appraiser by others is believed to be true, correct, and reliable. A reasonable effort has been made to verify such items; however, the appraiser assumes no responsibility for their accuracy.

5. Maps, plats, and exhibits included in this appraisal report are for illustration only, as an aid in visualizing matters discussed within the report. They should not be considered as surveys or relied upon for any other purpose. The appraiser has not made a survey of the property, and no responsibility is assumed in connection with such matters.

6. The physical condition of the improvements described herein was based on a visual, walk-through inspection. No liability is assumed for the soundness of structural members, building components, mechanical equipment, plumbing, or electrical components as no professional tests were made of the same. The appraiser assumes that no hidden or unapparent conditions of the property, subsoil, or structures exist, which would render the property more or less valuable. The appraiser assumes no responsibility for such conditions, or for engineering, which might be required to discover such factors. The appraiser recommends that the client obtain an opinion from a competent engineering firm.

7. It is assumed that there is full compliance with all applicable federal, state, and local environmental regulations and laws unless noncompliance is stated, defined, and considered in this appraisal report.

8. It is assumed that all applicable zoning and use regulations and restrictions have been complied with, unless a nonconformity has been stated, defined, and considered in this appraisal report.

9. It is assumed that all required licenses, certificates of occupancy, consents, or other legislative or administrative authority from any local, state, or national government or private entity or organization have been or can be obtained or renewed for any use on which the value estimate(s) contained in this report is based.

10. It is assumed that the utilization of the land and improvements is within the boundaries or property lines of the property described and that no encroachment or trespass exists, unless noted in this appraisal report.

11. Any distribution of the valuation in the report between land and improvements applies only under the existing program of utilization. The separate valuations for land and building must not be used in connection with any other appraisal and are invalid if so used.

12. Value estimates in this appraisal report apply only to the entire property, and cannot be prorated to individual portions or fractional interests. Any proration or division of interest will invalidate the value estimate(s), unless such proration or division of interests is set forth in this appraisal report.

13. The appraiser is not required to give testimony or attendance in court by reason of this appraisal, with reference to the property in question, unless arrangements have been made previously therefore. The fee charged for this appraisal does not include payment for court testimony or for further consultation.

14. Unless otherwise stated in this appraisal report, the appraiser did not observe the existence of hazardous material, which may or may not be present on the property. The appraiser has no knowledge of the existence of such materials on or in the property. The presence of substances such as asbestos, urea-formaldehyde foam insulation, or other potentially hazardous materials may affect the value of the property. Value estimates within this appraisal report are predicated on the assumption that there is no such material on or in the property that would cause a loss in value. No responsibility is assumed for any expertise or engineering knowledge required to discover them. The appraiser recommends that appropriate experts be retained to investigate and determine to what extent, if any, such substances are present and what risks, if any, are involved.

15. The determination concluded in this appraisal, as to whether or not the subject property is located within a Flood Hazard Zone, is based solely on an inspection of available Flood Insurance Rate Map(s) (FIRM) which are distributed by the National Flood Insurance Program (NFIP). The NFIP maps represent the most recent revisions available after reasonable investigations. Although these maps are the basis for flood hazard determination, the map scale is typically not adequate for accurate comparisons with other maps and/or surveys. Therefore, the determination presented herein regarding location of the subject property outside or within a flood hazard zone should not be construed as a guarantee or certification. A qualified engineer and/or surveyor can only provide certification of this. If there is any possibility that the subject is within an identified flood hazard zone, the appraiser recommends that the property should be covered by adequate flood insurance.

16. Unless otherwise noted in this appraisal report, no consideration in the valuation process has been given to subsurface rights (minerals, oil, water, etc.) that may be found on the subject property.

17. Any proposed or incomplete improvements included in this appraisal report are assumed to be completed in accordance with approved plans and specifications and in a workmanlike manner.

18. The appraiser reserves the right to alter opinions of value contained in this appraisal report on the basis of information withheld or not discovered in the normal course of a diligent investigation.

19. Disclosure of the contents of the appraisal report is governed by the Bylaws and Regulations of the professional appraisal organizations with which the appraiser is affiliated.

20. Neither all, nor any part of the content of the report, or copy thereof (including conclusions as to the property value, the identity of the appraiser, professional designations, reference to any professional appraisal organizations, or the firm with which the appraiser is connected), shall be used for any purposes by anyone but the client specified in the report, the borrower, if appraisal fee paid by same, the mortgagee or its successors and assigns, mortgage insurers, consultants, professional appraisal organizations, any state or federally approved financial institution, any department, agency or instrumentality of the United States or any state or the District of Columbia, without the previous written consent of the appraiser; nor shall it be conveyed by anyone to the public through advertising, public relations, news, sales or other media, without the written consent and approval of the appraiser.

21. The Americans with Disabilities Act (ADA) became effective January 26, 1992. The appraiser has not made a specific compliance survey and analysis of this property to determine whether or not it is in conformity with the various detailed requirements of the ADA. It is possible that a compliance survey of the property together with a detailed analysis of the requirements of the ADA would reveal the need for renovations to comply with that statute. Such a requirement could have an adverse impact on the market value of the property. Because the appraiser has no direct evidence relating to this issue, the appraiser did not consider possible noncompliance with the requirements of the ADA in this report.

22. This is an **Appraisal Report with the Scope of Work Limited to Processing only the Sales Comparison Approach**, which is intended to comply with the reporting requirements set forth under Standard Rule 2-2(a) of the Uniform Standards of Professional Practice for an **Appraisal Report**. As such, it might not include full discussions of the data, reasoning, and analyses that were used in the appraisal process to develop the appraiser's opinion of value. Supporting documentation containing the data, reasoning, and analysis is retained in the appraiser's work file. The information contained in this report is specific to the needs of the client and for the intended use stated in this report. The appraiser is not responsible for unauthorized use of this report.

DEFINITION OF MARKET VALUE

The accepted definition of market value is defined in The Dictionary of Real Estate Appraisal, Twelfth Edition (Chicago: Appraisal Institute, 2001). Other items of definition have been added below. These items and the general definition have been accepted by all five government agencies and the "RTC":

> "Market Value - The most probable price in terms of money which a property should bring in a competitive and open market under all conditions requisite to a fair sale, the buyer and seller each acting prudently, knowledgeably, and assuming the price is not affected by undue stimulus."

Implicit in this definition are the consummation of a sale as of a specified date and the passing of title from seller to buyer under conditions whereby:

1. Buyer and seller are typically motivated;

2. Both parties are well informed or well advised, and acting in what they consider their own best interest;

3. A reasonable time is allowed for exposure in the open market;

4. Payment is made in cash or U.S. dollars or in terms of financial arrangements comparable thereto; and

5. The price represents a normal consideration for the property sold unaffected by special or creative financing or sales concessions granted by anyone associated with the sale.

(Source: Office of the Comptroller of the Currency under 12 CFR, Part 34, Subpart C - Appraisals, 34.42 Definitions.)

*This definition is from regulations published by federal regulatory agencies pursuant to Title XI of the Financial Institutions Reform, Recovery, and Enforcement Act (FIRREA) of 1989 between July 5, 1990, and August 24, 1990, by the Federal Reserve System (FRS), National Credit Union Administration (NCUA), Federal Deposit Insurance Corporation (FDIC), the Office of Thrift Supervision (OTS), and the Office of Comptroller of the Currency (OCC). This definition is also referenced in regulations jointly published by the OCC, OTS, FRS, and FDIC on June 7, 1994, and in the Interagency Appraisal and Evaluation Guidelines, dated October 27, 1994. --This **WILL** be the definition for this Appraisal Report.

The Internal Revenue Service (IRS) indicates the definition of value for the subject property as fair market value, defined as "the price at which the property would change hands between a willing buyer and a willing seller, neither being under any compulsion to buy or to sell and both having reasonable knowledge of the relevant facts." (IRC 20.2031-1 (b)). This **WILL NOT** be the definition for this assignment.

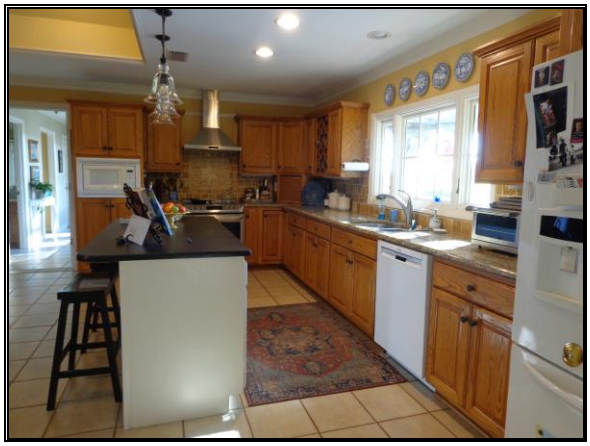
PHOTOGRAPHS OF SUBJECT PROPERTY

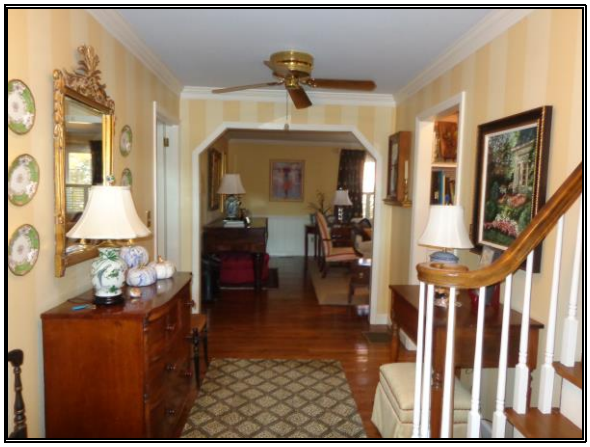
SUBJECT PROPERTY

PHOTOGRAPHS OF SUBJECT PROPERTY

RESIDENTIAL DWELLING

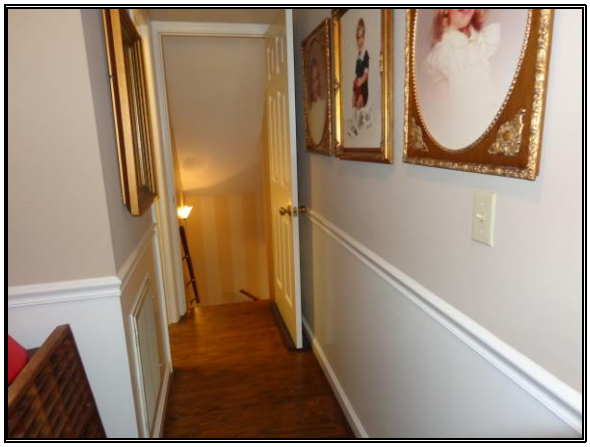
PHOTOGRAPHS OF SUBJECT PROPERTY





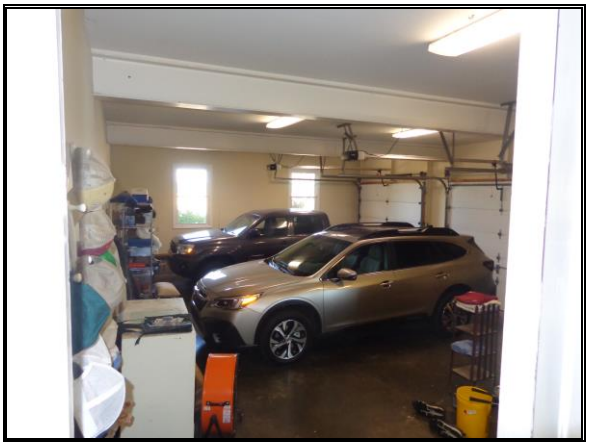
SUBJECT PROPERTY

PHOTOGRAPHS OF SUBJECT PROPERTY



SUBJECT PROPERTY

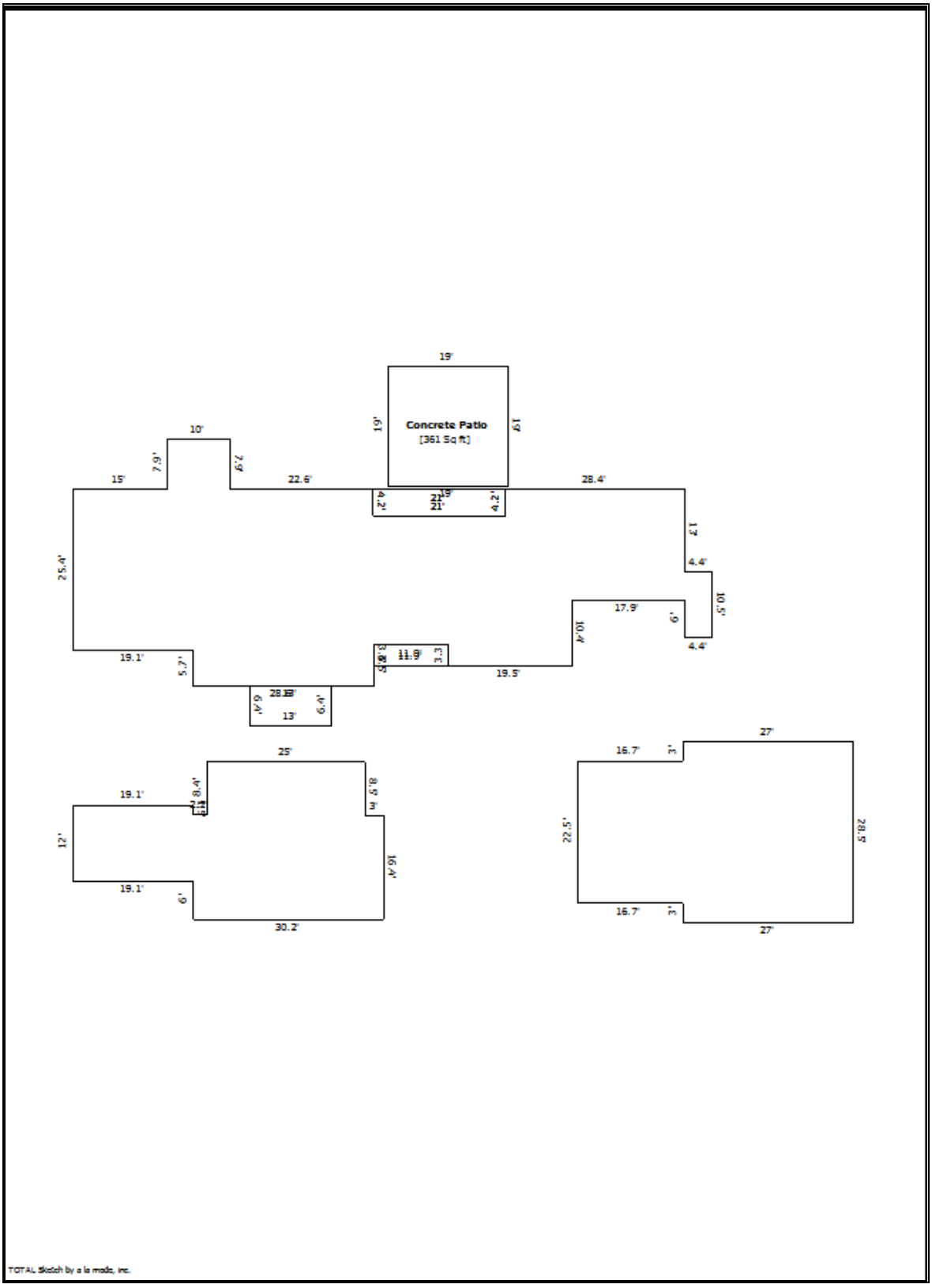
PHOTOGRAPHS OF SUBJECT PROPERTY



SUBJECT PROPERTY

PHOTOGRAPHS OF SUBJECT PROPERTY

STREET SCENES

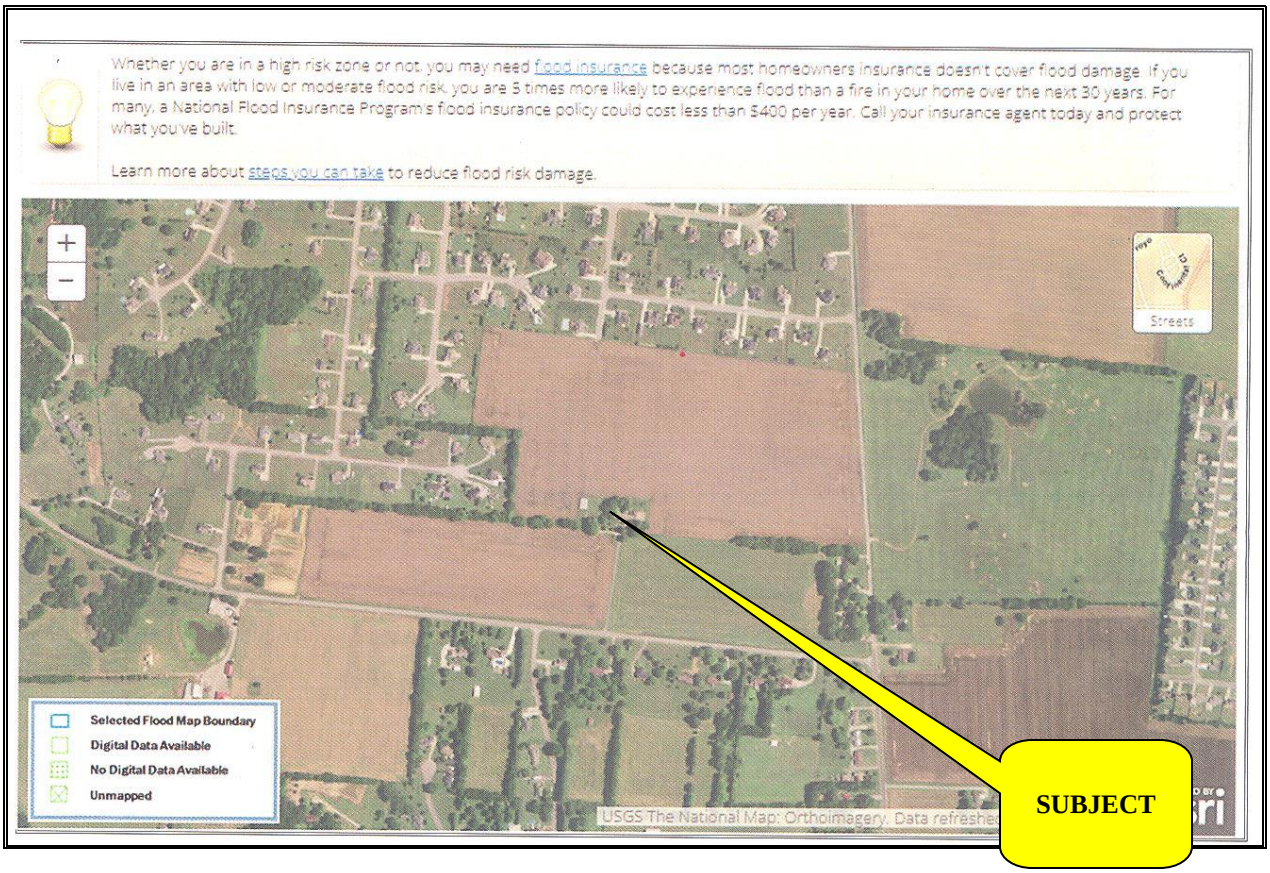


TOTAL Sketch by a la mode, inc.

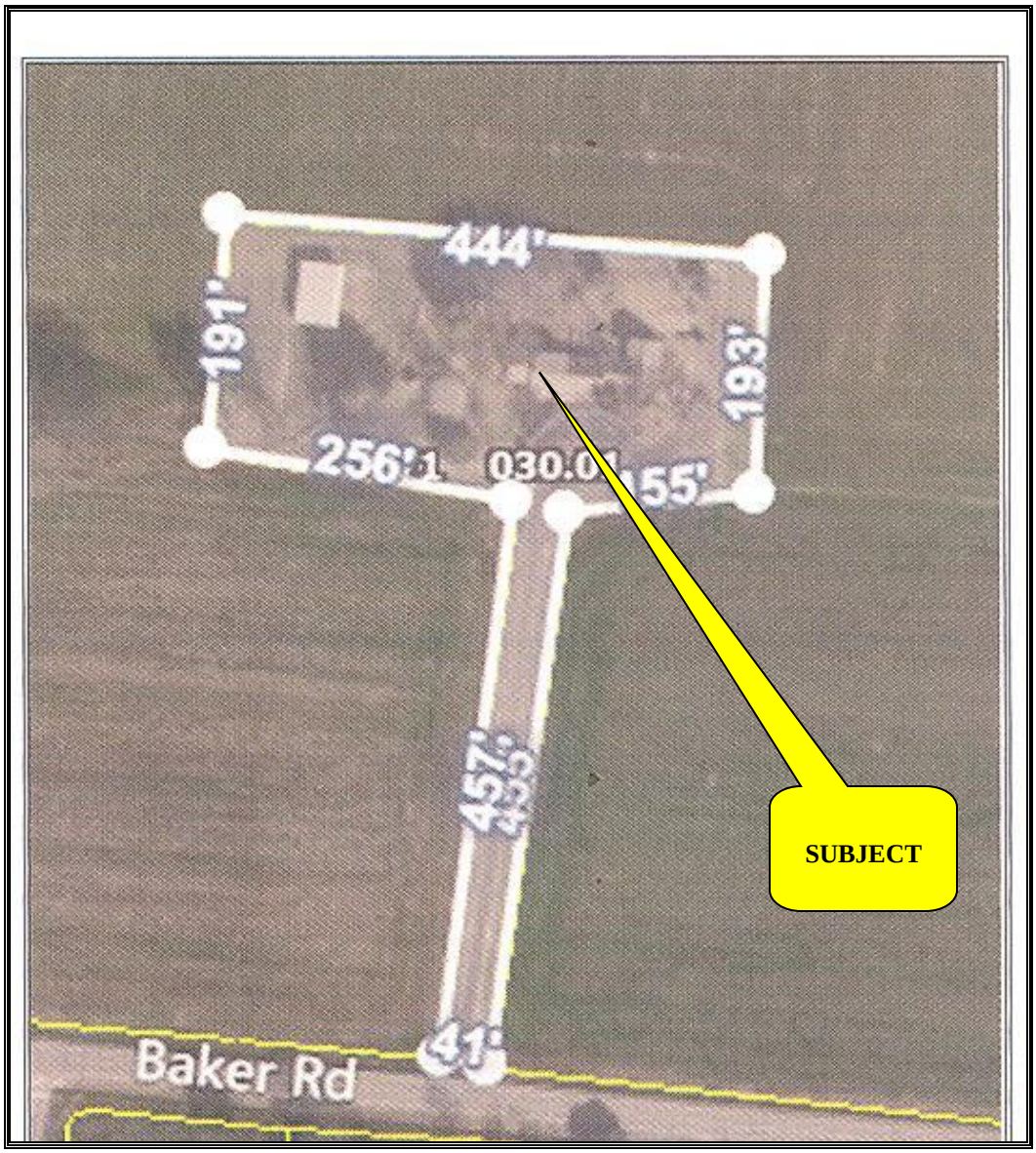
BUILDING SKETCH

Living Area		Calculation Details	
First Floor	2561.64 Sq ft	10 × 7.9	= 79
		10.5 × 4.4	= 46.2
		17.5 × 17.9	= 313.25
		25.4 × 19.1	= 485.14
		31.1 × 28.5	= 886.35
		10.5 × 4.2	= 44.1
		23.7 × 19.5	= 462.15
		12 × 20.4	= 244.8
		6.5 × 0.1	= 0.65
Second Floor	937.2 Sq ft	12 × 19.1	= 229.2
		30.2 × 16.4	= 495.28
		8.5 × 25	= 212.5
		0.1 × 2.2	= 0.22
Total Living Area (Rounded):	**3499 Sq ft**		
Non-living Area			
Concrete Patio	83.2 Sq ft	13 × 6.4	= 83.2
Concrete Patio	39.27 Sq ft	3.3 × 11.9	= 39.27
Concrete Patio	361 Sq ft	19 × 19	= 361
Third Floor	88.2 Sq ft	21 × 4.2	= 88.2
Undefined Area	88.2 Sq ft	4.2 × 21	= 88.2
Basement	1145.25 Sq ft	28.5 × 27	= 769.5
		22.5 × 16.7	= 375.75

BUILDING SKETCH


Whether you are in a high risk zone or not, you may need flood insurance because most homeowners insurance doesn't cover flood damage. If you live in an area with low or moderate flood risk, you are 5 times more likely to experience flood than a fire in your home over the next 30 years. For many, a National Flood Insurance Program's flood insurance policy could cost less than $400 per year. Call your insurance agent today and protect what you've built.
Learn more about steps you can take to reduce flood risk damage.
Streets
Selected Flood Map Boundary
Digital Data Available
No Digital Data Available
Unmapped
USGS The National Map: Orthoimagery. Data refreshe
SUBJECT

FLOOD MAP



TAX MAP


Jamison Downs Dr
Jamison Downs Dr
Tellico
RM
RM
RM
AR
Lindsey Ln
Lindsey Ln
SUBJECT
RM
John Locke Ln
RM
Baker Rd
Baker Rd
Baker Rd
Blackman Rd

ZONING MAP

PURCHASE ORDER

Rutherford County, Tennessee

PURCHASING DEPARTMENT:

School Bldg Program
Phone: 615-893-5812
Fax: 615-904-3772

NOTICE TO VENDOR

1. All packages, cartons or other containers must be plainly marked with the purchase order number.
2. No changes in or cancellations of this purchase order shall be recognized by the Vendor unless authorized by special form issued by the Purchasing Agent.
3. The county is not liable for Federal excise tax or state sales tax. Tax Exemption Certificate will be furnished.
4. Each shipment and/or each purchase order should be covered by separate invoice.
5. UNLESS OTHERWISE STATED, ALL PRICES ARE F.O.B. Destination.

MAIL Invoice to: **Rutherford Co. Board of Education**
ATTN: Accounts Payable
2240 Southpark Drive
Murfreesboro, TN 37128

VENDOR
3496
Johnny M. Sullivan, Sra
1703 First Place
Suite E
Murfreesboro, TN 37129

P.O. No **BP 16232**

SHIP TO
Rutherford Co Schools Engineering
2240 B Southpark Drive
Murfreesboro, TN 37128

ATTN TO: Trey Lee

Include P.O. Number on Invoices and Packages

REQUISITION NO.	DELIVERY REQUIRED	SHIP VIA	TERMS & FREIGHT	DATE ISSUED	PURCHASE ORDER NO.
				09/26/2022	BP 16232

ITEM	QUANTITY	ARTICLES OR SERVICES	UNIT COST	TOTAL COST
1	1	Appraisal for the John L. Batety Property per letter 9-22-2022 Not to exceed 189-91300-715-SEC $4,000 189-91300-715-ELEM $2,000	4000.000	$4,000.00
2	1	Appraisal for the John L. Batety Property per letter 9-22-2022 Not to exceed 189-91300-715-SEC $4,000 189-91300-715-ELEM $2,000	2000.000	$2,000.00
			TOTAL:	**$6,000.00**

ACCOUNTING INFORMATION:

189. -91300-715- SEC **$4,000.00**
189. -91300-715- ELEM **$2,000.00**

AUTHORIZED SIGNATURES:

Approved By Brian Runion On 9/27/2022
DIRECTOR OF SCHOOLS

Approved By Jeanette Egly On 9/26/2022
FINANCE DIRECTOR

Control Number 044177

PURCHASE ORDER

Johnny M. Sullivan, SRA

Real Estate Appraiser-Consultant

1703 First Place – Suite E
Murfreesboro, TN 37129-1599
615-895-6260
sulljohn@realtracs.com

September 22, 2022

Mr. Trey Lee
Assistant Superintendent
Rutherford County Schools
2240 Southpark Boulevard
Murfreesboro, TN 37128

Dear Mr. Lee:

Thank you for your consideration and the opportunity to perform an appraisal on a proposed 59.1-acre vacant land tract to be subdivided from a larger tract of 409 +/- acres. A second appraisal is also requested for a 2.29 - acre land parcel with an estate dwelling of over 3,600 square feet with multiple outbuilding resting on said land tract. These tracts are currently listed on the public records as being owned by John L. Batey, Jr.

These properties are considered complicated by standards produced by the Appraisal Standards Board (ASB) of The Appraisal Foundation. The proposed vacant land tract is considered development potential vacant land and the home site land parcel with multiple outbuildings and a single-family dwelling may create a "Super-Adequacy" situation as the multiple outbuildings are designed to aid a larger farm operation. That is to say 2.29 acres of land will not produce adequate agriculture utility to support the cost of multiple farm use outbuildings. Therefore, the appraiser must have the proper credentials in order to process these appraisal reports. The necessary credentials would require the appraiser to have a "State Certified General Real Estate Appraiser" certification.

- Appraisal Fee for Both Appraisals ……..…….....Not to Exceed $6,000
  (Estimated Delivery, +- 4 to 6 weeks from date of engagement; pending other assignments pending at the time of engagement and timely access to the properties).

  Each Appraisal Report will be completed in a narrative format.

I understand this proposal is for the Rutherford County Board of Education; therefore, I offer my professional services to you at the above quoted fee. Please sign and return this letter if the fee is acceptable and you wish to retain my services.

I intend to deliver a completed report to you within the stated time frame. Dates of delivery are subject to other work in progress and in recognition that unforeseen characteristics of any appraisal problem might render timely delivery impossible. I will make every effort to deliver all work on a timely basis. It is essential that I be provided any surveys, contracts, legal descriptions, etc.; if available. Also, a contact person and phone number for interior and exterior inspection of each property.

If you need any additional information, please contact me at 615-895-6260. Again, thank you for your consideration in allowing me to service your appraisal needs.

Sincerely,

Johnny M. Sullivan, SRA
State Certified General
Real Estate Appraiser CG - 493

Accepted: _____ 9-27-2022
Signature Date

ENGAGEMENT LETTER, PAGE 2

REAL ESTATE PURCHASE AGREEMENT
(5104 Baker Road, Murfreesboro, TN)

THIS AGREEMENT is made as of the 15th day of September, 2022 ("Effective Date"), between John L. Batey, Jr. and Melissa W. Batey (collectively "Seller"), and the Rutherford County Board of Education ("Buyer").

Background

Buyer wishes to purchase a house and yard consisting of approximately 2.29 acres located at 5104 Baker Road, Murfreesboro, Rutherford County, Tennessee, as more particularly shown on Exhibit "A", being Tax Map 071, Parcel 30.01-000, together with all appurtenant easements for ingress, egress and utilities, and other appurtenances thereto, together with all trade names, franchises, licenses, permits, development rights and approvals, deposits, credits, petroleum and mineral interests and royalties, water rights and other intangibles owned or utilized by or for the benefit of Seller in connection therewith (the "Property").

Seller wishes to sell the Property to Buyer;

In consideration of the mutual agreements herein, and other good and valuable consideration, including the sum of Ten Dollars ($10.00) paid to Seller by Buyer, the receipt of which is hereby acknowledged, Seller agrees to sell to Buyer and Buyer agrees to purchase the Property from Seller, subject to the following terms and conditions:

1. PURCHASE PRICE AND PAYMENT

1.1 Purchase Price; Payment. The total Purchase Price for the Property shall be the appraised value of the house as determined by an appraisal mutually acceptable to Buyer and Seller or as otherwise agreed by Buyer and Seller ("Purchase Price"). The Purchase Price shall be paid in cash at closing. If the Buyer and Seller do not reach an agreement upon a mutually acceptable price, Buyer or Seller may terminate this Agreement by written notice to the other party.

1.2 Earnest Money Deposit. An earnest money deposit in the amount of Five Thousand Dollars ($5,000) ("Earnest Money Deposit") shall be deposited with Escrow Agent by Buyer within three (3) business days after the Effective Date. All deposits made as earnest money shall be deemed included within the meaning of the term Earnest Money Deposit for all purposes. The Earnest Money Deposit shall be held as specifically provided in this Agreement and shall be applied to the Purchase Price at Closing.

1.3 Prorations. Ad valorem taxes and matters of income and expense, if any, and other items customarily prorated in transactions of this kind shall be prorated as of midnight of the day preceding the Closing Date. In the event the Property has been assessed for property tax purposes at such rates or with exemptions that would result in additional taxes and assessments for prior tax years or for the Closing tax year being assessed because of supplemental taxes resulting from delayed assessments or other causes, including without limitation Buyer's change in land usage or the change in ownership of the Property attributable to Buyer's acquisition of the Property (known variously as "rollback", "agricultural recoupment" or "school board revaluation" taxes), Seller shall pay all such taxes and assessments when due, prorated as of midnight of the day preceding the Closing Date.

1.4 Closing Costs.

(a) Seller shall pay:

(1) For the costs to prepare the Warranty Deed; and

PURCHASE AGREEMENT

(2) Seller's attorneys' fees.

(b) Buyer shall pay:

(1) Any transfer taxes on the deed;

(2) The costs of the title insurance;

(3) The costs of any Phase I environmental site assessment to be obtained by Buyer, if any;

(4) The costs of a Survey at the Property;

(5) The costs of recording the deed; and

(6) Buyer's attorneys' fees.

2. INSPECTION PERIOD AND CLOSING

2.1 Inspection Period. Buyer shall have an Inspection Period which begins on the next business day following the date upon which the Agreement, fully executed by Seller, Buyer and Escrow Agent, has been received by Buyer (the "Effective Date") and ends at midnight one hundred eighty (180) days later ("Inspection Period"). Buyer shall have the Inspection Period within which to physically inspect the Property, to conduct its due diligence and to inspect all books, records and accounts of Seller related thereto. Buyer and Buyer's officers, employees, consultants, attorneys and other authorized representatives, shall have the right to reasonable access to the Property and to all records of Seller related thereto (including without limitation title information, surveys, environmental assessment reports and other information concerning the condition of the Property), at reasonable times during the Inspection Period for the purpose of inspecting the Property, taking soil and ground water samples, conducting hazardous materials and wetlands inspections, tests and assessments, reviewing the books and records of Seller concerning the Property and otherwise conducting its due diligence review of the Property. Buyer hereby agrees to indemnify and hold Seller harmless from any damages, liabilities or claims for property damage or personal injury and mechanics or construction liens caused or created by Buyer and its agents and contractors in the conduct of such inspections and investigations, other than pre-existing conditions merely discovered by Buyer or its agents or contractors. Seller shall cooperate with and assist Buyer in making such inspections and reviews and in obtaining any governmental approvals of its contemplated use of the Property. Seller shall make available to Buyer such of the foregoing as may be in Seller's possession in order to facilitate Buyer's due diligence. Seller shall give Buyer any authorizations which may be required by Buyer in order to gain access to records or other information pertaining to the Property or the use thereof maintained by any third party, governmental or quasi-governmental authorities or organizations. The indemnities contained in this section shall survive the termination of this Agreement.

2.2 Buyer's Termination Right. Within the Inspection Period, Buyer may, in its sole discretion, for any reason or for no reason, elect whether or not to go forward with this Agreement to Closing, which election shall be made by notice to Seller given within the Inspection Period. If such notice is not timely given, this Agreement and all rights, duties and obligations of Buyer and Seller hereunder, except any which expressly survive termination, shall terminate, whereupon Escrow Agent shall forthwith return to Buyer the Earnest Money Deposit. If such notice is timely given, this Agreement and all rights, duties and obligations of Buyer and Seller hereunder (including without limitation their respective obligations to close the transaction), shall, subject to the terms and conditions hereof, become fully binding and the Earnest Money Deposit shall become nonrefundable except for the failure of a closing condition or the default of Seller hereunder.

2.3 Time and Place of Closing. The Closing shall take place at the offices of Escrow Agent at 10:00 A.M. no later than thirty (30) days after the Rutherford County Commission approves funding and the Rutherford County Board of Education approves the purchase of the Property, or at such other time and place and in such manner as Seller and Buyer may agree.

3. WARRANTIES, REPRESENTATIONS AND COVENANTS OF SELLER

Seller warrants and represents as follows as of the date of this Agreement and as of the Closing and where indicated covenants and agrees as follows:

3.1 Title. Seller is the owner in fee simple of all of the Property.

3.2 Eminent Domain/Condemnation. No condemnation or eminent domain proceedings are now pending or threatened concerning the Property, and Seller has received no notice from any governmental agency or authority or other potential condemnor concerning any right-of-way, utility or other taking which may affect the Property.

3.3 Environmental Matters. To the best of Seller's knowledge the Property does not now contain nor has the Property contained any underground storage tanks, material amounts of hazardous material or landfills. Seller has used no hazardous material at the Property nor has Seller permitted any other person to do so. To the best of Seller's knowledge the Property contains vegetation, animal species or significant historic/archaeological sites which are subject to special regulations or limitations under local, state or federal laws, regulations or orders.

3.4 Foreign Investment and Real Property Tax Act. Seller is not a "foreign person" within the meaning of Section 1445 of the Internal Revenue Code, or under any comparable state statutes which are applicable to this transaction. At Closing Seller will execute and deliver to Buyer an affidavit regarding such matters. If Seller fails to execute and deliver such affidavit, Buyer may deduct and withhold from the Purchase Price such amounts as Buyer may be required to withhold in order to satisfy any of Buyer's tax withholding obligations under such statutes or regulations promulgated pursuant thereto.

4. POSSESSION; RISK OF LOSS

4.1 Possession. Possession of the Property will be transferred to Buyer at the conclusion of the Closing.

4.2 Risk of Loss. All risk of loss to the Property shall remain upon Seller until the conclusion of the Closing. If, before Closing, any material portion of the Property is damaged by casualty, or if any material portion of the Property is taken or threatened by eminent domain, or if there is a material obstruction of access by virtue of a taking by eminent domain, Seller shall, within ten (10) days of such damage or taking, notify Buyer thereof and Buyer shall have the option to:

(a) terminate this Agreement upon notice to Seller given within ten (10) business days after such notice from Seller, in which case Buyer shall receive a return of the Earnest Money Deposit; or

(b) proceed with the purchase of the Property, in which event Seller shall assign to Buyer all Seller's right, title and interest in all amounts due or collected by Seller under applicable insurance policies or as condemnation awards. In such event, the Purchase Price shall be reduced by the amount of any insurance deductible to the extent it reduces the insurance proceeds payable.

4.3 USA Patriot Act.

(a) None of the funds to be used for payment by Buyer of the Purchase Price will be subject to 18 U.S.C. §§ 1956-1957 (Laundering of Money Instruments), 18 U.S.C. §§ 981-986 (Federal Asset Forfeiture), 18 U.S.C. §§ 881 (Drug Property Seizure), Executive Order Number 13224 on Terrorism Financing, effective September 24, 2001, or the United and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism Act of 2001, H.R. 3162, Public Law 107-56 (the "US Patriot Act").

(b) Buyer is not, and will not become, a person or entity with whom U.S. persons are restricted from doing business with under the regulations of the Office of Foreign Asset Control ("OFAC") of the Department of Treasury (including those named on OFAC's Specially Designated and Blocked Persons list) or under any statute, executive order (including the September 24, 2001 Executive Order Blocking Property and Prohibiting Transactions With Persons Who Commit, Threaten to Commit, or Support Terrorism), the USA Patriot Act, or other governmental action.

5. TITLE MATTERS

Within ten (10) days after the Effective Date, Seller shall deliver to Buyer's counsel copies of any title information, including prior title policies and surveys, in Seller's possession. During the Inspection Period Buyer may order a title insurance commitment from a national title insurance company acceptable to it and a current survey from a reputable surveyor. Buyer will have thirty (30) business days after its receipt of both the title insurance commitment and survey within which to notify Seller in writing of any conditions, defects, encroachments or other objections to title or survey which are not acceptable to Buyer. Any matter disclosed by the title insurance commitment (other than liens removable by the payment of money) or by the survey which is not timely specified in Buyer's written notice to Seller shall be deemed a "Permitted Exception". Seller shall use reasonable and diligent efforts to cure all objections to title or survey by Closing. If such title defects and/or objections are not cured within said period, Buyer may (i) refuse to purchase the Property, terminate this Agreement and receive a return of the Earnest Money Deposit; or (ii) waive such objection(s) and close the purchase of the Property subject to them.

6. CONDITIONS PRECEDENT

6.1 Conditions Precedent to Buyer's Obligations. The obligations of Buyer under this Agreement are subject to satisfaction or written waiver by Buyer of each of the following conditions or requirements on or before the Closing Date:

(a) The title insurance commitment shall have been issued and "marked down" through Closing, subject only to Permitted Exceptions.

(b) The physical and environmental condition of the Property shall not have materially changed from the Effective Date, ordinary wear and tear excepted.

(c) Buyer must be able to extend water, sewer and electric utilities to the boundary of the Property with adequate capacity for Buyer's proposed use of the Property.

(d) Approval of the purchase of the Property and funding for the purchase of the same by the Rutherford County Commission and Rutherford County Board of Education.

(e) Buyer receiving any easements from Seller which Buyer determines are reasonably needed for the Buyer's intended use of the Property.

(f) Approval of funding for the purchase of the Property by the Rutherford County Commission.

(g) The simultaneous closing of the sale of the property consisting of approximately 71 acres more or less on Baker Road which is a portion of Tax Map 071, Parcel 30.00 to the Buyer or its assigns which is under a separate contract.

(h) Buyer shall have received the following in form reasonably satisfactory to Buyer:

(1) A warranty deed in proper form for recording, duly executed, witnessed and acknowledged, and insured by the title insurance company, so as to convey to Buyer the fee simple title to the Property, subject only to the Permitted Exceptions; and

(2) An owner's affidavit, non-foreign affidavit and such further instruments of conveyance, transfer and assignment and other documents as may reasonably be required by the title insurance company in order to effectuate the provisions of this Agreement and the consummation of the transactions contemplated herein; and

(3) Such other documents as Buyer or the title insurance company may reasonably request to effect the transactions contemplated by this Agreement.

If any of the above contingencies are not satisfied to Buyer's satisfaction within Buyer's sole discretion, the Buyer may elect to either: (1) terminate this Agreement and receive a full refund of the Earnest Money Deposit; or (2) extend this Agreement by an additional thirty (30) days to give Seller time to satisfy the contingency, or (3) waive the contingency and proceed to closing.

6.2 Conditions Precedent to Seller's Obligations. The obligations of Seller under this Agreement are subject to Buyer having delivered to Seller at or prior to the Closing the balance of the Purchase Price and such other documents as Seller or the title insurance company may reasonably request to effect the transactions contemplated by this Agreement and the simultaneous closing of the purchase of the parcel consisting of approximately 59.1 acres, more or less, being a portion of Tax Map 071, Parcel 30.00 under a separate contract by the Buyer or its assigns.

7. BREACH; REMEDIES

7.1 Breach by Seller. In the event of a breach of Seller's covenants or warranties herein and the failure of Seller to cure such breach within the time provided for Closing, Buyer may, at Buyer's election (i) terminate this Agreement and receive a return of the Earnest Money Deposit, and the parties shall have no further rights or obligations under this Agreement (except as survive termination); (ii) enforce this Agreement by suit for specific performance; (iii) waive such breach and close the purchase contemplated hereby, notwithstanding such breach; or (iv) in the case of a willful breach by Seller after Buyer has elected to go forward beyond the Inspection Period to Closing, Buyer may bring an action against Seller for damages, after notice to Seller of such willful breach and the expiration of a period of thirty (30) days from such notice, during which Seller shall have the opportunity to cure such willful breach.

7.2 Breach by Buyer. In the event of a breach of Buyer's covenants or warranties herein and the failure of Buyer to cure such breach within the time provided for Closing, Seller's sole legal and equitable remedy shall be to terminate this Agreement and retain Buyer's Earnest Money Deposit as AGREED LIQUIDATED DAMAGES for such breach, and upon payment in full to Seller of such Earnest Money Deposit, the parties shall have no further rights, claims, liabilities or obligations under this Agreement (except as survive termination). *BUYER AND SELLER AGREE THAT IT WOULD BE IMPRACTICAL AND EXTREMELY DIFFICULT TO ESTIMATE THE DAMAGES SUFFERED BY SELLER AS A RESULT OF BUYER'S FAILURE TO COMPLETE THE PURCHASE OF THE PROPERTY PURSUANT TO THIS AGREEMENT, AND THAT UNDER THE CIRCUMSTANCES EXISTING AS OF THE DATE OF THIS AGREEMENT, THE LIQUIDATED DAMAGES PROVIDED FOR IN THIS SECTION REPRESENT A REASONABLE ESTIMATE OF THE DAMAGES WHICH SELLER WILL INCUR AS A RESULT OF SUCH FAILURE. THEREFORE, BUYER AND SELLER DO HEREBY AGREE THAT A*

REASONABLE ESTIMATE OF THE TOTAL NET DETRIMENT THAT SELLER WOULD SUFFER IN THE EVENT THAT BUYER DEFAULTS AND FAILS TO COMPLETE THE PURCHASE OF THE PROPERTY IS AN AMOUNT EQUAL TO THE EARNEST MONEY DEPOSIT (WHICH INCLUDES ANY ACCRUED INTEREST THEREON). SAID AMOUNT WILL BE THE FULL, AGREED AND LIQUIDATED DAMAGES FOR THE BREACH OF THIS AGREEMENT BY BUYER. THE PAYMENT OF SUCH AMOUNT AS LIQUIDATED DAMAGES IS NOT INTENDED AS A FORFEITURE OR PENALTY, BUT IS INTENDED TO CONSTITUTE LIQUIDATED DAMAGES TO SELLER.

8. MISCELLANEOUS

8.1 Commissions.

8.2 Notices. All notices and demands of any kind which either party may be required or may desire to serve upon the other party in connection with this Agreement shall be in writing, signed by the party or its counsel identified below, and shall be served (as an alternative to personal service) by registered or certified mail, overnight courier service or facsimile transmission (followed promptly by personal service or mailing of a hard copy), at the addresses set forth below:

As to Seller:	John L. Batey, Jr. and Melissa W. Batey 5104 BAKER RD MURFREESBORO, TN 3729 Telephone: 615-838-2500 Email: melwbatey@gmail.com
With a coy to Seller's Counsel:	Bricke Murfree Murfree & Goodman, PLLC 805 South Church St, Ste 21 Murfreesboro, TN 37130 Telephone: 615-867-0835
As to Buyer:	Rutherford County Board of Education Attn: James Sullivan Southgate Blvd. Murfreesboro, TN 37130
With a copy to Buyer's Counsel:	Jeff Reed 16 Public Square North Murfreesboro, TN 37130 Telephone: (615) 893-5522 Facsimile: (615) 849-2135 Email: jreed@mborolaw.com
With a copy to Escrow Agent: (if required)	Hudson, Reed & Christiansen, PLLC 16 Public Square North Murfreesboro, TN 37130 Telephone: (615) 893-5522 Facsimile: (615) 849-2135

Any such notice or demand so served, shall constitute proper notice hereunder upon delivery to the United States Postal Service or to such overnight courier, or by confirmation of the facsimile transmission.

8.3 Attorneys' Fees. In the event of any dispute, litigation or other proceeding between the parties hereto to enforce any of the provisions of this Agreement or any right of either party hereunder, the unsuccessful party to such dispute, litigation or other proceeding shall pay to the successful party all

costs and expenses, including reasonable attorneys' fees, incurred at trial, on appeal, and in any arbitration, administrative or other proceedings, all of which may be included in and as a part of the judgment rendered in such litigation. Any indemnity provisions herein shall include indemnification for such costs and fees. This section shall survive the Closing or a prior termination hereof.

8.4 Time. Time is of the essence of this Agreement, provided that if any date upon which some action, notice or response is required of any party hereunder occurs on a weekend or national holiday, such action, notice or response shall not be required until the next succeeding business day.

8.5 Governing Law. This Agreement shall be governed by the laws of the state in which the Property is located.

8.6 Successors and Assigns. The terms and provisions of this Agreement shall be binding upon and shall inure to the benefit of the heirs, successors and assigns of the parties. The Buyer may assign Buyer's rights and obligations under this Agreement to Rutherford County. Except as to Rutherford County, no third parties, including any brokers or creditors, shall be beneficiaries hereof or entitled to any rights or benefits hereunder.

8.7 Harvesting of Crops. Seller shall be entitled to harvest any crops on the Property before Closing, but Buyer is not responsible for any crop damage due to any testing or inspection work on the Property.

8.8 Removal of property. Seller shall be allowed to remove any property from the house and any improvements on the Property prior to Closing.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first above written.

"BUYER"

RUTHERFORD COUNTY BOARD OF EDUCATION

By: _____
Name: Tommy Shupe
Title: Chairman

"SELLER"

_____
JOHN L. BATEY, JR.

_____
MELISSA W. BATEY

JOINDER OF ESCROW AGENT

1. Duties. Escrow Agent joins herein for the purpose of agreeing to comply with the terms hereof insofar as they apply to Escrow Agent. Escrow Agent shall receive and hold the Earnest Money Deposit in trust, to be disposed of in accordance with the provisions of this joinder and the foregoing Agreement.

2. Indemnity. Escrow Agent shall not be liable to any party except for claims resulting from the negligence or willful misconduct of Escrow Agent. If the escrow is the subject of any controversy or litigation, the parties to the Agreement shall jointly and severally indemnify and hold Escrow Agent harmless from and against any and all loss, cost, damage, liability or expense, including costs of reasonable attorneys' fees to which Escrow Agent may be put or which Escrow Agent may incur by reason of or in connection with such controversy or litigation, except to the extent it is determined that such controversy or litigation resulted from Escrow Agent's negligence or willful misconduct. If the indemnity amounts payable hereunder result from the fault of Buyer or Seller (or their respective agents), the party at fault shall pay and hold the other party harmless against such amounts.

3. Conflicting Demands. If conflicting demands are made upon Escrow Agent or if Escrow Agent is uncertain with respect to the escrow, the parties to the Agreement expressly agree that Escrow Agent shall have the absolute right to do either or both of the following: (i) withhold and stop all proceedings in performance of this escrow and await settlement of the controversy by final appropriate legal proceedings or otherwise as it may require; or (ii) file suit for declaratory relief and/or interpleader and obtain an order from the court requiring the parties to interplead and litigate in such court their several claims and rights between themselves. Upon the filing of any such declaratory relief or interpleader suit and tender of the Earnest Money Deposit to the court, Escrow Agent shall thereupon be fully released and discharged from any and all obligations to further perform the duties or obligations imposed upon it. Buyer and Seller agree to respond promptly in writing to any request by Escrow Agent for clarification, consent or instructions. Any action proposed to be taken by Escrow Agent for which approval of Buyer and/or Seller is requested shall be considered approved by the particular party if Escrow Agent does not receive written notice of disapproval within five (5) business days after a written request for approval is received by the party whose approval is being requested. Escrow Agent shall not be required to take any action for which approval of Buyer and/or Seller has been sought unless such approval has been received. No notice by Buyer or Seller to Escrow Agent of disapproval of a proposed action shall affect the right of Escrow Agent to take any action as to which such approval is not required.

4. Tax Identification. Seller and Buyer shall provide to Escrow Agent appropriate Federal tax identification numbers.

5. Continuing Counsel. Seller acknowledges that Escrow Agent is counsel to Buyer herein and Seller agrees that in the event of a dispute hereunder or otherwise between Seller and Buyer, Escrow Agent may continue to represent Buyer notwithstanding that it is acting and will continue to act as Escrow Agent hereunder, it being acknowledged by all parties that Escrow Agent's duties hereunder are ministerial in nature.

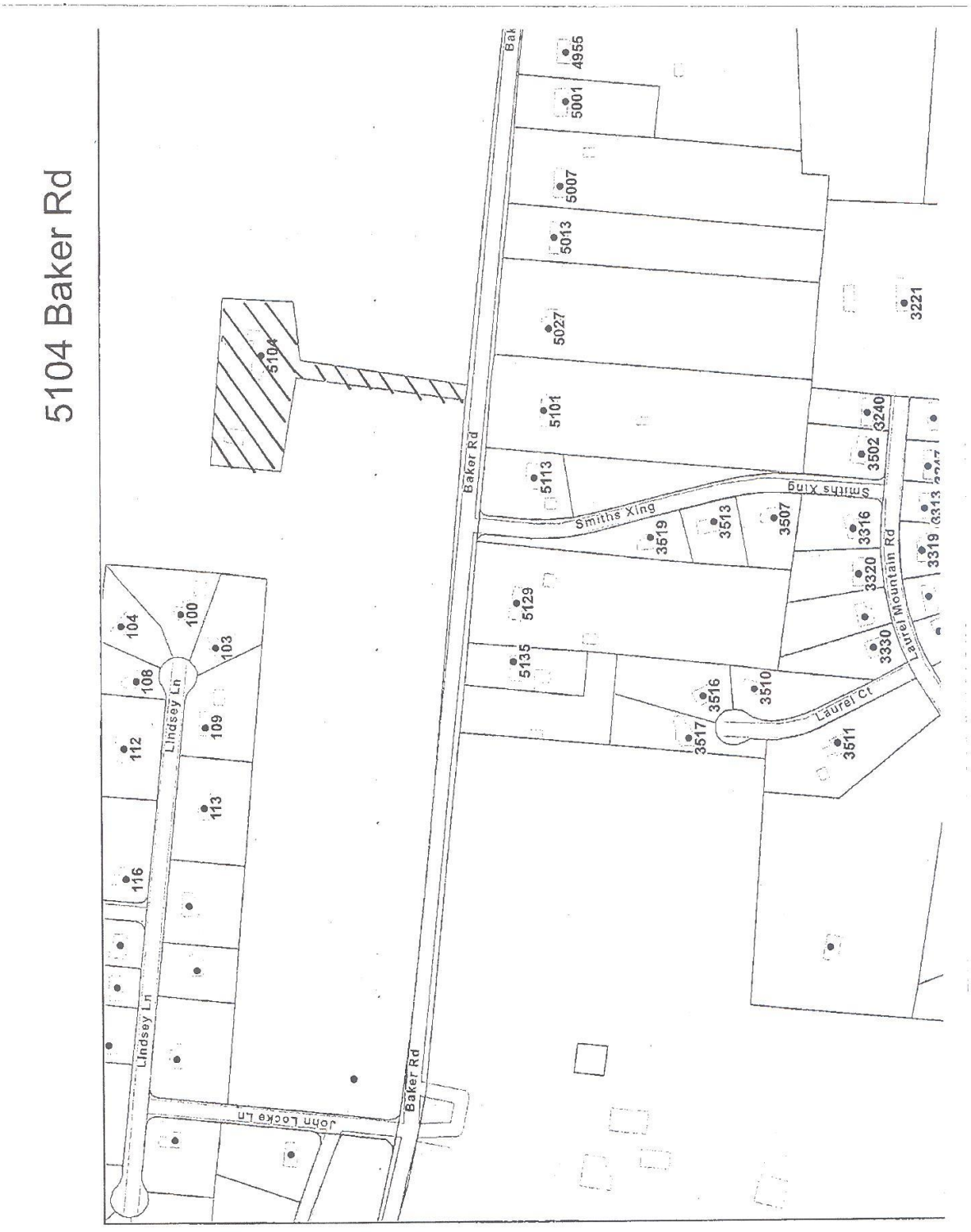
HUDSON, REED & CHRISTIANSEN, PLLC

By:_____
Its Authorized Agent

Date:_____

EXHIBIT "A"

PURCHASE AGREEMENT



PURCHASE AGREEMENT

SEND TAX NOTICE TO:
John L. Batey, Jr.
Rt 2, Box 97
Murfreesboro, TN 37130

This Instrument Prepared By:
REED AND McHALE, Attorneys
117 East Main Street
Murfreesboro, TN 37130

541

WARRANTY DEED

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 which is hereby acknowledged, we, the undersigned, JOHN L. BATEY, SR. and wife, ANNIE J. BATEY, have bargained and sold and by these presents do transfer and convey unto JOHN L. BATEY, JR. and wife, MELISSA W. BATEY, their heirs and assigns, forever, certain tracts or parcels of real estate situated and located in the 7th Civil District of Rutherford County, Tennessee, and being more particularly described as follows to wit:

PARCEL NO. I: Bounded on the north, east and west by remaining property of John L. Batey, Sr.; the south by property of John L. Batey, Sr. and Fannie Batey Talley, and a 20 foot wide parcel of land being conveyed simultaneously in Tract No. 2 herein.

Beginning at a pin in the north fence line of John L. Batey, Sr. and Fannie Batey Talley, being the SW corner of this tract and further described as S 86° 19' E 274.2 feet from a pin by corner post on the SE corner of John H. Riggs; thence N 7° 30' E 200.0 feet to a pin; thence S 86° 7' E 450.0 feet to a pin, being the NE corner of this tract; thence S 7° 30' W 200.0 feet to a pin in the north fence of John L. Batey, Sr. and Fannie Batey Talley; thence with fence line N 86° 07' W 150.0 feet to a pin in fence line on the east side of the 20 foot parcel of land described in Tract No. 2; thence crossing the north end of said 20 foot strip N 85° 26' W 20.0 feet to a pin in fence line; thence with the north fence of John L. Batey, Sr. and Fannie Batey Talley N 86° 07' W 280.0 feet to the beginning containing 2.06 acres more or less

PARCEL NO. II: Bounded on the north by property conveyed in Tract No. 1, on the east by property of John L. Batey and Fannie Batey Talley, on the south by Brown Chapel Road and on the west by property of John L. Batey and Fannie Batey Talley.

Beginning at a pin being N 85° 26' W 1367ft from the centerline of intersection of Browns Chapel Road and Blackman Road and being S 85° 26' E 26ft from a state right of way concrete marker on the north side of Brown Chapel Road 30ft from centerline of said road, being the SW corner of this tract; thence along fence line N 7° 30' E 502ft to a pin in NW corner of this tract; thence S 85° 26' E 20ft to a pin in the NE corner of this tract; thence S 7° 30' W 502ft to a pin 30ft from centerline of Browns Chapel Road; thence N 85° 26' W 20ft to the begininning pin. This tract containing 0.23 acres more or less, according to survey of Robert E. Francis, Registered Land Surveyor, dated June 22, 1973.

Both Tract No. 1 and Tract No. 2 being a portion of the property conveyed to John L. Batey, Sr. and wife Annie Jamison Batey by warranty deed of record in Deed Book 119, page 379, Register's Office of Rutherford County, Tennessee, and being a portion of the property subsequently conveyed by Annie Jamison Batey to John L. Batey by warranty deed of record in Deed Book 224, page 439, Register's Office of Rutherford County, Tennessee.

LEGAL DESCRIPTION/WARRANTY DEED, PAGE 1

TO HAVE AND TO HOLD said real estate, together with all the apuurtenances, estate and title thereunto belonging, unto the said grantees, their heirs and assigns forever. 592

We covenant with the said grantees that we are lawfully seized and possessed of said real estate, that we have a good right to convey the same, and that it is unencumbered.

We further covenant and bind ourselves, our heirs and representatives forever, to warrant and defend the title to said real estate unto the said grantees their heirs and assigns, against the lawful claims of all persons whomsoever.

WITNESS OUR HANDS, this 7th day of November, 1977.

John L Batey
JOHN L. BATEY, SR.

Annie J Batey
ANNIE J. BATEY

STATE OF TENNESSEE)
: SS:
RUTHERFORD COUNTY)

Personally appeared before me, the undersigned authority, a Notary Public in and for said County and State, the within named JOHN L. BATEY, SR. and wife, ANNIE J. BATEY, the bargainors, with whom I am personally acquainted, and who acknowledged that they executed the foregoing (WARRANTY DEED) instrument for the purposes therein contained.

WITNESS MY HAND and official seal at Murfreesboro, Tennessee, this the 7th day of November, 1977.

Patrick J McHale
NOTARY PUBLIC

My Commission Expires: 12/28/80

STATE OF TENNESSEE)
: SS:
RUTHERFORD COUNTY)

I hereby swear or affirm that the actual consideration for this transfer or value of the property transferred whichever is greater, is $1,600.00 which amount is equal to or greater than the amount which the property transferred would command at a fair and voluntary sale.

John L. Batey Jr.
AFFIANT

Sworn to and subscribed before me, this the 7th day of November, 1977.

Patrick J McHale
NOTARY PUBLIC

My Commission Expires: 12/28/80

STATE OF TENNESSEE
RUTHERFORD COUNTY
OFFICE OF THE REGISTER Nov 8 1977
I, HOMER JONES, REGISTER DO CERTIFY THAT THE FOREGOING INSTRUMENT AND CERTIFICATE ARE REGISTERED IN MY SAID OFFICE IN BOOK NO. 261 PAGE NO. 591 AND THAT THEY WERE RECEIVED Nov 8 1977 AT 4:15 O'CLOCK P M. AND ENTERED IN MOTE BOOK 2 PAGE 258
HOMER JONES, Register
BY Evelyn Beasley DEP REG.

RECORDING FEE 6.00
STATE TAX 4.16
REGISTER'S FEE .50
TOTAL PAID 10.66
RECEIPT NO. 53971

QUALIFICATIONS OF JOHNNY M. SULLIVAN, SRA

MAILING ADDRESS: 1703 First Place, Ste. E, Murfreesboro, TN 37129-1599

DATE OF BIRTH: September 26, 1953 SOCIAL SECURITY NUMBER: Available Upon Request

STATE CERTIFICATION: Tennessee Certified General Appraiser....CG-493

EMPLOYER: Self-Employed Fee Appraiser, Associated with Appraisal Associates, 1703 First Place, Ste. E, Murfreesboro, TN 37129-1599, Office (615) 895-6260, Mobile (615) 812-5188, Home (615) 890-0812

PRESENT POSITION: Fee Appraisal Assignments - Residential and Commercial Properties

PROFESSIONAL EXPERIENCE:

July 1978 to June 1990 - Staff Appraiser, Cavalry Banking (formerly Murfreesboro Federal Savings and Loan Association), P.O. Box 188, Murfreesboro, TN 37133-0188
October 1975 to July 1978 - Division of Property Assessments, State of Tennessee

July 1974 to July 1975 - Salesman, Moore's Building Supplies, 802 W College St., Murfreesboro, TN 37130

ACADEMIC EDUCATION: Bachelor of Science Degree from Middle Tennessee State University, Murfreesboro, TN 37132 - August 1975. Degree in Business Education/Tennessee Teacher's Certificate

APPRAISAL EDUCATION: The Appraisal Institute requires continuing education for its Designated Members to remain certified; I am currently certified. Examination was optional/required for the following list of courses:

Inconsistency: It's Hiding in Plain Sight in Your Appraisal November 2021
Residential Market Analysis and Highest & Best Use August 2021
7 Hour National USPAP Update Course-January 2020
Examining Property Rights & Its Implications on Valuation September 2019
Residential Measuring Standards & GLA or Not? August 2019
Fall Real Estate Symposium November 2018
Appraiser Complaints & How to Avoid Disciplinary Actions-July 2018
Current Appraisal Topics-April 2018
7 Hour National USPAP Update Course-January 2018
Introduction to Litigation Valuation & the Appraiser as an Expert Witness-August 2017
Appraisal Review-June 2017
Supervisor Appraiser & Trainee Responsibilities, TN – May 2017
Business Practice and Ethics - March 2017
7 Hour National USPAP Update Course-March 2016
Introduction to Vineyard & Winery Valuation – April 2015
Understanding Today's Regulatory Environment TREAC 2015 Update, Appraiser Legislative Update.
How to Utilize Statistics Effectively in an Appraisal – Brentwood, TN – May 2014
Commercial Appraisal Engagement & Review Seminar for Bankers & Appraisers – January 2014
Residential Applications: Using Technology to Measure & Support Assignment Results – November 2013
Litigation Appraising: Specialized Topics and Applications, Murfreesboro, TN – August 2005
The Appraiser as Expert Witness, Murfreesboro, TN – August 2004
Condemnation Appraising/Advanced Topics and Applications, Course 720, Murfreesboro, TN - August 2003
Condemnation Appraising/Basic Principles and Applications, Course 710, Murfreesboro, TN - August 2002
Standards of Professional Practice, Part C, Appraisal Institute, Nashville, TN - September 2001
Standards of Professional Practice, Parts A & B, Appraisal Institute, Brentwood, TN - October 1995
1BB Cap Theory & Tech, Part B, Income Capitalization, Appraisal Institute, Nashville, TN - April 1992
1BA Cap Theory & Tech, Part A, Income Capitalization, Appraisal Institute, Nashville, TN - March 1992
Income Capitalization of Real Estate, Academy of Real Estate Appraisers (AREA), Nashville, TN - September 1991

APPRAISAL SEMINARS: Various seminars are offered by the Appraisal Institute and should be attended to remain current. The following are seminars attended in last 15 years. State Certified and Appraisal Institute designated course requirements were maintained during the years 1980-1999.

QUALIFICATIONS OF JOHNNY M. SULLIVAN, SRA

National Uniform Standards of Professional Appraisal Practice (USPAP) Course – February 2014
National Uniform Standards of Professional Appraisal Practice (USPAP) Course – February 2013
2009-2012 Code-of-Ethics Seminar – November 2012
The Lending World in Crisis-What Clients Need Their Appraisers to Know Today, Nashville, TN – January 2012
Understanding and Testing DCF Valuation Models, Nashville, TN – December 2011
Uniform Appraisal Dataset / Fannie Mae Freddy Mac, Murfreesboro, TN – July 2011
Appraising Distressed Commercial Real Estate, Nashville, TN – January 2011
Hot Topics in Residential Appraisal, Nashville, TN – April 2010
Introduction to Valuation for Financial Reporting, Nashville, TN – February 2010
Business Practices and Ethics, Nashville, TN – December 2009
Appraising Convenience Stores, Nashville, TN – October 2009
National USPAP Update, Nashville, TN – June 2009
Liability Management for Residential Appraisers, Franklin, TN – May 2008
Quality Assurance in Residential Appraisals: Risky Appraisals = Risky Loans, Murfreesboro, TN – April 2007
Hypothetical Conditions and Extraordinary Assumptions, Murfreesboro, TN – April 2007
National USPAP Update Course, Nashville, TN – March 2007
Scope of Work: Expanding Your Range of Services, Murfreesboro, TN – September 2006
Uniform Residential Appraisal, Murfreesboro, TN – August 2005

ASSOCIATION MEMBERSHIPS:

Three, 3-year terms Board Member-Nashville-Middle TN Chapter, a.k.a. Greater TN Chapter, Appraisal Institute
Designated Member of the Appraisal Institute (created from the merger of SREA and AIREA)
Senior Residential Appraiser (SRA)
Tennessee Housing Development Agency (THDA)
Tennessee Real Estate Commission - License Retired
Rutherford County Board of Realtors

COURTS – QUALIFIED EXPERT: Chancery Court – Rutherford, Williamson, Wilson & Smith Co.; General Sessions – Rutherford County

APPROVED APPRAISER: FNMA, FHLMC, THDA, MidSouth Bk, First National Bk of McMinnville, Independence Bk of Owensboro, Ky., Pinnacle Bk, First Tennessee National Bk, Bank of America, SunTrust Bk, First Bank, Regions Bank, CitiCorp, Capital Bk Trust, Guaranty Trust Co., Synovus Bk (a.k.a. Bank of Nashville), American City Bk, Farm Credit Mid America, Regions Mortgage, Inc.; Cleveland Bank & Trust Co., City Bank & Trust, McMinnville; Farmers Bank of Cornersville, South Trust, U.S. Bk, and other mortgage companies. Other clients include the City of Murfreesboro, Rutherford Co., Consolidated Utility District, Middle Tennessee Electric Membership Cooperation, Town of Smyrna, City of LaVergne, City of Manchester, City of Tullahoma, local authorities, U.S. Army Corp of Engineers, State of Tennessee Real Estate Management Office, Certified Public Accountants, various Attorneys, and other professionals.

RELATED PAST EMPLOYMENT:

Employed by Cavalry Banking (Currently known as Pinnacle Bank) as a Senior Staff Appraiser appraising all types of real estate.

Employed by the Division of Property Assessments as a Real Estate Appraiser with emphasis placed on Mass Appraisal Technique as related to Appraisals for Advalorum Tax purposes.

Employed by Moores Building Supplies as a Building Materials Salesman, this familiarized me with building procedures, contractors, materials, and the building industry in general.

PAST DUTIES: Duties as Senior Staff Appraiser included primarily residential appraisals (both existing and proposed cases) and numerous commercial property appraisals. Also responsible for construction loan disbursements during the construction process, which involved personal on-site inspections to estimate the percentage of completion and to assure conformity with the plans and specifications as submitted.

QUALIFICATIONS OF JOHNNY M. SULLIVAN, SRA

RUTHERFORD COUNTY POPULATION GROWTH

	1970	1980	1990	2000	2010	2021	PROJECTED 2024
COUNTY	59,428	84,058	118,570	182,023	262,604	352,182	392,336
Murfreesboro	26,360	32,845	44,922	68,816	108,755	157,519	163,340
Smyrna	5,698	8,839	13,647	25,569	39,974	55,518	63,355
LaVergne	*N/A	5,495	7,499	18,687	32,588	39,091	44,765
Eagleville	437	444	462	464	604	744	811

Note: LaVergne was incorporated in 1972.
*Note: LaVergne did not participate in this census.

GROWTH CHART

PERMIT CHART - YEAR-TO-DATE

Total Permits up-to-date thru December 2021

MURFREESBORO

YEAR	TOTAL	SGL FAM	PERC. CHG.	MUL FAM	INDUS/ COMM	IND/COM. $ AMT.
2006-^	4,113	1,597		2,447	69	109,124,899
2009	576	379	76.3%	167	30	82,841,563
2010	508	298	81.3%	184	26	30,856,871
2011	425	406	74.6%	0	19	37,237,890
2012	1,017	536	#REF!	464	17	49,041,364
2013	1,626	711	55.5%	889	26	48,210,493
2014	1,868	821	48.6%	1,023	24	64,844,373
2015	2,367	1,142	28.5%	1,185	40	76,898,127
2016	1,898	1,431	#REF!	514	60	119,949,916
2017	2,258	991	30.7%	1,233	34	57,621,276
2018	2,794	1,503	-51.7%	1,247	44	85,169,580
2019	2,314	1,325	11.84%	941	48	80,667,287
2020	680	664	49.89%	8	26	44,774,559
2021	2,378	1,670	N/A	552	51	241,208,416

^ - Year 2006 is Base Year for Percentage Change

RUTHERFORD COUNTY

YEAR	TOTAL**	TOTAL* SGL FAM	SGL FAM	PERC. CHG.	MUL FAM	INDUS/ COMM.	IND/COM. $ AMT.
2006-^	#REF!	#REF!	894		1	20	6,704,785
2009	#REF!	#REF!	343	61.6%	0	12	2,634,397
2010	1,145	795	322	64.0%	0	7	2,807,149
2011	1,010	854	336	40.6%	0	17	6,711,314
2012	1,797	1,259	531	40.6%	0	17	7,104,330
2013	2,586	1,469	556	37.8%	0	6	1,227,821
2014	2,955	1,726	633	29.2%	0	14	2,775,739
2015	3,498	2,083	620	#REF!	0	16	30,162,250
2016	3,395	2,561	698	#REF!	0	11	1,990,951
2017	3,950	2,281	785	-12.5%	0	18	4,955,962
2018	4,423	2,793	664	15.4%	0	28	13,982,762
2019	4,020	2,800	859	-29.37%	2	14	6,747,676
2020	1,233	1,082	351	59.14%	0	4	547,457
2021	N/A	N/A	N/A	N/A	0	12	N/A

**Total of All Permits Issued County & All Cities

SMYRNA

YEAR	TOTAL	SGL FAM		MUL FAM	INDUS/ COMM.	IND/COM. $ AMT.
2006-^	769	555		99	115	69,286,488
2009	203	97	82.5%	39	67	57,466,677
2010	164	95	82.9%	19	50	60,590,341
2011	166	87	84.3%	5	74	106,698,156
2012	361	149	73.2%	150	62	25,657,691
2013	314	151	72.8%	75	88	14,124,210
2014	323	175	68.5%	80	68	28,523,644
2015	351	211	62.0%	66	74	71,127,889
2016	430	250	#REF!	93	87	164,875,436
2017	566	248	0.8%	236	82	36,778,121
2018	545	310	-25.0%	149	86	90,490,399
2019	596	449	-44.8%	70	77	68,034,386
2020	278	160	64.37%	30	88	7,891,661
2021	N/A	N/A	N/A	N/A	N/A	N/A

^ - Year 2006 is Base Year for Percentage Change

LAVERGNE

YEAR	TOTAL	SGL FAM		MUL FAM	INDUS/ COMM.	IND/COM. $ AMT.
2006-^	595	551		0	44	20,397,000
2009	105	78	85.8%	0	27	2,702,864
2010	94	57	89.7%	0	37	8,619,430
2011	66	25	95.5%	0	41	19,492,096
2012	80	43	92.2%	0	37	6,820,831
2013	84	51	90.7%	9	24	2,543,412
2014	117	97	82.4%	0	20	12,073,791
2015	144	110	80.0%	0	34	46,750,800
2016	251	182	#REF!	0	69	76,278,000
2017	323	257	-41.2%	0	66	49,621,000
2018	392	316	-22.96%	0	76	55,134,000
2019	235	167	47.15%	0	68	52,658,931
2020	74	52	68.86%	0	22	43,803,852
2021	N/A	N/A	N/A	N/A	N/A	N/A

APPRAISAL REPORT – COMPLETE SCOPE OF WORK

OF

MELISSA AND JOHN L. BATEY, JR. PROPERTY
CORNERS BLACKMAN AND BAKER ROADS-59.1 ACRES – (TO BE SUBDIVIDED FROM PARENT TRACT OF 408.50 ACRES)
MURFREESBORO, TENNESSEE 37129
PART OF TAX MAP 071, PARCEL 030.00

OWNERS: MELISSA AND JOHN L. BATEY, JR.

PREPARED FOR

RUTHERFORD COUNTY BOARD OF EDUCATION
C/O MR. TREY LEE
ASSISTANT SUPERINTENDENT ENGINEERING AND CONSTRUCTION
2240 SOUTHPARK DRIVE
MURFREESBORO, TENNESSEE 37128
PURCHASE ORDER NUMBER: BP 16232

APPRAISED BY

JOHNNY M. SULLIVAN, SRA

EFFECTIVE DATE AND INSPECTION DATE OF APPRAISAL

NOVEMBER 3, 2022

DATE OF REPORT

NOVEMBER 8, 2022

November 8, 2022

Rutherford County Board of Education
c/o Mr. Trey Lee
Assistant Superintendent Engineering & Construction
2240 Southpark Drive
Murfreesboro, TN 37128

Re: Melissa and John L. Batey, Jr., Property
Appraisal of Proposed Acreage Tract 59.1 +/- Acres
To be Subdivided from Parent Tract of 408.50 Acres
Corners Blackman and Baker Roads
Murfreesboro, TN 37129
Part of Tax Map 071, parcel 030.00
Purchase Order Number: BP 16232

Dear Mr. Lee:

In accordance with your request and engagement, I have personally inspected and appraised the above referenced property for the purpose of estimating the current market value of the fee simple interest of the subject property. The following report contains a **SUMMARY** of the methods of approach and data gathered in my investigation. This Appraisal Report is being completed for the purpose of acquiring a proposed 59.1-acre tract to be subdivided from the parent tract. This parent tract is 408.5 acres of agriculture use vacant land. There may be agriculture use buildings located on the parent tract**,** however, any and all of these will offer no contributive value due to highest and best use.

The purpose of this appraisal is to give my opinion of the **current market value** of the **"fee simple"** interest of the subject property as of November 3, 2022, the Effective Date and Inspection Date of the Appraisal. The Report Date is November 8, 2022. Enclosed in this report is an **Appraisal Report – Complete Scope of Work.** The pertinent facts and data, which I believe applicable to the property, are summarized, and the reasons leading to my estimate of market value are included. This appraisal is made subject to any limited conditions and assumptions listed within this report.

To the best of my knowledge, this report conforms to the current requirements prescribed by the Uniform Standards of Professional Appraisal Practice of the Appraisal Standards Board of the Appraisal Foundation (as required by the Financial Institutions Reform and Recovery Act - FIRREA).

The person signing this report has the knowledge and experience necessary to complete the assignment competently and is duly licensed by the appropriate state to perform this level of appraisal under certificate number CG-493. This letter must remain attached to the report, which contains 38 pages, plus related exhibits, in order for the value opinion set forth to be considered valid.

Current economic conditions both nationally and locally are considered volatile and in an adjustment mode. Economists debate the time line for this condition; therefore, marketing periods for development and commercial real estate are difficult to predict. If properties such as the subject require "sell off", a market discount may become necessary; note secondary definition of market value within this report.

Based on my investigation, it is my opinion that the **current market value**, as defined in this report, "As If Vacant", of the "**fee simple**" interest of the subject property as of November 3, 2022, also considered the Effective Date and Inspection Date of the Appraisal with the report date being November 8, 2022 relative to a twelve- to eighteen-month exposure and marketing period, is:

FOUR MILLION FIVE HUNDRED THOUSAND DOLLARS

($4,500,000.00)

CURRENT MARKET VALUE

Respectfully submitted,

_____

Johnny M. Sullivan, SRA
State Certified General
Real Estate Appraiser - CG-493

SUBJECT PROPERTY

SUMMARY OF SALIENT FACTS

Total Site Area of Parent Tract-	408.50+/- Acres
Area to be Subdivided from Parent Tract	59.10+/- Acres
Highest and Best Use Estimate	Institutional and/or Development Potential
Estimated Value by Direct Sales Comparison – 59.10+/- Ac as If Vacant	$ 4,500,000
Estimated Value by Cost **(Not Processed)**	**N/A**
Estimated Value by Income Capitalization **(Not Processed)**	**N/A**
Final Current Market Value Estimate of Proposed Site – 59.10+/- Ac As of November 3, 2022, Effective Date of Appraisal	**$ 4,500,000**

Location:	Corners Blackman and Baker Roads-59.1 Acres--**Proposed** Murfreesboro, TN 37129 **Part of** Tax Map 071, parcel 030.00
Owners of Record:	Melissa and John L. Batey, Jr.
Sales Contract:	This transaction is to aid in the evaluation of the property for asset acquisition by the client. There is a **Purchase Agreement** to analyze; see "**Noteworthy Conditions**".
Improvements:	This appraisal will consider the land as if vacant. Due to highest and best use, any outbuildings and residential dwellings will offer **NO** contributing value.
Census Tract:	408.07/1
Note:	**NO Portion** of the parcel lies **WITHIN** the FEMA Flood Zone "AE" Flood Hazard Area; this is according to the flood map included within the addendum of this report; see "**Noteworthy Conditions**"

TABLE OF CONTENTS

EXTENT OF THE APPRAISAL PROCESS

The following report represents an **Appraisal Report – Complete Scope of Work** format, which is intended to comply with requirements set forth under the Financial Institutions Reforms Recovery and Enforcement Act (FIRREA); the Interagency Appraisal and Evaluation Guidelines effective October 27, 1994; and the Uniform Standards of Professional Appraisal Practice (USPAP) effective January 1, 2022.

According to The Appraisal Foundation and its Director of Appraisal Issues, John S. Brenan, who stated the terminology "Summary Appraisal Report" is correct as long as the words "Appraisal Report" are within the phrase. I refer you to The Appraisal Foundation's 2014-15 USPAP, Q & A dated October 9, 2013, Item 10, Page 4.

NOTEWORTHY CONDITIONS

The subject property is approximately 59.1 acres to be taken from the parent tract of 408.5 acres. The client is in the process of completing geological and other technical surveys. After these are completed the exact acreage amount will be announced. This appraisal will be completed assuming 59.01+/- acres is the size of the subject property. However, if the final total is substantially different, an adjustment in this appraisal may be necessary.

The subject's tract DOES have a formal contract for purchase. There is an understanding from the principles that the buyers have options to withdraw from the contract if necessary. The agreed upon sales price is currently $80,000 per acre pending approval from local authorities. The purpose of this report is to aid the client with acquisition. Further explanation is listed on page 8 of this report.

The subject is to be utilized for public service as a school campus. Because of the future use as a school campus, the client has two possibilities for waste disposal; an on-site "Drip Field" STEP system or constructing a sewer line to an existing system provided by the City of Murfreesboro. This proposed sewer line will be considered a "dedicated line" suitable for use only by the proposed school campus. This sewer line is south of the proposed 59.10 acres. This existing sewer line has a rendering on a city provided sewer map which is located within the addendum. This Appraisal Report is being prepared ASSUMING THE SITE HAS READILY AVAILABLE SEWER SERVICE FROM THE CITY OF MURFREESBORO, TENNESSEE. THIS IS CONSIDERED TO BE A "HYPOTHETICAL CONDITION".

The subject property does NOT have any lands referenced within the "Flood Zone". As referenced by the client, the "Due Diligence" period will allow soil, water, hazardous materials, and wet-lands inspections. These must all suit the client and become a condition of this Appraisal Report.

These items listed are considered to be "Extraordinary Assumptions" and/or "Hypothetical Conditions". The definitions are listed later within this Appraisal Report.

SCOPE OF THE INVESTIGATION

This appraisal includes several independent investigations which include information from other groups or individuals.

Typical county and city data have been obtained from the Chamber of Commerce. The local newspapers, "The Daily News Journal," and "The Tennessean" have been utilized for data and information concerning growth, development, and overall economic makeup of Eagleville, LaVergne, Smyrna, Murfreesboro, and Rutherford County.

The Rutherford County Regional Planning Commission and Engineering Department as well as the same authority from the City of Murfreesboro have also been consulted concerning traffic count and trends as well as zoning and possible zoning of development parcels of land. Whenever possible, certain civil engineers are relied upon for site plan or plat information. Your appraiser has made an estimate, from the tax and soil maps; to determine the calculated acreage for land area considered having inferior soils and rock formations. A legal description in the form of a survey and/or Warranty Deed should be provided for the subject property as this report is assuming a subdivision from the parent tract of 408.50 acres. **The client has directed your appraiser to reference the size of the land parcel as 59.10+/- acres. A complete legal description and survey is recommended.** Also, **i**t is highly recommended a complete engineering and soil analysis be performed for the subject, as your appraiser is not a specialist in these areas. ***If the acreage amount proves to be a noticeable difference in area, an adjustment in this appraisal may be required.***

The public records have been checked for possible comparable sales of vacant residential agriculture and development tracts similar to the subject's size and utility. In this appraisal, sales of similar development potential and agriculture potential tracts were researched in Rutherford County and other possible market areas. Other resources have also been considered for the possibility of comparable sales.

Your Appraiser has made an on-site inspection of the subject and utilized the tax map, submitted "Aerial Map" from the Assessor's Office with a rendering of the proposed subdivision and ASCS maps in order to determine the estimated size of the vacant tract and the suitable soils representing the subject property. A copy of these maps and the flood map is included within the addendum of this report. The tax map represents the subject to be identified as part of Tax Map 071, parcel 030.00 which is also the parent tract.

Marshall Valuation Cost Service has been utilized to estimate cost new of the subject property's improvements, when necessary. Again, when necessary, certain local contractors have been consulted. These local contractors' estimates, for the reproduction of the building, when necessary, have been considered when completing the Cost Approach and have also been helpful in calculating certain rent returns. Other local sources have been considered for income and expense summaries as well as lease information. Local financial institutions have been consulted concerning typical lending rates. These will be considered when processing a discount rate or Income Capitalization Approach, if so required.

