Final Approved
9/14/2021
PD-181

High School / Middle School in Awendaw

Charleston County, South Carolina

TMS711-00-00-052

4/23/2021

PD Prepared for:

Charleston County School District

Prepared By/Applicant:

SEAMONWHITESIDE

501 Wando Park Blvd Suite 200 Mount Pleasant, SC | (843) 884-1667 | seamonwhiteside.com

Project # 8067

High School/Middle School in Awendaw PD

27. Appendices
    A. Site Location Map & Current Aerial
    B. Tax Map, Existing Land Use Map
    C. As-built Survey/Tree Survey
    D. Aerial Conceptual Sketch Plan
    E. Wetland Letter Application & Receipt
    F. Architectural Site Plan
    G. Landscape Sketch Plan
    H. Utility Plans
    I. Circulation Plan
    J. Traffic Impact and Access Study
    K. Historical & Archaeological Survey
    L. Site Photography
    M. Letters of Coordination
    N. Existing Buildings

1. Statement of Objectives

The objective of the High School/Middle School in Awendaw PD (Planned Development) is to create flexibility within the existing AG-10 zoning to allow for a high school and middle school with associated facilities such as parking, football, track, baseball, softball and tennis.

A Conceptual Site Plan for the school and surrounding facilities is included in Appendix D of this report.

2. Intent and Results of Proposed PD

Intent and results of the proposed school use meets with the objectives of §4.23.4 of the ZLDR in the following ways:

A. A maximum choice in the types of environment available to the public by allowing a development that would not be possible under the strict application of the standards of this Ordinance that were designated primarily for development on individual lots:

   1. Educational and recreational facilities are accessible to residents of the area and of Charleston County.
   2. A centrally located community 'hub' for the towns of McClellanville and Awendaw is provided.

B. A greater freedom in selecting the means to provide access, light, open space and design amenities:

   1. Increased access to the site is available to residents through sport fields and facilities versus the current privately-owned agricultural use.

C. Quality design and environmentally sensitive development by allowing development to take advantage of special site characteristics, locations and land use arrangements:

   1. Development of the school, including utilities will occur in areas already cleared of vegetation, minimizing the need for tree removal.
   2. Quality open spaces and sports/recreation fields are provided for the school and community.
   3. The conceptual site plan (see Appendix D) provides interconnected stormwater detention ponds, minimizing the need for below-ground drainage.

D. A development pattern in harmony with the applicable goals and strategies of the Comprehensive Plan, the proposed school use meets the following:

2.2.1 Land Use: Provides needed community facilities for an underserved area of the county, centrally situated and easily accessible by the adjacent highway. Additional buffer widths will be provided where the site is adjacent to private property, respecting the rights of the neighbors.

2.2.2 Economic Development: Provides job opportunities for area residents, as well as needed services for healthy local governments.

2.2.5 Population: Accommodates the socioeconomic diverse and growing population of Awendaw, McClellanville, and the surrounding area with needed educational facilities in an environmentally and fiscally sustainable manner.

2.2.7 Transportation: Utilizes existing highway and local roadways to serve the proposed school, maintaining the existing community character.

2.2.8 Community Facilities: Community facilities and services will be provided, coordinated with Charleston County, ensuring capacity for expected growth.

LU 1. The proposed school will not affect any critical line areas.

LU 2. A 100-foot buffer, planted to meet S-3 planting requirements, will be provided between Highway 17 and school structures.

LU 4. The school will be located along existing road systems that will accommodate the expected traffic.

LU 6. Utilizes the implementation tool of a Planned Development Zoning District as well as increases the level of service (LOS) of the CCSD by centrally locating the new school between the towns of Awendaw and McClellanville.

LU 16. This PD will follow the approval process for amending the BCDCOG 208 Water Quality Management Plan, if applicable.

E. The permanent preservation of common open space, recreation areas and facilities:

1. Recreation areas and facilities provided on the site will be available for use by the school and students as well as residents.

F. An efficient use of the land resulting in more economical networks of utilities, streets, schools, public grounds and buildings, and other facilities:

1. The conceptual plan (See Appendix D) provides all elements (buildings, parking, sports fields, etc.) carefully arranged to best utilize the site while providing accessibility to all areas from the centrally located school structure.

2. Well water will be utilized to provide potable water for the site, and a new septic system will be created to serve the school, with the drip area located in an existing field with a minimum of 100 feet of buffer on all sides per SCDHEC requirements.

G. A creative approach to the use of land and related physical facilities that results in better development and design and the construction of amenities:

1. Given the underserved community, the location of a new middle/high school at this site will allow for the provision of needed recreational and athletic amenities that will serve both students and the community.

3. Site Information

The property is a 107.2-acre tract of land composed of 106.4 acres upland, 0.8 ac non-jurisdictional pond and is located along the north side of Highway 17 in Charleston County near Awendaw, South Carolina. Access to the property is provided by U.S. Highway 17 and three roads. Unimproved private Kaiser Farm Road connects internal to the property; Jenkins Hill Road is a public road and is adjacent to the site along the west side; and Duffield Road is a public road that connects to the property at the southeast corner. Along Highway 17, there are residential properties on both sides of the property and the Francis Marion National Forest is located to the north and east of the property.

The site is a currently used as a farm and is made up of farmland and agricultural uses. A large portion of the site is open, with relatively few trees. There are several grand trees including live oaks, water oaks, and black gums. There is a notable cluster of live oaks in the northwest corner of the property. Historic use of the property consists of rural residential, farmland and open pasture.

4. Allowed Land Uses

Middle and high school facilities are planned for the entirety of the site. All facilities are available to the public for use and may or may not require application to the CCSD to do so. Facilities included as part of this PD are as follows:

A. School Buildings (all areas are listed as maximum square feet):

1. One main academic building (260,000 sf).

2. Anticipated ancillary buildings including but not limited to a fieldhouse (10,000 sf), press box for concessions (5,000 sf), well house (500sf), and three storage buildings (10,000 sf).

3. The exact number of buildings will be determined during programming and the design phase of the project.

B. The maximum building lot coverage percentage is 30-percent.

C. Utilities: All utilities to serve the listed facilities, including water well/service, septic service (including waste treatment drip field), electrical service, and stormwater detention pond. A well house will be included for water.

D. Parking: Paved parking will be provided for allowed facilities based on ZLDR requirements.

E. Athletic Fields: One football field, one practice field, middle school multi-use field, one baseball field, one softball field and bleachers are anticipated.

F. Paved Track

G. Tennis Courts (6)

H. Resource Extraction: Due to construction of the school and school related facilities, site activities, including the digging of stormwater detention ponds and tree removal, may result in the extraction of soil or lumber from the site.

5. Maximum Density

No residential uses are proposed for this Planned Development.

6. Impact Assessment/Analysis

A. Utilities

1. Water: A well to be dug onsite will provide potable water for the schools and associated recreational facilities on the site.

2. Wastewater: A septic system will be utilized to service the schools and associated athletic facilities. Wastewater disposal shall be coordinated with South Carolina Department of Health and Environmental Control (SCDHEC) and serviced through septic services approved by SCDHEC. Prior to applying for Site Plan Review, the applicant shall submit a letter to the Zoning and Planning Department requesting a determination by the County regarding whether an amendment to the 208 Water Quality Management Plan is required for the septic system. If the County determines an amendment to the BCDCOG 208 Water Quality Management Plan is required, the amendment must be approved by the BCDCOG prior to submittal of any zoning permit applications for land disturbance activities/development or any Site Plan Review applications.

3. Electrical: Power will be provided to the site from existing overhead electric lines located along the north side of Highway 17.

B. Traffic/Roads

1. A Traffic and Access Impact Study has been performed by Ridgeway Traffic Consulting, LLC and is provided in its entirety in Appendix I. Conclusions of this study state, in part:

*"*Turn *lane improvements have been recommended for the main intersection to US 17 and the intersection of US 17 at Jenkins Hill Road that will minimize impacts on US 17 through volumes and provide for good traffic operations. Conflicting traffic volumes along Jenkins Hill Road are expected to be minimal although a right-turn lane is recommended at the southern access to separate passenger vehicles and buses that will continue north."*

2. Roadway improvements to both Highway 17 and Jenkins Hill Road are anticipated as part of the school project. Along with recommended turn lanes provided by Ridgeway Traffic, pavement upgrades to Highway 17 may be warranted with utility and drainage relocations. Portions of Jenkins Hill Roads may require upgrades that include pavement, realignment, signage striping, and utility relocation.

C. Emergency Services

1. This site is currently under the jurisdiction of Charleston County Sherriff's Office and the Charleston County Emergency Services.
2. Refer to Appendix M, Letters of Coordination, regarding all necessary utility and infrastructure connection coordination and additional services needed for this parcel.

D. Drainage

1. The planned development shall comply with all Charleston County Stormwater Ordinances and South Carolina Department of Health and Environmental Control (SCDHEC) Regulatory requirements. For site locations within sensitive drainage basins, additional stormwater design and construction requirements may be required by the Director of Public Works prior to Stormwater permit approval and issuance. Sensitive drainage basins may include but are not limited to areas which incur flooding conditions, are designated as Special Protection Areas, discharge to water bodies with restrictive Water Quality conditions, and/or are governed by other restrictive Water Quality and Water Quality conditions. Where possible and allowed by permit, the proposed site may connect its stormwater system with existing conveyances. Best Management Practices (BMP's) shall be utilized, installed, and maintained in compliance with applicable approved permits throughout all phases including, but not limited to, site development, construction, and post construction.
2. Applicant shall comply with Charleston County Stormwater Ordinances and SCDHEC Regulatory requirements for pre and post construction water quality and quantity. Stormwater design, construction, and maintenance

shall be in compliance with applicable approved Charleston County Stormwater Permits. Comprehensive Master Drainage Plan must be provided for proposed site and incorporate all development phasing, future development, existing drainage systems and conveyances, and proposed drainage systems and conveyances. The Comprehensive Stormwater Master Plan shall also include discharge management plans for specialized activities within the development. Utilization of approved and permitted Low Impact Design elements is encouraged within a comprehensive site Master Drainage Plan.

3. The maintenance of all stormwater devices, structures, and facilities will be the responsibility of the Developer and/or Charleston County School District. A Covenants For Permanent Maintenance of Stormwater Facilities shall be established by responsible party and recorded at the Registrar of Deeds office.

E. Garbage Disposal

1. No public garbage collection is currently available. The property will utilize private contract waste disposal.

7. Development Schedule

A. The exact year for school construction is unknown at this time and will depend on enrollment growth or the attendance zone reaching the 500 minimum student population threshold per school. The District does not typically approve funds for new school construction for a student population that is less than 500.
B. The site will remain in its natural state until it is developed.
C. If phasing is to occur, it will be determined during the design phase.

8. Open Space

A. Open space will be owned and maintained by the school.
B. See Common Open Space for more information.

9. Streets

No public rights of way are planned for this development. All internal drives will be owned and maintained by the CCSD.