All of the data presented in this report is factual and accurate to the level obtainable by the above-described procedures and the analysis of this data followed prescribed procedures developed through appraisal professional organization sponsored instructional courses. The appraiser's professional experiences have also contributed to the interpretation of the data, the analysis of same, and the development of the appraisal conclusion.

IDENTIFICATION OF THE PROPERTY

Appraiser's Prospective and Procedure: The following analysis will focus on the subject tract of 59.1+/- acres taken from the parent tract of 408.5 acres. The tract is currently utilized as an agriculture use land parcel. The highest and best use will address the residential development potential as well as the current use. This appraisal report will represent the subject as a proposed 59.10+/- acres taken from the parent tract of 408.5 acres, ONE land parcel.

The subject property is located approximately one mile north of the intersection of Blackman and Burnt Knob Roads west of the Murfreesboro City Limits in the area locally referred to as the Blackman Community of Rutherford County. The subject corners and fronts Baker and Blackman Roads. Blackman Road's intersection with I-24 and Veterans Parkway is +/- 1.5 to 2.5 miles south of this intersection; note the enclosed tax and plat map/sketch drawing. The appraised property consists of a proposed tract of approximately 59.10+/- acres, taken from the parent tract of 408.5 acres, identified on the Property Assessor's Tax Map as Map 071, parcel 030.00. The mailing address is Baker Road (No Numeric Number), Murfreesboro, Tennessee 37129. **It is highly recommended a complete survey and soil analysis be performed. If a current survey provides the site to be more or less in acreage or abrogating circumstances are discovered, an adjustment in this appraisal may be required.**

The subject is further identified on the Rutherford County Property Assessor's tax map as Part of Tax Map 071, parcel 030.00 in Record Book 548, page 1888. The address for the parent tract is Blackman and/or Baker Road (No Numeric Number), Murfreesboro, Tennessee 37129. During economic progression, the positive road frontage on Blackman and Baker Roads supports the possibility of subdivision development, assuming suitable sewer, septic and/or "**Step**" system soil sites are available; please refer to the "**Noteworthy Conditions**".

The subject tract will consist of 59.10+/- acres, taken from the parent tract of 408.5 acres, of potential residential subdivision use land with the enclosed map pronouncing said area. The soil classifications suitable for subsurface sewage have been labeled on the noted ASCS map within the addendum. However, per the "**Hypothetical Conditions**" so referenced, the valuation estimate will assume the proposed subject will have readily available sewer from the City of Murfreesboro, Tennessee.

TYPE OF PROPERTY

The subject property currently consists of a county-zoned residential-agricultural parcel. This appraisal will address the subject property as if vacant with potential for residential subdivision development.

The electric, gas, and utility water services are located on Baker and Blackman Roads with water and electric also fronting these main thoroughfares. This appraisal will address the 59.10+/- acres of the subject as one unit, not divided into different parts. The process of separating any part from the whole would require a different analysis. This action would take on a development mode. Development is typically considered to be a speculative venture performed by investors requiring a certain capitalized return for land, labor, and capital spent.

Currently, the subject is considered a vacant residential and/or agricultural use zoned development potential land parcel, per the referenced "**Hypothetical Condition"**. The subject is a level to rolling agriculture use site with approximately 95% of the 59.10 acres considered level to slightly rolling elevation and at road grade. The site has a small wooded area near the southeast section along Blackman Road; note enclosed aerial maps. The remaining land is cleared and currently utilized for agriculture crop production. However, county and city subdivision developments are currently progressive in the Blackman Community of Rutherford, Tennessee. Therefore, the geological fitting portion of the subject property will be considered as a development potential land parcel.

The subject parcel is considered a small part woodland, part pasture grade, and part crop land tract currently utilized for agriculture purposes. The subject is less than one mile from the city limits of Murfreesboro and considered a residential development potential land parcel. Currently, the subject is located outside the city limits of any city in Rutherford County. This allows the county to control the zoning and subdivision planning. Your appraiser has investigated the possible subdivision development of the subject property with the Murfreesboro and Rutherford County Planning Departments. Certain rock formations, water retention, and expansive soil problems have been discovered. These problems are considered "workable" with +/-95% of the soils conducive for subsurface septic or "**Step**" systems. The road frontage on Baker and Blackman Roads should allow ingress-egress. This aids with the potential of residential subdivision development.

Approximately +/-95% of the soils may be reliable for subsurface sewage disposal and/or "**STEP**" systems. However, a qualified "Soil Scientist" is equipped for this analysis. This is strongly suggested. As previously stated, a forced main sewer line would be planned for the proposed school site, the City of Murfreesboro's gravity sewer system lines are between 1,200 and 1,600 feet southeast of the subject property. The public utility services, road frontage, and the setting near the city limits of Murfreesboro deem the subject to be considered reasonable for residential lot development. During economic progression, the most likely usage would be for residential subdivision development. The current economic conditions (progressive) will dictate this land parcel to be a development potential tract in waiting. **Again, refer to the "Noteworthy Conditions" and "Hypothetical Conditions so referenced.**

The subject tract is further identified as follows:

Tax / Parcel Number	Owner of Record	Surveyed Acreage	Identifying Characteristics	Soil Types
071/030.00	Melissa & John L. Batey, Jr.	59.10+/-	Frontage on Baker & Blackman Roads	+-95% - conducive for septic or "**STEP**" systems*
	Overall	59.10+/-	***Noteworthy Conditions**	Note Enclosed Soil Map

PURPOSE OF THE APPRAISAL

The purpose of this appraisal is to render my opinion of the **current market value** of the **"fee simple"** ownership of the subject, as of the effective date and inspection date of the appraisal, November 3, 2022. The report date is November 8, 2022. This appraisal is made with the subject considered to be vacant, raw land utilized for general ownership and/or agriculture production, i.e., pasture, grazing, and hay crop with potential for residential use subdivision development.

The accepted definition of market value is defined in **The Dictionary of Real Estate Appraisal, Twelfth Edition (Chicago: Appraisal Institute, 2001).** Other items of definition have been added below. These items and the general definition have been accepted by all five government agencies and the "RTC":

> "Market Value - The most probable price in terms of money which a property should bring in a competitive and open market under all conditions requisite to a fair sale, the buyer and seller each acting prudently, knowledgeably, and assuming the price is not affected by undue stimulus."

Implicit in this definition are the consummation of a sale as of a specified date and the passing of title from seller to buyer under conditions whereby:

1. Buyer and seller are typically motivated;
2. Both parties are well informed or well advised, and acting in what they consider their own best interest;
3. A reasonable time is allowed for exposure in the open market;
4. Payment is made in cash or U.S. dollars or in terms of financial arrangements comparable thereto; and
5. The price represents a normal consideration for the property sold unaffected by special or creative financing or sales concessions granted by anyone associated with the sale.

(Source: Office of the Comptroller of the Currency under 12 CFR, Part 34, Subpart C - Appraisals, 34.42 Definitions.) **This WILL BE the definition for this Appraisal Report.**

However; the Internal Revenue Service (IRS) indicates the definition of value for the subject property as fair market value, defined as "the price at which the property would change hands between a willing buyer and a willing seller, neither being under any compulsion to buy or to sell and both having reasonable knowledge of the relevant facts." (IRC 20.2031-1 (b)). **This will NOT be the definition for this Appraisal Report.**

Probability of Value Change: The market value of the property appraised in this report is estimated as of the aforementioned date. Constantly changing economic, social, political, and physical conditions have varying affects upon real property values. Even after the passage of a relatively short period of time, property values may change substantially and require a review of the appraisal and re-certification.

Retrospective Value as defined by the Appraisal Institute: "An opinion of value that is likely to have occurred at a specified historic date, sometime in the past. A retrospective value opinion is most frequently utilized in connection with appraisals for estate tax, condemnation, inheritance tax, and similar purposes."

Hypothetical Condition: a condition, directly related to a specific assignment, which is contrary to what is known by the appraiser to exist on the effective date of the assignment results, but is used for the purpose of analysis.

Extraordinary Assumption: an assignment-specific assumption as of the effective date regarding uncertain information used in an analysis which, if found to be false, could alter the appraiser's opinions or conclusions.

EXPOSURE TIME / MARKETING TIME

Exposure Time / Marketing Time: Two related but different concepts that are often confused are Exposure Time and Marketing Time. USPAP specifically addresses the confusion. Exposure Time: Backward looking; ends on the effective value date. Based on factual, past events.

Marketing time is forward looking; starts on the effective value date. A forecast based on expectancies of future occurrences. Marketing time and exposure time are both influenced by price. That is, a prudent buyer could be enticed to acquire the property in less time if the price

were less. Hence, the time span cited below coincides with the value opinion(s) formed herein. In the recent past, the volume of competitive properties offered for sale, sale prices, and vacancy rates have fluctuated little. Sale concessions have not been prevalent. The subject has several referenced inferior marketing factors, which should extend the exposure period; such as its specific use. In light thereof, an estimated exposure time for the subject is 12-18 months assuming competitive pricing and prudent market. The Marketing Period is felt to also be 12-18 months.

LEGAL DESCRIPTION

Your appraiser has **NOT** been provided with a legal description. There is a Warranty Deed referencing the parent tract, however, the legal and survey for the proposed subject property are pending. A physical inspection has been made of the subject site with the tax map utilized to determine the calculated acreage of the parent parcel. The tax map has also been utilized to estimate the boundaries of the proposed subject. A rendering of the boundaries is referenced within an aerial photograph of the tax map. It is highly recommended a professional in this field complete a survey and legal description. ***If upon completion of said survey, the area so referenced is different, an adjustment in this appraisal report may be required. This is highly recommended.***

HISTORY OF THE SUBJECT PROPERTY

There is a Quitclaim Deed of the parent tract dated September 15, 2005, John L. Batey, Jr to John L. Batey, Jr., and wife Melissa W. Batey, sworn consideration $-0-, as recorded in Record Book 588, page 1888, Rutherford County Register's Office. The subject property is considered to be a portion of the parent tract referenced above. Therefore, the legal and survey are pending.

When inspecting the public records, it has been determined that there has been no other sales history for the past three years. ***However, it is strongly suggested a current title search be produced, as your appraiser is NOT an expert in real estate title.***

LISTING AND/OR SALES CONTRACT

There is **a** sales contract to analyze as of the effective date of the Appraisal; refer to the "**Noteworthy Conditions**". It should be noted that institutional purchasers of real estate, similar to the client's circumstance, require certain locational and logistic factors not typical of most market acquisitions. Therefore, their need to acquire specific real estate parcels do **NOT** meet the definition of "Market Value" (review the definition of market value-page 6). The key terms here are "most probable" and "price **NOT** affected by undue stimulus". The client's need for specific land parcels suggest it may require a premium to purchase these needed tracts. This need sometimes defies the definition of "Market Value". Therefore, the contract premium may be beneficial to the client and still not meet the "Market Value" definition.

FUNCTION OF APPRAISAL

The function of this appraisal is for the sole use of the client, Rutherford County Board of Education, in connection **with asset acquisition and for NO other purpose.** The appraiser assumes **NO** responsibility as to the legal ownership of said property and the appraisal is made in **"fee simple"** terms. There are **NO Other Intended or Unintended Users or Uses.**

Fee Simple Interest is defined in **The Dictionary of Real Estate Appraisal, Third Edition (Chicago: Appraisal Institute, 1993)**, as:

> "Absolute ownership unencumbered by any other interest or estate; subject only to the limitations imposed by the governmental powers of taxation, eminent domain, police power, and escheat."

CITY AND AREA DATA

The subject is located outside the corporate limits of Murfreesboro, Tennessee. which is the county seat of Rutherford County. Nashville is +/- 30 miles west with Murfreesboro and Rutherford County comprising a major sector of the Nashville Standard Metropolitan Statistical Area (SMSA).

During the first ten years of the 21st Century, Rutherford County had a 44.3% increase in population with a total of 262,604 in the 2010 Census, this according to the March 17, 2011 Daily News Journal Report. This calculates to a 5.1% increase since the 2008 Census. Rutherford County topped the state in the 1990's with a 52,000 increase in population; and again, in the census taken in 2008, Rutherford County led the state. According to U.S. Census data, more people have chosen to relocate to Rutherford County than any other county in the state over the past 28 years. More people have chosen to move into Rutherford County than moved out during 1990 - 2008. The May 18, 2009 Daily News Journal reported Rutherford County was 57th in the nation for the year of 2008 according to U.S. Census figures**.** In a census certified May 14, 2009, the county's population increased 3.5% gaining 7,808 people for a total population of 249,270 for that period. **A**ccording to a report by the Greater Nashville Regional Council, an increased rate of growth for Rutherford County's population is predicted for the next 20 years. As of May 2019, the Rutherford County Chamber of Commerce indicates 330,409 people currently reside in Rutherford County. By 2025, the projected population of Rutherford County is 376,248 according to the Nashville Business Journal.

The high level of growth in Rutherford County got its initial boost when Nissan Motor Manufacturing Corporation USA opened its Smyrna factory in 1984. The factory created jobs, and then support industries and retail stores sprang up throughout the area to meet the needs of the growing population. Although Rutherford County's economic prosperity isn't owed to a single event, Nissan's arrival symbolized the start of that growth.

Nissan's 5.1 million square foot plant and headquarters is the nation's largest automotive manufacturing facility under one roof and the county's largest employer. But the county has many other industrial anchors that have contributed to growth and prosperity. Also, Middle Tennessee State University (MTSU) is cited as a big part of the county's growth. The University's growth rate over the past five years exceeded 3% annually. The fall semester of 2010 saw the University's largest enrollment surpass 26,000 students.

The 2010 census indicated Murfreesboro's population was 108,755, with the growth rate for the 10 years since 2000 up from 68,816 for an increase of 39,939 up over 36.7% for an annual increase of 3.7% per year. Murfreesboro's population was 49,278 residents according to the Census in 1990. According to the local newspaper, The Daily News Journal, Murfreesboro's most recent special 2017 Census indicated a population of in excess of 128,000. This number was certified by the State in May 2018 and represents a 27,425 increase over the 100,575 certified population tabulated during the 2008 special census. This number represents a 23.57% population increase

during that three-year period. Murfreesboro's population reached 110,000 by the year 2012. According to the Rutherford County Chamber of Commerce, Murfreesboro's 2019 population is 142,056. Murfreesboro is ranked the 8th fastest growing midsize city in the United States per WalletHub 2018. The most recent census, July 2021, has Rutherford County with 352,182 and the City of Murfreesboro, Tennessee at 157,519 population. This represents a +/- 3% annual increase.

Projected population for the City of Murfreesboro is 163,340 by 2024. This increase is projected at an annual rate of +/-2.0%. Murfreesboro's explosive growth is well ahead of these projected figures. Currently, the City of Murfreesboro is approximately 39 square miles according to the same study, and it is reasonable to expect it to more than double in size during the next 20 years in terms of both population and land area actually developed.

According to the March 17, 2011 Daily News Journal Report, Smyrna climbed from 18th to 15th most populated city in Tennessee. Smyrna increased from a population of 25,569 in 2000 to 39,974 for an increase of over 36%. In 1998's special census, Smyrna's population totaled 24,077. If this growth trend continues, Smyrna's current population could double within 10 years. A May 2019 report from the Rutherford County Chamber of Commerce states that the current population of Smyrna is 51,519; with a projected population of 89,223 by 2024. The current population, per the U.S. Census Bureau is 55,518.

According to the March 17, 2011 Daily News Journal Report, LaVergne climbed from 27th to 19th most populated city in Tennessee. According to the 2010 Census, LaVergne's population was 32,588 up from 18,687 in 2000, nearly 42.66% increase. In the Census of 1990, LaVergne's population was 7,499 for an annual increase over the past 20 years of 3.85%. The U.S. Census Bureau has LaVergne's population at 39,091 as of July 2021.

This city, on Davidson County's southern border, known as the gateway to Rutherford County from Nashville grew almost as fast as the rest of Rutherford County - at 36.47% or 2,004 more than the 1980 census, which found 5,495 people. Then a special census in June 1994 reported 11,088 people reflecting a population increase of 47.8% in four years. LaVergne's continuing dramatic population increased to 26,472 residents according to a census certified on May 14, 2009 translated into near 42% increase above the census of 2000. LaVergne continues to attract more residents. The current population of LaVergne is 39,091 with a projected population of 42,933 by 2024. These figures come from a May 2019 report from the Rutherford County Chamber of Commerce.

Eagleville, the smallest municipality in Rutherford County, had a population of 501 in 1998. The 2000 census revealed a total population of 464. A special Census in 2006 revealed the population had grown to 562 for a near 20% increase. The site of a small commercial area and growing residential area, Eagleville is Rutherford County's southernmost city. A report from the Nashville Business Journal dated April 27, 2018, indicated the, 2017 population of Eagleville was 726 residents and was listed in the Top 10 of Tennessee's Fastest Growing Cities. The current population of Eagleville is 744 with a projected population of 811 by 2024.

Because of its geographic location, several state and federal highways bisect Murfreesboro. U.S. Highways 41-70S and 231 intersect in the city. In addition, Interstate 24 passes through the west portion of the city, connecting Nashville and Chattanooga. Interstates 40 and 65 also intersect with Interstate 24 in Nashville, which provides good access to Murfreesboro, Smyrna, and LaVergne in Rutherford County. State Route 840, a four-lane controlled access highway passes around Nashville and through Rutherford County between the cities of Murfreesboro and Smyrna.

Various city and county leaders had indicated that State Route 840, would spur a population growth greater than that of Nissan's plant on Smyrna. The impact of state Route 840 on the county's economy would be spread over a 10-year period. A 27-mile segment from Interstate 40 at Lebanon in Wilson County to Interstate 24 at Murfreesboro was completed in November 1996. The second leg of State Route 840 opened in the fall of 2000, extending the Route to Triune and Highway 31W in Williamson County. The third leg from Triune to I-65 was completed late summer of 2001. State Route 840 currently serves as a bypass around Nashville connecting to Interstate 65.

Murfreesboro is the economic focal point of the county, with a strong diversified manufacturing base and strong retail sales. Middle Tennessee State University (MTSU), with over 21,630 students, is the fastest growing public university in Tennessee and is another major influence on the economy of Murfreesboro. Also, with the Nissan Motor Manufacturing plant in Smyrna, and several related support companies located in the area in recent years, the truck and auto industry has contributed significantly to the area's industrial growth.

A wide array of businesses has chosen to call Rutherford County home for many reasons: easy transportation access, excellent school systems, tremendous recreational facilities, a $351 million tourism industry, new industry and job opportunities; you cannot overlook the high quality of life, along with a rapidly growing population, to name a few. In the past several years, the county's retail base has taken off, now exceeding $8 billion in annual sales according to the Tennessee Department of Revenue, 2017 Total County Retail Sales. Rutherford County has long had a healthy and diverse mix of industries.

As of April 2019, other major employers in the area are:

Rutherford County Employers	
Company Name	**Employees**
Nissan Motor Manufacturing Corporation, USA	8,500
Rutherford County Government	5,500
National HealthCare Corporation	3,250
Middle Tennessee State University (MTSU)	2,175
Ingram Content Group	1,807
Dept. of Veterans Affairs, TN Valley HealthCare System	1,756
State Farm Insurance Companies	1,650
Amazon Fulfillment Center	1,621
Saint Thomas Rutherford Hospital	1,400
Asurion	1,250
Verizon Wireless	1,068
General Mills	1,028
Adient	1,000
Venture Express, Inc.	1,000
Bridgestone Americas Tire Operations	975
City of Murfreesboro	940
Taylor Farms Tennessee, Inc.	770
Vi-Jon	728
Murfreesboro Medical Clinic	660
Federal-Mogul Motorparts	650
TriStar StoneCrest Medical Center	555
Schneider Electric	550
Quality Industries	500
Mahle Filter Systems North America	491
Town of Smyrna	482
Saks Distribution Center	454

NOTE: Figures provided by Rutherford County Chamber of Commerce – April 2019

The not seasonally adjusted unemployment rate in Rutherford County for March 2020 was 2.7%, which is less than the state rate of 3.7% and less than the national rate of 4.5%, and less than the state and national seasonally adjusted rates of 3.5% and 4.4% respectively. New job growth during this economic adjustment is difficult to predict; however, Rutherford County's unemployment rate should drop and maintain a level at or below the state and national averages.

.

Unemployment rates for the 2000's year's average is:

Year	National	State	Local
2009	9.3%	10.2%	9.6%
2010	9.6%	10.0%	9.0%
2011	9.0%	9.5%	8.2%
2012	8.1%	8.0%	6.6%
2013	7.4%	8.1%	6.4%
2014	6.2%	6.8%	5.3%
2015	5.3%	5.9%	4.6%
2016	4.9%	4.6%	3.6%
2017	4.4%	3.9%	3.0%
2018	3.9%	3.5%	2.7%
2019	3.7%	3.4%	2.6%

Overall, the unemployment rate for Rutherford County consistently is lower than the state and national levels creating a desirable labor force which helps drive the local economy in a positive manner.

The manufacturing, or "hard" industries, draws workers who in turn draw service-oriented business like so many satellites. Economists see this as a natural progression: People need to eat, go to school, attend church, use banks, use medical care, and play; they go shopping and buy a multitude of goods and services.

Murfreesboro has become one of the hottest locations in the nation for new restaurants and retail businesses. Eating and drinking establishments in Murfreesboro now average more than $1 million each in annual sales. Corporate chains have quickly taken notice of this lucrative market with national eateries including Applebee's, O'Charley's, Chili's, The Chop House, Bonefish Grill, Macaroni Grill, Mimi's Café, Red Robin Burgers, The Olive Garden, Hooters, CiCi's Pizza, Pizza Hut, Outback Steakhouse, Longhorn Steakhouse, Cracker Barrel, Red Lobster, and Shoney's.

Regional chains and locally known eateries feature everything from steak to catfish and Mexican food which include Camino Real, Buffalo Wild Wings, Fazoli's, Demo's Steak & Spaghetti House, Toot's, Jim & Nick's, Jason's Deli, Moe's Southwest Grill, Steak n' Shake, Zaxby's, and International House of Pancakes, also known by the acronym IHOP. Nationally, regionally, and locally known "fast food" chains or eateries abound and should continue to locate in Rutherford County due to the thriving economy and increasing demographics.

Murfreesboro has evolved into a regional trade center for surrounding counties. Near the state Highway 96 West and Interstate 24 interchange, (a.k.a. Old Fort Parkway), the city boasts of one of North America's largest Wal-Mart superstores replacing the existing Wal-Mart store, which was converted into a Castner-Knott and then purchased by Dillards. This department store anchor has had a significant impact on the expansion of Stones River Mall into a viable regional mall and

prompted a J.C. Penney Co., Inc., store to construct a department store anchor, as well as prompting Sears to complete expansion, and hopefully attract another recognized national store as its sixth anchor.

A "Life Center" development located on the new Medical Center Parkway is developing with office, retail and medical buildings. The new hospital building for Middle Tennessee Medical Center, MTMC, which opened fall 2010, has also been located in this area. This new seven-story building is licensed for 286 beds and was constructed with the option of additional floors for future growth. "The Avenue", a part of this development, opened with several nationally recognized retail chain stores and eateries. It is reported that near 150 retail outlets and restaurants will be located within this development, which is located just off the new Medical Center Parkway/Interstate 24 interchange.

With the opening of Home Depot, Dillards, and J.C. Penney Co., Inc. between 1995 and 2006, along with many more major projects in the works, local commercial real estate brokers report the highest demand they've ever seen for high-visibility, high-traffic retail sites. On the west side of the same interchange is Sam's Wholesale Club, Tractor Supply Company (TSC), Stonetrace Commons, a shopping center with Kroger as its anchor, and Old Time Pottery. All support the retail upswing for Rutherford County.

The Old Fort Parkway area of Murfreesboro has some of the most active real estate in the region. Dozens of businesses and eateries have opened on that road, on both sides of Interstate 24, in just the past few years. More are coming. A 407,000 square foot shopping center was completed in 1998. The Murfreesboro Towne Centre complex includes Target as its anchor, T. J. Maxx, Party City, and Pier 1 Imports, among other stores. Lowe's of Murfreesboro, Inc., home center relocated into a larger store near this complex.

For several years the cities of Murfreesboro, Smyrna, and LaVergne relied upon the Sewart Air Force Base as a major employer. This air base closed in the late 1960's, and the airport became a portion of the Nashville Metropolitan Airport Authority and has been developing industrially since. In 1992, this complex was reclaimed by Rutherford County with an airport authority serving as management for leasing. This complex is the third largest general aviation airport in the state of Tennessee.

The most significant boost to the cities of Murfreesboro, Smyrna, and LaVergne, as well as Rutherford County, occurred over 20 years ago when Nissan Motor Manufacturing Corporation USA established its new truck and auto manufacturing plant in Smyrna. Along with the payroll to Nissan employees came spin-off industries and suppliers for Nissan. Many of these have located in and around Rutherford County, which has resulted in impressive growth for the county, and for Smyrna and LaVergne in particular. This growth in numbers has dramatically impacted construction of single-family houses, apartment units, smaller multifamily housing, retail facilities, and office space.

The “downtown” areas along U.S. Highway 41-70S/New Nashville Highway, (a.k.a. Broad Street) consist of major commercial-retail activity. U.S. Highway 41-70S is the major four-lane traffic artery through the heart of Murfreesboro, Smyrna, and LaVergne. In Murfreesboro, State Highway 96 West, (a.k.a. Old Fort Parkway), and U.S. Highway 231 South, (a.k.a. South Church Street), are both connectors of U.S. Highway 41-70S and Interstate 24. Both interchange areas should continue as strong centers for commercial-retail and residential activity in Murfreesboro.

Murfreesboro, Smyrna, and LaVergne should continue to develop as support communities for Nashville's warehouse and industrial base. Because of the easy access to Interstate 24 from the connector roads, each city offers storage and traffic-related industry a quality location. Each also offers a strong residential housing market for first time buyers, as well as established homeowners.

For the years 2000 to 2007, and again from 2016 to present, the Middle Tennessee economy grew at a rate unparalleled to any other recent period. Retail sales were at record high levels; homes were being constructed at one of the fastest rates in the country; commercial development was progressive, and real wages continued to rise.

Leading economic indicators show that more of the same should occur in the near future. However, economic growth should parallel the nations. Rutherford and the surrounding seven counties have one of the lowest unemployment rates in the nation. Currently national trends for real estate are in an adjustment mode. The local real estate market is also experiencing a similar retraction in number of sale transfers. Per the Middle Tennessee Board of Realtors, current sales have increased some twenty percent over the past thirty-six months showing signs of continued demand in the residential real estate market. The second quarter of 2022 saw a small sales decrease and has continued into the third quarter. The national economic conditions are currently considered volatile with short term interest rates currently increase to levels not seen since the last major recession. Long term mortgage rates are also increasing to similar levels. These factors may cause economic conditions to soften with a recession predicted for the first quarter of 2023.

Murfreesboro should continue to develop as a major trade area for Middle Tennessee, and the future of the city, county and its other major incorporated cities, Smyrna and LaVergne, appears to be very promising during economic progression.

NEIGHBORHOOD DATA

The subject property is located near three miles north of the intersection of Veterans Parkway and Franklin Road (a.k.a. Highway 96) fronting Franklin Road. State Route I-840, Manson Pike, Medical Center Parkway and Fortress Boulevard and southwest of the I-24/Medical Center Parkway interchange are traffic arteries east, southeast and southwest of the subject property. New roads recently completed by the City of Murfreesboro surround this interchange. The intersection of Old Fort Parkway and Fortress Boulevard is near three to four miles northeast of the subject site, note enclosed location map. Northwest Broad Street is +/- four miles northeast of the immediate

area with Salem Road, a two-lane state highway, three to four miles southeast of the subject. Also, in the year 2009, a new interchange at Salem Road and I-24 was completed and opened. These two interchanges are expected to ease traffic problems in this neighborhood. The subject property is currently near the boundary of the city limits of Murfreesboro. The area north and northwest of the subject on the west side of Veterans Parkway is located outside the city limits. This area includes residential and commercial development when economic progression is in progress.

The subject is located three to four miles northwest of the commercial center known as Murfreesboro's "Gateway" Project. This project, funded by the City, is to create corporate and medical jobs for Rutherford County. Currently, twelve to fifteen different multi-level residential and/or office buildings are under construction or are completed following the plan created by the city-developed "Gateway". There has also been over 400,000 square feet of retail area constructed over the past five to seven years. This is not including the Avenue Life-style Center. St. Thomas Rutherford, the hospital, opened for business on October 2, 2010 after four to five years of planning and construction. The subject property is located approximately four to five miles west of this new medical center.

The development of the commercial properties along Old Fort Parkway, a well-traveled thoroughfare, has been taking place for the past twenty (20) plus years, and is less than five miles northeast of the subject. This development has accelerated in recent years with the location of the Stones River Mall on this main arterial access to the City of Murfreesboro from Interstate 24. Similar developments have occurred at and near the South Church Street interchange which is seven to eight miles east of the subject.

This area is approximately five to six miles northwest of downtown Murfreesboro. Thompson Lane intersects Old Fort Parkway approximately one block north of the interstate interchange and is considered one of Murfreesboro's bypasses, diverting traffic around the downtown business district from this area near Interstate 24's interchange to Memorial Boulevard near the Alvin C. York V.A. Medical Center. Rutherford Boulevard, also considered a bypass, is located +/-six to eight miles southeast of the subject property. This bypass connects with Northfield Boulevard and is to surround the city when completed. The former site and vacant office building for State Farm Insurance Company South-Central Regional office facility is located at the corner of DeJarnett Lane and Memorial Boulevard approximately eight to ten miles northeast of the subject.

Other developments regarded as major commercial projects in the vicinity of the subject include: The Doubletree Hotel, McDonald's Fast-Food outlet, Old Time Pottery, and various highway traffic related service stations, food outlets, and motels. Major developmental activity took place at the junction of Old Fort Parkway with Thompson Lane. This major construction involved Wal-Mart and its "superstore" prototype. This prototype is one of the largest superstores in the United States of America. This superstore is in addition to the Sam's Warehouse outlet, which is located on the west side of the Interstate 24 interchange with State Highway 96 West (Old Fort Parkway).

Home Depot, a national retail building supply, opened between the Stones River Mall and Wal-Mart's new superstore. Castner-Knott, which was later bought by Dillards, converted the previous Wal-Mart space in Stones River Mall into a department store, which had a significant impact on this regional mall expansion. Murfreesboro's Town Centre is a large retail center completed circa 1996, which includes national retailers such as T. J. Maxx, Target, Lowe's Building Supply, and many others.

Overall, this corridor of commercial development appears to be one of the most active in the Murfreesboro and Middle Tennessee area. Activity related to the Town Centre, Castner-Knott conversion, Home Depot, Wal-Mart superstore development, and other land parcel sales indicate interest in the area by major commercial developers. The Avenue has been under construction for the past ten years and remains an on-going, up-scale retail life-style center. This Avenue Life-style Center also boasts a +250 room Embassy-Suites Hotel and Convention Center. Recently six to seven other national brand motels are under construction or have recently been completed within the "Avenue Life-style Center". All of this activity bodes well for the subject property during economic incentive, which serves as an excellent visibility placement for its potential use as a public service facility and or its highest and best use as residential and/or mixed-use property for this neighborhood.

Multi-family development (R-ML Zoned) and single-family housing (RS-15 Zoned) land uses are adjacent to this area in Cason Grove and Countryside Subdivisions. Cason Lane Academy Elementary School is located on Cason Lane less than three miles west of the subject. Blackman High, Middle, and Elementary Schools are less than two to two- and one-half-miles southeast of the subject property. The properties fronting St. Andrews Drive are multi-family residential with over 700 new apartment units surrounding the immediate area. **One subject apartment complex is recently completed at the intersection of Veterans Parkway and I-840 less than two miles southwest of the subject property.** Other vacant lands included in this sector of Murfreesboro are offered for single and multi-family development as well as retail and other commercial enterprises.

The portion of the neighborhood within the city limits is a multi-use area. To the southeast, within the city limits of Murfreesboro, lie approximately 1,500 to 2,000 residential building lots with houses in the $325,000 to $875,000 price range occupying 70% of these lots. This same area houses several different commercial/retail buildings and two large shopping malls. There are also several vacant residential tracts near the subject, some outside and others within the city limits.

Franklin Road, (a.k.a. State Highway 96 West), intersects with Interstate 24 at Exit 78 four-five miles southeast of the subject. The state route has been widened into four and five lanes. This will aid the traffic flow for this sector of Murfreesboro and Rutherford County. Veterans Parkway is a viable thoroughfare intersecting near its interchange with I-840.

Single-family subdivisions not mentioned above are Evergreen Farms, Riverdale Estates, Amber Glen, Windermere, Salem Springs, Clarkwood, and Cason Court. Other residential developments outside the city limits are currently experiencing good market response and are within one mile of the subject. A Verizon Call Center and the Old Time Pottery are the two largest commercial buildings in the area with Stones River Mall located one-quarter mile east of the interchange. Other smaller independent type businesses occupy various size and style buildings. A Kroger Center is near the Cason Lane/Highway 96 interchange as well as the Veterans Parkway intersection with a Publix Center at the corner of Rucker Lane and Highway 96.

Commercial buildings located at or near the Interstate 24 interchanges are: Hampton Inn, Cracker Barrel Restaurant, McDonald's Fast Food, Computers for Education, and other smaller shops, offices, and retail outlets. Interstate 24's interchange with South Church Street also houses similar travel/service businesses. Several residential subdivisions surround the intersection of Kimbro Road and Salem Highway. St. Andrews Drive is an extension of Kimbro Road providing a variety of commercial and residential developments.

Overall, this area around the interchanges and west portion of Murfreesboro has experienced a commercial construction boom and residential construction was on the upswing during the years of 2000 to 2007. Current residential and commercial development is enjoying a steady recovery from the recession of 2008. The rates of commercial interest should be consistent with the overall national economic success. The economic progression is predicted to be stable, however, local growth seems to be steadier and more progressive than national investment. As previously referenced, the current condition of the national economy is volatile with unknown circumstances predicted for the immediate future.

The immediate area surrounding the subject property is currently designed for residential, us with commercial use along Veterans Boulevard near its intersection with Franklin Road and I-840. A blend of commercial use retail outlets and major national motel chains are housed around the interchanges and in the Avenue Life-Style Center. The residential growth for this sector of Rutherford County was considered good with over two thousand (2,000) lots developed over the past eight years. However, the growth, which slowed during the periods after the 2008 recession and produced local and national commercial interest is currently in an adjustment mode. The enclosed building permit chart within the addendum will reference increased and decreased request for residential and commercial permits in Rutherford County, Tennessee.

All of these factors make for a homogeneous place for this residential and commercial sector of Murfreesboro to thrive during growth modes. The subject property, too, is located in an area where single-family and multi-family residential, commercial, retail, or office service enterprise is thriving due to the high traffic exposure of Veterans Parkway, I-840, Franklin Road and favorable demographics. **Therefore, during economic incentive, the neighborhood provides an adequate setting for single-family and multi-family residential, retail, and office service.**

The neighborhood setting of new residential users seem to be reasonable for this sector of Murfreesboro, Tennessee including the subject property. During economic progression, the growth mode for residential and commercial growth is positive as the subject neighborhood is at the beginning of a typical neighborhood life cycle. The beginning of this neighborhood life cycle does allow for new patron growth to sustain the community service mission typical of most planning departments in cities the size of Murfreesboro. However, the current growth rate of Rutherford County for the past five to seven years is estimated at four to five percent annually. It is my opinion that the location of the subject is reasonable for its intended and zoned use. However, the time line for capacious demand may be another two to four years. Refer to the Permit Chart included in the addendum for residential and commercial growth history as the current rate of growth exceeds or remains stable each year for the past four or five years. The uncertain economic conditions may cause the local growth rate to stall as unknown factors may create a "stand on the sideline" mode for local developers.

Currently several neighboring land owners have applied to the city planning commission for a change in zoning and/or annexation. These positive events bode well for the neighborhood. Demands for continued growth is considered in the cautious mode; however, active request such as these are good for the community.

SITE DATA

The proposed site is a gently sloping, irregular tract consuming approximately 59.10+/- acres. The site will be at and above road grade and irregular to rectangular in configuration. The boundary lines have varying dimensions and are identified on the aerial tax map included within the addendum. Consolidated Utility District water, electricity, and telephone lines are available to the subject property. Currently, Consolidated Utility District (CUD), Middle Tennessee Electric Membership Cooperation (MTEMC), Atmos Energy, and AT&T Telephone offer their service to this section of Murfreesboro, and Rutherford County, Tennessee. As previously stated, the City of Murfreesboro's sewer line is 1,200 to 1,600 feet south of the subject and should be able to provide this service to the subject property; again, refer to the "**Noteworthy Conditions**".

The county has no sewer system; therefore, the reference to the subject being allowed city provide sewer service is a condition of this Appraisal Report. However, as previously stated, the subject property has 95+-% of its soils conducive to allow subsurface septic systems. Again, a qualified soil scientist may locate certain sites suitable for subsurface sewage disposal, however, the soils related to the subject are labeled on the attached Soil Map. **As stated, the client has referenced a dedicated sewer line to which it may be utilized for waste and sewage disposal will be available for the proposed school campus only.**

NO PORTION of the subject tract is located within the HUD Identified Flood Hazard Area. The Federal Insurance Rate Map (FIRM) numbers are 47149C0119H dated January 5, 2007. This according to the FEMA Flood Map included within the addendum of this report. A qualified survey will locate any area within the flood zone. According to the census map of Rutherford County, this sector is identified as 408.07/1.

Middle Tennessee Electric Membership Corporation (MTEMC) provides electric service, overhead, to most customers inside and outside the city limits of Murfreesboro; therefore, would be the provider, assuming any development. Consolidated Utility District (CUD) provides the residential water service and Atmos Energy provides natural and propane gas service, (note statement above concerning sewer and other utility service). AT&T offers telephone service.

The Murfreesboro and Rutherford County Road Department and the State of Tennessee Department of Transportation (TDOT), which provides maintenance for the surrounding area, maintain the streets that are in place. If any subdivision is developed, the developer would be required to construct any street or subdivision improvements to their standards. The subject has adequate road frontage along Baker and Blackman Roads. This, along with the possibility of suitable soils allowing septic or "**Step**" systems, provides an adequate setting for residential development or as in the subject's proposal, public service for the school system. **However, this Appraisal Report will require the subject to have readily available sewer service from the City of Murfreesboro.**

The subject tract has a level to rolling topography with alternating areas of rolling crop/pasture and very limited woodlands. The on-site inspection reveals the site to be mostly rolling to level, approximately 95% being cleared, open crop and pasture-grade land to the west, east and south with woodlands near the extreme southeastern boundary. The grade elevations are not known at this writing. This statement is from observed conditions and referencing the soil conservation map. Mostly, the tract is considered 95% cleared and considered open crop and pasture. There are small spots of woodlands near the proposed site's southeastern boundary.

The open crop and pasture land has been identified as Bradyville, Cumberland, Harpeth, and Lomond. These soil classifications are identified on the attached ASCS soil survey map. Several open ditches allowing surface drainage are scattered about the subject parcel, note attached tax and soil map. There are also other small wooded areas alternating with the cleared pasture lands. Portions of the subject may have sinkholes, exposed surface and subsurface outcroppings of limestone rock mingled within trees; refer to the enclosed maps.

NO subsurface soil map or evaluation has been provided to your appraiser. Parcels surrounding the subject have not been surveyed; therefore, runoff is unknown. If the client desires, a professional in subsurface evaluation could be employed to determine if the subject property has been contaminated. It should be noted, this parcel has been vacant and attended as cash crop and pasture for cattle grazing for many years. ***This appraisal is assuming NO contamination. In this Appraisal Report, there is no accounting for any cash crop currently located on the proposed site.***

A copy of the soil conservation map is included within the addendum of this report. This map reveals the soil classifications. These classifications aid in the prediction of available expansive soils which will allow subsurface septic systems. The subject's severe soils have been coded in red. **The subject appears to have +/-5% severe soils, which are NOT conducive for subsurface sewage disposal and 95% conducive soils; per attached Soil Map.**

It is highly recommended a complete engineer's study be performed so as to determine the soil content and possible lot availability. These measures are considered when developers calculate acquisition cost for potential development land and/or lands to be held waiting for utility conditions to change. This land has specific development problems due to soil classification, surface and subsurface rock formations, sink holes, and drainage correction causing it to require proper engineering for conventional subdivision development, however, more remains probable for lot development.

> **ATTENTION TO THE READER: Your appraiser is NOT an engineer nor a soil scientist; the information so stated is referenced from the Soil Conservation Map, produced by the United States Department of Agriculture Soil Conservation Service (ASCS) and Federal Emergency Management Agency (FEMA) flood insurance program. It is highly recommended a complete engineering and soil science study be completed. The subject appears to be adequate for residential subdivision development. However, this statement is from observation as an appraiser, NOT an engineer.**

Overall, the tract is suited for residential subdivision development or special use for public benefit, assuming no adverse affect from the surrounding parcels. The subject has superior access and road frontage, reasonable to above average soils, and electric and water rural utility service deeming it desirable for subdivision lot development; again, refer to the "**Noteworthy Conditions**" concerning sewer availability. Its reasonable distance from city services, shopping and employment centers enhances the subject, and reasonable soils deeming it desirable for conventional residential development. However, typical residential lot subdivision is possible; demand and soil classification would dictate. This analysis references the ground and its development possibilities. **The referenced economic conditions will be considered later in this report as demand for subdivision development is considered to have been in a very progressive mode over the past seven to eight years. Current economic changes have been referenced.**

ZONING

The subject property is currently located outside the city limits of Murfreesboro or any other planning authority with zoning controlled by the Rutherford County Planning Department. However, this Appraisal Report will assume the zoning to be directed by the City of Murfreesboro. Therefore, the following zoning analysis is written according to the assumed zoning as medium density residential. Current zoning is AR (Agricultural Residential).

The most likely zoning would be and continues to remain residential-agriculture, with typical building lot subdivision development possible; most probable 10,000 to 15,000 square foot lot size. However, multi-use residential is also possible, i.e., townhouses or detached single-family on 6,000 square foot lot size blended with medium density lot sizes. The subject's soil factors would require an engineering study to determine lot yield, drainage, and road placement. The hypothetical conditions so referenced will require the subject's use of city provided sewer; note statement in the "**Noteworthy Conditions**" concerning sewer lines. However, CUD water and the minimum distance from major employment, shopping, and typical social amenities also cause this tract to be considered for residential subdivision development.

TAX ASSESSMENT

The subject property is located outside the city limits of Murfreesboro. The current combined city-county tax rate for Murfreesboro is $2.5688 per $100 of Assessment for property within the city limits of Murfreesboro, with the county-only assessment being $1.6162 per $100. This tract is currently classified as agriculture/residential use property and is assessed at 25% of the appraised value. Also considered a tax responsibility is 30% of the value of personal property, however, no personal property has been appraised nor is any assessed. Based on information provided by the Assessor's Office of Rutherford County, the tax burden for the parent tract is given on the following page. As the subject property is proposed, there is **NO** current assessment.

Tax Map: 71, Parcel 030.00				
Subject Property*	Land*	Improvements*	Personal Property	Total*
Appraised Value	$ 4,035,181	$ 107,000	$ 0	$ 4,142,151
Assessed Value	$ 0	$ 0	$ 0	$ 0
Assessed Value In Use (Greenbelt)	$ 199,875	$ 26,750	$ 0	$ 226,625
2022 Tax Rate		Tax Rate	Assessed Value	Taxes
$1.6162 / $100		.016162	$ 0	$ 3,662.71

*Values and Taxes calculated within this table reflect the total land and improvements for Map 71 Parcel 030.00.
Note: This is an estimate of the tax liability for the 2022 tax year, assuming taxable ownership. No personal property has been included within this appraisal assignment. Upon development, the "Green Belt" status for the subject will require a three-year roll back tax payment. This will be a lien on the property. The Green Belt estimate has been listed on the tax records.

HIGHEST AND BEST USE

Highest and best use is defined in The Dictionary of Real Estate Appraisal, **Fourth Edition (Chicago: Appraisal Institute, 2002)**, as:

> "That reasonable, probable, and legal use of vacant land or an improved property, which is physically possible, appropriately supported, financially feasible, and that results in the highest value. The four criteria the highest and best use must meet are:
>
> - Legal permissibility
> - Physical possibility
> - Financial feasibility, and
> - Maximum profitability

> The definition immediately above applies specifically to the highest and best use of land. It is to be recognized that in cases where a site has existing improvements on it, the highest and best use may very well be determined to be different from the existing use. The existing use will continue, however, unless and until land value in its highest and best use exceeds the total value of the property in its existing use.
>
> Also implied is that the estimation of highest and best use results from judgment and analytical skill, i.e., that the use concluded from analysis represents an opinion, not a fact to be found. In appraisal practice the concept of highest and best use represents the foundation upon which market value rest. In the context of most probable selling price (market value) another appropriate term to reflect highest and best use would be most probable use. In the context of investment value an alternative term would be most profitable use."

When considering this definition, consideration must be given to its legal use as well as its most profitable use. The legal usage is usually determined in accordance with the local zoning regulations. As stated previously, the most likely zoning for the subject would be to remain as agricultural use and/or single-family residential use. Any alternate zoning request must be approved from the Murfreesboro and Rutherford County Regional Planning Commissions. Zoning "by right" is AR (Agricultural Residential).

Consideration must also be given to the neighborhood in which the property is located and the uses for which land is presently being utilized. Also, what is the demand for uses and what is the demand for possible future uses of the area? **During economic progression,** the vacant property in this area is suitable for single-family development with limited zoning to allow multi-family and commercial use tracts. The subject site is considered a vacant residential-agricultural use tract and could be zoned for higher density if the site was suitable for residential development. **As previously referenced, this tract's geological make up would allow typical demand for conventional subdivision development of single-family building lots during economic incentive. Assuming city approved zoning, higher density and or multi-use development is possible.**

Other **related community service activities** could conceivably fill the definition of highest and best use. In considering the property as if improved with certain improvements, the highest and best use would take on a different analysis. However, the bulk of the land is considered vacant and will be appraised assuming no improvements exist. The possible agricultural farm-type fencing and agriculture use outbuildings previously mentioned will over no value contribution due to highest and best use.

When analyzing vacant property with special zoning such as the subject, demand for this usage must be considered. Other support for judgment of highest and best use must also be considered. **The contribution to the community and public welfare**, wealth maximization for the property owners, the most probable use, and the most profitable use are all factors involved in determining highest and best use.

Single-Family Residential zoned properties typically produce the highest profit when ample demand exists. This classification also profits the community in providing housing units for residents in the community. Wealth maximization to property owners is achieved when the demand for these housing units exists. The most probable use is sometimes different than allowable uses under certain zoning. The key to all the answers of these judgment questions is demand. If proper demand does not exist, the highest and best use and/or most probable use, would be different from allowable zoning.

In considering the subject property, one must understand the community development goals and the contribution available building tracts and lots provide. In Murfreesboro, and Rutherford County, as well as other communities, successful growth is attained through many avenues; providing a variety of housing units is one such necessity. When creating a well-rounded housing market, certain lands must also be reserved for community well-being, i.e., churches, parks, **schools,** day care, or other related institutions. The subject property seems to be within these guidelines; however, it's most probable use is to be considered for residential building lot development.

Murfreesboro and Rutherford County have had a healthy housing market. During economic progression, the subject's sector and others in Rutherford County have a robust demand for single-family building lots. The immediate area has several vacant land parcels ready for residential use. These seem to be more near or within the city limits of Murfreesboro, Tennessee, as is the subject property. The subject does have this amenity as well as 95% of its land is conducive for "**STEP**" or subsurface septic systems. This has been explained within this Appraisal Report; again, refer to the "Noteworthy Conditions". Typically, single-family residential properties supporting agricultural use are near the subject. However, the referenced natural progression of residential development is within the immediate neighborhood with the city limits of Murfreesboro being within one to two miles of the subject property, depending of sector direction.

A growth trend over the past three to five years has renewed demand for single-family building lots in most of Rutherford County. This demand has been evident within the immediate neighborhood as several newly developing subdivision are currently in production. All six development potential sales within the Sales Comparison Approach represent neighborhood development within competing or immediate market sectors. Refer to the enclosed (within the addendum) "Building Permit Chart" for residential, multi-family, and commercial use permit numbers. These statistics support the call for subdivision development for this sector of Murfreesboro and Rutherford County including the subject property.

This is reflective of certain sectors of LaVergne, Smyrna, Murfreesboro and Rutherford County, as the national economy is currently in an adjustment mode; economic growth at a stable to moderate pace 1.5% to 3.00% annual national growth. The past five years has seen Rutherford County increasing its population at an annual rate of 3% to 5%. The population growth chart, also included within the addendum, represents a positive increase in residents and a projection for this

continued increase into the twenty-first century. It is estimated Rutherford County will have over 392,336 persons by the year 2024. These forecasts can be related to the National Economy with typical growth swings also considered relevant within the local economy.

The financial markets, as well as the stock market, are currently in a volatile mode. However, the immediate neighborhood has an upside potential with economic incentive for residential subdivision development, therefore, the subject's vacant land is a candidate for conventional subdivision development at this time. The demand is present in other sectors of Rutherford County as well as in the immediate neighborhood. Therefore, the subject property is judged to have adequate demand, ample soils for "**STEP**" or septic systems, and ample frontage for ingress-egress, all positive factors for conventional subdivision development; again, refer to the "Noteworthy Conditions".

However, when considering the subject property in its highest and best use, the most probable use, and the highest and best use, are estimated to be the same with demand currently in a positive trend. The subject would be most suited for conventional or multiple density single-family residential development, small acreage building sites, and agriculture production, with the most likely use being conventional or multiple density residential use. An alternate use may be for public benefit such as **schools**, churches, public parks and other recreational activities.

HIGHEST AND BEST USE-Conclusion

As If Vacant: The highest and best use is considered to be residential-single-family development. The current agriculture use is most likely the interim use. The single-family use could take on conventional subdivisions, small acreage tracts, and/or mixed-use development as the frontage on Blackman and Baker Roads may allow such users. Such development could be considered similar to the properties surrounding the subject property and within the general outlying neighborhoods situated along the periphery of Murfreesboro's city limits.

As If Improved: The highest and best use as if improved is for congenital residential subdivisions similar to others in this sector of Murfreesboro and Rutherford County. Most likely development would be mid to upper-scale dwellings suitable for residential cohabitation. A change in economic conditions could alter this analysis. Therefore, current tends MUST remain positive in order for this conclusion to prevail. This conclusion is subject to the continued demand for residential housing and economic progression.

DESCRIPTION OF THE IMPROVEMENTS

As previously stated, the valuation so referenced in this appraisal will include the land as if vacant with **NO** value estimate for any possible remains of agriculture outbuildings or the referenced residential dwellings. **NO** contributing value will be allowed for any agriculture outbuildings.

The highest and best use of the subject acreage tract, as if vacant, has been determined to remain as general ownership and/or agriculture as an interim use, with residential building lot development in the near future. The highest and best use definition states, "It is to be recognized that in cases where a site has existing improvements, the highest and best use may very well be determined to be different from the existing use. The existing use will continue, however, unless and until land value in its highest and best use exceeds the total value of the property in its existing use."

The subject's 59.10 +/- acres will be considered vacant, as the agriculture outbuildings and any residential dwellings that may exist will offer **NO** contributing value. There may be remains of typical farm-type fencing; however, these will offer **NO** contributing value.

APPRAISAL MODE

The typical and theoretical real estate appraisal includes three separate but interrelated preliminary approaches to value, which are correlated into a single final value conclusion. The preliminary approaches are summarized on the below:

1. The Sales Comparison Approach - which is a direct comparison of the property under appraisal with other similar properties which have sold. Oftentimes abstracted adjustments are necessary in order to equate the sale with the subject property.

2. Cost Approach - which is based upon the estimated reproduction cost of the improvements, less accrued depreciation from all causes plus land value.

3. The Income Capitalization Approach - a set of procedures in which an appraiser derives a value indication for income-producing property by converting anticipated future benefits into an indicated property value. This conversion is accomplished by discounting annual cash flows for the projected holding period and the reversion at the end of this period at a specified yield rate. Income and expense summary are required with most capitalization techniques.

In the appraisal of a specific property, one or more of the approaches may be more applicable than the others and one or more of the approaches may be impractical because of the lack of suitable data in the market with which to make comparisons.

In this report, the Sales Comparison Approach will be processed for an indication of estimated value. If necessary, the Income Capitalization Approach will be processed to determine present value of future benefit for a particular holding period. After these approaches have been processed, your appraiser will consider the strengths and weaknesses of each. This explanation of each approach, along with a judgment of the strongest, is called the Reconciliation. This collation of data, and the judgment of which approach or approaches are relied upon with the most emphasis, ultimately results in a final estimate of the defined value for the subject property.

At this point, the final value estimate is addressed as the appraiser's opinion based on his analytical skill and ability. This estimate is just that, an estimate based on proof from the marketplace.

VALUATION - Land as if vacant analysis – 59.10 +/- Acres

The Sales Comparison Approach involves direct comparison of the property being appraised to similar properties, which have sold in the same or similar market in order to derive a market value indication for the property being appraised. This approach is also called the Market Data Approach.

The Sales Comparison Approach, which relies on the principle of substitution, implies that a prudent person will not pay more to buy a property than it will cost to buy a comparable substitute property.

In estimating market value of vacant land such as the agricultural zoned land with residential development potential, the most effective way is to compare like properties that have sold with the subject tract. The following list of similar use residential zoned vacant tract sales are comparable with the subject in matters of marketability, i.e., development potential, similarly zoned, available utilities, tract size, soil type, and general availability. After reviewing several sales, the sales selected for comparative analysis of the subject have been listed and a final value estimate determined. Typically, when developers purchase raw land with the intent to pursue construction at a later date, holding expenses for such raw land are calculated to determine acquisition cost.

These sales are listed raw, and when necessary, adjustments processed for any dissimilarity. When certain dissimilarities are apparent, market extracted adjustments are sometimes necessary. When necessary, an adjustment grid will follow the listed sales. The size factor will be addressed as the subject is to be 59.10 +/- acres. Therefore, sale of the largest land parcels will be considered with a size adjustment calculation considered when necessary.

The subject property is unique in that it has certain characteristics promoting its potential for typical subdivision development. Development potential of most vacant tracts would serve as the highest and best use, therefore, rendering the highest value. However, as explained, the suitable soils ratio necessary for "**STEP**" or septic system usage is estimated to be +/-95%. There is a reasonable distance from the city's sewer system to the subject property (less than 1,600 lineal feet southeast). However, the city provided sewer line is proposed for placement on the subject site. This is also a condition for this Appraisal Report.

During economic progression, there has been demand for conventional residential subdivision development in this area of Rutherford County; however, the geological conditions limit the lot yield unless a "**STEP**" system is constructed. This is costly to the developer, however, necessary to achieve adequate building lots. Again, the subject property, for purposes of this analysis will assume city provided sewer is located upon the site and available for use. The subject's access along its road frontage on both Baker and Blackman Roads allow for adequate entries to the subject and possible building lots. These components, along with the tract size, are primary parts when developers consider the purchase of vacant land with the intent to achieve subdivision development. These positive and negative factors are pertinent for analysis when estimating acquisition cost for vacant land suitable for development.

Therefore, your appraiser will analyze development potential tract sales to establish the beginning and upper end of the market value range and analyze property transfers where development potential was the primary motivation for purchase. These factors must be blended in order to represent a potential buyer's rational to justify the purchase. The results should support the subject's market value estimate.

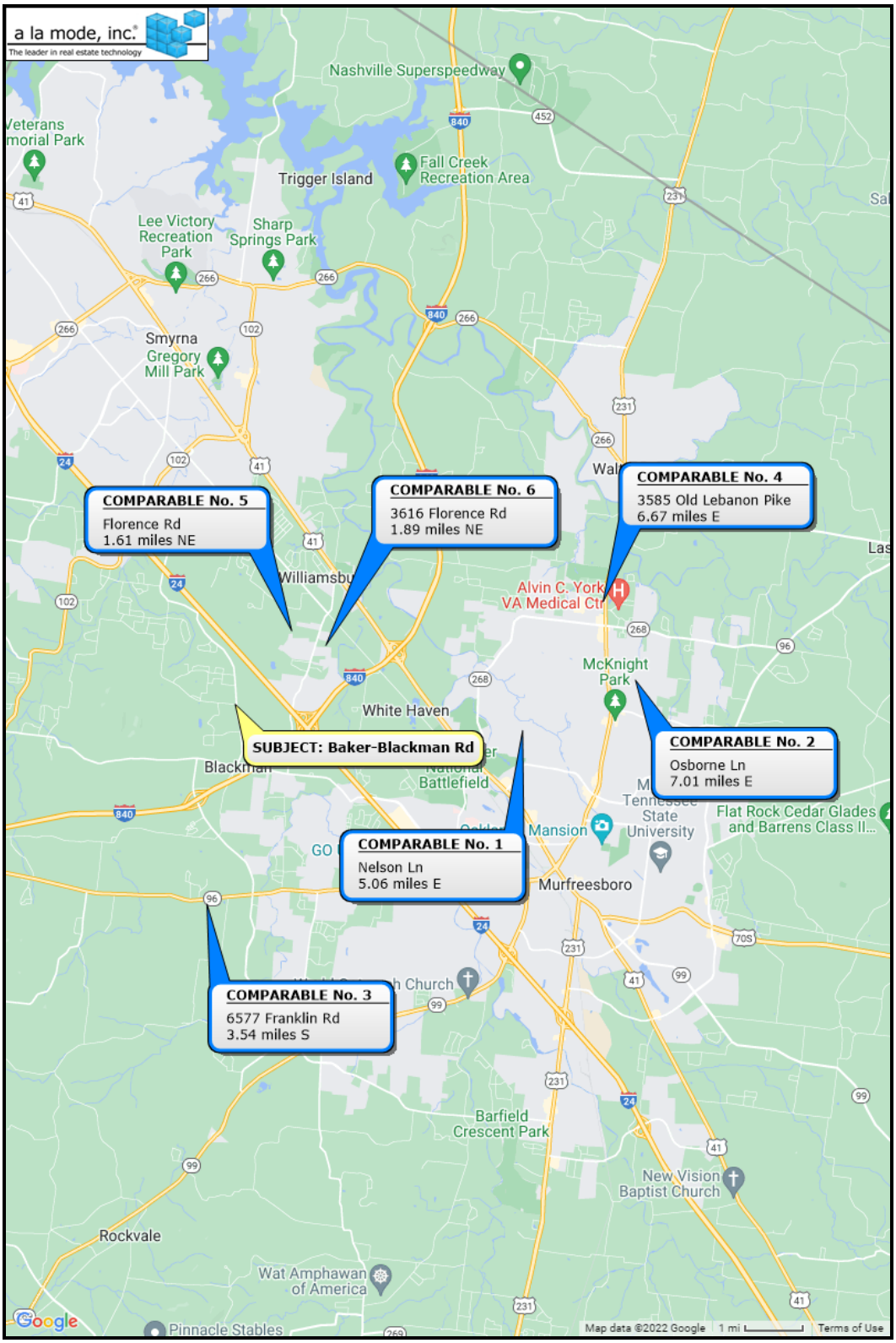
The sales are listed raw with no adjustments for any dissimilarity. Any judgment of difference will be performed on a qualitative and quantitative basis, as the subject is expected to have a reasonable lot yield as per city zoning requirements. Any marginal geological conditions such as rock, sink holes, woodland, and other such factors can be engineered to allow building lots, however, maybe not at a typical yield. This inferior lot yield will be considered with necessary adjustments for certain comparables. The qualitative analysis represents the comparables as superior, inferior, or similar to the subject with a notation of positive, negative or equally recognized. When necessary, these percentage adjustments represent the lot yield loss attributed to the subject due to inferior geological conditions. However, for the subject's proposed 59.10 +/- acre land parcel, most of the land is cleared pasture grade and crop land; i.e., +/-95%. These sales will require qualitative notice for size, location, soil content, road frontage, and general economic conditions.

COMPARABLE VACANT LAND SALES-DEVELOPMENT POTENTIAL

NO	DATE RECD. BOOK/PAGE	LOCATION MAP-PARCEL	***GRANTOR*** / GRANTEE	SIZE / ACRE Zoning	SALES PRICE	PRICE / ACRE
1.	04-12-2021 2066/3697	Nelson Lane Murfreesboro, TN p.o. 69-079.00	Molly Nelson Van Ort Trust Riverview Cove, LLC	22.963 Ac RS-15	$1,435,188	$ 62,500
2.	01-28-2021 2031/1656	Osborne Lane Murfreesboro, TN 68-062.01	State Farm Mutual Auto Donald Henley Construction	21.22 Ac RS-15	$1,450,000	$ 68,332
3.*	04-09-2021 2080/3586 05-14-2021 2082/2012	Franklin Road Murfreesboro, TN 6577 Franklin Road Murfreesboro, TN 100-001.01	Thomas Moon Saddlewood Development Steven Turley Saddlewood Development	76.41 Ac County Zoned for Multiple Density	$5,750,000	$ 75,252
4.**	07-22-2022 2266/2975	3585 Old Lebanon Road Murfreesboro, TN 058-046.00	Charles Campbell Etal Hollingshead Land, LLC	73.90 Ac County Zoned, City to approve PRD or PUD	$7,000,000 $6,500,000 Adjusted**	$ 87,957
5.	08-28-2020 1954/3442	Florence Road Murfreesboro, TN 056-063.00-01.10	Fortress Builders, Inc. ANH TN Development	45.11 Ac PRD	$4,700,000	$104,190
6.	03-10-2022 2218/2213	3616 Florence Rd Murfreesboro, TN 071-015.00	Deborah Jackson, Etal Alcorn Properties, LLC	18.9 Ac R-6, CF	$975,000	$51,587
			OVERALL MEAN	43.08 Ac	$3.468.365	$ 74,970

***Prior Sales:** Sale Three has a previous sales transaction recorded in Record Book 1811, page 2293; September 9, 2019, $2,000,000. This was considered a typical real estate transaction.

**This transfer involved two properties four to five miles apart. The development potential portion is estimated to render the bulk of the $7,000,000 sales price. The extraction of $500,000 for the 5.73 acres with a dwelling and several outbuildings is market related. Therefore, the development potential land price per acres has been utilized for analysis at $6,500,000 divided by 73.90 acres: $87,957 per acre.



AREA MAP – COMPARABLE LAND SALES & SUBJECT PROPERTY

Comparable 1 - Nelson Ln

Comparable 2 - Osborne Ln

Comparable 3 - Franklin Rd & 6577 Franklin Rd

Comparable 4 – 3585 Old Lebanon Rd

Comparable 5 – Florence Rd

Comparable 6 - 3616 Florence Rd

PHOTOGRAPHS OF COMPARABLE DEVELOPMENT POTENTIAL VACANT LAND

Residential Land Sales Analysis

The listed sales range from $51,587 to $104,190 per acre with the calculated mean being $74,970. The subject's tract **DOES** have a contract for purchase (refer to previous statement) as the purpose of this report is to aid the client with acquisition of the subject property. The subject does **NOT** appear to have been publicly listed by any professional delegate or agent. ***It is highly recommended a survey, title search, engineering study, and opinion letter be completed.***

Most emphasis is placed on the sales that are most recent and similar in size and purpose. Most raw land purchased for development has certain motivations concerning lot yield and available utilities. The subject and the sales are no exception. Because of the topography, availability of utilities, and the typical zoning classification, the subject could expect a lot yield of 2.5 to 3.25 lots per acre; again, assuming sewer availability. Most tracts desirable for subdivision development is accustomed to 3 to 1 lot yield ratio. Subdivision development properties require on site surface water retention. This requirement will cause a loss of use and reduced lot yields.

Current economic conditions have been at a premium increasing the need for residential building lots. However, as referenced within this report economic conditions are changing with interest rates and inflation currently on the rise. This reduces demand for housing and sometimes increase unemployment. However, interest from the marketplace to purchase the subject within this zoning qualification is considered with previous demand from developers' progressive. **Progressive demand for development potential real estate must remain in place in order for the subject property to demand premium per acre prices.**

Again, your appraiser is **NOT** an engineer and has only an estimate with regard to experience for lot yields. All utilities are at or near the site per the "**Hypnotical Conditions**" so referenced. The subject would require a complete engineer's study in order to address the "Highest and Best Use" for this land parcel. These factors would indicate the subject property should require the middle to upper end of the value range. The fact that the subject is within an area of anticipation, near city-approved Planned Residential Developments (PRD), PUD, retail, employment centers, and desirable school campuses may allow the subject to expect a reasonable per-acre price for this location. The mixed-use probability may also create an adequate demand for the subject property.

Developers purchased all comparable sales in order to begin development allowing these parcels to achieve economic incentive.

- Sales one, two and four are located in the north sector of Murfreesboro, Tennessee and considered very desirable land parcels for development with seasoned developers being the Grantees. All have sewer availability with Sale four expected to render multiple use development. Also representing the upper end of the price range within this chart of sales.

- Sale three is located on the west sector of Murfreesboro fronting Franklin Highway, (a.k.a. Highway 96) and most near the subject property. This site was previously purchased by Mr. Moon for speculation. This site as is fronts a major throughfare and will be considered for multi-use development. Thereby rendering the higher per acre sales price.

- Sales five and six are located on Florence Road, across the road from each other, within the city limits of Murfreesboro, Tennessee. Sale five had subdivision approval with some excavation evident. Each development has high density residential development proposed and/or in place. Sale six also offered a small portion re-zoned for commercial local utility. Because of the subdivision amenities in place sale five offers the largest per acre price in this chart of sales.

Residential Use Sales Comparison Analysis

Overall, the most suitable sales have been selected to represent the subject property assuming Residential Development Use. The per acre indication represents a reasonable range with most emphasis placed on the sales which recognize the location, visibility, and infrastructure position of the subject property. These sales will be "Blended" in order to render a current estimate of market value. Again, the range of per acre indication is $51,587 to $104,190 with an unadjusted mean indication of $74,970 per acre. There is a contract to analyze. However, this analysis represents current market conditions and will be considered for the final estimate of indicated value when blended with the most supportive comparables.

The list of sales will represent development potential motivation from buyers of lands with the intention to construct general residential and/or mixed-use developments. These market transactions are felt to represent user and investor/developer motivation. These comparable sales will represent similar utility and position.

Again, your appraiser is **NOT** an engineer and has only an estimate with regard to experience for unit yields and cost to construct infrastructure in environments similar to the subject's. All utilities are at or near the site with the subject having adequate and superior soils for subsurface "**STEP"** system if needed. The subject property would require a complete engineer's study in order to address the "**Highest and Best Use**" for this land parcel. However, city sewer would be required to achieve "**Highest and Best Use**".

The Sales Comparison Approach is the most reliable method of supporting market value. However, when certain items of dissimilarity are noticed, market adjustments must be abstracted, as noted above. The listed sales represent similar use, residential use development land with quantitative adjustments difficult to measure. However, any judgment of other size, marketing and geological factors will be performed considering a qualitative basis, not quantitative.

Therefore, the middle to end of the value range is felt to best represent the subject tract. Based on the previous information of comparables, all sales are given credence with weighted emphasis placed on the end of the residential range. The present economic conditions would require most buyers to have primary motivation in order to entice purchase. These enticements would be considered noteworthy demand for residential and mixed-use building lots, as the term of the current economic upturn is difficult to estimate. As referenced, this demand must continue in order for the subject to represent the upper end of the value range for residential development potential land.

The preceding analysis references many marketing factors related to valuation of real estate. The above referenced range of value offers the client an array of possibilities. The final value estimate of vacant land is often difficult, as many factors affect market transactions. However, the final estimate of value represented in this analysis is felt to be supported by market transactions of local buyers and sellers.

Based upon the preceding analysis and the indication demonstrated in the marketplace, it is my opinion the value of the subject property, assuming mixed use development, on a per acre basis would range from $70,000 to $80,000 per acre, as if vacant, assuming demand was present. However, most recent and current demand for vacant development potential land was progressive as developers were in acquisition modes due to these economic and demographic conditions; again, refer to "**Noteworthy Conditions**". As referenced, the current condition of the economy may have a worthy change due to higher interest rates, higher unemployment, and general unsettlement of all economic markets.

Weighted Analysis

The weighted analysis represents each comparable and in my opinion the worthiness of each indication of value. As previously referenced most emphasis is placed on sale numbers three and four, then the analysis has been "blended" for a final indication of current market value. However, the following "Weighted Analysis" will aid with this final indication. Each of these comparable sales have been listed in the calculating table on the following page with each assigned a percentage of worthiness for this analysis. This calculation produces an indication of value at $76,000 per acre. Therefore, the most probable per acre indication ranges from $70,000 to $80,000 per acre.

Weighted Indication for Sale Comparison Approach			
Sales 1-6 Adjusted Indication			
Variable Weighting --Unit of Measure--Per Acre Indication			
			Value
Approach	Indicated Value	Weight	Indication
	Per Acre		
Sale One-62500 Ac	$ 62,500.00	15%	$ 9,375.00
Sale Two -68332 Ac	$ 68,332.00	15%	$ 10,249.80
Sale Three-75252 Ac	$ 75,252.00	25%	$ 18,813.00
Sale Four-87957 Ac	$ 87,957.00	25%	$ 21,989.25
Sale Five-104190 Ac	$ 104,190.00	10%	$ 10,419.00
Sale Six- 51587 Ac	$ 51,587.00	10%	$ 5,158.70
		100%	
Weighted Indication			$ 76,004.75
Mean Indication	$ 74,969.67		
Subject Property			
Batey Property--Blackman/Baker Rds			
Vacant Land - 59.10 Acres			
Murfreesboro, Tennessee			
Date-10-02-2022			
Saved As: Weighted Indication Templete-6-Sales-Batey			

Therefore, this blended analysis is felt to best represent the subject tract. Based on the previous information of comparables, all sales are given credence with weighted emphasis placed on sales as listed above and presented in this analysis. Therefore, the middle to end of the presented range best reflects the most probable current value for the subject property. The present economic conditions would require most buyers to have specific use motivation in order to entice purchase.

Sales Comparison Calculation Chart						
The following calculations are related to the subject's proposed 59.1 Acres Tract						
Unit of Measure for this Property is:	Unit of Measure		Per Acre Indication for Land: Estimate/ Unit		Indication of Value	
	Per Acre					
Pessimistic	59.10	@	$70,000.00		$ 4,137,000	
Most Probable	59.10	@	$75,000.00		$ 4,432,500	
Optimistic	59.10	@	$80,000.00		$ 4,728,000	
Indicated Value of Existing Improvements and Site				=	$ 4,500,000	
	Rounded and Called				$ 4,500,000	

The preceding analysis references many marketing factors related to valuation of real estate. The referenced range of value offers the client an array of possibilities. The final value estimate of vacant land is often difficult, as many factors affect market transactions. However, the final estimate of value represented in this analysis is felt to be supported by market transactions of local buyers and sellers.

The Final Current Value Indication, supported by the Sales Comparison Analysis, as if vacant, as of November 3, 2022, the effective date and inspection date of the appraisal with November 8, 2022, being the report date, subject to a typical marketing period of 12-18 months, and the "**Noteworthy Conditions"** so referenced, rounded, is as follows:

59.1 +/- Acres

FOUR MILLION FIVE HUNDRED THOUSAND DOLLARS

($4,500,000.00)

COST APPROACH

In the Cost Approach to value, it is assumed that an informed purchaser would consider the cost of producing a substitute property with the same utility as the subject's as one alternative to acquiring an existing property, thus the principle of substitution.

In The Dictionary of Real Estate Appraisal, **Third Edition (Chicago: Appraisal Institute, 1993)**, the definition of Cost Approach is as follows:

> "Cost Approach - That approach in appraisal analysis which is based on the proposition that the informed purchaser would pay no more than the cost of producing a substitute property with the same utility as the subject property. It is particularly applicable when the property being appraised involves relatively new improvements which represent the highest and best use of the land or when relatively unique or specialized improvements are located on the site and for which there exist no comparable properties on the market."

In the application of these principles to the subject property, my study procedure would be to perform a valuation of the engineering detail of the improvements. Take into consideration the land site, price these details using current local market prices for labor, materials, identify existing deficiencies of the improvements, and arrive at a Cost of Reproduction New Less Depreciation on the improvements.

When estimating depreciation, your appraiser must review loss of value from not only physical deterioration, but also functional and economic inadequacies. Any of the three avenues of value loss must be addressed in the Cost Approach.

The subject property is being considered as a vacant tract, due to highest and best use, with any building improvements listed, barns and sheds, offering no contributory value. Therefore, the Cost Approach will **NOT** be processed as value contribution. The subject exhibits no forms of functional or economic obsolescence.

INCOME CAPITALIZATION APPROACH

The theory of the Income Capitalization Approach is based on the premise that the value of a property is equivalent to the present worth of the net income stream which it may be expected to produce during its economic life. In order to achieve this, the net annual income of the property is capitalized at an appropriate rate that has been extracted from the market to indicate the present value of the property based on its income producing ability.

Because the subject is appraised as vacant, raw land ready for development or construction, its lack of ability to produce income in the form of rents limits the support of this approach to our appraisal problem. Therefore, the Income Capitalization Approach will **NOT** be processed due to the lack of supportive available data from the marketplace.

When a property requires an extended marketing period of more than two years, a discounting technique resembling an Income Capitalization Approach is often necessary. In this appraisal problem, the estimated valuation is assuming a twelve- to eighteen-month exposure and marketing period; therefore, the referenced discounting is not necessary. This method was explained and processed in the Sales Comparison Approach. That is to say, if the subject property were to be offered to the investor public, it should sell for or near the appraisal value estimated in this report given a reasonable marketing period.

RECONCILIATION

Reconciliation is the process of analyzing the data presented in all approaches to indicated value. In estimating value of vacant land, the most applicable approach is the Sales Comparison. This approach reflects the actions of prudent buyers and sellers and relies upon the principle of substitution which states that an informed buyer will not pay more to purchase a property than it will cost to purchase a comparable substitute property.

The Cost and Income Capitalization Approaches typically are not considered for estimating the value of vacant land, however, in some appraisals, an investment analysis has been utilized to support a discount rate attributable to properties requiring an extended marketing period. In considering the subject property, I have addressed the appraisal in terms of a twelve- to eighteen-month exposure and marketing period; therefore, the discounting for the time value of money was not necessary.

When appraising real estate for the purpose of establishing a most probable selling price for the clients, the appraiser references in his/her opinion a range of possible sale prices. For the subject property this process produces a range from the Sales Comparison of +/-$70,000® to +/-$80,000® per acre. This range of possible value represents my opinion of current market conditions pertaining to similar properties such as the subject. However, the final opinion of value must be announced. This reconciliation references the most probable value opinion supported by the valuation approaches processed. **However, as stated the final price could be within the referenced range.**

The definition of "Price" is different than "Value" as value expresses an economic concept and is never a fact but always an opinion and qualified by definition.

"Price" as defined by the Dictionary of Real Estate Appraisal; 5th Edition, Appraisal Institute: "The amount asked, offered, or paid for a property. Once stated, price is a fact, whether it is publicly disclosed or retained in private. Because of the financial capabilities, motivations, or special interest of a given buyer or seller, the price paid for a property may or may not have any relation to the **value that might be ascribed to that property by others**." Also listed within the USPAP guidelines.

Therefore, in my opinion, with all support being developed from the Sales Comparison Approach, based on the preceding analysis, relative to a twelve- to eighteen-month exposure & marketing period in **"fee simple"** terms, the subject property, 59.10 +/- acres, as if vacant, as of the effective date and inspection date of the appraisal, November 3, 2022, and the report date being November 8, 2022, **subject to any referenced limiting, "Noteworthy Conditions", "Hypothetical Conditions", and Extraordinary Assumptions",** so referenced within this report, the final estimate of value is:

FOUR MILLION FIVE HUNDRED THOUSAND DOLLARS

($4,500,000.00)

CURRENT MARKET VALUE

Thank you for the opportunity to be of service to you in this matter. If further explanation is required, please call my office at 615-895-6260.

Johnny M. Sullivan, SRA
State Certified General
Real Estate Appraiser - CG-493

A D D E N D U M

CERTIFICATE

I certify that, to the best of my knowledge and belief:

1. The statements of fact contained in this report are true and correct.

2. The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and are my personal, impartial, and unbiased professional analyses, opinions, and conclusions.

3. I have no present or prospective interest in the property that is the subject of this report, and no personal interest or bias with respect to the property or to the parties involved with this assignment.

4. My engagement in this assignment was not contingent upon developing or reporting predetermined results.

5. My compensation for completing this assignment is not contingent upon the development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this appraisal.

6. My analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the Uniform Standards of Professional Appraisal Practice, and the Code of Ethics of the Appraisal Institute.

7. The use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.

8. I have made a personal inspection of the property that is the subject of this report: Inside / outside / both / proposed improvements and/or vacant land.

9. No one provided significant professional assistance to the person signing this report.

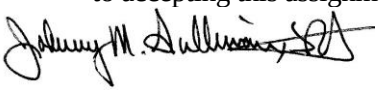
10. As of the date of this report, I, Johnny M. Sullivan, SRA, have completed the requirements of the Continuing Education program for designated members of the Appraisal Institute.

11. I hereby certify that I am a Tennessee State Certified General Real Estate Appraiser and my certificate number is CG-493.

12. This appraisal was not made, nor was the appraisal rendered on the basis of a requested minimum valuation, specific valuation, or any amount, which would result in the approval of a loan.

13. The person signing this report has the knowledge and experience to complete the assignment competently and is duly licensed by the appropriate state to perform this level of appraisal.

14. I have / have not appraised this property or performed any other real estate related service in the three years prior to accepting this assignment.



11-3-2022 (Effective Date)
11-8-2022 (Report Date)

Johnny M. Sullivan, SRA
State Certified General
Real Estate Appraiser – CG-493

Property: Melissa & John L. Batey, Jr. Property
Address: Corners Baker and Blackman Roads
Murfreesboro, TN 37129

GENERAL ASSUMPTIONS AND LIMITING CONDITIONS

This **Appraisal Report – Complete Scope of Work** and resulting estimate of value is subject to the following assumptions and limiting conditions:

1. The forecasts, projections, or operating estimates contained herein are based upon current market conditions, anticipated short-term supply and demand factors, and a continued stable economy. Therefore, these forecasts are subject to changes in future conditions. Value estimates in this appraisal report are stated in United States currency as of the date of appraisal.

2. No responsibility is assumed for the legal description or for matters including legal or title considerations. Title to the property is assumed to be good and marketable and in Fee Simple Interest, unless otherwise stated in the report.

3. The property is appraised free and clear of all existing liens and encumbrances, including deed restrictions and developers' agreements, unless otherwise stated in this appraisal report.

4. Information, estimates, and opinions furnished to the appraiser by others is believed to be true, correct, and reliable. A reasonable effort has been made to verify such items; however, no responsibility for their accuracy is assumed by the appraiser.

5. Maps, plats, and exhibits included in this appraisal report are for illustration only, as an aid in visualizing matters discussed within the report. They should not be considered as surveys or relied upon for any other purpose. The appraiser has not made a survey of the property, and no responsibility is assumed in connection with such matters.

6. The physical condition of the improvements described herein was based on a visual, walk-through inspection. No liability is assumed for the soundness of structural members, building components, mechanical equipment, plumbing, or electrical components as no professional tests were made of the same. The appraiser assumes that no hidden or unapparent conditions of the property, subsoil, or structures exist, which would render the property more or less valuable. The appraiser assumes no responsibility for such conditions, or for engineering which might be required to discover such factors. The appraiser recommends that the client obtain an opinion from a competent engineering firm.

7. It is assumed that there is full compliance with all applicable federal, state, and local environmental regulations and laws unless noncompliance is stated, defined, and considered in this appraisal report.

8. It is assumed that all applicable zoning and use regulations and restrictions have been complied with, unless a nonconformity has been stated, defined, and considered in this appraisal report.

9. It is assumed that all required licenses, certificates of occupancy, consents, or other legislative or administrative authority from any local, state, or national government or private entity or organization have been or can be obtained or renewed for any use on which the value estimate(s) contained in this report is based.

10. It is assumed that the utilization of the land and improvements is within the boundaries or property lines of the property described and that no encroachment or trespass exists, unless noted in this report.

11. Any distribution of the valuation in the report between land and improvements applies only under the existing program of utilization. The separate valuations for land and building must not be used in connection with any other appraisal and are invalid if so used.

12. Value estimates in this appraisal report apply only to the entire property, and cannot be prorated to individual portions or fractional interests. Any proration or division of interest will invalidate the value estimate(s), unless such proration or division of interests is set forth in this appraisal report.

13. The appraiser is not required to give testimony or attendance in court by reason of this appraisal, with reference to the property in question, unless arrangements have been made previously therefore. The fee charged for this appraisal does not include payment for court testimony or for further consultation.

14. Unless otherwise stated in this appraisal report, the appraiser did not observe the existence of hazardous material, which may or may not be present on the property. The appraiser has no knowledge of the existence of such materials on or in the property. The presence of substances such as asbestos, urea-formaldehyde foam insulation, or other potentially hazardous materials may affect the value of the property. Value estimates within this appraisal report are predicated on the assumption that there is no such material on or in the property that would cause a loss in value. No responsibility is assumed for any expertise or engineering knowledge required to discover them. The appraiser recommends that appropriate experts be retained to investigate and determine to what extent, if any, such substances are present and what risks, if any, are involved.

15. The determination concluded in this appraisal, as to whether or not the subject property is located within a Flood Hazard Zone, is based solely on an inspection of available Flood Insurance Rate Map(s) (FIRM) which are distributed by the National Flood Insurance Program (NFIP). The NFIP maps represent the most recent revisions available after reasonable investigations. Although these maps are the basis for flood hazard determination, the map scale is typically not adequate for accurate comparisons with other maps and/or surveys. Therefore, the determination presented herein regarding location of the subject property outside or within a flood hazard zone should not be construed as a guarantee or certification. Certification of this can only be provided by a qualified engineer and/or surveyor. If there is any possibility that the subject is within an identified flood hazard zone, the appraiser recommends that the property should be covered by adequate flood insurance.

16. Unless otherwise noted in this appraisal report, no consideration in the valuation process has been given to subsurface rights (minerals, oil, water, etc.) that may be found on the subject property.

17. Any proposed or incomplete improvements included in this appraisal report are assumed to be completed in accordance with approved plans and specifications and in a workmanlike manner.

18. The appraiser reserves the right to alter opinions of value contained in this appraisal report on the basis of information withheld or not discovered in the normal course of a diligent investigation.

19. Disclosure of the contents of the appraisal report is governed by the Bylaws and Regulations of the professional appraisal organizations with which the appraiser is affiliated.