10. Compliance with ZLDR

A. Items not specifically addressed within this Planned Development Guidelines shall comply with and reference the Charleston County Zoning and Land Development Regulations (ZLDR) for the AG-10 Zoning District in effect at the time of the subsequent application submittal.

B. The PD agrees to proceed with proposed development in accordance with the provisions of these zoning regulations, applicable provisions of the Charleston County Comprehensive Plan, and with such conditions as may be attached to any rezoning to the applicable PD district.

C. The provisions of Article 3.10, Variances, of this Ordinance shall not apply to the planned development and all major changes to the planned development

must be approved by County Council. Tree variances may be granted in accordance with this Article and all other sections of this Ordinance.

D. This Planned Development intends to meet the application criteria listed in Chapter 4, Article, 4.23 of the Charleston County Zoning and Land Development Regulations Ordinance (ZLDR).

E. No person shall erect or alter any building, structure, or sign on any tract of land or use any tract of land within the PD except in conformance with these guidelines and regulations. Unless modified herein, definitions of terms used in the Planned Development Guidelines shall follow definitions listed in the Charleston County Zoning and Land Development Regulations Ordinance (ZLDR) for the AG-10 Zoning District, as amended from time to time.

F. Administration and enforcement of the Planned Development Guidelines shall follow the Charleston County Zoning and Land Development Regulations Ordinance (ZLDR).

G. Approval Criteria

The PD complies with the standards contained in Article 4.23.9(E)(9) per the ZLDR as outlined below.

Applications for PD Development Plan approval may be approved only if the County Council determines that the following criteria are met:

1. *The PD Development Plan complies with the standards contained in this Article;*

    i. The PD Development plan complies with the standards contained in Article 4.23 in the following ways:

        1. A Pre- Application meeting occurred on October 8th, 2019 with the client, consultant and Charleston County Staff.

        2. A Conceptual PD Development Plan was presented to Charleston County Planning Commission at a Planning Commission Workshop on December 9th, 2019.

        3. Three community workshops were held as part of the community outreach for the PD with a total of 157 people in attendance.

            <u>Community Meeting 1</u>

            Date: December 5th, 2019

            Location: St. James Santee Elementary School

            Number of Attendees: 58 participants

            <u>Community Meeting 2</u>

            Date: January 21st, 2020

            Location: St. James Santee Elementary School

            Number of Attendees: 76 participants

Community Meeting 3

Date: January 23rd, 2020

Location: Wando Mt. Pleasant Library

Number of Attendees: 23 participants

4. A Draft Plan Development Plan Submittal was made to Charleston County for staff review. Charleston County Staff provided comments that were addressed in this PD.
5. The complete PD Development Plan Application was submitted to the County including all required items as specified by the County.

2. *The development is consistent with the intent of the Comprehensive Plan and other adopted policy documents; and*
    i. The PD will provide educational, recreational and community facilities for an underserved area of the County that is accessible to all residents of Charleston County. The project is located off Highway 17 and has access off existing roads, minimizing the overall impact of the site. Buffers adjacent to the road and existing residential uses is provided to screen incompatible land uses and enhance the school property. Overall, the proposed use is consistent with the intent of the Comprehensive Plan and other adopted policy documents as further detailed in the "Intent and Results of Proposed PD" section.
3. *The County and other agencies will be able to provide necessary public services, facilities, and programs to serve the development proposed, at the time the property is developed.*
    i. Letters of coordination are provided from SCDOT, Charleston County Sheriff, US Postal Service, Fire, EMS, Berkeley Electric, and Charleston County Stormwater that state the County and other agencies will be able to provide the necessary public services, facilities, and programs to serve the development proposed, at the time the property is developed. See the Letters of Coordination in Appendix M.

11. Historical and Archaeological Survey

There are no known historical or cultural artifacts on this property. See Appendix K for Historical and Archaeological Site Assessment.

12. Letters of Coordination

See Appendix M for the Letters of Coordination.

13. Dimensional Standards

DENSITY/INTENSITY AND DIMENSIONAL STANDARDS TABLE	
MINIMUM SETBACKS (SCHOOL BUILDING)	
FRONT/STREET SIDE	100 FEET
INTERIOR SIDE	100 FEET
REAR	100 FEET
MINIMUM SETBACKS (ALL OTHER BUILDINGS SUCH AS STORAGE BUILDINGS, PRESS BOX)	
FRONT/STREET SIDE	100 FEET
INTERIOR SIDE	25 FEET
REAR	10 FEET
MINIMUM BUFFERS	
HWY 17	100 FEET, S3
NORTH SIDE (RM-FOREST)	0 FEET
EAST SIDE (RM-FOREST)	0 FEET
EAST SIDE (AGR-RESID.)	25 FEET, TYPE B
WEST SIDE (AG-10)	0 FEET
JENKINS HILL ROAD	35 FEET
FRESHWATER WETLAND*	15 FEET
OCRM CRITICAL LINE	50 FEET
MAXIMUM HEIGHT	
HEIGHT – SCHOOL	50 FEET
HEIGHT- ALL OTHER USES	35 FEET
MINIMUM LOT AREA	1 ACRE
MINIMUM LOT WIDTH	135 FEET
MAXIMUM BUILDING COVER	30% OF LOT

*Note: Freshwater wetland does not include the existing non-jurisdictional pond.

14. Architectural Guidelines

A. Architectural design for the school will reflect the local rural character. See Appendix F for a conceptual plan for the school.

B. Architectural standards shall comply with Article 9.6 of the Charleston County Zoning and Land Development Regulations Ordinance (ZLDR).

C. An architectural wall is not required when ten (10) or more parking spaces are located between the right-of-way and front façade of a building. There is a 100' required buffer along Highway 17 and the school building is setback from the road far enough to provide an effective visual buffer for the parking area.

15. Lots to Abut Upon Common Open Space

No individual lots are planned for this site.

16. Access

A. Access to the site shall be primarily provided via U.S. Highway 17 and Jenkins Hill Road. SCDOT approval and applicable encroachment permit shall be required for all activity within the highway right of way. Any improvements or access to Jenkins Hill Road will require approval by Charleston County.

B. Within the site, paved vehicular accessways will be provided in 24-foot and 15' minimum widths for two and one lane traffic. Lanes specifically designed for student drop-off and for buses, including stacking space for both, will be provided to serve the schools. Areas between structures shall be covered by easements where necessary for access, maintenance and utility service.

17. Commercial Areas

There are no commercial areas associated with this PD.

18. Industrial Areas

There are no industrial areas associated with this PD.

19. Areas Designated for Future Use

Development will remain in its natural state until such time as development permits are approved.

20. Signs and Lighting

A. One monument style, externally lit, free standing sign that complies with the requirements of ZLDR Art. 9.11will be provided to address Highway 17. Light Emitting Diode LED Message Boards are allowed and do not require a special exception. LED Message Boards shall comply with Article 9.11 Signs of the ZLDR and be incorporated into the monument style sign.

B. One secondary sign addressing the entrance along Jenkins Hill Road that complies with the requirements of ZLDR Art.9.11 is allowed.

C. Directional signage shall be allowed internal to the site and shall comply with ZLDR Article 9.11.

D. All site lighting shall comply with Article 9.6.4.C. of the ZLDR.

E. Lighting for the sports and recreation areas shall follow the IES guidelines for Sports and Recreational Area Lighting. Illumination levels for field sports shall not exceed 50 foot-candles. Light poles shall not exceed 80 feet in height. If other specifications have not been determined, lighting for recreation fields shall comply with Article 9.6.4.C. of the ZLDR.

21. Parking

A. Parking is per CCSD standards for schools: one (1) space per each vehicle owned and operated by the school, plus two (2) per employee (including faculty, administrative, etc.), plus 1 per 8 students.

B. Parking shall comply with Article 9.3 of the ZLDR.

22. Tree Protection

Tree protection, preservation, and replacement shall meet or exceed regulations outlined in Article 9.4 of the Charleston County Zoning and Land Development Regulations Ordinance (ZLDR).

23. Resource Areas

A. Several large hardwood trees that are found in the northwest corner of the site will remain. Existing irrigation ditches and the primarily pine trees that have grown along them will be filled and removed as necessary to provide for the development of the site and for the safety of students. Tree protection, preservation and replacement shall meet or exceed regulations outlined in Article 9.4 of the ZLDR.

B. The PD does not anticipate plans to change the non-jurisdictional pond located at the rear of the property however, if necessary, the pond may be modified, altered or removed.

24. Common Open Space

A. Landscaping shall meet or exceed regulations outlined in Article 9.5 Landscaping, Screening and Buffers of the ZLDR.

B. As illustrated on the Aerial Conceptual Sketch Plan, in Appendix D, proposed Common Open Space will include +/-74.88 acres, or a minimum of 70% of the overall 107.2 acres. Areas include all athletic fields and recreational structures, and septic drip field with surrounding 100' buffer.

C. All fencing shall be commensurate with the type of facility provided. All fencing shall meet or exceed regulations outlined in the ZLDR at the time of subsequent development application. School fencing shall meet Charleston County School District requirements for safety.

25. Special Events

Special events shall meet regulations in Article 6.7 Special Events Use of the ZLDR.

26. Maintenance

It is the intent of CCSD to maintain the property by leasing the property to the current owner to continue use as a hay field. Once purchased by CCSD, if the prior owner chooses not to lease the property, it will be placed under the current CCSD maintenance contracts, or by other means.

The ownership group conducted a review of the buildings on site and determined what needed to remain for the property to continue to be a working hayfield. It was determined that two structures (See Images 1 and 4 in Appendix N: Existing Buildings) will be demolished six months upon closing of the property.

APPENDIX A:

SITE LOCATION MAP & CURRENT AERIAL

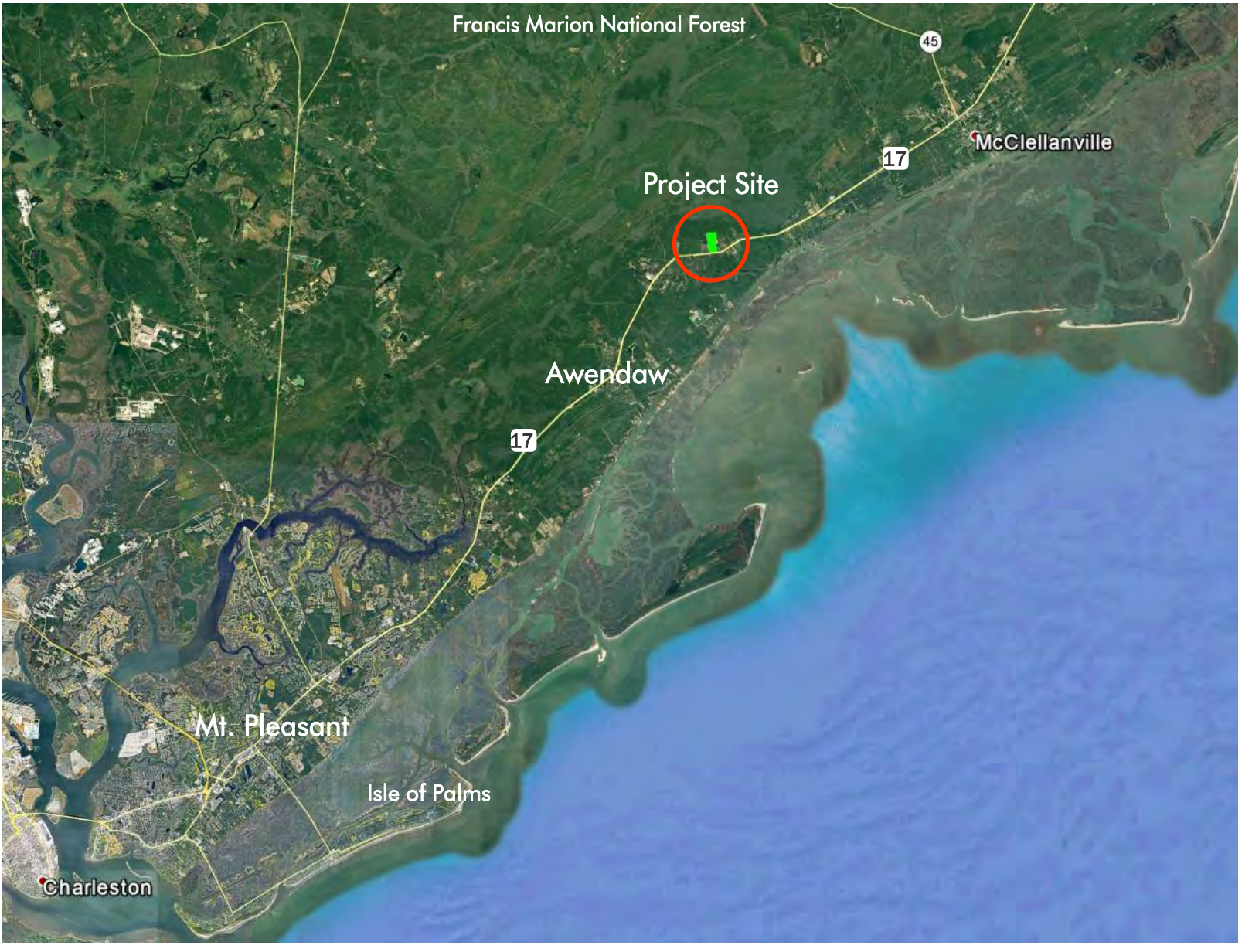
NOTE: THIS PLAN IS CONCEPTUAL IN NATURE AND SUBJECT TO CHANGE.

SEAMONWHITESIDE

EXISTING CONDITIONS MAP

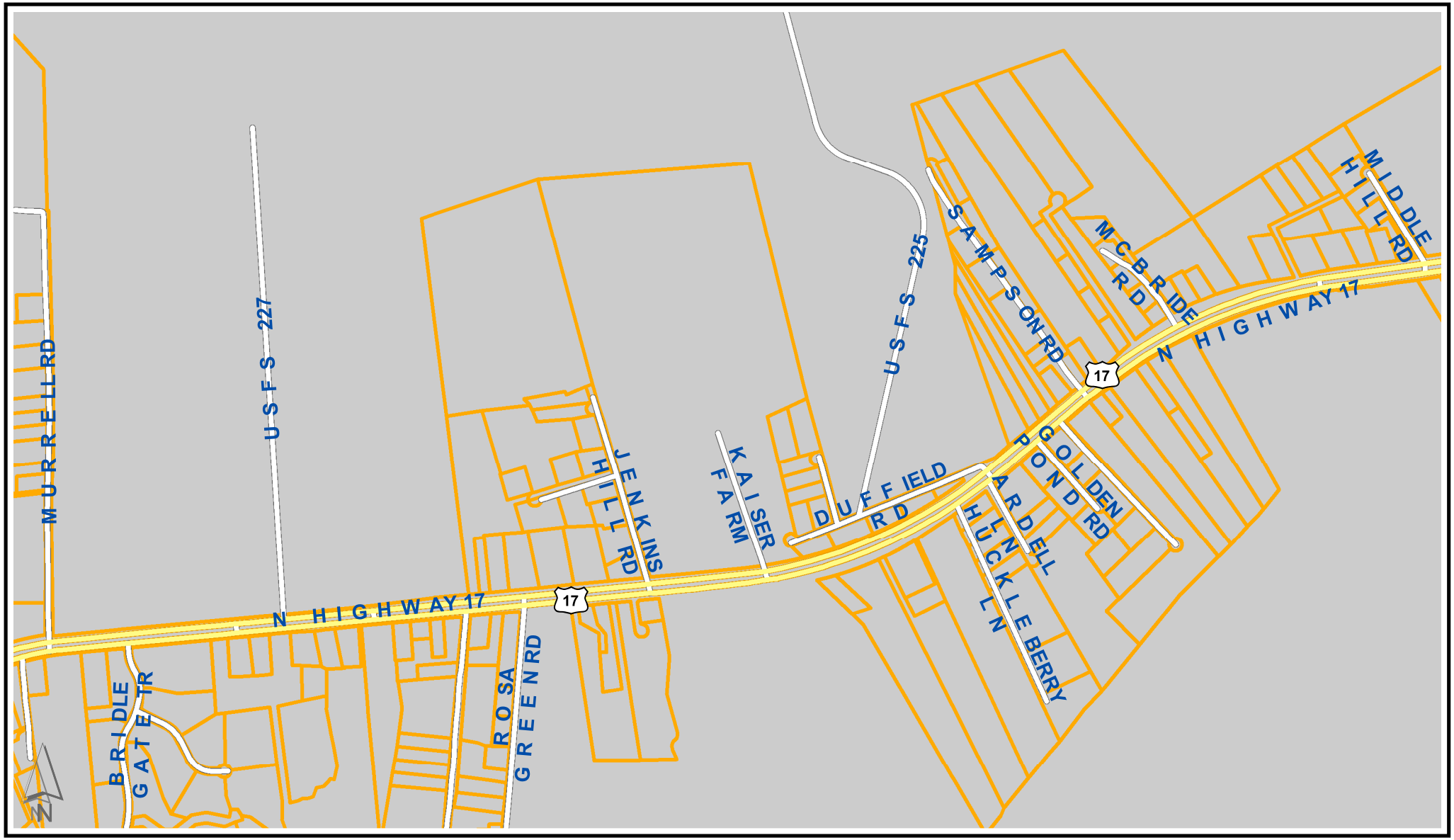
CHARLESTON COUNTY PUBLIC SCHOOLS

12/5/2019


Francis Marion National Forest
45
McClellanville
17
Project Site
Awendaw
17
Mt. Pleasant
Isle of Palms
Charleston

APPENDIX B:

TAX MAP
& EXISTING LAND USE MAP



kaiser tract

0 487.5 975 1,950 Feet

1 inch = 1,061 feet

CHARLESTON COUNTY
SOUTH CAROLINA

Author: Charleston County SC
Date: 2/18/2019

Charleston County SC

0 375 750 1,500 Feet

1 inch = 819 feet

CHARLESTON COUNTY SOUTH CAROLINA

Note: The Charleston County makes every effort possible to produce the most accurate information. The layers contained in the map service are for information purposes only. The Charleston County makes no warranty, express or implied, nor any guaranty as to the content, sequence, accuracy, timeliness or completeness of any of the information provided. The County explicitly disclaims all representations and warranties. The reader agrees to hold harmless the Charleston County for any cause of action and costs associated with any causes of action which may arise as a consequence of the County providing this information.

Author: Charleston County SC
Date: 11/26/2019

APPENDIX C:

AS-BUILT SURVEY/ TREE SURVEY

VICIINTY MAP: NOT TO SCALE

NAD 83

0 200 400 Feet

1 INCH = 200 FEET

LEGEND

PROPERTY CORNER FOUND, AS DESCRIBED	PROPERTY LINE
PROPERTY CORNER, SET	ADJACENT PROPERTY LINE
POWER POLE	OVERHEAD POWER LINE
ELECTRIC BOX	UNDERGROUND POWER LINE
TELEPHONE PEDISTOOL	TELEPHONE LINE
TREE, AS DESCRIBED	STORM DRAINAGE LINE
GRAND TREE, AS DESCRIBED (24" +)	GAS LINE

NOTES:

1. ANYTHING SHOWN OUTSIDE THE DEFINED BOUNDARY OF THIS PLAT IS FOR DESCRIPTIVE PURPOSES ONLY.
2. AREA DETERMINED BY COORDINATE (DMD) METHOD.
3. THE PUBLIC RECORDS REFERENCED ON THIS PLAT ARE ONLY THOSE USED AND NECESSARY FOR THE ESTABLISHMENT OF THE BOUNDARY OF THIS PROPERTY. THEY ARE NOT AND DO NOT CONSTITUTE A TITLE SEARCH.
4. THE PROPERTY IS LOCATED IN FLOOD ZONE X AS SCALED FROM F.I.R.M PANEL NO. 45019C0190J. REVISED NOV. 17, 2004.
5. THE LOCATION OF OBVIOUS, ACCESSIBLE UTILITIES WERE PHYSICALLY SURVEYED. UNDERGROUND, INACCESSIBLE UTILITIES ARE SHOWN IN AN APPROXIMATE LOCATION ONLY.
6. COORDINATES ARE BASED ON SOUTH CAROLINA STATE PLANE (NAD 83).
7. ELEVATIOS ARE BASED ON NGVD 1929.
7. WETLANDS WERE NOT SURVEYED FOR THIS BOUNDARY.
8. EASEMENTS MAY EXIST OUTSIDE THE KNOWLEDGE OF THE SURVEYOR WHICH WERE NOT SHOWN ON THE REFERENCE PLATS.

* BENCHMARK INFORMATION
CONTACT: MICHAEL SCHMIEDER
SOUTHEASTERN LAND SURVEYING, LLC
843-795-9330

PARCEL CURVE TABLE					
Curve #	Length	Radius	Delta	Chord Direction	Chord Length
C1	272.76	3769.72	004.1457	N82°30'05"E	272.70
C2	19.60	3769.72	000.2980	N80°11'39"E	19.60
C3	281.36	3769.72	004.2764	N77°25'37"E	281.88
C4	225.76	50.00	258.6943	N29°31'18"E	77.33

REFERENCES

PLAT BOOK	PAGE
BW	198
CO	119
S18	0245
BW	4
N	160
O	94

DEED BOOK	PAGE
R186	275
G180	564

SC DOT DOCKET NO. 10.743
SHEET 30-31

I HEREBY STATE TO THE BEST OF MY KNOWLEDGE, INFORMATION, AND BELIEF, THE SURVEY SHOWN HEREON WAS MADE IN ACCORDANCE WITH THE REQUIREMENTS OF THE STANDARDS OF PRACTICE MANUAL FOR LAND SURVEYING IN SOUTH CAROLINA, AND MEETS OR EXCEEDS THE REQUIREMENTS FOR A CLASS "A" SURVEY AS SPECIFIED THEREIN.