20. Neither all, nor any part of the content of the report, or copy thereof (including conclusions as to the property value, the identity of the appraiser, professional designations, reference to any professional appraisal organizations, or the firm with which the appraiser is connected), shall be used for any purposes by anyone but the client specified in the report, the borrower, if appraisal fee paid by same, the mortgagee or its successors and assigns, mortgage insurers, consultants, professional appraisal organizations, any state or federally approved financial institution, any department, agency or instrumentality of the United States or any state or the District of Columbia, without the previous written consent of the appraiser; nor shall it be conveyed by anyone to the public through advertising, public relations, news, sales or other media, without the written consent and approval of the appraiser.

21. The Americans with Disabilities Act (ADA) became effective January 26, 1992. The appraiser has not made a specific compliance survey and analysis of this property to determine whether or not it is in conformity with the various detailed requirements of the ADA. It is possible that a compliance survey of the property together with a detailed analysis of the requirements of the ADA would reveal the need for renovations to comply with that statute. Such a requirement could have an adverse impact on the market value of the property. Because the appraiser has no direct evidence relating to this issue, the appraiser did not consider possible noncompliance with the requirements of the ADA in this report.

22. This is an **Appraisal Report – Complete Scope of Work** which is intended to comply with the reporting requirements set forth under Standard Rule 2-2(a) of the Uniform Standards of Professional Practice for an **Appraisal Report**. As such, it might not include full discussions of the data, reasoning, and analyses that were used in the appraisal process to develop the appraiser's opinion of value. Supporting documentation containing the data, reasoning, and analysis is retained in the appraiser's work file. The information contained in this report is specific to the needs of the client and for the intended use stated in this report. The appraiser is not responsible for unauthorized use of this report.

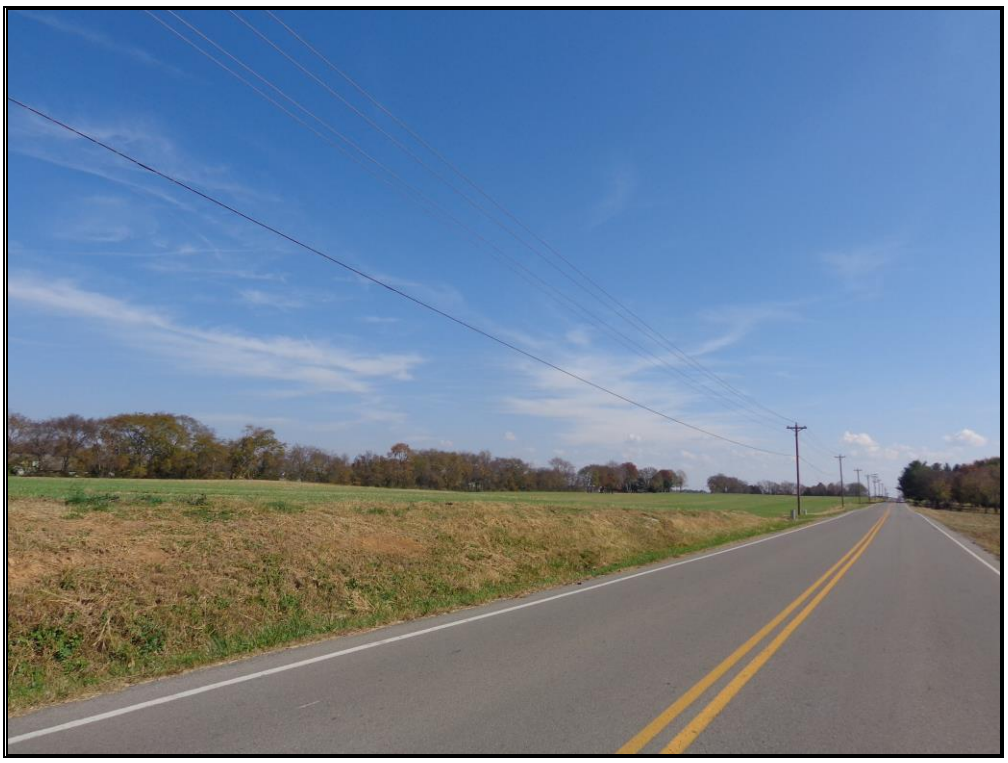
PHOTOGRAPHS OF SUBJECT PROPERTY

SUBJECT PROPERTY

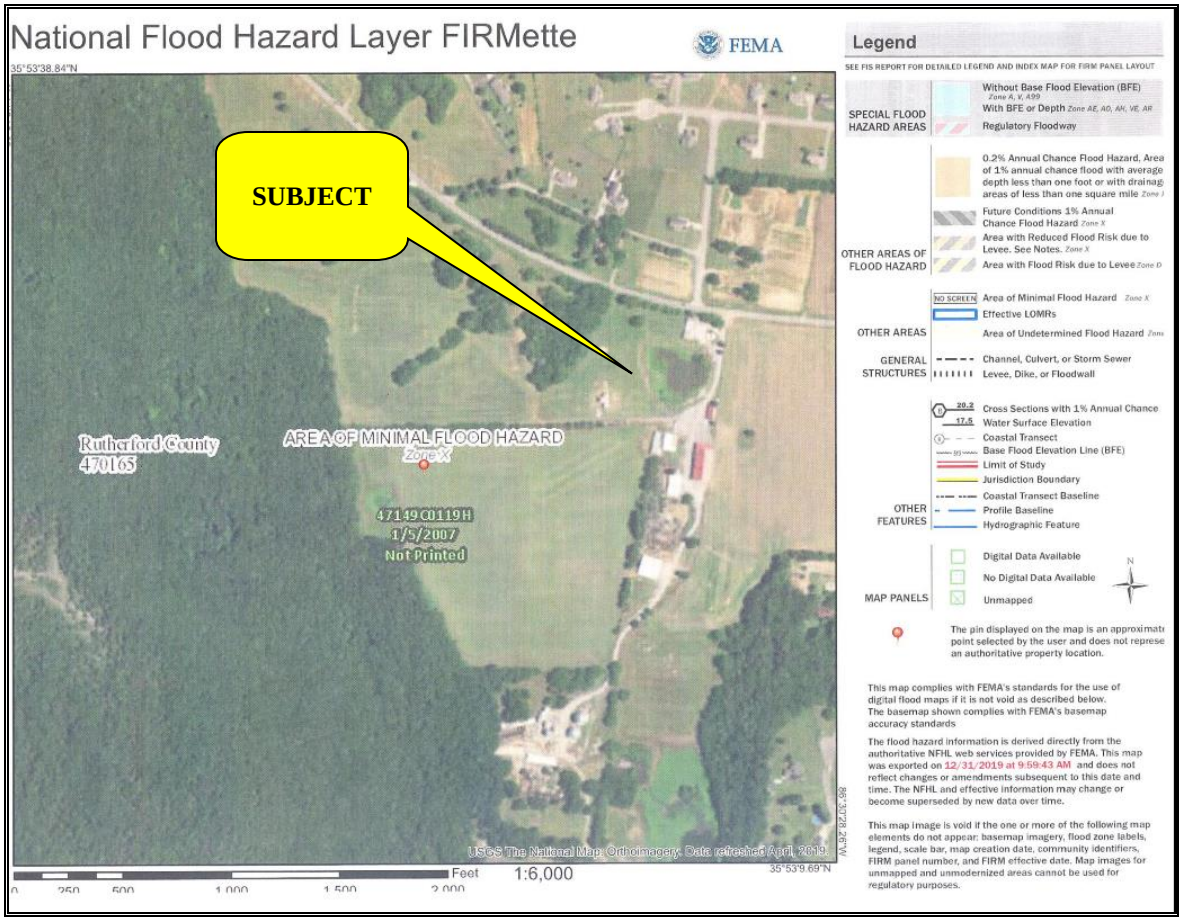
PHOTOGRAPHS OF SUBJECT PROPERTY

SUBJECT PROPERTY

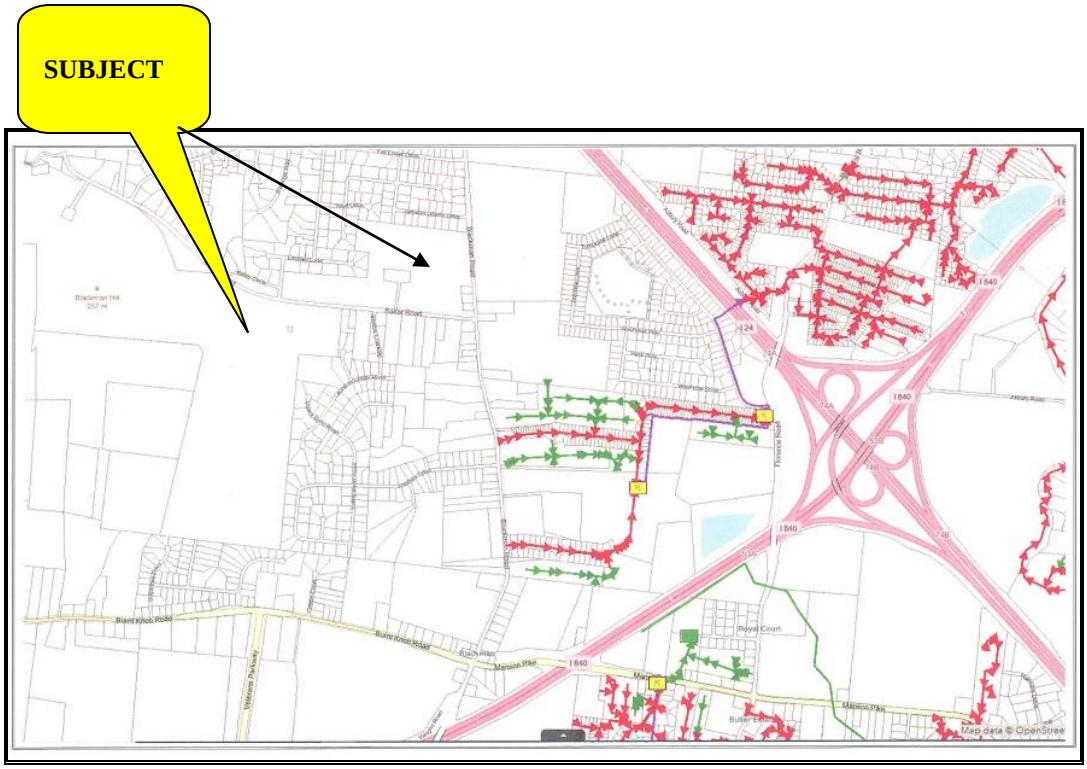
PHOTOGRAPHS OF SUBJECT PROPERTY



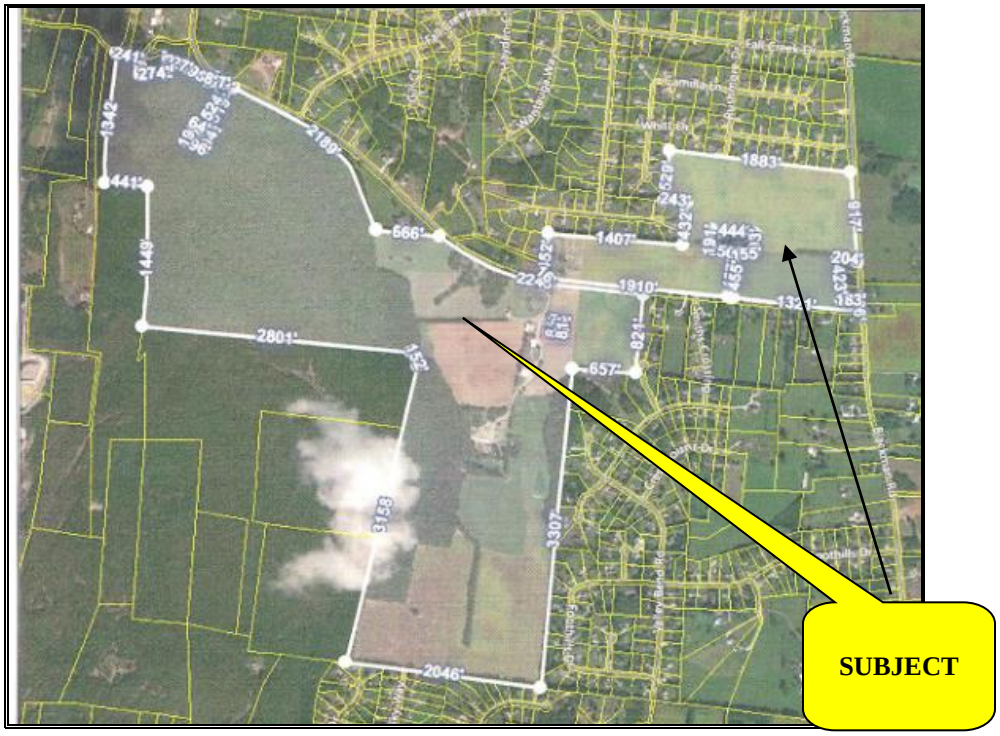
STREET SCENES


National Flood Hazard Layer FIRMette
FEMA
35°53'38.84"N
SUBJECT
Rutherford County
470165
AREA OF MINIMAL FLOOD HAZARD
Zone X
47149C0119H
1/5/2007
Not Printed
USGS The National Map: Orthoimagery. Data refreshed April, 2019
35°53'9.69"N
Feet
1:6,000
0
250
500
1,000
1,500
2,000
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, Area of 1% annual chance flood with average depth less than one foot or with drainag areas of less than one square mile Zone
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
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 approximat point selected by the user and does not represe 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 12/31/2019 at 9:59:43 AM 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.

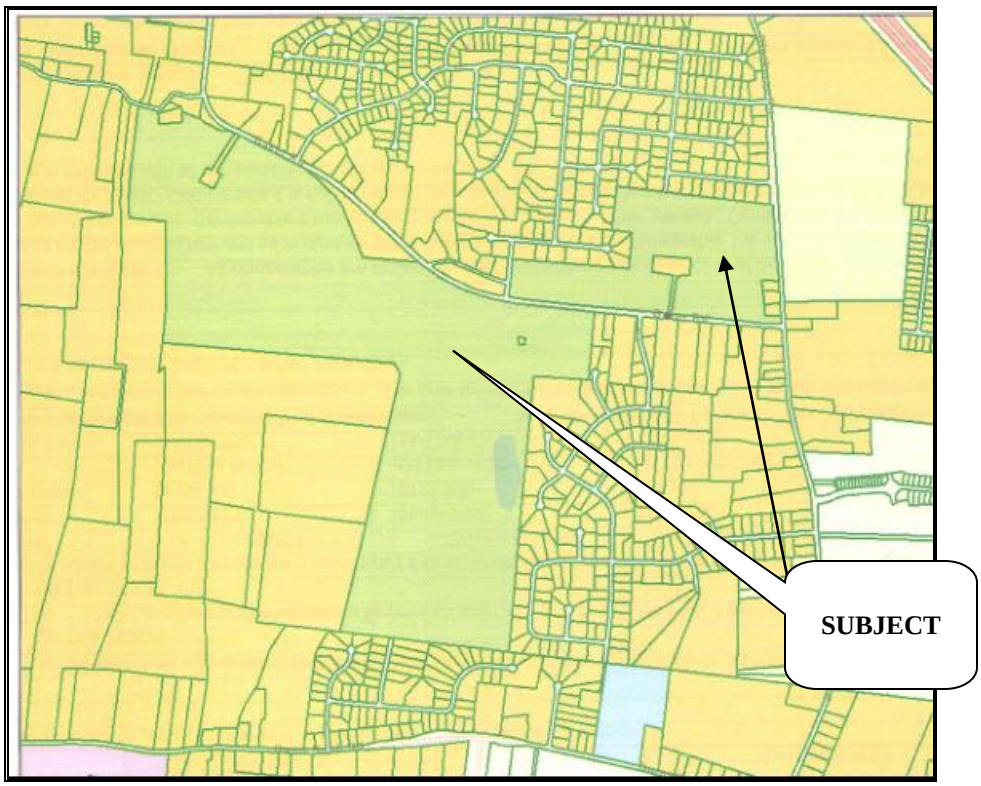
FLOOD MAP



MURFREESBORO WATER & SEWER DEPARTMENT SEWER LINES


1342
2189'
1883'
441'
1449'
666'
1407'
1910'
2801'
821'
657'
3158'
3307'
2046'
SUBJECT

TAX MAP



ZONING MAP


TrC
BtC
GRC
BrB
MrE
TrC
HcA
BtC
BrA
GRC
TrC
BrB
HcA
TaC2
GRC
MrE
Eg
BtC
Ar
TaB2
LoB
BrB
HcA
Eg
LoB
LoA
LoB
HcA
LoB
HcA
CuB
LoB
BrB
Ar
Ar
BrB
W
LoA
Ar
HcA
BrB
GRC
BtC
Ar
GRC
BtC
Ar
TaB2
Ar
HcA
HcA
CuB
HcA
CuB
BrB
LoB
HcA
HcA
CuB
BrB
BrB
HcA
24
Blackman Rd
Foothills Dr
SUBJECT

SOIL MAP

Septic Tank Absorption Fields

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
Ar	Arrington silt loam, 0 to 2 percent slopes, occasionally flooded	Very limited	Arrington (90%)	Flooding (1.00)	16.9	4.0%
				Slow water movement (0.47)		
			Egam (4%)	Flooding (1.00)		
				Depth to saturated zone (1.00)		
				Slow water movement (1.00)		
			Ocana (2%)	Flooding (1.00)		
				Seepage, bottom layer (1.00)		
			Armour (2%)	Slow water movement (1.00)		
			Lindell (2%)	Flooding (1.00)		
				Depth to saturated zone (1.00)		
				Slow water movement (0.47)		
BrA	Bradyville silt loam, 0 to 2 percent slopes	Very limited	Bradyville (100%)	Slow water movement (1.00)	0.8	0.2%
				Depth to bedrock (0.85)		
BrB	Bradyville silt loam, 2 to 5 percent slopes	Very limited	Bradyville (91%)	Slow water movement (1.00)	57.3	13.4%
				Depth to bedrock (0.85)		
			Talbott (9%)	Depth to bedrock (1.00)		
				Slow water movement (1.00)		
BtC	Bradyville-Rock outcrop complex, 2 to 12 percent slopes	Very limited	Bradyville (50%)	Slow water movement (1.00)	16.8	3.9%

SOIL MAP LEGEND

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Depth to bedrock (0.85)		
CuB	Cumberland silt loam, 2 to 5 percent slopes	Somewhat limited	Cumberland (100%)	Slow water movement (0.47)	14.7	3.4%
Eg	Egam silt loam	Very limited	Egam (100%)	Flooding (1.00)	19.9	4.7%
				Depth to saturated zone (1.00)		
				Slow water movement (1.00)		
				Depth to bedrock (0.50)		
GRC	Gladeville-Rock outcrop complex, 2 to 15 percent slopes, extremely stony	Very limited	Gladeville (60%)	Depth to bedrock (1.00)	120.5	28.2%
				Large stones (0.99)		
				Slope (0.04)		
			Talbott (9%)	Depth to bedrock (1.00)		
				Slow water movement (1.00)		
				Slope (0.04)		
HcA	Harpeth silt loam, 0 to 2 percent slopes	Somewhat limited	Harpeth (100%)	Slow water movement (0.47)	49.9	11.7%
LoA	Lomond silt loam, 0 to 2 percent slopes	Somewhat limited	Lomond (100%)	Slow water movement (0.47)	16.2	3.8%
LoB	Lomond silt loam 2 to 5 percent slopes	Somewhat limited	Lomond (100%)	Slow water movement (0.47)	41.3	9.7%
MrE	Mimosa-Rock outcrop complex, 20 to 40 percent slopes	Very limited	Mimosa (70%)	Slow water movement (1.00)	47.0	11.0%
				Slope (1.00)		
				Depth to bedrock (0.50)		
			Ashwood (6%)	Depth to bedrock (1.00)		
				Slow water movement (1.00)		
				Slope (1.00)		

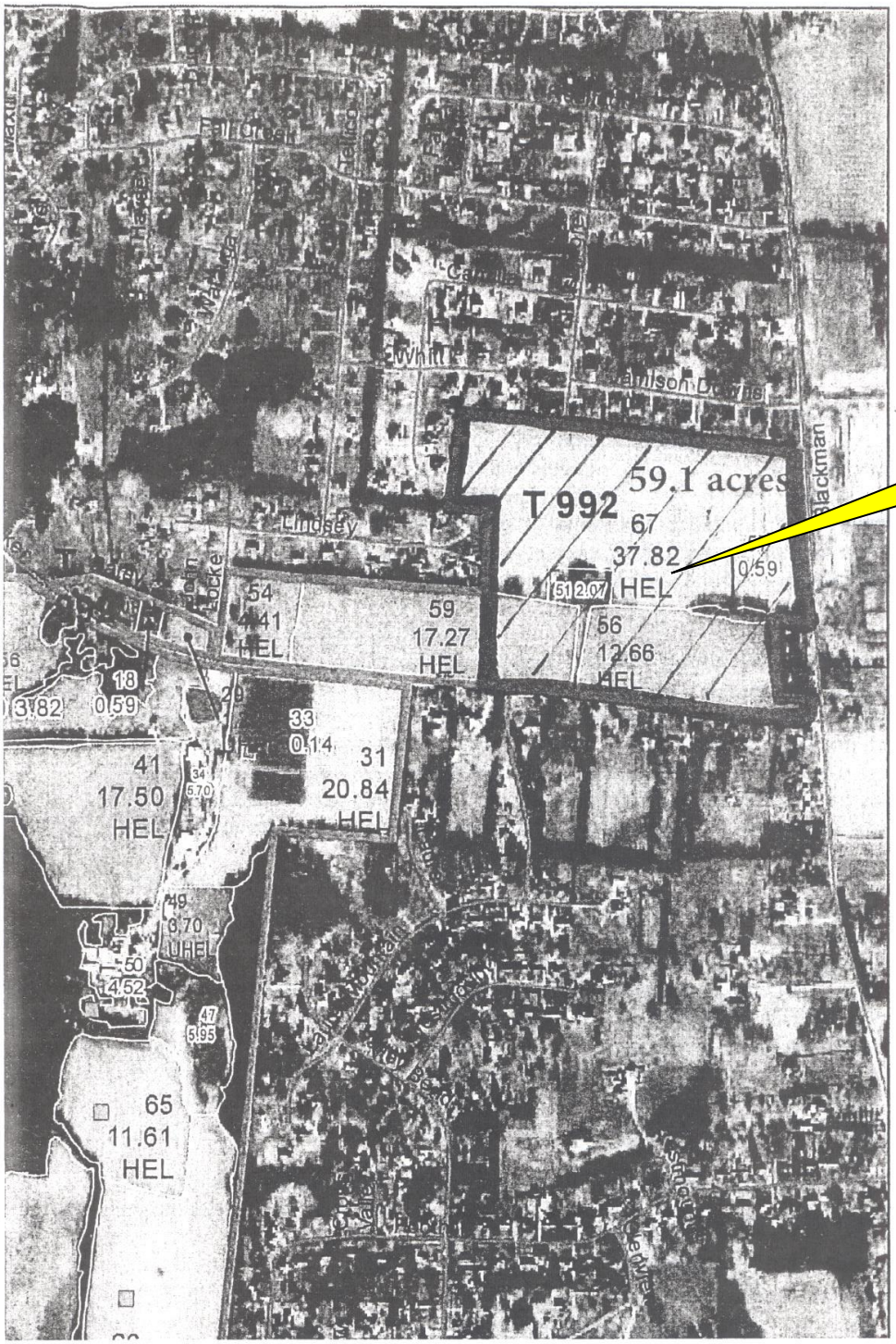
SOIL MAP LEGEND

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
			Dellrose (5%)	Slow water movement (1.00)		
				Slope (1.00)		
			Gladdice (4%)	Depth to bedrock (1.00)		
				Slope (1.00)		
				Slow water movement (1.00)		
TaB2	Talbott silt loam, 2 to 5 percent slopes, eroded	Very limited	Talbott (100%)	Depth to bedrock (1.00)	14.7	3.4%
				Slow water movement (1.00)		
TaC2	Talbott silt loam, 5 to 12 percent slopes, eroded	Very limited	Talbott (100%)	Depth to bedrock (1.00)	4.4	1.0%
				Slow water movement (1.00)		
				Slope (0.04)		
TrC	Talbott-Barfield-Rock outcrop complex, 2 to 12 percent slopes	Very limited	Talbott (35%)	Depth to bedrock (1.00)	5.8	1.4%
				Slow water movement (1.00)		
			Barfield (35%)	Depth to bedrock (1.00)		
W	Water	Not rated	Water (100%)		1.0	0.2%
Totals for Area of Interest					**427.2**	**100.0%**

Rating	Acres in AOI	Percent of AOI
Very limited	304.1	71.2%
Somewhat limited	122.1	28.6%
Null or Not Rated	1.0	0.2%
Totals for Area of Interest	**427.2**	**100.0%**

SOIL MAP LEGEND

nnessee



PROPOSED SUBJECT

REAL ESTATE PURCHASE AGREEMENT
(Approximately 59.1 Acres on Baker Road, Murfreesboro, TN)

THIS AGREEMENT is made as of the 15th day of September, 2022 ("Effective Date"), between John L. Batey, Jr. and Melissa W. Batey (collectively "Seller"), and the Rutherford County Board of Education ("Buyer").

Background

Buyer wishes to purchase real property on Baker Road, Murfreesboro, Rutherford County, Tennessee consisting of approximately 59.1 acres, more or less, owned by Seller, as more particularly shown on Exhibit "A", being a portion of Tax Map 071, Parcel 30.00, together with all appurtenant easements for ingress, egress and utilities, and other appurtenances thereto, together with all trade names, franchises, licenses, permits, development rights and approvals, deposits, credits, petroleum and mineral interests and royalties, water rights and other intangibles owned or utilized by or for the benefit of Seller in connection therewith (the "Property").

Seller wishes to sell the Property to Buyer;

In consideration of the mutual agreements herein, and other good and valuable consideration, including the sum of Ten Dollars ($10.00) paid to Seller by Buyer, the receipt of which is hereby acknowledged, Seller agrees to sell to Buyer and Buyer agrees to purchase the Property from Seller, subject to the following terms and conditions:

1. PURCHASE PRICE AND PAYMENT

1.1 Purchase Price; Payment. The total Purchase Price for the Property shall be determined by multiplying Eighty Thousand and 00/100 Dollars ($80,000.00) per acre based on a survey to be obtained by Buyer ("Purchase Price"). The Purchase Price shall be paid in cash at closing.

1.2 Earnest Money Deposit. An earnest money deposit in the amount of Five Thousand Dollars ($5,000) ("Earnest Money Deposit") shall be deposited with Escrow Agent by Buyer within three (3) business days after the Effective Date. All deposits made as earnest money shall be deemed included within the meaning of the term Earnest Money Deposit for all purposes. The Earnest Money Deposit shall be held as specifically provided in this Agreement and shall be applied to the Purchase Price at Closing.

1.3 Prorations. Ad valorem taxes and matters of income and expense, if any, and other items customarily prorated in transactions of this kind shall be prorated as of midnight of the day preceding the Closing Date. In the event the Property has been assessed for property tax purposes at such rates or with exemptions that would result in additional taxes and assessments for prior tax years or for the Closing tax year being assessed because of supplemental taxes resulting from delayed assessments or other causes, including without limitation Buyer's change in land usage or the change in ownership of the Property attributable to Buyer's acquisition of the Property (known variously as "rollback", "agricultural recoupment" or "school board revaluation" taxes), Seller shall pay all such taxes and assessments when due, prorated as of midnight of the day preceding the Closing Date.

1.4 Closing Costs.

(a) Seller shall pay:

(1) For the costs to prepare the Warranty Deed; and

(2) Seller's attorneys' fees.

PURCHASE AGREEMENT

(b) Buyer shall pay:

(1) Any transfer taxes on the deed;

(2) The costs of the title insurance;

(3) The costs of any Phase I environmental site assessment to be obtained by Buyer, if any;

(4) The costs of a Survey of the Property;

(5) The costs of recording the deed; and

(6) Buyer's attorneys' fees.

2. INSPECTION PERIOD AND CLOSING

2.1 Inspection Period. Buyer shall have an Inspection Period which begins on the next business day following the date upon which the Agreement, fully executed by Seller, Buyer and Escrow Agent, has been received by Buyer (the "Effective Date") and ends at midnight one hundred eighty (180) days later ("Inspection Period"). Buyer shall have the Inspection Period within which to physically inspect the Property, to conduct its due diligence and to inspect all books, records and accounts of Seller related thereto. Buyer and Buyer's officers, employees, consultants, attorneys and other authorized representatives, shall have the right to reasonable access to the Property and to all records of Seller related thereto (including without limitation title information, surveys, environmental assessment reports and other information concerning the condition of the Property), at reasonable times during the Inspection Period for the purpose of inspecting the Property, taking soil and ground water samples, conducting hazardous materials and wetlands inspections, tests and assessments, reviewing the books and records of Seller concerning the Property and otherwise conducting its due diligence review of the Property. Buyer hereby agrees to indemnify and hold Seller harmless from any damages, liabilities or claims for property damage or personal injury and mechanics or construction liens caused or created by Buyer and its agents and contractors in the conduct of such inspections and investigations, other than pre-existing conditions merely discovered by Buyer or its agents or contractors. Seller shall cooperate with and assist Buyer in making such inspections and reviews and in obtaining any governmental approvals of its contemplated use of the Property. Seller shall make available to Buyer such of the foregoing as may be in Seller's possession in order to facilitate Buyer's due diligence. Seller shall give Buyer any authorizations which may be required by Buyer in order to gain access to records or other information pertaining to the Property or the use thereof maintained by any third party, governmental or quasi-governmental authorities or organizations. The indemnities contained in this section shall survive the termination of this Agreement.

2.2 Buyer's Termination Right. Within the Inspection Period, Buyer may, in its sole discretion, for any reason or for no reason, elect whether or not to go forward with this Agreement to Closing, which election shall be made by notice to Seller given within the Inspection Period. If such notice is not timely given, this Agreement and all rights, duties and obligations of Buyer and Seller hereunder, except any which expressly survive termination, shall terminate, whereupon Escrow Agent shall forthwith return to Buyer the Earnest Money Deposit. If such notice is timely given, this Agreement and all rights, duties and obligations of Buyer and Seller hereunder (including without limitation their respective obligations to close the transaction), shall, subject to the terms and conditions hereof, become fully binding and the Earnest Money Deposit shall become nonrefundable except for the failure of a closing condition or the default of Seller hereunder.

2.3 Time and Place of Closing. The Closing shall take place at the offices of Escrow Agent at 10:00 A.M. no later than thirty (30) days after the Rutherford County Commission approves funding and

the Rutherford County Board of Education approves the purchase of the Property, or at such other time and place and in such manner as Seller and Buyer may agree.

3. WARRANTIES, REPRESENTATIONS AND COVENANTS OF SELLER

Seller warrants and represents as follows as of the date of this Agreement and as of the Closing and where indicated covenants and agrees as follows:

3.1 Title. Seller is the owner in fee simple of all of the Property.

3.2 Eminent Domain/Condemnation. No condemnation or eminent domain proceedings are now pending or threatened concerning the Property, and Seller has received no notice from any governmental agency or authority or other potential condemnor concerning any right-of-way, utility or other taking which may affect the Property.

3.3 Environmental Matters. To the best of Seller's knowledge the Property does not now contain nor has the Property contained any underground storage tanks, material amounts of hazardous material or landfills. Seller has used no hazardous material at the Property nor has Seller permitted any other person to do so. To the best of Seller's knowledge the Property contains no wetlands, vegetation, animal species or significant historic/archaeological sites which are subject to special regulations or limitations under local, state or federal laws, regulations or orders.

3.4 Foreign Investment and Real Property Tax Act. Seller is not a "foreign person" within the meaning of Section 1445 of the Internal Revenue Code, or under any comparable state statutes which are applicable to this transaction. At Closing Seller will execute and deliver to Buyer an affidavit regarding such matters. If Seller fails to execute and deliver such affidavit, Buyer may deduct and withhold from the Purchase Price such amounts as Buyer may be required to withhold in order to satisfy any of Buyer's tax withholding obligations under such statutes or regulations promulgated pursuant thereto.

3.5 Conveyance of Easements. For no additional cost to the Buyer, Seller shall grant the Buyer the following easements:

(a) Utility easements for water, sewer, electric, and gas utilities along, across, and through remaining property of Seller at locations to be mutually agreed by Buyer and Seller, if reasonably needed for Buyer's intended use; and

(b) An easement for drainage of surface water along, across, and through remaining property of Seller at a location to be mutually agreed by Buyer and Seller, if reasonably needed for Buyer's intended use.

(c) Road right of way on remaining property of Seller for any improvements needed to Baker Road, if reasonably needed for Buyer's intended use.

4. POSSESSION; RISK OF LOSS

4.1 Possession. Possession of the Property will be transferred to Buyer at the conclusion of the Closing.

4.2 Risk of Loss. All risk of loss to the Property shall remain upon Seller until the conclusion of the Closing. If, before Closing, any material portion of the Property is damaged by casualty, or if any material portion of the Property is taken or threatened by eminent domain, or if there is a material obstruction of access by virtue of a taking by eminent domain, Seller shall, within ten (10) days of such damage or taking, notify Buyer thereof and Buyer shall have the option to:

(a) terminate this Agreement upon notice to Seller given within ten (10) business days after such notice from Seller, in which case Buyer shall receive a return of the Earnest Money Deposit; or

(b) proceed with the purchase of the Property, in which event Seller shall assign to Buyer all Seller's right, title and interest in all amounts due or collected by Seller under applicable insurance policies or as condemnation awards. In such event, the Purchase Price shall be reduced by the amount of any insurance deductible to the extent it reduces the insurance proceeds payable.

4.3 USA Patriot Act.

(a) None of the funds to be used for payment by Buyer of the Purchase Price will be subject to 18 U.S.C. §§ 1956-1957 (Laundering of Money Instruments), 18 U.S.C. §§ 981-986 (Federal Asset Forfeiture), 18 U.S.C. §§ 881 (Drug Property Seizure), Executive Order Number 13224 on Terrorism Financing, effective September 24, 2001, or the United and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism Act of 2001, H.R. 3162, Public Law 107-56 (the "US Patriot Act").

(b) Buyer is not, and will not become, a person or entity with whom U.S. persons are restricted from doing business with under the regulations of the Office of Foreign Asset Control ("OFAC") of the Department of Treasury (including those named on OFAC's Specially Designated and Blocked Persons list) or under any statute, executive order (including the September 24, 2001 Executive Order Blocking Property and Prohibiting Transactions With Persons Who Commit, Threaten to Commit, or Support Terrorism), the USA Patriot Act, or other governmental action.

5. TITLE MATTERS

Within ten (10) days after the Effective Date, Seller shall deliver to Buyer's counsel copies of any title information, including prior title policies and surveys, in Seller's possession. During the Inspection Period Buyer may order a title insurance commitment from a national title insurance company acceptable to it and a current survey from a reputable surveyor. Buyer will have thirty (30) business days after its receipt of both the title insurance commitment and survey within which to notify Seller in writing of any conditions, defects, encroachments or other objections to title or survey which are not acceptable to Buyer. Any matter disclosed by the title insurance commitment (other than liens removable by the payment of money) or by the survey which is not timely specified in Buyer's written notice to Seller shall be deemed a "Permitted Exception". Seller shall use reasonable and diligent efforts to cure all objections to title or survey by Closing. If such title defects and/or objections are not cured within said period, Buyer may (i) refuse to purchase the Property, terminate this Agreement and receive a return of the Earnest Money Deposit; or (ii) waive such objection(s) and close the purchase of the Property subject to them.

6. CONDITIONS PRECEDENT

6.1 Conditions Precedent to Buyer's Obligations. The obligations of Buyer under this Agreement are subject to satisfaction or written waiver by Buyer of each of the following conditions or requirements on or before the Closing Date:

(a) The title insurance commitment shall have been issued and "marked down" through Closing, subject only to Permitted Exceptions.

(b) The physical and environmental condition of the Property shall not have materially changed from the Effective Date, ordinary wear and tear excepted.

(c) Buyer must be able to extend water, sewer and electric utilities to the boundary of the Property with adequate capacity for Buyer's proposed use of the Property.

(d) Seller granting to the Buyer at no additional cost any right of way, gas, water, sewer, and/or electric utility line easements the Buyer determines are reasonably necessary for Buyer's planned use of the Property across Seller's remaining Property.

(e) Seller granting to the Buyer at no additional cost any drainage easements the Buyer determines are reasonably necessary for Buyer's planned use of the Property across Seller's remaining property.

(f) Seller granting to the Buyer at no additional cost any easements or sufficient property for road improvements from Seller's remaining property which the Buyer determines are reasonably needed for Buyer's planned use of the property as a school site.

(g) Approval of the purchase of the Property and funding for the purchase of the same by the Rutherford County Commission and Rutherford County Board of Education.

(h) Buyer receiving any easements from Seller which Buyer determines are reasonably needed for the Buyer's intended use of the Property.

(i) Approval of funding for the purchase of the Property by the Rutherford County Commission.

(j) The simultaneous closing of the sale of the home and property at 5104 Baker Road, Murfreesboro, Tennessee to the Buyer or its assigns.

(k) Buyer shall have received the following in form reasonably satisfactory to Buyer:

(1) A warranty deed in proper form for recording, duly executed, witnessed and acknowledged, and insured by the title insurance company, so as to convey to Buyer the fee simple title to the Property, subject only to the Permitted Exceptions; and

(2) An owner's affidavit, non-foreign affidavit and such further instruments of conveyance, transfer and assignment and other documents as may reasonably be required by the title insurance company in order to effectuate the provisions of this Agreement and the consummation of the transactions contemplated herein; and

(3) Such other documents as Buyer or the title insurance company may reasonably request to effect the transactions contemplated by this Agreement.

If any of the above contingencies are not satisfied to Buyer's satisfaction within Buyer's sole discretion, the Buyer may elect to either: (1) terminate this Agreement and receive a full refund of the Earnest Money Deposit; or (2) extend this Agreement by an additional thirty (30) days to give Seller time to satisfy the contingency, or (3) waive the contingency and proceed to closing.

6.2 Conditions Precedent to Seller's Obligations. The obligations of Seller under this Agreement are subject to Buyer having delivered to Seller at or prior to the Closing the balance of the Purchase Price and such other documents as Seller or the title insurance company may reasonably request to effect the transactions contemplated by this Agreement and the simultaneous closing of the purchase of 5104 Baker Road, Murfreesboro, Tennessee by the Buyer or its assigns.

7. BREACH; REMEDIES

7.1 Breach by Seller. In the event of a breach of Seller's covenants or warranties herein and the failure of Seller to cure such breach within the time provided for Closing, Buyer may, at Buyer's election (i) terminate this Agreement and receive a return of the Earnest Money Deposit, and the parties shall have no further rights or obligations under this Agreement (except as survive termination); (ii)

enforce this Agreement by suit for specific performance; (iii) waive such breach and close the purchase contemplated hereby, notwithstanding such breach; or (iv) in the case of a willful breach by Seller after Buyer has elected to go forward beyond the Inspection Period to Closing, Buyer may bring an action against Seller for damages, after notice to Seller of such willful breach and the expiration of a period of thirty (30) days from such notice, during which Seller shall have the opportunity to cure such willful breach.

7.2 Breach by Buyer. In the event of a breach of Buyer's covenants or warranties herein and the failure of Buyer to cure such breach within the time provided for Closing, Seller's sole legal and equitable remedy shall be to terminate this Agreement and retain Buyer's Earnest Money Deposit as AGREED LIQUIDATED DAMAGES for such breach, and upon payment in full to Seller of such Earnest Money Deposit, the parties shall have no further rights, claims, liabilities or obligations under this Agreement (except as survive termination). *BUYER AND SELLER AGREE THAT IT WOULD BE IMPRACTICAL AND EXTREMELY DIFFICULT TO ESTIMATE THE DAMAGES SUFFERED BY SELLER AS A RESULT OF BUYER'S FAILURE TO COMPLETE THE PURCHASE OF THE PROPERTY PURSUANT TO THIS AGREEMENT, AND THAT UNDER THE CIRCUMSTANCES EXISTING AS OF THE DATE OF THIS AGREEMENT, THE LIQUIDATED DAMAGES PROVIDED FOR IN THIS SECTION REPRESENT A REASONABLE ESTIMATE OF THE DAMAGES WHICH SELLER WILL INCUR AS A RESULT OF SUCH FAILURE. THEREFORE, BUYER AND SELLER DO HEREBY AGREE THAT A REASONABLE ESTIMATE OF THE TOTAL NET DETRIMENT THAT SELLER WOULD SUFFER IN THE EVENT THAT BUYER DEFAULTS AND FAILS TO COMPLETE THE PURCHASE OF THE PROPERTY IS AN AMOUNT EQUAL TO THE EARNEST MONEY DEPOSIT (WHICH INCLUDES ANY ACCRUED INTEREST THEREON). SAID AMOUNT WILL BE THE FULL, AGREED AND LIQUIDATED DAMAGES FOR THE BREACH OF THIS AGREEMENT BY BUYER. THE PAYMENT OF SUCH AMOUNT AS LIQUIDATED DAMAGES IS NOT INTENDED AS A FORFEITURE OR PENALTY, BUT IS INTENDED TO CONSTITUTE LIQUIDATED DAMAGES TO SELLER.*

8. MISCELLANEOUS

8.1 Commissions.

8.2 Notices. All notices and demands of any kind which either party may be required or may desire to serve upon the other party in connection with this Agreement shall be in writing, signed by the party or its counsel identified below, and shall be served (as an alternative to personal service) by registered or certified mail, overnight courier service or facsimile transmission (followed promptly by personal service or mailing of a hard copy), at the addresses set forth below:

As to Seller: John L. Batey, Jr. and Melissa W. Batey
5104 BAKER RD
MURFREESBORO, TN 37129
Telephone: 838-2500
Email: melwbatey@gmail.com

With a coy to Seller's Counsel: Bricke Murfree
Murfree & Goodman, PLLC
805 South Church St, Ste 21
Murfreesboro, TN 37130
Telephone: 615-867-0835

As to Buyer:	Rutherford County Board of Education Attn: James Sullivan Southgate Blvd. Murfreesboro, TN 37130
With a copy to Buyer's Counsel:	Jeff Reed 16 Public Square North Murfreesboro, TN 37130 Telephone: (615) 893-5522 Facsimile: (615) 849-2135 Email: jreed@mborolaw.com
With a copy to Escrow Agent: (if required)	Hudson, Reed & Christiansen, PLLC 16 Public Square North Murfreesboro, TN 37130 Telephone: (615) 893-5522 Facsimile: (615) 849-2135

Any such notice or demand so served, shall constitute proper notice hereunder upon delivery to the United States Postal Service or to such overnight courier, or by confirmation of the facsimile transmission.

8.3 Attorneys' Fees. In the event of any dispute, litigation or other proceeding between the parties hereto to enforce any of the provisions of this Agreement or any right of either party hereunder, the unsuccessful party to such dispute, litigation or other proceeding shall pay to the successful party all costs and expenses, including reasonable attorneys' fees, incurred at trial, on appeal, and in any arbitration, administrative or other proceedings, all of which may be included in and as a part of the judgment rendered in such litigation. Any indemnity provisions herein shall include indemnification for such costs and fees. This section shall survive the Closing or a prior termination hereof.

8.4 Time. Time is of the essence of this Agreement, provided that if any date upon which some action, notice or response is required of any party hereunder occurs on a weekend or national holiday, such action, notice or response shall not be required until the next succeeding business day.

8.5 Governing Law. This Agreement shall be governed by the laws of the state in which the Property is located.

8.6 Successors and Assigns. The terms and provisions of this Agreement shall be binding upon and shall inure to the benefit of the heirs, successors and assigns of the parties. The Buyer may assign Buyer's rights and obligations under this Agreement to Rutherford County. Except as to Rutherford County, no third parties, including any brokers or creditors, shall be beneficiaries hereof or entitled to any rights or benefits hereunder.

8.7 Harvesting of Crops. Seller is entitled to harvest any crops on the Property before Closing, but Buyer is not responsible for any damage to crops from any testing or inspection of the Property.

8.8 Removal of property. Seller shall be allowed to remove any portion of barns or outbuildings on the Property prior to Closing.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first above written.

"BUYER"

RUTHERFORD COUNTY BOARD OF EDUCATION

By: _____
Name: Teresa Sharp
Title: Chairman

"SELLER"

_____
JOHN L. BATEY, JR.

_____
MELISSA W. BATEY

PURCHASE AGREEMENT

JOINDER OF ESCROW AGENT

1. Duties. Escrow Agent joins herein for the purpose of agreeing to comply with the terms hereof insofar as they apply to Escrow Agent. Escrow Agent shall receive and hold the Earnest Money Deposit in trust, to be disposed of in accordance with the provisions of this joinder and the foregoing Agreement.

2. Indemnity. Escrow Agent shall not be liable to any party except for claims resulting from the negligence or willful misconduct of Escrow Agent. If the escrow is the subject of any controversy or litigation, the parties to the Agreement shall jointly and severally indemnify and hold Escrow Agent harmless from and against any and all loss, cost, damage, liability or expense, including costs of reasonable attorneys' fees to which Escrow Agent may be put or which Escrow Agent may incur by reason of or in connection with such controversy or litigation, except to the extent it is determined that such controversy or litigation resulted from Escrow Agent's negligence or willful misconduct. If the indemnity amounts payable hereunder result from the fault of Buyer or Seller (or their respective agents), the party at fault shall pay and hold the other party harmless against such amounts.

3. Conflicting Demands. If conflicting demands are made upon Escrow Agent or if Escrow Agent is uncertain with respect to the escrow, the parties to the Agreement expressly agree that Escrow Agent shall have the absolute right to do either or both of the following: (i) withhold and stop all proceedings in performance of this escrow and await settlement of the controversy by final appropriate legal proceedings or otherwise as it may require; or (ii) file suit for declaratory relief and/or interpleader and obtain an order from the court requiring the parties to interplead and litigate in such court their several claims and rights between themselves. Upon the filing of any such declaratory relief or interpleader suit and tender of the Earnest Money Deposit to the court, Escrow Agent shall thereupon be fully released and discharged from any and all obligations to further perform the duties or obligations imposed upon it. Buyer and Seller agree to respond promptly in writing to any request by Escrow Agent for clarification, consent or instructions. Any action proposed to be taken by Escrow Agent for which approval of Buyer and/or Seller is requested shall be considered approved by the particular party if Escrow Agent does not receive written notice of disapproval within five (5) business days after a written request for approval is received by the party whose approval is being requested. Escrow Agent shall not be required to take any action for which approval of Buyer and/or Seller has been sought unless such approval has been received. No notice by Buyer or Seller to Escrow Agent of disapproval of a proposed action shall affect the right of Escrow Agent to take any action as to which such approval is not required.

4. Tax Identification. Seller and Buyer shall provide to Escrow Agent appropriate Federal tax identification numbers.

5. Continuing Counsel. Seller acknowledges that Escrow Agent is counsel to Buyer herein and Seller agrees that in the event of a dispute hereunder or otherwise between Seller and Buyer, Escrow Agent may continue to represent Buyer notwithstanding that it is acting and will continue to act as Escrow Agent hereunder, it being acknowledged by all parties that Escrow Agent's duties hereunder are ministerial in nature.

HUDSON, REED & CHRISTIANSEN, PLLC

By:_____
Its Authorized Agent

Date:_____

EXHIBIT "A"

PURCHASE AGREEMENT

PURCHASE ORDER

Rutherford County, Tennessee

PURCHASING DEPARTMENT:

School Bldg Program
Phone: 615-893-5812
Fax: 615-904-3772

NOTICE TO VENDOR

1. All packages, cartons or other containers must be plainly marked with the purchase order number.
2. No changes in or cancellations of this purchase order shall be recognized by the Vendor unless authorized by special form issued by the Purchasing Agent.
3. The county is not liable for Federal excise tax or state sales tax. Tax Exemption Certificate will be furnished.
4. Each shipment and/or each purchase order should be covered by separate invoice.
5. UNLESS OTHERWISE STATED, ALL PRICES ARE F.O.B. Destination.

MAIL Invoice to: **Rutherford Co. Board of Education**
ATTN: Accounts Payable
2240 Southpark Drive
Murfreesboro, TN 37128

VENDOR
3496
Johnny M. Sullivan, Sra
1703 First Place
Suite E
Murfreesboro, TN 37129

P.O. No **BP 16232**

SHIP TO
Rutherford Co Schools Engineering
2240 B Southpark Drive
Murfreesboro, TN 37128

ATTN TO: Trey Lee

Include P.O. Number on Invoices and Packages

REQUISITION NO.	DELIVERY REQUIRED	SHIP VIA	TERMS & FREIGHT	DATE ISSUED	PURCHASE ORDER NO.
				09/26/2022	BP 16232

ITEM	QUANTITY	ARTICLES OR SERVICES	UNIT COST	TOTAL COST
1	1	Appraisal for the John L. Batety Property per letter 9-22-2022 Not to exceed 189-91300-715-SEC $4,000 189-91300-715-ELEM $2,000	4000.000	$4,000.00
2	1	Appraisal for the John L. Batety Property per letter 9-22-2022 Not to exceed 189-91300-715-SEC $4,000 189-91300-715-ELEM $2,000	2000.000	$2,000.00
			TOTAL:	**$6,000.00**

ACCOUNTING INFORMATION:

189. -91300-715- SEC	**$4,000.00**
189. -91300-715- ELEM	**$2,000.00**

AUTHORIZED SIGNATURES:

Approved By Brian Runion On 9/27/2022
DIRECTOR OF SCHOOLS

Approved By Jeanette Egly On 9/26/2022
FINANCE DIRECTOR

Control Number 044177

PURCHASE ORDER: BP16232

PURCHASE REQUISITION # 20228410246

BP 16232

Details

Requested By: Trey Lee - **Department:** Engineering-Construction - **School:** Rutherford County School Board

Email: leetr@rcschools.net
ADA: - **Attn:** Trey Lee

PO Number: - **Request Date:** 09/22/2022
Deliver To: 2240 Southpark Drive, Murfreesboro, TN 37128

Vendor: 3496 - Johnny M. Sullivan, Sra - Address: 1703 First Place Suite E Murfreesboro, TN 37129

Purchasing Approved: Lynn Pater On: 9-22-2022

Finance Approved: Jeanette Egly On: 9-22-2022

Item Details - **PO Type:** BP-Building Program-Fund 189-See Below

Qty	Item/Service/Description	Bid Num	Unit Price	Total
1	Appraisal for the John L. Batety Property per letter 9-22-2022		6000.00	$6,000.00
	Not to exceed			$0.00
				$0.00
	189-91300-715-SEC $4,000			$0.00
	189-91300-715-ELEM $2,000			$0.00

Sub Total:	**$6,000.00**
Shipping:	**$0.00**
Order Total:	**$6,000.00**

Department Approvals

Engineering Approved: Trey Lee On: 9-22-2022

PURCHASE REQUISITION

Johnny M. Sullivan, SRA

Real Estate Appraiser-Consultant

1703 First Place – Suite E
Murfreesboro, TN 37129-1599
615-895-6260
sulljohn@realtracs.com

September 22, 2022

Mr. Trey Lee
Assistant Superintendent
Rutherford County Schools
2240 Southpark Boulevard
Murfreesboro, TN 37128

Dear Mr. Lee:

Thank you for your consideration and the opportunity to perform an appraisal on a proposed 59.1-acre vacant land tract to be subdivided from a larger tract of 409 +/- acres. A second appraisal is also requested for a 2.29 - acre land parcel with an estate dwelling of over 3,600 square feet with multiple outbuilding resting on said land tract. These tracts are currently listed on the public records as being owned by John L. Batey, Jr.

These properties are considered complicated by standards produced by the Appraisal Standards Board (ASB) of The Appraisal Foundation. The proposed vacant land tract is considered development potential vacant land and the home site land parcel with multiple outbuildings and a single-family dwelling may create a "Super-Adequacy" situation as the multiple outbuildings are designed to aid a larger farm operation. That is to say 2.29 acres of land will not produce adequate agriculture utility to support the cost of multiple farm use outbuildings. Therefore, the appraiser must have the proper credentials in order to process these appraisal reports. The necessary credentials would require the appraiser to have a "State Certified General Real Estate Appraiser" certification.

- Appraisal Fee for Both Appraisals ……..…….....Not to Exceed $6,000
  (Estimated Delivery, +- 4 to 6 weeks from date of engagement; pending other assignments pending at the time of engagement and timely access to the properties).

  Each Appraisal Report will be completed in a narrative format.

I understand this proposal is for the Rutherford County Board of Education; therefore, I offer my professional services to you at the above quoted fee. Please sign and return this letter if the fee is acceptable and you wish to retain my services.

ENGAGEMENT LETTER

I intend to deliver a completed report to you within the stated time frame. Dates of delivery are subject to other work in progress and in recognition that unforeseen characteristics of any appraisal problem might render timely delivery impossible. I will make every effort to deliver all work on a timely basis. It is essential that I be provided any surveys, contracts, legal descriptions, etc.; if available. Also, a contact person and phone number for interior and exterior inspection of each property.

If you need any additional information, please contact me at 615-895-6260. Again, thank you for your consideration in allowing me to service your appraisal needs.

Sincerely,

Johnny M. Sullivan, SRA
State Certified General
Real Estate Appraiser CG - 493

Accepted: _____ 9-27-2022
Signature Date

ENGAGGEMENT LETTER

PROPERTY TAX INFORMATION:

OWNER: JOHN L. BATEY, JR. and
MELISSA W. BATEY
5104 Baker Road
Murfreesboro, TN 37129

SEND TAX BILLS TO: Same

THIS INSTRUMENT PREPARED BY:

SANDRA Y. TRAIL, Attorney
107 North Maple Street
Murfreesboro, TN 37130

From information furnished
by the parties.

Map: 071
Parcel: 030.00

QUITCLAIM DEED

Record Book
548 Pg 1888

KNOW ALL MEN BY THESE PRESENTS that I, JOHN L. BATEY, JR., also known as JOHN LOCKE BATEY, JR., for and in consideration of the sum of Ten and No/100 ($10.00) Dollars, cash in hand paid, the receipt of which is hereby acknowledged, have bargained and sold and hereby remise, release and forever quitclaim unto JOHN L. BATEY, JR. and wife, MELISSA W. BATEY, as tenants in common and not as tenants by the entirety, their heirs and assigns, all of my right, title and interest in and to those certain parcels of land located in Rutherford County, Tennessee, which parcels are more particularly described as follows:

PARCEL ONE:

BEGINNING in the center of the Public Road that runs northward from Blackman to Peeples farm, and the northeast corner of the old County School, now Church of Christ lot, the southeast corner of this tract; running thence with center of said road North 6° West 111.6 poles to a point in said road in line with fence leading North 85-1/2° West; thence with said fence line, 137 poles to the intersection of a fence line running South 2-3/4° West; thence with said line, 87.8 poles to a cedar post at a southwest corner of this tract; thence South 85-3/4° East 43 poles to the point of fence intersection that runs South 1-1/2° West; thence with said fence 26.1 poles to a cedar post at the southeast corner of Tract No. 4 of the Division of lands of G.W. Haynes estate which has been conveyed to Riggs brothers, in the north line of the Batey farm; thence with north line of this tract and the north line of the Church lot South 87-1/4° East 110.7 poles to the point of beginning, containing 95.75 acres, and being Tract No. 1, of the survey of the G.W. Haynes lands made by John D. Kerr, County Surveyor in December, 1956.

PARCEL TWO:

BEING a tract of cedar land which is bounded on the South and East by lands of John L. Batey and by Road; on the North by lands of John Franklin Rowlett; and on the West by lands of Richardson and Mrs. Howard Lane; and containing 100 acres, more or less, but no guarantee of acreage, or quantity is made in this conveyance.

PARCELS ONE and TWO above being the same property devised to John Locke Batey, Jr. by John Locke Batey who died testate and whose Will is of record in Will Book 22, page 375 of the County Clerk's Office for Rutherford County, Tennessee.

WARRANTY DEED/LEGAL DESCRIPTION,

PARCEL THREE:

Beginning on a stake in the middle of the OLD NASHVILLE and Shelbyville Road, and running thence with the middle of a public road, North 88 degrees West 137 poles to a stake; thence South 2 degrees West 53 poles to a stake; thence North 88 degrees West 41 poles to a stake, the northwest corner of Lot 6, of the division of the A.W. Blackman lands; thence with the West line of Lot 6, South 2 degrees West 201 poles to a stake in Will Harding's North line; thence with same, North 88 degrees West 124 poles to a stake; thence North 9 degrees East 207 poles to a stake; thence North 88 degrees West 156 poles to a stake; thence North 2 degrees East 40 poles to a stake; thence South 87 degrees East 146 poles to a stake; thence North 12 degrees West 28 poles to a stake in the middle of public road; thence with middle of same, South 87 degrees East 71 poles; North 65 degrees East 8 poles; South 70 degrees East 50 poles; thence leaving road North 2 degrees East 19-1/2 poles to a stake in Haynes' (formerly Mrs. Mary Blackman's) South line; thence with same South 88 degrees East 152 poles to a stake, the northwest corner of school lot; thence with west line of same, South 9 degrees East 16 poles to a stake, the southwest corner of same school lot; thence South 88 degrees East 20 poles to a stake in the middle of road; thence with same, South nine degrees East 9-1/2 poles to the beginning, containing 261 acres, more or less.

EXCEPTED AND RESERVED from this tract is the house and approximately 3.6 acres of land conveyed by John L. Batey and John L. Batey, Jr. and wife, Melissa W. Batey, to John L. Batey and wife, Annie Jamison Batey, by deeds of record in Deed Book 386, page 290, and Deed Book 386, page 292, of the Register's Office for Rutherford County, Tennessee.

PARCEL THREE above being the same property devised to John L. Batey, Jr. by Fannie Batey Talley who died testate and whose Will is of record in Will Book 18, page 49, of the County Clerk's Office for Rutherford County, Tennessee, and to John Locke Batey, Jr. by Annie Jamison Batey who died testate and whose Will is probated at Will Book 30, page 811, of the County Clerk's Office for Rutherford County, Tennessee.

Said property is quitclaimed subject to such limitations, restrictions and encumbrances as may affect the premises.

WITNESS my hand and seal this 15th day of September, 2005.

JOHN L. BATEY, JR.

STATE OF TENNESSEE)
COUNTY OF RUTHERFORD)

Personally appeared before me, a Notary Public in and for said County and State, the within named JOHN L. BATEY, JR., the bargainor, with whom I am personally acquainted, and who acknowledged that he executed the within instrument for the purposes therein contained.

Witness my hand and official seal at Murfreesboro, Tennessee this 15th day of September, 2005.

NOTARY PUBLIC
My commission Expires: 1/25/06

NOTARY PUBLIC AT LARGE RUTHERFORD TENN.

WARRANTY DEED/LEGAL DESCRIPTION

AFFIDAVIT OF VALUE

I hereby swear or affirm that no consideration was given for this Quitclaim Deed.

Melissa Batey
AFFIANT

Sworn to and subscribed before me, on this 15th day of September, 2005.

Sandy Trail
NOTARY PUBLIC

My Commission Expires: 1/25/08

SANDY TRAIL NOTARY PUBLIC AT LARGE RUTHERFORD

Record Book
548 Pg 1890

Jennifer M Gerhart, Register
Rutherford County Tennessee

Rec #:	446790	Instrument	1371827
Rec'd:	15.00	MBk:	81 Pg 748
State:	0.00		
Clerk:	0.00	Recorded	
EDP:	2.00	9/28/2005	at 3:03 PM
Total:	17.00	in Record Book	
		548 Pages	1888-1890

WARRANTY DEED/LEGAL DESCRIPTION

QUALIFICATIONS OF JOHNNY M. SULLIVAN, SRA

MAILING ADDRESS: 1703 First Place, Ste. E, Murfreesboro, TN 37129-1599

DATE OF BIRTH: September 26, 1953 SOCIAL SECURITY NUMBER: Available Upon Request

STATE CERTIFICATION: Tennessee Certified General Appraiser....CG-493

EMPLOYER: Self-Employed Fee Appraiser, Associated with Appraisal Associates, 1703 First Place, Ste. E, Murfreesboro, TN 37129-1599, Office (615) 895-6260, Mobile (615) 812-5188, Home (615) 890-0812

PRESENT POSITION: Fee Appraisal Assignments - Residential and Commercial Properties

PROFESSIONAL EXPERIENCE:

July 1978 to June 1990 - Staff Appraiser, Cavalry Banking (formerly Murfreesboro Federal Savings and Loan Association), P.O. Box 188, Murfreesboro, TN 37133-0188
October 1975 to July 1978 - Division of Property Assessments, State of Tennessee

July 1974 to July 1975 - Salesman, Moore's Building Supplies, 802 W College St., Murfreesboro, TN 37130

ACADEMIC EDUCATION: Bachelor of Science Degree from Middle Tennessee State University, Murfreesboro, TN 37132 - August 1975. Degree in Business Education/Tennessee Teacher's Certificate

APPRAISAL EDUCATION: The Appraisal Institute requires continuing education for its Designated Members to remain certified; I am currently certified. Examination was optional/required for the following list of courses:

Inconsistency: It's Hiding in Plain Sight in Your Appraisal November 2021
Residential Market Analysis and Highest & Best Use August 2021
7 Hour National USPAP Update Course-January 2020
Examining Property Rights & Its Implications on Valuation September 2019
Residential Measuring Standards & GLA or Not? August 2019
Fall Real Estate Symposium November 2018
Appraiser Complaints & How to Avoid Disciplinary Actions-July 2018
Current Appraisal Topics-April 2018
7 Hour National USPAP Update Course-January 2018
Introduction to Litigation Valuation & the Appraiser as an Expert Witness-August 2017
Appraisal Review-June 2017
Supervisor Appraiser & Trainee Responsibilities, TN – May 2017
Business Practice and Ethics - March 2017
7 Hour National USPAP Update Course-March 2016
Introduction to Vineyard & Winery Valuation – April 2015
Understanding Today's Regulatory Environment TREAC 2015 Update, Appraiser Legislative Update.
How to Utilize Statistics Effectively in an Appraisal – Brentwood, TN – May 2014
Commercial Appraisal Engagement & Review Seminar for Bankers & Appraisers – January 2014
Residential Applications: Using Technology to Measure & Support Assignment Results – November 2013
Litigation Appraising: Specialized Topics and Applications, Murfreesboro, TN – August 2005
The Appraiser as Expert Witness, Murfreesboro, TN – August 2004
Condemnation Appraising/Advanced Topics and Applications, Course 720, Murfreesboro, TN - August 2003
Condemnation Appraising/Basic Principles and Applications, Course 710, Murfreesboro, TN - August 2002
Standards of Professional Practice, Part C, Appraisal Institute, Nashville, TN - September 2001
Standards of Professional Practice, Parts A & B, Appraisal Institute, Brentwood, TN - October 1995
1BB Cap Theory & Tech, Part B, Income Capitalization, Appraisal Institute, Nashville, TN - April 1992
1BA Cap Theory & Tech, Part A, Income Capitalization, Appraisal Institute, Nashville, TN - March 1992
Income Capitalization of Real Estate, Academy of Real Estate Appraisers (AREA), Nashville, TN - September 1991

APPRAISAL SEMINARS: Various seminars are offered by the Appraisal Institute and should be attended to remain current. The following are seminars attended in last 15 years. State Certified and Appraisal Institute designated course requirements were maintained during the years 1980-1999.

QUALIFICATIONS OF JOHNNY M. SULLIVAN, SRA

National Uniform Standards of Professional Appraisal Practice (USPAP) Course – February 2014
National Uniform Standards of Professional Appraisal Practice (USPAP) Course – February 2013
2009-2012 Code-of-Ethics Seminar – November 2012
The Lending World in Crisis-What Clients Need Their Appraisers to Know Today, Nashville, TN – January 2012
Understanding and Testing DCF Valuation Models, Nashville, TN – December 2011
Uniform Appraisal Dataset / Fannie Mae Freddy Mac, Murfreesboro, TN – July 2011
Appraising Distressed Commercial Real Estate, Nashville, TN – January 2011
Hot Topics in Residential Appraisal, Nashville, TN – April 2010
Introduction to Valuation for Financial Reporting, Nashville, TN – February 2010
Business Practices and Ethics, Nashville, TN – December 2009
Appraising Convenience Stores, Nashville, TN – October 2009
National USPAP Update, Nashville, TN – June 2009
Liability Management for Residential Appraisers, Franklin, TN – May 2008
Quality Assurance in Residential Appraisals: Risky Appraisals = Risky Loans, Murfreesboro, TN – April 2007
Hypothetical Conditions and Extraordinary Assumptions, Murfreesboro, TN – April 2007
National USPAP Update Course, Nashville, TN – March 2007
Scope of Work: Expanding Your Range of Services, Murfreesboro, TN – September 2006
Uniform Residential Appraisal, Murfreesboro, TN – August 2005

ASSOCIATION MEMBERSHIPS:

Three, 3-year terms Board Member-Nashville-Middle TN Chapter, a.k.a. Greater TN Chapter, Appraisal Institute
Designated Member of the Appraisal Institute (created from the merger of SREA and AIREA)
Senior Residential Appraiser (SRA)
Tennessee Housing Development Agency (THDA)
Tennessee Real Estate Commission - License Retired
Rutherford County Board of Realtors

COURTS – QUALIFIED EXPERT: Chancery Court – Rutherford, Williamson, Wilson & Smith Co.; General Sessions – Rutherford County

APPROVED APPRAISER: FNMA, FHLMC, THDA, MidSouth Bk, First National Bk of McMinnville, Independence Bk of Owensboro, Ky., Pinnacle Bk, First Tennessee National Bk, Bank of America, SunTrust Bk, First Bank, Regions Bank, CitiCorp, Capital Bk Trust, Guaranty Trust Co., Synovus Bk (a.k.a. Bank of Nashville), American City Bk, Farm Credit Mid America, Regions Mortgage, Inc.; Cleveland Bank & Trust Co., City Bank & Trust, McMinnville; Farmers Bank of Cornersville, South Trust, U.S. Bk, and other mortgage companies. Other clients include the City of Murfreesboro, Rutherford Co., Consolidated Utility District, Middle Tennessee Electric Membership Cooperation, Town of Smyrna, City of LaVergne, City of Manchester, City of Tullahoma, local authorities, U.S. Army Corp of Engineers, State of Tennessee Real Estate Management Office, Certified Public Accountants, various Attorneys, and other professionals.

RELATED PAST EMPLOYMENT:

Employed by Cavalry Banking (Currently known as Pinnacle Bank) as a Senior Staff Appraiser appraising all types of real estate.

Employed by the Division of Property Assessments as a Real Estate Appraiser with emphasis placed on Mass Appraisal Technique as related to Appraisals for Advalorum Tax purposes.

Employed by Moores Building Supplies as a Building Materials Salesman, this familiarized me with building procedures, contractors, materials, and the building industry in general.

PAST DUTIES: Duties as Senior Staff Appraiser included primarily residential appraisals (both existing and proposed cases) and numerous commercial property appraisals. Also responsible for construction loan disbursements during the construction process, which involved personal on-site inspections to estimate the percentage of completion and to assure conformity with the plans and specifications as submitted.

QUALIFICATIONS OF JOHNNY M. SULLIVAN, SRA

RUTHERFORD COUNTY POPULATION GROWTH

	1970	1980	1990	2000	2010	2021	PROJECTED 2024
COUNTY	59,428	84,058	118,570	182,023	262,604	352,182	392,336
Murfreesboro	26,360	32,845	44,922	68,816	108,755	157,519	163,340
Smyrna	5,698	8,839	13,647	25,569	39,974	55,518	63,355
LaVergne	*N/A	5,495	7,499	18,687	32,588	39,091	44,765
Eagleville	437	444	462	464	604	744	811

Note: LaVergne was incorporated in 1972.
*Note: LaVergne did not participate in this census.

GROWTH CHART

PERMIT CHART - YEAR-TO-DATE

Total Permits up-to-date thru December 2021

MURFREESBORO

YEAR	TOTAL	SGL FAM	PERC. CHG.	MUL FAM	INDUS/ COMM	IND/COM. $ AMT.
2006-^	4,113	1,597		2,447	69	109,124,899
2009	576	379	76.3%	167	30	82,841,563
2010	508	298	81.3%	184	26	30,856,871
2011	425	406	74.6%	0	19	37,237,890
2012	1,017	536	#REF!	464	17	49,041,364
2013	1,626	711	55.5%	889	26	48,210,493
2014	1,868	821	48.6%	1,023	24	64,844,373
2015	2,367	1,142	28.5%	1,185	40	76,898,127
2016	1,898	1,431	#REF!	514	60	119,949,916
2017	2,258	991	30.7%	1,233	34	57,621,276
2018	2,794	1,503	-51.7%	1,247	44	85,169,580
2019	2,314	1,325	11.84%	941	48	80,667,287
2020	680	664	49.89%	8	26	44,774,559
2021	2,378	1,670	N/A	552	51	241,208,416

^ - Year 2006 is Base Year for Percentage Change

RUTHERFORD COUNTY

TOTAL**	TOTAL* SGL FAM	SGL FAM	PERC. CHG.	MUL FAM	INDUS/ COMM.	IND/COM. $ AMT.
#REF!	#REF!	894		1	20	6,704,785
#REF!	#REF!	343	61.6%	0	12	2,634,397
1,145	795	322	64.0%	0	7	2,807,149
1,010	854	336	40.6%	0	17	6,711,314
1,797	1,259	531	40.6%	0	17	7,104,330
2,586	1,469	556	37.8%	0	6	1,227,821
2,955	1,726	633	29.2%	0	14	2,775,739
3,498	2,083	620	#REF!	0	16	30,162,250
3,395	2,561	698	#REF!	0	11	1,990,951
3,950	2,281	785	-12.5%	0	18	4,955,962
4,423	2,793	664	15.4%	0	28	13,982,762
4,020	2,800	859	-29.37%	2	14	6,747,676
1,233	1,082	351	59.14%	0	4	547,457
N/A	N/A	N/A	N/A	0	12	N/A

****Total of All Permits Issued County & All Cities**

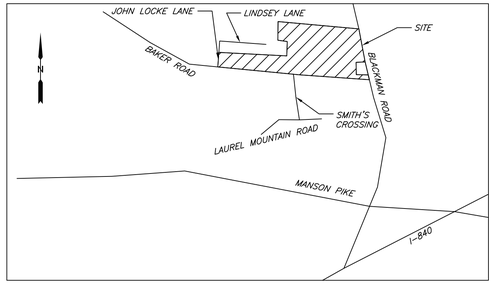
SMYRNA

YEAR	TOTAL	SGL FAM		MUL FAM	INDUS/ COMM.	IND/COM. $ AMT.
2006-^	769	555		99	115	69,286,488
2009	203	97	82.5%	39	67	57,466,677
2010	164	95	82.9%	19	50	60,590,341
2011	166	87	84.3%	5	74	106,698,156
2012	361	149	73.2%	150	62	25,657,691
2013	314	151	72.8%	75	88	14,124,210
2014	323	175	68.5%	80	68	28,523,644
2015	351	211	62.0%	66	74	71,127,889
2016	430	250	#REF!	93	87	164,875,436
2017	566	248	0.8%	236	82	36,778,121
2018	545	310	-25.0%	149	86	90,490,399
2019	596	449	-44.8%	70	77	68,034,386
2020	278	160	64.37%	30	88	7,891,661
2021	N/A	N/A	N/A	N/A	N/A	N/A

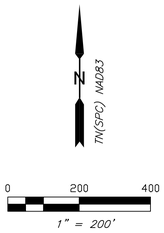
^ - Year 2006 is Base Year for Percentage Change

LAVERGNE

TOTAL	SGL FAM		MUL FAM	INDUS/ COMM.	IND/COM. $ AMT.
595	551		0	44	20,397,000
105	78	85.8%	0	27	2,702,864
94	57	89.7%	0	37	8,619,430
66	25	95.5%	0	41	19,492,096
80	43	92.2%	0	37	6,820,831
84	51	90.7%	9	24	2,543,412
117	97	82.4%	0	20	12,073,791
144	110	80.0%	0	34	46,750,800
251	182	#REF!	0	69	76,278,000
323	257	-41.2%	0	66	49,621,000
392	316	-22.96%	0	76	55,134,000
235	167	47.15%	0	68	52,658,931
74	52	68.86%	0	22	43,803,852
N/A	N/A	N/A	N/A	N/A	N/A



VICINITY MAP – N.T.S.



I HEREBY CERTIFY THAT THIS IS A CATEGORY "IV" SURVEY AND THE PRECISION OF THE GPS PORTION OF THIS SURVEY (IN RELATIVE POSITIONING ACCURACY GIVEN AT THE 95% CONFIDENCE LEVEL) IS 1:10,000 AS SHOWN HEREON AND THAT THIS SURVEY WAS DONE IN COMPLIANCE WITH THE CURRENT TENNESSEE MINIMUM STANDARDS OF PRACTICE FOR LAND SURVEYORS

DANIEL A CURRY RLS#2964 DATE

WARNING:

THIS SURVEY WAS PREPARED FOR THE BENEFIT OF THE PARTY OR PARTIES NAMED HEREON AND IS INTENDED FOR THEIR SOLE USE. OTHER PARTIES ARE ADVISED NOT TO RELY UPON THIS. USE OF THIS DRAWING BY PARTIES OTHER THAN THOSE LISTED HEREON IS UNAUTHORIZED AND CONSTITUTES A VIOLATION OF FEDERAL COPYRIGHT LAWS.

FOR:

RUTHERFORD COUNTY SCHOOLS
C/O – TREY LEE, ASSISTANT SUPERINTENDENT
ENGINEERING AND CONSTRUCTION
2240 SOUTHPARK DRIVE
MURFREESBORO, TN 37128
LEETR@RCSCHOOLS.NET

DEED REFERENCE:

PARCEL 30.00
TO: JOHN L. JR. AND MELISSA BATEY
FROM: JOHN AND ANN BATEY
RECORD: DB 548,PG 1888, R.O.R.C.

PARCEL 30.01
TO: JOHN L. JR. AND MELISSA BATEY
FROM: JOHN AND ANN BATEY
RECORD: DB 261,PG 591, R.O.R.C.

PROPERTY MAP REFERENCE:

BEING ALL OF PARCEL 30.00 & 30.01 ON RUTHERFORD COUNTY TAX MAP 71

UTILITY NOTE:

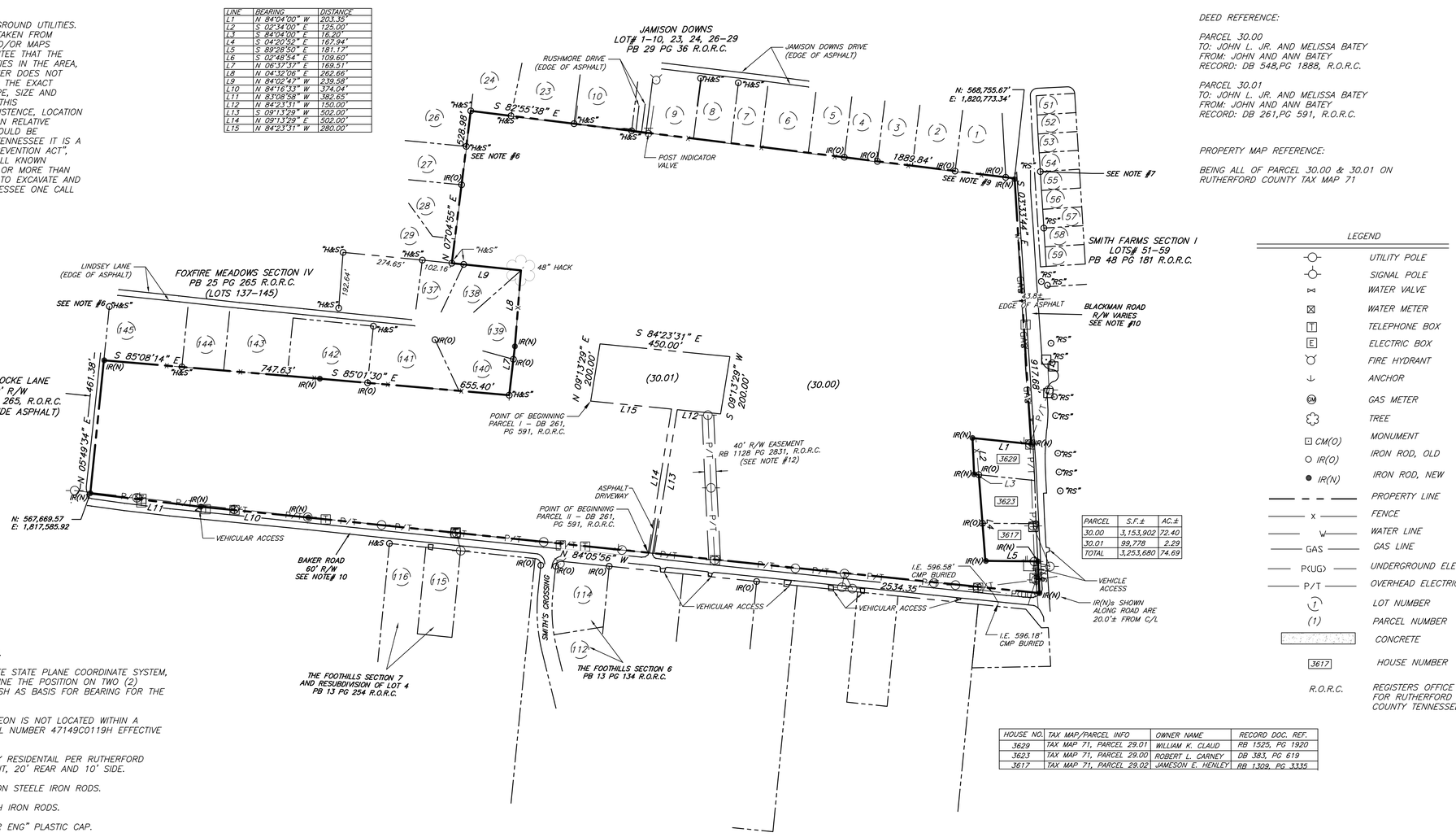
THIS SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. ABOVE GRADE AND UNDERGROUND UTILITIES SHOWN WERE TAKEN FROM VISIBLE APPURTENANCES AT THE SITE, PUBLIC RECORDS AND/OR MAPS PREPARED BY OTHERS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. THEREFORE, RELIANCE UPON THE TYPE, SIZE AND LOCATION OF UTILITIES SHOWN SHOULD BE DONE SO WITH THIS CIRCUMSTANCE CONSIDERED. DETAILED VERIFICATION OF EXISTENCE, LOCATION AND DEPTH SHOULD ALSO BE MADE PRIOR TO ANY DECISION RELATIVE THERETO IS MADE. AVAILABILITY AND COST OF SERVICE SHOULD BE CONFIRMED WITH THE APPROPRIATE UTILITY COMPANY. 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 (3) THREE OR MORE THAN (10) WORKING DAYS PRIOR TO THE DATE OF THEIR INTENT TO EXCAVATE AND ALSO TO AVOID ANY POSSIBLE HAZARD OR CONFLICT. TENNESSEE ONE CALL 1-615-366-1987 OR 1-800-351-1111.

GPS CERTIFICATION:

I, DANIEL A. CURRY, HEREBY CERTIFY THAT THIS MAP WAS DRAWN UNDER MY SUPERVISION FROM TWO POINTS ESTABLISHED VIA THE TDOT GNSS REFERENCE NETWORK AND THE FOLLOWING INFORMATION WAS USED TO PERFORM THIS SURVEY:

TYPE OF SURVEY: REAL TIME KINEMATIC
POSITIONAL ACCURACY: 0.05 FEET
DATE OF SURVEY: JANUARY 13, 2023.
DATUM/EPOCH: NAD83(2011) EPOCH 2010.00
PUBLISHED/FIXED CONTROL USED: TDOT CORS NETWORK
GEOID MODEL: 2003(CONUS)
COMBINED GRID FACTOR: NONE

LINE	BEARING	DISTANCE
L1	N 84°04'00" W	203.35'
L2	S 02°34'00" E	125.00'
L3	S 84°04'00" E	16.20'
L4	S 04°20'52" E	167.94'
L5	S 89°28'50" E	181.17'
L6	S 02°48'54" E	109.60'
L7	N 06°37'37" E	169.51'
L8	N 04°32'06" E	262.66'
L9	N 84°02'47" W	239.58'
L10	N 84°16'33" W	374.04'
L11	N 83°08'58" W	382.65'
L12	N 84°23'31" W	150.00'
L13	S 09°13'29" W	502.00'
L14	N 09°13'29" E	502.00'
L15	N 84°23'31" W	280.00'



PARCEL	S.F.±	AC.±
30.00	3,153,902	72.40
30.01	99,778	2.29
TOTAL	3,253,680	74.69

HOUSE NO.	TAX MAP/PARCEL INFO	OWNER NAME	RECORD DOC. REF.
3629	TAX MAP 71, PARCEL 29.01	WILLIAM K. CLAUD	RB 1525, PG 1920
3623	TAX MAP 71, PARCEL 29.00	ROBERT L. CARNEY	DB 383, PG 619
3617	TAX MAP 71, PARCEL 29.02	JAMESON E. HENLEY	RB 1309, PG 3335

LEGEND

	UTILITY POLE
	SIGNAL POLE
	WATER VALVE
	WATER METER
	TELEPHONE BOX
	ELECTRIC BOX
	FIRE HYDRANT
	ANCHOR
GM	GAS METER
	TREE
CM(O)	MONUMENT
IR(O)	IRON ROD, OLD
IR(N)	IRON ROD, NEW
	PROPERTY LINE
x	FENCE
W	WATER LINE
GAS	GAS LINE
PWR	UNDERGROUND ELECTRIC
P/T	OVERHEAD ELECTRIC
7	LOT NUMBER
(1)	PARCEL NUMBER
	CONCRETE
3617	HOUSE NUMBER
R.O.R.C.	REGISTERS OFFICE FOR RUTHERFORD COUNTY TENNESSEE

NOTES:

1. SURVEY FIELD WORK BEGAN ON JANUARY 13, 2023.
2. NO TITLE COMMITMENT WAS PROVIDED TO THIS SURVEYOR.
3. BEARINGS SHOWN HEREON ARE BASED ON THE TENNESSEE STATE PLANE COORDINATE SYSTEM, ZONE 4100, NAD83. GPS EQUIPMENT WAS USED TO DETERMINE THE POSITION ON TWO (2) CONTROL POINTS FOR THE SURVEYED PROPERTY TO ESTABLISH AS BASIS FOR BEARING FOR THE SURVEY.
4. BY GRAPHIC PLOTTING ONLY THIS PROPERTY SHOWN HEREON IS NOT LOCATED WITHIN A SPECIAL FLOOD HAZARD AREA AS PER FEMA MAP AND PANEL NUMBER 47149C0119H EFFECTIVE DATE JANUARY 5, 2005.
5. THIS PROPERTY IS CURRENTLY ZONED AS RL-LOW DENSITY RESIDENTAIL PER RUTHERFORD COUNTY STANDARDS SETBACKS ARE AS FOLLOWS: 40' FRONT, 20' REAR AND 10' SIDE.
6. ALL "H&S" LABELS SHOWN ARE 1/2" CAPPED HUDDLESTON STEELE IRON RODS.
7. ALL "RS" LABELS SHOWN ARE 5/8" CAPPED RAGAN SMITH IRON RODS.
8. ALL IR(N) LABELS ARE 1/2" IRON RODS WITH A "COLLIER ENG" PLASTIC CAP.
9. ALL IR(O) LABELS ARE UNCAPPED 1/2" FOUND IRON RODS.
10. PER CONVERSATION WITH RUTHERFORD COUNTY HIGHWAY DEPARTMENT THE PRESCRIPTIVE RIGHT OF WAY FOR BLACKMAN ROAD IS 40'. AN EXISTING IRON PIN THAT IS THE SOUTHEAST CORNER OF LOT 1 ON THE FINAL PLAT OF JAMISON DOWNS WAS LOCATED. JAMISON DOWNS PLAT STATES 50' TO C/L OF BLACKMAN ROAD FROM THIS PIN. USING THE FIELD MONUMENTATION OUTLINED ABOVE ALONG WITH RAGAN SMITH PINS OPPOSITE SIDE OF BLACKMAN ROAD THE RIGHT OF WAY IS APPROXIMATELY 30' CLOSER TO BLACKMAN ROAD ALONG THE SUBJECT PROPERTY AS SHOWN HEREON.
11. PER THE FOOTHILLS – SECTION 6 FINAL PLAT, AS RECORDED IN PLAT BOOK 13 PAGE 134 AND THE FOOTHILLS – SECTION 7 AND A RESUBDIVISION OF LOT 104, AS RECORDED IN PLAT BOOK 13 PG 254 THE RIGHT OF WAY OF BAKER ROAD IS 60' AS SHOWN HEREON.
12. THIS EASEMENT IS BLANKET IN NATURE AND THERE WAS NO DESCRIPTION IN THE REFERENCED DOCUMENT.

REVISIONS

NO	DATE	BY	DESCRIPTION

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION
2949 NOLENSVILLE PIKE, NASHVILLE, TN 37211
PHONE: (615) 331-1441 FAX: (615) 331-1050

GENERAL PROPERTY SURVEY
JOHN BATEY PROPERTY - 7TH CIVIL DISTRICT
RUTHERFORD COUNTY
MURFREESBORO, TENNESSEE

PRELIMINARY NOT FOR RELEASE

DATE: 2/22/2023
DRAWN BY: S.M.R.
SUPERVISED BY: D.A.C.
CHECKED BY: D.A.C.

GEN. PROP. SURVEY

SHEET NO: 1 OF 1

JURISDICTIONAL WATERS DETERMINATION REPORT

5104 Baker Road
Murfreesboro, Rutherford County, Tennessee

February 21, 2023

Prepared for:

Rutherford County Schools
2240 Southpark Drive
Murfreesboro, TN 37128

Prepared by:

GRIGGS & MALONEY
Engineering, Planning, & Environmental Consulting

745 S. Church St., STE 205
P.O. Box 2968
Murfreesboro, Tennessee 37130
(615) 895-8221

G&M Project No. 300-74

TABLE OF CONTENTS

Page

List of Figures

List of Acronyms

CoCoRaHS	**Community, Collaborative, Rain, Hail, and Snow Network**
DWR	**Division of Water Resources**
ESRL PSD	**Earth System Research Laboratory Physical Science Division**
G&M	**Griggs & Maloney, Inc.**
HD	**Hydrologic Determination**
HUC	**Hydrologic Unit Code**
HWY	**Highway**
JWA	**Jurisdictional Waters Assessment**
JWD	**Jurisdictional Waters Determination**
NOAA	**National Oceanic and Atmospheric Administration**
NRCS	**National Resource Conservation Service**
NWI	**National Wetlands Inventory**
STR	**Stream**
TDEC	**Tennessee Department of Environment and Conservation**
TWRA	**Tennessee Wildlife Resource Authority**
USACE	**United States Army Corps of Engineers**
USDA	**United States Department of Agriculture**
USFWS	**United States Fish and Wildlife Service**
USGS	**United States Geological Survey**
WWC	**Wet Weather Conveyance**

1.1. Executive Summary

Griggs & Maloney, Inc. (G&M) conducted a Jurisdictional Waters Determination on an approximately 74-acre subject property (Part of Parcel ID: 071-030.00-000) located at 5104 Baker Road in Murfreesboro, Rutherford County, Tennessee.

Desktop review of the subject property utilizing data from U.S Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) maps, U.S Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Web Soil Survey maps, U.S. Geological Survey (USGS) topographic maps, digital elevation maps, StreamStats maps, and aerial photographs were examined to determine if potential aquatic resources exist within the subject property.

Based on review of the aforementioned map sources, no hydric soil or wetland areas are indicated to be present within the subject property. Soil examined at several areas within the subject property did not feature characteristics that are typical of hydric soils. The observed soil was consistent throughout the site and featured a similar matrix color.

Figure 1 shows the subject property boundary on a USGS 7.5 Minute Topographic map, while Figure 2 show the subject property boundaries outlined on the most recent Google Earth Pro aerial image. Both Figure 1 and Figure 2 are included under Appendix A. Additional photos taken at various points within the subject property area are included under Appendix B. Wetland Determination Data Forms are attached under Appendix C. Weather Conditions are included under Appendix D and copies of the maps referenced for evaluation of the subject property are included under Appendix E.

It is recommended that the project area referenced in this JWD report be reviewed by the appropriate regulatory agencies and a concurrence letter be acquired from the agencies before any disturbance or development within the project area occurs.

Upon approval, G&M can facilitate the submittal of this report to the appropriate regulatory authorities to obtain the respective agencies concurrence letter, which will be provided and can be utilized to obtain future environmental related permits for the project area.

1.2. Project Area Description

The subject property consists almost entirely of open fields with fence rows that feature some tree cover. Review of past aerial imagery indicates that the subject property has been utilized for agricultural purposes on an annual basis, where the ground cover is disturbed from cultivation. Review of contour maps indicate that the subject property features a slight gradient that slopes from the eastern extent of the property, which features elevation around 612 AMSL, to the western extent of the property where the elevations are lowest at around 596 AMSL. The property features a gradual rolling topography, as evidenced by available contour maps.

The subject property is bounded to the south by Baker Road, residential developments to the west and north, and Blackman Road to the east. Additional photos that show observed conditions of the subject property during the time of the determination are included under Appendix B.

Figure 1: Site Location Map and Figure 2: Site Detail Map are included under Appendix A, which show the project area overlain on a topographic map and aerial images.

1.3. Methodology

The project area was evaluated for drainage channels that meet the definition of either a wet weather conveyance or a stream according to the Tennessee Department of Environment and Conservation (TDEC) Hydrologic Determination (HD) protocols.

To be classified as a wet weather conveyance according to TDEC criteria, the channel must be evaluated by a Qualified Hydrologic Professional (QHP) and a Hydrologic Determination (HD) Field Data Sheet must be completed and achieve an overall score of less than 19, under normal weather conditions, based on the field evaluation of three characteristics and associated aspects of the channel: *Geomorphology, Hydrology*, and *Biology.* Channels achieving a score greater than 19, under normal weather conditions, is to be considered a stream. TDEC defines a wet weather conveyance as:

"Wet Weather Conveyances" are man-made or natural watercourses, including natural watercourses that have been modified by channelization: that flow only in direct response to precipitation runoff in their immediate locality; whose channels are at all times above the ground water table; that are not suitable for drinking water supplies; and in which hydrological and biological analyses indicate that, under normal weather conditions, due to naturally occurring ephemeral or low flow there is not sufficient water to support fish, or multiple populations of obligate lotic aquatic organisms whose life cycle includes an aquatic phase of at least two months. [Rule 1200-4-3-.04(25)]

A variance in terminology occurs with the U.S. Army Corps of Engineers (USACE) as channels are classified as either an Ephemeral Stream, Intermittent Stream, or Perennial Stream, according to regulation 33 CFR 328.3 and Regulatory Guidance Letter 05-05. USACE's definition for each of the three stream classifications:

1. *Ephemeral stream*: An ephemeral stream has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

2. *Intermittent stream*: An intermittent stream has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.

3. *Perennial stream*: A perennial stream has flowing water year-round during a typical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.

The project area was also evaluated for wetland areas according to the technical criteria established by the USACE Wetland Delineation Manual Techniques (1987) along with the Interim Regional Supplement to the USACE Wetland Delineation Manual: Eastern Mountains and Piedmont Region (July 2010) for potential wetland areas. To be classified as a wetland according to USACE criteria, an area must exhibit all of the following environmental characteristics:

1. *Vegetation*. The prevalent (dominant) vegetation consists of plants that are typically adapted to life in water or anaerobic (saturated) soil conditions. These hydrophytic species (plants growing in wetlands and water), due to morphological, physiological, and/or reproductive adaptation(s), can grow, compete, reproduce, and/or persist in moist soil conditions.

2. *Soil*. Soils are present and classified as hydric, or they possess characteristics that are associated with reducing soil conditions that are formed by extended periods of inundation.

3. *Hydrology*. The area is inundated either permanently or periodically at mean water depths of less than or equal to 6.6 feet, or the soil is saturated to the surface at some time during the growing season of the prevalent vegetation.

Antecedent rainfall data was collected calculated and weather conditions for the project area were considered to be normal. Local precipitation data was derived from a Community, Collaborative, Rain, Hail, and Snow Network (CoCoRaHS) weather station designated "TN-RD-65". Precipitation mean and standard deviation were derived from NOAA ESRL PSD data from the Nashville NWSCMO AP station. A copy of the weather conditions calculation sheet is included under Appendix F.

1.4. Map Review

Prior to performing field work, G&M performed a map review of the project area utilizing data derived from the USDA's Web Soil Survey, USFWS's National Wetlands Inventory (NWI), and USGS 3D Elevation Program's LiDAR data.

Soils data from Web Soil Survey indicates that the property is underlain with Arrington, Bradyville, Cumberland, Harpeth and Lomond soil series. None of these soil types are considered hydric soils based on their classification. Wetland data sourced from the NWI mapper indicates that mapped wetland features occur within or in proximity to the project area. LiDAR data derived from USGS 3D Elevation Program indicates that the project area occurs within a relatively low gradient area. Copies of the map resources utilized during desktop review are included under Appendix E.

1.5. Jurisdictional Waters Determination

G&M personnel conducted field evaluation of the project area on February 6, 2023 under clear and sunny conditions. Prior to field evaluation, approximately 1.03" of rainfall had occurred within 7 days, with 0" occurring within 48 hours of the field visit. G&M conducted two USACE Wetland Determination Data Forms to document several topographic low areas within the project area. The following section details the observed site conditions during field work.

1.5.1. Site Conditions

At the time of the field review, the subject property was actively utilized for agricultural purposes (crop production/winter wheat) which had disturbed the natural vegetative ground cover throughout the majority of the property, as shown in Photo 1. Photo 1 is looking southwest from N35.892456°, W86.502869°. Typical fencerows within the property feature hardwood trees and shrubs consisting primarily of common hackberry (*Celtis occidentalis*) and Chinese privet (*Ligustrum sinense*). There was no standing surface water observed at the time of the field visit, despite having received over an inch of rainfall over the past 7 days.

Photo 1 – Looking north from N35.892456°, W86.502869° showing observed conditions within the subject property.

A total of two Wetland Determination Data Forms (Upland 1 and 2) were completed for the lowest elevation areas within the project area in order to document observed soils, vegetation, and hydrology. The first sample plot is located at N35.891726°, W86.507553° near Baker Road. The area is planted in winter wheat (*Triticum aestivum*) so vegetation has been disturbed. No signs of hydrology were observed at the time of field work and the soil was observed to be consistent with upland conditions. Photo 2 is looking east at Upland 1 (UPL 1) from N35.891689°, W86.507583°. The field data form for UPL 1 is attached under Appendix D.

Photo 2 – Looking northwest at UPL 1 from N35.891689°, W86.507583°.

Upland 2 (UPL 2) is located at N35.892861°, W86.507476° in a depressional area near UPL 2 in the western extent of the project area. There is a slight rise that separates the two low areas where UPL 1 and UPL 2 are located. Vegetation is dominated by winter wheat (*Triticum aestivus*) that was also observed at UPL 1. The soil was observed to be consisted with upland soils and is not considered hydric. Photo 3 is looking at the northwest at UPL 2 from N35.892822°, W86.507486°. The field data form for UPL 2 is attached under Appendix D.

Photo 3 – Looking northeast at UPL 2 from N35.892822°, W86.507486°.

The remainder of the property was investigated for any potential aquatic features but no channelized features or hydric soil was identified throughout the property. UPL 1 and UPL 2 were taken at the lowest elevation point across the property and possessed upland soils.

1.6. Summary

Griggs & Maloney, Inc. (G&M) conducted a Jurisdictional Waters Determination on an approximately 74-acre subject property (Part of Parcel ID: 071-030.00-000) located at 5104 Baker Road in Murfreesboro, Rutherford County, Tennessee.

Desktop review of the subject property utilizing data from U.S Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) maps, U.S Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Web Soil Survey maps, U.S. Geological Survey (USGS) topographic maps, digital elevation maps, StreamStats maps, and aerial photographs were examined to determine if potential aquatic resources exist within the subject property.

Based on review of the aforementioned map sources, no hydric soil or wetland areas are indicated to be present within the subject property. Soil examined at several areas within the subject property did not feature characteristics that are typical of hydric soils. The observed soil was consistent throughout the site and featured a similar matrix color.

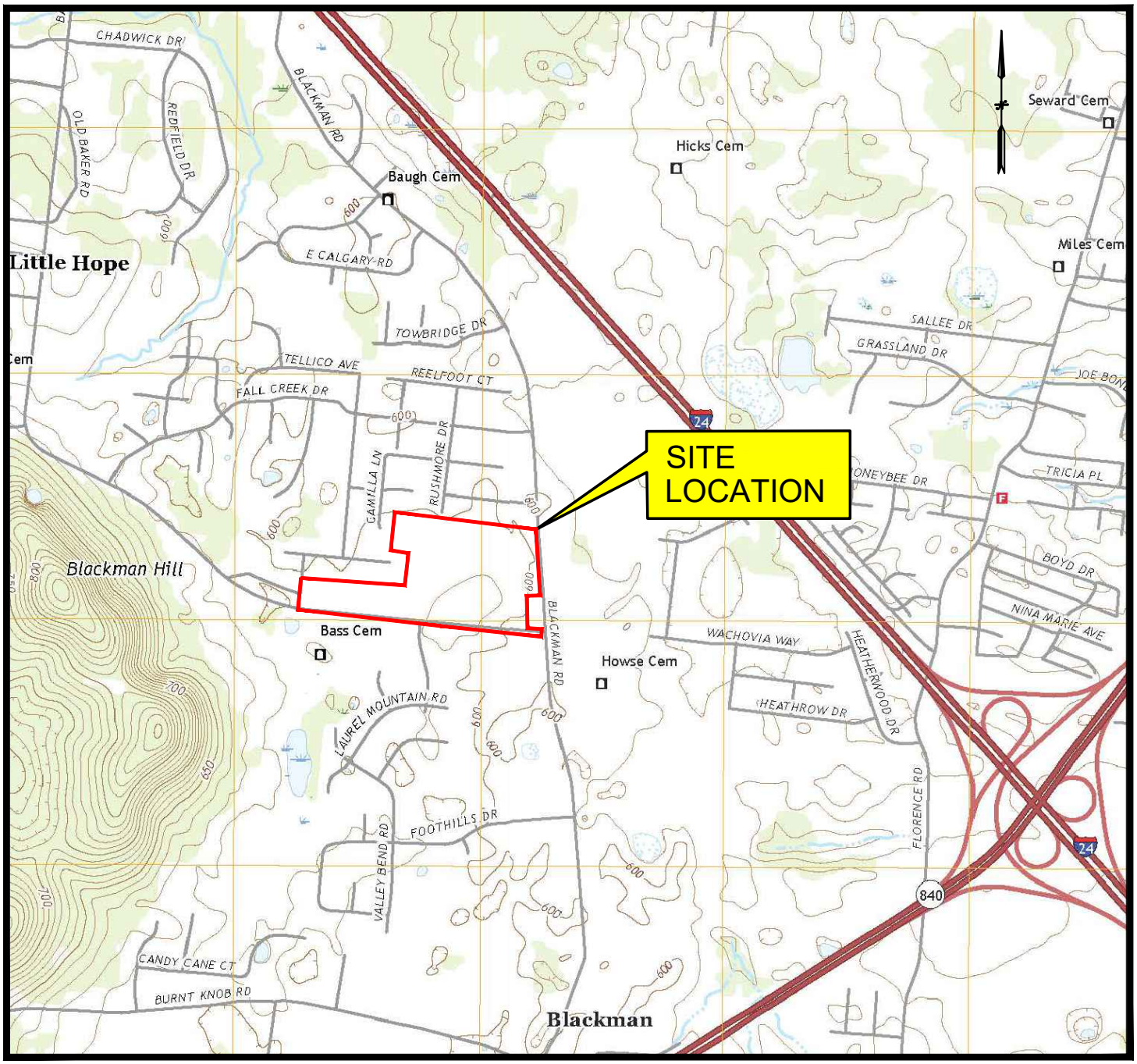
Figure 1 shows the subject property boundary on a USGS 7.5 Minute Topographic map, while Figure 2 show the subject property boundaries outlined on the most recent Google Earth Pro aerial image. Both Figure 1 and Figure 2 are included under Appendix A. Additional photos taken at various points within the subject property area are included under Appendix B. Wetland Determination Data Forms are attached under Appendix C. Weather Conditions are included under Appendix D and copies of the maps referenced for evaluation of the subject property are included under Appendix E.

It is recommended that the project area referenced in this JWD report be reviewed by the appropriate regulatory agencies and a concurrence letter be acquired from the agencies before any disturbance or development within the project area occurs.

Upon approval, G&M can facilitate the submittal of this report to the appropriate regulatory authorities to obtain the respective agencies concurrence letter, which will be provided and can be utilized to obtain future environmental related permits for the project area.

1.7. Appendix A: Figure 1: Project Area Location Map & Figure 2: Site Conditions Map

Figure 1: Project Area Location Map



2000 0 2000 4000 6000

SCALE: 1"=2000'

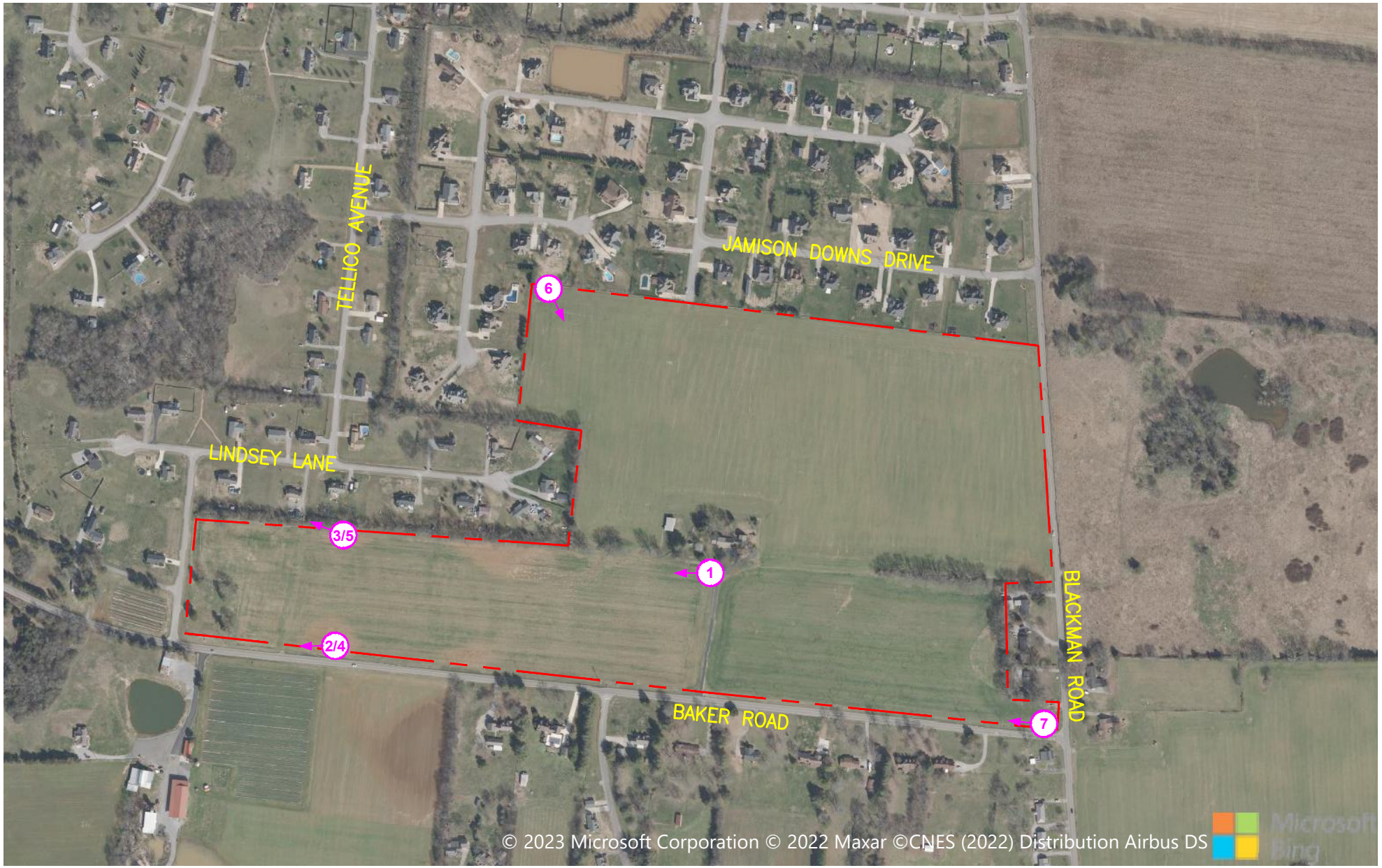
Taken from: U.S.G.S.
7.5 Minute Series (Topographic)
Walter Hill 2019
Smyrna 2019

GRIGGS & MALONEY
INCORPORATED
Engineering & Environmental Consulting
P.O. BOX 2968, MURFREESBORO, TN 37133-2968
(615) 895-8221 * FAX (615) 895-0632

Figure 1
Site Location Map
Jurisdictional Waters Determination
Rutherford County Schools
5104 Baker Road
Murfreesboro, Rutherford County, Tennessee
Project No. 300-74 February 2023

FILE NAME: L:\ENVIRONMENTAL\ACTIVE PROJECTS\300 RUTHERFORD COUNTY\300-74 BATEY PROPERTY JDW\DRAWINGS\300-74 FIG 1 SITE LOC FIG 2 DETAILS.DWG PLOTTED: 2/7/2023

Figure 2: Site Conditions Map



FILE NAME: L:\ENVIRONMENTAL\ACTIVE PROJECTS\300 RUTHERFORD COUNTY\300-74 BATEY PROPERTY JDW\DRAWINGS\300-74 FIG 1 SITE LOC FIG 2 DETAILS.DWG PLOTTED:2/22/2023

GRIGGS & MALONEY
INCORPORATED
Engineering & Environmental Consulting
P.O. BOX 2968, MURFREESBORO, TN 37133-2968
(615) 895-8221 * FAX (615) 895-0632

Legend:

1 Photo Location

250 0 250 500 750

SCALE IN FEET

Figure 2
Site Detail Map
Jurisdictional Waters Determination
Rutherford County Schools
5104 Baker Road
Murfreesboro, Rutherford County, Tennessee
Project No. 300-74 February 2023

1.8. Appendix B: Additional Photographs of Project Area

Photo 4: Observed upland soil from UPL 1.

Photo 5: Looking at observed soil for UPL 2.

Photo 6 – Looking southeast from the northwestern property corner at N35.895523°, W86.504967°.

Photo 7 – Looking northwest from the southeastern property corner at N35.890928°, W86.498664°.

1.9. Appendix C: Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Batey Property City/County: Murfreesboro / Rutherford Sampling Date: 2/6/2023
Applicant/Owner: _____ State: TN Sampling Point: UPL 1
Investigator(s): C. Maloney / A. Sanders - G&M Section, Township, Range: _____
Landform (hillslope, terrace, etc.): Ag. Field Local relief (concave, convex, none): _____ Slope (%): <5%
Subregion (LRR or MLRA): N/123 Lat: 35.891726° Long: -86.507553° Datum: _____
Soil Map Unit Name: Arrington silt loam (Ar) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation ✔, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:
Sample plot conducted in active agricultural field area in low topographic area.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✔	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: UPL 1

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size: 5')			
1. Triticum aestivum	100	Y	NI
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		

50% of total cover: 50 20% of total cover: 20

Woody Vine Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** _____ **No** _____

Remarks: (Include photo numbers here or on a separate sheet.)

Vegetation disturbed from agriculture. Winter wheat appears to be cover crop.

SOIL

Sampling Point: UPL 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8"	10YR 4/3	98						2% concretions
8+	7.5YR 4/4	100						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** ✔

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Batey Property City/County: Murfreesboro / Rutherford Sampling Date: 2/6/2023
Applicant/Owner: _____ State: TN Sampling Point: UPL 2
Investigator(s): C. Maloney / A. Sanders - G&M Section, Township, Range: _____
Landform (hillslope, terrace, etc.): Ag. Field Local relief (concave, convex, none): _____ Slope (%): <5%
Subregion (LRR or MLRA): N/123 Lat: 35.892861° Long: -86.507476° Datum: _____
Soil Map Unit Name: Arrington silt loam (Ar) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)
Are Vegetation ✔, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:
Sample plot conducted in active agricultural field area in low topographic area.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✔	Depth (inches): _____
Water Table Present?	Yes _____	No ✔	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): _____

Wetland Hydrology Present? Yes ✔ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: UPL 2

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size: 5')			
1. Triticum aestivum	100	Y	NI
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		

50% of total cover: 50 20% of total cover: 20

Woody Vine Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** _____ **No** _____

Remarks: (Include photo numbers here or on a separate sheet.)

Vegetation disturbed from agriculture. Winter wheat appears to be cover crop.

SOIL Sampling Point: UPL 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6"	10YR 4/3	95					SCL	5% concretions
8+	10YR 4/4	85					SCL	15% concretions

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** ✔

Remarks:

1.10. Appendix D: Weather Conditions Calculation Sheets

Normal Weather Conditions Calculations Table

			Long-term rainfall records							
	Month	**Standard Deviation**	**Minus One Std. Dev. (DRY)**	**Normal (Mean inches)**	**Plus One Std. Dev. (WET)**	**Actual Rainfall**	**Condition (elevated, low, average)**	**Condition value**	**Month weight value**	**Product of previous two columns**
1st prior month*	January	2.52	1.97	4.49	7.01	5.68	Average	2	3	6
2nd prior month*	December	2.74	2	4.74	7.48	4.86	Average	2	2	4
3rd prior month*	November	2.17	1.99	4.16	6.33	6.15	Elevated	3	1	3
									Sum =	13

Note:

If sum is:	
6-9	then prior period has been abnormally dry
10-14	then prior period has been normal (average)
15-18	Then prior period has been abnormally wet

Condition value:	
Low =	1
Average =	2
Elevated =	3

Notes: Field visit -2/6/2023

1.03" of rainfall recorded in previous 7 days

CoCoRaHS - TN-RD-65/TN-RD-1

NOAA ESRL PSD - MURFREESBORO 5N

Conclusion: Normal weather conditions present.

1.11. Appendix E: Reference Maps

USFWS NWI Map

U.S. Fish and Wildlife Service
National Wetlands Inventory

Wetlands

February 22, 2023

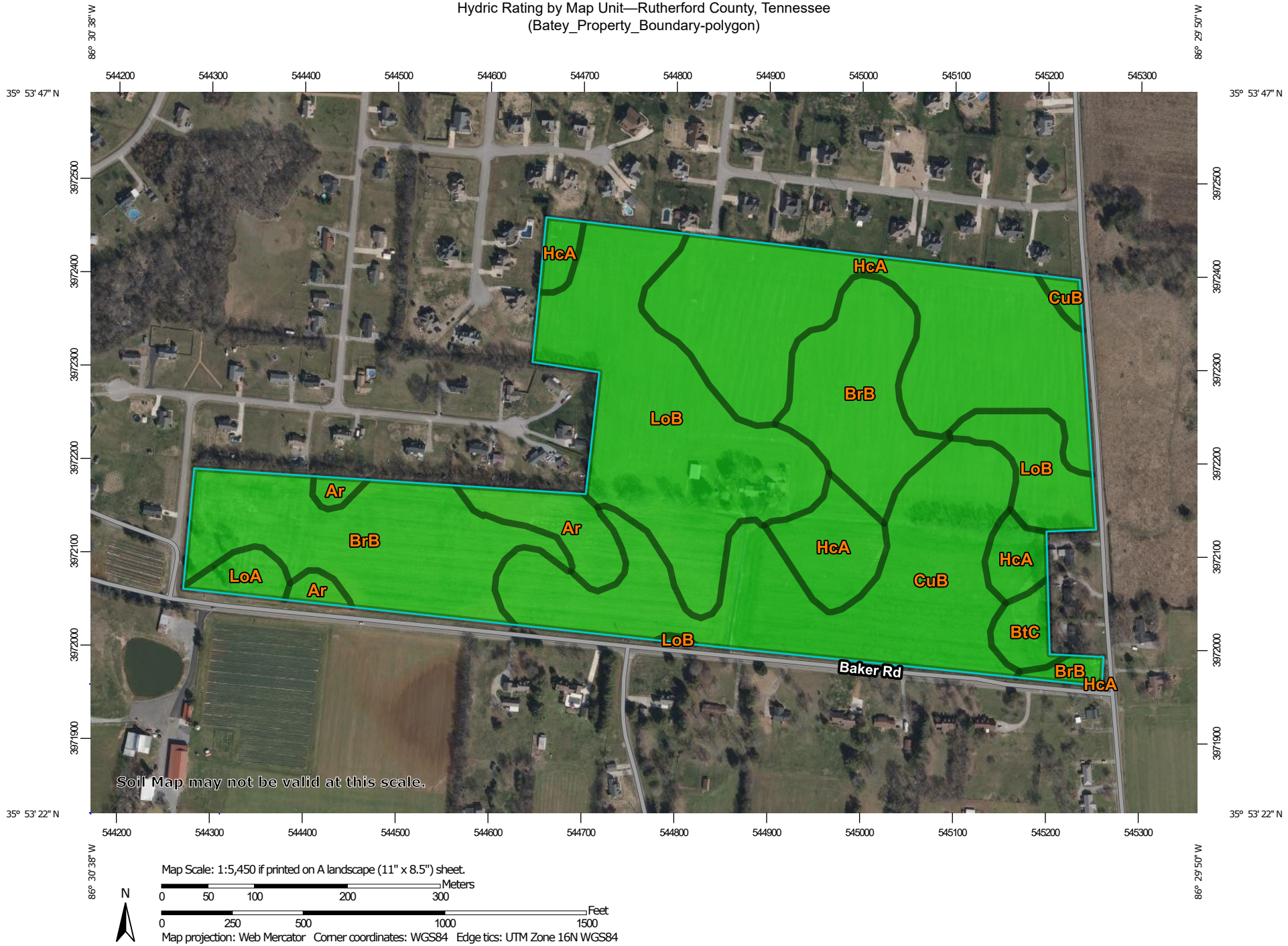
Wetlands

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

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

USDA NRCS Soil Maps

Hydric Rating by Map Unit—Rutherford County, Tennessee
(Batey_Property_Boundary-polygon)



Map Scale: 1:5,450 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 50 100 200 300

Feet
0 250 500 1000 1500

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
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Lines
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Points
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Rutherford County, Tennessee
Survey Area Data: Version 19, Sep 15, 2022

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

Date(s) aerial images were photographed: Feb 14, 2020—Mar 1, 2020

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

Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Ar	Arrington silt loam, 0 to 2 percent slopes, occasionally flooded	0	3.0	4.0%
BrB	Bradyville silt loam, 2 to 5 percent slopes	0	16.7	22.6%
BtC	Bradyville-Rock outcrop complex, 2 to 12 percent slopes	0	1.1	1.5%
CuB	Cumberland silt loam, 2 to 5 percent slopes	0	15.6	21.1%
HcA	Harpeth silt loam, 0 to 2 percent slopes	0	19.5	26.4%
LoA	Lomond silt loam, 0 to 2 percent slopes	0	1.0	1.4%
LoB	Lomond silt loam 2 to 5 percent slopes	0	16.9	22.9%
Totals for Area of Interest			**73.7**	**100.0%**

Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Rating Options

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

USGS 3DEP Hillshade Map


USGS National Map 3D Elevation Program (3DEP). December 22, 2022., USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed June, 2022.

CONSOLIDATED UTILITY DISTRICT
Rutherford County, Tennessee

January 20, 2023

Mr. Trey Lee
Rutherford County School District
2240 South Park Boulevard
Murfreesboro, TN 37128

Re: Rutherford County Schools (elementary and middle)
5104 Baker Road, Murfreesboro, TN
Tax Map 71, Parcel(s) 30.00 and 30.01
Will Serve Letter – Water Only

Dear Mr. Trey Lee,

This "Will Serve Letter" is for the property identified above (hereafter "Developer/Development") which lies within the water service area of Consolidated Utility District of Rutherford County (hereafter "the District"). Based on the Water Service Availability Request provided to the District, your proposed project will create 1 commercial lot for both an elementary school and a middle school. The District is advised that the project will be completed in more than one phase. The fire hydrant requirement submitted **(NOT via the Rutherford County Fire-Rescue Dept.)** was 500 gpm @ 20 psi, the fire sprinkler requirement submitted **(NOT from a fire sprinkler contractor/designer and assumed to exclude the hose allowance)** was 500 gpm at 40 psi, and an irrigation requirement of 100 gpm was assumed.

The District's water system currently has a 12-inch water main along Baker Road and a 6-inch water main along Blackman Road, either of which could be the main point of connection for the Development, but the best and highly recommended connection is to the 12-inch water main. **The current infrastructure should meet the domestic water, irrigation, and ASSUMED fire demands of the Development.** Fire demands are based on the fire hydrant and fire sprinkler requirements submitted. The Developer should verify current requirements with the appropriate local regulating body. *Once more details are available concerning the size of the proposed structures and their type of construction the Developer should verify that these fire flow requirements are still valid with the appropriate local regulating body.* If additional fire demands are required, an additional analysis must be completed to determine feasibility and availability of the additional demand before moving forward with the project. It appears that no water mains will be required within the Development since the lot can be served by the existing water system infrastructure. However, if that changes as the Development's design proceeds the exact details of the connections and water main size required throughout the Development will be determined in the design phase after construction plans are submitted and reviewed.

The District understands sewer service for this development will be provided by a proposed decentralized wastewater system which will be owned by the Rutherford County School District but operated and maintained by the District per a pending contractual arrangement for such. The Developer should consult with District's Engineering Manager, Jason Laxson at phone 615-867-7327 or at email jlaxson@cudrc.com for more information and advice before and during the design and construction of the proposed decentralized wastewater system .

No public water improvements and/or extensions shall be approved or installed until all conditions are fulfilled as outlined in the District's Developer's Packet and are subject to payment by Developer of engineering and inspection fees. All water lines/facilities improvements needed to serve the property in question are to be installed by the Developer in accordance with the District's policies and procedures as outlined in the Technical Specifications of the District which can be found on our website or at our office.

This letter is specifically subject to the above conditions and such other terms and conditions as the District may require from time to time or at the time the water line improvements/upgrades are to be implemented and installed according to the District's requirements. This letter is intended only as a matter of "general information" and is not a contract between the parties. The letter shall not be considered an agreement or obligation of the District to provide water service to the Developer. In addition, there are or may be additional terms, requirements, and conditions of the District to provide water service to the Developer which are not set forth or otherwise referred to in this letter.

In addition to the foregoing, this letter and any approval(s) previously granted the Developer by the District shall automatically expire within two (2) years from the date of this letter, unless the District has approved the Developer's Construction Plans (meaning all the District's review comments have been fully addressed and it is ready for "CUD Water Plans" to be prepared) or the District has issued an approved commercial meter application for the site.

Please feel welcome to call or email if you have questions.

Sincerely,

Alan Stuemke

Alan Stuemke, P.E.
Director of Engineering, Consolidated Utility District
PH: 615-225-3311 | Fax: 615-225-3314 | Email: astuemke@cudrc.com

Pc: Roger Goodson, CUD General Manager
Jimmy Hailey, P.E., James C. Hailey & Company
Joshua Sanders, Rutherford County Fire Marshal

City of MURFREESBORO TENNESSEE

. . . creating a better quality of life

TO: Trey Lee

FROM: Greg McKnight

COPY: James Sullivan; Matthew Blomeley; Valerie Smith; Greg McKnight; Sam Huddleston; Darren Gore

DATE: January 6, 2023

SUBJECT: Request For "Will Serve" John L. and Melissa Batey

The City of Murfreesboro is in receipt of your letter, dated December 21, 2022, to Mrs. Valerie Smith requesting a sanitary sewer "will serve" letter for the John L. and Melissa Batey property located at 5104 Baker Road. The City of Murfreesboro always appreciates the partnering opportunities we have with Rutherford County Schools.

The request for sanitary sewer service from the Murfreesboro Water Resources Department is not always a straightforward process and has several different factors for consideration. The City has had extensive discussion over the last many years regarding sewer capacity throughout the City and how we serve outside City Sewer services.

The proposed "Batey" school site is not within the City Limits of Murfreesboro; as such, the Rutherford County School Board must file a formal request for annexation into the City pursuant to Section 33-2.1.1 of the Murfreesboro City Code.

https://library.municode.com/tn/murfreesboro/codes/code_of_ordinances?nodeId=PTIICO_CH33WARE_ARTIINGE_S33-2.1.1COWASESEPROULI

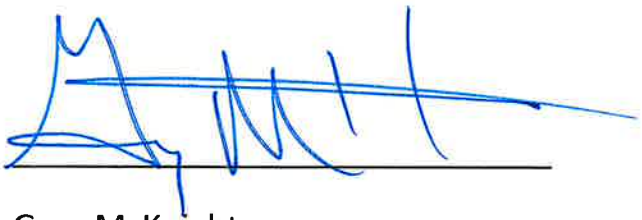
The written request for annexation needs to be submitted to the City's Planning Director for action by the City Planning Commission and Murfreesboro City Council. The request will need to adhere to the requirements of the City of Murfreesboro. Other City provided services should be confirmed prior to commencing the annexation process if sanitary sewer service is the impetus behind the annexation request.

The City Planning Commission and City Council will decide as to annexation in the ordinary course of business. Please note that denying annexation does not automatically allow rights to sanitary sewer service as an outside the city customer. Service as an outside the city customer must be approved by the City Planning Commission and City Council; and the Developer must receive site plan approval of the proposed development by both the City of Murfreesboro Planning and Engineering Department as well as the Rutherford County Planning and Engineering Department, ensuring that site plan approval is approved by both bodies.

The proposed sanitary sewer service to this property will also require a hydraulic capacity analysis. The Shelton Square pump station was designed for a certain planned amount of development within the Shelton Square subdivision and presumed amount of development in the surrounding properties. The proposed school site was not considered in any of those capacity calculations; as such, the pumping station will be undersized or other developable property that was presumed to be served may not be serviceable if sanitary sewer service is provided to the proposed school site.

While your letter is specific to sanitary sewer service, one other point that the city believes to be of substantial interest is the level of service the current public roadway infrastructure will support with the proposed school traffic. While internal traffic circulation is always one of the City's highest priorities when reviewing a school site, queuing in drop-off and pick-up areas, the level of service for public ingress and egress using public roadways to and from this proposed County school location is also of considerable importance. Please understand that the City of Murfreesboro looks at all developments' peak traffic patterns and may recommend public roadway improvements in conjunction with annexation approval if the existing transportation infrastructure is considered deficient, including traffic studies around the adjacent area. There is substantial development in the area, and it is of concern that Blackman Road, Baker Road, Burnt Knob Road, and the Manson Pike intersection will not be able to handle the amount of traffic generated with the additional 5000 plus students and the associated traffic.

The City looks forward to working with the Rutherford County School Board in reviewing this site for annexation and other planned City services including sanitary sewer service. Please feel free to give me a call if you have any questions or require any additional information.



Greg McKnight
Planning Director

BLACKMAN ROAD SCHOOL CAMPUS

Traffic Impact Study

2/22/2023

Prepared For:
Rutherford County Schools

Vicinity Map
(Not to Scale)

Property Address: 1008 John Locke Lane
Murfreesboro, TN 37129

BURCH TRANSPORTATION

1114 17th Avenue South Ste.103
Nashville, TN 37206
(615) 258-8551
www.burchtransportation.com

In collaboration with:

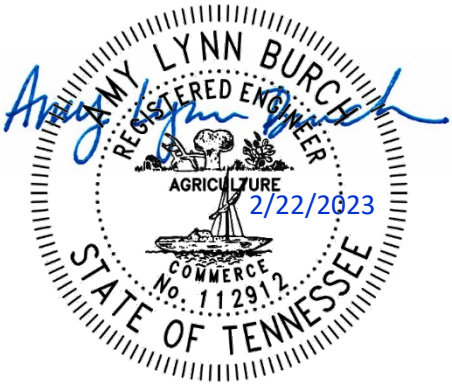
COLLIER ENGINEERING CO., INC.

2949 Nolensville Pike
Nashville, TN 37211
(615) 331-1441
www.collierengineering.com

BLACKMAN ROAD SCHOOL CAMPUS TRAFFIC IMPACT STUDY

PREPARED FOR:

Rutherford County Schools



PREPARED BY:

BURCH TRANSPORTATION, LLC

BURCH
TRANSPORTATION

Table of Contents

List of Tables

List of Figures

Appendix

1. Executive Summary

Rutherford County Schools is planning to develop a new school campus in the Blackman community outside the Murfreesboro city limits. More specifically, the potential school campus will include a new elementary school and middle school on the 72-acre parcel located on the northwestern corner of the intersection of Blackman Road and Baker Road. The parcel is currently located in unincorporated Rutherford County and zoned Agricultural Residential (AR), which is intended for low-density residential development and farming activities. Based on the information provided by Rutherford County Schools, the new campus will have a total enrollment of 2,400 students – 1,200 elementary and 1,200 middle - and will be completed in five years.

In order to provide data for this study, turning movement counts were conducted at the study intersections for the AM and PM peak hours when Rutherford County schools were in session. The count data utilized for the TIS was collected on Thursday, January 12, 2023. Background traffic volumes for the year 2028 were developed using historical TDOT traffic data as well as site-specific developments that have been approved but not yet constructed in the vicinity of the project site. The traffic that is estimated to be generated by the project site was then added to the street network. The analyses presented in this report indicate that the proposed development will generate a manageable amount of new vehicular traffic in the study area. In total, the proposed school campus is expected to generate approximately 1,605 trips and 844 trips in the AM arrival and PM dismissal periods, respectively.

Based on the analyses presented in this study and review of the study area and proposed development information, the following is recommended to accommodate the proposed school campus and provide for efficient traffic operations and safety. The recommendations are grouped into short-term and long-term improvements. Those recommendations classified as short-term are generally located on Baker Road and Blackman Road near the project site. These should be completed as the schools are constructed. Recommendations classified as long-term include off-site intersection improvements necessary for the efficient and safe traffic operation in the broader study area. The timing of these improvements should be based on the phasing of school demands and should be coordinated with other planned road improvements previously identified by the County and City.

Short-Term Recommendations

Baker Road and Elementary School Access #1 (Entrance)

- The southbound approach of Elementary School Access #1 should be stop-controlled and should include two entering lanes and one exiting lane.
- The eastbound approach of Baker Road at the westernmost Elementary School access should include an exclusive left turn lane with approximately 250 feet of storage.
- The westbound approach of Baker Road should include an exclusive right turn lane. This turn lane should extend east to the adjacent access, providing approximately 450 feet of storage.
- The Elementary School Access #1 on Baker Road should be designed and constructed to maintain sufficient intersection sight distance, clear of any obstructions such as vegetation, landscaping, hardscaping, signs, and fencing within the departure sight triangle.

Baker Road and Elementary School Access #2 (Exit)

- The southbound approach of Elementary School Access #2 should be stop-controlled and should include one entering lane and two exiting lanes. The two exiting lanes should be striped as an exclusive left turn lane and an exclusive right turn lane.

- The eastbound approach of Baker Road at the easternmost Elementary School access should include an exclusive left turn lane with approximately 150 feet of storage.
- The Elementary School Access #2 on Baker Road should be designed and constructed to maintain sufficient intersection sight distance, clear of any obstructions such as vegetation, landscaping, hardscaping, signs, and fencing within the departure sight triangle.

Blackman Road and Middle School Access #1 (Entrance)/Elene Way

- The eastbound approach of Middle School Access #1 should align with Elene Way, which provides access to the approved Smith Farms development on the east side of Blackman Road.
- The eastbound approach should be stop-controlled and include two entering lanes and one exiting lane.
- The northbound approach of Blackman Road at the southernmost Middle School access should include an exclusive left turn lane with approximately 150 feet of storage. As the primary entrance for middle school parent traffic, additional storage should be provided if right-of-way along Blackman Road is available.
- The southbound approach of Blackman Road should include an exclusive right turn lane. This turn lane should extend north to the adjacent access, providing approximately 500 feet of storage.
- At a minimum, crosswalks should be provided on the northbound approach of the intersection. In addition, a School Crossing Assembly consisting of a School (S1-1) sign with supplemental diagonal arrow plaque (W16-7P) should be installed at this location facing northbound and southbound traffic on Blackman Road.
- The Middle School Access #1 on Blackman Road should be designed and constructed to maintain sufficient intersection sight distance, clear of any obstructions such as vegetation, landscaping, hardscaping, signs, and fencing within the departure sight triangle.

Blackman Road and Middle School Access #2 (Exit)

- The eastbound approach of Middle School Access #2 should be stop-controlled and should include one entering lane and two exiting lanes. The two exiting lanes should be striped as an exclusive left turn lane and an exclusive right turn lane.
- The northbound approach of Blackman Road at the northernmost Middle School access should include an exclusive left turn lane with approximately 150 feet of storage.
- The Middle School Access #2 on Blackman Road should be designed and constructed to maintain sufficient intersection sight distance, clear of any obstructions such as vegetation, landscaping, hardscaping, signs, and fencing within the departure sight triangle.

School Zone Plan

- A 20-mph school zone should be designated along Blackman Road and Baker Road near the project site. A School Zone sign (S1-1) with supplemental Ahead plaque (W16-9P) should be installed at the following locations:
    - On Blackman Road approximately 200 feet south of Baker Road facing northbound traffic;
    - On Blackman Road approximately 500 feet north of the Middle School Access #2 facing southbound traffic;
    - On Baker Road approximately 500 feet west of the Elementary School Access #1 facing eastbound traffic.
- Due to the 40-mph posted speed limit on Blackman Road and Baker Road, Reduced School Speed Limit Ahead signs (S4-5) should be installed on both roadway facilities. Specifically, a S4-5 sign should be installed at the following locations:

  - On Blackman Road approximately 100 feet south of Baker Road facing northbound traffic;
  - On Blackman Road approximately 400 feet north of the Middle School Access #2 facing southbound traffic;
  - On Baker Road approximately 400 feet west of the Elementary School Access #1 facing eastbound traffic.
- A School Speed Limit Assembly consisting of a School Speed Limit 20 When Flashing sign (S5-1) with a S4-3P supplemental 'School' plaque and flashing yellow beacons should be installed at the following locations:
  - On Blackman Road approximately 100 feet south of Baker Road facing northbound traffic;
  - On Blackman Road approximately 300 feet north of the Middle School Access #2 facing southbound traffic;
  - On Baker Road approximately 100 feet west of Blackman Road facing westbound traffic; and
  - On Baker Road approximately 300 feet west of the Elementary School Access #1 facing eastbound traffic.
- End School Zone signs (S5-2) should be placed at the following locations:
  - On Blackman Road approximately 100 feet south of Baker Road facing southbound traffic;
  - On Blackman Road approximately 400 feet north of the Middle School Access #2 facing northbound traffic;
  - On Baker Road approximately 400 feet west of the Elementary School Access #1 facing westbound traffic.

School Arrival and Dismissal Operations

- Elementary School parents should be instructed to enter the site from Baker Road and specifically from the westernmost access point (Elementary School Access #1). As mentioned previously, this access should be designed and constructed with two entering lanes that carry parent traffic northbound for pick-up/drop-off to occur on the west and north sides of the school. Parents should be instructed to exit the site via the easternmost access point on Baker Road (Elementary School Access #2).
- Elementary School bus traffic should enter the site via Elementary School Access #2, proceed west along the school frontage to the loading/unloading zone, and exit to Baker Road via Elementary School Access #1. As such, intersections along this route should be designed and constructed with curb radii that accommodate the turning wheel paths of school buses.
- Middle School parents should be instructed to enter the site from Blackman Road and specifically from the southernmost access point (Middle School Access #1). As mentioned previously, this access should be designed and constructed with two entering lanes that carry parent traffic westbound for pick-up/drop-off to occur on the west side of the school. Parents should be instructed to exit the site via the northernmost access point on Blackman Road (Middle School Access #2).
- Middle School bus traffic should enter the site via Middle School Access #2, proceed south along the school frontage to the loading/unloading zone, and exit to Blackman Road via Middle School Access #1. As such, intersections along this route should be designed and constructed with curb radii that accommodate the turning wheel paths of school buses.

- Raised crosswalks should be constructed on internal roadways where students will routinely be crossing vehicular traffic. At a minimum, a raised crosswalk should be constructed where elementary and middle school bus riders will be crossing internal roadways from the bus staging areas to the school entrances.
- For both arrival and dismissal times at the schools, traffic control officers/crossing guards should be utilized at the entry and exit points to facilitate efficient traffic operations, prevent off-site queueing onto public roads, and provide safe crossing opportunities for any students that walk to school.
- Based on the staggered arrival times for the elementary and middle schools, it is recommended that two crossing guards be first staged at the Elementary School Access #1 to facilitate entering traffic and at Elementary School Access #2 to facilitate exiting traffic. Once traffic at the Elementary School has sufficiently subsided, these crossing guards should move to the Middle School Accesses to facilitate traffic at those two locations.
- In addition, sidewalks should be constructed on the western side of Blackman Road and on the northern side of Baker Road on the school property to facilitate students walking from adjacent neighborhoods. Internal school sidewalks should connect the school buildings and the sidewalks along Blackman Road and Baker Road.

Long-Term Recommendations

Blackman Road and Baker Road Cross Sections

- Through a previous planning effort, Blackman Road and Baker Road have been identified for future improvement. Namely, Blackman Road is proposed to be widened to a 5-lane cross section and Baker Road is proposed to be widened to a 3-lane cross section.
- As such, additional ROW should be preserved on the project site along Blackman Road and Baker Road for any future improvements and/or widening of these facilities.

Blackman Road and Baker Road

- With the anticipated location of future students, significant traffic volumes will be added to the unsignalized intersection of Blackman Road and Baker Road. Under the current one-way stop control and with no capacity improvements, the eastbound approach operates at LOS F under the projected AM peak hour conditions.
- Although the eastbound approach would still operate at LOS F, provision of a northbound left turn lane on Blackman Road can significantly decrease delay for eastbound right turning vehicles (from 395 seconds to 65 seconds). Any additional delay reductions would require significant changes to traffic control.
- After investigation of multiple alternatives, it is recommended that a single-lane roundabout be considered as the preferred traffic control mechanism at this location long-term as it would significantly improve the efficiency of traffic operations in the area. The timing of the roundabout construction should consider the phasing of school enrollment, adjacent private developments, and the County's long-term plan to widen Blackman Road to a 5-lane cross section as identified in Murfreesboro's 2040 Major Thoroughfare Plan.
- Prior to the roundabout construction and/or if a roundabout is not feasible in this location, an exclusive left turn lane should be constructed on the northbound approach of Blackman Road. At a minimum, this turn lane should include approximately 100 feet of storage.

Baker Road and 1-Mile Lane/Altavista Lane

- The addition of the Blackman Road School Campus will result in significant traffic volumes added to the intersection of Baker Road and 1-Mile Lane/Altavista Lane. This is most noticeable in the AM peak hour when many parents leaving the schools after drop-off are assumed to make a northbound left turn movement to leave the study area, destined for the interstate.
- The addition of volume to the northbound left turn movement significantly increases delay for the conflicting eastbound left turn movement. While the delays are high (approximately 1,385 seconds), the 95th percentile queue is projected to be approximately 5 vehicles, which exceeds the available storage length by approximately 60 feet.
- Of note is that this intersection is currently located within the municipal limits of Smyrna, and the existing right-of-way on either side of 1-Mile Lane is limited based on adjacent residential development.
- Additional turn lanes as well as AWSC were evaluated as potential improvements to reduce delays at this intersection. However, none of the tested scenarios has a significant benefit on the intersection overall. The most significant improvement in vehicular delay can be achieved through construction of a single-lane roundabout. As such, the feasibility of constructing a roundabout at this location should be evaluated as a long-term solution for reducing delays for minor street turning movements.

Intersection of Blackman Road and Burnt Knob Road/Manson Pike

- The all-way stop traffic control and existing lane configurations causes this intersection to operate inefficiently under existing conditions. With the addition of background growth in the area and the Blackman Road School Campus, this intersection as well as many of the individual turning movements are expected to operate at a LOS F with significant delays.
- Based on the data collected as part of this TIS, it is anticipated that the projected traffic volumes at this intersection will meet MUTCD warrants for a traffic signal if the schools are constructed. Once a signal warrant study confirms this assumption, a traffic signal should be constructed at this intersection. With the construction of a traffic signal:
    - The northbound approach of Blackman Road should be widened to include an exclusive left turn lane with approximately 50 feet of storage, a single through lane, and an exclusive right turn lane with approximately 75 feet of storage. This approach should include permissive left turn phasing.
    - The southbound approach of Blackman Road should be restriped to provide an exclusive left turn lane with approximately 200 feet of storage, a single through lane, and an exclusive right turn lane with approximately 50 feet of storage. This approach should include protected-permitted left turn phasing.
    - The eastbound approach of Burnt Knob Road and the westbound approach of Manson Pike should retain the existing lane configurations and should both include protected-permitted left turn phasing.
    - The intersection should include crosswalks, curb ramps, pedestrian signals, and push buttons on all approaches.
- It is anticipated that the construction of the traffic signal would occur with the future widening of Blackman Road to a 5-lane cross section as identified in Murfreesboro's 2040 Major Thoroughfare Plan.

The recommendations presented above are conceptual in nature and intended for developing planning level cost estimates for necessary site improvements associated with the proposed Blackman Road School

Campus. All roadway design details including turn lane storage lengths, taper lengths, lane transitions, curb radii, etc. should be finalized through the design and preparation of construction documents and should be based on survey, existing roadway features, right-of-way constraints, etc. Based on the analyses presented in this report, no further improvements are recommended in association with the Blackman Road School Campus.

2. Introduction

The potential Blackman Road School Campus is located at 1008 John Locke Lane in unincorporated Rutherford County. More specifically, the campus is located on the northwestern corner of the intersection of Blackman Road and Baker Road. The proposed school campus will be located on a single 72-acre parcel that is currently zoned as AR. This zoning classification is intended to preserve rural, low-density development patterns conducive for farming activities. Based on information provided by Rutherford County Schools, the school campus will include a 1,200-student elementary school and a 1,200-student middle school. According to the preliminary site plan provided in Appendix A, four vehicular accesses will be provided with two located on Blackman Road and two located on Baker Road. The two campuses will be connected by an internal roadway network and parking areas. Roadway connectivity to the adjacent neighborhoods to the north and west is not anticipated.

The project site location is presented in Figure 1. For the purpose of this traffic analysis, the school campus was assumed to be complete in five years, which is a 2028 horizon. The intention of this traffic impact study (TIS) is to identify the amount of traffic expected to be generated by the proposed schools and evaluate its impact on the surrounding roadways and intersections. The TIS will also identify appropriate improvements necessary to accommodate the project's vehicular and non-motorized traffic and ensure safe and efficient school operations.

Figure 1: Project Site Location

3. Existing Conditions

Primary access to the project site is provided by Blackman Road and Baker Road. The following provides a description of the roadways and intersections within the study area and the existing traffic data.

3.1 Roadway Descriptions

Blackman Road is categorized as a minor arterial according to Murfreesboro's 2040 Major Thoroughfare Plan (MTP). The land uses along Blackman Road near the project site are a mostly low-density residential and agricultural. Blackman Road is a two-way street that generally provides access from Veterans Parkway and I-840 to the south and to residential areas to the north. Blackman Road includes a single travel lane in each direction immediately adjacent to the project site. The posted speed limit on Blackman Road is 40 mph. There are no pedestrian or bicycle facilities and no transit service on Blackman Road in the vicinity of the project site. In Murfreesboro's 2040 MTP, Blackman Road is recommended for widening to a 5-lane cross section.

Looking north on Blackman Road
Near the Project Site

Baker Road is classified as a local road in Murfreesboro's 2040 Major Thoroughfare Plan (MTP). Adjacent to the project site, Baker Road runs in an east-west direction before turning north to provide access to the Stewarts Creek area. Near the project site, Baker Road is a 2-lane facility with a single travel lane in each direction. The posted speed limit on Baker Road is 40 mph. There are no pedestrian or bicycle facilities and no transit service on Blackman Road in the vicinity of the project site. In Murfreesboro's 2040 MTP, Baker Road is recommended for widening to a 3-lane cross section.

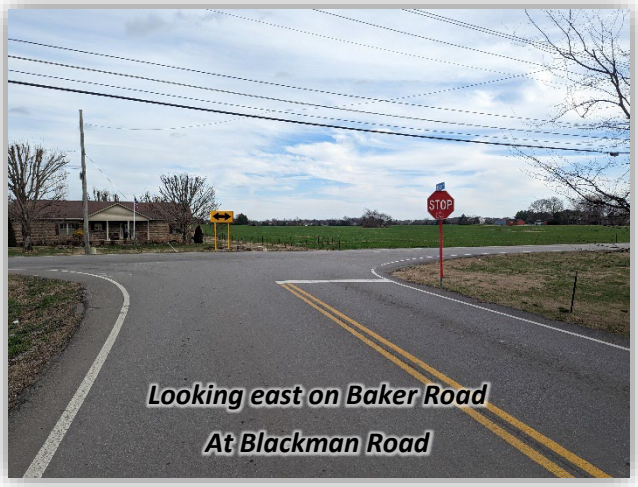
Looking west on Baker Road
Near the Project Site

3.2 Intersection Descriptions

The following four (4) intersections were studied in this analysis:

- Blackman Road and Baker Road (one-way stop)
- Blackman Road and Burnt Knob Road/Manson Pike (all-way stop)
- Baker Road and Bass Road (one-way stop)
- Baker Road and 1-Mile Lane/Altavista Lane (two-way stop)

The intersection of **Blackman Road and Baker Road** is an unsignalized intersection with three approaches. The northbound and southbound approaches of Blackman Road both have a single shared lane for all movements. The eastbound approach of Baker Road is stop controlled and has a single lane for all movements. There are no pedestrian crosswalks provided at the intersection.



Looking east on Baker Road
At Blackman Road

The intersection of **Blackman Road and Burnt Knob Road/Manson Pike** is an unsignalized, all-way stop intersection with four approaches. The northbound approach of Blackman Road includes one shared left turn/through lane and an exclusive right turn lane with approximately 50 feet of storage. The southbound approach of Blackman Road has a single shared lane for all movements. The eastbound approach of Burnt Knob Road includes one left turn lane with approximately 150 feet of storage and a shared through/right turn lane. The westbound approach of Manson Pike includes one left turn lane with approximately 150 feet of storage and a shared through/right turn lane. There are no pedestrian crosswalks provided at the intersection.


Looking south on Blackman Road
At Burnt Knob Road/Manson Pike

The intersection of **Baker Road and Bass Road** is an unsignalized intersection with three approaches. The northbound and southbound approaches of Baker Road both have a single shared lane for all movements. The westbound approach of Bass Road is stop controlled and has a single lane for all movements. There are no pedestrian crosswalks provided at the intersection.

The intersection of **Baker Road and 1-Mile Lane/Altavista Lane** is an unsignalized intersection with four approaches. The northbound and southbound approaches of Baker Road both have a single shared lane for all movements. The eastbound approach of 1-Mile Lane is stop controlled and has an exclusive left turn lane with approximately 65 feet of storage and a shared through/right turn lane. The westbound approach of Altavista Lane is stop controlled and has a single shared lane for all movements. Buffered sidewalks are provided on Altavista Lane but there are no otherwise no pedestrian facilities provided at the intersection.

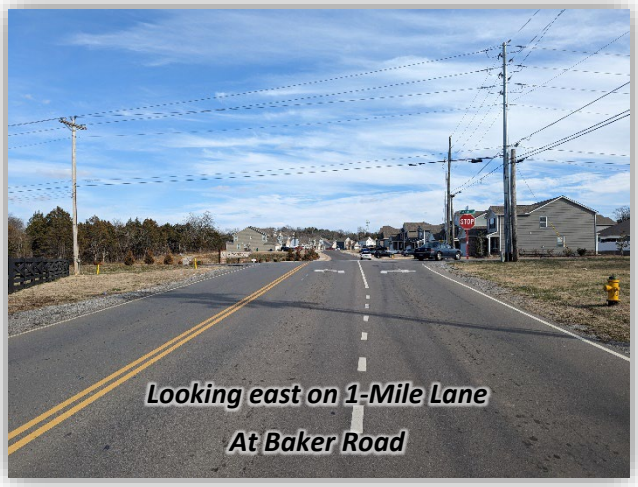
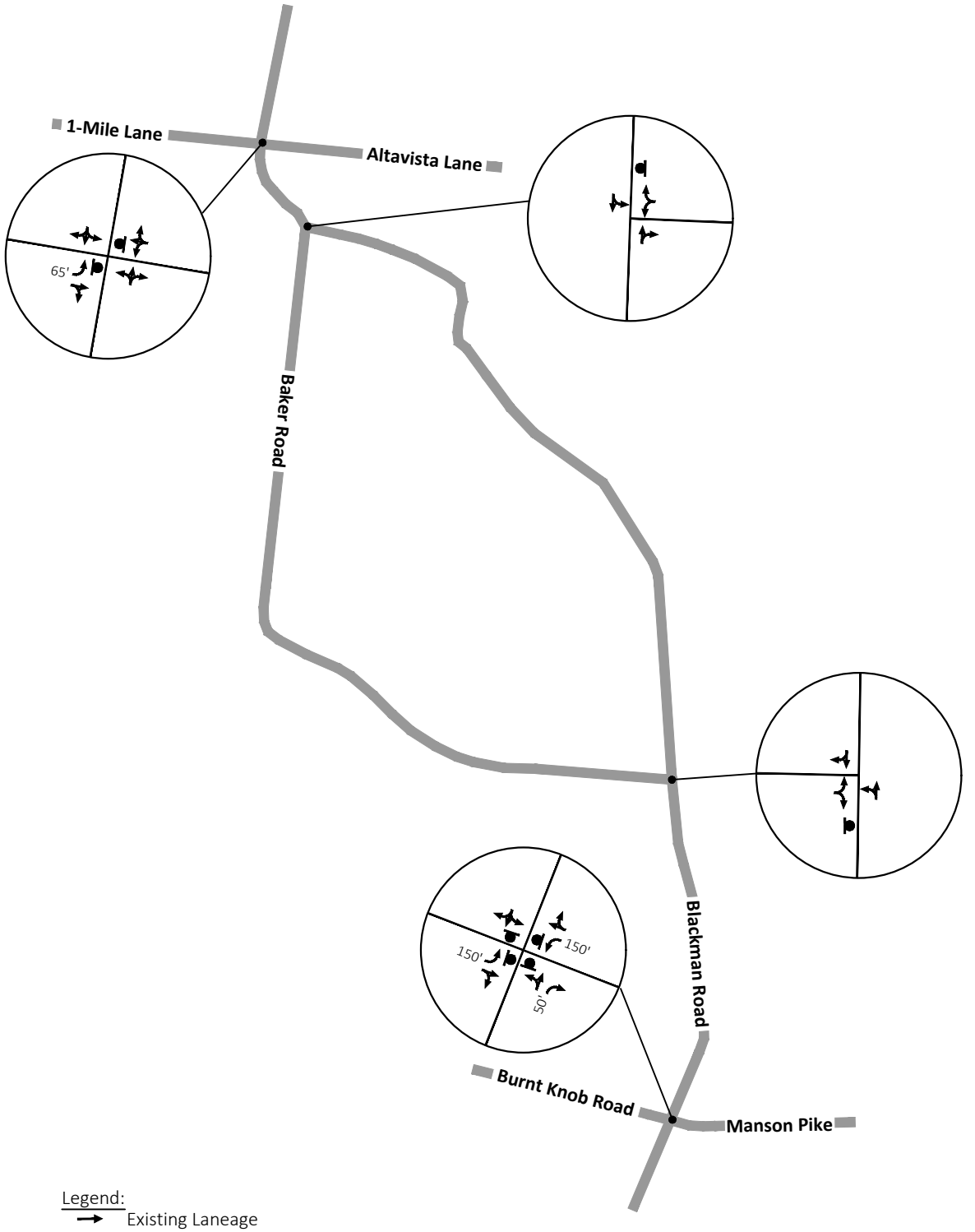


Figure 2 presents the intersection laneage and traffic control for the study intersections.

Figure 2: Existing Laneage and Traffic Control



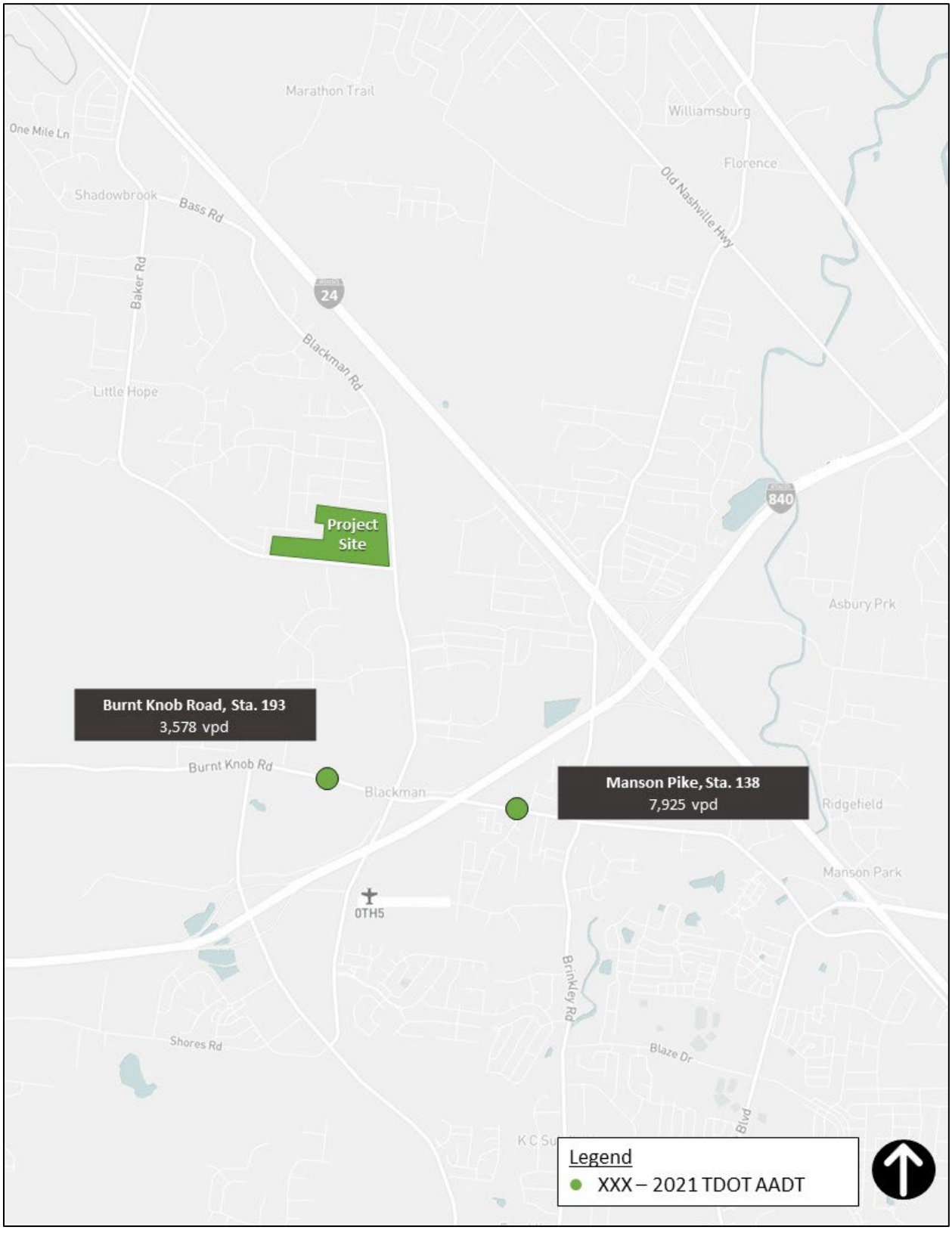
3.3 Existing Traffic Volumes

Existing traffic data on Burnt Knob Road and Manson Pike were obtained from the Tennessee Department of Transportation (TDOT). The 2021 traffic data is summarized in Figure 3. As shown, the Annual Average Daily Traffic (AADT) on Burnt Knob Road is approximately 3,578 vehicles per day west of Blackman Road. South of the project site and east of Blackman Road, the AADT of Manson Pike is approximately 7,925 vehicles per day. The TDOT count station data is included in Appendix B.

Turning movement counts were conducted for the study intersections on Thursday, January 12, 2023, when Rutherford County schools were in session. From the traffic counts, the peak hours at the study intersections were determined to be 6:45 – 7:45 AM and 2:30 – 3:30 PM. However, to align with the anticipated school peak hours, which generally occur during arrival and dismissal periods, traffic count data for the hours of 6:45 – 7:45 AM and 2:00 – 3:00 PM were used for peak hour analysis. Turning movement counts were not balanced between the study intersections given the distance and numerous residential developments with access in between the study intersections.

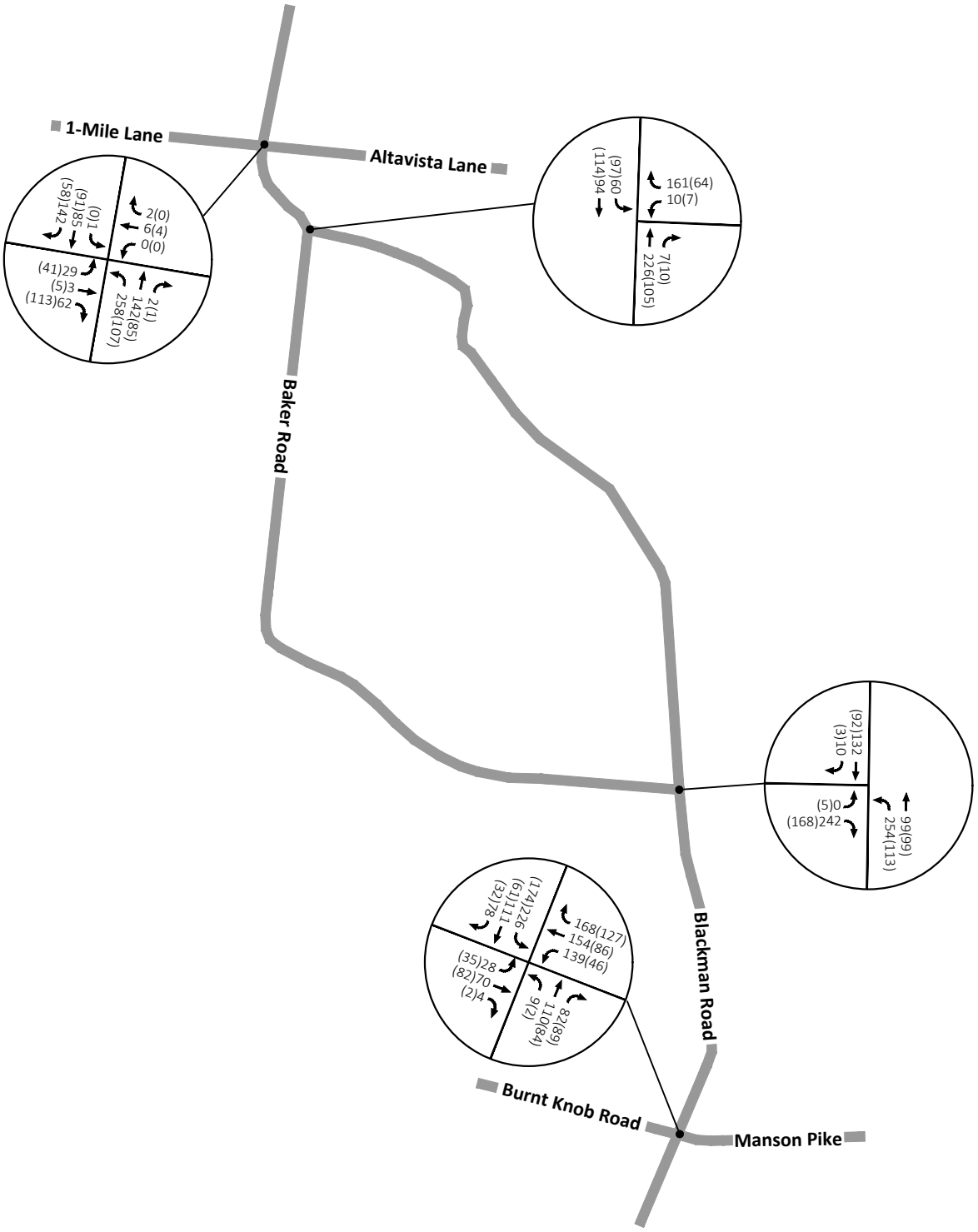
The 2023 Existing Conditions Peak Hour Traffic Volumes are presented in Figure 4. The turning movement count data is included in Appendix C. The traffic calculation worksheets are included in Appendix D.

Figure 3: 2021 Annual Average Daily Traffic Volumes



Source: TDOT

Figure 4: 2023 Existing Peak Hour Traffic Volumes



Legend:
XXX - AM Peak Hour Traffic Volumes
(XXX) - PM Peak Hour Traffic Volumes

(Not to Scale)

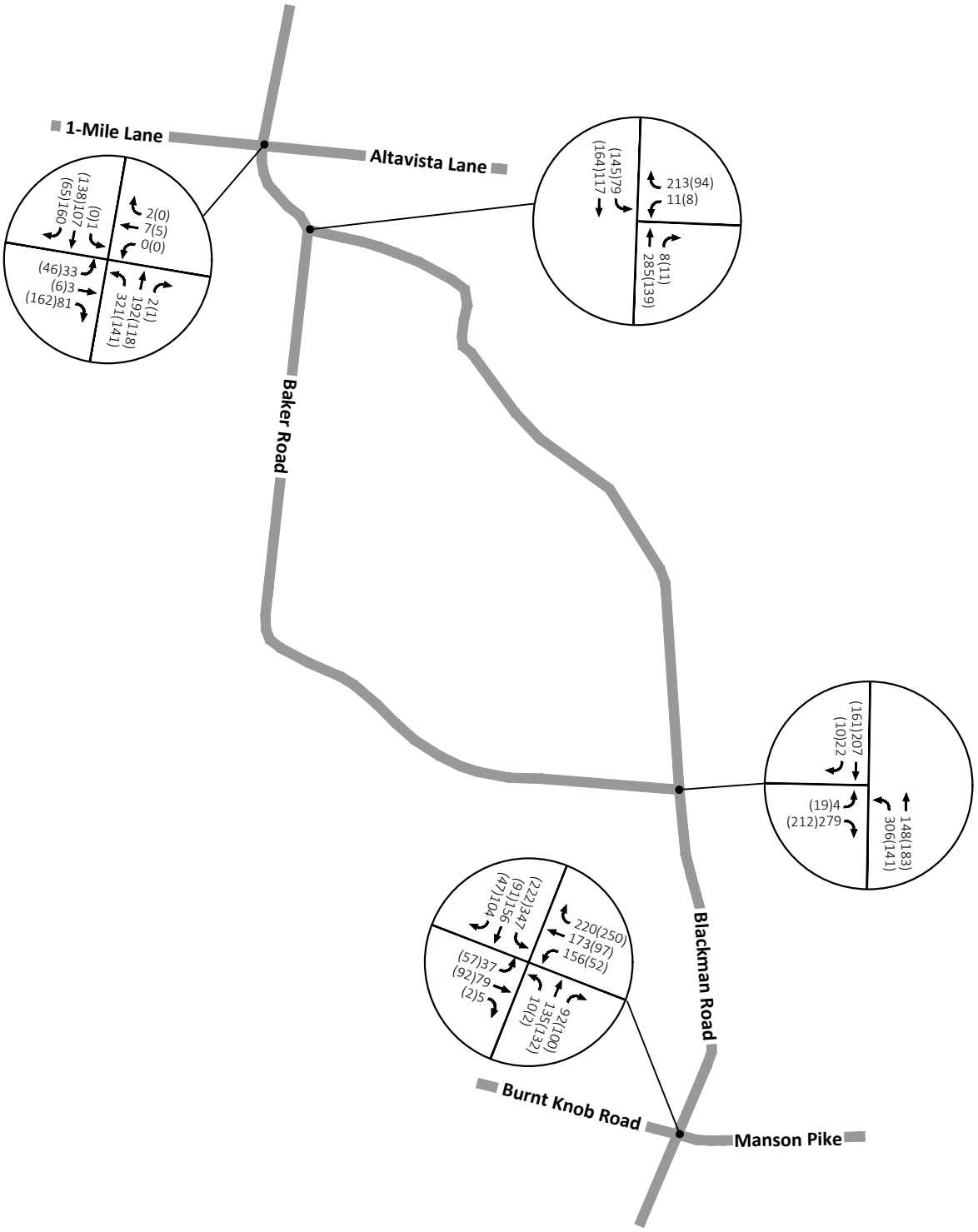
4. Background Conditions

As previously stated, it is assumed that the proposed school campus would be operational in approximately five years, which would be in the year 2028. To account for additional traffic expected to be traveling on the study roadways in 2028, background traffic volumes were established. A growth rate was first applied to the existing peak hour traffic volumes based on historical TDOT count station traffic data. The average annual traffic growth for the two TDOT count stations located in the study area over the last five years (between 2017 and 2021) is approximately 4.8%. In addition, there are multiple site-specific developments already approved near the project site. As such, the 2023 Existing Peak Hour Traffic Volumes were increased by 12.5% (2.5% annual growth for 5 years).

Traffic volumes generated by the Smith Farms and the Shelton Square residential developments to the east and south of the project site were also included in the development of background traffic volumes. The remaining phase of the Smith Farms development includes 205 single-family homes. Trip assignments for the Smith Farms development were used directly from the 2018 TIS that was provided by the County. The remaining phases of the Shelton Square development include approximately 408 additional single-family homes. No TIS was completed for the Shelton Square development. Therefore, trip generation was calculated for the remaining dwelling units and applied to the network according to the Smith Farms trip distribution based on the similarity in access and land uses. Information on these developments, their projected trip assignments, and required off-site improvements is included in Appendix E.

Figure 5 presents the 2028 Background Conditions Peak Hour Traffic Volumes. The TDOT count station data and historical growth is included in Appendix B. The traffic calculation worksheets are included in Appendix D.

Figure 5: 2028 Background Peak Hour Traffic Volumes



Legend:
XXX - AM Peak Hour Traffic Volumes
(XXX) - PM Peak Hour Traffic Volumes

(Not to Scale)

5. Projected Conditions

A trip generation process was used to estimate the amount of traffic that is expected to be generated by the proposed Blackman Road School Campus. Because the two schools are located on the same parcel and also have different schedules, the standard process for calculating the site's projected trip generation was modified as described below.

As previously discussed, the proposed development will include a 1,200-student elementary school and a 1,200-student middle school. Initially, trip generation rates for the land uses were taken from ITE's *Trip Generation Manual, 11th Edition*. The ITE trip generation calculations were based on the elementary and middle/junior high school land uses for the general urban/suburban setting. Table 1 below presents the traffic expected to be generated by the proposed elementary and middle schools during their respective peak hours as calculated using ITE rates directly.

Table 1: Trip Generation

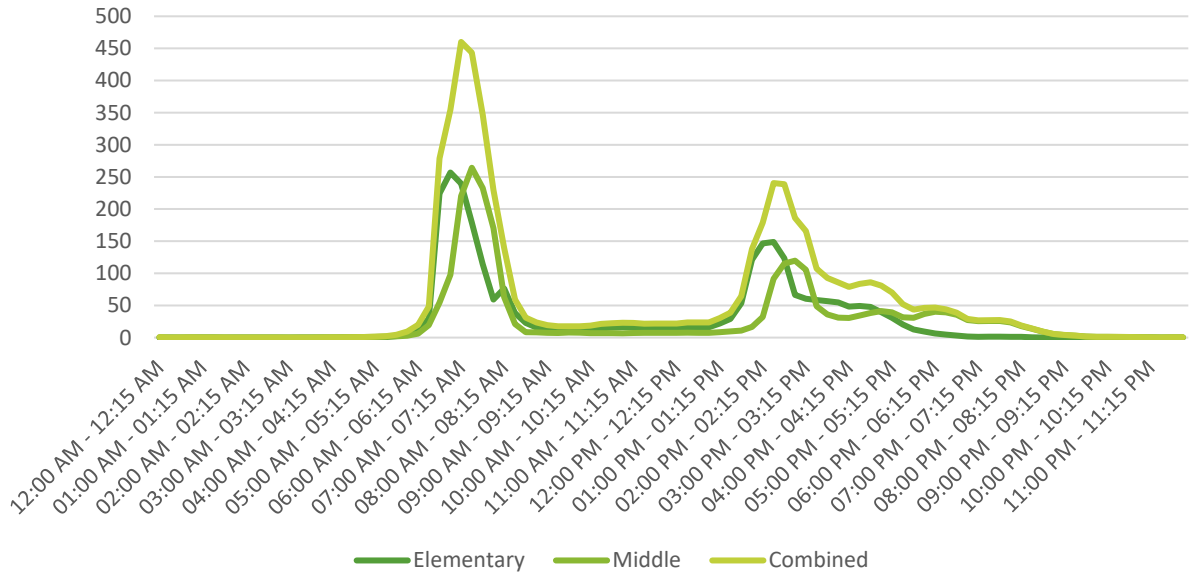
Land Use	Size	Average Daily Traffic	AM Peak Hour			PM Peak Hour		
			Total	Enter	Exit	Total	Enter	Exit
Elementary School (LUC 520)	1,200 students	2,724	900	486	414	540	248	292
Middle School /Junior High School (LUC 522)	1,200 students	2,508	888	488	400	432	199	233
Total	**2,400 students**	**5,232**	**1,788**	**974**	**814**	**972**	**447**	**525**

Source: ITE *Trip Generation Manual, 11th Edition.*
Note: Trip Generation above includes new vehicular traffic and does not include internal or alternate mode trips.