JOHN T. BYRNES III S.C.P.L.S. No. 16115

SOUTH CAROLINA REGISTERED LAND SURVEYOR JOHN T. BYRNES III 16115

SOUTH CAROLINA SOUTHEASTERN LAND SURVEYING LLC CERTIFICATE OF AUTHORIZATION C04554

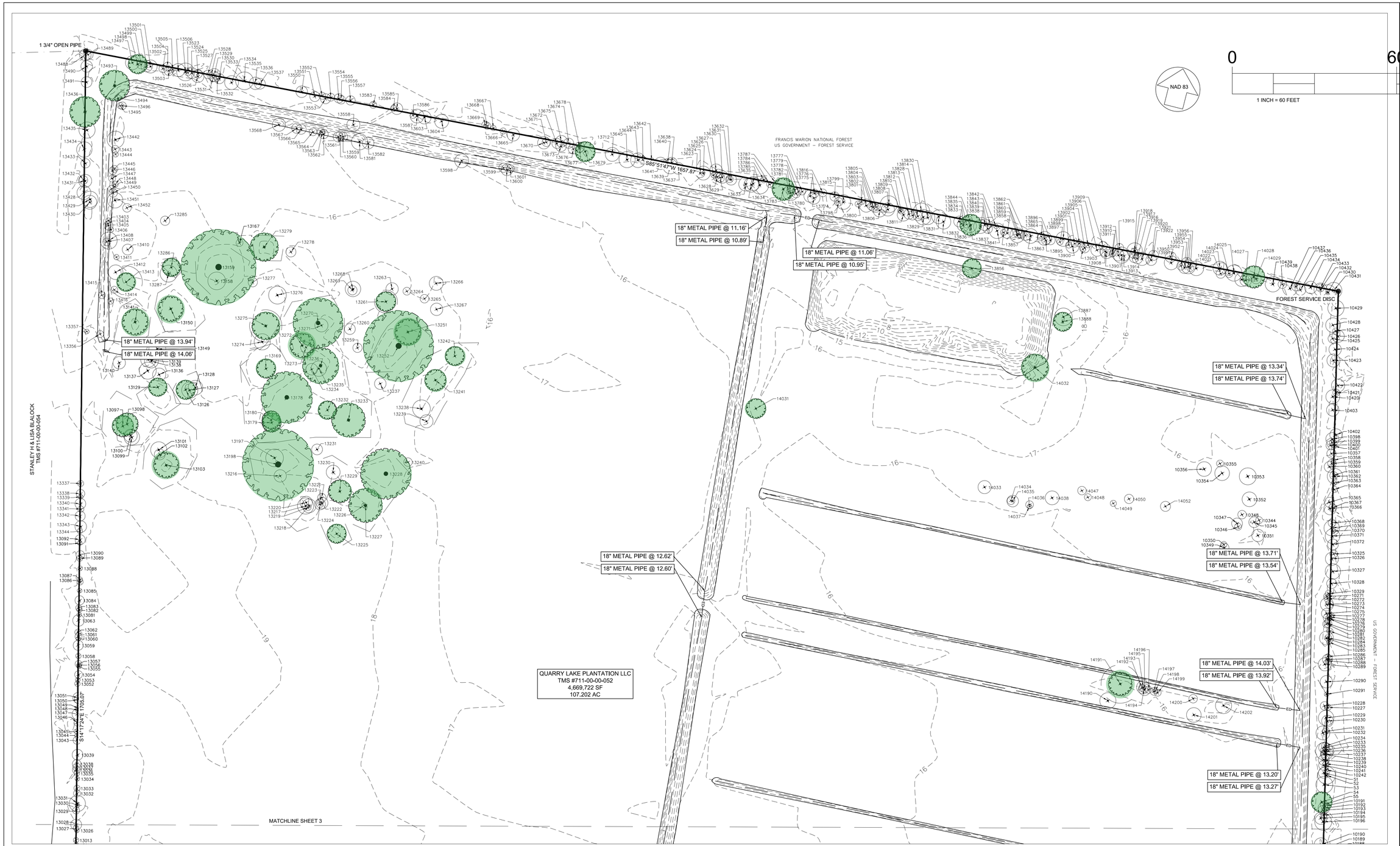
NO.	DATE	DESCRIPTION	BY

SOUTHEASTERN LAND SURVEYING LLC
1035-B JENKINS ROAD
CHARLESTON SC 29407
(843)795-9330

A TREE AND TOPOGRAPHICAL SURVEY OF TMS #711-00-00-052 KAISER FARM

OWNED QUARRY LAKE PLANTATION, LLC
LOCATED NEAR THE TOWN OF AWENDAW
CHARLESTON COUNTY, SOUTH CAROLINA

DATE:	09-18-2019
DRAWN:	MAS
CHECK:	PRB
CC:	SS
JOB:	19131
DWG:	19131TOPO
SHEET:	1 OF 6



NO.	DATE	DESCRIPTION	BY

SOUTHEASTERN LAND SURVEYING LLC
1035-B JENKINS ROAD
CHARLESTON SC 29407
(843)795-9330

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LOCATED NEAR THE TOWN OF AWENDAW
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JOB:	19131
DWG:	19131TOPO
SHEET:	2 OF 6

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JOHN T. BYRNES III S.C.P.L.S. No. 16115

SOUTH CAROLINA REGISTERED LAND SURVEYOR 16115 JOHN T. BYRNES III

SOUTH CAROLINA SOUTHEASTERN LAND SURVEYING LLC C0455A CERTIFICATE OF AUTHORIZATION

LEGEND

- PROPERTY CORNER FOUND, AS DESCRIBED
- PROPERTY CORNER, SET
- POWER POLE
- ELECTRIC BOX
- TELEPHONE PEDISTOOL
- TREE, AS DESCRIBED
- GRAND TREE, AS DESCRIBED (24" +)

LEGEND

- PROPERTY LINE
- ADJACENT PROPERTY LINE
- OVERHEAD POWER LINE
- UNDERGROUND POWER LINE
- TELEPHONE LINE
- STORM DRAINAGE LINE
- GAS LINE

REFERENCES

PLAT BOOK	PAGE
BW	198
CO	119
S18	0245
BW	4
N	160
O	94

DEED BOOK	PAGE
R186	275
G180	564

SC DOT DOCKET NO. 10.743
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MATCHLINE SHEET 2

MATCHLINE SHEET 4

STANLEY H. & LISA BLALOCK
TMS #711-00-00-054

JOSEPHINE SIDBURY ET. AL.
TMS #711-00-00-055

CARLTON & JOHN MICHAEL SMALLS
TMS #711-00-00-056

HERMAN L. GREEN
TMS #711-00-00-057

US GOVERNMENT - FOREST SERVICE

24" METAL PIPE @ 14.56'

24" METAL PIPE @ 13.60'

18" RCP @ 15.14'

18" RCP @ 14.28'

IRON PIPE IN ROOT

18" METAL PIPE @ 14.03'

18" METAL PIPE @ 13.83'

15" METAL PIPE @ 14.41'

12" RCP @ 15.42'

18" METAL PIPE @ 14.87'

18" METAL PIPE @ 14.13'

18" METAL PIPE @ 12.88'

18" METAL PIPE @ 12.92'

18" METAL PIPE @ 12.59'

18" METAL PIPE @ 12.29'

20" METAL PIPE @ 13.60'

18" METAL PIPE @ 14.00'

18" HDPE @ 12.38'

18" HDPE @ 14.22'

N13°27'26"W 1802.90'

NAD 83

0 60 120 Feet

1 INCH = 60 FEET

LEGEND

- PROPERTY CORNER FOUND, AS DESCRIBED
- PROPERTY CORNER, SET
- POWER POLE
- ELECTRIC BOX
- TELEPHONE PEDISTOOL
- TREE, AS DESCRIBED
- GRAND TREE, AS DESCRIBED (24" +)

LEGEND

- PROPERTY LINE
- ADJACENT PROPERTY LINE
- OVERHEAD POWER LINE
- UNDERGROUND POWER LINE
- TELEPHONE LINE
- STORM DRAINAGE LINE
- GAS LINE

REFERENCES

PLAT BOOK	PAGE
BW	198
CO	119
S18	0245
BW	4
N	160
O	94

DEED BOOK	PAGE
R186	275
G180	564

SC DOT DOCKET NO. 10.743
SHEET 30-31

NOTES:

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JOHN T. BYRNES III S.C.P.L.S. No. 16115