As shown in Table 1, the combined peak hour traffic expected to be generated by the two schools is approximately 5,232 vehicles per day (vpd), 1,788 trips in the AM peak hour, and 972 trips in the PM peak hour. These totals assume that there is no spatial relationship between the schools and that their peak hours occur independently. However, elementary and middle school start schedules are staggered in Rutherford County and the schools are located on the same site. More specifically, elementary schools start at 7:30 AM and end at 2:30 PM and middle schools start at 8:00 AM and end at 3:00 PM. As such, an additional process was used to develop estimates for the hours in which the peak hour volumes would overlap accounting for the staggered schedule.

More specifically, entering and exiting peak hour and off-peak volumes for both schools were distributed across the day in 15-minute increments based on the trip distributions by land use found in *ITE Trip Generation, 11th Edition Technical Appendices* and accounting for the staggered start and end times of the schools. The entering and exiting volumes for both schools were combined to develop a conservative estimate for the AM and PM peak hour volumes for the campus as a whole. The resulting distribution of daily and peak hour volumes by 15-minute interval is depicted graphically in Figure 6. As depicted in Figure 6, the AM peak hour for the school campus is expected to occur from 6:45 – 7:45 AM and the PM peak hour for the school campus is expected to occur from 2:00 – 3:00 PM.

Figure 6: Daily Distribution of School Trips in 15-Minute Intervals



The resulting peak hour traffic volume estimations for each school are shown in Table 2. As shown and expected, the peak hour volumes are slightly lower than those direct ITE trip rate calculations shown in Table 1. Specifically, the campus is expected to generate 1,605 AM peak hour trips and approximately 844 PM peak hour trips. The trips shown in Table 2 represent the new traffic expected to be generated by the schools, which includes both parent and bus traffic. Data collected in 2022 by Burch Transportation and Collier Engineering at the Rockvale School Cluster in Rutherford County shows that approximately 60% of elementary and middle school students ride the bus and the remaining 40% are picked up/dropped off by parents. In addition, data from these sites indicates the average occupancy of school buses is approximately 30 students per bus. Based on the similar characteristics between the two school campuses, the Blackman Road School Campus is expected to have a similar distribution between buses and parents. The result is approximately 24 buses entering and exiting the site for each school during both peak hours. All trip generation calculations are included in Appendix F.

Table 2: Modified Trip Generation

Land Use	Size	AM Peak Hour			PM Peak Hour		
		Total	Enter	Exit	Total	Enter	Exit
Elementary School (LUC 520)	1,200 students	790	418	372	485	216	269
Middle School /Junior High School (LUC 522)	1,200 students	815	457	358	359	169	190
Total Trips	**2,400 students**	**1,605**	**875**	**730**	**844**	**385**	**459**
Bus Trips		*96*	*48*	*48*	*96*	*48*	*48*
Passenger Car Trips		*1,509*	*827*	*682*	*748*	*337*	*411*

A directional distribution for the passenger car volumes was developed based on the existing traffic counts, street network, site accesses, and anticipated zoning districts for the new schools. Based on information provided by Rutherford County Schools, the new elementary school will be comprised of students from the existing Browns Chapel, Stewarts Creek, and Blackman Elementary Schools. The new middle school will be comprised of students from the existing Rockvale, Stewarts Creek, and Blackman Middle Schools. As mentioned previously, vehicular access to the properties will be provided directly from Blackman Road and Baker Road. Blackman Road will provide access primarily for the middle school and Baker Road will provide access primarily for the elementary school based on the current conceptual site plan.

More specifically, circulation for parents of elementary students will include vehicles entering the site via the westernmost access (Elementary School Access #1) on Baker Road, circulating the building in a clockwise fashion to pick-up/drop-off students, and then exiting south to Baker Road via Elementary School Access #2. Circulation for parents of middle school students will entail vehicles entering the southernmost access (Middle School Access #1) on Blackman Road, circulating the building in a clockwise fashion to pick-up/drop-off students, and then exiting west to Blackman Road via Middle School Access #2. In general, this circulation pattern minimizes the mixing of traffic volumes between the elementary and middle schools as well as between parent and bus traffic.

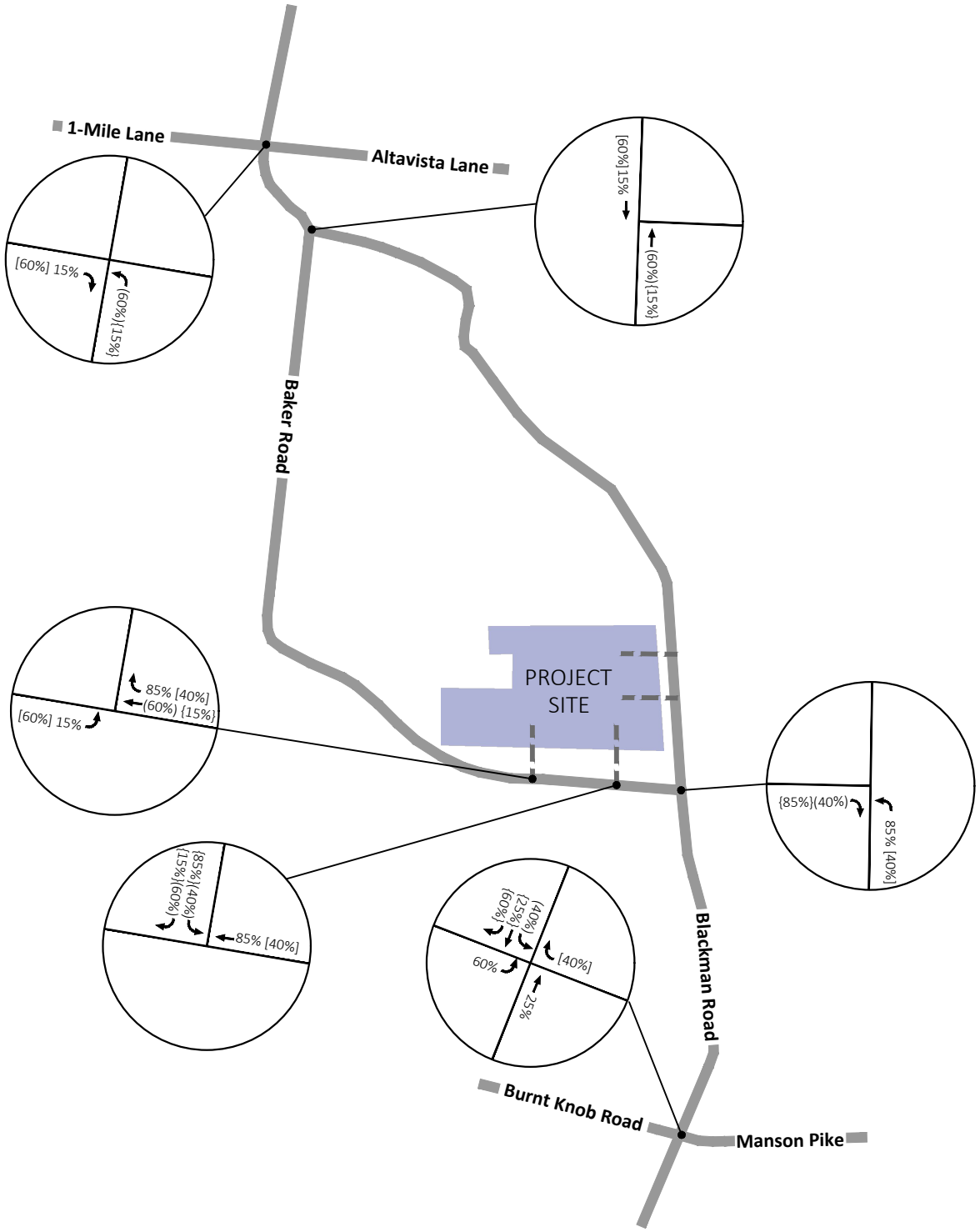
Based on this information, Table 3 presents the roadways, directions, and percent distribution that each school's traffic is expected to be coming from when entering the site in the AM peak and exiting the site during the PM peak. Exiting AM and entering PM distributions were developed based on assumptions for commuting patterns in the area.

Table 3: Directional Distribution

School	Roadway	Entering Direction (From – To the Site)	Distribution %
Elementary	Blackman Road	South	25%
	Baker Road	Northwest	15%
	Burnt Knob Road	West	60%
Middle	Blackman Road	South	70%
	Baker Road	Northwest	5%
	Burnt Knob Road	West	25%

A directional distribution for each school was developed for the turning movements at each of the study intersections and is presented in Figure 7 and Figure 8. Using these directional distributions, the passenger car traffic generated by the schools was assigned to the street network. The traffic assignment for each individual school is presented in Appendix G. The combined total assignment for the school campus is presented in Figure 9. The combined elementary and middle school traffic was added to the background traffic volumes to obtain the 2028 Future Projected Peak Hour Traffic Volumes, which are presented in Figure 10. These volumes represent the total peak hour traffic expected at the study intersections following completion of the proposed school campus. The traffic calculation worksheets showing the traffic assignment and volume calculations are included in Appendix D.

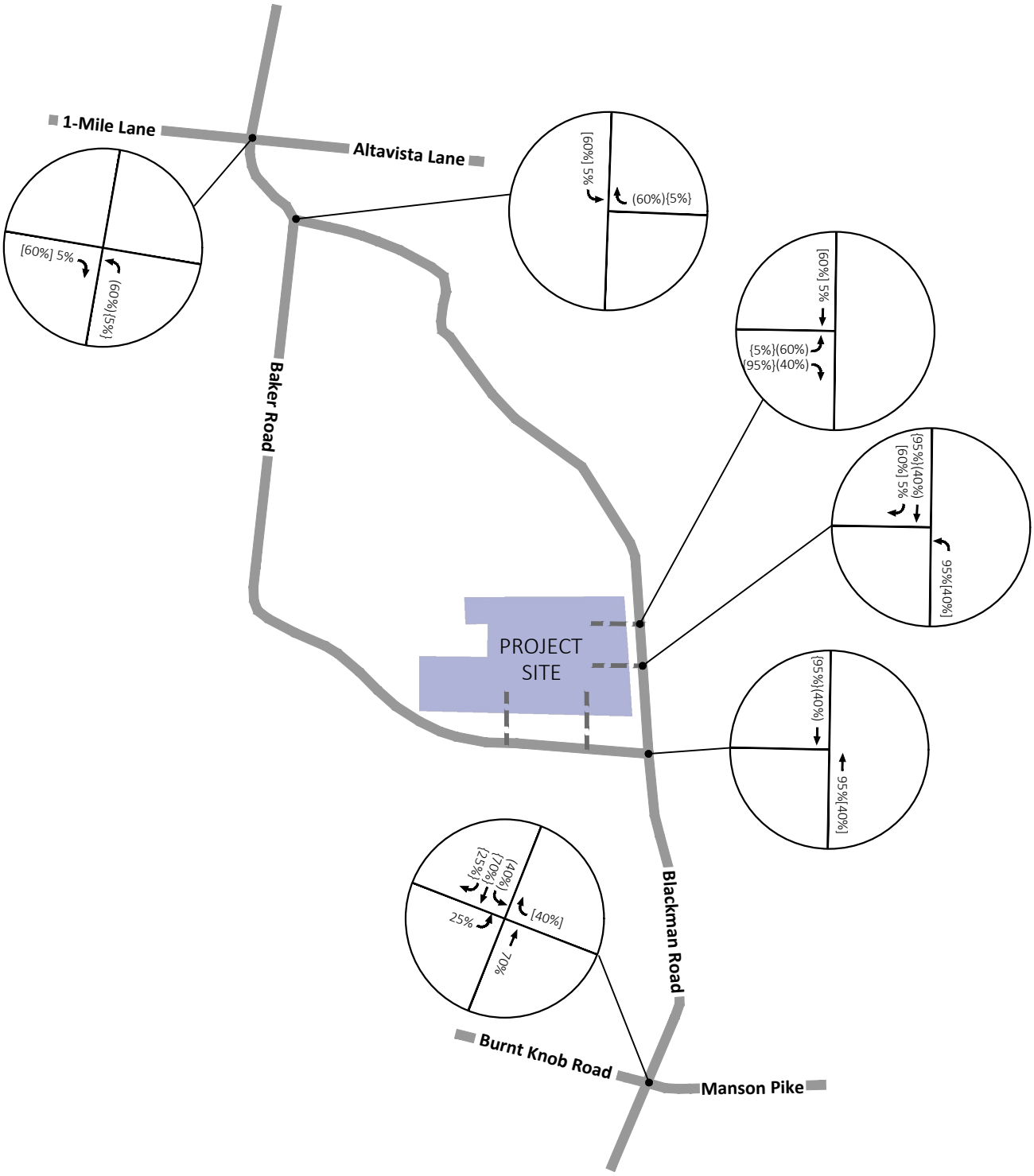
Figure 7: Directional Distribution of Traffic Generated by the Elementary School



Legend:
XX% - AM Enter
(XX%) - AM Exit
[XX%] - PM Enter
{XX%} - PM Exit

(Not to Scale)

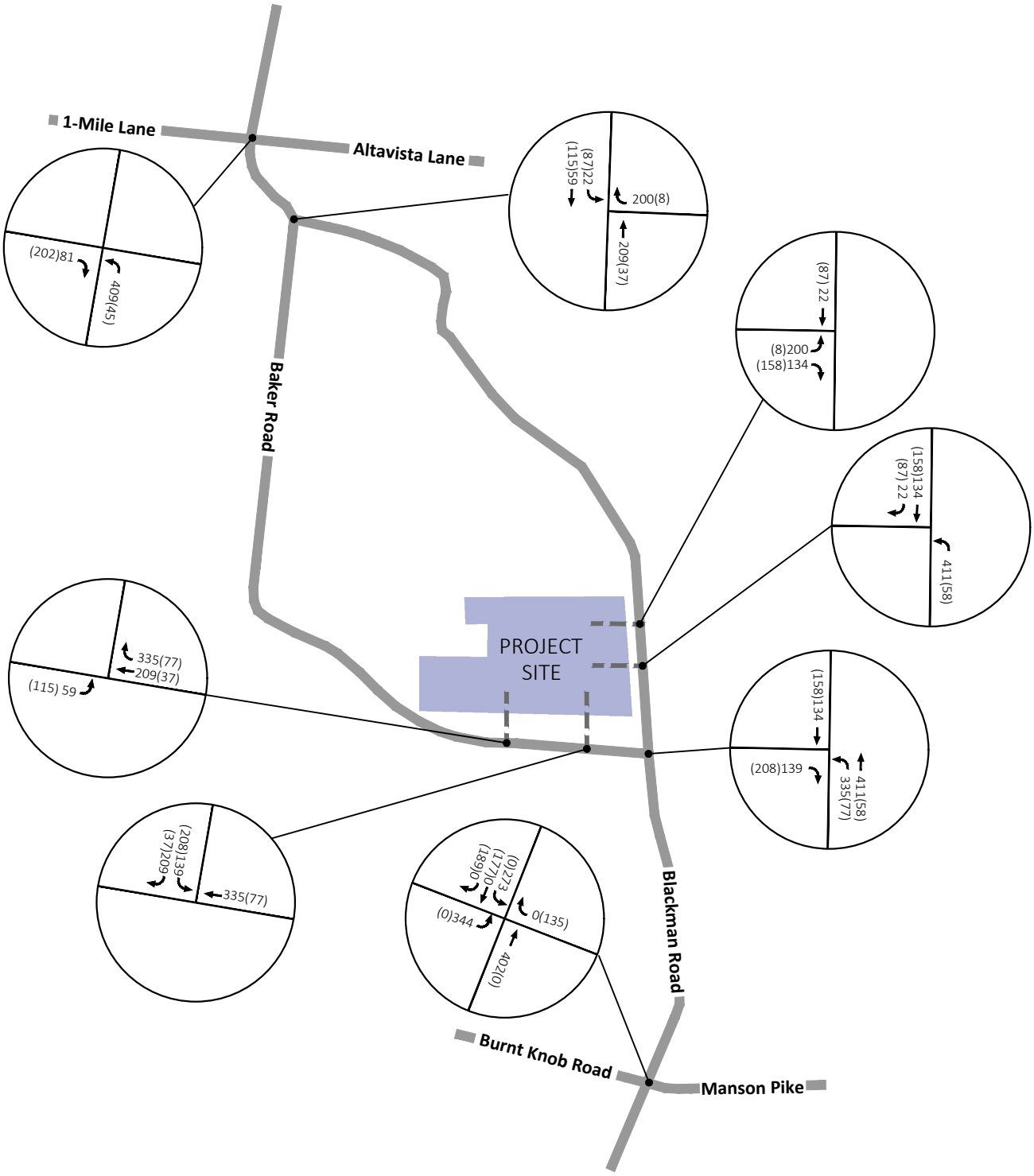
Figure 8: Directional Distribution of Traffic Generated by the Middle School



Legend:
XX% - AM Enter
(XX%) - AM Exit
[XX%] - PM Enter
{XX%} - PM Exit

(Not to Scale)

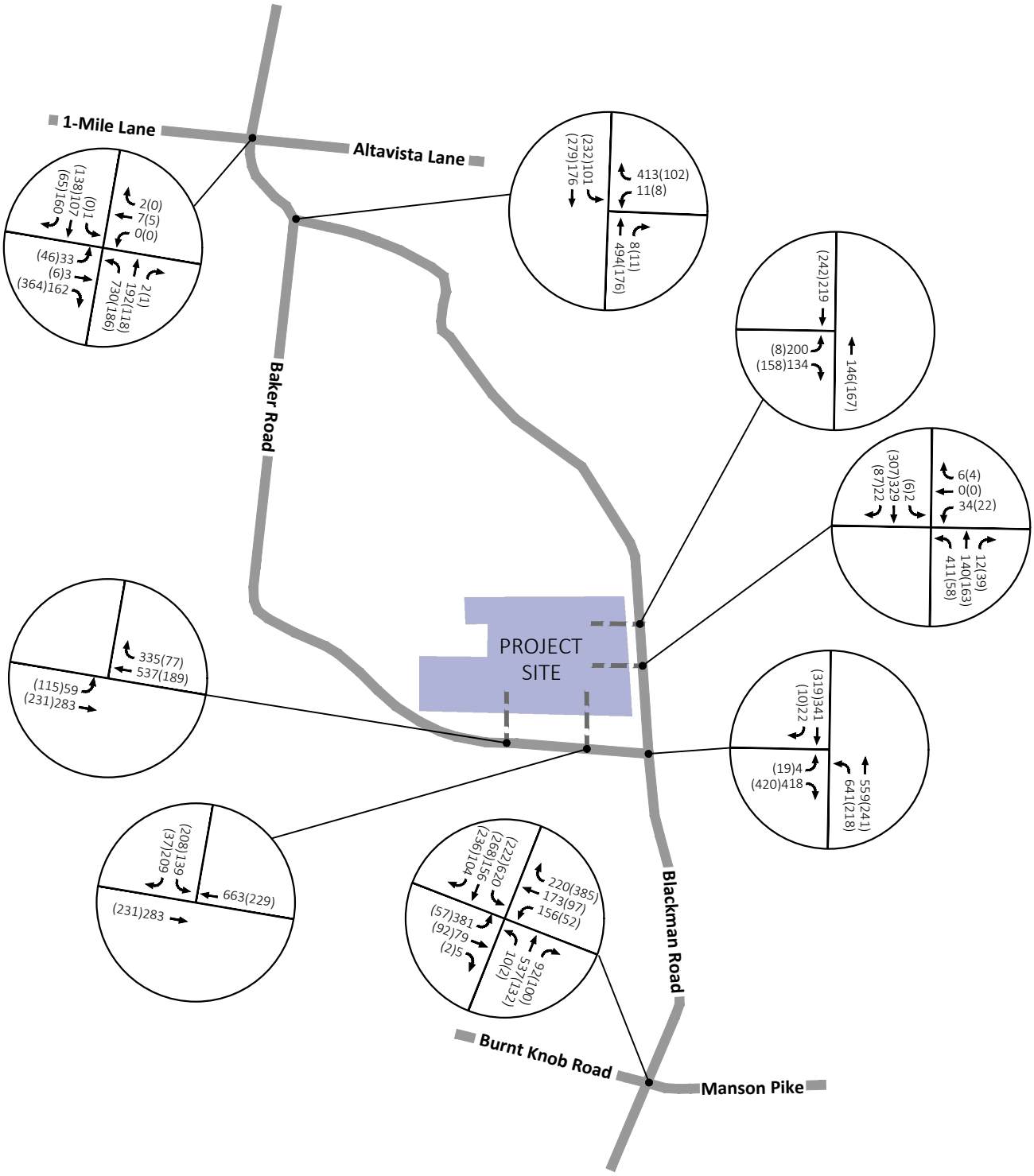
Figure 9: Total Assignment of Traffic Generated by the Blackman Road School Campus



Legend:
XXX - AM Peak Hour Traffic Volumes
(XXX) - PM Peak Hour Traffic Volumes

(Not to Scale)

Figure 10: 2028 Future Projected Peak Hour Traffic Volumes



Legend:
XXX - AM Peak Hour Traffic Volumes
(XXX) - PM Peak Hour Traffic Volumes

(Not to Scale)

6. Traffic Operational Analysis

To evaluate the study intersections under Existing, Background, and Future Projected conditions, capacity analyses were conducted for the study intersections using Synchro 11 software and HCM 6th Edition methodology. The capacity analyses result in a control delay and corresponding level of service (LOS). The LOS and control delay are used to describe how well a turning movement and/or intersection operates. LOS A operates with the least amount of delay, and LOS F the worst. In urbanized areas, LOS D is generally considered acceptable. Table 3 presents the descriptions of LOS for unsignalized intersections, and Table 4 presents the descriptions of LOS for signalized intersections.

Table 3: Description of Unsignalized Intersection Level of Service (LOS)

LOS	Control Delay (seconds per vehicle)	Description
A	0 – 10	Usually no conflicting traffic
B	> 10 – 15	Occasionally some delay due to conflicting traffic
C	> 15 – 25	Delay noticeable to vehicles, but not inconveniencing
D	> 25 – 35	Delay noticeable and irritating, increased likelihood of risk taking
E	> 35 – 50	Delay approaches tolerance level, risk-taking behavior likely
F	> 50	Delay exceeds tolerance level, high likelihood of vehicle risk taking
Source: *Highway Capacity Manual*		

Table 4: Description of Signalized Intersection Level of Service (LOS)

LOS	Control Delay (seconds per vehicle)	Description
A	≤ 10	Volume-to-capacity is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.
B	> 10 – 20	Volume-to-capacity is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.
C	> 20 – 35	Progression is favorable or the cycle length is moderate. Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.
D	> 35 – 55	Volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.
E	> 55 – 80	Volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.
F	> 80	Volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.
Source: *Highway Capacity Manual*		

6.1 Capacity Analysis

As mentioned previously, access to the proposed elementary school will be provided via Baker Road and access to the proposed middle school will be provided via Blackman Road. Due to the nature of school traffic in Rutherford County, it is imperative that the site design, circulation patterns, and traffic control maximize on-site storage for vehicles that queue during arrival and dismissal times. As such, each of the site accesses is assumed to facilitate two-way traffic. In addition, exclusive left- and right-turn lanes are assumed at Elementary School Access #1 and Middle School Access #1, which are intended to serve as the sole entry points for parent pick-up/drop-off. Elementary School Access #2 and Middle School Access #2 are assumed to include a single shared lane for exiting traffic.

Based on these assumptions, Table 5 below presents the results of the AM peak hour analysis, which coincides with the overlapping arrival times for both the elementary and middle schools. As shown, the majority of critical turning movements currently operate at LOS D or better during the AM peak. The only exception is the southbound approach of Blackman Road at Burnt Knob Road/ Manson Pike. As the only approach with a single shared lane for all movements, this approach currently operates at LOS E during the AM peak hour. Under background conditions, this movement deteriorates to LOS F along with the overall intersection LOS. In addition, the westbound through/right turn movement at this intersection as well as the eastbound left turn at the intersection of Baker Road and 1-Mile Lane/Altavista Lane also deteriorate to LOS E.

With the addition of the proposed schools, many of the critical turning movements in the study area are expected to see increases in delay. The overall intersection LOS at Blackman Road and Burnt Knob Road/Manson Pike is projected to operate at LOS F with more than 300 seconds of additional delay. As stop-controlled minor-street approaches, the eastbound left turn and the westbound approach at Baker Road and 1-Mile Lane/Altavista Lane both operate at LOS F under projected AM peak hour conditions. In addition, the eastbound approach of Baker Road at Blackman Road is expected to operate at LOS F under projected AM peak hour conditions. The site accesses that facilitate exiting school traffic during the AM peak hour are projected to operate at LOS F. However, it is anticipated that crossing guards will be used to stop traffic on the major street, allowing exiting traffic to leave the site more efficiently.

Table 6 presents the results of the PM peak hour analysis. As shown, all critical turning movements are expected to operate at LOS D or better under existing and background conditions. This is likely due to the fact that school dismissal times do not align with typical PM peak hours. Under projected conditions, the westbound though/right-turn movement and the southbound approach at the intersection of Blackman Road and Burnt Knob Road/Manson Pike are expected to operate at LOS F in the PM peak hour. These approach delays cause the overall intersection to operate at LOS F under projected PM peak hour conditions. All other critical turning movements are expected to operate acceptably. It is important to note that, specifically, for the PM peak hour, the Synchro model results do not account for delays that would result from on-site queueing prior to student dismissal. Should ample storage not be provided on site, vehicles will likely spill back onto Baker Road and Blackman Road prior to dismissal, negatively impacting traffic operations along these streets.

Based on projected conditions analysis, several improvements were explored at the study intersections with the ultimate goal of reducing vehicular delays. The resulting recommendations, detailed in the conclusions section of this report, include improvements to both capacity and traffic control. The improved LOS and delays are highlighted in Tables 7 and 8. All Synchro worksheets are included in Appendix H.

Table 5: Intersection Capacity Analysis – AM Peak Hour

Intersection	Approach / Lane Group	2023 Existing LOS (Delay in sec/veh)	2028 Background LOS (Delay in sec/veh)	2028 Projected LOS (Delay in sec/veh)
Blackman Road & Burnt Knob Road/Manson Pike (all-way stop)	NB Left Turn/Through	A (13.1)	C (16.0)	F (325.9)
	NB Right Turn	B (10.9)	B (12.6)	C (20.5)
	EB Left Turn	B (11.9)	B (1.8)	F (156.2)
	EB Through/Right Turn	B (12.4)	B (14.7)	C (21.8)
	WB Left Turn	B (13.9)	C (16.7)	D (31.5)
	WB Through/Right Turn	C (21.4)	E (39.6)	F (127.2)
	SB Approach	E (39.3)	F (193.6)	F (813.5)
	Overall Intersection	**C (24.4)**	**F (93.1)**	**F (399.6)**
Baker Road & 1-Mile Lane/Altavista Lane (two-way stop)	NB Left Turn	A (8.5)	A (8.9)	B (12.4)
	EB Left Turn	D (25.1)	E (41.8)	F (1385.2)
	EB Through/Right Turn	B (10.2)	B (10.8)	C (17.8)
	WB Approach	C (20.4)	D (29.6)	F (299.9)
	SB Left Turn	A (7.5)	A (7.6)	A (7.6)
Blackman Road & Baker Road (two-way stop)	NB Left Turn	A (8.1)	B (8.7)	B (12.6)
	EB Approach	B (10.7)	B (12.9)	F (395.3)
Baker Road & Bass Road (two-way stop)	WB Approach	B (11.2)	B (12.9)	E (43.2)
	SB Left Turn	A (7.9)	A (8.1)	A (8.9)
Blackman Road & MS Access #1/Elene Way (two-way stop)	NB Left Turn	--	--	A (9.9)
	WB Left Turn	--	--	F (83.9)
	WB Through/Right Turn	--	--	A (9.1)
	SB Left Turn	--	--	A (7.6)
Blackman Road & MS Access #2 (two-way stop)	EB Approach	--	--	C (16.4)
Baker Road & ES Access #1 (two-way stop)	EB Left Turn	--	--	B (10.5)
Baker Road & ES Access #2 (two-way stop)	SB Approach	--	--	F (119.2)
Notes: HCM 6th Edition Results reported above.				

Table 6: Intersection Capacity Analysis – PM Peak Hour

Intersection	Approach / Lane Group	2023 Existing LOS (Delay in sec/veh)	2028 Background LOS (Delay in sec/veh)	2028 Projected LOS (Delay in sec/veh)
Blackman Road & Burnt Knob Road/Manson Pike (all-way stop)	NB Left Turn/Through	B (10.2)	B (13.5)	C (17.3)
	NB Right Turn	A (9.2)	B (11.2)	B (14.3)
	EB Left Turn	B (10.2)	B (12.4)	C (15.8)
	EB Through/Right Turn	B (10.4)	B (12.7)	C (16.6)
	WB Left Turn	B (10.1)	B (11.5)	B (13.6)
	WB Through/Right Turn	B (11.9)	C (23.3)	F (78.1)
	SB Approach	B (14.9)	D (30.5)	F (328.6)
	Overall Intersection	**B (12.1)**	**C (21.4)**	**F (172.1)**
Baker Road & 1-Mile Lane/Altavista Lane (two-way stop)	NB Left Turn	A (7.8)	A (8.0)	A (8.1)
	EB Left Turn	B (13.3)	C (16.7)	C (19.6)
	EB Through/Right Turn	A (9.8)	B (10.8)	B (13.3)
	WB Approach	B (13.3)	C (15.8)	C (17.9)
	SB Left Turn	A (0.0)	A (0.0)	A (0.0)
Blackman Road & Baker Road (two-way stop)	NB Left Turn	A (7.6)	A (7.9)	A (8.7)
	EB Approach	A (9.8)	B (11.9)	D (27.9)
Baker Road & Bass Road (two-way stop)	WB Approach	A (9.6)	B (10.2)	B (11.3)
	SB Left Turn	A (7.7)	A (7.9)	A (8.2)
Blackman Road & MS Access #1/Elene Way (two-way stop)	NB Left Turn	--	--	A (8.4)
	WB Left Turn	--	--	C (16.5)
	WB Through/Right Turn	--	--	A (9.2)
	SB Left Turn	--	--	A (7.7)
Blackman Road & MS Access #2 (two-way stop)	EB Approach	--	--	B (11.2)
Baker Road & ES Access #1 (two-way stop)	EB Left Turn	--	--	A (8.1)
Baker Road & ES Access #2 (two-way stop)	SB Approach	--	--	C (17.2)
Notes: HCM 6th Edition Results reported above.				

Table 7: Intersection Capacity Analysis – With Recommended Short-Term Improvements

Intersection	Approach / Lane Group	2028 Projected AM LOS (Delay in sec/veh)	2028 Projected PM LOS (Delay in sec/veh)
Blackman Road & MS Access #1/Elene Way (two-way stop)	NB Left Turn	A (9.9)	A (8.4)
	WB Left Turn	F (83.9)	C (16.5)
	WB Through/Right Turn	A (9.1)	A (9.2)
	SB Left Turn	A (7.6)	A (7.7)
Blackman Road & MS Access #2 (two-way stop)	EB Approach	C (16.4)	B (11.2)
Blackman Road & MS Access #2 (add separate left- and right-turn lanes)	*EB Left Turn*	*B (14.2)*	*B (11.4)*
	EB Right Turn	*B (10.5)*	*B (11.0)*
Baker Road & ES Access #1 (two-way stop)	EB Left Turn	B (10.5)	A (8.1)
Baker Road & ES Access #2 (two-way stop)	SB Approach	F (119.2)	C (17.2)
Baker Road & ES Access #2 (add separate left- and right-turn lanes)	*SB Left Turn*	*E (36.7)*	*C (16.8)*
	SB Right Turn	*C (22.6)*	*A (9.8)*

Table 8: Intersection Capacity Analysis – With Recommended Long-Term Improvements

Intersection	Approach / Lane Group	2028 Projected AM LOS (Delay in sec/veh)	2028 Projected PM LOS (Delay in sec/veh)
Blackman Road & Burnt Knob Road/Manson Pike (all-way stop)	NB Left Turn/Through	F (325.9)	C (17.3)
	NB Right Turn	C (20.5)	B (14.3)
	NB Left Turn	--	
	NB Through	--	
	EB Left Turn	F (156.2)	C (15.8)
	EB Through/Right Turn	C (21.8)	C (16.6)
	WB Left Turn	D (31.5)	B (13.6)
	WB Through/Right Turn	F (127.2)	F (78.1)
	SB Approach	F (813.5)	F (328.6)
	SB Left Turn	--	
	SB Through	--	
	SB Right Turn	--	
	Overall Intersection	**F (399.6)**	**F (172.1)**
Blackman Road & Burnt Knob Road/Manson Pike (signalized with additional NB and SB capacity)	*EB Left Turn*	*F (171.3)*	*B (17.8)*
	EB Through/Right Turn	*D (39.5)*	*B (17.1)*
	WB Left Turn	*D (42.3)*	*B (14.6)*
	WB Through/Right Turn	*F (171.9)*	*F (100.9)*
	NB Left Turn	*D (43.4)*	*B (15.6)*
	NB Through	*F (200.1)*	*B (18.1)*
	NB Right Turn	*D (46.2)*	*B (18.0)*
	SB Left Turn	*F (196.9)*	*B (14.2)*
	SB Through	*B (17.8)*	*B (16.5)*
	SB Right Turn	*B (17.4)*	*B (17.1)*
	Overall Intersection	***F (150.6)***	***D (41.2)***
Blackman Road & Baker Road (two-way stop)	NB Left Turn	B (12.6)	A (8.7)
	EB Approach	F (395.3)	D (27.9)
Blackman Road & Baker Road (add NB left turn lane)	*NB Left Turn*	*B (12.6)*	*A (8.7)*
	EB Approach	*F (64.9)*	*D (27.4)*
Blackman Road & Baker Road (roundabout)	***Overall Intersection***	***D (26.5)***	***A (7.8)***
Baker Road & 1-Mile Lane/ Altavista Lane (two-way stop)	NB Left Turn	B (12.4)	A (8.1)
	EB Left Turn	F (1385.2)	C (19.6)
	EB Through/Right Turn	C (17.8)	B (13.3)
	WB Approach	F (299.9)	C (17.9)
	SB Left Turn	A (7.6)	A (0.0)
Baker Road & 1-Mile Lane/ Altavista Lane (roundabout)	***Overall Intersection***	***B (13.6)***	***A (6.0)***

6.2 Pedestrian, Bicycle, and Transit Access

The project site is located in an area that is generally categorized as rural/suburban. For the most part, residential development near the site is relatively low density. Therefore, vehicular travel is the primary mode of travel in the study area. There are currently no multimodal facilities along the project frontage on Baker Road and Blackman Road and no pedestrian infrastructure at any of the study intersections. However, there are numerous residential developments already under construction as well as the potential for additional residential development near the school campus. To facilitate students walking to and from school from nearby neighborhoods, sidewalks should be included on the project site along Baker Road and Blackman Road and should provide safe access from these roadways to the school entrances.

There are no bicycle facilities in the vicinity of the project site and no transit services are available in this area of Rutherford County.

6.3 Site Access and Circulation

As discussed previously and shown in the site plan included in Appendix A, access to the Blackman Road School Campus will be provided by four individual accesses that each facilitate two-way traffic. Based on coordination with Rutherford County Schools, the Elementary School will have primary access on Baker Road and the Middle School will have primary access on Blackman Road.

Circulation for the Elementary School traffic will be separated for parents and buses. Parents will enter the westernmost access during both arrival and dismissal periods. They will circulate north to drop-off/pick-up students on the west and north sides of the school before exiting south to Baker Road. Buses carrying elementary school students will enter and exit the site opposite of parent traffic. More specifically, buses will enter from the easternmost access on Baker Road, proceed to the staging area on the south side of the building for drop-off/pick-up, and then exit via the westernmost access on Baker Road.

Circulation for the Middle School traffic will also be separated for parents and buses. Parents will enter the southernmost access during both arrival and dismissal periods. They will circulate west to drop-off/pick-up students on the west and south sides of the school before exiting east to Blackman Road. Buses carrying middle school students will enter and exit the site opposite of parent traffic. More specifically, buses will enter from the northernmost access on Blackman Road, proceed to the staging area on the east side of the building for drop-off/pick-up, and then exit via the southernmost access on Blackman Road.

With the one-way circulation patterns for both schools, there will be significant turning movements at the entry and exit points during the arrival and dismissal periods. Traffic control officers/crossing guards should be utilized during these times to facilitate efficient traffic operations, prevent off-site queueing onto public roads, and provide safe crossing opportunities for any students that walk to school.

7. Conclusions and Recommendations

Rutherford County Schools is planning to develop a new school campus in the Blackman community outside the Murfreesboro city limits. More specifically, the potential school campus will include a new elementary school and middle school potentially on the 72-acre parcel located on the northwestern corner of the intersection of Blackman Road and Baker Road. The parcel is currently located in unincorporated Rutherford County and zoned Agricultural Residential (AR), which is intended for low-density residential development and farming activities. Based on the information provided by Rutherford County Schools, the new campus will have a total enrollment of 2,400 students – 1,200 elementary and 1,200 middle - and will be completed in five years.

The analyses presented in this report indicate that the proposed school campus will generate a manageable amount of new vehicular traffic to the study area. In total, the proposed school campus is expected to generate approximately 1,605 trips and 844 trips in the AM arrival and PM dismissal periods, respectively.

Based on the analyses presented in this study and review of the study area and proposed development information, the following is recommended to accommodate the proposed school campus and provide for efficient traffic operations and safety. The recommendations are grouped into short-term and long-term improvements. Those recommendations classified as short-term are generally located on Baker Road and Blackman Road near the project site. These should be completed as the schools are constructed. Recommendations classified as long-term include off-site intersection improvements necessary for the efficient and safe traffic operation in the broader study area. The timing of these improvements should be based on the phasing of school demands and should be coordinated with other planned road improvements previously identified by the County and City.

Short-Term Recommendations

Baker Road and Elementary School Access #1 (Entrance)

- The southbound approach of Elementary School Access #1 should be stop-controlled and should include two entering lanes and one exiting lane.
- The eastbound approach of Baker Road at the westernmost Elementary School access should include an exclusive left turn lane with approximately 250 feet of storage.
- The westbound approach of Baker Road should include an exclusive right turn lane. This turn lane should extend east to the adjacent access, providing approximately 450 feet of storage.
- The Elementary School Access #1 on Baker Road should be designed and constructed to maintain sufficient intersection sight distance, clear of any obstructions such as vegetation, landscaping, hardscaping, signs, and fencing within the departure sight triangle.

Baker Road and Elementary School Access #2 (Exit)

- The southbound approach of Elementary School Access #2 should be stop-controlled and should include one entering lane and two exiting lanes. The two exiting lanes should be striped as an exclusive left turn lane and an exclusive right turn lane.
- The eastbound approach of Baker Road at the easternmost Elementary School access should include an exclusive left turn lane with approximately 150 feet of storage.
- The Elementary School Access #2 on Baker Road should be designed and constructed to maintain sufficient intersection sight distance, clear of any obstructions such as vegetation, landscaping, hardscaping, signs, and fencing within the departure sight triangle.

Blackman Road and Middle School Access #1 (Entrance)/Elene Way

- The eastbound approach of Middle School Access #1 should align with Elene Way, which provides access to the approved Smith Farms development on the east side of Blackman Road.
- The eastbound approach should be stop-controlled and include two entering lanes and one exiting lane.
- The northbound approach of Blackman Road at the southernmost Middle School access should include an exclusive left turn lane with approximately 150 feet of storage. As the primary entrance for middle school parent traffic, additional storage should be provided if right-of-way along Blackman Road is available.
- The southbound approach of Blackman Road should include an exclusive right turn lane. This turn lane should extend north to the adjacent access, providing approximately 500 feet of storage.
- At a minimum, crosswalks should be provided on the northbound approach of the intersection. In addition, a School Crossing Assembly consisting of a School (S1-1) sign with supplemental diagonal arrow plaque (W16-7P) should be installed at this location facing northbound and southbound traffic on Blackman Road.
- The Middle School Access #1 on Blackman Road should be designed and constructed to maintain sufficient intersection sight distance, clear of any obstructions such as vegetation, landscaping, hardscaping, signs, and fencing within the departure sight triangle.

Blackman Road and Middle School Access #2 (Exit)

- The eastbound approach of Middle School Access #2 should be stop-controlled and should include one entering lane and two exiting lanes. The two exiting lanes should be striped as an exclusive left turn lane and an exclusive right turn lane.
- The northbound approach of Blackman Road at the northernmost Middle School access should include an exclusive left turn lane with approximately 150 feet of storage.
- The Middle School Access #2 on Blackman Road should be designed and constructed to maintain sufficient intersection sight distance, clear of any obstructions such as vegetation, landscaping, hardscaping, signs, and fencing within the departure sight triangle.

School Zone Plan

- A 20-mph school zone should be designated along Blackman Road and Baker Road near the project site. A School Zone sign (S1-1) with supplemental Ahead plaque (W16-9P) should be installed at the following locations:
    - On Blackman Road approximately 200 feet south of Baker Road facing northbound traffic;
    - On Blackman Road approximately 500 feet north of the Middle School Access #2 facing southbound traffic;
    - On Baker Road approximately 500 feet west of the Elementary School Access #1 facing eastbound traffic.
- Due to the 40-mph posted speed limit on Blackman Road and Baker Road, Reduced School Speed Limit Ahead signs (S4-5) should be installed on both roadway facilities. Specifically, a S4-5 sign should be installed at the following locations:
    - On Blackman Road approximately 100 feet south of Baker Road facing northbound traffic;
    - On Blackman Road approximately 400 feet north of the Middle School Access #2 facing southbound traffic;

  - On Baker Road approximately 400 feet west of the Elementary School Access #1 facing eastbound traffic.
- A School Speed Limit Assembly consisting of a School Speed Limit 20 When Flashing sign (S5-1) with a S4-3P supplemental 'School' plaque and flashing yellow beacons should be installed at the following locations:
  - On Blackman Road approximately 100 feet south of Baker Road facing northbound traffic;
  - On Blackman Road approximately 300 feet north of the Middle School Access #2 facing southbound traffic;
  - On Baker Road approximately 100 feet west of Blackman Road facing westbound traffic; and
  - On Baker Road approximately 300 feet west of the Elementary School Access #1 facing eastbound traffic.
- End School Zone signs (S5-2) should be placed at the following locations:
  - On Blackman Road approximately 100 feet south of Baker Road facing southbound traffic;
  - On Blackman Road approximately 400 feet north of the Middle School Access #2 facing northbound traffic;
  - On Baker Road approximately 400 feet west of the Elementary School Access #1 facing westbound traffic.

School Arrival and Dismissal Operations

- Elementary School parents should be instructed to enter the site from Baker Road and specifically from the westernmost access point (Elementary School Access #1). As mentioned previously, this access should be designed and constructed with two entering lanes that carry parent traffic northbound for pick-up/drop-off to occur on the west and north sides of the school. Parents should be instructed to exit the site via the easternmost access point on Baker Road (Elementary School Access #2).
- Elementary School bus traffic should enter the site via Elementary School Access #2, proceed west along the school frontage to the loading/unloading zone, and exit to Baker Road via Elementary School Access #1. As such, intersections along this route should be designed and constructed with curb radii that accommodate the turning wheel paths of school buses.
- Middle School parents should be instructed to enter the site from Blackman Road and specifically from the southernmost access point (Middle School Access #1). As mentioned previously, this access should be designed and constructed with two entering lanes that carry parent traffic westbound for pick-up/drop-off to occur on the west side of the school. Parents should be instructed to exit the site via the northernmost access point on Blackman Road (Middle School Access #2).
- Middle School bus traffic should enter the site via Middle School Access #2, proceed south along the school frontage to the loading/unloading zone, and exit to Blackman Road via Middle School Access #1. As such, intersections along this route should be designed and constructed with curb radii that accommodate the turning wheel paths of school buses.
- Raised crosswalks should be constructed on internal roadways where students will routinely be crossing vehicular traffic. At a minimum, a raised crosswalk should be constructed where elementary and middle school bus riders will be crossing internal roadways from the bus staging areas to the school entrances.

- For both arrival and dismissal times at the schools, traffic control officers/crossing guards should be utilized at the entry and exit points to facilitate efficient traffic operations, prevent off-site queueing onto public roads, and provide safe crossing opportunities for any students that walk to school.
- Based on the staggered arrival times for the elementary and middle schools, it is recommended that two crossing guards be first staged at the Elementary School Access #1 to facilitate entering traffic and at Elementary School Access #2 to facilitate exiting traffic. Once traffic at the Elementary School has sufficiently subsided, these crossing guards should move to the Middle School Accesses to facilitate traffic at those two locations.
- In addition, sidewalks should be constructed on the western side of Blackman Road and on the northern side of Baker Road on the school property to facilitate students walking from adjacent neighborhoods. Internal school sidewalks should connect the school buildings and the sidewalks along Blackman Road and Baker Road.

Long-Term Recommendations

Blackman Road and Baker Road Cross Sections

- Through a previous planning effort, Blackman Road and Baker Road have been identified for future improvement. Namely, Blackman Road is proposed to be widened to a 5-lane cross section and Baker Road is proposed to be widened to a 3-lane cross section.
- As such, additional ROW should be preserved on the project site along Blackman Road and Baker Road for any future improvements and/or widening of these facilities.

Blackman Road and Baker Road

- With the anticipated location of future students, significant traffic volumes will be added to the unsignalized intersection of Blackman Road and Baker Road. Under the current one-way stop control and with no capacity improvements, the eastbound approach operates at LOS F under the projected AM peak hour conditions.
- Although the eastbound approach would still operate at LOS F, provision of a northbound left turn lane on Blackman Road can significantly decrease delay for eastbound right turning vehicles (from 395 seconds to 65 seconds). Any additional delay reductions would require significant changes to traffic control.
- After investigation of multiple alternatives, it is recommended that a single-lane roundabout be considered as the preferred traffic control mechanism at this location long-term as it would significantly improve the efficiency of traffic operations in the area. The timing of the roundabout construction should consider the phasing of school enrollment, adjacent private developments, and the County's long-term plan to widen Blackman Road to a 5-lane cross section as identified in Murfreesboro's 2040 Major Thoroughfare Plan.
- Prior to the roundabout construction and/or if a roundabout is not feasible in this location, an exclusive left turn lane should be constructed on the northbound approach of Blackman Road. At a minimum, this turn lane should include approximately 100 feet of storage.

Baker Road and 1-Mile Lane/Altavista Lane

- The addition of the Blackman Road School Campus will result in significant traffic volumes added to the intersection of Baker Road and 1-Mile Lane/Altavista Lane. This is most noticeable in the AM peak hour when many parents leaving the schools after drop-off are assumed to make a northbound left turn movement to leave the study area, destined for the interstate.
- The addition of volume to the northbound left turn movement significantly increases delay for the conflicting eastbound left turn movement. While the delays are high (approximately 1,385 seconds), the 95th percentile queue is projected to be approximately 5 vehicles, which exceeds the available storage length by approximately 60 feet.
- Of note is that this intersection is currently located within the municipal limits of Smyrna, and the existing right-of-way on either side of 1-Mile Lane is limited based on adjacent residential development.
- Additional turn lanes as well as AWSC were evaluated as potential improvements to reduce delays at this intersection. However, none of the tested scenarios has a significant benefit on the intersection overall. The most significant improvement in vehicular delay can be achieved through construction of a single-lane roundabout. As such, the feasibility of constructing a roundabout at this location should be evaluated as a long-term solution for reducing delays for minor street turning movements.

Intersection of Blackman Road and Burnt Knob Road/Manson Pike

- The all-way stop traffic control and existing lane configurations causes this intersection to operate inefficiently under existing conditions. With the addition of background growth in the area and the Blackman Road School Campus, this intersection as well as many of the individual turning movements are expected to operate at a LOS F with significant delays.
- Based on the data collected as part of this TIS, it is anticipated that the projected traffic volumes at this intersection will meet MUTCD warrants for a traffic signal if the schools are constructed. Once a signal warrant study confirms this assumption, a traffic signal should be constructed at this intersection. With the construction of a traffic signal:
    - The northbound approach of Blackman Road should be widened to include an exclusive left turn lane with approximately 50 feet of storage, a single through lane, and an exclusive right turn lane with approximately 75 feet of storage. This approach should include permissive left turn phasing.
    - The southbound approach of Blackman Road should be restriped to provide an exclusive left turn lane with approximately 200 feet of storage, a single through lane, and an exclusive right turn lane with approximately 50 feet of storage. This approach should include protected-permitted left turn phasing.
    - The eastbound approach of Burnt Knob Road and the westbound approach of Manson Pike should retain the existing lane configurations and should both include protected-permitted left turn phasing.
    - The intersection should include crosswalks, curb ramps, pedestrian signals, and push buttons on all approaches.
- It is anticipated that the construction of the traffic signal would occur with the future widening of Blackman Road to a 5-lane cross section as identified in Murfreesboro's 2040 Major Thoroughfare Plan.

Short-term improvements are depicted in Figure 11 and Figure 12 with the school zone plan depicted in Figure 13. The recommendations presented in these figures are conceptual in nature and intended for developing planning level cost estimates for necessary site improvements associated with the proposed Blackman Road School Campus. All roadway design details including turn lane storage lengths, taper lengths, lane transitions, curb radii, etc. should be finalized through the design and preparation of construction documents and should be based on survey, existing roadway features, right-of-way constraints, etc. Based on the analyses presented in this report, no further improvements are recommended in association with the Blackman Road School Campus.

Figure 11: Recommended Short-Term Improvements along Baker Road

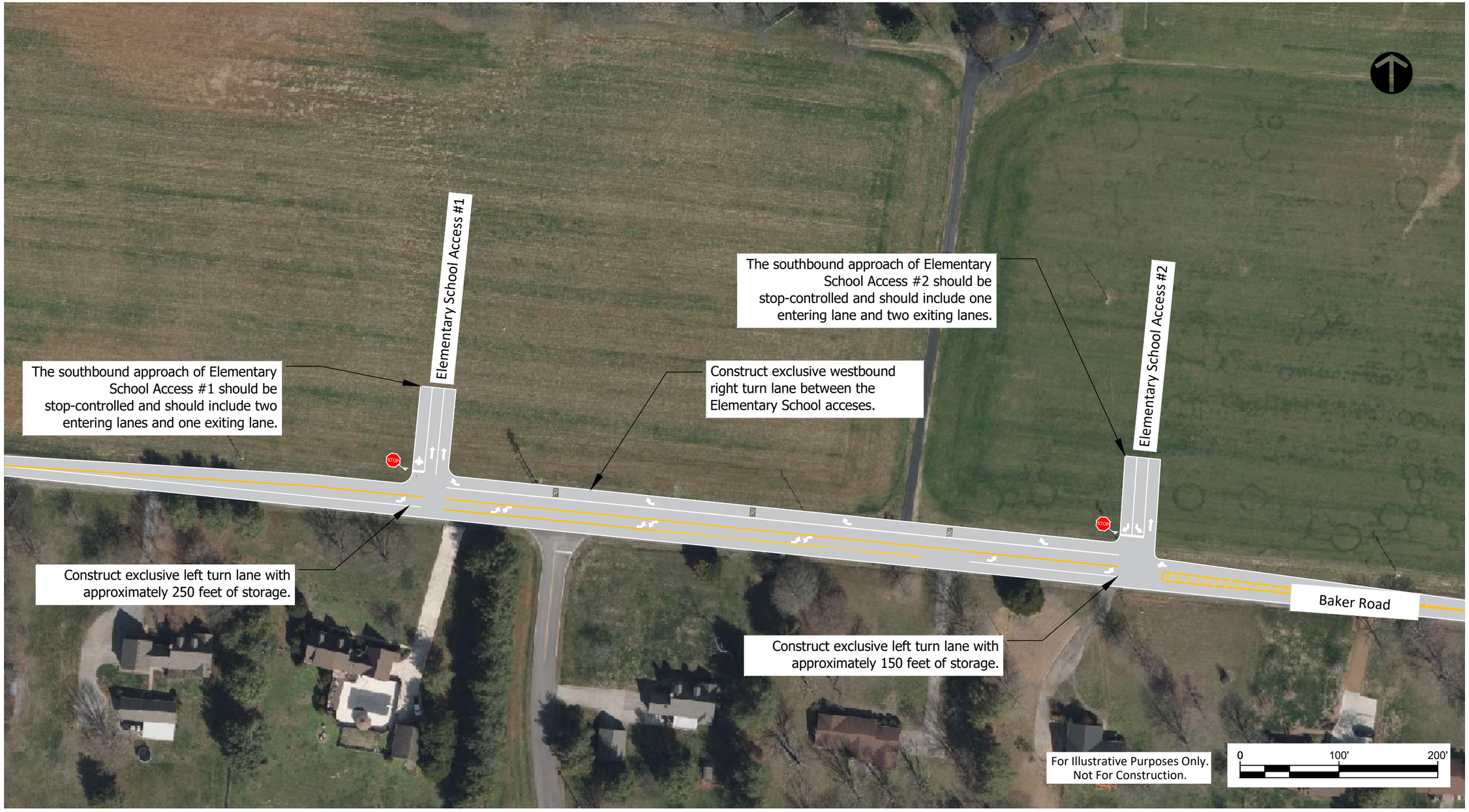


Figure 12: Recommended Short-Term Improvements along Blackman Road

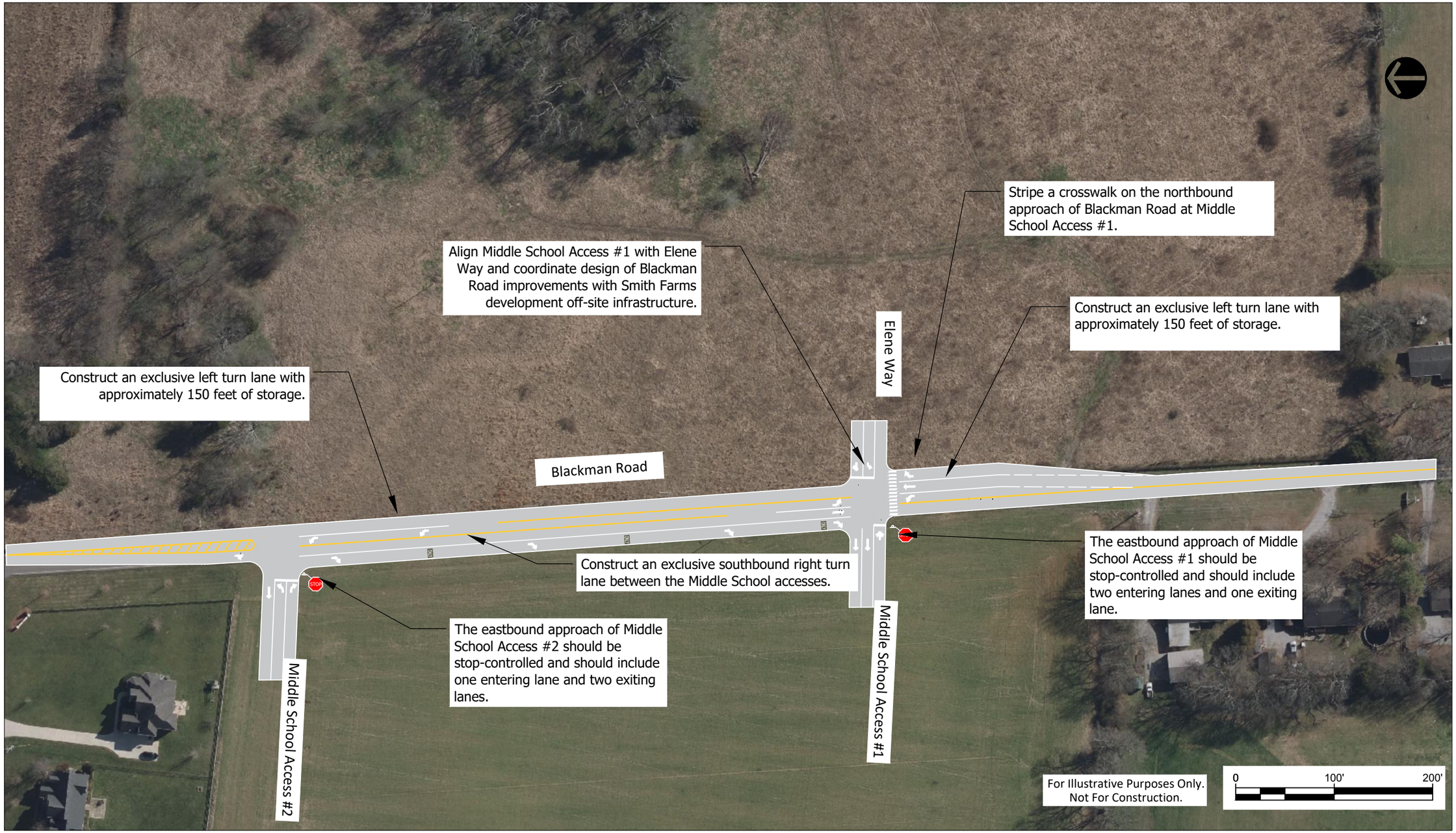
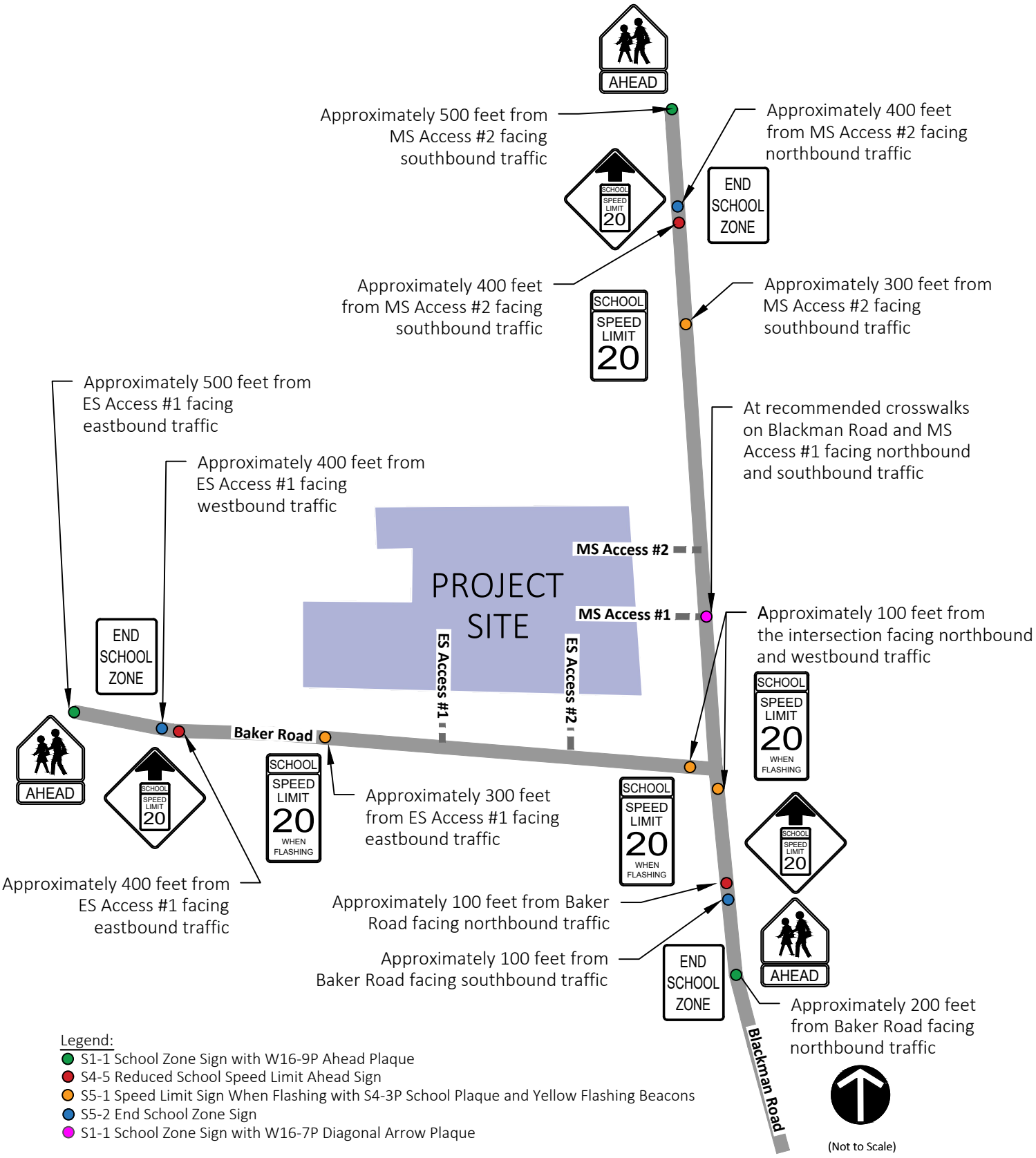


Figure 13: Recommended School Zone Plan



APPENDIX A
SITE PLAN

STORM WATER

PARKING

MIDDLE SCHOOL

BLACKMAN RD

STORM WATER

SOCCER

SOCCER

FOOTBALL

FOOTBALL

PARKING

ELEMENTARY SCHOOL
SINGLE STORY

PARKING

STORM WATER

BASEBALL

SOFTBALL

PROPERTY LINE

BAKER RD

STORM WATER

GRID

STATE PLANE COORDINATE
SYSTEM NAD-83 (1990)

0 60 120 240 360

GRAPHIC SCALE

Barge Cauthen & ASSOCIATES

Civil Engineers

6606 CHARLOTTE PIKE, STE 210
NASHVILLE, TENNESSEE 37209
615.356.9911 PHONE
615.352.6737 FAX

PRELIM SITE D with ES

BLACKMAN RD PROPERTY

1008 JOHN LOCKE LN

MURFREESBORO, TN 37129

DESCRIPTION

DATE

C1.5

BCA JOB NO. 2416-20

APPENDIX B
TDOT COUNT DATA & HISTORICAL ANALYSIS

TDOT Count Station Data Historical Growth Analysis (AADT)

Station No.	Station 193		Station 138	
Street	Burnt Knob Road		Manson Pike	
Location	West of Blackman Road		East of Blackman Road	
Year	**AADT**	**Annual % Growth**	**AADT**	**Annual % Growth**
2021	3,578	12.0%	7,925	12.0%
2020	3,195	-1.4%	7,076	-5.2%
2019	3,239	0.3%	7,468	-1.9%
2018	3,228	-2.1%	7,615	14.2%
2017	3,297	25.6%	6,666	1.7%
2016	2,626	1.0%	6,556	7.6%
2015	2,600	-0.8%	6,095	-1.7%
2014	2,622	2.9%	6,202	5.6%
2013	2,547	-0.4%	5,875	-3.8%
2012	2,557	13.0%	6,109	0.4%
2011	2,263		6,083	
With 2020 & 2021 Data:				
10-year Annual Avg Growth		5.0%		2.9%
5-year Annual Avg Growth		6.9%		4.1%
3-year Annual Avg Growth		3.7%		1.6%
Pre-pandemic Data:				
8-year Annual Avg Growth		4.9%		2.7%
5-year Annual Avg Growth		4.8%		4.0%
3-year Annual Avg Growth		7.9%		4.7%

APPENDIX C
TURNING MOVEMENT COUNTS

Collier Engineering Co., Inc.

2949 Nolensville Pike
Nashville, Tennessee 37211

File Name : Baker Rd at Altavista Ln
Site Code :
Start Date : 1/12/2023
Page No : 1

Groups Printed- Vehicles

	Baker Rd From North					Altavista Ln From East					Baker Rd From South					1 Mile Ln From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:30 AM	0	5	24	0	29	0	1	1	0	2	45	29	0	0	74	9	2	12	0	23	128
06:45 AM	1	16	21	0	38	0	0	0	0	0	63	27	1	0	91	5	0	9	0	14	143
Total	1	21	45	0	67	0	1	1	0	2	108	56	1	0	165	14	2	21	0	37	271
07:00 AM	0	29	31	0	60	0	1	0	0	1	49	41	0	0	90	6	2	21	0	29	180
07:15 AM	0	19	44	0	63	0	2	2	0	4	72	43	1	0	116	8	1	15	0	24	207
07:30 AM	0	21	46	0	67	0	3	0	0	3	74	31	0	0	105	10	0	17	0	27	202
07:45 AM	1	9	30	0	40	0	1	0	0	1	59	23	0	0	82	21	2	37	0	60	183
Total	1	78	151	0	230	0	7	2	0	9	254	138	1	0	393	45	5	90	0	140	772
08:00 AM	0	11	52	0	63	0	2	0	0	2	70	18	0	0	88	13	1	21	0	35	188
08:15 AM	0	11	9	0	20	0	0	1	0	1	18	16	0	0	34	13	0	25	0	38	93
*** BREAK ***																					
Total	0	22	61	0	83	0	2	1	0	3	88	34	0	0	122	26	1	46	0	73	281
*** BREAK ***																					
01:30 PM	2	19	15	0	36	0	2	0	0	2	23	13	0	0	36	8	3	24	0	35	109
01:45 PM	0	19	6	0	25	0	1	0	0	1	13	9	0	0	22	8	0	18	0	26	74
Total	2	38	21	0	61	0	3	0	0	3	36	22	0	0	58	16	3	42	0	61	183
02:00 PM	0	26	7	0	33	0	2	0	0	2	12	8	0	0	20	9	4	20	0	33	88
02:15 PM	0	15	17	0	32	0	1	0	0	1	21	16	0	0	37	7	1	32	0	40	110
02:30 PM	0	21	14	0	35	0	1	0	0	1	38	28	1	0	67	8	0	25	0	33	136
02:45 PM	0	29	20	0	49	0	0	0	0	0	36	33	0	0	69	17	0	36	0	53	171
Total	0	91	58	0	149	0	4	0	0	4	107	85	1	0	193	41	5	113	0	159	505
03:00 PM	0	13	21	0	34	0	1	0	0	1	27	20	0	0	47	26	1	39	0	66	148
03:15 PM	0	23	24	0	47	0	0	1	0	1	29	17	0	0	46	19	0	42	0	61	155
03:30 PM	1	21	22	0	44	0	1	1	0	2	28	19	0	0	47	32	0	61	0	93	186
03:45 PM	0	27	18	0	45	0	0	0	0	0	22	8	0	0	30	40	7	76	0	123	198
Total	1	84	85	0	170	0	2	2	0	4	106	64	0	0	170	117	8	218	0	343	687
Grand Total	5	334	421	0	760	0	19	6	0	25	699	399	3	0	1101	259	24	530	0	813	2699
Apprch %	0.7	43.9	55.4	0		0	76	24	0		63.5	36.2	0.3	0		31.9	3	65.2	0		
Total %	0.2	12.4	15.6	0	28.2	0	0.7	0.2	0	0.9	25.9	14.8	0.1	0	40.8	9.6	0.9	19.6	0	30.1	

Collier Engineering Co., Inc.

2949 Nolensville Pike
Nashville, Tennessee 37211

File Name : Baker Rd at Bass Rd
Site Code :
Start Date : 1/11/2023
Page No : 1

Groups Printed- Vehicles

	Baker Rd From North					Bass Rd From East					Baker Rd From South					Church Parking Lot From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:30 AM	5	12	1	0	18	0	1	24	0	25	0	42	0	0	42	0	0	1	0	1	86
06:45 AM	13	17	0	0	30	2	1	45	0	48	0	46	2	0	48	0	0	0	0	0	126
Total	18	29	1	0	48	2	2	69	0	73	0	88	2	0	90	0	0	1	0	1	212
07:00 AM	14	25	0	0	39	6	0	41	0	47	1	49	2	0	52	0	0	2	0	2	140
07:15 AM	11	26	0	0	37	1	0	37	0	38	0	84	3	0	87	0	0	0	0	0	162
07:30 AM	22	26	0	0	48	1	0	38	0	39	0	47	0	0	47	0	0	0	0	0	134
07:45 AM	16	25	0	0	41	1	0	35	0	36	0	42	1	0	43	0	0	0	0	0	120
Total	63	102	0	0	165	9	0	151	0	160	1	222	6	0	229	0	0	2	0	2	556
08:00 AM	10	19	0	0	29	0	1	33	0	34	0	31	2	0	33	0	0	0	0	0	96
08:15 AM	12	17	0	0	29	0	0	25	0	25	0	19	1	0	20	0	0	0	0	0	74
*** BREAK ***																					
Total	22	36	0	0	58	0	1	58	0	59	0	50	3	0	53	0	0	0	0	0	170
*** BREAK ***																					
01:30 PM	14	21	0	0	35	3	0	13	0	16	0	20	1	0	21	1	1	0	0	2	74
01:45 PM	16	35	0	0	51	0	0	8	0	8	0	12	1	0	13	1	0	0	0	1	73
Total	30	56	0	0	86	3	0	21	0	24	0	32	2	0	34	2	1	0	0	3	147
02:00 PM	21	33	1	0	55	5	0	15	0	20	0	16	1	0	17	0	0	0	0	0	92
02:15 PM	28	27	0	0	55	1	0	15	0	16	0	24	3	0	27	1	0	0	0	1	99
02:30 PM	22	25	0	0	47	0	0	22	0	22	0	36	4	0	40	0	0	0	0	0	109
02:45 PM	26	29	2	0	57	1	0	12	0	13	0	29	2	0	31	0	0	0	0	0	101
Total	97	114	3	0	214	7	0	64	0	71	0	105	10	0	115	1	0	0	0	1	401
03:00 PM	33	26	1	0	60	1	0	23	0	24	0	12	2	0	14	0	0	0	0	0	98
03:15 PM	36	39	0	0	75	2	0	18	0	20	0	19	1	0	20	0	0	0	0	0	115
03:30 PM	37	31	0	0	68	0	0	13	0	13	0	21	1	0	22	0	0	0	0	0	103
03:45 PM	40	56	0	0	96	0	0	16	0	16	0	14	1	0	15	0	0	0	0	0	127
Total	146	152	1	0	299	3	0	70	0	73	0	66	5	0	71	0	0	0	0	0	443
Grand Total	376	489	5	0	870	24	3	433	0	460	1	563	28	0	592	3	1	3	0	7	1929
Apprch %	43.2	56.2	0.6	0		5.2	0.7	94.1	0		0.2	95.1	4.7	0		42.9	14.3	42.9	0		
Total %	19.5	25.3	0.3	0	45.1	1.2	0.2	22.4	0	23.8	0.1	29.2	1.5	0	30.7	0.2	0.1	0.2	0	0.4	

Collier Engineering Co., Inc.

2949 Nolensville Pike
Nashville, Tennessee 37211

File Name : Baker Rd at Blackman Rd
Site Code :
Start Date : 1/25/2023
Page No : 1

Groups Printed- Vehicles

	Blackman Rd From North					From East					Blackman Rd From South					Baker Rd From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:30 AM	0	27	0	0	27	0	0	0	0	0	28	22	0	0	50	1	0	18	0	19	96
06:45 AM	0	33	2	0	35	0	0	0	0	0	48	33	0	0	81	0	0	37	0	37	153
Total	0	60	2	0	62	0	0	0	0	0	76	55	0	0	131	1	0	55	0	56	249
07:00 AM	0	35	5	0	40	0	0	0	0	0	96	23	0	0	119	0	0	39	0	39	198
07:15 AM	0	29	2	0	31	0	0	0	0	0	89	24	0	0	113	0	0	107	0	107	251
07:30 AM	0	35	1	0	36	0	0	0	0	0	21	19	0	0	40	0	0	59	0	59	135
07:45 AM	0	23	0	0	23	0	0	0	0	0	14	26	0	0	40	1	0	12	0	13	76
Total	0	122	8	0	130	0	0	0	0	0	220	92	0	0	312	1	0	217	0	218	660
08:00 AM	0	16	1	0	17	0	0	0	0	0	9	18	0	0	27	0	0	14	0	14	58
08:15 AM	0	18	0	0	18	0	0	0	0	0	14	17	0	0	31	0	0	21	0	21	70
*** BREAK ***																					
Total	0	34	1	0	35	0	0	0	0	0	23	35	0	0	58	0	0	35	0	35	128
*** BREAK ***																					
01:30 PM	0	7	0	0	7	0	0	0	0	0	21	19	0	0	40	0	0	16	0	16	63
01:45 PM	0	19	1	0	20	0	0	0	0	0	30	22	0	0	52	0	0	17	0	17	89
Total	0	26	1	0	27	0	0	0	0	0	51	41	0	0	92	0	0	33	0	33	152
02:00 PM	0	21	2	0	23	0	0	0	0	0	42	31	0	0	73	0	0	10	0	10	106
02:15 PM	0	13	0	0	13	0	0	0	0	0	33	21	0	0	54	1	0	18	0	19	86
02:30 PM	0	27	0	0	27	0	0	0	0	0	16	30	0	0	46	4	0	101	0	105	178
02:45 PM	0	31	1	0	32	0	0	0	0	0	22	17	0	0	39	0	0	39	0	39	110
Total	0	92	3	0	95	0	0	0	0	0	113	99	0	0	212	5	0	168	0	173	480
03:00 PM	0	13	0	0	13	0	0	0	0	0	18	25	0	0	43	0	0	20	0	20	76
03:15 PM	0	23	1	0	24	0	0	0	0	0	24	26	0	0	50	0	0	19	0	19	93
03:30 PM	0	24	0	0	24	0	0	0	0	0	24	23	0	0	47	0	0	23	0	23	94
03:45 PM	0	25	1	0	26	0	0	0	0	0	28	26	0	0	54	0	0	23	0	23	103
Total	0	85	2	0	87	0	0	0	0	0	94	100	0	0	194	0	0	85	0	85	366
Grand Total	0	419	17	0	436	0	0	0	0	0	577	422	0	0	999	7	0	593	0	600	2035
Apprch %	0	96.1	3.9	0		0	0	0	0		57.8	42.2	0	0		1.2	0	98.8	0		
Total %	0	20.6	0.8	0	21.4	0	0	0	0	0	28.4	20.7	0	0	49.1	0.3	0	29.1	0	29.5	

Collier Engineering Co., Inc.

2949 Nolensville Pike
Nashville, Tennessee 37211

File Name : Blackman Rd at Manson Pk
Site Code :
Start Date : 1/12/2023
Page No : 1

Groups Printed- Vehicles

	Blackman Rd From North					Manson Pk From East					Blackman Rd From South					Burnt Knob Rd From West					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:30 AM	24	16	7	0	47	30	34	26	0	90	2	14	7	0	23	8	6	1	0	15	175
06:45 AM	41	20	26	0	87	35	32	40	0	107	3	30	14	0	47	7	23	0	0	30	271
Total	65	36	33	0	134	65	66	66	0	197	5	44	21	0	70	15	29	1	0	45	446
07:00 AM	44	34	25	0	103	36	36	66	0	138	1	22	15	0	38	8	11	1	0	20	299
07:15 AM	66	33	15	0	114	37	47	37	0	121	3	25	26	0	54	8	17	2	0	27	316
07:30 AM	75	24	12	0	111	31	39	25	0	95	2	33	27	0	62	5	19	1	0	25	293
07:45 AM	43	28	9	0	80	24	38	30	0	92	0	22	30	0	52	2	23	1	0	26	250
Total	228	119	61	0	408	128	160	158	0	446	6	102	98	0	206	23	70	5	0	98	1158
08:00 AM	27	16	11	0	54	33	31	21	0	85	1	12	18	0	31	7	19	1	0	27	197
08:15 AM	24	10	6	0	40	12	23	16	0	51	1	14	14	0	29	7	13	0	0	20	140
*** BREAK ***																					
Total	51	26	17	0	94	45	54	37	0	136	2	26	32	0	60	14	32	1	0	47	337
*** BREAK ***																					
01:30 PM	27	14	8	0	49	19	18	24	0	61	0	13	21	0	34	2	18	1	0	21	165
01:45 PM	29	16	11	0	56	13	21	40	0	74	0	20	20	0	40	5	18	0	0	23	193
Total	56	30	19	0	105	32	39	64	0	135	0	33	41	0	74	7	36	1	0	44	358
02:00 PM	29	12	3	0	44	11	26	37	0	74	2	22	16	0	40	11	18	2	0	31	189
02:15 PM	26	11	4	0	41	16	18	48	0	82	0	13	13	0	26	4	10	0	0	14	163
02:30 PM	66	16	9	0	91	11	18	19	0	48	0	15	20	0	35	6	20	0	0	26	200
02:45 PM	53	22	16	0	91	8	24	23	0	55	0	34	40	0	74	14	34	0	0	48	268
Total	174	61	32	0	267	46	86	127	0	259	2	84	89	0	175	35	82	2	0	119	820
03:00 PM	20	16	8	0	44	13	14	25	0	52	0	20	48	0	68	10	25	0	0	35	199
03:15 PM	22	8	7	0	37	14	24	46	0	84	2	31	67	0	100	12	52	0	0	64	285
03:30 PM	36	11	12	0	59	18	23	42	0	83	0	23	24	0	47	8	24	2	0	34	223
03:45 PM	45	20	7	0	72	8	21	28	0	57	1	21	22	0	44	10	20	1	0	31	204
Total	123	55	34	0	212	53	82	141	0	276	3	95	161	0	259	40	121	3	0	164	911
Grand Total	697	327	196	0	1220	369	487	593	0	1449	18	384	442	0	844	134	370	13	0	517	4030
Apprch %	57.1	26.8	16.1	0		25.5	33.6	40.9	0		2.1	45.5	52.4	0		25.9	71.6	2.5	0		
Total %	17.3	8.1	4.9	0	30.3	9.2	12.1	14.7	0	36	0.4	9.5	11	0	20.9	3.3	9.2	0.3	0	12.8	

APPENDIX D
TRAFFIC CALCULATION WORKSHEETS

Traffic Volume Calculations
#1 Blackman Road and Baker Road

AM Peak Hour

Condition	Eastbound Baker Road			Northbound Blackman Road			Southbound Blackman Road		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
2023 Existing Traffic Volumes	0		242	254	99			132	10
Intersection Balancing Adjustment									
2023 Existing Traffic Volumes	**0**	**0**	**242**	**254**	**99**	**0**	**0**	**132**	**10**
2028 Background Growth									
Growth Rate (2.5% Annual for 5 Years)	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%
Background Growth Volumes	0	0	30	32	12	0	0	17	1
Approved Developments & % Remaning:									
Smith Farms 100%	4				17			51	11
Shelton Farms 55%			7	20	20			7	
2028 Background Traffic Volumes	**4**	**0**	**279**	**306**	**148**	**0**	**0**	**207**	**22**
New Site Traffic									
Directional Distribution (Elementary)									
Enter				85%					
Exit			40%						
Traffic Assignment (Elementary)									
Enter 394	0	0	0	335	0	0	0	0	0
Exit 348	0	0	139	0	0	0	0	0	0
Total Assignment (Elementary)	0	0	139	335	0	0	0	0	0
Directional Distribution (Middle)									
Enter					95%				
Exit								40%	
Traffic Assignment (Middle)									
Enter 433	0	0	0	0	411	0	0	0	0
Exit 334	0	0	0	0	0	0	0	134	0
Total Assignment (Middle)	0	0	0	0	411	0	0	134	0
Total Assignment	0	0	139	335	411	0	0	134	0
2028 Total Projected Traffic Volumes	**4**	**0**	**418**	**641**	**559**	**0**	**0**	**341**	**22**

PM Peak Hour

Condition	Eastbound Baker Road			Northbound Blackman Road			Southbound Blackman Road		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
2023 Existing Traffic Volumes	5		168	113	99			92	3
Intersection Balancing Adjustment									
2023 Existing Traffic Volumes	**5**	**0**	**168**	**113**	**99**	**0**	**0**	**92**	**3**
2028 Background Growth									
Growth Rate (2.5% Annual for 5 Years)	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%
Background Growth Volumes	1	0	21	14	12	0	0	12	0
Approved Developments & % Remaning:									
Smith Farms 100%	13				58			34	7
Shelton Farms 55%			23	14	14			23	
2028 Background Traffic Volumes	**19**	**0**	**212**	**141**	**183**	**0**	**0**	**161**	**10**
New Site Traffic									
Directional Distribution (Elementary)									
Enter				40%					
Exit			85%						
Traffic Assignment (Elementary)									
Enter 192	0	0	0	77	0	0	0	0	0
Exit 245	0	0	208	0	0	0	0	0	0
Total Assignment (Elementary)	0	0	208	77	0	0	0	0	0
Directional Distribution (Middle)									
Enter					40%				
Exit								95%	
Traffic Assignment (Middle)									
Enter 145	0	0	0	0	58	0	0	0	0
Exit 166	0	0	0	0	0	0	0	158	0
Total Assignment (Middle)	0	0	0	0	58	0	0	158	0
Total Assignment	0	0	208	77	58	0	0	158	0
2028 Total Projected Traffic Volumes	**19**	**0**	**420**	**218**	**241**	**0**	**0**	**319**	**10**

**Adjusted for rounding errors.*

Traffic Volume Calculations
#2 Baker Road and Bass Road

AM Peak Hour

Condition	Westbound Bass Road			Northbound Baker Road			Southbound Baker Road		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
2023 Existing Traffic Volumes	10		161		226	7	60	94	
Intersection Balancing Adjustment									
2023 Existing Traffic Volumes	**10**	**0**	**161**	**0**	**226**	**7**	**60**	**94**	**0**
2028 Background Growth									
Growth Rate (2.5% Annual for 5 Years)	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%
Background Growth Volumes	1	0	20	0	28	1	8	12	0
Approved Developments & % Remaning:									
Smith Farms 100%			12		11		4	4	
Shelton Farms 55%			20		20		7	7	
2028 Background Traffic Volumes	**11**	**0**	**213**	**0**	**285**	**8**	**79**	**117**	**0**
New Site Traffic									
Directional Distribution (Elementary)									
Enter								15%	
Exit					60%				
Traffic Assignment (Elementary)									
Enter 394	0	0	0	0	0	0	0	59	0
Exit 348	0	0	0	0	209	0	0	0	0
Total Assignment (Elementary)	0	0	0	0	209	0	0	59	0
Directional Distribution (Middle)									
Enter							5%		
Exit			60%						
Traffic Assignment (Middle)									
Enter 433	0	0	0	0	0	0	22	0	0
Exit 334	0	0	200	0	0	0	0	0	0
Total Assignment (Middle)	0	0	200	0	0	0	22	0	0
Total Assignment	0	0	200	0	209	0	22	59	0
2028 Total Projected Traffic Volumes	**11**	**0**	**413**	**0**	**494**	**8**	**101**	**176**	**0**

PM Peak Hour

Condition	Westbound Bass Road			Northbound Baker Road			Southbound Baker Road		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
2023 Existing Traffic Volumes	7		64		105	10	97	114	
Intersection Balancing Adjustment									
2023 Existing Traffic Volumes	**7**	**0**	**64**	**0**	**105**	**10**	**97**	**114**	**0**
2028 Background Growth									
Growth Rate (2.5% Annual for 5 Years)	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%
Background Growth Volumes	1	0	8	0	13	1	12	14	0
Approved Developments & % Remaning:									
Smith Farms 100%			8		7		13	13	
Shelton Farms 55%			14		14		23	23	
2028 Background Traffic Volumes	**8**	**0**	**94**	**0**	**139**	**11**	**145**	**164**	**0**
New Site Traffic									
Directional Distribution (Elementary)									
Enter								60%	
Exit					15%				
Traffic Assignment (Elementary)									
Enter 192	0	0	0	0	0	0	0	115	0
Exit 245	0	0	0	0	37	0	0	0	0
Total Assignment (Elementary)	0	0	0	0	37	0	0	115	0
Directional Distribution (Middle)									
Enter							60%		
Exit			5%						
Traffic Assignment (Middle)									
Enter 145	0	0	0	0	0	0	87	0	0
Exit 166	0	0	8	0	0	0	0	0	0
Total Assignment (Middle)	0	0	8	0	0	0	87	0	0
Total Assignment	0	0	8	0	37	0	87	115	0
2028 Total Projected Traffic Volumes	**8**	**0**	**102**	**0**	**176**	**11**	**232**	**279**	**0**

**Adjusted for rounding errors.*

Traffic Volume Calculations
#3 Baker Road and 1-Mile Lane/Altavista Lane

AM Peak Hour

Condition	Eastbound 1-Mile Lane			Westbound Altavista Lane			Northbound Baker Road			Southbound Baker Road		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
2023 Existing Traffic Volumes	29	3	62	0	6	2	258	142	2	1	85	142
Intersection Balancing Adjustment												
2023 Existing Traffic Volumes	**29**	**3**	**62**	**0**	**6**	**2**	**258**	**142**	**2**	**1**	**85**	**142**
2028 Background Growth												
Growth Rate (2.5% Annual for 5 Years)	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%
Background Growth Volumes	4	0	8	0	1	0	32	18	0	0	11	18
Approved Developments & % Remaning:												
Smith Farms 100%			4				11	12			4	
Shelton Farms 55%			7				20	20			7	
2028 Background Traffic Volumes	**33**	**3**	**81**	**0**	**7**	**2**	**321**	**192**	**2**	**1**	**107**	**160**
New Site Traffic												
Directional Distribution (Elementary)												
Enter			15%									
Exit							60%					
Traffic Assignment (Elementary)												
Enter 394	0	0	59	0	0	0	0	0	0	0	0	0
Exit 348	0	0	0	0	0	0	209	0	0	0	0	0
Total Assignment (Elementary)	0	0	59	0	0	0	209	0	0	0	0	0
Directional Distribution (Middle)												
Enter			5%									
Exit							60%					
Traffic Assignment (Middle)												
Enter 433	0	0	22	0	0	0	0	0	0	0	0	0
Exit 334	0	0	0	0	0	0	200	0	0	0	0	0
Total Assignment (Middle)	0	0	22	0	0	0	200	0	0	0	0	0
Total Assignment	0	0	81	0	0	0	409	0	0	0	0	0
2028 Total Projected Traffic Volumes	**33**	**3**	**162**	**0**	**7**	**2**	**730**	**192**	**2**	**1**	**107**	**160**

PM Peak Hour

Condition	Eastbound 1-Mile Lane			Westbound Altavista Lane			Northbound Baker Road			Southbound Baker Road		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
2023 Existing Traffic Volumes	41	5	113	0	4	0	107	85	1	0	91	58
Intersection Balancing Adjustment												
2023 Existing Traffic Volumes	**41**	**5**	**113**	**0**	**4**	**0**	**107**	**85**	**1**	**0**	**91**	**58**
2028 Background Growth												
Growth Rate (2.5% Annual for 5 Years)	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%
Background Growth Volumes	5	1	14	0	1	0	13	11	0	0	11	7
Approved Developments & % Remaning:												
Smith Farms 100%			12				7	8			13	
Shelton Farms 55%			23				14	14			23	
2028 Background Traffic Volumes	**46**	**6**	**162**	**0**	**5**	**0**	**141**	**118**	**1**	**0**	**138**	**65**
New Site Traffic												
Directional Distribution (Elementary)												
Enter			60%									
Exit							15%					
Traffic Assignment (Elementary)												
Enter 192	0	0	115	0	0	0	0	0	0	0	0	0
Exit 245	0	0	0	0	0	0	37	0	0	0	0	0
Total Assignment (Elementary)	0	0	115	0	0	0	37	0	0	0	0	0
Directional Distribution (Middle)												
Enter			60%									
Exit							5%					
Traffic Assignment (Middle)												
Enter 145	0	0	87	0	0	0	0	0	0	0	0	0
Exit 166	0	0	0	0	0	0	8	0	0	0	0	0
Total Assignment (Middle)	0	0	87	0	0	0	8	0	0	0	0	0
Total Assignment	0	0	202	0	0	0	45	0	0	0	0	0
2028 Total Projected Traffic Volumes	**46**	**6**	**364**	**0**	**5**	**0**	**186**	**118**	**1**	**0**	**138**	**65**

**Adjusted for rounding errors.*

Traffic Volume Calculations
#4 Blackman Road and Burnt Knob Road/Manson Pike

AM Peak Hour

Condition	Eastbound Burnt Knob Road			Westbound Manson Pike			Northbound Blackman Road			Southbound Blackman Road		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
2023 Existing Traffic Volumes	28	70	4	139	154	168	9	110	82	226	111	78
Intersection Balancing Adjustment												
2023 Existing Traffic Volumes	**28**	**70**	**4**	**139**	**154**	**168**	**9**	**110**	**82**	**226**	**111**	**78**
2028 Background Growth												
Growth Rate (2.5% Annual for 5 Years)	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%
Background Growth Volumes	4	9	1	17	19	21	1	14	10	28	14	10
Approved Developments & % Remaning:												
Smith Farms 100%	2					11		4		34	11	6
Shelton Farms 55%	3					20		7		59	20	10
2028 Background Traffic Volumes	**37**	**79**	**5**	**156**	**173**	**220**	**10**	**135**	**92**	**347**	**156**	**104**
New Site Traffic												
Directional Distribution (Elementary)												
Enter	60%							25%				
Exit										40%		
Traffic Assignment (Elementary)												
Enter 394	236	0	0	0	0	0	0	99	0	0	0	0
Exit 348	0	0	0	0	0	0	0	0	0	139	0	0
Total Assignment (Elementary)	236	0	0	0	0	0	0	99	0	139	0	0
Directional Distribution (Middle)												
Enter	25%							70%				
Exit										40%		
Traffic Assignment (Middle)												
Enter 433	108	0	0	0	0	0	0	303	0	0	0	0
Exit 334	0	0	0	0	0	0	0	0	0	134	0	0
Total Assignment (Middle)	108	0	0	0	0	0	0	303	0	134	0	0
Total Assignment	344	0	0	0	0	0	0	402	0	273	0	0
2028 Total Projected Traffic Volumes	**381**	**79**	**5**	**156**	**173**	**220**	**10**	**537**	**92**	**620**	**156**	**104**

PM Peak Hour

Condition	Eastbound Burnt Knob Road			Westbound Manson Pike			Northbound Blackman Road			Southbound Blackman Road		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
2023 Existing Traffic Volumes	35	82	2	46	86	127	2	84	89	174	61	32
Intersection Balancing Adjustment												
2023 Existing Traffic Volumes	**35**	**82**	**2**	**46**	**86**	**127**	**2**	**84**	**89**	**174**	**61**	**32**
2028 Background Growth												
Growth Rate (2.5% Annual for 5 Years)	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%
Background Growth Volumes	4	10	0	6	11	16	0	11	11	22	8	4
Approved Developments & % Remaning:												
Smith Farms 100%	6					38		14		22	8	4
Shelton Farms 55%	12					69		23		4	14	7
2028 Background Traffic Volumes	**57**	**92**	**2**	**52**	**97**	**250**	**2**	**132**	**100**	**222**	**91**	**47**
New Site Traffic												
Directional Distribution (Elementary)												
Enter						40%						
Exit											25%	60%
Traffic Assignment (Elementary)												
Enter 192	0	0	0	0	0	77	0	0	0	0	0	0
Exit 245	0	0	0	0	0	0	0	0	0	0	61	147
Total Assignment (Elementary)	0	0	0	0	0	77	0	0	0	0	61	147
Directional Distribution (Middle)												
Enter						40%						
Exit											70%	25%
Traffic Assignment (Middle)												
Enter 145	0	0	0	0	0	58	0	0	0	0	0	0
Exit 166	0	0	0	0	0	0	0	0	0	0	116	42
Total Assignment (Middle)	0	0	0	0	0	58	0	0	0	0	116	42
Total Assignment	0	0	0	0	0	135	0	0	0	0	177	189
2028 Total Projected Traffic Volumes	**57**	**92**	**2**	**52**	**97**	**385**	**2**	**132**	**100**	**222**	**268**	**236**

**Adjusted for rounding errors.*

Traffic Volume Calculations
#5 Blackman Road and Middle School Access #1/Elene Way (Entrance)

AM Peak Hour

Condition	Eastbound Middle School Access #1			Westbound Elene Way			Northbound Blackman Road			Southbound Blackman Road		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
2023 Existing Traffic Volumes								99			142	
Intersection Balancing Adjustment												
2023 Existing Traffic Volumes	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**99**	**0**	**0**	**142**	**0**
2028 Background Growth												
Growth Rate (2.5% Annual for 5 Years)	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%
Background Growth Volumes	0	0	0	0	0	0	0	12	0	0	18	0
Approved Developments & % Remaning:												
Smith Farms 100%				34		6		9	12	2	28	
Shelton Farms 55%								20			7	
2028 Background Traffic Volumes	**0**	**0**	**0**	**34**	**0**	**6**	**0**	**140**	**12**	**2**	**195**	**0**
New Site Traffic												
Directional Distribution (Elementary)												
Enter												
Exit												
Traffic Assignment (Elementary)												
Enter 394	0	0	0	0	0	0	0	0	0	0	0	0
Exit 348	0	0	0	0	0	0	0	0	0	0	0	0
Total Assignment (Elementary)	0	0	0	0	0	0	0	0	0	0	0	0
Directional Distribution (Middle)												
Enter							95%					5%
Exit											40%	
Traffic Assignment (Middle)												
Enter 433	0	0	0	0	0	0	411	0	0	0	0	22
Exit 334	0	0	0	0	0	0	0	0	0	0	134	0
Total Assignment (Middle)	0	0	0	0	0	0	411	0	0	0	134	22
Total Assignment	0	0	0	0	0	0	411	0	0	0	134	22
2028 Total Projected Traffic Volumes	**0**	**0**	**0**	**34**	**0**	**6**	**411**	**140**	**12**	**2**	**329**	**22**

PM Peak Hour

Condition	Eastbound Middle School Access #1			Westbound Elene Way			Northbound Blackman Road			Southbound Blackman Road		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
2023 Existing Traffic Volumes								104			95	
Intersection Balancing Adjustment												
2023 Existing Traffic Volumes	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**104**	**0**	**0**	**95**	**0**
2028 Background Growth												
Growth Rate (2.5% Annual for 5 Years)	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%
Background Growth Volumes	0	0	0	0	0	0	0	13	0	0	12	0
Approved Developments & % Remaning:												
Smith Farms 100%				22		4		32	39	6	19	
Shelton Farms 55%								14			23	
2028 Background Traffic Volumes	**0**	**0**	**0**	**22**	**0**	**4**	**0**	**163**	**39**	**6**	**149**	**0**
New Site Traffic												
Directional Distribution (Elementary)												
Enter												
Exit												
Traffic Assignment (Elementary)												
Enter 192	0	0	0	0	0	0	0	0	0	0	0	0
Exit 245	0	0	0	0	0	0	0	0	0	0	0	0
Total Assignment (Elementary)	0	0	0	0	0	0	0	0	0	0	0	0
Directional Distribution (Middle)												
Enter							40%					60%
Exit											95%	
Traffic Assignment (Middle)												
Enter 145	0	0	0	0	0	0	58	0	0	0	0	87
Exit 166	0	0	0	0	0	0	0	0	0	0	158	0
Total Assignment (Middle)	0	0	0	0	0	0	58	0	0	0	158	87
Total Assignment	0	0	0	0	0	0	58	0	0	0	158	87
2028 Total Projected Traffic Volumes	**0**	**0**	**0**	**22**	**0**	**4**	**58**	**163**	**39**	**6**	**307**	**87**

**Adjusted for rounding errors.*

Traffic Volume Calculations
#6 Blackman Road and Middle School Access #2 (Exit)

AM Peak Hour

Condition	Eastbound Middle School Access #2			Northbound Blackman Road			Southbound Blackman Road		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
2023 Existing Traffic Volumes					99			142	
Intersection Balancing Adjustment									
2023 Existing Traffic Volumes	**0**	**0**	**0**	**0**	**99**	**0**	**0**	**142**	**0**
2028 Background Growth									
Growth Rate (2.5% Annual for 5 Years)	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%
Background Growth Volumes	0	0	0	0	12	0	0	18	0
Approved Developments & % Remaning:									
Smith Farms 100%					15			30	
Shelton Farms 55%					20			7	
2028 Background Traffic Volumes	**0**	**0**	**0**	**0**	**146**	**0**	**0**	**197**	**0**
New Site Traffic									
Directional Distribution (Elementary)									
Enter									
Exit									
Traffic Assignment (Elementary)									
Enter 394	0	0	0	0	0	0	0	0	0
Exit 348	0	0	0	0	0	0	0	0	0
Total Assignment (Elementary)	0	0	0	0	0	0	0	0	0
Directional Distribution (Middle)									
Enter								5%	
Exit	60%		40%						
Traffic Assignment (Middle)									
Enter 433	0	0	0	0	0	0	0	22	0
Exit 334	200	0	134	0	0	0	0	0	0
Total Assignment (Middle)	200	0	134	0	0	0	0	22	0
Total Assignment	200	0	134	0	0	0	0	22	0
2028 Total Projected Traffic Volumes	**200**	**0**	**134**	**0**	**146**	**0**	**0**	**219**	**0**

PM Peak Hour

Condition	Eastbound Middle School Access #2			Northbound Blackman Road			Southbound Blackman Road		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
2023 Existing Traffic Volumes					104			95	
Intersection Balancing Adjustment									
2023 Existing Traffic Volumes	**0**	**0**	**0**	**0**	**104**	**0**	**0**	**95**	**0**
2028 Background Growth									
Growth Rate (2.5% Annual for 5 Years)	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%
Background Growth Volumes	0	0	0	0	13	0	0	12	0
Approved Developments & % Remaning:									
Smith Farms 100%					36			25	
Shelton Farms 55%					14			23	
2028 Background Traffic Volumes	**0**	**0**	**0**	**0**	**167**	**0**	**0**	**155**	**0**
New Site Traffic									
Directional Distribution (Elementary)									
Enter									
Exit									
Traffic Assignment (Elementary)									
Enter 192	0	0	0	0	0	0	0	0	0
Exit 245	0	0	0	0	0	0	0	0	0
Total Assignment (Elementary)	0	0	0	0	0	0	0	0	0
Directional Distribution (Middle)									
Enter								60%	
Exit	5%		95%						
Traffic Assignment (Middle)									
Enter 145	0	0	0	0	0	0	0	87	0
Exit 166	8	0	158	0	0	0	0	0	0
Total Assignment (Middle)	8	0	158	0	0	0	0	87	0
Total Assignment	8	0	158	0	0	0	0	87	0
2028 Total Projected Traffic Volumes	**8**	**0**	**158**	**0**	**167**	**0**	**0**	**242**	**0**

**Adjusted for rounding errors.*

Traffic Volume Calculations
#7 Baker Road and Elementary School Access #1 (Entrance)

AM Peak Hour

Condition	Eastbound Baker Road			Westbound Baker Road			Southbound Elementary School Access #1		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
2023 Existing Traffic Volumes		242			264				
Intersection Balancing Adjustment									
2023 Existing Traffic Volumes	**0**	**242**	**0**	**0**	**264**	**0**	**0**	**0**	**0**
2028 Background Growth									
Growth Rate (2.5% Annual for 5 Years)	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%
Background Growth Volumes	0	30	0	0	33	0	0	0	0
Approved Developments & % Remaning:									
Smith Farms 100%		4			11				
Shelton Farms 55%		7			20				
2028 Background Traffic Volumes	**0**	**283**	**0**	**0**	**328**	**0**	**0**	**0**	**0**
New Site Traffic									
Directional Distribution (Elementary)									
Enter	15%					85%			
Exit					60%				
Traffic Assignment (Elementary)									
Enter 394	59	0	0	0	0	335	0	0	0
Exit 348	0	0	0	0	209	0	0	0	0
Total Assignment (Elementary)	59	0	0	0	209	335	0	0	0
Directional Distribution (Middle)									
Enter									
Exit									
Traffic Assignment (Middle)									
Enter 433	0	0	0	0	0	0	0	0	0
Exit 334	0	0	0	0	0	0	0	0	0
Total Assignment (Middle)	0	0	0	0	0	0	0	0	0
Total Assignment	59	0	0	0	209	335	0	0	0
2028 Total Projected Traffic Volumes	**59**	**283**	**0**	**0**	**537**	**335**	**0**	**0**	**0**

PM Peak Hour

Condition	Eastbound Baker Road			Westbound Baker Road			Southbound Elementary School Access #1		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
2023 Existing Traffic Volumes		173			116				
Intersection Balancing Adjustment									
2023 Existing Traffic Volumes	**0**	**173**	**0**	**0**	**116**	**0**	**0**	**0**	**0**
2028 Background Growth									
Growth Rate (2.5% Annual for 5 Years)	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%
Background Growth Volumes	0	22	0	0	15	0	0	0	0
Approved Developments & % Remaning:									
Smith Farms 100%		13			7				
Shelton Farms 55%		23			14				
2028 Background Traffic Volumes	**0**	**231**	**0**	**0**	**152**	**0**	**0**	**0**	**0**
New Site Traffic									
Directional Distribution (Elementary)									
Enter	60%					40%			
Exit					15%				
Traffic Assignment (Elementary)									
Enter 192	115	0	0	0	0	77	0	0	0
Exit 245	0	0	0	0	37	0	0	0	0
Total Assignment (Elementary)	115	0	0	0	37	77	0	0	0
Directional Distribution (Middle)									
Enter									
Exit									
Traffic Assignment (Middle)									
Enter 145	0	0	0	0	0	0	0	0	0
Exit 166	0	0	0	0	0	0	0	0	0
Total Assignment (Middle)	0	0	0	0	0	0	0	0	0
Total Assignment	115	0	0	0	37	77	0	0	0
2028 Total Projected Traffic Volumes	**115**	**231**	**0**	**0**	**189**	**77**	**0**	**0**	**0**

**Adjusted for rounding errors.*

Traffic Volume Calculations
#8 Baker Road and Elementary School Access #2 (Exit)

AM Peak Hour

Condition	Eastbound Baker Road			Westbound Baker Road			Southbound Elementary School Access #2		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
2023 Existing Traffic Volumes		242			264				
Intersection Balancing Adjustment									
2023 Existing Traffic Volumes	**0**	**242**	**0**	**0**	**264**	**0**	**0**	**0**	**0**
2028 Background Growth									
Growth Rate (2.5% Annual for 5 Years)	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%
Background Growth Volumes	0	30	0	0	33	0	0	0	0
Approved Developments & % Remaning:									
Smith Farms 100%		4			11				
Shelton Farms 55%		7			20				
2028 Background Traffic Volumes	**0**	**283**	**0**	**0**	**328**	**0**	**0**	**0**	**0**
New Site Traffic									
Directional Distribution (Elementary)									
Enter					85%				
Exit							40%		60%
Traffic Assignment (Elementary)									
Enter 394	0	0	0	0	335	0	0	0	0
Exit 348	0	0	0	0	0	0	139	0	209
Total Assignment (Elementary)	0	0	0	0	335	0	139	0	209
Directional Distribution (Middle)									
Enter									
Exit									
Traffic Assignment (Middle)									
Enter 433	0	0	0	0	0	0	0	0	0
Exit 334	0	0	0	0	0	0	0	0	0
Total Assignment (Middle)	0	0	0	0	0	0	0	0	0
Total Assignment	0	0	0	0	335	0	139	0	209
2028 Total Projected Traffic Volumes	**0**	**283**	**0**	**0**	**663**	**0**	**139**	**0**	**209**

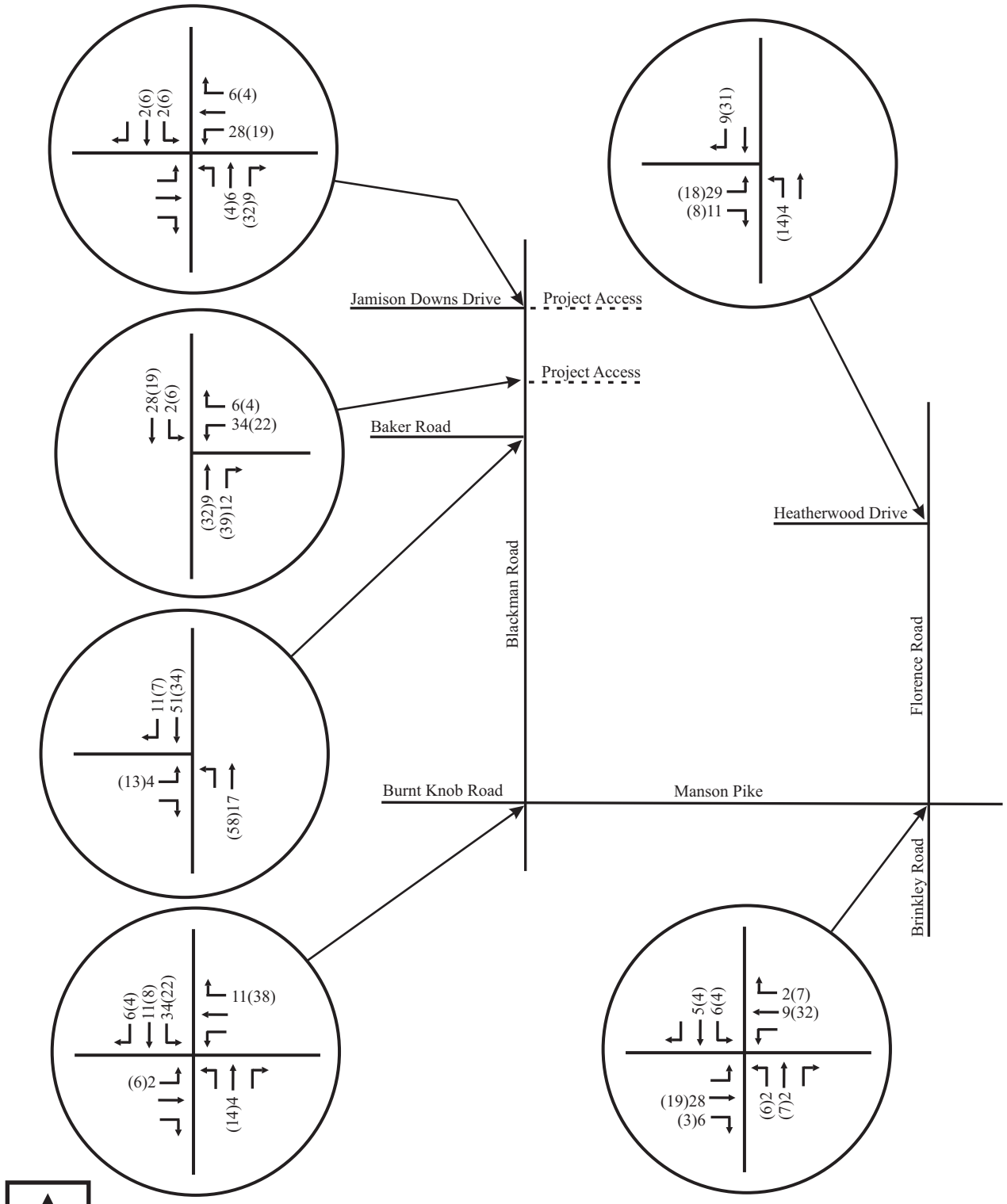
PM Peak Hour

Condition	Eastbound Baker Road			Westbound Baker Road			Southbound Elementary School Access #2		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
2023 Existing Traffic Volumes		173			116				
Intersection Balancing Adjustment									
2023 Existing Traffic Volumes	**0**	**173**	**0**	**0**	**116**	**0**	**0**	**0**	**0**
2028 Background Growth									
Growth Rate (2.5% Annual for 5 Years)	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%
Background Growth Volumes	0	22	0	0	15	0	0	0	0
Approved Developments & % Remaning:									
Smith Farms 100%		13			7				
Shelton Farms 55%		23			14				
2028 Background Traffic Volumes	**0**	**231**	**0**	**0**	**152**	**0**	**0**	**0**	**0**
New Site Traffic									
Directional Distribution (Elementary)									
Enter					40%				
Exit							85%		15%
Traffic Assignment (Elementary)									
Enter 192	0	0	0	0	77	0	0	0	0
Exit 245	0	0	0	0	0	0	208	0	37
Total Assignment (Elementary)	0	0	0	0	77	0	208	0	37
Directional Distribution (Middle)									
Enter									
Exit									
Traffic Assignment (Middle)									
Enter 145	0	0	0	0	0	0	0	0	0
Exit 166	0	0	0	0	0	0	0	0	0
Total Assignment (Middle)	0	0	0	0	0	0	0	0	0
Total Assignment	0	0	0	0	77	0	208	0	37
2028 Total Projected Traffic Volumes	**0**	**231**	**0**	**0**	**229**	**0**	**208**	**0**	**37**

**Adjusted for rounding errors.*

APPENDIX E
SITE-SPECIFIC BACKGROUND DEVELOPMENT INFORMATION

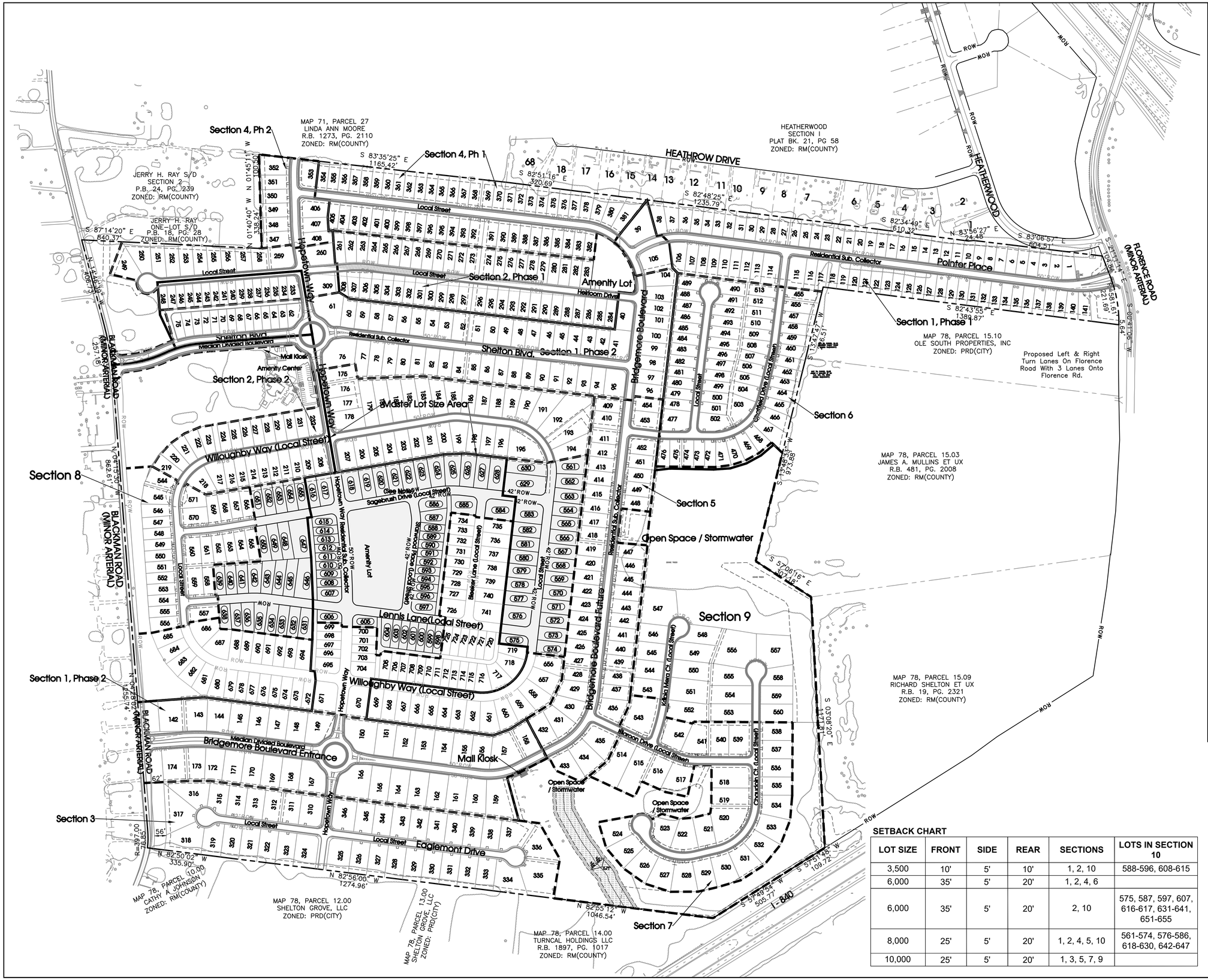
F i s c h b a c h
Transportation Group, LLC
Traffic Engineering and Planning



No Scale

XX - AM Peak Hour Volumes
(XX) - PM Peak Hour Volumes

Figure 7.
Peak Hour Traffic Volumes
Generated by the Proposed Project



Legend:

☐	EXIST. CONCRETE MONUMENT	⊡	INLET PROTECTION FILTER
●	IRON PIN SET (I.P.S.)	♿	HANDICAP PARKING SYMBOL
○	IRON PIN FOUND (I.P.F.)	⇦	HC SIGN
⊸	EXIST. SIGN POST	▬	HEADWALL
○	EXIST. SEWER CLEANOUT	⌒	WINGED HEADWALL
◯	EXIST. MANHOLE (SEWER & PHONE)	◯	MANHOLE
⊖	EXIST. CATCH BASIN (STORM SEWER)	63.25 ×	PROPOSED SPOT ELEVATION
⊗	EXIST. WATER/GAS VALVE	(63.25) ×	EXIST. SPOT ELEVATION
T	EXIST. TELEPHONE RISER	◐	POST INDICATOR VALVE
G	EXIST. GAS RISER	▭	REDUCER
E	ELECTRICAL ENCLOSURE	⊄	REMOTE FIRE DEPT. CONNECTION
W	EXIST. WATER METER	△	REVISION NUMBER
○	EXIST. UTILITY POLE	⁂	RIP RAP
◇	EXIST. FIRE HYDRANT	➡	RUNOFF FLOW ARROW
⊕	BENCHMARK	>	SEWER/STORM FLOW DIRECTION
◩	BLOW OFF VALVE	➡	TRAFFIC ARROW
•	CONCRETE BOLLARD	➡	TURN LANE ARROWS
▩	CATCH BASIN	V.A.	VAN ACCESSIBLE HANDICAP DESIGNATION
▩	CURB INLET	W	WATER METER
●	AREA DRAIN	▭	WHEEL STOP
◩	CONCRETE THRUST BLOCK	⊠	GREASE TRAP
▬	DOUBLE DETECTOR CHECK VALVE	#1	DRAINAGE STRUCTURE DESIGNATION
⊀	FIRE DEPT. CONNECTION	Ⓐ	DRAINAGE PIPE DESIGNATION
▶	FIRE HYDRANT	⋰⋰	CONCRETE SIDEWALK
G	GAS METER	═	EXTRUDED CURB
⊗	GATE VALVE & BOX	═	CURB & GUTTER
○	EXTERIOR CLEANOUT	⋰⋰	CONCRETE SWALE
⊣⊢	CHECK VALVE		

EXISTING PHONE	PH
EXISTING ELECTRIC	OH
PROPERTY LINE	
EASEMENTS	
RIGHT OF WAY	ROW
EROSION CONTROL SILT FENCE	SF SF SF
EXISTING TREELINE	
EXISTING FENCELINE	X X X X
MINIMUM BUILDING SETBACK LINE	
PHASE BOUNDARY	
EXISTING GAS LINE	GAS
PROPOSED GAS LINE	GAS
EXISTING STORM	STM STM
PROPOSED STORM	STM STM
EXISTING CONTOUR LINES	601
PROPOSED CONTOUR LINES	601
EXISTING SANITARY SEWER	SS SS
PROPOSED SANITARY SEWER	
EXISTING WATER	W W
PROPOSED WATER	W W

SETBACK CHART

LOT SIZE	FRONT	SIDE	REAR	SECTIONS	LOTS IN SECTION 10
3,500	10'	5'	10'	1, 2, 10	588-596, 608-615
6,000	35'	5'	20'	1, 2, 4, 6	
6,000	35'	5'	20'	2, 10	575, 587, 597, 607, 616-617, 631-641, 651-655
8,000	25'	5'	20'	1, 2, 4, 5, 10	561-574, 576-586, 618-630, 642-647
10,000	25'	5'	20'	1, 3, 5, 7, 9	

N

-200′ 0 200′ 400′

SCALE: 1"= 200′

SITE ENGINEERING CONSULTANTS
ENGINEERING • SURVEYING • LAND PLANNING
LANDSCAPE ARCHITECTURE
SEC, Inc.
850 MIDDLE TENNESSEE BOULEVARD MURFREESBORO, TENNESSEE 37129
PHONE (615) 895-7221 FAX (615) 895-7567

This site as shown on these construction drawings is intended to achieve specific engineering design criteria and objectives. It is the sole responsibility of the contractor to construct the site in accordance with these construction drawings and to take all necessary measures to comply with the design as noted, described, and illustrated. The engineer assumes no administrative liability or responsibility in the assurance that the site is constructed in accordance with the construction plans.

REVIEW SET
(Not Intended For Construction)

Shelton Square Section 10

Murfreesboro, Tennessee

REVISED: 4-6-2022: PC Comments

DRAWN: CFBJ, SJA
DATE: 3-17-2022
CHECKED: JFM
FILE NAME: 15302section10
SCALE: 1"=200'
JOB NO. 15302

Master Plan

SHEET:
2 of 19

APPENDIX F
TRIP GENERATION CALCULATIONS

Daily Distribution of Entering/Exiting School Volumes

Hourly Distribution of Entering and Exiting Vehicle Trips by Land Use			
Source: ITE *Trip Generation Manual*, 11th Edition			
Land Use Code	520		
Land Use	Elementary School		
Setting	General Urban/Suburban		
Time Period	Weekday		
# Data Sites	13		
	% of 24-Hour Vehicle Trips		
Time	**Total**	**Entering**	**Exiting**
12:00 - 1:00 AM	0.0%	0.0%	0.0%
1:00 - 2:00 AM	0.0%	0.0%	0.0%
2:00 - 3:00 AM	0.0%	0.0%	0.0%
3:00 - 4:00 AM	0.0%	0.0%	0.0%
4:00 - 5:00 AM	0.0%	0.0%	0.0%
5:00 - 6:00 AM	0.0%	0.1%	0.0%
6:00 - 7:00 AM	2.3%	3.2%	1.4%
7:00 - 8:00 AM	31.0%	35.7%	26.3%
8:00 - 9:00 AM	13.0%	11.6%	14.4%
9:00 - 10:00 AM	2.0%	2.1%	2.0%
10:00 - 11:00 AM	2.0%	1.9%	2.1%
11:00 - 12:00 PM	2.7%	2.5%	2.8%
12:00 - 1:00 PM	2.4%	2.7%	2.2%
1:00 - 2:00 PM	3.7%	3.6%	3.9%
2:00 - 3:00 PM	15.4%	14.7%	16.0%
3:00 - 4:00 PM	10.3%	8.5%	12.1%
4:00 - 5:00 PM	8.2%	7.0%	9.4%
5:00 - 6:00 PM	5.2%	4.9%	5.6%
6:00 - 7:00 PM	1.1%	1.1%	1.1%
7:00 - 8:00 PM	0.2%	0.2%	0.2%
8:00 - 9:00 PM	0.2%	0.1%	0.3%
9:00 - 10:00 PM	0.0%	0.0%	0.0%
10:00 - 11:00 PM	0.0%	0.0%	0.0%
11:00 - 12:00 AM	0.0%	0.0%	0.0%

Hourly Distribution of Entering and Exiting Vehicle Trips by Land Use			
Source: ITE *Trip Generation Manual*, 11th Edition			
Land Use Code	522		
Land Use	Middle School/Junior High School		
Setting	General Urban/Suburban		
Time Period	Weekday		
# Data Sites	3		
	% of 24-Hour Vehicle Trips		
Time	**Total**	**Entering**	**Exiting**
12:00 - 1:00 AM	0.1%	0.1%	0.1%
1:00 - 2:00 AM	0.0%	0.0%	0.1%
2:00 - 3:00 AM	0.1%	0.0%	0.1%
3:00 - 4:00 AM	0.0%	0.0%	0.0%
4:00 - 5:00 AM	0.0%	0.1%	0.0%
5:00 - 6:00 AM	0.2%	0.3%	0.1%
6:00 - 7:00 AM	1.2%	1.7%	0.7%
7:00 - 8:00 AM	28.7%	33.4%	24.0%
8:00 - 9:00 AM	12.1%	11.5%	12.7%
9:00 - 10:00 AM	1.4%	1.4%	1.4%
10:00 - 11:00 AM	1.3%	1.3%	1.4%
11:00 - 12:00 PM	1.4%	1.4%	1.3%
12:00 - 1:00 PM	1.4%	1.5%	1.4%
1:00 - 2:00 PM	1.6%	1.5%	1.8%
2:00 - 3:00 PM	6.2%	8.3%	4.1%
3:00 - 4:00 PM	13.8%	10.1%	17.5%
4:00 - 5:00 PM	5.9%	6.0%	5.8%
5:00 - 6:00 PM	7.6%	7.7%	7.4%
6:00 - 7:00 PM	7.7%	8.5%	7.0%
7:00 - 8:00 PM	4.9%	3.2%	6.6%
8:00 - 9:00 PM	3.4%	1.4%	5.4%
9:00 - 10:00 PM	0.7%	0.6%	0.9%
10:00 - 11:00 PM	0.2%	0.1%	0.3%
11:00 - 12:00 AM	0.1%	0.0%	0.1%

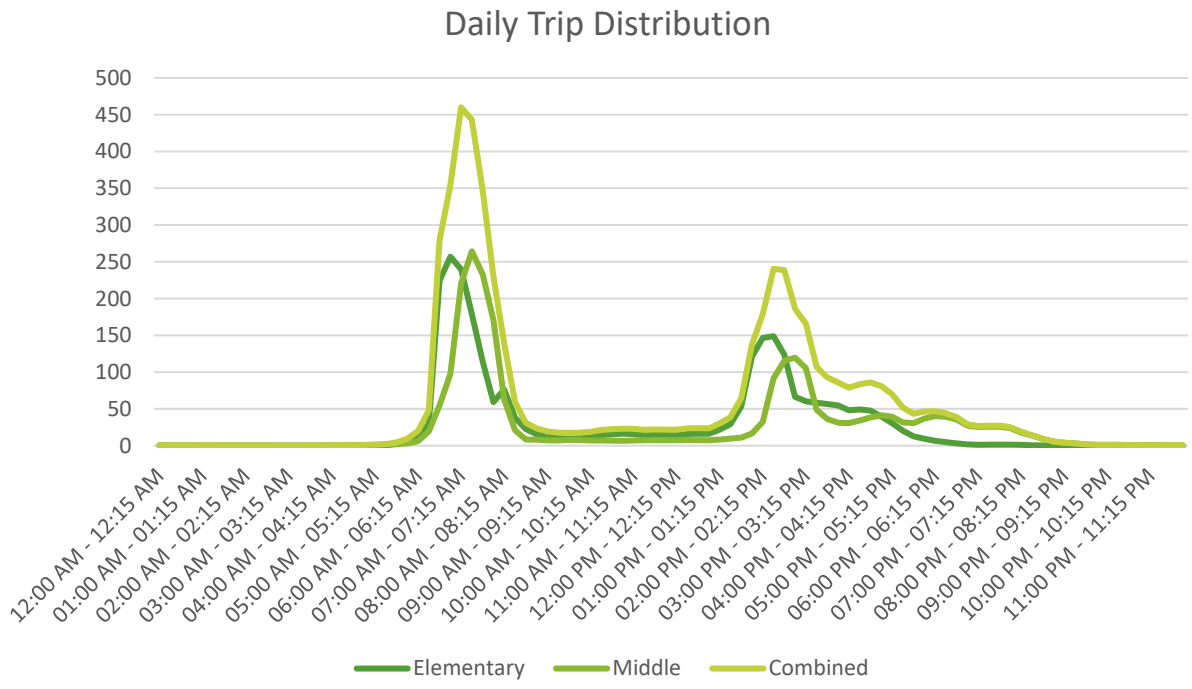
15-Minute Interval	Elementary School			Middle School			Combined			Peak Hour Volume
	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total	
12:00 AM - 12:15 AM	0	0	**0**	0	0	**1**	0	0	**1**	0
12:15 AM - 12:30 AM	0	0	0	0	0	0	0	0	0	0
12:30 AM - 12:45 AM	0	0	**0**	0	0	**0**	0	0	**0**	1
12:45 AM - 01:00 AM	0	0	**0**	0	0	**0**	0	0	**0**	1
01:00 AM - 01:15 AM	0	0	**0**	0	0	**0**	0	0	**0**	0
01:15 AM - 01:30 AM	0	0	**0**	0	0	**0**	0	0	**0**	0
01:30 AM - 01:45 AM	0	0	**0**	0	0	**0**	0	0	**0**	0
01:45 AM - 02:00 AM	0	0	0	0	0	0	0	0	0	0
02:00 AM - 02:15 AM	0	0	0	0	0	0	0	0	0	0
02:15 AM - 02:30 AM	0	0	0	0	0	0	0	0	0	0
02:30 AM - 02:45 AM	0	0	0	0	0	0	0	0	0	0
02:45 AM - 03:00 AM	0	0	0	0	0	0	0	0	0	0
03:00 AM - 03:15 AM	0	0	0	0	0	0	0	0	0	0
03:15 AM - 03:30 AM	0	0	0	0	0	0	0	0	0	0
03:30 AM - 03:45 AM	0	0	0	0	0	0	0	0	0	0
03:45 AM - 04:00 AM	0	0	**0**	0	0	**0**	0	0	**0**	2
04:00 AM - 04:15 AM	0	0	**0**	0	0	**0**	0	0	**0**	2
04:15 AM - 04:30 AM	0	0	**0**	0	0	**0**	0	0	**0**	3
04:30 AM - 04:45 AM	0	0	**0**	0	0	**1**	0	0	**1**	5
04:45 AM - 05:00 AM	0	0	**0**	1	0	**1**	1	0	**1**	9
05:00 AM - 05:15 AM	0	0	**0**	1	0	**1**	1	0	**1**	17
05:15 AM - 05:30 AM	1	0	**1**	1	0	**2**	2	0	**2**	36
05:30 AM - 05:45 AM	2	0	**2**	1	1	**2**	3	1	**4**	82
05:45 AM - 06:00 AM	5	2	**6**	2	1	**3**	7	2	**9**	356
06:00 AM - 06:15 AM	9	4	**14**	4	2	**6**	14	6	**20**	701
06:15 AM - 06:30 AM	19	10	**29**	13	7	**19**	32	16	**48**	1142
06:30 AM - 06:45 AM	129	95	**224**	34	20	**55**	163	115	**279**	1537
06:45 AM - 07:00 AM	138	118	**257**	59	39	**98**	197	157	**355**	**1605**
07:00 AM - 07:15 AM	123	117	**240**	128	92	**220**	251	209	**460**	1480
07:15 AM - 07:30 AM	85	94	**179**	147	117	**264**	233	211	**443**	1159
07:30 AM - 07:45 AM	71	43	**114**	123	110	**233**	194	153	**347**	775
07:45 AM - 08:00 AM	38	21	**59**	87	84	**171**	125	105	**230**	459
08:00 AM - 08:15 AM	34	42	**76**	30	33	**63**	64	75	**139**	253
08:15 AM - 08:30 AM	18	20	**38**	9	12	**21**	27	32	**59**	133
08:30 AM - 08:45 AM	12	11	**23**	4	4	**8**	16	15	**31**	92
08:45 AM - 09:00 AM	8	8	**16**	4	4	**8**	12	12	**24**	78
09:00 AM - 09:15 AM	6	6	**12**	4	4	**7**	10	10	**19**	72
09:15 AM - 09:30 AM	6	5	**11**	4	3	**7**	9	8	**18**	71
09:30 AM - 09:45 AM	5	5	**10**	4	4	**8**	9	8	**17**	75
09:45 AM - 10:00 AM	5	5	**10**	4	4	**8**	9	9	**18**	80

AM Peak

15-Minute Interval	Elementary School			Middle School			Combined			Peak Hour Volume
	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total	
10:00 AM - 10:15 AM	6	6	**12**	3	4	**7**	9	10	**19**	85
10:15 AM - 10:30 AM	7	7	**14**	4	3	**7**	11	11	**21**	90
10:30 AM - 10:45 AM	7	8	**16**	4	3	**7**	11	11	**22**	90
10:45 AM - 11:00 AM	8	8	**16**	3	3	**7**	11	12	**23**	89
11:00 AM - 11:15 AM	7	8	**16**	4	3	**7**	11	12	**23**	88
11:15 AM - 11:30 AM	7	7	**14**	4	4	**7**	11	11	**22**	87
11:30 AM - 11:45 AM	7	7	**15**	4	4	**7**	11	11	**22**	89
11:45 AM - 12:00 PM	7	7	**14**	4	3	**7**	11	11	**22**	91
12:00 PM - 12:15 PM	8	6	**14**	4	4	**8**	12	10	**22**	93
12:15 PM - 12:30 PM	9	7	**16**	4	4	**8**	12	11	**24**	101
12:30 PM - 12:45 PM	8	8	**16**	3	4	**7**	12	12	**24**	116
12:45 PM - 01:00 PM	8	8	**16**	3	4	**7**	11	12	**24**	157
01:00 PM - 01:15 PM	11	11	**22**	4	5	**8**	14	16	**30**	271
01:15 PM - 01:30 PM	16	13	**29**	5	5	**10**	20	18	**39**	420
01:30 PM - 01:45 PM	29	24	**53**	6	5	**11**	35	29	**64**	621
01:45 PM - 02:00 PM	64	57	**121**	12	5	**17**	75	63	**138**	796
02:00 PM - 02:15 PM	70	76	**146**	22	11	**32**	92	87	**179**	**844**
02:15 PM - 02:30 PM	67	82	**149**	46	46	**92**	113	127	**240**	831
02:30 PM - 02:45 PM	52	71	**124**	52	63	**115**	104	135	**239**	698
02:45 PM - 03:00 PM	27	40	**66**	49	70	**120**	76	110	**186**	552
03:00 PM - 03:15 PM	25	35	**60**	38	67	**105**	64	102	**166**	451
03:15 PM - 03:30 PM	23	35	**58**	20	29	**49**	43	64	**107**	364
03:30 PM - 03:45 PM	23	34	**57**	17	19	**36**	40	53	**93**	341
03:45 PM - 04:00 PM	22	33	**55**	15	16	**31**	37	49	**86**	334
04:00 PM - 04:15 PM	21	28	**48**	16	15	**31**	36	43	**79**	329
04:15 PM - 04:30 PM	22	27	**49**	16	18	**34**	39	45	**84**	321
04:30 PM - 04:45 PM	22	26	**48**	18	20	**38**	40	46	**86**	289
04:45 PM - 05:00 PM	18	21	**40**	21	20	**41**	40	41	**81**	246
05:00 PM - 05:15 PM	14	16	**31**	20	19	**39**	34	36	**70**	212
05:15 PM - 05:30 PM	10	11	**20**	19	13	**32**	28	23	**52**	188
05:30 PM - 05:45 PM	6	6	**13**	20	10	**31**	27	17	**43**	180
05:45 PM - 06:00 PM	4	5	**9**	20	17	**37**	25	22	**46**	176
06:00 PM - 06:15 PM	3	3	**6**	22	18	**40**	25	22	**47**	159
06:15 PM - 06:30 PM	2	3	**5**	20	19	**39**	22	22	**44**	138
06:30 PM - 06:45 PM	1	2	**3**	16	20	**36**	17	22	**39**	122
06:45 PM - 07:00 PM	1	1	**2**	12	15	**27**	13	16	**29**	110
07:00 PM - 07:15 PM	1	1	**1**	8	17	**26**	9	18	**27**	106
07:15 PM - 07:30 PM	0	1	**1**	7	19	**26**	8	19	**27**	98
07:30 PM - 07:45 PM	0	1	**1**	6	19	**26**	7	20	**27**	85
07:45 PM - 08:00 PM	0	1	**1**	5	19	**24**	5	20	**25**	67

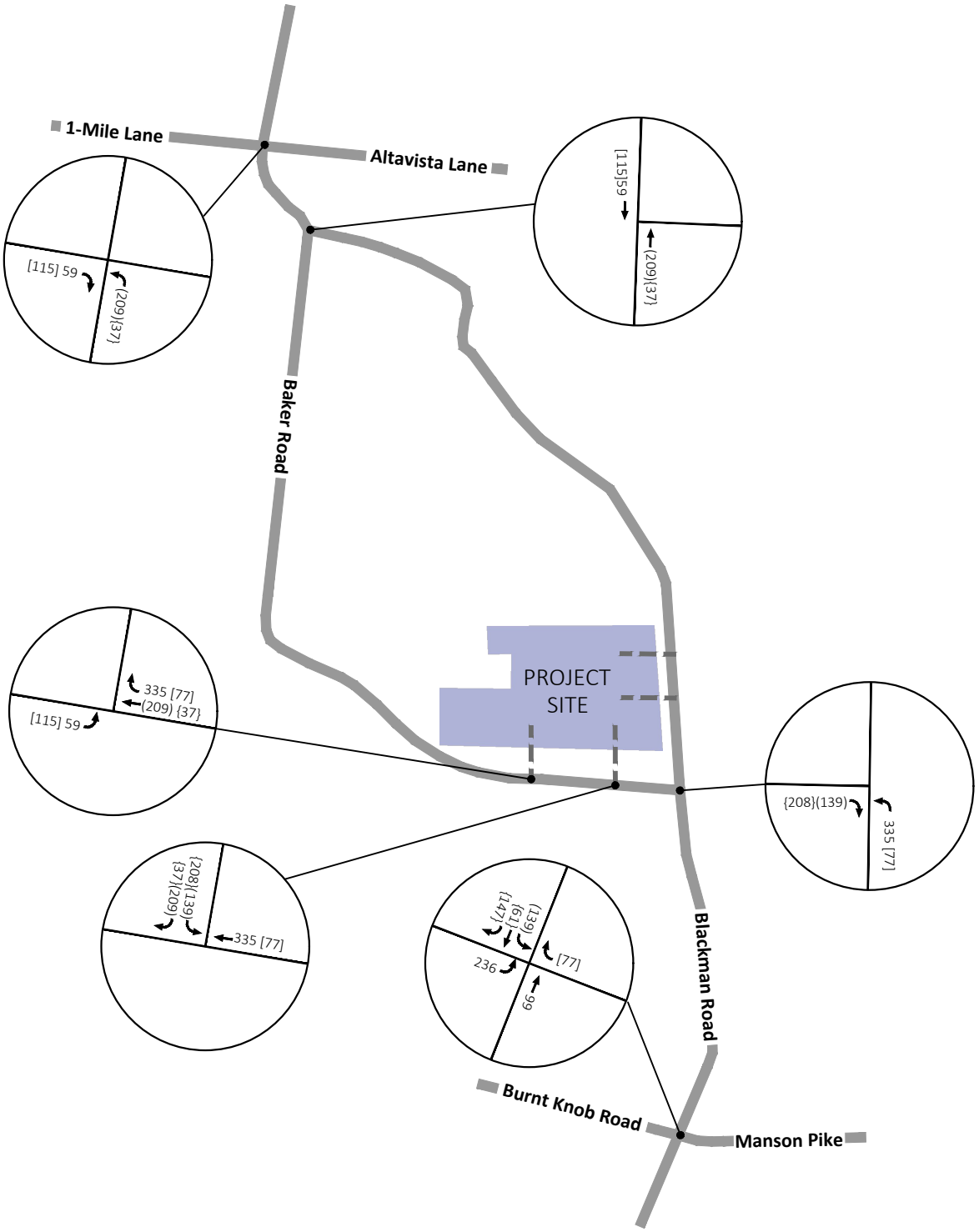
PM Peak

15-Minute Interval	Elementary School			Middle School			Combined			Peak Hour Volume
	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total	
08:00 PM - 08:15 PM	0	1	**1**	4	14	**18**	4	15	**19**	48
08:15 PM - 08:30 PM	0	0	**0**	3	10	**14**	4	10	**14**	33
08:30 PM - 08:45 PM	0	0	**0**	2	7	**9**	2	7	**9**	22
08:45 PM - 09:00 PM	0	0	**0**	2	4	**5**	2	4	**6**	14
09:00 PM - 09:15 PM	0	0	**0**	1	2	**4**	2	3	**4**	10
09:15 PM - 09:30 PM	0	0	**0**	1	2	**3**	1	2	**3**	7
09:30 PM - 09:45 PM	0	0	**0**	0	1	**2**	0	1	**2**	5
09:45 PM - 10:00 PM	0	0	**0**	0	1	**1**	0	1	**1**	4
10:00 PM - 10:15 PM	0	0	**0**	0	1	**1**	0	1	**1**	4
10:15 PM - 10:30 PM	0	0	**0**	0	1	**1**	0	1	**1**	3
10:30 PM - 10:45 PM	0	0	**0**	0	0	**1**	0	0	**1**	2
10:45 PM - 11:00 PM	0	0	**0**	0	0	**1**	0	0	**1**	2
11:00 PM - 11:15 PM	0	0	**0**	0	0	**0**	0	0	**0**	2
11:15 PM - 11:30 PM	0	0	**0**	0	0	**0**	0	0	**0**	1
11:30 PM - 11:45 PM	0	0	**0**	0	0	**0**	0	0	**0**	1
11:45 PM - 12:00 AM	0	0	**0**	0	0	**0**	0	0	**0**	0



APPENDIX G
TRIP ASSIGNMENTS BY SCHOOL

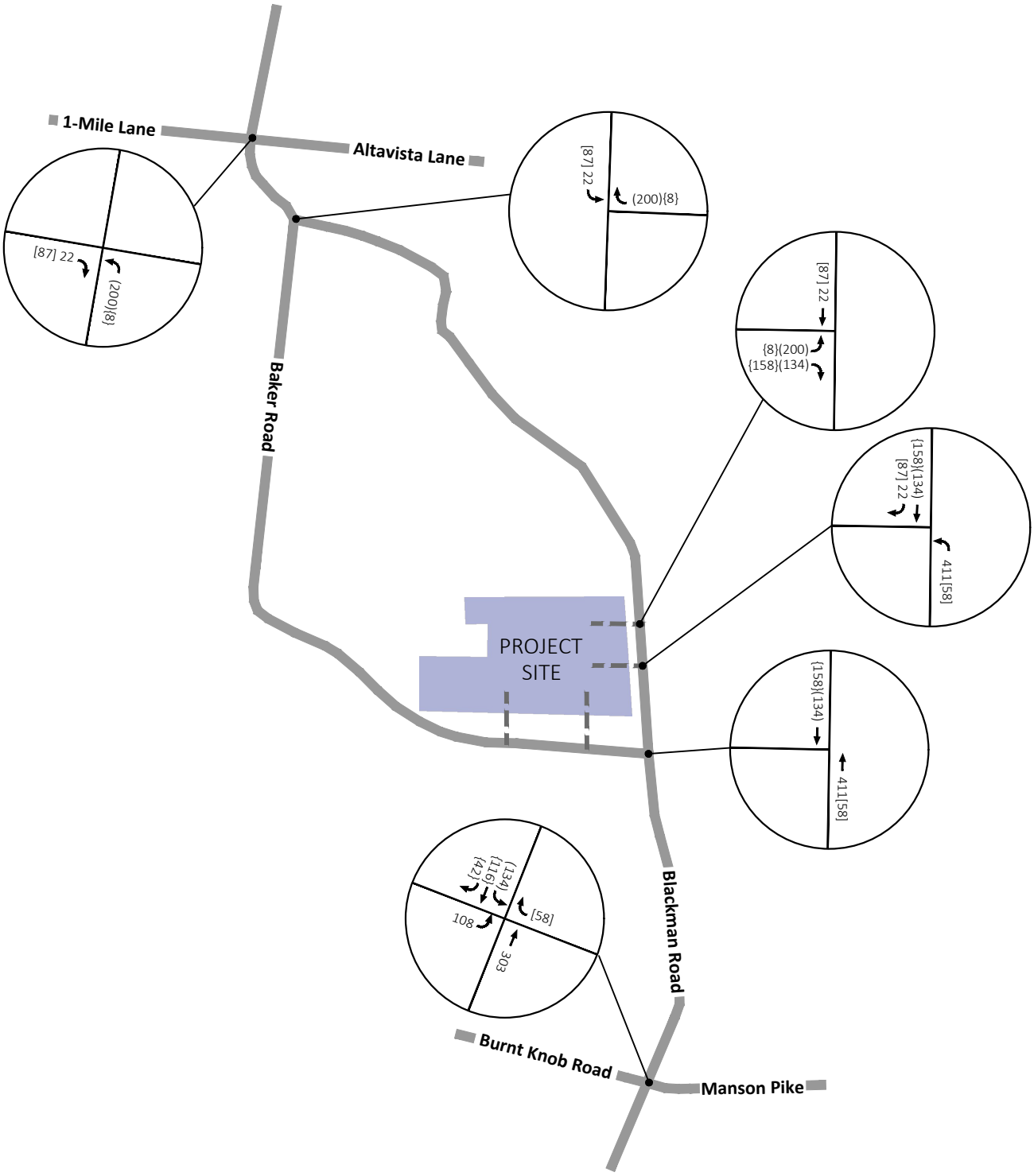
Figure G1: Assignment of Traffic Generated by the Elementary School



Legend:
XX% - AM Enter
(XX%) - AM Exit
[XX%] - PM Enter
{XX%} - PM Exit

(Not to Scale)

Figure G2: Assignment of Traffic Generated by the Middle School



Legend:
XX% - AM Enter
(XX%) - AM Exit
[XX%] - PM Enter
{XX%} - PM Exit

(Not to Scale)

APPENDIX H
CAPACITY ANALYSIS WORKSHEETS

2023 EXISTING CONDITIONS

Intersection	
Intersection Delay, s/veh	24.4
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	28	70	4	139	154	168	9	110	82	226	111	78
Future Vol, veh/h	28	70	4	139	154	168	9	110	82	226	111	78
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	30	76	4	151	167	183	10	120	89	246	121	85
Number of Lanes	1	1	0	1	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	12.3	19.1	12.2	39.3
HCM LOS	B	C	B	E

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	8%	0%	100%	0%	100%	0%	54%
Vol Thru, %	92%	0%	0%	95%	0%	48%	27%
Vol Right, %	0%	100%	0%	5%	0%	52%	19%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	119	82	28	74	139	322	415
LT Vol	9	0	28	0	139	0	226
Through Vol	110	0	0	70	0	154	111
RT Vol	0	82	0	4	0	168	78
Lane Flow Rate	129	89	30	80	151	350	451
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.271	0.168	0.071	0.177	0.319	0.654	0.862
Departure Headway (Hd)	7.529	6.771	8.456	7.9	7.612	6.725	6.882
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	477	529	423	454	473	536	528
Service Time	5.281	4.522	6.218	5.661	5.356	4.469	4.922
HCM Lane V/C Ratio	0.27	0.168	0.071	0.176	0.319	0.653	0.854
HCM Control Delay	13.1	10.9	11.9	12.4	13.9	21.4	39.3
HCM Lane LOS	B	B	B	B	B	C	E
HCM 95th-tile Q	1.1	0.6	0.2	0.6	1.4	4.7	9.2

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	29	3	62	0	6	2	258	142	2	1	85	142
Future Vol, veh/h	29	3	62	0	6	2	258	142	2	1	85	142
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	65	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	32	3	67	0	7	2	280	154	2	1	92	154

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	891	887	169	921	963	155	246	0	0	156	0	0
Stage 1	171	171	-	715	715	-	-	-	-	-	-	-
Stage 2	720	716	-	206	248	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	263	283	875	251	256	891	1320	-	-	1424	-	-
Stage 1	831	757	-	422	434	-	-	-	-	-	-	-
Stage 2	419	434	-	796	701	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	210	217	875	188	196	891	1320	-	-	1424	-	-
Mov Cap-2 Maneuver	210	217	-	188	196	-	-	-	-	-	-	-
Stage 1	638	756	-	324	333	-	-	-	-	-	-	-
Stage 2	315	333	-	731	700	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.8	20.4	5.4	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1320	-	-	210	768	243	1424	-	-
HCM Lane V/C Ratio	0.212	-	-	0.15	0.092	0.036	0.001	-	-
HCM Control Delay (s)	8.5	0	-	25.1	10.2	20.4	7.5	0	-
HCM Lane LOS	A	A	-	D	B	C	A	A	-
HCM 95th %tile Q(veh)	0.8	-	-	0.5	0.3	0.1	0	-	-

Intersection	
Int Delay, s/veh	6.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	242	254	99	132	10
Future Vol, veh/h	0	242	254	99	132	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	263	276	108	143	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	809	149	154	0	-	0
Stage 1	149	-	-	-	-	-
Stage 2	660	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	350	898	1426	-	-	-
Stage 1	879	-	-	-	-	-
Stage 2	514	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	278	898	1426	-	-	-
Mov Cap-2 Maneuver	278	-	-	-	-	-
Stage 1	698	-	-	-	-	-
Stage 2	514	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.7	5.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1426	-	898	-	-
HCM Lane V/C Ratio	0.194	-	0.293	-	-
HCM Control Delay (s)	8.1	0	10.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.7	-	1.2	-	-

Intersection	
Int Delay, s/veh	4.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	161	226	7	60	94
Future Vol, veh/h	10	161	226	7	60	94
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	175	246	8	65	102

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	482	250	0	0	254	0
Stage 1	250	-	-	-	-	-
Stage 2	232	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	543	789	-	-	1311	-
Stage 1	792	-	-	-	-	-
Stage 2	807	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	514	789	-	-	1311	-
Mov Cap-2 Maneuver	514	-	-	-	-	-
Stage 1	792	-	-	-	-	-
Stage 2	764	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.2	0	3.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	765	1311	-
HCM Lane V/C Ratio	-	-	0.243	0.05	-
HCM Control Delay (s)	-	-	11.2	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.9	0.2	-

Intersection	
Intersection Delay, s/veh	12.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	35	82	2	46	86	127	2	84	89	174	61	32
Future Vol, veh/h	35	82	2	46	86	127	2	84	89	174	61	32
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	38	89	2	50	93	138	2	91	97	189	66	35
Number of Lanes	1	1	0	1	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	10.3	11.6	9.7	14.9
HCM LOS	B	B	A	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	2%	0%	100%	0%	100%	0%	65%
Vol Thru, %	98%	0%	0%	98%	0%	40%	23%
Vol Right, %	0%	100%	0%	2%	0%	60%	12%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	86	89	35	84	46	213	267
LT Vol	2	0	35	0	46	0	174
Through Vol	84	0	0	82	0	86	61
RT Vol	0	89	0	2	0	127	32
Lane Flow Rate	93	97	38	91	50	232	290
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.162	0.148	0.073	0.163	0.093	0.371	0.492
Departure Headway (Hd)	6.226	5.505	6.934	6.408	6.696	5.764	6.099
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	575	649	515	558	535	623	589
Service Time	3.978	3.256	4.692	4.166	4.445	3.513	4.143
HCM Lane V/C Ratio	0.162	0.149	0.074	0.163	0.093	0.372	0.492
HCM Control Delay	10.2	9.2	10.2	10.4	10.1	11.9	14.9
HCM Lane LOS	B	A	B	B	B	B	B
HCM 95th-tile Q	0.6	0.5	0.2	0.6	0.3	1.7	2.7

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	41	5	113	0	4	0	107	85	1	0	91	58
Future Vol, veh/h	41	5	113	0	4	0	107	85	1	0	91	58
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	65	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	45	5	123	0	4	0	116	92	1	0	99	63

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	458	456	131	520	487	93	162	0	0	93	0	0
Stage 1	131	131	-	325	325	-	-	-	-	-	-	-
Stage 2	327	325	-	195	162	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	513	501	919	467	481	964	1417	-	-	1501	-	-
Stage 1	873	788	-	687	649	-	-	-	-	-	-	-
Stage 2	686	649	-	807	764	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	476	458	919	375	440	964	1417	-	-	1501	-	-
Mov Cap-2 Maneuver	476	458	-	375	440	-	-	-	-	-	-	-
Stage 1	798	788	-	628	593	-	-	-	-	-	-	-
Stage 2	622	593	-	694	764	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.7	13.3	4.3	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1417	-	-	476	881	440	1501	-	-
HCM Lane V/C Ratio	0.082	-	-	0.094	0.146	0.01	-	-	-
HCM Control Delay (s)	7.8	0	-	13.3	9.8	13.3	0	-	-
HCM Lane LOS	A	A	-	B	A	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.3	0.5	0	0	-	-

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	168	113	99	92	3
Future Vol, veh/h	5	168	113	99	92	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	183	123	108	100	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	456	102	103	0	-	0
Stage 1	102	-	-	-	-	-
Stage 2	354	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	562	953	1489	-	-	-
Stage 1	922	-	-	-	-	-
Stage 2	710	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	513	953	1489	-	-	-
Mov Cap-2 Maneuver	513	-	-	-	-	-
Stage 1	841	-	-	-	-	-
Stage 2	710	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.8	4.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1489	-	930	-	-
HCM Lane V/C Ratio	0.082	-	0.202	-	-
HCM Control Delay (s)	7.6	0	9.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.3	-	0.8	-	-

Intersection	
Int Delay, s/veh	3.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	64	105	10	97	114
Future Vol, veh/h	7	64	105	10	97	114
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	70	114	11	105	124

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	454	120	0	0	125	0
Stage 1	120	-	-	-	-	-
Stage 2	334	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	564	931	-	-	1462	-
Stage 1	905	-	-	-	-	-
Stage 2	725	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	521	931	-	-	1462	-
Mov Cap-2 Maneuver	521	-	-	-	-	-
Stage 1	905	-	-	-	-	-
Stage 2	669	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.6	0	3.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	864	1462	-
HCM Lane V/C Ratio	-	-	0.089	0.072	-
HCM Control Delay (s)	-	-	9.6	7.7	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.2	-

2028 BACKGROUND CONDITIONS

Intersection	
Intersection Delay, s/veh	93.1
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	37	79	5	156	173	220	10	135	92	347	156	104
Future Vol, veh/h	37	79	5	156	173	220	10	135	92	347	156	104
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	86	5	170	188	239	11	147	100	377	170	113
Number of Lanes	1	1	0	1	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	14.4	33.1	14.7	193.6
HCM LOS	B	D	B	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	7%	0%	100%	0%	100%	0%	57%
Vol Thru, %	93%	0%	0%	94%	0%	44%	26%
Vol Right, %	0%	100%	0%	6%	0%	56%	17%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	145	92	37	84	156	393	607
LT Vol	10	0	37	0	156	0	347
Through Vol	135	0	0	79	0	173	156
RT Vol	0	92	0	5	0	220	104
Lane Flow Rate	158	100	40	91	170	427	660
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.351	0.202	0.1	0.213	0.374	0.837	1.352
Departure Headway (Hd)	8.703	7.937	10.011	9.441	8.802	7.876	7.377
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	416	455	360	383	412	466	495
Service Time	6.403	5.637	7.711	7.141	6.502	5.576	5.463
HCM Lane V/C Ratio	0.38	0.22	0.111	0.238	0.413	0.916	1.333
HCM Control Delay	16	12.6	13.8	14.7	16.7	39.6	193.6
HCM Lane LOS	C	B	B	B	C	E	F
HCM 95th-tile Q	1.6	0.7	0.3	0.8	1.7	8.2	29.5

Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	33	3	81	0	7	2	321	192	2	1	107	160
Future Vol, veh/h	33	3	81	0	7	2	321	192	2	1	107	160
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	65	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	36	3	88	0	8	2	349	209	2	1	116	174

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1118	1114	203	1159	1200	210	290	0	0	211	0	0
Stage 1	205	205	-	908	908	-	-	-	-	-	-	-
Stage 2	913	909	-	251	292	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	184	208	838	173	185	830	1272	-	-	1360	-	-
Stage 1	797	732	-	330	354	-	-	-	-	-	-	-
Stage 2	328	354	-	753	671	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	133	143	838	116	127	830	1272	-	-	1360	-	-
Mov Cap-2 Maneuver	133	143	-	116	127	-	-	-	-	-	-	-
Stage 1	549	731	-	227	244	-	-	-	-	-	-	-
Stage 2	218	244	-	670	670	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19.5	29.6	5.5	0
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1272	-	-	133	714	156	1360	-	-
HCM Lane V/C Ratio	0.274	-	-	0.27	0.128	0.063	0.001	-	-
HCM Control Delay (s)	8.9	0	-	41.8	10.8	29.6	7.6	0	-
HCM Lane LOS	A	A	-	E	B	D	A	A	-
HCM 95th %tile Q(veh)	1.1	-	-	1	0.4	0.2	0	-	-

Intersection	
Int Delay, s/veh	6.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	279	306	148	207	22
Future Vol, veh/h	4	279	306	148	207	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	303	333	161	225	24

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1064	237	249	0	-	0
Stage 1	237	-	-	-	-	-
Stage 2	827	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	247	802	1317	-	-	-
Stage 1	802	-	-	-	-	-
Stage 2	430	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	178	802	1317	-	-	-
Mov Cap-2 Maneuver	178	-	-	-	-	-
Stage 1	579	-	-	-	-	-
Stage 2	430	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.9	5.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1317	-	764	-	-
HCM Lane V/C Ratio	0.253	-	0.403	-	-
HCM Control Delay (s)	8.7	0	12.9	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	1	-	2	-	-

Intersection	
Int Delay, s/veh	5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	213	285	8	79	117
Future Vol, veh/h	11	213	285	8	79	117
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	232	310	9	86	127

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	614	315	0	0	319	0
Stage 1	315	-	-	-	-	-
Stage 2	299	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	455	725	-	-	1241	-
Stage 1	740	-	-	-	-	-
Stage 2	752	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	421	725	-	-	1241	-
Mov Cap-2 Maneuver	421	-	-	-	-	-
Stage 1	740	-	-	-	-	-
Stage 2	696	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.9	0	3.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	700	1241	-
HCM Lane V/C Ratio	-	-	0.348	0.069	-
HCM Control Delay (s)	-	-	12.9	8.1	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.6	0.2	-

Intersection	
Intersection Delay, s/veh	21.4
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	57	92	2	52	97	250	2	132	100	222	91	47
Future Vol, veh/h	57	92	2	52	97	250	2	132	100	222	91	47
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	62	100	2	57	105	272	2	143	109	241	99	51
Number of Lanes	1	1	0	1	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	12.6	21.8	12.5	30.5
HCM LOS	B	C	B	D

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	1%	0%	100%	0%	100%	0%	62%
Vol Thru, %	99%	0%	0%	98%	0%	28%	25%
Vol Right, %	0%	100%	0%	2%	0%	72%	13%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	134	100	57	94	52	347	360
LT Vol	2	0	57	0	52	0	222
Through Vol	132	0	0	92	0	97	91
RT Vol	0	100	0	2	0	250	47
Lane Flow Rate	146	109	62	102	57	377	391
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.302	0.203	0.142	0.22	0.12	0.696	0.773
Departure Headway (Hd)	7.466	6.739	8.272	7.74	7.67	6.639	7.111
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	481	530	432	462	467	543	509
Service Time	5.235	4.508	6.047	5.514	5.427	4.396	5.168
HCM Lane V/C Ratio	0.304	0.206	0.144	0.221	0.122	0.694	0.768
HCM Control Delay	13.5	11.2	12.4	12.7	11.5	23.3	30.5
HCM Lane LOS	B	B	B	B	B	C	D
HCM 95th-tile Q	1.3	0.8	0.5	0.8	0.4	5.4	6.9

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	46	6	162	0	5	0	141	118	1	0	138	65
Future Vol, veh/h	46	6	162	0	5	0	141	118	1	0	138	65
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	65	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	50	7	176	0	5	0	153	128	1	0	150	71

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	623	621	186	712	656	129	221	0	0	129	0	0
Stage 1	186	186	-	435	435	-	-	-	-	-	-	-
Stage 2	437	435	-	277	221	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	398	403	856	347	385	921	1348	-	-	1457	-	-
Stage 1	816	746	-	600	580	-	-	-	-	-	-	-
Stage 2	598	580	-	729	720	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	357	354	856	246	338	921	1348	-	-	1457	-	-
Mov Cap-2 Maneuver	357	354	-	246	338	-	-	-	-	-	-	-
Stage 1	716	746	-	527	509	-	-	-	-	-	-	-
Stage 2	519	509	-	574	720	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12	15.8	4.3	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1348	-	-	357	815	338	1457	-	-
HCM Lane V/C Ratio	0.114	-	-	0.14	0.224	0.016	-	-	-
HCM Control Delay (s)	8	0	-	16.7	10.7	15.8	0	-	-
HCM Lane LOS	A	A	-	C	B	C	A	-	-
HCM 95th %tile Q(veh)	0.4	-	-	0.5	0.9	0	0	-	-

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	19	212	141	183	161	10
Future Vol, veh/h	19	212	141	183	161	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	230	153	199	175	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	686	181	186	0	-	0
Stage 1	181	-	-	-	-	-
Stage 2	505	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	413	862	1388	-	-	-
Stage 1	850	-	-	-	-	-
Stage 2	606	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	362	862	1388	-	-	-
Mov Cap-2 Maneuver	362	-	-	-	-	-
Stage 1	745	-	-	-	-	-
Stage 2	606	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.9	3.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1388	-	774	-	-
HCM Lane V/C Ratio	0.11	-	0.324	-	-
HCM Control Delay (s)	7.9	0	11.9	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.4	-	1.4	-	-

Intersection	
Int Delay, s/veh	3.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	94	139	11	145	164
Future Vol, veh/h	8	94	139	11	145	164
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	102	151	12	158	178

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	651	157	0	0	163	0
Stage 1	157	-	-	-	-	-
Stage 2	494	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	433	889	-	-	1416	-
Stage 1	871	-	-	-	-	-
Stage 2	613	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	379	889	-	-	1416	-
Mov Cap-2 Maneuver	379	-	-	-	-	-
Stage 1	871	-	-	-	-	-
Stage 2	537	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.2	0	3.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	804	1416	-
HCM Lane V/C Ratio	-	-	0.138	0.111	-
HCM Control Delay (s)	-	-	10.2	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0.4	-

2028 FUTURE PROJECTED CONDITIONS

Intersection	
Intersection Delay, s/veh	399.6
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	381	79	5	156	173	220	10	537	92	620	156	104
Future Vol, veh/h	381	79	5	156	173	220	10	537	92	620	156	104
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	414	86	5	170	188	239	11	584	100	674	170	113
Number of Lanes	1	1	0	1	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	131.9	100	281.9	813.5
HCM LOS	F	F	F	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	2%	0%	100%	0%	100%	0%	70%
Vol Thru, %	98%	0%	0%	94%	0%	44%	18%
Vol Right, %	0%	100%	0%	6%	0%	56%	12%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	547	92	381	84	156	393	880
LT Vol	10	0	381	0	156	0	620
Through Vol	537	0	0	79	0	173	156
RT Vol	0	92	0	5	0	220	104
Lane Flow Rate	595	100	414	91	170	427	957
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	1.613	0.252	1.18	0.246	0.478	1.1	2.731
Departure Headway (Hd)	14.139	13.367	15.008	14.413	15.43	14.449	12.429
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	262	271	244	251	236	256	306
Service Time	11.839	11.067	12.708	12.113	13.13	12.149	10.429
HCM Lane V/C Ratio	2.271	0.369	1.697	0.363	0.72	1.668	3.127
HCM Control Delay	325.9	20.5	156.2	21.8	31.5	127.2	813.5
HCM Lane LOS	F	C	F	C	D	F	F
HCM 95th-tile Q	25.5	1	13.3	0.9	2.4	11.8	67.1

Intersection	
Int Delay, s/veh	43.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	33	3	162	0	7	2	730	192	2	1	107	160
Future Vol, veh/h	33	3	162	0	7	2	730	192	2	1	107	160
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	65	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	36	3	176	0	8	2	793	209	2	1	116	174

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2006	2002	203	2091	2088	210	290	0	0	211	0	0
Stage 1	205	205	-	1796	1796	-	-	-	-	-	-	-
Stage 2	1801	1797	-	295	292	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	44	60	838	38	53	830	1272	-	-	1360	-	-
Stage 1	797	732	-	103	132	-	-	-	-	-	-	-
Stage 2	102	132	-	713	671	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 13	18	838	11	16	830	1272	-	-	1360	-	-
Mov Cap-2 Maneuver	~ 13	18	-	11	16	-	-	-	-	-	-	-
Stage 1	234	731	-	30	39	-	-	-	-	-	-	-
Stage 2	~ 24	39	-	560	670	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	245.7	299.9	9.8	0
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1272	-	-	13	458	20	1360	-	-
HCM Lane V/C Ratio	0.624	-	-	2.759	0.392	0.489	0.001	-	-
HCM Control Delay (s)	12.4	0	-	$ 1385.2	17.8	299.9	7.6	0	-
HCM Lane LOS	B	A	-	F	C	F	A	A	-
HCM 95th %tile Q(veh)	4.6	-	-	5.4	1.8	1.4	0	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	88.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	418	641	559	341	22
Future Vol, veh/h	4	418	641	559	341	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	454	697	608	371	24

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2385	383	395	0	-	0
Stage 1	383	-	-	-	-	-
Stage 2	2002	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	38	664	1164	-	-	-
Stage 1	689	-	-	-	-	-
Stage 2	114	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 4	664	1164	-	-	-
Mov Cap-2 Maneuver	~ 4	-	-	-	-	-
Stage 1	66	-	-	-	-	-
Stage 2	114	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	$ 395.3	6.7	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1164	-	259	-	-
HCM Lane V/C Ratio	0.599	-	1.771	-	-
HCM Control Delay (s)	12.6	0	$ 395.3	-	-
HCM Lane LOS	B	A	F	-	-
HCM 95th %tile Q(veh)	4.2	-	30.6	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	16

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	413	494	8	101	176
Future Vol, veh/h	11	413	494	8	101	176
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	449	537	9	110	191

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	953	542	0	0	546	0
Stage 1	542	-	-	-	-	-
Stage 2	411	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	287	540	-	-	1023	-
Stage 1	583	-	-	-	-	-
Stage 2	669	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	253	540	-	-	1023	-
Mov Cap-2 Maneuver	253	-	-	-	-	-
Stage 1	583	-	-	-	-	-
Stage 2	589	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	43.2	0	3.3
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	525	1023	-
HCM Lane V/C Ratio	-	-	0.878	0.107	-
HCM Control Delay (s)	-	-	43.2	8.9	0
HCM Lane LOS	-	-	E	A	A
HCM 95th %tile Q(veh)	-	-	9.7	0.4	-

Intersection	
Int Delay, s/veh	7.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	34	0	6	411	140	12	2	329	22
Future Vol, veh/h	0	0	0	34	0	6	411	140	12	2	329	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	125	-	125	85	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	37	0	7	447	152	13	2	358	24

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1418	1421	358	1420	1432	152	382	0	0	165	0	0
Stage 1	362	362	-	1046	1046	-	-	-	-	-	-	-
Stage 2	1056	1059	-	374	386	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	114	136	686	114	134	894	1176	-	-	1413	-	-
Stage 1	657	625	-	276	305	-	-	-	-	-	-	-
Stage 2	272	301	-	647	610	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	80	84	686	80	83	894	1176	-	-	1413	-	-
Mov Cap-2 Maneuver	80	84	-	80	83	-	-	-	-	-	-	-
Stage 1	407	624	-	171	189	-	-	-	-	-	-	-
Stage 2	167	187	-	646	609	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	72.7	7.2	0
HCM LOS	A	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1176	-	-	-	80	894	1413	-	-
HCM Lane V/C Ratio	0.38	-	-	-	0.462	0.007	0.002	-	-
HCM Control Delay (s)	9.9	-	-	0	83.9	9.1	7.6	-	-
HCM Lane LOS	A	-	-	A	F	A	A	-	-
HCM 95th %tile Q(veh)	1.8	-	-	-	1.9	0	0	-	-

Intersection	
Int Delay, s/veh	7.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	200	134	0	146	219	0
Future Vol, veh/h	200	134	0	146	219	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	217	146	0	159	238	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	397	238	238	0	-	0
Stage 1	238	-	-	-	-	-
Stage 2	159	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	608	801	1329	-	-	-
Stage 1	802	-	-	-	-	-
Stage 2	870	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	608	801	1329	-	-	-
Mov Cap-2 Maneuver	608	-	-	-	-	-
Stage 1	802	-	-	-	-	-
Stage 2	870	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.4	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1329	-	673	-	-
HCM Lane V/C Ratio	-	-	0.539	-	-
HCM Control Delay (s)	0	-	16.4	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	3.2	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	59	283	537	335	0	0
Future Vol, veh/h	59	283	537	335	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	0	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	64	308	584	364	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	948	0	-	0	1020	584
Stage 1	-	-	-	-	584	-
Stage 2	-	-	-	-	436	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	724	-	-	-	262	512
Stage 1	-	-	-	-	557	-
Stage 2	-	-	-	-	652	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	724	-	-	-	239	512
Mov Cap-2 Maneuver	-	-	-	-	239	-
Stage 1	-	-	-	-	508	-
Stage 2	-	-	-	-	652	-

Approach	EB	WB	SB
HCM Control Delay, s	1.8	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	724	-	-	-	-
HCM Lane V/C Ratio	0.089	-	-	-	-
HCM Control Delay (s)	10.5	-	-	-	0
HCM Lane LOS	B	-	-	-	A
HCM 95th %tile Q(veh)	0.3	-	-	-	-

Intersection	
Int Delay, s/veh	32.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	283	663	0	139	209
Future Vol, veh/h	0	283	663	0	139	209
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	308	721	0	151	227

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	721	0	-	0	1029	721
Stage 1	-	-	-	-	721	-
Stage 2	-	-	-	-	308	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	881	-	-	-	259	427
Stage 1	-	-	-	-	482	-
Stage 2	-	-	-	-	745	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	881	-	-	-	259	427
Mov Cap-2 Maneuver	-	-	-	-	259	-
Stage 1	-	-	-	-	482	-
Stage 2	-	-	-	-	745	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	119.2
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	881	-	-	-	339
HCM Lane V/C Ratio	-	-	-	-	1.116
HCM Control Delay (s)	0	-	-	-	119.2
HCM Lane LOS	A	-	-	-	F
HCM 95th %tile Q(veh)	0	-	-	-	14.6