SOUTH CAROLINA REGISTERED LAND SURVEYOR 16115 JOHN T. BYRNES III

SOUTH CAROLINA SOUTHEASTERN LAND SURVEYING LLC C0455A CERTIFICATE OF AUTHORIZATION

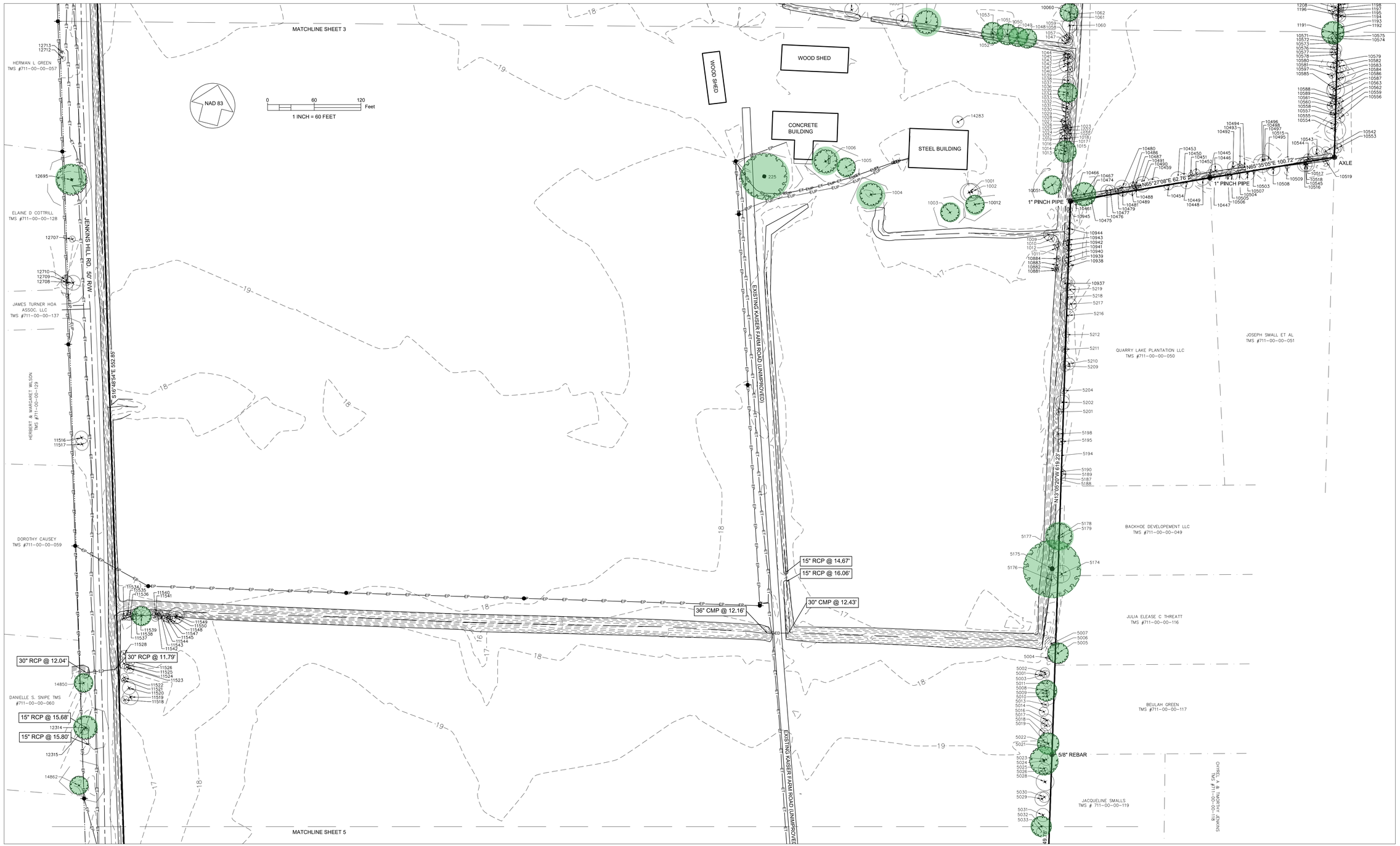
NO.	DATE	DESCRIPTION	BY

SOUTHEASTERN LAND SURVEYING LLC
1035-B JENKINS ROAD
CHARLESTON SC 29407
(843)795-9330

A TREE AND TOPOGRAPHICAL SURVEY OF TMS #711-00-00-052 KAISER FARM

OWNED QUARRY LAKE PLANTATION, LLC
LOCATED NEAR THE TOWN OF AWENDAW
CHARLESTON COUNTY, SOUTH CAROLINA

DATE:	09-18-2019
DRAWN:	MAS
CHECK:	PRB
CC:	SS
JOB:	19131
DWG:	19131TOPO
SHEET:	3 OF 6



NO.	DATE	DESCRIPTION	BY

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JOHN T. BYRNES III S.C.P.L.S. No. 16115

SOUTH CAROLINA REGISTERED LAND SURVEYOR 16115 JOHN T. BYRNES III

SOUTH CAROLINA SOUTHEASTERN LAND SURVEYING LLC CERTIFICATE OF AUTHORIZATION C04554

LEGEND

- PROPERTY CORNER FOUND, AS DESCRIBED
- PROPERTY CORNER, SET
- POWER POLE
- ELECTRIC BOX
- TELEPHONE PEDISTOOL
- TREE, AS DESCRIBED
- GRAND TREE, AS DESCRIBED (24" +)

LEGEND

- PROPERTY LINE
- ADJACENT PROPERTY LINE
- OVERHEAD POWER LINE
- UNDERGROUND POWER LINE
- TELEPHONE LINE
- STORM DRAINAGE LINE
- GAS LINE

REFERENCES

PLAT BOOK	PAGE
BW	198
CO	119
S18	0245
BW	4
N	160
O	94

DEED BOOK	PAGE
R186	275
G180	564

SC DOT DOCKET NO. 10.743
SHEET 30-31

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DATE:	09-18-2019
DRAWN:	MAS
CHECK:	PRB
CC:	SS
JOB:	19131
DWG:	19131TOPO
SHEET:	4 OF 6

NO.	DATE	DESCRIPTION	BY

SOUTHEASTERN LAND SURVEYING LLC
1035-B JENKINS ROAD
CHARLESTON SC 29407
(843)795-9330

A TREE AND TOPOGRAPHICAL SURVEY OF TMS #711-00-00-052 KAISER FARM

OWNED QUARRY LAKE PLANTATION, LLC
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JOHN T. BYRNES III S.C.P.L.S. No. 16115

SOUTH CAROLINA REGISTERED LAND SURVEYOR 16115 JOHN T. BYRNES III

SOUTH CAROLINA SOUTHEASTERN LAND SURVEYING LLC C0455A CERTIFICATE OF AUTHORIZATION

LEGEND

- PROPERTY CORNER FOUND, AS DESCRIBED
- PROPERTY CORNER, SET
- POWER POLE
- ELECTRIC BOX
- TELEPHONE PEDISTOOL
- TREE, AS DESCRIBED
- GRAND TREE, AS DESCRIBED (24" +)

LEGEND

- PROPERTY LINE
- ADJACENT PROPERTY LINE
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DRAWN:	MAS
CHECK:	PRB
CC:	SS
JOB:	19131
DWG:	19131TOPO
SHEET:	5 OF 6

51	14	PINE
52	17+6	PINE
53	16+6	PINE
54	22+5	PINE
55	10	PINE
225	30+29	LO
245	15	PINE
246	10	PINE
247	12	PINE
248	9	PINE
249	10	PINE
250	15	PINE
251	15	PINE
252	12	PINE
253	15+10	PINE
254	12	PINE
255	10	PINE
256	13	PINE
257	11	PINE
258	8	PINE
259	11	PINE
260	15	PINE
261	15	PINE
262	23	PINE
263	11	PINE
264	12	PINE
311	10	PINE
1001	23	PINE
1002	22	LO
1003	24	CEDAR
1004	29	LO
1005	24	GUM
1006	30	GUM
1009	13	PINE
1010	8	PINE
1011	6	PINE
1012	7	PINE
1013	16	PINE
1014	12+7+5+4	PINE
1015	9	PINE
1016	19	PINE
1017	10+8	PINE
1018	17	PINE
1019	8	PINE
1020	10+3	PINE
1021	12	PINE
1022	6	PINE
1023	10	PINE
1024	7	PINE
1025	13	PINE
1223	15	PINE
1248	17+7	PINE
1273	16+7	PINE
1298	22+6	PINE
1323	11	PINE
1348	30+30	LO
1373	15	PINE
1398	10	PINE
1423	12	PINE
1448	9	PINE
1473	10	PINE
1498	15	PINE
1523	15	PINE
1548	12	PINE
1573	15+11	PINE
1598	12	PINE
1623	10	PINE
1648	13	PINE
1673	11	PINE
1699	8	PINE
1724	11	PINE
1749	15	PINE
1774	15	PINE
1799	23	PINE
1824	11	PINE
1849	12	PINE
1874	10	PINE
1899	23	PINE
1924	22	LO
1949	24	CEDAR
1974	29	LO
1999	24	GUM
2024	30	GUM
2049	13	PINE
2074	8	PINE
2099	6	PINE
2124	7	PINE
2149	16	PINE
2174	12+7+5+5	PINE
2199	29	PINE
2224	39	PINE
2250	10+9	PINE
2275	1	PINE
2300	10	PINE
2325	10+4	PINE
2350	12	PINE
2375	6	PINE
2400	10	PINE
2425	7	PINE
2450	13	PINE

1082	6+4	GUM
1083	16	PINE
1084	22	PINE
1085	19	PINE
1086	10	GUM
1087	6	GUM
1088	24	PINE
1089	13	PINE
1090	21+6	PINE
1091	15	PINE
1092	19	PINE
1093	17	PINE
1094	11	PINE
1095	11	PINE
1096	21	PINE
1097	16+16+9	PINE
1098	6	lo
1099	28	PINE
1100	15	PINE
1101	15	PINE
1102	20	PINE
1103	17	PINE
1104	19	PINE
1105	15	PINE
1106	16	PINE
1107	19	PINE
1108	11	PINE
1109	13	PINE
1110	15	PINE
1111	16	PINE
1112	17	PINE
1113	6	PINE
1114	18	PINE
1115	19	PINE
1116	17	PINE
1117	12	PINE
1118	8	PINE
1119	17	PINE
1120	18	PINE
1121	12	PINE
1122	24	PINE
1123	14	PINE
1124	8	LO
1125	25	PINE
1126	19	PINE
1127	16	PINE
1129	15	PINE
1133	6	GUM
1134	15	PINE
1135	6+6	GUM
1136	20	PINE
1137	16	PINE
1138	7	PINE
1139	12+12+6	PINE
1140	8+6+5+5+3	POPLAR
1141	16	PINE
1142	14	PINE
1143	20	PINE
1144	6	GUM
1145	6	GUM
1146	9+7+6+3+2	POPLAR
1147	18	PINE
1148	7	PINE
1149	6	GUM
1150	6	GUM
1151	15+14	PINE
1152	14	PINE
1153	8	LO
1154	19	PINE
1155	6	PINE
1156	14	PINE
1157	15	PINE
1158	7	PINE
1159	7	PINE
1160	21	PINE
1161	6	PINE
1162	12	PINE
1163	10	PINE
1164	18+10	PINE
1165	7	PINE
1166	15	PINE
1167	9	PINE
1168	15	PINE
1169	6	LO
1170	10	PINE
1171	14	PINE
1172	6	PINE
1173	12	PINE
1174	11	PINE
1175	8	PINE
1176	7	PINE
1177	8	PINE
1178	12	PINE
1179	19	PINE
1180	8	PINE
1181	9	PINE
1182	12	PINE
1183	14+10	PINE
1184	14	PINE
1185	8	PINE

1186	6+4	PINE
1187	13	PINE
1188	8+7	PINE
1190	14	PINE
1191	13+10+6	PINE
1192	6	PINE
1193	14	GUM
1194	13	PINE
1195	14	PINE
1196	10	PINE
1197	6	LO
1198	6	LO
1199	16+5	PINE
1200	19	PINE
1208	6	PINE
1209	12	PINE
1210	6	PINE
1211	6	PINE
1212	15+8	PINE
1213	13	PINE
1214	14	PINE
1215	12	PINE
1216	9	PINE
1217	6	GUM
1218	13	pine
1219	11	PINE
1220	15	PINE
1221	21	LO
1222	8	PINE
1223	7	PINE
1224	11	PINE
1225	8	PINE
1226	7	PINE
1235	8	PINE
1236	7	PINE
1237	17+9	GUM
1238	12	PINE
1239	6	PINE
1240	13	PINE
1241	9	PINE
1242	6	PINE
1243	10	PINE
1244	12	PINE
1245	9	PINE
1246	8	PINE
1247	6	LO
1248	7	PINE
1249	11	PINE
1250	6	PINE
1251	18	PINE
1252	12	PINE
1253	12	PINE
1254	7	GUM
1255	6	LO
1256	13	PINE
1257	13	PINE
1258	6+5	GUM
1259	17	PINE
1260	14	PINE
1268	10	PINE
1269	6	GUM
1270	6	PINE
1271	14+9	PINE
1272	10	PINE
1273	9	PINE
1274	10	PINE
1275	8	PINE
1276	19	PINE
1277	14	PINE
1278	13+3+3	PINE
1279	14	PINE
1280	12+6+4	PINE
1281	12	PINE
1282	12	PINE
1283	8	PINE
1284	6	PINE
1285	16	PINE
1286	11	PINE
1296	16	PINE
1297	7	PINE
1298	11	PINE
1299	7	PINE
1300	6	PINE
1301	14	PINE
1302	8+4	PINE
5001	12	PINE
5002	12	PINE
5003	10	PINE
5004	8	OAK
5005	27	PINE
5006	8	GUM
5007	10+7	OAK
5008	27	PINE
5009	8	PINE
5010	22	PINE
5011	9	PINE
5013	8	PINE
5014	12	PINE
5016	16	PINE
5017	14	PINE

5018	12	LO
5019	11	PINE
5021	11	LO
5022	28	PINE
5023	15	PINE
5024	20+17	LO
5025	15	PINE
5026	8	PINE
5028	15+8	PINE
5029	18	PINE
5030	14	PINE
5031	17	PINE
5032	26	PINE
5033	14	PINE
5034	12	PINE
5035	16	PINE
5036	10	LAO
5037	18	PINE
5038	10	PINE
5039	10	PINE
5040	8	PINE
5041	18	PINE
5043	15	PINE
5044	14	PINE
5046	15	PINE
5047	26	PINE
5048	12	PINE
5174	22	PINE
5175	7+4	LO
5176	8+7	LO
5177	12	PINE
5178	24+10	PINE
5179	13	PINE
5187	8	OAK
5188	10	PINE
5189	12	PINE
5190	14	PINE
5194	9	PINE
5195	8	OAK
5198	14	PINE
5201	8	WO
5202	18	PINE
5204	8	WO
5209	13	PINE
5210	15	PINE
5211	8	PINE
5212	8	PINE
5216	17	PINE
5217	14	WO
5218	18	PINE
5219	13	PINE
10012	24	LO
10051	24	LO
10060	24	PINE
10062	24	PINE
10063	25+13	PINE
10064	24+9	PINE
10068	19	PINE
10077	14+6+4+3	PINE
10078	13+6	PINE
10079	10	PINE
10080	11	PINE
10081	12+9	PINE
10082	15	PINE
10083	8	PINE
10084	14	PINE
10085	9+9+5	PINE
10086	8	PINE
10087	10	PINE
10088	6	PINE
10089	13+6+5	PINE
10090	10	PINE
10091	12+5	PINE
10092	6	PINE
10093	11+5	PINE
10094	13	PINE
10095	6	PINE
10096	13	PINE
10097	13	PINE
10098	7	PINE
10099	11+11+4	PINE
10100	11+10	PINE
10101	6	PINE
10102	9	PINE
10103	15	PINE
10104	14+6	PINE
10105	6	PINE
10106	12	PINE
10107	12	PINE
10108	6	GUM
10109	8	PINE
10110	13	PINE
10111	6	PINE
10112	3+3	PINE
10113	19	PINE
10114	8	PINE
10115	6	PINE
10116	12	PINE
10117	8	PINE
10118	14	PINE

10119	9	PINE
10120	12+3	PINE
10121	6	PINE
10122	9	PINE
10123	15	PINE
10124	6	PINE
10125	15	PINE
10126	6	PINE
10127	13	PINE
10128	6	PINE
10129	6	PINE
10130	17+6	PINE
10131	6	PINE
10132	6	GUM
10133	6	TUPELO
10134	9	PINE
10135	8+3	PINE
10136	12	PINE
10137	10	PINE
10138	15	PINE
10139	14	PINE
10140	12	PINE
10141	7	PINE
10142	10+10+6	PINE
10143	13	PINE
10144	19	PINE
10145	12	PINE
10146	9+5	PINE
10147	9	PINE
10148	11	PINE
10149	13	PINE
10150	7	PINE
10151	16	PINE
10152	15	PINE
10153	17+5	PINE
10154	21	PINE
10155	9	GUM
10160	6	GUM
10161	17	PINE
10162	17	PINE
10163	13+13	PINE
10164	7	PINE
10165	15	PINE
10166	7	MAPLE
10167	8	GUM
10168	6	GUM
10169	13+13	PINE
10170	7	PINE
10171	8	PINE
10172	17	PINE
10173	13+12+9+4	PINE
10174	17	PINE
10175	9	GUM
10176	6	GUM
10177	7	GUM
10178	14+6+5	PINE
10179	9+8+3	PINE
10180	14	PINE
10181	15	PINE
10182	10	PINE
10183	8	PINE
10184	14	PINE
10185	16	PINE
10186	11	PINE
10187	17	PINE
10188	14	PINE
10189	6	GUM
10190	18	PINE
10191	6	PINE
10192	15	PINE
10193	12	PINE
10194	8	GUM
10195	16	PINE
10196	17+5	PINE
10227	8	GUM
10228	11	PINE
10229	20	PINE
10230	15	PINE
10231	8	GUM
10232	18	PINE
10233	14	PINE
10234	5+5	GUM
10235	8	PINE
10236	11+6+6	PINE
10237	8	PINE
10238	13	PINE
10239	14+7	PINE
10240	8	PINE
10241	13	PINE
10242	6	GUM
10271	9	PINE
10272	9	PINE
10273	17	PINE
10274	5+5	GUM
10275	13	PINE
10276	11	PINE
10277	8	GUM
10278	8	GUM
10279	6	GUM
10280	7+3	WO
10281	10	WO
10282	8	GUM
10283	18	PINE
10284	5+4	WO
10285	6	GUM
10286	7	GUM
10287	8+5	GUM
10288	6	GUM
10289	17	PINE
10290	16	PINE

10291	6	GUM
10325	10	PINE
10326	9+8	GUM
10327	20	PINE
10328	13	PINE
10329	9	PINE
10344	9	GUM
10345	14	GUM
10346	9	GUM
10347	14	GUM
10348	11	GUM
10349	12	GUM
10350	8	GUM
10351	16	PINE
10352	19	PINE
10353	22	PINE
10354	19	PINE
10355	9	PINE
10356	19	PINE
10357	7+5	PINE
10358	6	PINE
10359	11	PINE
10360	14	PINE
10361	10	PINE
10362	10+10	PINE
10363	6	PINE
10364	8	GUM
10365	13	PINE
10366	16	PINE
10367	5+5	GUM
10368	10	PINE
10369	20	PINE
10370	6	GUM
10371	19	PINE
10372	14	PINE
10398	17	PINE
10399	7	GUM
10400	12	PINE
10401	6	GUM
10402	8+8	GUM
10403	16	PINE
10420	18	PINE
10421	9	PINE
10422	17	PINE
10423	17	PINE
10424	16	PINE
10425	12	PINE
10426	16	PINE
10427	8	PINE
10428	19	PINE
10429	21	PINE
10430	20	PINE
10431	11+10	PINE
10432	17	PINE
10433	10	PINE
10434	16	PINE
10435	14	PINE
10436	11	PINE
10437	19	PINE
10438	11	PINE
10439	20	PINE
10445	10	PINE
10446	17	PINE
10447	14	GUM
10448	17	PINE
10449	9+7	PINE
10450	12	PINE
10451	6	PINE
10452	10	PINE
10453	19	PINE
10454	12	PINE
10459	12	PINE
10460	13	PINE
10461	10	TUPELO
10466	13	GUM
10467	16+14	GUM
10474	6	PINE
10475	9	PINE
10476	10+6	PINE
10477	13	PINE
10479	8	GUM
10480	19	PINE
10481	8+4	GUM
10486	8	PINE
10487	9	LO
10488	7	MAPLE
10489	9	PINE
10490	11+9	PINE
10491	14	PINE
10492	14	PINE
10493	6	GUM
10494	8	PINE
10495	8	GUM
10496	23	PINE
10497	18	PINE
10498	8	GUM
10503	7	TUPLEO
10504	17+5	PINE
10505	15	PINE
10506	7	PINE
10507	19	PINE
10508	17	PINE
10509	7	TUPELO
10515	11	GUM
10516	19	PINE
10517	19	PINE
10518	7	PINE
10519	7	WO
10542	11	PINE
10543	19	PINE

10544	12	PINE
10545	7	PINE
10553	12	WO
10554	27	PINE
10555	9	PINE
10556	13	PINE
10557	7	PINE
10558	11	PINE
10559	8	GUM
10560	12	PINE
10561	12	PINE
10562	7	WO
10563	10	PINE
10571	11	PINE
10572	13	PINE
10573	6	PINE
10574	11	PINE
10575	6	GUM
10576	13	PINE
10577	14	PINE
10578	12	PINE
10579	8	GUM
10580	8	PINE
10581	10	PINE
10582	17	PINE
10583	5+3	WO
10584	13+4	WO
10585	7	PINE
10586	13+4	PINE
10587	13+6+4	PINE
10588	6	PINE
10589	8	PINE
10597	7	GUM
10598	13	PINE
10599	8	PINE
10600	8	PINE
10601	7	PINE
10602	8	PINE
10603	12	PINE
10604	8	PINE
10605	6	PINE
10606	12	PINE
10607	7	PINE
10608	19	PINE
10609	13	PINE
10610	13	PINE
10611	11	PINE
10612	9	PINE
10613	8	PINE
10614	7	PINE
10615	8	LO
10616	14	PINE
10617	9	LO
10618	14	PINE
10619	9	PINE
10620	8	PINE
10621	6	PINE
10622	6	GUM
10623	8	PINE
10624	6	PINE
10625	9	PINE
10626	9	PINE
10627	8	PINE
10628	17	PINE
10629	7	PINE
10630	12	PINE
10631	6	PINE
10644	11	PINE
10645	8+5	PINE
10646	6	PINE
10647	10	PINE
10648	14	PINE
10649	6	PINE
10650	8	PINE
10651	8	PINE
10652	11	PINE
10718	31	LO
10881	6	PINE
10882	6	PINE
10883	8	PINE
10884	7	PINE
10937	6+4+4	WO
10938	8	WO
10939	7	GUM
10940	9	WO
10941	9	GUM
10942	11	PINE
10943	7	TUPELO
10944	11+5	WO
10945	7	TUPELO
11372	29	LO
11373	26	LO
11374	21+17+17	LO
11375	21	LO
11516	17	LO
11517	16	LO
11518	10	GUM
11519	20	WO
11520	17	WO
11521	6	BIRCH
11522	10	WO
11523	13	WO
11524	7	WO
11525	13	WO
11526	6+6	WO
11527	7	WO
11528	9	MAPLE
11534	6	BIRCH
11535	7+6	BIRCH
11536	6+4	BIRCH