Intersection	
Intersection Delay, s/veh	172.1
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	57	92	2	52	97	385	2	132	100	222	268	236
Future Vol, veh/h	57	92	2	52	97	385	2	132	100	222	268	236
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	62	100	2	57	105	418	2	143	109	241	291	257
Number of Lanes	1	1	0	1	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	2	2
HCM Control Delay	16.3	71.8	16	328.6
HCM LOS	C	F	C	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	1%	0%	100%	0%	100%	0%	31%
Vol Thru, %	99%	0%	0%	98%	0%	20%	37%
Vol Right, %	0%	100%	0%	2%	0%	80%	33%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	134	100	57	94	52	482	726
LT Vol	2	0	57	0	52	0	222
Through Vol	132	0	0	92	0	97	268
RT Vol	0	100	0	2	0	385	236
Lane Flow Rate	146	109	62	102	57	524	789
Geometry Grp	7	7	7	7	7	7	6
Degree of Util (X)	0.338	0.231	0.157	0.244	0.127	1.02	1.666
Departure Headway (Hd)	9.694	8.949	11.049	10.501	9.551	8.443	7.721
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	373	404	327	344	378	435	481
Service Time	7.394	6.649	8.749	8.201	7.251	6.143	5.721
HCM Lane V/C Ratio	0.391	0.27	0.19	0.297	0.151	1.205	1.64
HCM Control Delay	17.3	14.3	15.8	16.6	13.6	78.1	328.6
HCM Lane LOS	C	B	C	C	B	F	F
HCM 95th-tile Q	1.5	0.9	0.5	0.9	0.4	13.3	45.3

Intersection	
Int Delay, s/veh	8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	46	6	364	0	5	0	186	118	1	0	138	65
Future Vol, veh/h	46	6	364	0	5	0	186	118	1	0	138	65
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	65	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	50	7	396	0	5	0	202	128	1	0	150	71

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	721	719	186	920	754	129	221	0	0	129	0	0
Stage 1	186	186	-	533	533	-	-	-	-	-	-	-
Stage 2	535	533	-	387	221	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	343	354	856	251	338	921	1348	-	-	1457	-	-
Stage 1	816	746	-	531	525	-	-	-	-	-	-	-
Stage 2	529	525	-	637	720	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	296	297	856	116	284	921	1348	-	-	1457	-	-
Mov Cap-2 Maneuver	296	297	-	116	284	-	-	-	-	-	-	-
Stage 1	685	746	-	446	440	-	-	-	-	-	-	-
Stage 2	438	440	-	340	720	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14	17.9	5	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1348	-	-	296	831	284	1457	-	-
HCM Lane V/C Ratio	0.15	-	-	0.169	0.484	0.019	-	-	-
HCM Control Delay (s)	8.1	0	-	19.6	13.3	17.9	0	-	-
HCM Lane LOS	A	A	-	C	B	C	A	-	-
HCM 95th %tile Q(veh)	0.5	-	-	0.6	2.7	0.1	0	-	-

Intersection	
Int Delay, s/veh	11.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	19	420	218	241	319	10
Future Vol, veh/h	19	420	218	241	319	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	457	237	262	347	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1089	353	358	0	-	0
Stage 1	353	-	-	-	-	-
Stage 2	736	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	238	691	1201	-	-	-
Stage 1	711	-	-	-	-	-
Stage 2	474	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	183	691	1201	-	-	-
Mov Cap-2 Maneuver	183	-	-	-	-	-
Stage 1	547	-	-	-	-	-
Stage 2	474	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	27.9	4.1	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1201	-	617	-	-
HCM Lane V/C Ratio	0.197	-	0.773	-	-
HCM Control Delay (s)	8.7	0	27.9	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0.7	-	7.2	-	-

Intersection	
Int Delay, s/veh	3.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	102	176	11	232	279
Future Vol, veh/h	8	102	176	11	232	279
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	111	191	12	252	303

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1004	197	0	0	203	0
Stage 1	197	-	-	-	-	-
Stage 2	807	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	268	844	-	-	1369	-
Stage 1	836	-	-	-	-	-
Stage 2	439	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	209	844	-	-	1369	-
Mov Cap-2 Maneuver	209	-	-	-	-	-
Stage 1	836	-	-	-	-	-
Stage 2	342	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.3	0	3.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	691	1369	-
HCM Lane V/C Ratio	-	-	0.173	0.184	-
HCM Control Delay (s)	-	-	11.3	8.2	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.6	0.7	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	22	0	4	58	163	39	6	307	87
Future Vol, veh/h	0	0	0	22	0	4	58	163	39	6	307	87
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	125	-	125	85	-	150
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	24	0	4	63	177	42	7	334	95

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	674	693	334	699	746	177	429	0	0	219	0	0
Stage 1	348	348	-	303	303	-	-	-	-	-	-	-
Stage 2	326	345	-	396	443	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	368	367	708	354	342	866	1130	-	-	1350	-	-
Stage 1	668	634	-	706	664	-	-	-	-	-	-	-
Stage 2	687	636	-	629	576	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	349	345	708	338	321	866	1130	-	-	1350	-	-
Mov Cap-2 Maneuver	349	345	-	338	321	-	-	-	-	-	-	-
Stage 1	631	631	-	666	627	-	-	-	-	-	-	-
Stage 2	645	600	-	626	573	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	15.4	1.9	0.1
HCM LOS	A	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1130	-	-	-	338	866	1350	-	-
HCM Lane V/C Ratio	0.056	-	-	-	0.071	0.005	0.005	-	-
HCM Control Delay (s)	8.4	-	-	0	16.5	9.2	7.7	-	-
HCM Lane LOS	A	-	-	A	C	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	-	0.2	0	0	-	-

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	158	0	167	242	0
Future Vol, veh/h	8	158	0	167	242	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	172	0	182	263	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	445	263	263	0	-	0
Stage 1	263	-	-	-	-	-
Stage 2	182	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	571	776	1301	-	-	-
Stage 1	781	-	-	-	-	-
Stage 2	849	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	571	776	1301	-	-	-
Mov Cap-2 Maneuver	571	-	-	-	-	-
Stage 1	781	-	-	-	-	-
Stage 2	849	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.2	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1301	-	763	-	-
HCM Lane V/C Ratio	-	-	0.236	-	-
HCM Control Delay (s)	0	-	11.2	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.9	-	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	115	231	189	77	0	0
Future Vol, veh/h	115	231	189	77	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	0	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	125	251	205	84	0	0

Major/Minor	Major1			Major2		
Conflicting Flow All	289	0	-	0	706	205
Stage 1	-	-	-	-	205	-
Stage 2	-	-	-	-	501	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1273	-	-	-	402	836
Stage 1	-	-	-	-	829	-
Stage 2	-	-	-	-	609	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1273	-	-	-	363	836
Mov Cap-2 Maneuver	-	-	-	-	363	-
Stage 1	-	-	-	-	748	-
Stage 2	-	-	-	-	609	-

Approach	EB	WB	SB
HCM Control Delay, s	2.7	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1273	-	-	-	-
HCM Lane V/C Ratio	0.098	-	-	-	-
HCM Control Delay (s)	8.1	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0.3	-	-	-	-

Intersection	
Int Delay, s/veh	6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	231	229	0	208	37
Future Vol, veh/h	0	231	229	0	208	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	251	249	0	226	40

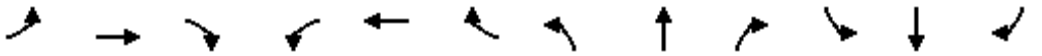
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	249	0	-	0	500	249
Stage 1	-	-	-	-	249	-
Stage 2	-	-	-	-	251	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1317	-	-	-	530	790
Stage 1	-	-	-	-	792	-
Stage 2	-	-	-	-	791	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1317	-	-	-	530	790
Mov Cap-2 Maneuver	-	-	-	-	530	-
Stage 1	-	-	-	-	792	-
Stage 2	-	-	-	-	791	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	17.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1317	-	-	-	558
HCM Lane V/C Ratio	-	-	-	-	0.477
HCM Control Delay (s)	0	-	-	-	17.2
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	2.6

2028 FUTURE PROJECTED CONDITIONS

WITH RECOMMENDED SHORT-TERM IMPROVEMENTS



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	381	79	5	156	173	220	10	537	92	620	156	104
Future Volume (veh/h)	381	79	5	156	173	220	10	537	92	620	156	104
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	414	86	5	170	188	239	11	584	100	674	170	113
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	339	513	30	465	157	200	315	455	386	517	1004	851
Arrive On Green	0.16	0.29	0.29	0.08	0.21	0.21	0.24	0.24	0.24	0.26	0.54	0.54
Sat Flow, veh/h	1781	1750	102	1781	748	951	1096	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	414	0	91	170	0	427	11	584	100	674	170	113
Grp Sat Flow(s),veh/h/ln	1781	0	1852	1781	0	1699	1096	1870	1585	1781	1870	1585
Q Serve(g_s), s	24.5	0.0	5.5	11.2	0.0	31.5	1.2	36.5	7.6	39.5	6.9	5.3
Cycle Q Clear(g_c), s	24.5	0.0	5.5	11.2	0.0	31.5	1.2	36.5	7.6	39.5	6.9	5.3
Prop In Lane	1.00		0.05	1.00		0.56	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	339	0	543	465	0	357	315	455	386	517	1004	851
V/C Ratio(X)	1.22	0.00	0.17	0.37	0.00	1.20	0.03	1.28	0.26	1.30	0.17	0.13
Avail Cap(c_a), veh/h	339	0	543	465	0	357	315	455	386	517	1004	851
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.0	0.0	39.4	41.8	0.0	59.3	43.4	56.7	45.8	46.7	17.7	17.3
Incr Delay (d2), s/veh	123.3	0.0	0.1	0.5	0.0	112.6	0.0	143.4	0.4	150.2	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	31.4	0.0	4.6	8.8	0.0	36.1	0.6	51.6	5.6	58.5	5.6	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	171.3	0.0	39.5	42.3	0.0	171.9	43.4	200.1	46.2	196.9	17.8	17.4
LnGrp LOS	F	A	D	D	A	F	D	F	D	F	B	B
Approach Vol, veh/h		505			597			695			957	
Approach Delay, s/veh		147.6			135.0			175.5			143.9	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.5	48.5		85.0	29.0	36.0	44.0	41.0
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	12.0	44.0		80.5	24.5	31.5	39.5	36.5
Max Q Clear Time (g_c+I1), s	13.2	7.5		8.9	26.5	33.5	41.5	38.5
Green Ext Time (p_c), s	0.0	0.5		1.4	0.0	0.0	0.0	0.0

Intersection Summary		
HCM 6th Ctrl Delay		150.6
HCM 6th LOS		F

Intersection	
Intersection Delay, s/veh	13.6
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	215	10	1004	291
Demand Flow Rate, veh/h	220	10	1024	296
Vehicles Circulating, veh/h	119	1059	41	817
Vehicles Exiting, veh/h	994	6	298	252
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.6	8.1	15.4	14.4
Approach LOS	A	A	C	B

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	220	10	1024	296
Cap Entry Lane, veh/h	1222	469	1323	600
Entry HV Adj Factor	0.977	0.984	0.980	0.982
Flow Entry, veh/h	215	10	1004	291
Cap Entry, veh/h	1194	461	1297	589
V/C Ratio	0.180	0.021	0.774	0.494
Control Delay, s/veh	4.6	8.1	15.4	14.4
LOS	A	A	C	B
95th %tile Queue, veh	1	0	8	3

Intersection	
Int Delay, s/veh	17.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	418	641	559	341	22
Future Vol, veh/h	4	418	641	559	341	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	454	697	608	371	24

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2385	383	395	0	-	0
Stage 1	383	-	-	-	-	-
Stage 2	2002	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	38	664	1164	-	-	-
Stage 1	689	-	-	-	-	-
Stage 2	114	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	15	664	1164	-	-	-
Mov Cap-2 Maneuver	15	-	-	-	-	-
Stage 1	276	-	-	-	-	-
Stage 2	114	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	64.9	6.7	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1164	-	471	-	-
HCM Lane V/C Ratio	0.599	-	0.974	-	-
HCM Control Delay (s)	12.6	-	64.9	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	4.2	-	12.4	-	-

Intersection	
Intersection Delay, s/veh	26.5
Intersection LOS	D

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	458	1305	395
Demand Flow Rate, veh/h	467	1331	402
Vehicles Circulating, veh/h	378	4	711
Vehicles Exiting, veh/h	735	841	624
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	10.2	35.3	16.4
Approach LOS	B	E	C

Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	467	1331	402
Cap Entry Lane, veh/h	938	1374	668
Entry HV Adj Factor	0.981	0.980	0.982
Flow Entry, veh/h	458	1305	395
Cap Entry, veh/h	920	1347	656
V/C Ratio	0.498	0.969	0.602
Control Delay, s/veh	10.2	35.3	16.4
LOS	B	E	C
95th %tile Queue, veh	3	20	4

Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	200	134	0	146	219	0
Future Vol, veh/h	200	134	0	146	219	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	217	146	0	159	238	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	397	238	238	0	-	0
Stage 1	238	-	-	-	-	-
Stage 2	159	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	608	801	1329	-	-	-
Stage 1	802	-	-	-	-	-
Stage 2	870	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	608	801	1329	-	-	-
Mov Cap-2 Maneuver	608	-	-	-	-	-
Stage 1	802	-	-	-	-	-
Stage 2	870	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1329	-	608	801	-	-
HCM Lane V/C Ratio	-	-	0.358	0.182	-	-
HCM Control Delay (s)	0	-	14.2	10.5	-	-
HCM Lane LOS	A	-	B	B	-	-
HCM 95th %tile Q(veh)	0	-	1.6	0.7	-	-

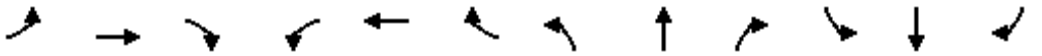
Intersection	
Int Delay, s/veh	7.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	283	663	0	139	209
Future Vol, veh/h	0	283	663	0	139	209
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	308	721	0	151	227

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	721	0	-	0	1029	721
Stage 1	-	-	-	-	721	-
Stage 2	-	-	-	-	308	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	881	-	-	-	259	427
Stage 1	-	-	-	-	482	-
Stage 2	-	-	-	-	745	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	881	-	-	-	259	427
Mov Cap-2 Maneuver	-	-	-	-	259	-
Stage 1	-	-	-	-	482	-
Stage 2	-	-	-	-	745	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	28.2
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	881	-	-	-	259	427
HCM Lane V/C Ratio	-	-	-	-	0.583	0.532
HCM Control Delay (s)	0	-	-	-	36.7	22.6
HCM Lane LOS	A	-	-	-	E	C
HCM 95th %tile Q(veh)	0	-	-	-	3.4	3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	92	2	52	97	385	2	132	100	222	268	236
Future Volume (veh/h)	57	92	2	52	97	385	2	132	100	222	268	236
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	62	100	2	57	105	418	2	143	109	241	291	257
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	207	527	11	522	94	374	401	555	471	554	701	594
Arrive On Green	0.05	0.29	0.29	0.05	0.29	0.29	0.00	0.30	0.30	0.08	0.37	0.37
Sat Flow, veh/h	1781	1827	37	1781	328	1307	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	62	0	102	57	0	523	2	143	109	241	291	257
Grp Sat Flow(s),veh/h/ln	1781	0	1864	1781	0	1635	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	1.5	0.0	2.6	1.4	0.0	18.1	0.0	3.7	3.3	5.1	7.3	7.7
Cycle Q Clear(g_c), s	1.5	0.0	2.6	1.4	0.0	18.1	0.0	3.7	3.3	5.1	7.3	7.7
Prop In Lane	1.00		0.02	1.00		0.80	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	207	0	537	522	0	467	401	555	471	554	701	594
V/C Ratio(X)	0.30	0.00	0.19	0.11	0.00	1.12	0.00	0.26	0.23	0.43	0.42	0.43
Avail Cap(c_a), veh/h	254	0	537	574	0	467	537	555	471	554	701	594
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.9	0.0	17.0	14.5	0.0	22.6	15.6	16.9	16.8	13.7	14.7	14.8
Incr Delay (d2), s/veh	0.8	0.0	0.2	0.1	0.0	78.3	0.0	1.1	1.1	0.5	1.8	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	1.0	0.5	0.0	16.1	0.0	1.6	1.2	2.0	3.0	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.8	0.0	17.1	14.6	0.0	100.9	15.6	18.1	18.0	14.2	16.5	17.1
LnGrp LOS	B	A	B	B	A	F	B	B	B	B	B	B
Approach Vol, veh/h		164			580			254			789	
Approach Delay, s/veh		17.4			92.4			18.0			16.0	
Approach LOS		B			F			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	23.3	7.7	22.8	4.7	28.2	7.8	22.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.1	18.8	5.0	18.1	5.0	18.9	5.0	18.1
Max Q Clear Time (g_c+I1), s	7.1	5.7	3.4	4.6	2.0	9.7	3.5	20.1
Green Ext Time (p_c), s	0.0	0.8	0.0	0.3	0.0	1.7	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	41.2
HCM 6th LOS	D

Intersection	
Intersection Delay, s/veh	6.0
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	453	5	331	221
Demand Flow Rate, veh/h	462	5	338	225
Vehicles Circulating, veh/h	153	388	58	211
Vehicles Exiting, veh/h	283	8	557	182
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.1	4.0	5.1	5.1
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	462	5	338	225
Cap Entry Lane, veh/h	1180	929	1301	1113
Entry HV Adj Factor	0.980	0.980	0.981	0.982
Flow Entry, veh/h	453	5	331	221
Cap Entry, veh/h	1157	911	1275	1093
V/C Ratio	0.391	0.005	0.260	0.202
Control Delay, s/veh	7.1	4.0	5.1	5.1
LOS	A	A	A	A
95th %tile Queue, veh	2	0	1	1

Intersection	
Int Delay, s/veh	11.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	19	420	218	241	319	10
Future Vol, veh/h	19	420	218	241	319	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	457	237	262	347	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1089	353	358	0	-	0
Stage 1	353	-	-	-	-	-
Stage 2	736	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	238	691	1201	-	-	-
Stage 1	711	-	-	-	-	-
Stage 2	474	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	191	691	1201	-	-	-
Mov Cap-2 Maneuver	191	-	-	-	-	-
Stage 1	571	-	-	-	-	-
Stage 2	474	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	27.4	4.1	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1201	-	621	-	-
HCM Lane V/C Ratio	0.197	-	0.768	-	-
HCM Control Delay (s)	8.7	-	27.4	-	-
HCM Lane LOS	A	-	D	-	-
HCM 95th %tile Q(veh)	0.7	-	7.1	-	-

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	478	499	358
Demand Flow Rate, veh/h	487	509	365
Vehicles Circulating, veh/h	354	21	242
Vehicles Exiting, veh/h	253	820	288
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	10.2	6.2	6.8
Approach LOS	B	A	A

Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	487	509	365
Cap Entry Lane, veh/h	962	1351	1078
Entry HV Adj Factor	0.982	0.980	0.981
Flow Entry, veh/h	478	499	358
Cap Entry, veh/h	944	1323	1058
V/C Ratio	0.506	0.377	0.339
Control Delay, s/veh	10.2	6.2	6.8
LOS	B	A	A
95th %tile Queue, veh	3	2	2

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	158	0	167	242	0
Future Vol, veh/h	8	158	0	167	242	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	172	0	182	263	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	445	263	263	0	-	0
Stage 1	263	-	-	-	-	-
Stage 2	182	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	571	776	1301	-	-	-
Stage 1	781	-	-	-	-	-
Stage 2	849	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	571	776	1301	-	-	-
Mov Cap-2 Maneuver	571	-	-	-	-	-
Stage 1	781	-	-	-	-	-
Stage 2	849	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1301	-	571	776	-	-
HCM Lane V/C Ratio	-	-	0.015	0.221	-	-
HCM Control Delay (s)	0	-	11.4	11	-	-
HCM Lane LOS	A	-	B	B	-	-
HCM 95th %tile Q(veh)	0	-	0	0.8	-	-

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	231	229	0	208	37
Future Vol, veh/h	0	231	229	0	208	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	251	249	0	226	40

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	249	0	-	0	500	249
Stage 1	-	-	-	-	249	-
Stage 2	-	-	-	-	251	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1317	-	-	-	530	790
Stage 1	-	-	-	-	792	-
Stage 2	-	-	-	-	791	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1317	-	-	-	530	790
Mov Cap-2 Maneuver	-	-	-	-	530	-
Stage 1	-	-	-	-	792	-
Stage 2	-	-	-	-	791	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	15.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1317	-	-	-	530	790
HCM Lane V/C Ratio	-	-	-	-	0.427	0.051
HCM Control Delay (s)	0	-	-	-	16.8	9.8
HCM Lane LOS	A	-	-	-	C	A
HCM 95th %tile Q(veh)	0	-	-	-	2.1	0.2

GEOTECHNICAL ENGINEERING REPORT
COLLIER PROJECT NO. 2036-22-01

February 27, 2023

PROPOSED BATEY FARM SCHOOL CAMPUS
5104 BAKER ROAD
Murfreesboro, Tennessee

Rutherford County Board of Education
Murfreesboro, Tennessee

These services were performed in general accordance with our December 7, 2022 Professional Services proposal and contract with the Rutherford County Board of Education (RCBOE). The report is prepared for the exclusive use of RCBOE and the design team. Use or reliance by any other party is prohibited without the written authorization of RCBOE and Collier.

2-27-2023

Nathan Couch

J. Samuel Vance, P.E.
Geotechnical Manager
Tennessee No. 102042

Nathan A. Couch, P.E.
Project Engineer
Tennessee No. 122500

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION

2949 Nolensville Pike
Nashville, TN 37211
615.331.1441
www.collierengineering.com

TABLE OF CONTENTS ***Page***

APPENDIX

EXECUTIVE SUMMARY

A geotechnical study was performed for a school campus in Murfreesboro, Tennessee. Sixty-six (66) borings were drilled to depths of 5 to 18 feet within and near the footprints of proposed improvements. The following geotechnical considerations were identified:

- The borings encountered typically stiff, or firmer, residual clay to the exploration depths of 5 to 18 feet. Some weak upper soils were encountered at normally shallow (<3 feet), but occasionally deeper, intervals at 25 of 62 sampled borings.
- The site is considered generally suitable for the proposed project provided the site and building pads are prepared in accordance with the recommendations of this report using techniques and construction methods appropriate for the geology and host soils.
- The grading contractor should be prepared to remediate weak, low strength soils to provide uniform stable subgrades for bearing and new fill. The boring data should be considered by the project team and contractors to establish a baseline for likely remediation requirements.
- The site is within karst prone geology and the risk of sinkhole development cannot be eliminated. Known dropouts were observed at two site areas, and these, and other karst features, shall be mitigated in accordance with approved TDEC protocol. The owner is advised that soil-supported elements (foundations, slabs, pavements, etc.) are susceptible to movement caused by karst activity and sinkhole development, and this risk must be acknowledged and accepted by the owner for the proposed project.
- Some existing soils are highly plastic and may pose shrink / swell issues under proposed slabs and pavements. For this reason, the upper one foot of subgrades beneath grade supported slabs and pavements should consist of low reaction or non-sensitive materials. Particular areas of the site, as disclosed by the subsurface drilling, are blanketed with highly silty, dark brown clay which may prove to be difficult to achieve adequate density due to the narrow moisture range at which such soils are workable.

The geotechnical engineer should be retained to observe and test the site development, subgrade preparation, and foundation construction of the proposed work. This summary should be used in conjunction with the entire report for design purposes. The section titled **GENERAL COMMENTS** should be read and acknowledged by the owner for an understanding of the report limitations.

SITE / PROJECT DESCRIPTION

Existing Conditions

The project site encompasses 65-acres of gently undulating, and predominately open, farmland situated in the northwest corner of the intersection of Blackman Road and Baker Road in Murfreesboro, Tennessee. Less than approximately 15 feet of topographic relief is present across the area of proposed construction ranging from about El. 613 along the Baker Road frontage to about El. 598 along the northwest property boundary.

The farm contains mainly open fields that have historically been used for row crop farming. Some trees are present within the property interior along an old fence row extending about 600 feet west of Blackman Road as well as around existing buildings (an occupied residence and detached shed) in the rough center of the site. Some overhead and buried utilities are present along the current property entrance drive. The landowner indicated there are two water wells in the front yard as illustrated on Exhibit 2 (specific locations not made known to us). He also pointed out the general area of the residence's septic field which is noted on Exhibit 2.

We observed two areas of apparent active karst, including an isolated dropout, near the east property line (near the recreation fields) and twin soil dropouts near the northeast property corner. The approximate locations of these features are indicated on Exhibit 1. In addition, we noted an area of ground near the recreation fields that contains multiple apparent rock outcrops (exposures of bare rock). Agriculture fields contained harvest stubble and an immature cover crop.

Proposed Improvements

- Site Location / Layout: See appended Exhibits 1, 2, and 3
- Improvements: Single-story elementary school, two-story middle school, site access, interior, and loop / perimeter drives, parking lots, recreation fields, and stormwater retention basins
- Building Construction* Slab-on-grade, load-bearing CMU or concrete walls, and concrete columns in the garage; wood or light gauge steel framing building
- FFE* TBD
- Maximum Loads* Columns: 250 kips
Walls: 6 klf
Slabs: 125 psf
- Grading* Assumed to entail cut or fill approaching 10 feet in max dimension

(*assumed)

SUBSURFACE CONDITIONS

Subsurface Conditions – General Comments

Conditions encountered at each boring are indicated on the appended individual logs (Exhibit 4, 66 sheets). Results of related laboratory testing are indicated thereon at appropriate strata. Stratification boundaries on the boring logs represent the perceived strata change between differing soil types and variably weathered bedrock; in situ, the transition may be more gradual than abrupt. A discussion of field sampling and laboratory testing procedures is included in Exhibit 5.

Elementary School

Ground cover at the related borings includes, with one exception, less than about 12 inches of topsoil with organics and roots. Topsoil thickness was about 16 inches at boring E-14. The 18 borings used for this exploration encountered typically stiff, lean, or fat, clay with a variable chert content to the depths of exploration. Some weak surface soils (exhibited by lower single-digit N values) were encountered to generally shallow depth (within the top sample interval, to a depth of about 3 feet) at borings E-2, E-5 to E-9, and E-14. Occasionally weak horizons were noted to greater depth at borings E-6 to E-8. Those borings coincided with topographically lower areas in the west end of the building layout as noted on Exhibits 1 and 2. Five of the 18 elementary school borings encountered refusal at depths ranging from about 12½ to 18 feet (borings E-2, E10, E14, E-17, and E-18). Boring E-5 was terminated after refusal was encountered on an apparent obstruction at shallow depth, but no offset boring was attempted due to conflicts with surface items and known buried items. All other borings within the elementary school footprint were terminated in typically stiff residual clay at a depth of about 15 feet.

Middle School

The surface materials at the 18 borings utilized to investigate this building footprint (illustrated on Exhibit 3) encountered less than about 12 inches of organic topsoil with roots. Except as noted, these borings encountered typically stiff, lean, or fat, clay with a variable chert content to the depths of exploration. Some weak surface soils (exhibited by lower single-digit N values) were encountered to generally shallow depth (within the top sample interval, to a depth of about 3 feet) at borings M-20, M-23, M-27 to M-30, M-32, and M-35. A weak horizon was noted to greater depth (the second sample) at boring M-23. Most borings were terminated in typically stiff residual soil at a depth of about 15 feet at the majority of the middle school borings, and hard auger refusal was noted at four locations, ranging in depth from 6 feet to about 18½ feet (borings M-19, M-21, M-27, and M-33).

Site Areas

Twenty-six (26) borings were positioned in large parking lots, near-school and perimeter roads, and near-school parking areas as noted on Exhibit 1. The surface cover at these boring locations consists of organic topsoil with roots less than about a foot in thickness. Beneath the topsoil, the

borings encountered typically stiff, or firmer, lean and fat residual clay to the limits of exploration. Weak soils (exhibiting lower N values) were revealed by the field testing at several pavement area borings including P-37, P-39, P-41, P-42, P-51, P-52, P-54, P-58, and P-59. Most pavement area borings were terminated without encountering refusal in residual soil at depths of about 5 feet and 10 feet. Two pavement borings refused at depths of about 6½ feet (P-38) and 5 feet (P-55). We note that the tools apparently encountered the sidewall of sloping bedrock at boring P-55. We noted that although abrupt, hard refusal was not achieved at that location, we nonetheless consider rock to have been encountered based on the behavior of the tools under engagement.

Stormwater Collection Areas

A single boring was positioned in each of the four proposed stormwater basins as noted on Exhibit 1. These borings (SW-63 to SW-66) were advanced via auger only and were utilized to confirm soil thickness at the relative locations. Boring SW-63 refused at a depth of 5 feet while the others were drilled to about 10 feet without encountering refusal.

General Comments regarding Refusal

Auger refusal is defined as the depth below the ground surface at which a test boring can no longer be advanced with the soil drilling technique being used. In limestone geology, auger refusal can result on limestone suspended in the residual soil matrix (float), on rock pinnacles, or knobs, rising above the surrounding bedrock surface, in widened joints that may extend well below the surrounding bedrock surface, or on the upper surface of continuous bedrock. With similar regard, we also refer to the comments above regarding boring P-55. Coring of bedrock was excluded from our approved scope of exploration.

Groundwater

The boreholes were checked for groundwater during advancement and upon completion. With one exception, no water was observed in the borings while drilling or for the short period between tool extraction and backfilling. Some free water was observed on the soil specimen and tools obtained at the bottom sample at boring P-38 which was obtained at the refusal surface. The apparent dry condition overall should not be inferred as a true representation of groundwater at the site. Due to the low permeability of the soils at the locations explored, a relatively long period of time may be necessary for groundwater to accumulate, and stabilize, in a borehole in these materials. Long term observations in piezometers, or observation wells, sealed from surface water are often required to define groundwater levels in this geologic setting. At this site, perched groundwater could be present at the bedrock surface. Groundwater level fluctuations occur due to seasonal rainfall, runoff, and other factors not evident at the time the borings were performed. The possibility of groundwater level fluctuations should be considered when developing the design and construction plans for the project.

Geology Discussion

Based on the 1966 *Geologic Map of the Smyrna Quadrangle, Tennessee* (web-based *National Geologic Map Database* as maintained by the USGS), this site is underlain by Ordovician Age limestone of the Ridley Formation. This rock type is typically cherty and medium to thick bedded.

The carbonate limestone underlying the site is susceptible to dissolution along joints and bedding planes in the rock mass. This results in voids and solution channels within the rock strata and a highly irregular bedrock surface. A depiction of preferential weathering at joints and fissures in the Ridley Formation is illustrated by the accompanying photograph (height of rock cut is approximately 35 feet). The weathering of the bedrock and subsequent collapse, or erosion, of the overburden into these openings results in what is referred to as karst topography. Any construction in karst topography is accompanied by some degree of risk for future internal soil erosion and ground subsidence that could affect the stability of the proposed structures.

Available topographic and geologic literature indicate many mapped closed depressions or sinkholes within close proximity to the subject property. Moreover, we previously mentioned our observations of isolated, apparent dropouts, or throats, of perceived active sinkholes. Borings drilled at the site did not disclose any voids, obvious signs of apparent karst-related soil softening, or impending overburden collapse. Additional karst / sinkhole related discussion is presented in the following text.

RECOMMENDATIONS FOR DESIGN

Geotechnical Considerations

The site is judged to be generally suitable for the planned project, and design and construction should be planned and executed under consideration for the following. Principal geotechnical issues for the project include weak surface soils, karst / sinkhole potential, and sensitive clays. These matters are discussed in brief below. Provided the site is prepared in accordance with these recommendations and guidelines and using earthwork practices, procedures, and protocol amenable for mass grading and development of sites in this geology, the buildings may be founded upon shallow spread footings bearing in engineer-approved subgrades.

Weak Soils

The exploration and field-testing results revealed low strength soils are present at multiple areas across the property. As generally discussed previously regarding the exploration results, weak surficial soils were encountered at 25 of the 62 sampled borings utilized for the investigation. These conditions are demonstrated by the low single digit N-values derived from the field testing. For the purposes of this discussion, an N-value of about 5 blow per foot (bpf) or less is indicative of weak, cohesive soil exhibiting low available shear strength. Consideration may be given to the typically wet season that prevailed at the time of this study as well as the farming and agriculture practices to till, plow, and invigorate the upper soil layer as prevailing causes for the widespread low strength soils. Moreover, some low strength soils coincided with flat-lying site areas exhibiting fair to poor surface drainage characteristics (i.e., P-37 and P-52). The upper lean clay soils at these locations also exhibited highly silty character and dark brown coloration, which, based on our experience, stem from soils created by erosion and sediment deposition in plowed fields. Nonetheless, the grading contractor should anticipate above normal undercutting, aerating / drying, moisture-conditioning, etc., of surface materials in particular areas of the site, not only at the spot locations identified by the field testing, but in areas between and beyond all boring locations.

Karst / Sinkhole Potential

Limestone prevalent in the host geology is soluble and prone to development of sinkholes. We reiterate our awareness of at least two active sinkhole throats on the site at the locations indicated on Exhibit 1. Numerous closed depressions are mapped near the property, and we judge the risk of sinkhole develop at this site is no greater than land in similar geology. Given the perceived thin to moderate soil depth, we believe the existing throats can be remediated using conventional inverted rock filter, a structural plug fill, and we recommend these and other similar features that may be discovered during and after construction be similarly treated.

The risk of sinkhole development is inherent in this geology and cannot be eliminated. No discernible horizons of karst-related soil softening, or indications of imminent overburden

collapse, were suggested by the auger / SPT sampling results at the locations explored. Our recommendations for lightly loaded foundations include soil supported shallow spread footings. The owner is advised that soil-supported elements (foundations, slabs, pavements, etc.) are susceptible to movement caused by karst activity and sinkhole development, and this risk must be acknowledged and accepted by the owner for the proposed project. If the Owner has additional concerns about understanding the perceived karst risk, further study and investigation, such as geophysical survey and track drill exploration (rock probes), should be performed.

The current state of the practice in geotechnical engineering does not allow for the accurate prediction of when, or where, sinkholes, or karst related subsidence, could occur. The risks associated with karst topography can be reduced by careful attention to the details of site preparation. Site design should include provisions for positive drainage, and water should not be allowed to pond on the site, either during or after construction. Surface runoff should be conveyed off property.

The grading contractor should be alert during construction to any indication of possible incipient sinkholes within the subsurface. Given the risk for karst related problems, it is essential that stripping and proofrolling operations be observed by the geotechnical engineer to detect the presence of near surface karst features that may require repair. Any sinkhole features encountered during the site grading, or during later stages of construction, should be reviewed by the geotechnical engineer.

Sensitive Clays

Some of the near-surface clays are fat (highly plastic) and prone to significant volume change with variations in available moisture. For this reason, we recommend the immediate subgrades under grade supported slabs and pavements be confirmed as low plasticity (lean clay as designated with a USCS classification of CL). If, upon the completion of stripping, the in-situ material is found by the Collier engineer to be fat or highly plastic clay, this interval should be undercut as necessary to construct a 12-inch-thick zone of material exhibiting lower swell susceptibility, or non-reactive, (with regard to large shrink / swell potential in response to significant swings in available moisture) beneath the grades-supported slabs and pavements. This precaution may not eliminate all future subgrade volume change and resultant floor slab movements; however, the potential for subgrade volume change should be significantly reduced if such a buffer is constructed beneath pavements and slabs.

In addition to the plasticity aspects of the existing fat clay, some natural soils are highly silty clay, such as the dark brown clay mentioned previously, and are moisture sensitive with typically narrow window of moisture range for optimal grading. The grading contractor should be advised of the anticipated soil conditions and should be prepared to expend the necessary effort to remediate problematic clays. As opposed to in-situ remediation to moisture condition sensitive

soils, which typically requires above normal effort and prevailing amenable site conditions and weather, our experience indicates undercut and replacement of sensitive soils will greatly reduce negative impacts to project schedule.

Seismic Site Class

Based on the *2018 International Building Code (IBC) Section 1613.2.2*, which gives specific reference to Chapter 20 of *ASCE 7-05* for site class definition, the Seismic Site Class for this project may be taken as Site Class C. Chapter 20 of *ASCE 7-05* requires a site soil profile determination extending a depth of 100 feet for seismic site classification. The exploration scope utilized for our study does not include a 100-foot near-surface profile determination. Borings for the project extended to a maximum depth of approximately 18 feet and this seismic site class definition considers that limestone bedrock continues below the maximum depth of the subsurface exploration. Additional and deeper exploration could be performed to confirm the conditions below the refusal elevation. Alternatively, a geophysical survey and a site-specific seismic study could be performed in an attempt to attain reduced acceleration values.

Earthwork and Grading

General Grading Notes

- Organic material, vegetation, root mats, existing trees / saplings and root balls, and related debris should be stripped and removed from the construction area.
- Remove existing buried, or embedded, items such as foundations, sidewalks, utilities, etc. Excavations resulting from removal of buried features should be repaired and backfilled with engineered fill as described hereinafter.
- Site demolition and preparation should include proper abandonment of the existing wells unless their location doesn't coincide with planned improvements and RCBOE plans to use them for site purposes (irrigation, etc.). If abandoned, the water wells shall be abandoned in accordance with guidelines endorsed by the Tennessee Department of Environment and Conservation (TDEC).
- The existing septic system including related tanks, piping, pumps, grinders, etc., shall be properly removed. Materials removed during abandonment and demolition of the septic system, along with all other materials generated by site demolition, shall be appropriately discarded offsite and in accordance with TDEC protocol.
- After stripping, cutting to grade, and undercut of soft / yielding material, these areas, and areas to receive fill, should be proofrolled with heavy construction equipment such as a loaded scraper or tandem axle dump before the onset of fill placement.
- Soft, dry, or disturbed soil should be removed, or moisture-conditioned and compacted in place, prior to placing fill. Where instability is perceived to be shallow (i.e., less than about 12 inches), acceptable remediation might consist of scarification, aeration, and recompaction.
- We reiterate that the grading contractor shall be made aware of the findings of this study and of the perceived need to expend above normal and necessary effort to stabilize the site and develop uniform subgrades. As warranted and with close collaboration with the geotechnical engineer, the contractor should be prepared to implement techniques for subgrade remediation on a broad scale and across wide areas of the site. Any areas exhibiting gross instability or unusual conditions may require additional exploration and study at the time of grading. The contractor shall be prepared to review and assist with exploration (via backhoe excavated test pits, etc.) any areas requiring consideration or scrutiny to help understand near surface conditions.
- Commensurate with the foregoing bullet and aforementioned aspects of the exploration results, we reiterate the anticipated depth of weak soils where encountered to be 2 to 3

feet and, in some cases, exceeding 6 feet. The owner, civil engineer, and grading contractor are advised to review the exploration results for this study and consider these aspects for use in development of baseline information, as warranted, for expected volumes or scope of undercut, remediation, etc., in the grading contract.

- The on-site clayey and silty soils are susceptible to disturbance from construction activity, particularly if the soil exhibits elevated natural moisture content and is wetted by surface water or seepage. Within those areas, soft, dry, or disturbed soil should be removed or moisture-conditioned and compacted in place prior to placing fill. Where instability is perceived to be shallow (i.e., less than about 12 inches), acceptable remediation might consist of scarification, aeration, and recompaction.
- The grading contractor should be prepared to maintain the site in a well-drained condition, to provide adequate site drainage, and minimize disturbance of the bearing soils. Heavy equipment traffic directly on bearing surfaces should be avoided in wet clay soils. Construction traffic should be limited on working and final subgrades.
- Utility trenches beneath buildings should be effectively sealed to restrict water intrusion and flow that could migrate below the structural footprint. This may include constructing the upper 18 inches of trench backfill using engineered clay fill to help reduce the potential to introduce surface water into crushed stone envelopes typically used for pipe / conduit bedding. Further, utility trench backfill within 5 feet of buildings should consist wholly of compacted clay that surrounds the conduit and fills the trench.
- Our experience indicates that soils relatively close to bedrock can become unstable, especially when seepage occurs along the bedrock interface and the construction traffic occurs over the soils. The contractor should be prepared to undercut these soils to bedrock and backfill with surge stone (described hereinafter) or other granular fill.

<u>Sinkhole Remediation</u>

- Known sinkhole throats and others that may be disclosed during, and after, earthwork on this site shall be remediated using TDEC-approved guidelines for sinkhole modification. As of the publication of this report, TDEC does not currently require a permit for such action, however, the procedure shall be performed in accordance with their regulated protocol and shall be documented for posterity purposes. Locations of known sinkhole throats as delineated on Exhibit 1 do not coincide with structural footprints, and normal TDEC repair procedures are considered appropriate.
- Any sinkholes disclosed after commencement of grading shall be reviewed by the geotechnical engineer for approval of repair procedures. Any such features that coincide

with, or are near, structural footprints warrant special consideration and review by the geotechnical engineer. At his discretion, additional exploration may be performed to better understand existing near surface conditions and to help assess perceived risks so that appropriate mitigation can be developed. The grading contractor should be alert during construction to any indication of possible incipient sinkholes within the subsurface.

Engineered Fill

- Select engineered fill shall consist of well graded, durable, processed limestone particles ranging in particle size from fines to about 12 inches (surge gradation), and this material is recommended exclusively for the loaded building pads of the planned structures. Surge stone may be spread in 18 inch loose horizontal lifts and thereafter compacted to a dense stable condition based on technical observation. Where required fill thickness becomes thin, the maximum particle size and lift thickness should decrease accordingly.
- Heavy, tracked equipment is recommended to spread and compact shot rock (surge stone) engineered fill (a D8 class bulldozer). Compaction of surge stone fill should involve at least five passes of the compacting equipment (with one pass equating to total coverage by the tracked equipment of the lift being compacted) and an additional five passes using machine movements perpendicular to the initial passes. Stability, density, and compaction of densified surge stone should be based upon technical observation by qualified and experienced soils technician under the direction of an experienced geotechnical engineer. As dictated by planned and available grades, the rock fill mass should be provided a drainage outlet to maintain positive dewatering of the mass.
- To provide adequate passive pressure and foundation confinement, the surge stone building pads should be constructed at least 10 feet horizontally beyond the exterior limits of buildings. The 10-foot rule should be ignored within narrow exterior corridors between adjacent wings in the school buildings, and these areas should be considered part of the buildings' general footprint during surge stone pad construction. At the interface of structural surge stone fill with adjacent site, or general, fill, the perimeter of the surge stone fill should be angled to create a 1H:1V outslope. Adjacent engineered fill embankments in general, or site, areas should be placed commensurate with surge stone fill (and the general elevation of the abutting fills raised concurrently) to maintain compaction integrity at the interface of the differing materials.
- Organic-free, clayey soil derived from on-site excavations may be used as engineered fill, except that highly plastic (CH designation) soils should be excluded from the upper 12 inches of fill beneath slabs and pavements. Delineation of fat (CH) clays should be performed in the field by the geotechnical engineer or his representative.

- Engineered soil fill should consist of low to medium plasticity (PI < 30) clay designated CL[1] by the Unified Soil Classification System. Rock particles greater than four inches in maximum dimension should be excluded from soil fill.
- Engineered soil fill should be placed in loose horizontal lifts no thicker than nine inches, and each layer should be densified to within 98% of the soil's maximum dry density per ASTM D 698. In order to reduce the potential for volume change in response to changes in moisture, the moisture content of the engineered fill should be controlled to within ±2% of the standard Proctor optimum moisture content. Acceptable testing frequency for density / compaction should be one test per every 2,500 SF per lift within building and pavement areas and for every 100 LF of trench.
- Mixed rock / soil fill should be reviewed and approved by the engineer prior to use on the site. Factors associated with use of this fill type would be based on particular usage and would include visual review, and acceptance, by the engineer with regard to acceptable fraction of each constituent, maximum particle size, desired lift thickness, and equipment used to compact each lift.
- Proposed borrow sources should be tested and approved by the geotechnical engineer before being imported and used at the site as engineered fill.

Drainage

- Surge stone building pads should be provided an outlet drain to maintain the matrix in a dewatered condition.
- All pavement or parking areas should be sloped away from the building to prevent gathering or pooling of water near the structures during and after construction.
- Gutters and downspouts that drain water a minimum of 10 feet beyond the footprint of the proposed structures are recommended. To help capture and control drainage from roofs, downspout flows may be connected via a manifold pipe arrangement to discharge to the local storm drainage system.
- Splash-blocks or scuppers should also be considered below hose bibs and water spigots.

[1] Although dark brown, silty clay as discussed previously may satisfy the plasticity aspects and classification noted above, such material should be excluded from use as engineered fill due to the high silt content and the potential for misidentification with topsoil materials (due to coloration). This material was encountered at borings P-37, P-40, P-42, P-47, P-52, P-55, and P-58, and is likely present in unexplored areas of the site.

- A positively draining ditch should be constructed at the base of slopes to be constructed near pavements or buildings. Where practical, such ditches should be positioned at least 3 feet beyond the back side of curbs or at least 10 feet from the building perimeter.
- An interval of free draining stone should be placed below floor slabs to help distribute point loads and to serve as a capillary break beneath the slab.
- Based on our observations and experience in this setting, subsurface seepage, springs, or other groundwater sources could impact the project. As such, the designers should consider foundation drains for the buildings. We expect that temporary inflows that enter excavations, or trenches, during construction resulting from precipitation, perched water in existing stone under slabs, pavements, etc., may be addressed via sump and pump techniques. Any groundwater sources encountered during construction, excavation, or that may develop at the site during, or after, completion of construction should be brought to the attention of the Collier geotechnical engineer.

Shallow Foundations

Shallow Foundation Notes

Provided that the site is prepared in accordance with the recommendations stated herein, proposed structures can be supported by conventional, shallow spread foundations bearing on engineer-approved stiff, natural soil or engineered fill.

Shallow Foundation Design

- An allowable bearing capacity of 2.5 KSF for loads as applied by individual and continuous footings, respectively, may be used for the aforementioned bearing media (FS of at least 3 against general shear failure).
- Minimum footing widths of 30 inches and 18 inches should be specified for individual and continuous footings, respectively.
- Exterior footings should be designed to bear at least 18 inches below finished grades to provide adequate confinement and frost protection.
- Lateral load resistance against footings may be calculated using a passive earth pressure of 750 PCF (below a depth of 2 feet). The coefficient of friction between the base of the concrete foundation and underlying clay soil is estimated at 0.35. A factor of safety of at least 1.5 should be used when calculating resistance to lateral loads.
- The sides of the excavation for spread footings must be nearly vertical and the concrete should be placed neat against these vertical faces for the passive earth pressure value to be valid. If the loaded side is sloped or benched before being backfilled, the allowable passive pressure will be significantly reduced.
- To accommodate minor uplift loads, the designers may account for the backfill above the footing element. For backfill compacted to 98% of Proctor density (assuming soil is used), the unit weight of the backfill above the foundation (vertical projection of the footing limits) may be taken as 115 PCF. For random backfill placed thereon, the unit weight above the footing should be taken as 90 PCF.
- When founded in accordance with our recommendations, both gross and differential settlements for the buildings are expected to be within tolerable limits. Specifically, based on the exploration data and the assumed foundation loads, we estimate that the total foundation settlement will not exceed 1 inch and that differential settlement will not exceed 50% of the total increment. That value does not include movement induced by karst-related subsidence.

- Whenever possible, foundation excavations should be opened and concrete cast on the same day. If foundation excavations must remain open for an extended period, they must be protected from rainfall, surface water infiltration, freezing, and excessive drying. The geotechnical engineer, or his representative, should examine all footing excavations immediately prior to being cast to observe the bearing surface and to document that conditions are as anticipated.
- During foundation installation, isolated soft zones may be encountered at the bearing elevation. If soft zones are encountered, the footing subgrade should be undercut to a firm stratum and backfilled with engineered fill so that the foundation element bears on a uniformly stable subgrade.
- Where knobs or pinnacles of bedrock are encountered in foundation excavations, the rock shall be removed by hoe ram or similar method to an elevation at least 2 feet below the footing contact level and the area backfilled with compacted soil fill. Based on the boring results and the available exploration data, we do not except this situation will be widespread at the current building locations provided that grading to achieve the buildings' FFE's does not involve substantial cut.

Grade Supported Slabs

Floor Slab Design

- Thickness and reinforcing requirements for grade supported slabs can be designed based on a conservatively estimated subgrade reaction modulus of 110 pci. Concrete slabs-on-grade are expected to perform satisfactorily if the subgrades are prepared as recommended in this report.
- A free-draining, granular base at least four inches thick and a vapor barrier should be incorporated into the slab design.
- An appropriate number of control joints should be included in the slab design to accommodate minor differential settlement that may occur.

Floor Slab Notes

- All floor slab subgrade areas should be moisture conditioned and properly compacted to the recommendations in this report immediately prior to placement of the stone base and concrete.
- Floor slabs should be structurally independent of any building footings, or walls, to reduce the possibility of floor slab cracking caused by differential movements between the slab and foundation. Where floor slabs are tied to perimeter walls or turn-down footings, any differential movement between such elements and the floor slab will likely be manifested in adjacent slab expansion joints or cracks that occur beyond structural dowels. The design engineer should account for this potential differential settlement through use of sufficient control joints, appropriate reinforcing, or other means.
- Floor slabs can be constructed over stiff natural lean clays and / or new engineered fill that meets our fill criteria. Prior to construction of grade supported slabs, varying levels of remediation may be required to reestablish stable subgrades within slab areas due to construction traffic, rainfall, disturbance, desiccation, etc.
- Confirm that interior trench backfill placed beneath slabs is compacted in accordance with recommendations outlined in the **Earthwork and Grading** section of this report.

Pavements

Recommended Pavement Sections

Material[1]	Asphalt Section Thickness (inches)	
	Light Duty Section (Cars Only)	Heavy Duty Section
Asphalt Surface	2½	1½
Asphalt Binder / Leveling Course	-	2½
Crushed Mineral Aggregate Base	8	8
Total Section Thickness	**10 ½**	**12**

1. Aggregates should conform to the following TDOT material specifications.
   - Section 411 for Surface Course, Grading E
   - Section 307 for Hot Mix Asphalt Leveling Course, Grading B-M
   - Section 303 for Aggregate Base Course material, Class A, Grading D

For areas subject to concentrated and repetitive loading conditions such as dumpster pads, truck delivery docks and ingress / egress aprons, we recommend using a Portland cement concrete pavement with a thickness of at least 7 inches underlain by at least 4 inches of crushed stone. The concrete should be air-entrained and have a minimum compressive strength of 4,000 psi after 28 days of laboratory curing per ASTM C-31. The above section represents the minimum design thickness, and, as such, periodic maintenance should be anticipated. Prior to placement of the crushed stone, the areas should be thoroughly proofrolled. For the dumpster pads, the concrete pavement area should be large enough to support the container and the tipping axle of the refuse truck.

Pavement Design and Construction Notes

- Assumed traffic: <10,000 ESALs (automobile parking) and <220,000 ESALs (drive areas)
- We anticipate that traffic loads will be produced primarily by daily car traffic, buses, delivery trucks per day, and trash removal trucks. Automobile section only receives car traffic. If heavier traffic loading is expected, this office should be provided with the information and allowed to review these pavement sections.
- A design life of 15 years was assumed to develop the total traffic used in thickness design.
- A California Bearing Ratio (CBR) value of 4 has been estimated for the native soils or similar borrow soils. Import fill should be tested prior to use by the geotechnical engineer.
- Because these areas receive considerable construction traffic early in the life of the project due to equipment movement, material storage, etc., pavement subgrades should be carefully

evaluated just before pavement construction. Particular attention should be paid to high traffic areas that were rutted and disturbed and to areas where backfilled trenches are located. Areas where unsuitable conditions are located should be repaired by scarification / recompaction or replacing the materials with properly compacted fill.

Lateral Earth Pressures

Below Grade Walls

Provided that wall backfill consists free-draining stone (as described below) which is positively drained, below grade walls can be designed for an effective fluid pressure of 60 PCF for the at-rest case, 40 PCF for the active condition, and 360 PCF for passive restraint. Those values are predicated upon a moist unit weight of 120 PCF and a phi angle (∅) of 30° for the backfill material described below. The wall design must also consider the surcharge influence resulting from any structural, or traffic, loads applied near the wall and hydrostatic loads. We recommend that below-grade-wall designs include a factor of safety of at least 1.5. Specific loading conditions should be addressed on a case-by-case basis.

We recommend that backfill placed against below-grade walls consist of compacted, free-draining, uniformly sized stone, such as ASTM D 448 size No. 57. The stone should be compacted with vibratory sled compactors and be placed in lift thickness not exceeding 12 inches. This wedge of stone should extend the entire height of the wall except that the upper 18 inches of the backfill should consist of relatively impervious material (i.e., compacted clay, pavement, etc.). The top of the wedge should extend outward from the wall at least one-half the height of the wall. A pipe, or an outlet, at the base of the wall should positively drain the stone backfill. This office should be contacted for alternate design parameters if wall backfill differs from the stone described above.

For the granular values to be valid, the granular backfill must extend out from the base of the wall at an angle of at least 45 and 60 degrees from vertical for the active and passive cases, respectively. To calculate the resistance to sliding, values of 0.35 and 0.5 should be used as the ultimate coefficient of friction between the footing and the underlying soil or rock, respectively.

Applicable conditions to the above include:

- For active earth pressure, wall must rotate about base, with top lateral movements of about 0.002 *H* to 0.004 *H* (*H* is wall height as measured from the footing base)
- For passive earth pressure to develop, wall must move horizontally to mobilize resistance
- No safety factor is included in the soil parameters
- In-situ soil backfill weight a maximum of 120 pcf
- Horizontal backfill, compacted to at least 95% of standard Proctor maximum dry density
- No hydrostatic pressures or dynamic loads are acting on the wall

The foregoing aspects of wall design and expected performance include the assumption that no hydrostatic pressure is allowed to develop. To help control hydrostatic pressure behind the wall, we reiterate that a drain should be installed at the base of the wall foundation with a collection pipe leading to a reliable discharge. If this is not possible, then combined hydrostatic and lateral earth pressures should be calculated for lean clay backfill using an equivalent fluid weighing 90 pcf

and 100 pcf for active and at-rest conditions, respectively. For granular backfill, an equivalent fluid weighing 85 pcf and 90 pcf should be used for active and at-rest, respectively. These pressures do not include the influence of surcharge or loads from equipment or floors which should be added. Heavy equipment should not operate within a distance closer than the exposed height of retaining walls to prevent lateral pressures more than those provided.

GENERAL COMMENTS

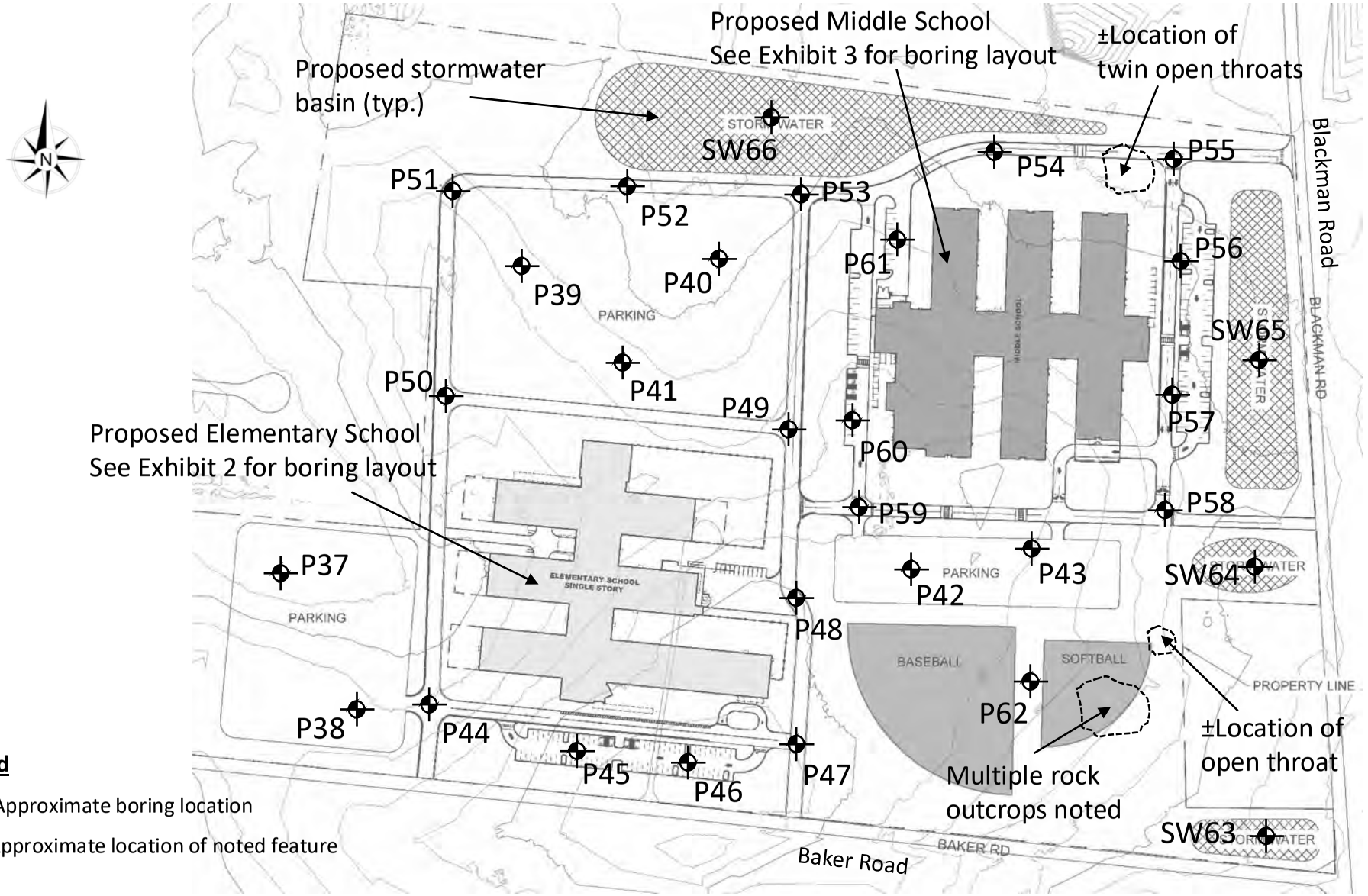
The analyses and recommendations presented in this report are based upon the data obtained from the exploration performed at the indicated locations and from any other information discussed in this report. This report does not reflect any variations which may occur between or beyond the points of exploration or across the site. The nature and extent of such variations may not become evident until construction. If variations appear evident, it will be necessary to reevaluate the recommendations of this report.

We recommend that Collier be retained to review the plans and specifications so that comments can be provided regarding the interpretation and implementation of the geotechnical recommendations in the design and specifications. Collier should be retained for testing and observation during earthwork and foundation construction phases to help determine that the design requirements are fulfilled.

The scope of geotechnical services for this project does not include any environmental or biological assessment of the site or existing structures or adjacent properties nor identification or prevention of pollutants, hazardous materials, or conditions.

This report has been prepared for the exclusive use of our client for specific application to the project discussed and has been prepared in accordance with generally accepted geotechnical engineering practices. No warranties, either express or implied, are intended or made. Site safety, excavation support, and dewatering requirements are the responsibility of others. In the event that changes in the nature, design, or location of the project as outlined in this report are planned, the conclusions and recommendations contained in this report shall not be considered valid unless Collier reviews the changes and either verifies or modifies the conclusions of this report in writing.

APPENDIX



Legend

Approximate boring location

Approximate location of noted feature

Source
Barge Cauthen Assoc.

ILLUSTRATION NOT INTENDED FOR CONSTRUCTION OR LAYOUT PURPOSES

Project Manager:	SV
Drawn by:	SV
Checked by:	NC
Approved by:	

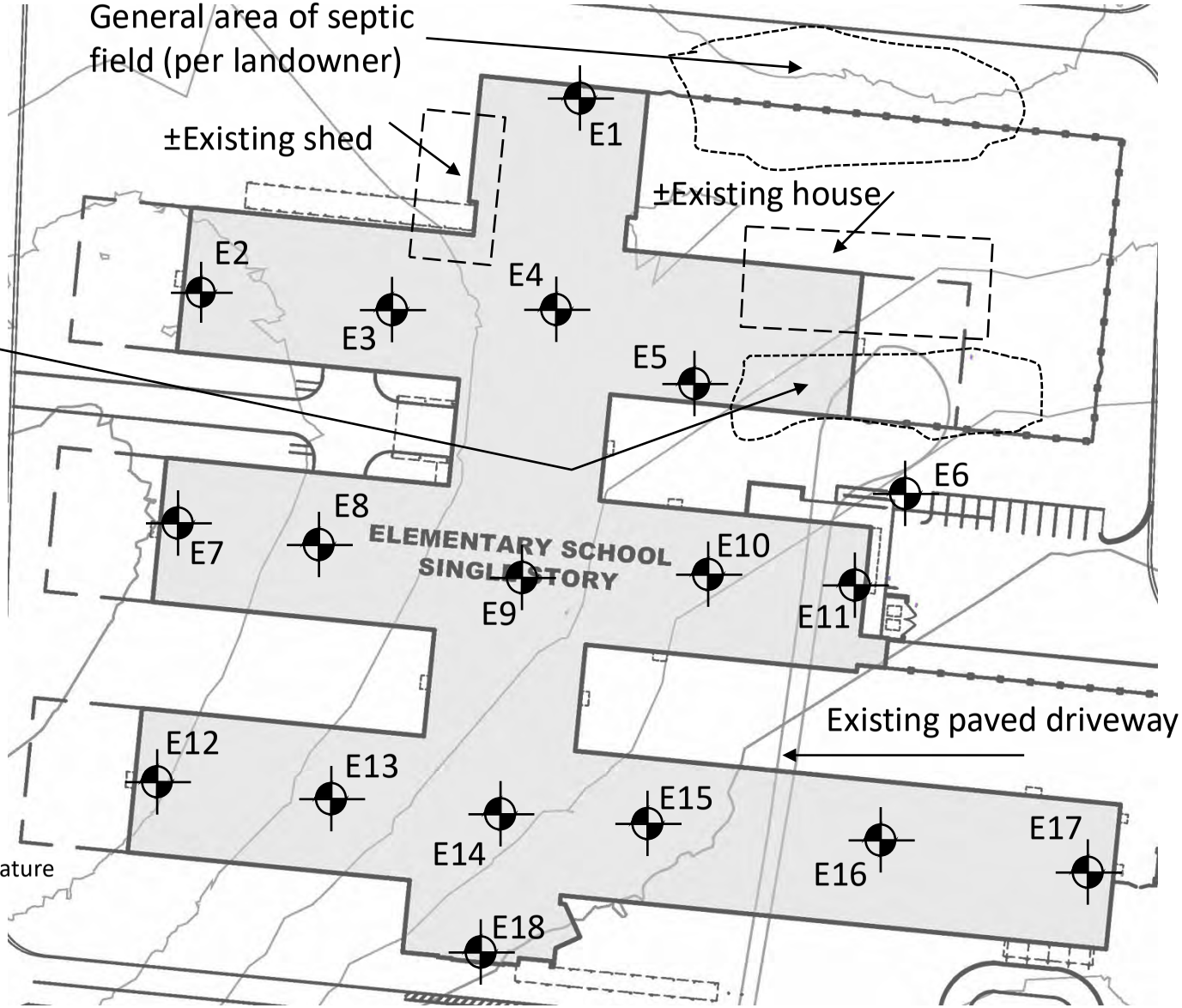
Project No.	2036-22-01
Scale:	N.T.S.
File Name:	Exh. 1
Date:	23Feb2023

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION
2949 Nolensville Road Nashville, TN 37211
PH. (615) 331-1441 FAX. (615) 331-1050

BORING LOCATION PLAN (site areas)

Proposed School Campus at Batey Property
5104 Baker Road
Murfreesboro, TN

Exh. 1



Landowner indicated two water wells are in front yard (actual locations not indicated to us)

Legend

Approximate boring location

Approximate location of noted feature

Source
Barge Cauthen Assoc.

ILLUSTRATION NOT INTENDED FOR CONSTRUCTION OR LAYOUT PURPOSES

Project Manager:	SV
Drawn by:	SV
Checked by:	NC
Approved by:	

Project No.	2036-22-01
Scale:	N.T.S.
File Name:	Exh. 2
Date:	24Feb2023

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION
2949 Nolensville Road Nashville, TN 37211
PH. (615) 331-1441 FAX. (615) 331-1050

BORING LOCATION PLAN (elementary school)

Proposed School Campus at Batey Property
5104 Baker Road
Murfreesboro, TN

Exh. 2

Legend

Approximate boring location

Source
Barge Cauthen Assoc.

ILLUSTRATION NOT INTENDED FOR CONSTRUCTION OR LAYOUT PURPOSES

Project Manager: SV	Project No. 2036-22-01
Drawn by: SV	Scale: N.T.S.
Checked by:	File Name: Exh. 3
Approved by:	Date: 23Feb2023

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION
2949 Nolensville Road Nashville, TN 37211
PH. (615) 331-1441 FAX. (615) 331-1050

BORING LOCATION PLAN (middle school)

Proposed School Campus at Batey Property
5104 Baker Road
Murfreesboro, TN

Exh. 3

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION

2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING E-1

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89312, -86.50326
*Surface elevation: 605
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil, organics, and root mat	<1							
		Lean to fat clay (CL/CH), red brown, with black mineral nodules and stains, stiff	3		X	3-4-8 (12)	6,500	24		42-23-19
5	600	Fat clay (CH), mottled red brown/tan/light grey, with black mineral nodules and stains, stiff to very stiff			X	3-4-5 (9)	9,000	37		
					X	3-4-9 (13)	9,000	34		
		Cherty below 8 feet								
10	595				X	7-14-15 (29)	7,000	30		
			15		X	3-4-7 (11)	7,000	34		
15	590	*Boring terminated (no refusal) at 15 feet*								
20	585									
25	580									
30	575									

Exhibit 4

Date started/completed: **January 16, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION

2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING E-2

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89281, -86.50401
*Surface elevation: 602
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil, organics, and root mat	<1							
		Lean to fat clay (CL/CH), red brown, with black mineral nodules and stains, firm	3		X	2-2-3 (5)	5,000	24		
		Fat clay (CH), mottled red brown/light grey, cherty, with black mineral nodules and stains, stiff	5		X	6-50/4"	5,500	28		
5	597	Lean to fat clay (CL/CH), mottled red brown/tan/light grey, trace of chert, with trace of black mineral nodules and stains, stiff			X	4-4-8 (12)	7,000	22		
					X	4-6-8 (14)	9,000	28		
10	592									
					X	2-4-5 (9)	8,500	27		
15	587		18							
		Auger refusal at 18 feet								
20	582									
25	577									
30	572									

Exhibit 4

Date started/completed: **January 16, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION

2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING E-3

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89278, -86.50364
*Surface elevation: 603
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil, organics, and root mat	<1							
		Lean to fat clay (CL/CH), red brown, with trace of black mineral nodules and stains, firm	3		X	2-2-4 (6)	4,000			
5	598	Fat clay (CH), mottled red brown/tan, stiff			X	3-4-4 (8)	8,500			
					X	3-6-7 (13)	9,000			
10	593				X	3-5-7 (12)	9,000			
		Cherty 13 to 15 feet	15		X	4-4-6 (10)	7,000			
15	588	*Boring terminated (no refusal) at 15 feet*								
20	583									
25	578									
30	573									

Exhibit 4

Date started/completed:	**January 16, 2023**
Drilled by:	**Southeast Drilling Solutions**
Drill rig:	**Geoprobe 7822**
Hammer type:	**Autohammer**
Driller/helper:	**Babcock/Babcock**
Water while drilling:	**Dry**
Water upon completion:	**Dry**
Borehole advanced by:	**Hollow stem auger**
Borehole abandoned by:	**Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION
2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING E-4

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89275, -86.50328
*Surface elevation: 604
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil, organics, and root mat	<1							
		Lean to fat clay (CL/CH), red brown, with trace of black mineral nodules and stains, firm			X	2-3-3 (6)	3,000			
			5		X	3-4-7 (11)	7,500			
5	599	Fat clay (CH), mottled red brown/tan, stiff			X	5-6-8 (14)	9,000			
					X	5-6-8 (14)	9,000			
10	594									
		Cherty 13 to 15 feet								
			15		X	4-6-9 (15)	9,000			
15	589	*Boring terminated (no refusal) at 15 feet*								
20	584									
25	579									
30	574									

Exhibit 4

Date started/completed: **January 16, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION

2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING E-5

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89262, -86.503
*Surface elevation: 606
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil, organics, and root mat	<1							
		Lean to fat clay (CL/CH), red brown, with trace of black mineral nodules and stains, soft	3		X	1-2-2 (4)	3,000			
5	601	*Boring terminated at 3 feet on apparent obstruction (possible tree root); no ability to offset due to tree canopies and marked gas line proximal to this location*								
10	596									
15	591									
20	586									
25	581									
30	576									

Exhibit 4

Date started/completed: **February 13, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained in the field using a navigation app with a horizontal tolerance of about 15 feet. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field by pacing with reference to existing features and to avoid surface conflicts. Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION

2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING E-6

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89242, -86.50265
*Surface elevation: 608
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil, organics, and root mat	<1							
		Lean to fat clay (CL/CH), red brown, with trace of black mineral nodules and stains, soft to firm			X	2-2-2 (4)	4,000			
			5		X	1-2-1 (3)	4,000			
5	603	Fat clay (CH), mottled red brown/tan, stiff to very stiff			X	4-6-7 (13)	9,000			
					X	4-7-7 (14)	9,000			
10	598									
		Cherty 13 to 15 feet								
			15		X	6-6-9 (15)	8,000			
15	593	*Boring terminated (no refusal) at 15 feet*								
20	588									
25	583									
30	578									

Exhibit 4

Date started/completed:	**January 21, 2023**
Drilled by:	**Southeast Drilling Solutions**
Drill rig:	**Geoprobe 7822**
Hammer type:	**Autohammer**
Driller:	**C. Wombles**
Water while drilling:	**Dry**
Water upon completion:	**Dry**
Borehole advanced by:	**Hollow stem auger**
Borehole abandoned by:	**Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained via projection of its estimated location on Google® maps. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field by pacing with reference to existing features and to avoid surface conflicts.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION
2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING E-7

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89241, -86.50405
*Surface elevation: 600
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil, organics, and root mat	<1							
5	595	Lean to fat clay (CL/CH), red brown, with trace of black mineral nodules and stains, firm			X	2-2-2 (4)	3,000			
					X	2-2-3 (5)	4,000			
			8		X	2-2-3 (5)	4,000			
10	590	Fat clay (CH), mottled red brown/tan/light grey, with black mineral nodules and stains and some chert, stiff to very stiff			X	3-4-7 (11)	5,000			
			15		X	7-10-15 (25)	8,000			
15	585	*Boring terminated (no refusal) at 15 feet*								
20	580									
25	575									
30	570									

Exhibit 4

Date started/completed: **January 20, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION
2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING E-8

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89238, -86.50369
*Surface elevation: 603
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil, organics, and root mat	<1							
		Lean to fat clay (CL/CH), red brown, with trace of black mineral nodules and stains, firm	3		X	2-2-3 (5)	4,000	24		
5	598	Lean clay (CL), brown, with black mineral nodules and trace of chert, soft to stif			X	2-1-3 (4)	4,000	23		
			8		X	4-6-7 (13)	8,000	18		40-20-20
10	593	Lean to fat clay (CL/CH), red brown, with black mineral nodules and abundant chert, stiff			X	4-7-7 (14)	8,000	24		
			15		X	4-5-7 (12)	8,000	20		
15	588	*Boring terminated (no refusal) at 15 feet*								
20	583									
25	578									
30	573									

Exhibit 4

Date started/completed: **January 20, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION

2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING E-9

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89235, -86.50333
*Surface elevation: 606
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil, organics, and root mat	<1							
		Lean to fat clay (CL/CH), red brown, with black mineral nodules and some chert, firm to stiff			X	3-2-3 (5)	3,000			
			5		X	3-3-5 (8)	4,500			
5	601	Fat clay (CH), mottled red brown/tan/light grey, trace of chert, stiff			X	4-5-7 (12)	8,000			
					X	4-5-6 (11)	8,000			
10	596									
					X	3-4-6 (10)	8,000			
15	591									
			18							
		Auger refusal at 18 feet								
20	586									
25	581									
30	576									

Exhibit 4

Date started/completed: **January 20, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION

2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING E-10

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89233, -86.50303
*Surface elevation: 608
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil, organics, and root mat	<1							
		Lean to fat clay (CL/CH), red brown, with trace of black mineral nodules and stains, firm to stiff			X	2-3-4 (7)	3,000			
		Cherty 3 to 5 feet	5		X	3-3-7 (10)	6,000			
5	603	Fat clay (CH), mottled tan/red brown, with some chert, stiff to very stiff			X	4-4-6 (10)	8,000			
					X	4-5-4 (9)	8,000			
10	598									
			15		X	5-6-9 (15)	8,000			
15	593	*Boring terminated (no refusal) at 15 feet*								
20	588									
25	583									
30	578									

Exhibit 4

Date started/completed:	**January 21, 2023**
Drilled by:	**Southeast Drilling Solutions**
Drill rig:	**Geoprobe 7822**
Hammer type:	**Autohammer**
Driller:	**C. Wombles**
Water while drilling:	**Dry**
Water upon completion:	**Dry**
Borehole advanced by:	**Hollow stem auger**
Borehole abandoned by:	**Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION
2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING E-11

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89231, -86.5027
*Surface elevation: 609
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil, organics, and root mat	<1							
		Lean to fat clay (CL/CH), red brown, with trace of black mineral nodules and stains, firm to stiff			X	3-3-4 (7)	4,000	25		
			5		X	2-3-6 (9)	4,500	23		
5	604	Fat clay (CH), mottled tan/red brown, with trace of chert, stiff to very stiff			X	3-5-7 (12)	9,000	32		
					X	5-5-7 (12)	9,000	28		
10	599									
			15		X	6-10-7 (17)	9,000	33		
15	594	*Boring terminated (no refusal) at 15 feet*								
20	589									
25	584									
30	579									

Exhibit 4

Date started/completed: **January 21, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **C. Wombles**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION
2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING E-12

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89201, -86.5041
*Surface elevation: 602
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil, organics, and root mat	<1							
		Lean to fat clay (CL/CH), red brown, with trace of black mineral nodules and stains, firm to stiff	4		X	2-3-3 (6)	6,500	28		
5	597	Fat clay (CH), mottled tan/red brown, with trace of chert, stiff to very stiff			X	3-4-5 (9)	6,500	46		
					X	3-5-6 (11)	8,000	31		
10	592				X	5-8-10 (18)	9,000	29		
			15		X	3-4-7 (11)	9,000	31		
15	587	*Boring terminated (no refusal) at 15 feet*								
20	582									
25	577									
30	572									

Exhibit 4

Date started/completed: **January 20, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION
2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING E-13

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89198, -86.50374
*Surface elevation: 605
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil, organics, and root mat	<1							
		Lean to fat clay (CL/CH), red brown, with trace of black mineral nodules and stains, stiff to very stiff			X	3-4-5 (9)	5,000			
					X	3-4-6 (10)	8,000			
5	600		6½		X	4-9-8 (17)	9,000			
		Fat clay (CH), mottled tan/red brown, with trace of black mineral nodules and staining, stiff			X	5-5-7 (12)	9,000			
10	595	Cherty below 9½ feet								
			15		X	3-4-6 (10)	8,000			
15	590	*Boring terminated (no refusal) at 15 feet*								
20	585									
25	580									
30	575									

Exhibit 4

Date started/completed: **January 20, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION

2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING E-14

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89195, -86.50338
*Surface elevation: 607
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil, organics, and root mat	~1½		X	2-2-3 (5)	4,500			
5	602	Lean to fat clay (CL/CH), mottled tan/red brown, with black mineral nodules and stains, firm to stiff	6½		X	4-4-6 (10)	8,000			
10	597	Fat clay (CH), mottled tan/red brown/brown, with black mineral nodules and staining, stiff	12		X	3-4-7 (11)	9,000			
					X	3-3-5 (8)	7,000			
15	592	*Auger refusal at 12 feet*								
20	587									
25	582									
30	577									

Exhibit 4

Date started/completed: **January 21, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION

2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING E-15

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89198, -86.50374
*Surface elevation: 605
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil, organics, and root mat	<1							
		Lean to fat clay (CL/CH), red brown, with chert, firm to stiff			X	3-3-3 (6)	3,000	24		
			5		X	4-5-5 (10)	3,000	22		
5	600	Fat clay (CH), mottled tan/red brown, stiff to very stiff			X	4-8-7 (15)	8,000	24		
					X	3-9-7 (16)	8,000	33		
10	595									
		Cherty 13 to 15 feet								
			15		X	6-4-7 (11)	7,000	26		
15	590	*Boring terminated (no refusal) at 15 feet*								
20	585									
25	580									
30	575									

Exhibit 4

Date started/completed: **January 21, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **C. Wombles**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION
2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING E-16

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.8919, -86.50267
*Surface elevation: 611
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil, organics, and root mat	<1							
		Lean to fat clay (CL/CH), red brown, with black mineral nodules, firm to stiff			X	2-3-3 (6)	3,500			45-21-24
5	606		5		X	3-4-5 (9)	8,500			
		Fat clay (CH), mottled tan/red brown, stiff to very stiff			X	3-6-8 (14)	9,000			
10	601				X	4-5-7 (12)	9,000			
		Cherty 13 to 15 feet	15		X	3-4-9 (13)	7,000			
15	596	*Boring terminated (no refusal) at 15 feet*								
20	591									
25	586									
30	581									

Exhibit 4

Date started/completed:	**January 21, 2023**
Drilled by:	**Southeast Drilling Solutions**
Drill rig:	**Geoprobe 7822**
Hammer type:	**Autohammer**
Driller/helper:	**C. Wombles**
Water while drilling:	**Dry**
Water upon completion:	**Dry**
Borehole advanced by:	**Hollow stem auger**
Borehole abandoned by:	**Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION

2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING E-17

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89187, -86.50222
*Surface elevation: 611
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil, organics, and root mat	<1							
		Lean to fat clay (CL/CH), red brown, with black mineral nodules and chert, firm to stiff	3		X	3-3-3 (6)	5,500			
5	606	Fat clay (CH), mottled tan/red brown, stiff			X	4-5-6 (11)	9,000			
					X	3-5-6 (11)	9,000			
10	601	Cherty 8 to 10 feet			X	4-5-7 (12)	9,000			
			13							
15	596	Lean to fat clay (CL/CH), mottled brown/red brown, with trace of chert, firm	17		X	2-3-4 (7)	5,000			
		Auger refusal at 17 feet								
20	591									
25	586									
30	581									

Exhibit 4

Date started/completed: **January 21, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION
2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING E-18

Project Name:	Proposed Batey Farm School Campus
Site Location:	5104 Baker Road, Murfreesboro, TN
Collier Project Number:	2036-22-01
Client:	Rutherford County Board of Education Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89172, -86.50342
*Surface elevation: 610
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil, organics, and root mat	<1							
		Lean clay (CL), mottled brown/red brown, with black mineral nodules and trace of chert, stiff	2		X	4-5-5 (10	5,000			
		Fat clay (CH), mottled tan/light grey, cherty, stiff	5		X	6-5-8 (13)	6,000			
5	605	Fat clay (CH) mottled brown/red brown, with black mineral nodules, stiff			X	3-4-6 (10)	8,500			
					X	3-4-7 (11)	8,500			
10	600		12½							
		Auger refusal at 12½ feet								
15	595									
20	590									
25	585									
30	580									

Exhibit 4

Date started/completed:	**January 21, 2023**
Drilled by:	**Southeast Drilling Solutions**
Drill rig:	**Geoprobe 7822**
Hammer type:	**Autohammer**
Driller/helper:	**Babcock/Babcock**
Water while drilling:	**Dry**
Water upon completion:	**Dry**
Borehole advanced by:	**Hollow stem auger**
Borehole abandoned by:	**Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION
2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING M-19

Project Name:	Proposed Batey Farm School Campus
Site Location:	5104 Baker Road, Murfreesboro, TN
Collier Project Number:	2036-22-01
Client:	Rutherford County Board of Education Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89438, -86.50096
*Surface elevation: 600
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil, organics, and root mat	<1							
		Lean to fat clay (CL/CH), red brown, cherty, stiff	3		X	5-4-5 (10)	5,000	22		
5	595	Fat clay (CH), red brown, cherty, stiff	6		X	2-3-5 (8)	7,000	36		57-28-29
		Auger refusal at 6 feet								
10	590									
15	585									
20	580									
25	575									
30	570									

Exhibit 4

Date started/completed:	**January 28, 2023**
Drilled by:	**Southeast Drilling Solutions**
Drill rig:	**Geoprobe 7822**
Hammer type:	**Autohammer**
Driller/helper:	**Babcock/Babcock**
Water while drilling:	**Dry**
Water upon completion:	**Dry**
Borehole advanced by:	**Hollow stem auger**
Borehole abandoned by:	**Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION

2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING M-20

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89437, -86.50047
*Surface elevation: 599
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil, organics, and root mat	<1							
		Lean to fat clay (CL/CH), red brown, with chert, soft	3		X	2-1-2 (3)	5,000			
5	594	Fat clay (CH), mottled red brown/tan/light grey, with black mineral nodules and stains and abundant chert, stiff			X	4-4-5 (9)				
					X	5-4-5 (9)	9,000			
			10		X	3-3-5 (8)	9,000			
10	589	Fat clay (CH), red brown, with black mineral nodules and stains and trace of chert, stiff								
			15		X	3-4-6 (10)	9,000			
15	584	*Boring terminated (no refusal) at 15 feet*								
20	579									
25	574									
30	569									

Exhibit 4

Date started/completed: **January 28, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION

2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING M-21

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89436, -86.49997
*Surface elevation: 598
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil and root mat	<½							
		Lean to fat clay (CL/CH), mottled brown/red brown, with black mineral nodules, stiff	3		X	2-3-6 (9)	5,000	23		
5	593	Fat clay (CH), mottled tan/red brown, with some chert, stiff			X	3-4-6 (10)	8,000	27		
					X	3-4-5 (9)	9,000	27		
10	588		10		X	3-6-7 (13)	7,500	34		
		Fat clay (CH), mottled brown/red brown, cherty, stiff								
15	583				X	3-4-5 (9)	7,000	37		
			18½		X	50/1"				
20	578	*Auger refusal at 18½ feet*								
25	573									
30	568									

Exhibit 4

Date started/completed: **January 24, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION
2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING M-22