11537	6	BIRCH
11538	8+6	BIRCH
11539	10+9+6	MAPLE
11540	11	GUM
11541	8	GUM
11542	8+6	GUM
11543	7	BIRCH
11544	6	GUM
11545	10	GUM
11546	8	GUM
11547	11	WO
11548	12	GUM
11549	10+10	GUM
11550	16	LO
11875	19	PINE
11876	19	PINE
12153	34	LO
12154	8	PINE
12155	7	BIRCH
12156	19	WO
12157	8	GUM
12158	12	WO
12159	8	BIRCH
12160	9+8	WO
12161	18	PINE
12162	15	PINE
12163	17	PINE
12164	11+4	PINE
12165	16	PINE
12166	9	ORNAMENTAL
12167	16	PINE
12168	4+3	LO
12169	7	PINE
12170	21	PINE
12171	28+8	PINE
12175	16	PINE
12176	12	PINE
12177	25	PINE
12178	21	PINE
12179	15	PINE
12180	12	PINE
12181	10	PINE
12183	18	PINE
12184	17	PINE
12185	15	PINE
12186	12	PINE
12187	8	PINE
12188	19	PINE
12308	9	PECAN
12314	16+14	WO
12315	9+5	WO
12695	40	LO
12707	8	WO
12708	13+6	LO
12709	16	LO
12710	13	LO
12712	3	ORNAMENTAL
12713	3	ORNAMENTAL
12714	18	PINE
12715	18	LO
12720	19	PINE
12721	19	PINE
12722	17	PINE
12723	17	PINE
12724	17	PINE
12725	19	PINE
12726	19	PINE
12727	21	PINE
12728	21	PINE
12729	18	PINE
12730	11	PINE
12731	15	PINE
12732	19	PINE
12733	18	PINE
12734	18	PINE
12735	19	PINE
12736	18	PINE
12737	16	PINE
12738	19	PINE
12739	17	PINE
12740	17	PINE
12741	18	PINE
12742	20	PINE
12743	30	PINE
12744	20+12	PINE
12745	19	PINE
12746	23	PINE
12747	20	PINE
12748	24	PINE
12749	18+17	PINE
12750	25	PINE
12751	25	PINE
12752	19	PINE
12753	26	PINE
12754	24	PINE
12755	19	PINE
12756	5+4+4+3	MAGNOLIA
12757	4+4+3+3	HOLLY
12758	5+5+3	HOLLY
12759	3+3	HOLLY
12760	24	PINE
12761	6	MAGNOLIA
12762	6	MAGNOLIA
12763	5+3	MAGNOLIA
12764	5+3	MAGNOLIA
12765	5+4	MAGNOLIA
12766	4+2	LO
12767	6+5	MAGNOLIA
12768	7	MAGNOLIA
12769	6	PEAR

12770	10	LO
12771	7	WO
12772	6	MAGNOLIA
12773	3	ORNAMENTAL
12774	11	WO
12775	9	POPLAR
12793	9	WO
12794	12+8	WO
12795	6	WO
12796	8	WO
12797	7+4	LO
12798	8	WO
12799	20	WO
12800	10+6	LO
12801	10	PINE
12802	8	PINE
12803	14	PINE
12804	15	PINE
12805	19	PINE
12806	11+5	PINE
12807	14	PINE
12808	13	PINE
12809	10	PINE
12810	17+5	PINE
12811	15	PINE
12812	15	PINE
12827	25	PINE
12828	6	WO
12829	14+14	PINE
12830	11	PINE
12831	5+2	WO
12832	8	WO
12833	16	PINE
12834	6	PINE
12835	11	PINE
12836	8	WO
12837	10	WO
12838	17	PINE
12839	14	PINE
12840	14	PINE
12856	17	PINE
12857	6+5	WO
12858	5+3	WO
12859	20	PINE
12860	10	WO
12861	15	PINE
12862	7+6	LO
12863	17	PINE
12864	6	WO
12865	12	PINE
12866	11+8	WO
12867	11	GUM
12868	7	TUPELO
12869	25+10	PINE
12870	16+4	PINE
12871	6	pine
12872	6	TUPELO
12873	20	PINE
12874	6	pine
12875	6	TUPELO
12876	8	WO
12877	6	WO
12892	6	WO
12893	12+11	LO
12894	9	WO
12895	12	WO
12896	10	GUM
12897	10	WO
12898	9	GUM
12899	12	GUM
12900	6	WO
12901	12	GUM
12915	13+5	WO
12916	8	WO
12917	16	PINE
12918	8+5	LO
12919	9	TUPELO
12920	7	TUPELO
12921	6	WO
12922	14	PINE
12923	16	LO
12924	10	WO
12955	21	PINE
12969	9	LO
12970	9	LO
12971	21+7	LO
12972	15	PINE
12973	9	LO
13002	8	WO
13003	10	WO
13004	6+5	WO
13005	6	WO
13006	8+6+5	WO
13007	10	WO
13008	8+3	LO
13009	9+9+	LO
13010	10+6+5	WO
13011	7	WO
13012	10	WO
13013	7	WO
13014	6	WO
13015	7	WO
13016	8	LO
13017	4+3	LO
13018	8+8	LO
13019	9	LO
13020	7	WO
13026	6	LO
13027	7	LO
13028	9+5	LO

13029	5+4	LO
13030	6	LO
13031	13+8	LO
13032	5+4	LO
13033	5+3	LO
13034	6	LO
13035	7	LO
13036	10	WO
13037	10	WO
13038	6+5	LO
13039	14	LO
13043	10	WO
13044	6	WO
13045	6	HICKORY
13046	8	WO
13047	14	WO
13048	8	GUM
13049	8	LO
13050	11	GUM
13051	7+7	GUM
13052	7	WO
13053	6	WO
13054	10	GUM
13055	6	LO
13056	6	LO
13057	9	LO
13058	7	WO
13059	7+6	LO
13060	6	WO
13061	9	LO
13062	8	LO
13063	8+7	WO
13081	6	LO
13082	7	LO
13083	8	LO
13084	7+5	WO
13085	6	LO
13086	8	WO
13087	7	WO
13088	3+3	WO
13089	8	WO
13090	6+5	LO
13091	6	WO
13092	13	WO
13097	28	LO
13098	29	LO
13099	20	GUM
13100	10+7	GUM
13101	21	LO
13102	14	LO
13103	33	LO
13126	25	WO
13127	21	LO
13128	19	LO
13129	24	LO
13136	17	LO
13137	22	LO
13138	18	LO
13139	20	LO
13140	16	WO
13141	34	LAO
13149	22	WO
13150	33	LO
13158	23	LO
13159	29+25+23+21	LO
13167	9	LO
13169	25	LO
13178	19+18+16+14	LO
13179	25	LO
13180	24	LO
13196	24	LO
13197	23	GUM
13198	29+23+22+19	LO
13216	10+6	WO
13217	21	LO
13218	18	LO
13219	8	GUM
13220	16	LO
13221	11	LO
13222	15	LO
13223	8	LO
13224	7+7	LO
13225	25	WO
13226	6	GUM
13227	24+20	LO
13228	26+20+20	LO
13229	30	LO
13230	18	WO
13231	14	WO
13232	24	LO
13233	25+19	LO
13234	15	LO
13235	20	LO
13236	29+18	LO
13237	15	LO
13238	23	LO
13239	17	GUM
13240	11	LO
13241	28	LO
13242	25	LO
13251	34	LO
13252	39+20+18+15	LO
13259	12	LO
13260	14	LO
13261	20+6	GUM
13263	16	WO
13264	10	WO
13265	11	LO
13266	18	WO
13267	16	WO

13268	20	GUM
13269	12	LO
13270	23+21+21	LO
13271	17	WO
13272	17+15	LO
13273	14	LO
13274	21	GUM
13275	18+18	GUM
13276	23	GUM
13277	12	WO
13278	13	WO
13279	37	WO
13285	12	WO
13286	24	WO
13287	22	WO
13337	8	WO
13338	11	WO
13339	6	WO
13340	8+6	WO
13341	8	LO
13342	8+5	LO
13343	9+6	WO
13344	7	WO
13356	5+4	GUM
13357	6	GUM
13403	7	WO
13404	7	WO
13405	12	GUM
13406	7	WO
13407	10	GUM
13408	22	PINE
13410	14	LO
13411	7	WO
13412	19	MAPLE
13413	24	TUPELO
13414	9	WO
13415	5+2+2	GUM
13416	8	WO
13428	18	PINE
13429	21	WO
13430	18	WO
13431	17	PINE
13432	11	GUM
13433	12	PINE
13434	20	WO
13435	21	GUM
13436	19+12+9	PINE
13442	22	PINE
13443	6+4	GUM
13444	7	GUM
13445	9	GUM
13446	10	WO
13447	9	GUM
13448	8	GUM
13449	9	WO
13450	11	WO
13451	20	PINE
13452	11	WO
13488	15	PINE
13489	13	PINE
13490	15	PINE
13491	14	PINE
13493	14+14+12	PINE
13494	8	GUM
13495	8	PINE
13496	10	PINE
13497	18	PINE
13498	17+8	PINE
13499	11	PINE
13500	9+6	PINE
13501	17	PINE
13502	10	PINE
13503	12	PINE
13504	11	TUPELO
13505	6	PINE
13506	17	PINE
13523	14+9	PINE
13524	8	GUM
13525	14	PINE
13526	16	PINE
13527	11	PINE
13528	11	LO
13529	6	WO
13530	9+8	MAPLE
13531	9	PINE
13532	6	WO
13533	13	PINE
13534	18	PINE
13535	13+10	WO
13536	16	PINE
13537	9+5	MAPLE
13550	14	WO
13551	13	WO
13552	9	WO
13553	13	WO
13554	10	GUM
13555	12	GUM
13556	11	WO
13557	12	PINE
13558	11+6	LO
13559	12	PINE
13560	12	PINE
13561	13	PINE
13562	12	PINE
13563	6	GUM
13564	10	PINE
13565	10	PINE
13566	13	PINE
13567	13	PINE
13568	17	PINE