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89406, -86.50097
*Surface elevation: 602
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil, organics, and root mat	<1							
		Lean to fat clay (CL/CH), mottled brown/red brown, with black mineral nodules and stains and trace of chert, firm to stiff			X	3-3-4 (7)	3,500			
			5		X	3-4-6 (10)	4,000			
5	597	Fat clay (CH), mottled red brown/tan/light grey, with black mineral nodules and stains and chert, stiff to very stiff			X	3-5-7 (12)	8,000			
		Abundant chert 8 to 10 feet			X	7-7-10 (17)	8,000			
10	592									
			15		X	4-5-7 (12)	9,000			
15	587	*Boring terminated (no refusal) at 15 feet*								
20	582									
25	577									
30	572									

Exhibit 4

Date started/completed: **January 28, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION
2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING M-23

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89406, -86.50048
*Surface elevation: 601
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil, organics, and root mat	<1							
		Lean to fat clay (CL/CH), mottled brown/red brown, with black mineral nodules and stains and some chert, firm			X	3-2-3 (5)	3,000	24		
5	596				X	2-2-3 (5)	3,000	24		
			8		X	3-3-4 (7)	5,000	23		
		Fat clay (CH), mottled brown/red brown, with black mineral nodules and stains and chert, stiff			X	3-5-7 (12)	6,000	24		
10	591									
			15		X	5-5-8 (13)	8,000	25		
15	586	*Boring terminated (no refusal) at 15 feet*								
20	581									
25	576									
30	571									

Exhibit 4

Date started/completed: **January 24, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION

2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING M-24

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89405, -86.49998
*Surface elevation: 601
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil, organics, and root mat	<1							
		Lean clay (CL), mottled brown/red brown, with black mineral nodules and stains and trace of chert, stiff			X	3-4-5 (9)	8,000			
5	596				X	3-4-6 (10)	8,000			
					X	3-4-7 (11)	8,000			
10	591				X	4-5-10 (15)	8,000			
			15		X	4-5-7 (12)	5,500			
15	586	*Boring terminated (no refusal) at 15 feet*								
20	581									
25	576									
30	571									

Exhibit 4

Date started/completed:	**January 24, 2023**
Drilled by:	**Southeast Drilling Solutions**
Drill rig:	**Geoprobe 7822**
Hammer type:	**Autohammer**
Driller/helper:	**Babcock/Babcock**
Water while drilling:	**Dry**
Water upon completion:	**Dry**
Borehole advanced by:	**Hollow stem auger**
Borehole abandoned by:	**Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION

2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING M-25

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89374, -86.50149
*Surface elevation: 604
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil, organics, and root mat	<1							
		Fat clay (CH), mottled brown/red brown, soft to stiff			X	3-2-2 (4)				
		Black mineral nodules and stains and chert to 8 feet			X	2-3-4 (7)	5,000			
5	599				X	4-4-5 (9)	5,500			
		Trace of chert below 8 feet			X	3-4-5 (9)	6,000			
10	594									
			15		X	4-4-6 (10)	6,500			
15	589	*Boring terminated (no refusal) at 15 feet*								
20	584									
25	579									
30	574									

Exhibit 4

Date started/completed: **January 28, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION
2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING M-26

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89372, -86.50098
*Surface elevation: 603
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil, organics, and root mat	<1							
5	598	Lean to fat clay (CL/CH), mottled brown/red brown, with trace of black mineral nodules and variable chert content, stiff			X	3-3-5 (8)	3,500	21		
					X	3-5-5 (10)	6,500	22		
			8		X	3-6-7 (13)	6,500	26		
10	593	Fat clay (CH), mottled brown/red brown, with trace of black mineral nodules and variable chert content, stiff			X	4-4-7 (11)	9,000	35		
			15		X	4-5-6 (11)	9,000	35		
15	588	*Boring terminated (no refusal) at 15 feet*								
20	583									
25	578									
30	573									

Exhibit 4

Date started/completed: **January 28, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION

2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING M-27

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89371, -86.50049
*Surface elevation: 603
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil and root mat	<1							
		Lean to fat clay (CL/CH), red brown with occasional tan mottle, with black mineral nodules and stains and trace of chert, soft to stiff			X	2-1-2 (3)	3,000			
5	598				X	2-3-4 (7)	6,500			
					X	2-3-3 (6)	6,500			
10	593				X	3-4-5 (9)	8,500			
					X	3-5-6 (11)				
15	588		17							
		Auger refusal at 17 feet								
20	583									
25	578									
30	573									

Exhibit 4

Date started/completed: **January 28, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION

2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING M-28

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.8937, -86.5
*Surface elevation: 602
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil, organics, and root mat	<1							
		Lean to fat clay (CL/CH), red brown, with black mineral nodules and some chert, soft	3		X	2-2-2 (4)	5,000			
5	597	Fat clay (CH), mottled tan/red brown, with trace of black mineral nodules and trace of chert, stiff			X	3-4-5 (9)	9,000			
					X	3-4-7 (11)	9,000			
10	592				X	3-4-6 (10)	9,000			
			15		X	3-4-5 (9)	7,500			
15	587	*Boring terminated (no refusal) at 15 feet*								
20	582									
25	577									
30	572									

Exhibit 4

Date started/completed: **January 28, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION
2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING M-29

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.8937, -86.49968
*Surface elevation: 602
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil, organics, and root mat	<1							
		Lean to fat clay (CL/CH), red brown, with black mineral nodules and some chert, firm			X	2-2-3 (5)	6,000	23		
5	597		6		X	3-2-5 (7)	7,000	25		
		Fat clay (CH), mottled tan/red brown, with trace of black mineral nodules and trace of chert, stiff			X	3-3-6 (9)	9,000	26		
10	592				X	4-5-7 (12)	9,000	27		
			15		X	3-5-7 (12)	9,000	28		
15	587	*Boring terminated (no refusal) at 15 feet*								
20	582									
25	577									
30	572									

Exhibit 4

Date started/completed: **January 28, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION

2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING M-30

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89340, -86.5011
*Surface elevation: 606
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil, organics, and root mat	<1							
		Lean clay (CL), red brown, with black mineral nodules and some chert, firm to stiff			X	3-2-3 (5)	5,000			
			5		X	2-3-5 (8)	5,000			
5	601	Fat clay (CH), mottled tan/red brown, stiff			X	3-5-7 (12)	9,000			
		Trace of black mineral nodules and trace of chert to 8 feet								
10	596				X	3-5-7 (12)	9,000			
			15		X	4-5-5 (10)	9,000			
15	591	*Boring terminated (no refusal) at 15 feet*								
20	586									
25	581									
30	576									

Exhibit 4

Date started/completed: **February 13, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION

2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING M-31

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89339, -86.5005
*Surface elevation: 606
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil, organics, and root mat	<1							
		Lean clay (CL), dark red brown, with black mineral nodules and some chert, firm	3		X	2-3-3 (6)	4,000	22		
		Fat clay (CH), red brown, with chert, firm	5		X	3-2-3 (5)	7,000	30		
5	601	Lean to fat clay (CL/CH), mottled tan/red brown, with abundant chert, stiff to very stiff	9		X	5-6-8 (14)	6,000	33		
					X	9-8-8 (16)	6,000	33		
10	596	Fat clay (CH), mottled tan/red brown, with chert, stiff to very stiff	15		X	5-5-7 (12)	9,000	32		
15	591	*Boring terminated (no refusal) at 15 feet*								
20	586									
25	581									
30	576									

Exhibit 4

Date started/completed: **February 13, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION
2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING M-32

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89338, -86.50001
*Surface elevation: 604
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil, organics, and root mat	<1							
		Lean clay (CL), dark red brown, with black mineral nodules and some chert, firm	3		X	2-3-3 (6)	4,500			
5	599	Fat clay (CH), mottled tan/red brown/light grey, stiff			X	3-3-6 (9)	9,000			56-29-27
					X	4-5-7 (12)	9,000			
10	594				X	3-4-8 (12)	9,000			
		Cherty 14 to 15 feet	15		X	4-4-5 (9)	9,000			
15	589	*Boring terminated (no refusal) at 15 feet*								
20	584									
25	579									
30	574									

Exhibit 4

Date started/completed:	**February 13, 2023**
Drilled by:	**Southeast Drilling Solutions**
Drill rig:	**Geoprobe 7822**
Hammer type:	**Autohammer**
Driller/helper:	**Babcock/Babcock**
Water while drilling:	**Dry**
Water upon completion:	**Dry**
Borehole advanced by:	**Hollow stem auger**
Borehole abandoned by:	**Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION

2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING M-33

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89312, -86.50135
*Surface elevation: 608
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil and root mat	<1							
		Lean clay (CL), dark red brown, with black mineral nodules and some chert, firm	3		X	2-3-3 (6)	3,000	43		
5	603	Lean to fat clay (CL/CH), mottled tan/red brown, with chert and trace of black mineral nodules, stiff	6		X	4-7-7 (14)	7,000	25		
		Fat clay (CH), mottled red brown/tan, with chert, stiff			X	3-3-5 (8)	8,000	30		
10	598				X	4-4-6 (10)	8,000	17		
15	593				X	4-4-5 (9)	8,000	21		
			17							
		Auger refusal at 18 feet								
20	588									
25	583									
30	578									

Exhibit 4

Date started/completed: **January 28, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION
2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING M-34

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89307, -86.50088
*Surface elevation: 609
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil, organics, and root mat	<1							
		Lean clay (CL), mottled tan/red brown, with black mineral nodules and some chert, firm			X	3-4-2 (6)	6,500			
5	604				X	2-3-3 (6)	4,500			40-23-17
			8		X	2-3-4 (7)	4,000			
		Lean to fat clay (CL/CH), mottled tan/red brown, with some chert, stiff			X	3-4-5 (9)	6,000			
10	599									
		Cherty 14 to 15 feet	15		X	3-5-5 (10)	6,000			
15	594	*Boring terminated (no refusal) at 15 feet*								
20	589									
25	584									
30	579									

Exhibit 4

Date started/completed: **February 13, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION
2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING M-35

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89305, -86.50051
*Surface elevation: 609
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil, organics, and root mat	<1							
		Lean clay (CL), dark red brown, with black mineral nodules, soft	3		X	2-1-2 (3)	3,000			
5	604	Lean to fat clay (CL/CH), mottled tan/red brown/light, stiff to very stiff			X	3-2-4 (6)	9,000			
					X	3-4-5 (9)	9,000			
10	599				X	4-5-10 (15)	9,000			
		Cherty 14 to 15 feet	15		X	5-4-5 (9)	9,000			
15	594	*Boring terminated (no refusal) at 15 feet*								
20	589									
25	584									
30	579									

Exhibit 4

Date started/completed: **February 13, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION
2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING M-36

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89316, -86.50001
*Surface elevation: 606
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil, organics, and root mat	<1							
		Lean clay (CL), dark red brown, with black mineral nodules and trace of chert, firm	3		X	2-3-3 (6)	5,000	23		
5	601	Lean to fat clay (CL/CH), mottled tan/red brown, with black mineral nodules and trace of chert, stiff	6		X	3-3-6 (9)	9,000	20		
		Fat clay (CH), red brown, cherty, stiff to very stiff			X	7-6-7 (13)	7,000	25		
10	596				X	5-7-9 (16)	7,000	28		
			15		X	3-4-5 (9)	7,000	34		
15	591	*Boring terminated (no refusal) at 15 feet*								
20	586									
25	581									
30	576									

Exhibit 4

Date started/completed: **February 13, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION
2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING P-37

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.8924, -86.50541
*Surface elevation: 598
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil,organics, and root mat	<1							
		Lean clay (CL), silty, dark brown, soft to firm			X	1-1-1 (2)	2,000	25		
			5		X	2-2-3 (5)	2,000	27		
5	593	*Boring terminated (no refusal) at 5 feet*								
10	588									
15	583									
20	578									
25	573									
30	568									

Exhibit 4

Date started/completed: **January 20, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION
2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING P-38

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89169, -86.50491
*Surface elevation: 602
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil,organics, and root mat	<1							
		Fat clay (CH), mottled red brown/tan/light grey, with chert and black mineral nodules and stains, stiff				3-5-7 (12)	7,000	32		
			5			4-4-5 (9)	6,000	35		
5	597	Lean clay (CL), dark brown, with rock fragments, stiff, moist	6½	▽▼		4-50/2"	4,000	44		
		Auger refusal at 6 ½ feet								
10	592									
15	587									
20	582									
25	577									
30	572									

Exhibit 4

Date started/completed: **January 20, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Trace of water at refusal**
Water upon completion: **surface after tools pulled**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION

2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING P-39

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89412, -86.50385
*Surface elevation: 602
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil,organics, and root mat	<1							
		Lean clay (CL), mottled brown/red brown, with black mineral nodules and stains, soft	3		X	2-2-2 (4)	3,000	23		
		Fat clay (CH), mottled tan/red brown/light grey, stiff	5		X	3-5-7 (12)	9,000	28		
5	597	*Boring terminated (no refusal) at 5 feet*								
10	592									
15	587									
20	582									
25	577									
30	572									

Exhibit 4

Date started/completed: **January 16, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION
2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING P-40

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.8941, -86.50256
*Surface elevation: 600
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil,organics, and root mat	<1							
		Lean clay (CL), dark brown, with chert, stiff	3		X	3-6-6 (12)	3,000	23		
		Fat clay (CH), red brown, with some chert, stiff	5		X	3-4-6 (10)	7,000	28		
5	595	*Boring terminated (no refusal) at 5 feet*								
10	590									
15	585									
20	580									
25	575									
30	570									

Exhibit 4

Date started/completed: **January 24, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION
2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING P-41

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89348, -86.50317
*Surface elevation: 603
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil,organics, and root mat	<1							
		Lean clay (CL), red brown, with black mineral nodules and trace of chert, firm	3		X	2-2-3 (5)	4,500	24		
5	598	Fat clay (CH), motteld tan/red brown/light grey, with black mineral nodules and some chert, stiff to very stiff			X	3-4-6 (10)	5,000	25		
					X	4-7-10 (17)	9,000	28		
10	593		10		X	4-8-10 (18)	7,000	27		
		Boring terminated (no refusal) at 10 feet								
15	588									
20	583									
25	578									
30	573									

Exhibit 4

Date started/completed: **January 16, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION

2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING P-42

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89245, -86.50132
*Surface elevation: 609
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil,organics, and root mat	<1							
		Lean clay (CL), silty, dark brown, soft to firm	3		X	2-2-2 (4)	1,500			
5	604		5		X	(omitted by driller)	3,000			
		Boring terminated (no refusal) at 5 feet								
10	599									
15	594									
20	589									
25	584									
30	579									

Exhibit 4

Date started/completed: **January 24, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION

2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING P-43

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.8926, -86.50051
*Surface elevation: 608
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil,organics, and root mat	<1							
		Lean clay (CL), mottled brown/red brown, with black mineral nodules and stains, stiff			X	3-3-5 (8)	6,000	26		
			5		X	3-5-7 (12	5,000	23		
5	603	Fat clay (CH), motteld tan/red brown/light grey, stiff to very stiff			X	5-5-5 (10)	9,000	27		
			10		X	5-7-8 (15)	9,000	30		
10	598	*Boring terminated (no refusal) at 10 feet*								
15	593									
20	588									
25	583									
30	578									

Exhibit 4

Date started/completed: **January 21, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION

2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING P-44

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89169, -86.50441
*Surface elevation: 602
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil,organics, and root mat	<1							
		Lean clay (CL), red brown, with black mineral nodules, stiff	3		X	3-4-4 (8)	5,000			
		Fat clay (CH), mottled red brown/tan, with black mineral nodues, very stiff	5		X	5-7-8 (15)	9,000			
5	597	*Boring terminated (no refusal) at 5 feet*								
10	592									
15	587									
20	582									
25	577									
30	572									

Exhibit 4

Date started/completed: **January 20, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION

2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING P-45

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89147, -86.5035
*Surface elevation: 611
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil,organics, and root mat	<1							
		Lean to fat clay (CL/CH), mottled brown/red brown, with black mineral nodules and trace of chert, firm	3		X	3-3-4 (7)	7,000	23		
5	606	Fat clay (CH), mottled tan/red brown/light grey, stiff			X	4-6-8 (14)	9,000	29		
					X	4-5-7 (12)	9,000	31		
10	601		10		X	4-6-7 (13)	9,000	27		
		Boring terminated (no refusal) at 10 feet								
15	596									
20	591									
25	586									
30	581									

Exhibit 4

Date started/completed: **January 20, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION

2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING P-46

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89141, -86.50274
*Surface elevation: 612
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil,organics, and root mat	<1							
		Fat clay (CH), red brown, with black mineral nodules and trace of chert, stiff	3		X	3-4-5 (9)	7,500			
		Fat clay (CH), mottled red brown/tan/light grey, stiff	5		X	3-4-6 (10)	8,500			
5	607	*Boring terminated (no refusal) at 5 feet*								
10	602									
15	597									
20	592									
25	587									
30	582									

Exhibit 4

Date started/completed: **January 21, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION

2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING P-47

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89151, -86.50199
*Surface elevation: 612
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil,organics, and root mat	<1							
		Lean clay (CL), silty, dark brown, firm	3		X	2-3-4 (7)	3,000	24		
5	607	Fat clay (CH), mottled tan/red brown/light grey, stiff to very stiff			X	3-3-5 (8)	8,000	37		
					X	7-8-2 (10)	9,000	31		
		Cherty below 7 feet								
10	602		10		X	8-9-10 (19)	7,000	18		
		Boring terminated (no refusal) at 10 feet								
15	597									
20	592									
25	587									
30	582									

Exhibit 4

Date started/completed: **January 21, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION
2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING P-48

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89226, -86.502
*Surface elevation: 610
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil,organics, and root mat	<1							
		Fat clay (CH), mottled tan/red brown, firm			X	2-3-3 (6)	6,500			
			5		X	2-3-4 (7)	5,500			
5	605	*Boring terminated (no refusal) at 5 feet*								
10	600									
15	595									
20	590									
25	585									
30	580									

Exhibit 4

Date started/completed: **January 21, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION

2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING P-49

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.8932, -86.50208
*Surface elevation: 604
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil,organics, and root mat	<1							
		Lean clay (CL), dark red brown, with some chert, firm	3		X	2-3-4 (7)	5,500	20		
5	599	Fat clay (CH), red brown, with black mineral nodules and some chert, firm	6		X	3-2-5 (7)	8,000	34		67-30-37
		Fat clay, mottled tan/red brown, with some chert, stiff to very stiff			X	3-7-8 (15)	9,000	27		
10	594		10		X	4-6-8 (14)	7,000	25		
		Boring terminated (no refusal) at 10 feet								
15	589									
20	584									
25	579									
30	574									

Exhibit 4

Date started/completed: **January 21, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION
2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING P-50

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89336, -86.50435
*Surface elevation: 604
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil,organics, and root mat	<1							
		Fat clay (CH), mottled tan/red brown/light grey, stiff			X	4-5-6 (11)	9,000	32		
			5		X	5-6-7 (13)	9,000	29		
5	599	*Boring terminated (no refusal) at 5 feet*								
10	594									
15	589									
20	584									
25	579									
30	574									

Exhibit 4

Date started/completed: **January 21, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION

2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING P-51

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89449, -86.50428
*Surface elevation: 603
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil,organics, and root mat	<1							
		Lean clay (CL), red brown, with black mineral nodules, firm	3		X	2-2-3 (5)	2,000	32		40-20-20
		Fat clay (CH), mottled tan/red brown/light grey, stiff	5		X	3-4-7 (11)	9,000	29		
5	598	*Boring terminated (no refusal) at 5 feet*								
10	593									
15	588									
20	583									
25	578									
30	573									

Exhibit 4

Date started/completed: **January 21, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION

2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING P-52

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89451, -86.50312
*Surface elevation: 599
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil,organics, and root mat	<1							
		Lean clay (CL), silty, dark brown, soft			X	1-1-1 (2)	3,000	32		
			5		X	1-2-2 (4)	2,000	25		
5	594	Lean clay (CL), mottled brown/red brown, with some chert, firm			X	2-3-3 (6)	4,000	24		
			8							
		Fat clay, mottled tan/red brown, with black mineral nodules and some chert, stiff			X	3-4-5 (9)	9,000	25		
10	589		10							
		Boring terminated (no refusal) at 10 feet								
15	584									
20	579									
25	574									
30	569									

Exhibit 4

Date started/completed: **January 16, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION

2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING P-53

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89444, -86.50198
*Surface elevation: 600
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil,organics, and root mat	<1							
		Lean clay (CL), red brown, with black mineral nodules, firm to stiff			X	3-3-4 (7)	5,000			
			5		X	4-4-6 (10)	7,000			
5	595	*Boring terminated (no refusal) at 5 feet*								
10	590									
15	585									
20	580									
25	575									
30	570									

Exhibit 4

Date started/completed: **January 24, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION
2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING P-54

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89444, -86.50198
*Surface elevation: 599
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil,organics, and root mat	<1							
		Lean to fat clay, mottled tan/red brown, soft to stiff			X	2-2-2 (4)	1,500			
		Abundant chert and trace of black mineral nodules to 6 feet			X	8-5-5 (10)				
5	594	Trace of chert below 6 feet			X	3-4-5 (9)	6,000			
			10		X	2-4-5 (9)	5,500			
10	589	*Boring terminated (no refusal) at 10 feet*								
15	584									
20	579									
25	574									
30	569									

Exhibit 4

Date started/completed: **January 28, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION

2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING P-55

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89468, -86.49952
*Surface elevation: 597
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil,organics, and root mat	<1							
		Lean clay (CL), silty, dark brown, firm			X	4-3-3 (6)	2,000			
			4½		X	4-50/3"	3,000			
5	592	*Boring terminated (hard refusal not achieved) at 4 ½ feet*								
		Spoon/auger lead off due to encounter side of apparent sloping rock pinnacle								
10	587									
15	582									
20	577									
25	572									
30	567									

Exhibit 4

Date started/completed: **January 24, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION

2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING P-56

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89412, -86.49948
*Surface elevation: 600
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil,organics, and root mat	<1							
		Lean clay, red brown, with black mineral noduls and trace of chert, firm to stiff			X	2-3-4 (7)	4,000	24		
5	595				X	3-3-5 (8)	5,500	22		
					X	4-5-5 (10)	5,500	21		
			10		X	4-4-6 (10)	6,000	22		
10	590	*Boring terminated (no refusal) at 10 feet*								
15	585									
20	580									
25	575									
30	570									

Exhibit 4

Date started/completed: **January 28, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION

2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING P-57

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89342, -86.4995
*Surface elevation: 601
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil,organics, and root mat	<1							
		Lean clay (CL), dark red brown, with black mineral nodules and trace of chert, stiff	3		X	3-4-5 (9)	6,000			
		Fat clay (CH), mottled tan/red brown, stiff	5		X	3-4-5 (9)	9,000			
5	596	*Boring terminated (no refusal) at 5 feet*								
10	591									
15	586									
20	581									
25	576									
30	571									

Exhibit 4

Date started/completed: **February 13, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION

2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING P-58

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89273, -86.49959
*Surface elevation: 603
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil,organics, and root mat	<1							
		Lean clay (CL), brown, with some chert, soft	3		X	2-1-2 (3)	3,000			
		Lean to fat clay (CL/CH), mottled tan/red brown, with abundant chert, firm	5		X	2-3-4 (7)	4,000			
5	598	*Boring terminated (no refusal) at 5 feet*								
10	593									
15	588									
20	583									
25	578									
30	573									

Exhibit 4

Date started/completed: **February 13, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION

2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING P-59

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89277, -86.5016
*Surface elevation: 608
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil,organics, and root mat	<1							
		Lean clay, red brown, with black mineral noduls and some chert, firm	3		X	2-2-3 (5)	5,000			
5	603	Fat clay, mottled red brown/tan/light grey, with trace of chert, stiff			X	3-4-5 (9)	8,000			
					X	4-5-6 (11)	8,000			
10	598		10		X	4-5-6 (11)	9,000			
		Boring terminated (no refusal) at 10 feet								
15	593									
20	588									
25	583									
30	578									

Exhibit 4

Date started/completed: **January 28, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION

2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING P-60

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89325, -86.50164
*Surface elevation: 607
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil,organics, and root mat	<1							
		Fat clay (CH), mottled tan/red brown, with some chert, firm to stiff			X	2-3-4 (7)	8,000			
			5		X	3-5-7 (12)	9,000			
5	602	*Boring terminated (no refusal) at 5 feet*								
10	597									
15	592									
20	587									
25	582									
30	577									

Exhibit 4

Date started/completed: **February 13, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION

2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING P-61

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89423, -86.50134
*Surface elevation: 602
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil,organics, and root mat	<1							
		Lean clay, red brown, with black mineral nodules, firm	3		X	3-3-4 (7)	3,500			
5	597	Lean to fat clay (CL/CH), red brown, with black mineral nodules, stiff	6		X	3-4-6 (10)	8,000			
		Fat clay, mottled red brown/tan/light grey, stiff			X	4-6-8 (14)	9,000			
10	592		10		X	4-5-7 (12)	9,000			
		Boring terminated (no refusal) at 10 feet								
15	587									
20	582									
25	577									
30	572									

Exhibit 4

Date started/completed: **January 24, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION

2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING P-62

Project Name: Proposed Batey Farm School Campus
Site Location: 5104 Baker Road, Murfreesboro, TN
Collier Project Number: 2036-22-01
Client: Rutherford County Board of Education
Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89178, -86.50053
*Surface elevation: 600
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater	Sample type	SPT blow counts (N-value)	Laboratory hand penetrometer (psf)	Water content (%)	Unconfined compressive strength (psf)	Atterberg Limits LL-PL-PI
		Topsoil and root mat	<1							
		Lean clay (CL), red brown, with black mineral nodules, firm	3		X	2-3-3 (6)	4,000	23		
5	595	Fat clay (CH), mottled tan/red brown/light grey, stiff to very stiff			X	3-5-6 (11)	8,000	29		
					X	4-6-7 (13)	9,000	30		
10	590		10		X	4-8-8 (16)	9,000	33		
		Boring terminated (no refusal) at 10 feet								
15	585									
20	580									
25	575									
30	570									

Exhibit 4

Date started/completed: **January 21, 2023**
Drilled by: **Southeast Drilling Solutions**
Drill rig: **Geoprobe 7822**
Hammer type: **Autohammer**
Driller/helper: **Babcock/Babcock**
Water while drilling: **Dry**
Water upon completion: **Dry**
Borehole advanced by: **Hollow stem auger**
Borehole abandoned by: **Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION

2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING SW-63

Project Name:	Proposed Batey Farm School Campus
Site Location:	5104 Baker Road, Murfreesboro, TN
Collier Project Number:	2036-22-01
Client:	Rutherford County Board of Education Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89101, -86.49893
*Surface elevation: 598
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	
		Topsoil and root mat	<1	
		Lean to fat clay (CL/CH), red brown, with some chert	5	No sampling performed; boring was advanced by auger only to confirm depth to rock in predetermined limits of
5	593	*Auger refusal at 5 feet*		
10	588			
15	583			
20	578			
25	573			
30	568			

Exhibit 4

Date started/completed:	**January 21, 2023**
Drilled by:	**Southeast Drilling Solutions**
Drill rig:	**Geoprobe 7822**
Hammer type:	**Autohammer**
Driller/helper:	**Babcock/Babcock**
Water while drilling:	**Dry**
Water upon completion:	**Dry**
Borehole advanced by:	**Hollow stem auger**
Borehole abandoned by:	**Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION

2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING SW-64

Project Name:	Proposed Batey Farm School Campus
Site Location:	5104 Baker Road, Murfreesboro, TN
Collier Project Number:	2036-22-01
Client:	Rutherford County Board of Education Murfreesboro, TN

Location: See Exhibit 1

*Latitude/Longitude: 35.89249, -86.49903

*Surface elevation: 600

* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	
		Topsoil and root mat	<1	
5	595	Lean to fat clay (CL/CH), red brown, with some chert	10	No sampling performed; boring was advanced by auger only to confirm depth to rock in predetermined limits of
10	590	*Boring terminated (no refusal) at 10 feet*		
15	585			
20	580			
25	575			
30	570			

Exhibit 4

Date started/completed:	**January 21, 2023**
Drilled by:	**Southeast Drilling Solutions**
Drill rig:	**Geoprobe 7822**
Hammer type:	**Autohammer**
Driller/helper:	**Babcock/Babcock**
Water while drilling:	**Dry**
Water upon completion:	**Dry**
Borehole advanced by:	**Hollow stem auger**
Borehole abandoned by:	**Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.

Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION
2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING SW-65

Project Name:	Proposed Batey Farm School Campus
Site Location:	5104 Baker Road, Murfreesboro, TN
Collier Project Number:	2036-22-01
Client:	Rutherford County Board of Education Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89365, -86.49893
*Surface elevation: 599
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	Groundwater				Water content (%)		Atterberg Limits LL-PL-PI
		Topsoil and root mat	<1							
		Lean to fat clay (CL/CH), red brown, with some chert				Bulk sample		24		38-22-16
5	594									
			10							
10	589	*Boring terminated (no refusal) at 10 feet*								
15	584									
20	579									
25	574									
30	569									

No sampling performed other than collection of bulk sample of soil cuttings; boring was advanced by auger only to confirm depth to rock in predetermined limits of drilling

Exhibit 4

Date started/completed:	**January 21, 2023**
Drilled by:	**Southeast Drilling Solutions**
Drill rig:	**Geoprobe 7822**
Hammer type:	**Autohammer**
Driller/helper:	**Babcock/Babcock**
Water while drilling:	**Dry**
Water upon completion:	**Dry**
Borehole advanced by:	**Hollow stem auger**
Borehole abandoned by:	**Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

COLLIER ENGINEERING CO., INC.
CONSULTING • DESIGN • CONSTRUCTION

2949 Nolensville Pike
Nashville, Tennessee 37211

LOG OF BORING SW-66

Project Name:	Proposed Batey Farm School Campus
Site Location:	5104 Baker Road, Murfreesboro, TN
Collier Project Number:	2036-22-01
Client:	Rutherford County Board of Education Murfreesboro, TN

Location: See Exhibit 1
*Latitude/Longitude: 35.89489, -86.50221
*Surface elevation: 598
* see remarks below

Depth (ft.)	Elevation (ft.)	Material Description	Depth (ft.)	
		Topsoil and root mat	<1	
5	593	Lean to fat clay (CL/CH), red brown, with some chert	10	No sampling performed; boring was advanced by auger only to confirm depth to rock in predetermined limits of
10	588	*Boring terminated (no refusal) at 10 feet*		
15	583			
20	578			
25	573			
30	568			

Exhibit 4

Date started/completed:	**January 21, 2023**
Drilled by:	**Southeast Drilling Solutions**
Drill rig:	**Geoprobe 7822**
Hammer type:	**Autohammer**
Driller/helper:	**Babcock/Babcock**
Water while drilling:	**Dry**
Water upon completion:	**Dry**
Borehole advanced by:	**Hollow stem auger**
Borehole abandoned by:	**Soil cuttings**

Remarks: Latitude/longitude data is approximate and was obtained by projection of geodetic information of the spot using base plan provided by Barge Cauthen. Ground surface elevation was obtained via interpolation (nearest foot) of contours shown on the boring location plan. The boring was positioned in the field using a smart phone navigation app with an approximate horizontal tolerance of about 15 feet.
Soil descriptions are based on visual examination of the recovered samples. Stratification lines represent the inferred boundary between soil types. Insitu, the transition may be gradual.

Laboratory Compaction Characteristics of Soil

Sample Information

Sample Number:	3	Material Designation:	3
Boring Number:	On-Site Borrow	Test Method:	D698
Sample Location:	M-27	Test Procedure:	A
Depth (ft):	2'-8'	Sample Preparation:	Wet
		Rammer: Mechanical	
		Manual	X

Sample Description: Red Lean Clay (CL)

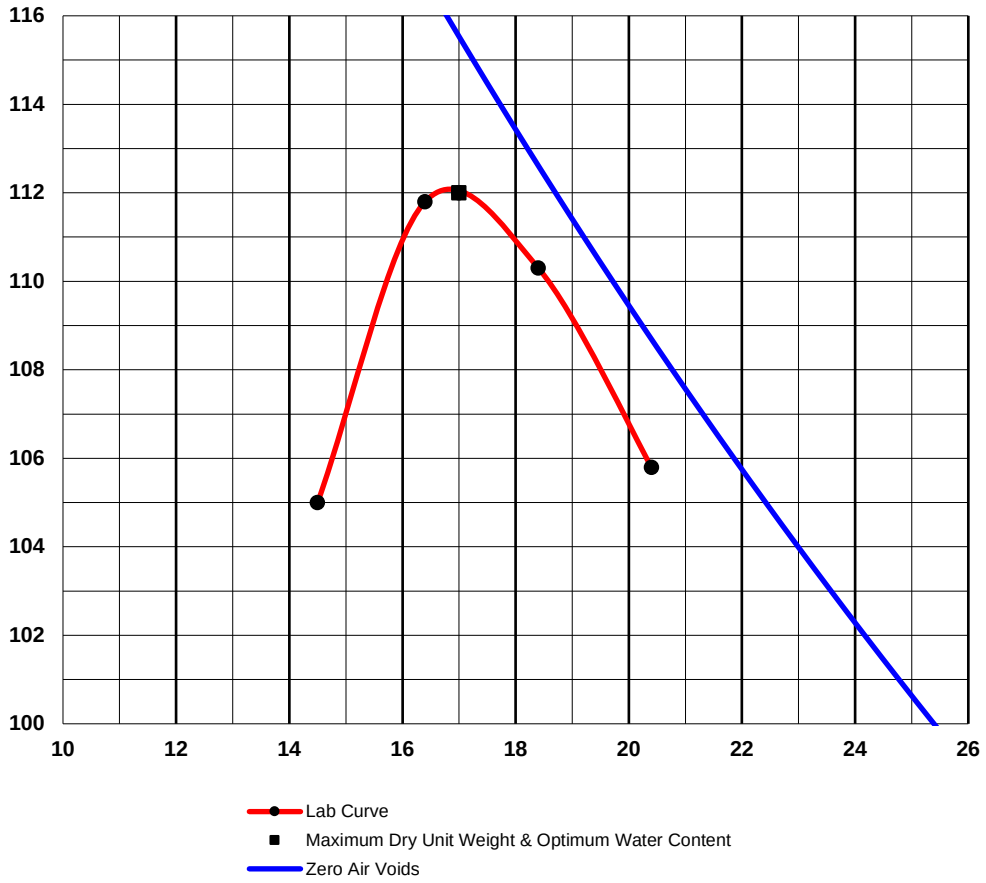
Atterberg Limits:

Liquid Limit:	39
Plastic Limit:	19
Plasticity Index:	20
Natural Moisture (%):	22

TEST RESULTS

Maximum Dry Unit Wt.:	112.0	pcf
Optimum Water Content:	17.0	%

Zero air voids for specific gravity of 2.70



Project Mngr. SV	Project No. 2036-22-01	COLLIER ENGINEERING CO., INC. CONSULTING • DESIGN • CONSTRUCTION	Laboratory Standard Proctor Test	EXHIBIT
Drawn By: JB	Scale As Shown	2949 Nolensville Pike Nashville, TN 37211 615-331-1050	Batey Farm School Campus	
Checked By: JB	File No. 3		Baker Rd/Blackman Rd	5
Approved By: SV	Date: 2/1/2023		Murfreesboro, TN	

Laboratory Compaction Characteristics of Soil

Sample Information

Sample Number:	1	Material Designation:	1
Boring Number:	On-Site Borrow	Test Method:	D698
Sample Location:	P-62	Test Procedure:	A
Depth (ft):	0'-5'	Sample Preparation:	Wet
		Rammer: Mechanical	
		Manual	X

Sample Description: Dark Red Lean Clay (CL)

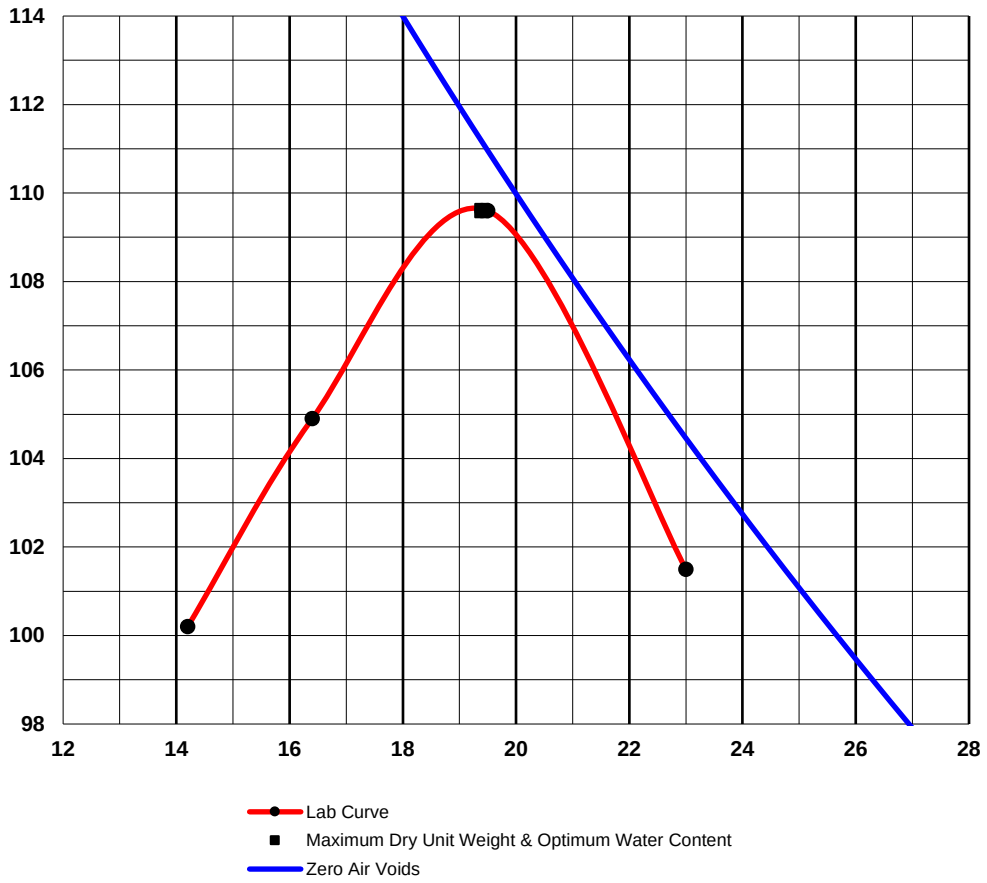
Atterberg Limits:

Liquid Limit:	37
Plastic Limit:	22
Plasticity Index:	15
Natural Moisture (%):	24

TEST RESULTS

Maximum Dry Unit Wt.:	109.6	pcf
Optimum Water Content:	19.4	%

Zero air voids for specific gravity of 2.72



Project Mngr. SV	Project No. 2036-22-01	COLLIER ENGINEERING CO., INC. CONSULTING • DESIGN • CONSTRUCTION	Laboratory Standard Proctor Test	EXHIBIT
Drawn By: JB	Scale As Shown	2949 Nolensville Pike Nashville, TN 37211 615-331-1050	Batey Farm School Campus	5
Checked By: JB	File No. 1		Baker Rd/Blackman Rd	
Approved By: SV	Date: 1/26/2023		Murfreesboro, TN	

Laboratory Compaction Characteristics of Soil

Sample Information

Sample Number:	1	Material Designation:	1
Boring Number:	On-Site Borrow	Test Method:	D698
Sample Location:	P-62	Test Procedure:	A
Depth (ft):	0'-5'	Sample Preparation:	Wet
		Rammer: Mechanical	
		Manual	X

Sample Description: Dark Red Lean Clay (CL)

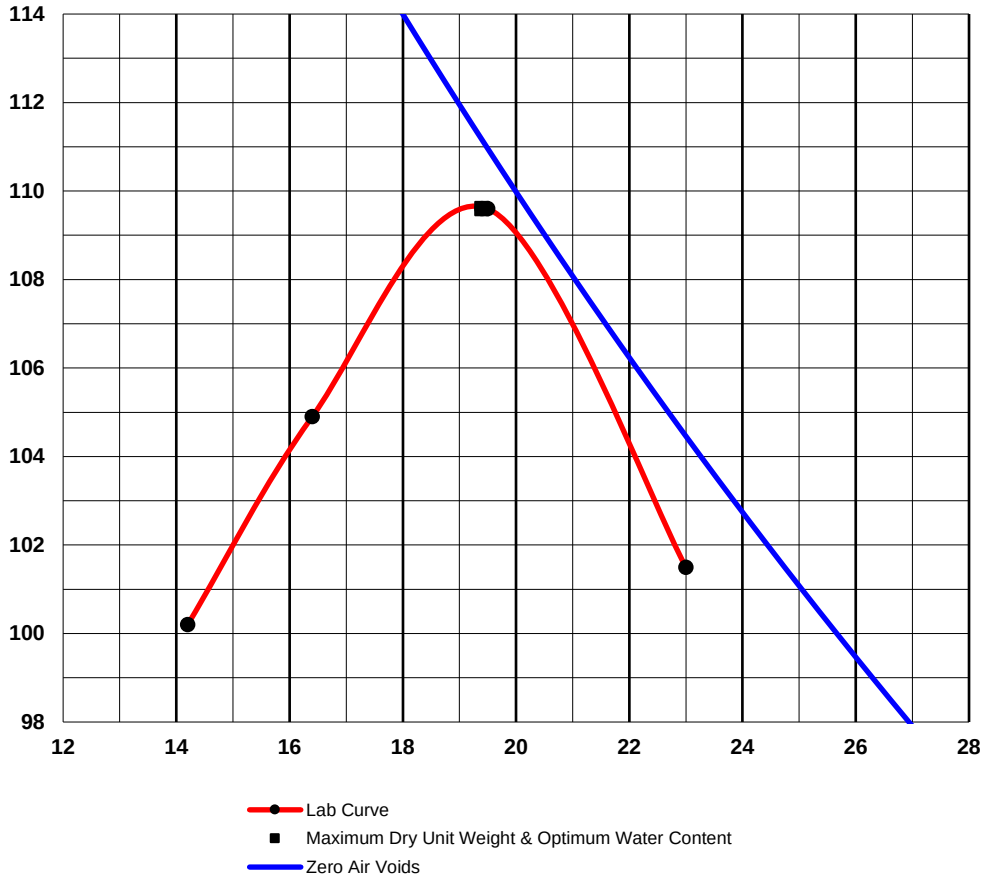
Atterberg Limits:

Liquid Limit:	37
Plastic Limit:	22
Plasticity Index:	15
Natural Moisture (%):	24

TEST RESULTS

Maximum Dry Unit Wt.:	109.6	pcf
Optimum Water Content:	19.4	%

Zero air voids for specific gravity of 2.72



Project Mngr. SV	Project No. 2036-22-01	COLLIER ENGINEERING CO., INC. CONSULTING • DESIGN • CONSTRUCTION	Laboratory Standard Proctor Test	EXHIBIT
Drawn By: JB	Scale As Shown	2949 Nolensville Pike Nashville, TN 37211 615-331-1050	Batey Farm School Campus	
Checked By: JB	File No. 1		Baker Rd/Blackman Rd	5
Approved By: SV	Date: 1/26/2023		Murfreesboro, TN	

Laboratory Compaction Characteristics of Soil

Sample Information

Sample Number:	2	Material Designation:	2
Boring Number:	On-Site Borrow	Test Method:	D698
Sample Location:	P-62	Test Procedure:	A
Depth (ft):	5'-10'	Sample Preparation:	Wet
		Rammer: Mechanical	
		Manual	X

Sample Description: Red Fat Clay (CH)

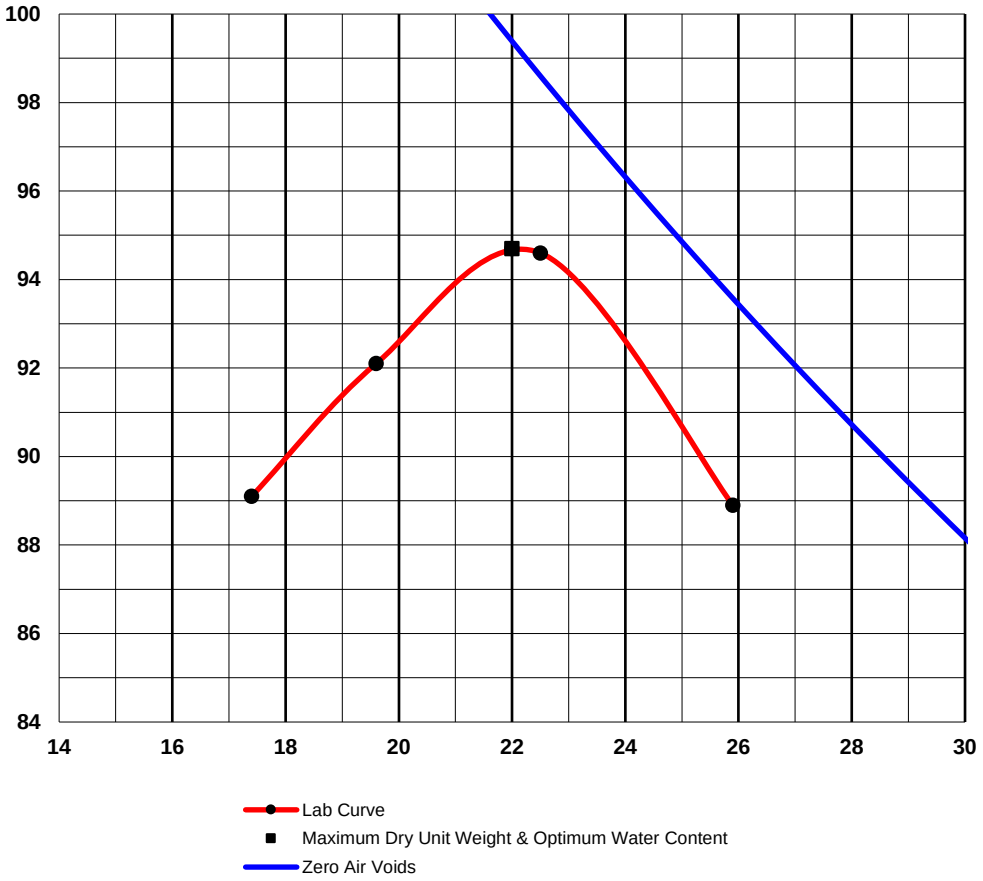
Atterberg Limits:

Liquid Limit:	52
Plastic Limit:	25
Plasticity Index:	27
Natural Moisture (%):	31

TEST RESULTS

Maximum Dry Unit Wt.:	94.7	pcf
Optimum Water Content:	22.0	%

Zero air voids for specific gravity of 2.45



Project Mngr. SV	Project No. 2036-22-01	COLLIER ENGINEERING CO., INC. CONSULTING • DESIGN • CONSTRUCTION	Laboratory Standard Proctor Test	EXHIBIT
Drawn By: JB	Scale As Shown	2949 Nolensville Pike Nashville, TN 37211 615-331-1050	Batey Farm School Campus	
Checked By: JB	File No. 2		Baker Rd/Blackman Rd	5
Approved By: SV	Date: 1/26/2023		Murfreesboro, TN	

Laboratory Compaction Characteristics of Soil

Sample Information

Sample Number:	4	Material Designation:	4
Boring Number:	On-Site Borrow	Test Method:	D698
Sample Location:	SW-65	Test Procedure:	A
Depth (ft):	2'-8'	Sample Preparation:	Wet
		Rammer: Mechanical	
		Manual	X

Sample Description: Dark Red Lean Clay (CL)

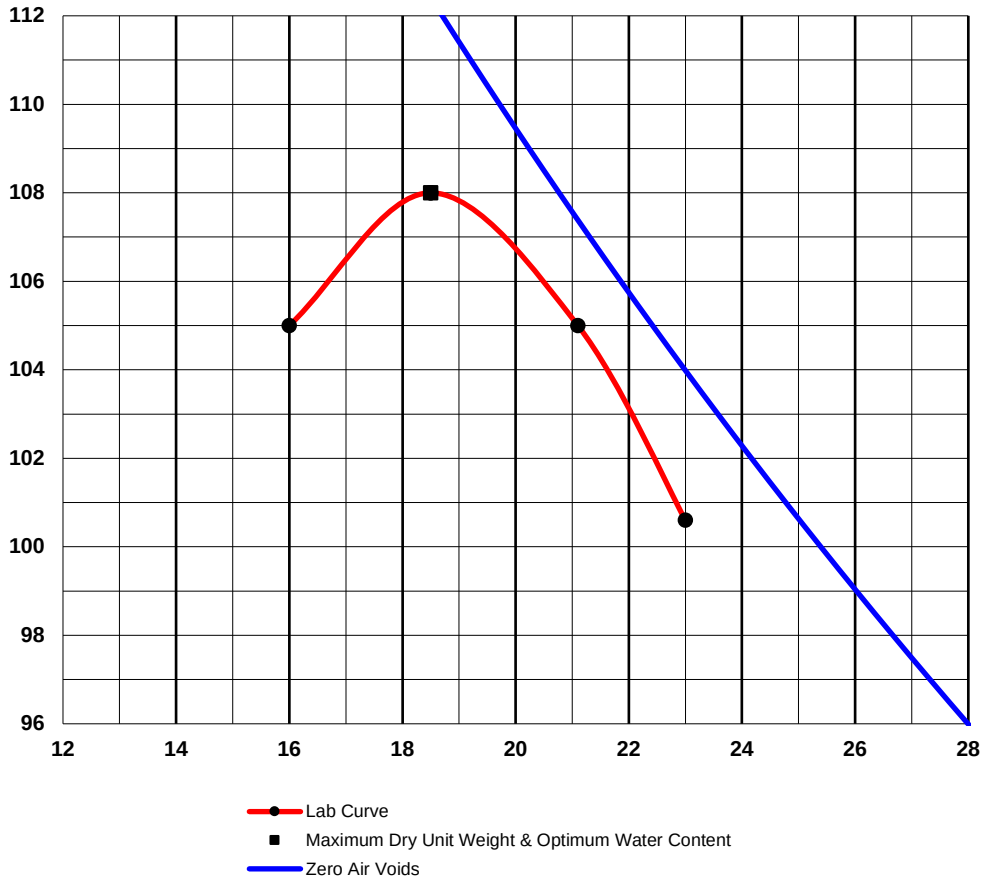
Atterberg Limits:

Liquid Limit:	38
Plastic Limit:	22
Plasticity Index:	16
Natural Moisture (%):	24

TEST RESULTS

Maximum Dry Unit Wt.:	108.0	pcf
Optimum Water Content:	18.5	%

Zero air voids for specific gravity of 2.70



Project Mngr. SV	Project No. 2036-22-01	COLLIER ENGINEERING CO., INC. CONSULTING • DESIGN • CONSTRUCTION	Laboratory Standard Proctor Test	EXHIBIT
Drawn By: JB	Scale As Shown	2949 Nolensville Pike Nashville, TN 37211 615-331-1050	Batey Farm School Campus	
Checked By: JB	File No. 4		Baker Rd/Blackman Rd	5
Approved By: SV	Date: 2/1/2023		Murfreesboro, TN	

Supporting Notes and Information

Standard Penetration Test (SPT)

Standard penetration resistance - the number of blows required to advance a standard 2-inch O.D. split-spoon sampler the last 12 inches of the total 18-inch penetration with a 140-pound safety hammer falling 30 inches (using a cathead and rope) is considered the "Standard Penetration" or "N-value". An automatic hammer was used, and the greater efficiency realized with this tool has been considered in the interpretation and analysis of the subsurface information for this report. The SPT field test procedure was performed in general accordance with ASTM D1586.

Lab Testing

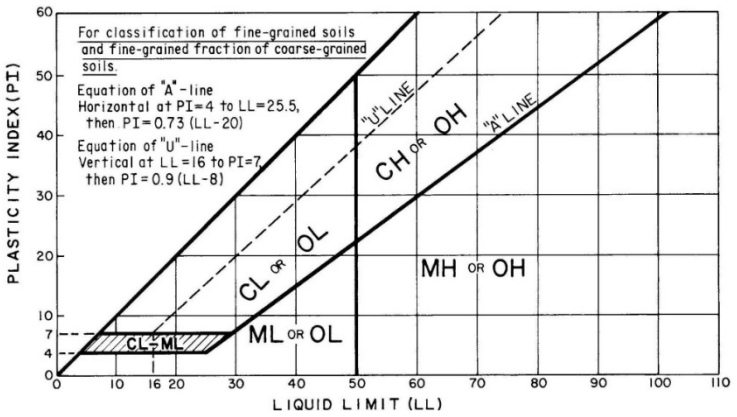
Selected SPT were subjected to laboratory testing to assess Atterberg Limits, natural moisture content, and relative shear strength index (using a hand penetrometer). Bulk samples obtained from isolated borings were tested for moisture density relationship (Standard Proctor). The hand penetrometer has been correlated with unconfined compression tests and provides a better estimate of soil consistency than visual examination alone. Samples not consumed by the testing will be stored and discarded after 60 days.

Soil Strength Terms

RELATIVE DENSITY OF COARSE-GRAINED SOILS Density determined by Standard Penetration Resistance		**CONSISTENCY OF FINE-GRAINED SOILS** Consistency determined by laboratory shear strength testing, field visual-manual procedures, or standard penetration resistance		
Descriptive Term (Density)	**Standard Penetration or N-Value (blows/ft.)**	**Descriptive Term (Consistency)**	**Correlated Unconfined Compressive Strength (psf)**	**Standard Penetration or N-Value (blows/ft.)**
Very loose	0-3	Very soft	Less than 500	<2
Loose	4-9	Soft	500 to 1,000	2-4
Medium dense	10-29	Firm/medium stiff	1,000 to 2,000	4-8
Dense	30-50	Stiff	2,000 to 4,000	8-15
Very dense	>50	Very stiff	4,000 to 8,000	15-30
		Hard	>8,000	>30

USCS Discussion and Plasticity Chart

Coarse Grained Soils have more than 50% of their dry weight retained on a #200 sieve; their principal descriptors are: boulders, cobbles, gravel or sand. Fine Grained Soils have less than 50% of their dry weight retained on a #200 sieve; they are principally described as clays if they are plastic and silts if they are slightly plastic or non-plastic. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size. In addition to gradation, coarse-grained soils are defined on the basis of their in-place relative density and fine-grained soils on the basis of their consistency.



Grain Size Terminology	
Major component of sample	**Range in particle size**
Boulder	>12 inches (300 mm)
Cobble	3 to 12 inches (75 to 300 mm)
Gravel	#4 sieve to 3 inches (4.75 mm to 75 mm)
Sand	#200 sieve to #4 sieve (0.075 mm to 4.75 mm)
Silt or clay	Passing #200 sieve (<0.075 mm)

References: NAVFAC Soil Mechanics Design Manual 7.1 – May 1982;
Excerpt from ASTM D 2487 *Standard Practice for Classification of Soils for Engineering Purposes (USCS)*

PRELIMINARY SOILS MAP:

1. REFERENCES TO SOIL SUITABILITY ARE BASED ON TDEC'S CURRENT STANDARDS FOR DRIP DISPERSAL SUITABILITY (AT LEAST 20" DEEP TO A WEAK STRUCTURED CLAY HORIZON, ROCK AND/OR LOW CHROMA DEPLETIONS)
2. OBSERVATIONS WERE MADE AT A MIN. OF 150' INTERVALS

2-26-23

Prepared by:
Lonnie Norrod Soil Consulting, LLC.
277 Red Williams Rd
Crossville, TN. 38555

LEGEND:

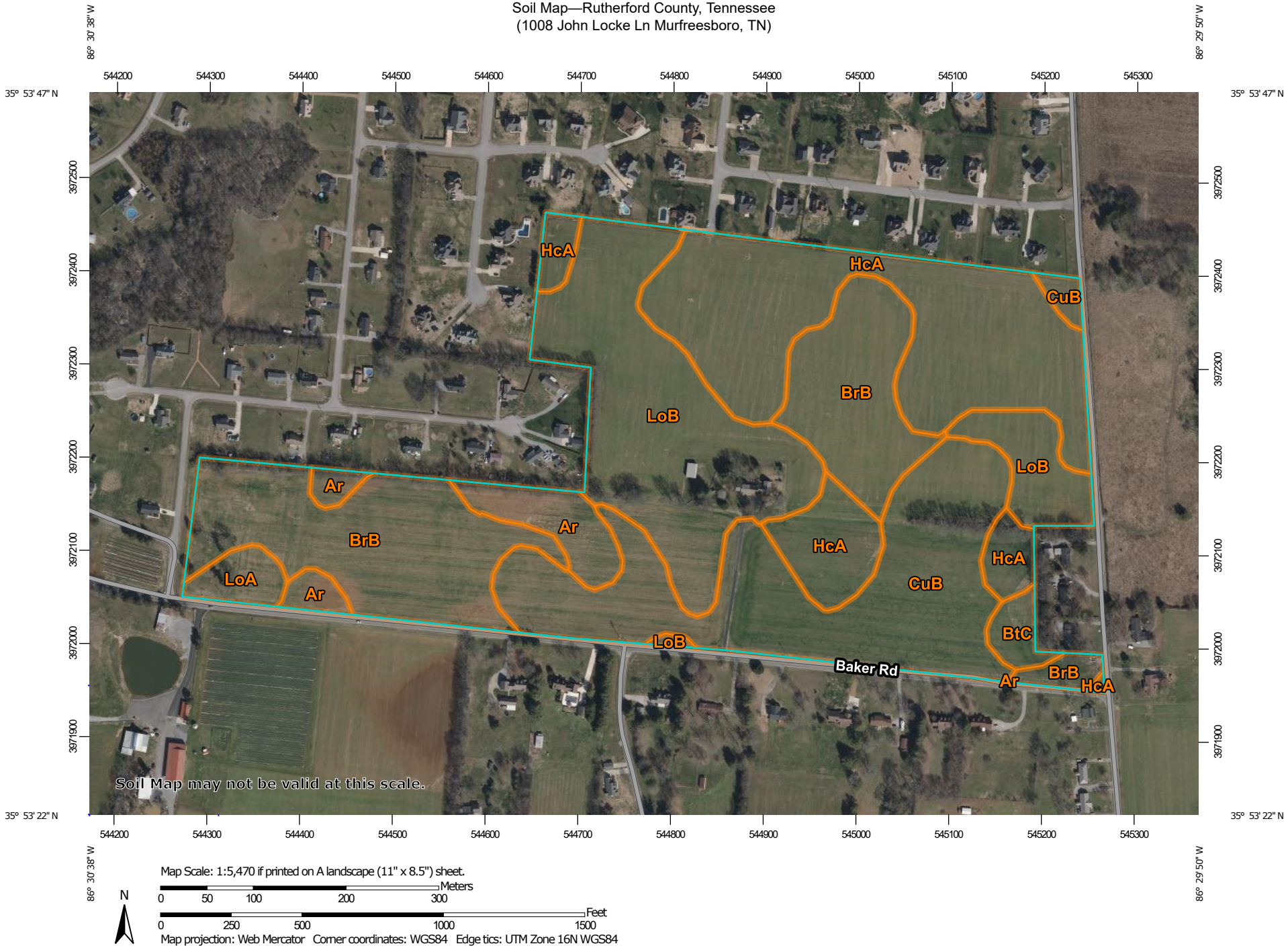
- – >50% suitability expected
- – 25–50% suitability expected
- – 0–25% suitability expected
- – no suitability expected
- – closed depression; suitability dependent upon demonstration of a positive surface drainage outlet
- – EXTENT OF OBSERVATIONS

N (approx.)

200 0' 200' 400' 600'
1"=200' SCALE

Beaty Property
Rutherford County
tax map 71, parcel 30
Baker Rd.

Soil Map—Rutherford County, Tennessee
(1008 John Locke Ln Murfreesboro, TN)



Map Scale: 1:5,470 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 50 100 200 300

Feet
0 250 500 1000 1500

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 Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Rutherford County, Tennessee
Survey Area Data: Version 19, Sep 15, 2022

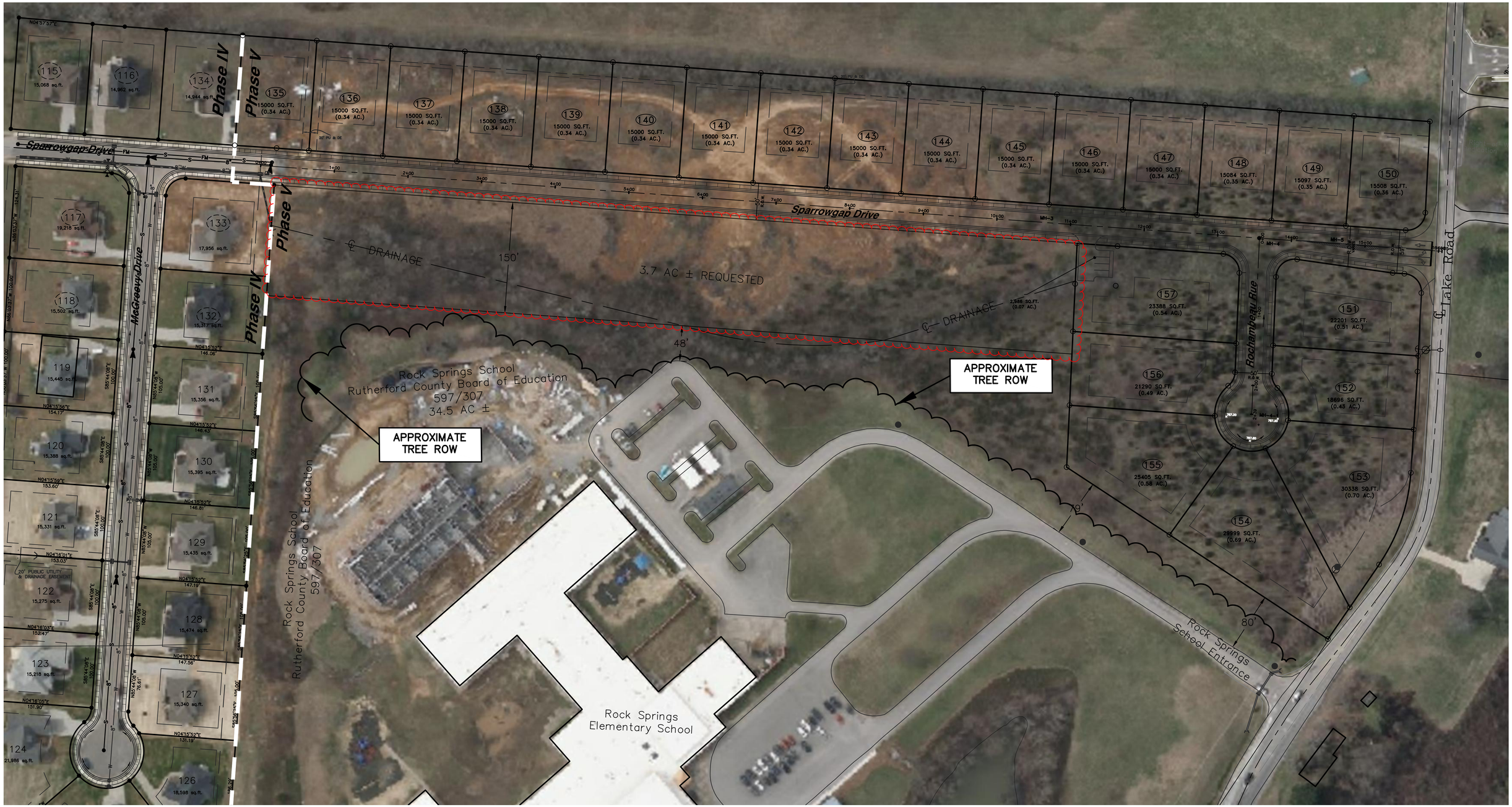
Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 14, 2020—Mar 1, 2020

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.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ar	Arrington silt loam, 0 to 2 percent slopes, occasionally flooded	3.4	4.4%
BrB	Bradyville silt loam, 2 to 5 percent slopes	17.5	22.9%
BtC	Bradyville-Rock outcrop complex, 2 to 12 percent slopes	0.9	1.2%
CuB	Cumberland silt loam, 2 to 5 percent slopes	16.4	21.5%
HcA	Harpeth silt loam, 0 to 2 percent slopes	19.8	25.9%
LoA	Lomond silt loam, 0 to 2 percent slopes	1.3	1.6%
LoB	Lomond silt loam 2 to 5 percent slopes	17.1	22.4%
Totals for Area of Interest		**76.3**	**100.0%**



OWNER: Deluxe Homes, LLC.
ADDRESS: 8181 ROCKY FORK ROAD
Smyrna, TN 37167

Tax Map 32, Parcel 24.00
Record Book 541: Page 1163

THIS PARCEL IS NOT LOCATED IN AREAS DESIGNATED AS "SPECIAL FLOOD HAZARD" ON THE NATIONAL FLOOD INSURANCE PROGRAM COMMUNITY MAP 47149C0105H, 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.

LEGEND FOR MONUMENTS
IPS ○ IRON PIN SET
IPF ○ IRON PIN FND.
○ RAILROAD SPIKE
FENCE
SURVEY POINT
△ NAIL
■ CONC. MARKER FND.

This survey is a TOPOGRAPHIC SURVEY for INFORMATION ONLY and is NOT A GENERAL PROPERTY SURVEY as defined under RULE 0820-3-.07

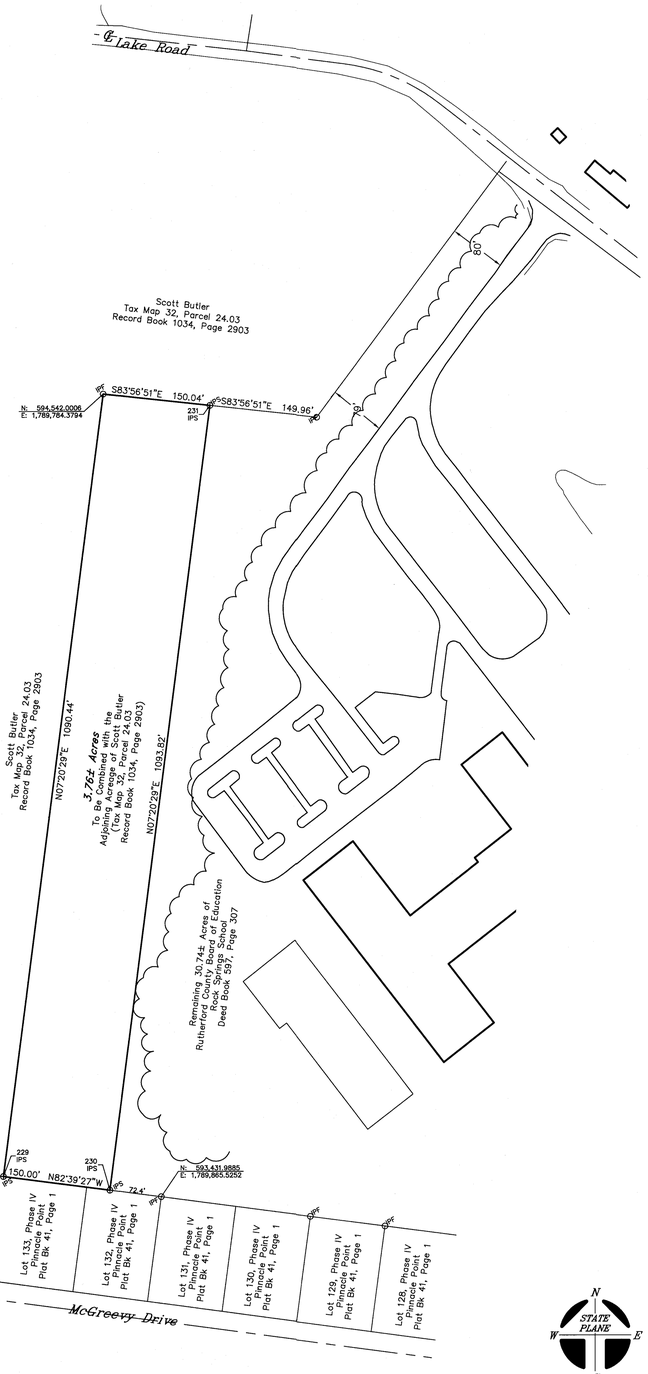
HUDDLESTON-STEELE ENGINEERING, INC.
2115 N.W. BROAD STREET, MURFREESBORO, TN 37129
SURVEYING : 893 - 4084, FAX: 893 - 0080

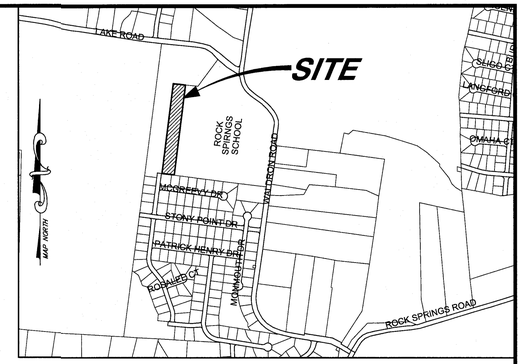
EXHIBIT

PINNACLE POINT PHASE V

3rd Civil District of Rutherford County, Tennessee

Date: APRIL 2021 | Scale: 1"=60' | C1.0



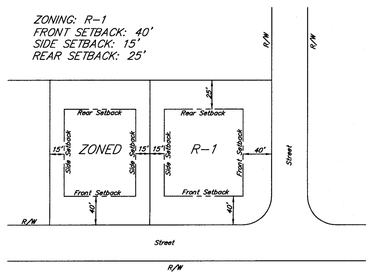


LOCATION MAP

N.T.S.

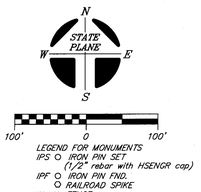
PLAN NOTES

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 prior 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 above ground evidence, and also from information obtained from the respective utility companies. The existence or non-existence 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. Parcels may be subject to additional easements, and/or restrictions, by record or prescription, that a complete title search may reveal.
4. Public utility and drainage easements where shown hereon are intended to indicate an easement for construction, operation, and maintenance of public utilities and drainage ways; including, but not limited to, sanitary sewers, force mains, water lines, telephone signal conduits, electric conductors, drainage pipes, and natural gas lines. Easements may not have infrastructure constructed within them until some future time and there may be no notice or consultation with the individual lot Owners of this construction.
5. This tract is to be deeded to Scott Butler and combined with his adjoining property. This tract is not intended to be a separate entity.



TYPICAL BUILDING SETBACK DETAIL

N.T.S.



LEGEND FOR MONUMENTS
IPS ○ IRON PIN SET
(1/2" rebar with HSENGR cap)
IPF ○ IRON PIN FND.
○ RAILROAD SPIKE
FENCE
● SURVEY OR CALCULATED POINT
△ NAIL
■ CONC. MARKER FND.

GLOBAL POSITION SYSTEM SURVEY NOTES

1. The survey portion was performed using the following global positioning system (GPS) survey equipment: SOKKIA GRX2 (Dual frequency). The GPS portion of this survey was performed using RTK (Real-Time Kinematic) surveying methods. TDOT CORS station TN38 for horizontal and for vertical control.
2. The relative positional accuracy is stated in the Category "IV" survey certification located above the surveyor's seal on this drawing.
3. The date that fieldwork was performed for this survey were: January, 2023
4. The datum(s) for the TDOT CORS Station that was used: HORIZ.: NAD83(2011) EPOCH 2010 VERT.: NAVD 1988
5. Fixed Control Station designation with positional data:
   TDOT CORS STATION-TN38
   STATE PLANE (TN 4100-US SURVEY FT.- NORTHING: 569,154.86
   EASTING: 1,837,086.15
   ELEVATION: 558.34 FT.
6. Geoid model used- GEOID03
7. Combined grid factors for TDOT CORS Station TN38:
   0.99992680 (STATE PLANE-TN 4100-US SURVEY FT.)

OWNER: Rutherford County Board of Education
ADDRESS: 2240 Southpark Drive
Murfreesboro, TN 37128

Tax Map 32, Part of Parcel 24.01
Part of Deed Book 597, Page 307

THIS PARCEL IS NOT LOCATED IN AREAS DESIGNATED AS "SPECIAL FLOOD HAZARD" ON THE NATIONAL FLOOD INSURANCE PROGRAM COMMUNITY MAP #7149C0105H, DATED, JANUARY 5, 2007, ZONE: X

I, HR. EBY CERTIFY THAT THIS IS A CATEGORY " IV " SUR-EY AND THE PRECISION OF THE GPS PORTION OF THIS SURVEY (IN RELATIVE POSITIONING ACCURACY GIVEN AT 1E 95% CONFIDENCE LEVEL) IS 1:10,000 AS SHOWN HEREIN AND THAT THIS SURVEY WAS DONE IN COMPLIANCE WITH CURRENT TENNESSEE MINIMUM STANDARDS OF PRA TICE FOR LAND SURVEYORS.

PHILIP G. CHAPPELL — REGISTERED LAND SURVEYOR — TENNESSEE No. 2007 — 1/27/2023

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

DRAWING REVISIONS		
NO.	DATE	DESCRIPTION
0	01-27-23	Original Issue

BOUNDARY SURVEY

RUTHERFORD COUNTY BOARD OF EDUCATION

1000 WALDRON ROAD, LAVERGNE, TN

3RD CIVIL DISTRICT OF RUTHERFORD COUNTY, TENNESSEE

DATE: JANUARY, 2023 | SCALE: 1"=100' | SHEET: 1 OF 1

WARRANTY DEED

016531

STATE OF TENNESSEE
COUNTY OF RUTHERFORD
THE ACTUAL CONSIDERATION OR VALUE, WHICHEVER IS GREATER, FOR THIS TRANSFER IS $ 425,000.00

Robert Bryant
Affiant

SUBSCRIBED AND SWORN TO BEFORE ME, THIS THE 12th DAY OF May 19 97

Connie L. Foster
Notary Public

MY COMMISSION EXPIRES: 3-17-2001
(AFFIX SEAL)

THIS INSTRUMENT WAS PREPARED BY
Atwood & Moore, Attorneys, 320 West Main Street, Suite 105, Murfreesboro, Tennessee 37130

ADDRESS NEW OWNER(S) AS FOLLOWS:	SEND TAX BILLS TO:	MAP-PARCEL NUMBERS
Rutherford County Board of (NAME)	Rutherford County Board of Educa (NAME)	32
2 Tracts, Waldron Road (ADDRESS)	(ADDRESS)	
Lavergne, TN (CITY) (STATE) (ZIP)	(CITY) (STATE) (ZIP)	Parcels 4 and 24

FOR AND CONSIDERATION OF THE SUM OF TEN DOLLARS, CASH IN HAND PAID BY THE HEREINAFTER NAMED GRANTEES, AND OTHER GOOD AND VALUABLE CONSIDERATIONS, THE RECEIPT OF WHICH IS HEREBY ACKNOWLEDGED, WE, J.T. Batey, Jr. and Bobby Woodard Batey and wife, Fannie C. Batey

HEREINAFTER CALLED THE GRANTORS, HAVE BARGAINED AND SOLD, AND BY THESE PRESENTS DO TRANSFER AND CONVEY UNTO Rutherford County Board of Education

HEREINAFTER CALLED THE GRANTEES, THEIR HEIRS AND ASSIGNS, A CERTAIN TRACT OR PARCEL OF LAND IN Rutherford COUNTY, STATE OF TENNESSEE, DESCRIBED AS FOLLOWS, TO-WIT:

TRACT NO. 1:

Located in the 3rd Civil District of Rutherford County, Tennessee. Bound on the south, west and north by the remaining property of Batey et al (Will Book 5, Page 233); on the northeast by the southwest right-of-way of Kidd Road and the southwest right-of-way of Waldron Road, and on the east by the west right-of-way of Waldron Road.

BEGINNING at an iron pin set on the southwest right-of-way of Kidd Road, said pin being 318.52 feet northwest of the southwest right-of-way of Waldron Road and the northern most point of this tract; thence with the southwest right of way of Kidd Road being 25 feet from and parallel with the center line of Kidd Road, S-55 degrees 16'10"E 318.52 feet to an iron pin set, thence with the southwest right-of-way of Waldron Road, being 25 feet from and parallel with the center line of Waldron Road S-05 degrees 56'20"-E 57.18 feet to an iron pin set; thence continuing S-16 degrees 58'00"-E 77.18 feet to an iron pin set; thence S-32 degrees 20'00"-E 84.08 feet to an iron pin set; thence S-47 degrees 59'00"-E 86.33 feet to an iron pin set, thence S-56 degrees 08'50"-E 152.92 feet to an iron pin set; thence S-49 degrees 41'10"-E 96.71 feet to an iron pin set; thence S-39 degrees 27'00"-E 100.67 feet to an iron pin set; thence S-24 degrees 24'10"-E 73.87 feet to an iron pin set; thence with the

CONTINUED

unimproved ( )
This is improved (X) property, known as 2 Tracts, Waldron Road, Lavergne, TN
(House Number) (Street) (P.O. Address) (City or Town) (Postal Zip)

TO HAVE AND TO HOLD the said tract or parcel of land, with the appurtenances, estate, title and interest thereto belonging to the said GRANTEES, their heirs and assigns forever; and we do covenant with the said GRANTEES that we are lawfully seized and possessed of said land in fee simple, have a good right to convey it and the same is unencumbered, unless otherwise herein set out; and we do further covenant and bind ourselves, our heirs and representatives, to warrant and forever defend the title to the said land to the said GRANTEES, their heirs and assigns, against the lawful claims of all persons whomsoever. Wherever used, the singular number shall include the plural, the plural the singular, and the use of any gender shall be applicable to all genders.

Witness my hand this 12th day of May 19 97

J. T. Batey Jr.
J.T. Batey, Jr.

Fannie C. Batey
Fannie C. Batey

307

Bobby Woodard Batey
Bobby Woodard Batey

STATE OF TENNESSEE
COUNTY OF RUTHERFORD

Personally appeared before me, the undersigned Notary Public in and for said County and State, the within named J.T. Batey, Jr. and Bobby Woodard Batey and wife, Fannie C. Batey

the bargainor _____, with whom I am personally acquainted or proved to me on the basis of satisfactory evidence, and who acknowledged that he executed the within instrument for the purposes therein contained. Witness my hand and official seal at Murfreesboro, Tennessee, this 12th day of May, 19 97.

Commission expires 8-18-99

Notary Public

STATE OF TENNESSEE
COUNTY OF

Before me, _____ a Notary Public within and for the State and County aforesaid, personally appeared _____ and _____ with whom I am personally acquainted and who upon _____ oath(s) acknowledged _____ to be the _____ and _____ respectively of the _____ the within named bargainor, and corporation, and that _____ as such _____ and _____ being authorized so to do, execute the foregoing instrument for the purposes therein contained by signing the name of the corporation, by the said _____ as such _____, and attesting the same by the said _____ as such _____.

Witness my hand and official seal at office at _____ on this the _____ day of _____ 19_____.

My commission expires _____

Notary Public

west right-of-way of Waldron Road 25 feet from and parallel with the center line S-01 degrees 31'00"-E 79.31 feet to an iron pin set; thence S-05 degrees 40'30"-W 439.96 feet to an iron pin set; thence S-05 degrees 19'30"-W 282.87 feet to an iron pin set, being the southeast corner of this tract; thence with the remaining property of Batey et al N-84 degrees 40'30"-W 1274.99 feet to an iron pin set, being the southwest corner of this tract, thence continuing with the remaining property of Batey et al N-05 degrees 19'30"-E 1090.69 feet to an iron pin set, being the northwest corner of this tract; thence continuing S-85 degrees 57'50"-E 300.00 feet to an iron pin set; thence N-34 degrees 43'50"-E 425.00 feet to the pin at the beginning, containing 34.00 acres, more or less.

BEING the same property conveyed to James T. Batey and wife, Willie Ella S. Batey by deed of record in Deed Book 76, page 343 and 380. The said Willie Ella S. Batey being deceased and her husband, James T. Batey having received the property as surviving tenant by the entirety. The said James T. Batey being deceased and leaving a will of record in Will Book 5, page 233 of the County Court Clerk's Office of Rutherford County, Tennessee. The said will having devised the property to his sons, J.T. Batey, Jr. and Bobby Woodard Batey.

TRACT NO. 2:

BEING a triangular shaped tract of land cut off the southwest corner of the B.H. McFarlin Farm by the New LaVergne (now Waldron Road) to Rock Springs Road.

BEGINNING at a point in the centerline of Waldron Road at the Centerline of Lake Road and being in the west line of the B.H. McFarlin Farm; thence south approximately 340 feet to a point, being the original southwest corner of the B.H. McFarlin Farm; thence east approximately 290 feet to a point in the centerline of Waldron Road; thence northwesterly with the centerline of Waldron Road approximately 460 feet to the point of beginning; containing approximately .50 acres, excluding existing road right-of-way and being described in general terms as follows west and south by Batey and north and east by the centerline of Waldron Road.

Being the same property conveyed to Bobby Woodard Batey and James T. Batey by quitclaim deed of record in Book 593, page 522, of the Register's Office of Rutherford County, Tennessee.

Both tracts are subject to the application for use of record in Trust Deed Book A-472, page 175 and to all other matters as shown of record in the Register's Office of Rutherford County, Tennessee.

Grantee agrees to allow the Grantors to connect at their own expense to sewer and water lines at a location to be agreed upon by Grantor and Grantee within 24 months from the date of this deed. If Grantee fails to allow Grantor to have full access to said water and sewer lines within 24 months from the date of this deed, Grantor may bring suit against Grantee to enforce this obligation of Grantee, and Grantee shall be responsible for all costs, including but not limited to reasonable attorney's fees and court costs for the necessity of court action by the Grantor to force Grantee to fulfill the terms of this agreement.

Grantee specifically agrees to allow Grantor to access the utilities including but not limited to sewer and water utility lines extended to the property described herein. However, Grantor shall connect to the lines in such a manner as to not interfere with Grantee use of the lines and in such a manner as to not cause any costs to be incurred by the Grantee. Grantor shall be responsible for any tap fees incurred by virtue of Grantors connection to the utility lines, and Grantor will pay any costs incurred in connecting to the line. Grantee specifically agrees that sewer and water lines should be made available and accessible to the Grantors remaining property in a line capacity large enough to accommodate 200 residential homes.

Sellers shall be responsible for all Greenbelt (Rollback) taxes and shall pay the same when they become due and payable.

The Sellers shall be allowed to remove and retain fencing and fence posts on the premises. Sellers should remove the fencing before the commencement of construction so as to ensure it is not damaged. If Sellers fail to remove the fencing prior to the commencement of construction, Purchaser will not be liable for any damage to the fencing.

RUTHERFORD COUNTY, TENNESSEE
Received for recording the 21 day
of MAY, 1997 at 8:08 AM
Notebook 50 page 249
REC. FEE $ 16.00 REC# 97450-001
STATE TAX $ SHANELLE GOLDEN
REG. FEE $ Deputy Register
RECORDED IN BOOK 591 Page 307
MARK H. MOSHEA, REGISTER OF DEEDS