13581	12+9	PINE
13582	15	PINE
13583	9	WO
13584	8	WO
13585	8+7	GUM
13586	8	PINE
13587	18	PINE
13598	18	PINE
13599	12	PINE
13600	15	PINE
13601	10	PINE
13603	17	PINE
13604	18	PINE
13623	10	GUM
13624	12	GUM
13625	18	WO
13626	7	GUM
13627	16	PINE
13628	11	GUM
13629	12	GUM
13630	16	PINE
13631	9	PINE
13632	14	MAPLE
13633	18	PINE
13634	19	PINE
13635	10+8	PINE
13637	15	PINE
13638	14	PINE
13639	19	MAPLE
13640	12	PINE
13641	16	PINE
13642	6	WO
13643	9	TUPELO
13644	19	PINE
13645	21	PINE
13665	16	PINE
13666	8	WO
13667	7	WO
13668	9	WO
13669	9	WO
13670	16	PINE
13671	11	PINE
13672	13	PINE
13673	14	PINE
13674	13	PINE
13675	10+5	GUM
13676	13	PINE
13677	10	MAPLE
13678	13	PINE
13679	19+7	PINE
13712	18	PINE
13774	16	PINE
13775	16	PINE
13776	11	PINE
13777	9	WO
13778	11	PINE
13779	9	WO
13780	20	PINE
13781	6	PINE
13782	8	GUM
13783	16+13	PINE
13784	8	GUM
13785	23	PINE
13786	8	GUM
13787	6	GUM
13798	11	PINE
13799	19	PINE
13800	8	PINE
13801	7	WO
13802	17	PINE
13803	10	PINE
13804	11	PINE
13805	7	PINE
13806	17	PINE
13807	17	PINE
13808	22	PINE
13809	6	GUM
13810	7	GUM
13811	16	PINE
13812	13	PINE
13813	12	PINE
13814	21	PINE
13815	12	PINE
13816	10	PINE
13828	12	PINE
13829	15+5	PINE
13830	18	PINE
13831	18	TUPELO
13832	19	PINE
13833	7+7	MAPLE
13834	16	PINE
13835	9	PINE
13836	17	PINE
13837	15+13	PINE
13838	18	PINE
13839	15	PINE
13840	12	PINE
13841	20	PINE
13842	6	PINE
13843	7	PINE
13844	7	MAPLE
13856	25	PINE
13857	8	PINE
13858	14	PINE
13859	19	PINE
13860	11	PINE
13861	9	PINE
13862	13	PINE
13863	19	PINE
13864	6+4	MAPLE

13865	18	PINE
13887	23	PINE
13888	25	PINE
13895	11	PINE
13896	12	PINE
13897	8	PINE
13898	19	PINE
13899	8	PINE
13900	17	PINE
13901	9	PINE
13902	6+3	MAPLE
13903	7	PINE
13904	13	PINE
13905	7	GUM
13906	16	PINE
13907	16	PINE
13908	14	PINE
13909	6+5	MAPLE
13910	9	PINE
13911	8	PINE
13912	15	PINE
13913	12+9	PINE
13914	13	PINE
13915	11	PINE
13916	12	PINE
13917	9	GUM
13918	20	PINE
13919	13	PINE
13920	17	PINE
13921	14	PINE
13922	13	PINE
13950	14	PINE
13951	18	PINE
13952	11	PINE
13953	15	PINE
13954	13	PINE
13955	18	PINE
13956	9	PINE
14021	19	PINE
14022	12	PINE
14023	18	PINE
14024	10	GUM
14025	21	PINE
14026	18	PINE
14027	15	PINE
14028	17+12	PINE
14029	10+3	GUM
14031	26	PINE
14032	23+9+3	PINE
14033	17	LO
14034	10	WO
14035	9+6	LO
14036	10	WO
14037	6	WO
14038	18	LO
14047	11	WO
14048	9	WO
14049	8	WO
14050	12	GUM
14052	13	GUM
14190	21	GUM
14191	17+14	GUM
14192	9	GUM
14193	9+8	GUM
14194	9	GUM
14195	9+6	GUM
14196	5+4	GUM
14197	10	GUM
14198	6	GUM
14199	9	GUM
14200	11	TUPELO
14201	19	GUM
14202	21	GUM
14283	15	GUM
14529	17	CEDAR
14850	24	PINE
14862	24	LO
14883	11	GUM
14884	10	PINE
14885	11	PINE
14886	11	PINE
14887	11	PINE
14888	7	GUM
14889	12	PINE
14894	12	PINE
14895	7	MAPLE
14896	33	PINE
14897	9	GUM
14898	9	GUM
14899	28	PINE
14900	6	CHERRY
14901	13	MAPLE
14902	8	PINE
14903	12	PECAN
14904	12	GUM
14905	18	PINE
14906	10	GUM
14907	25	PINE
14908	26	PINE
14909	13	GUM
14910	9	GUM
14911	23+14	PINE
14912	23	PINE
14913	19	PINE
14914	18+9	PINE
14915	24	PINE
14916	23	PINE
14917	13	PINE
14918	10	PINE
14919	16+6	PINE
14920	16	PINE

I HEREBY STATE TO THE BEST OF MY KNOWLEDGE, INFORMATION, AND BELIEF, THE SURVEY SHOWN HEREON WAS MADE IN ACCORDANCE WITH THE REQUIREMENTS OF THE STANDARDS OF PRACTICE MANUAL FOR LAND SURVEYING IN SOUTH CAROLINA, AND MEETS OR EXCEEDS THE REQUIREMENTS FOR A CLASS "A" SURVEY AS SPECIFIED THEREIN.

JOHN T. BYRNES III S.C.P.L.S. No. 16115

SOUTH CAROLINA REGISTERED LAND SURVEYOR 16115 JOHN T. BYRNES III

SOUTH CAROLINA SOUTHEASTERN LAND SURVEYING LLC C04554 CERTIFICATE OF AUTHORIZATION

NO.	DATE	DESCRIPTION	BY

SOUTHEASTERN LAND SURVEYING LLC
1035-B JENKINS ROAD
CHARLESTON SC 29407
(843)795-9330

A TREE AND TOPOGRAPHICAL SURVEY OF TMS #711-00-00-052 KAISER FARM

OWNED QUARRY LAKE PLANTATION, LLC
LOCATED NEAR THE TOWN OF AWENDAW
CHARLESTON COUNTY, SOUTH CAROLINA

DATE:	09-18-2019
DRAWN:	MAS
CHECK:	PRB
CC:	SS
JOB:	19131
DWG:	19131TOPO
SHEET:	6 OF 6

APPENDIX D:

AERIAL CONCEPTUAL SKETCH PLAN

General Notes:

Owner:
Quarry Lake Plantation, LLC
PO Box 973
Charleston, SC 29403

Developer:
Charleston County School District
75 Calhoun
Charleston, SC 29401
Contact: Angela Barnette
email: angela_barnette@charleston.k12.sc.us
Phone: (843) 937-6300

Engineers/Land Planners:
Seamon Whiteside
501 Wando Park Blvd., Ste. 200
Mount Pleasant, SC 29464
Contact: Lee Gastley
email: lgastley@seamonwhiteside.com
Phone: 843/ 884-1667

Site Information

TMS NO: 711-00-00-052
Property is located in Flood Zone X as scaled from F.I.R.M Panel No. 45019C 0190J dated November 17, 2004.

NON-JURISDICTIONAL WETLAND	±0.87 AC
UPLAND	±106.33 AC
TOTAL DEVELOPMENT:	107.2 AC

Proposed Uses

HIGH SCHOOL / MIDDLE SCHOOL (facilities):

MAIN BUILDING (incl. expansion)	±4.00
FIELD HOUSE	±0.15
PARKING / VEHICULAR ACCESS	±11.10
PONDS (NEW)	±11.52
POND (EXIST. NJ. WETLAND)	±0.87
LAND USE BUFFERS	±4.68
TOTAL	±32.32 ac

OPEN SPACE

ATHLETIC FIELDS / COURTS	± 9.25
WASTE TREATMENT DRIP AREA	±12.90
WASTE TREATMENT AREA BUFFER	±8.20
UNSTRUCTURED OPEN SPACE*	±28.38
REMAINING UNBUILT SPACE**	±16.15
TOTAL	±74.88 ac

* Unstructured open areas include, but are not limited to, contiguous areas around the buildings/structures and those areas surrounding ponds and athletic fields/courts that are not indicated as belonging to those uses. These areas may be utilized as pedestrian access or general landscaped or unused space.
** Remaining unbuilt space includes areas that do not fit in a listed use but are generally non-contiguous unused space. May include sidewalks or landscaped areas.

Note: Acreages indicated are approximate and based on the conceptual plan as shown. Total final acreages of individual built items will not exceed the amounts shown, and Total open space will not be less than shown.

Sketch Plan Notes

- This Sketch Plan is conceptual in nature and final location of features may be adjusted to allow for on-site conditions. The final layout, however, will maintain the general intent shown on this plan.
- All areas designated for future expansion or not intended for immediate improvement or development shall remain in natural state until such time as development permits are approved.
- Maximum 4% building coverage.
- Maximum height of structures shall be 35' measured from base flood elevation to the halfway point between the eave and the peak of the highest roof element.

Legend

- proposed building / building expansion
- parking / internal drives
- unstructured open space
- athletic fields / courts
- land use buffer
- pond
- drainage swale
- existing grand tree (24"+ dbh)
- existing protected tree (8"-24" dbh)

Site Location Map

NOTE: THIS PLAN IS CONCEPTUAL IN NATURE AND SUBJECT TO CHANGE.

SEAMONWHITESIDE

0 50 100 200
SCALE: 1" = 100'

AERIAL CONCEPTUAL SKETCH PLAN

AWENDAW / MCCLELLANVILLE HIGH SCHOOL / MIDDLE SCHOOL

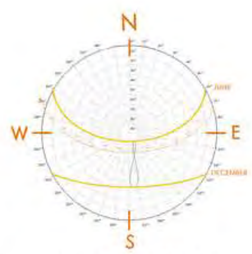
CHARLESTON COUNTY SCHOOL DISTRICT
CHARLESTON COUNTY, SOUTH CAROLINA
02/17/2020

CONCEPTUAL MASTER PLAN

NOTE: THIS PLAN IS CONCEPTUAL IN NATURE AND SUBJECT TO CHANGE BASED ON FINAL SURVEY DATA, DEVELOPMENT PROGRAM INFORMATION, MUNICIPAL AND REGULATORY INPUT , ETC. IT IS INTENDED TO BE USED ONLY AS A RESOURCE TO ESTABLISH THE POTENTIAL FOR VARIOUS DEVELOPMENT SCENARIOS.

02/28/2020

0 100 200 400 800



AZIMUTH

SEAMONWHITESIDE

APPENDIX E:

WETLAND LETTER APPLICATION & RECEIPT

DEPARTMENT OF THE ARMY
CHARLESTON DISTRICT, CORPS OF ENGINEERS
69A HAGOOD AVENUE
CHARLESTON, SOUTH CAROLINA 29403-5107

FEB - 5 2019

Regulatory Division

Mr. William Wilson
Sabine & Waters, Inc.
PO Box 1072
Summerville, South Carolina 29483

COPY

Dear Mr. Wilson:

This letter is in response to your request for an Approved Jurisdictional Determination (AJD) (SAC-2018-01542) received in our office on September 26, 2018, for a 107.2-acre site located on Kaiser Farm in McClellanville, Charleston County, South Carolina (Latitude: 33.0437°N, Longitude: -79.5984 °W). An AJD is used to indicate that this office has identified the presence or absence of wetlands and/or other aquatic resources on a site, including their accurate location(s) and boundaries, as well as their jurisdictional status pursuant to Section 404 of the Clean Water Act (CWA) (33 U.S.C. § 1344) and/or navigable waters of the United States pursuant to Section 10 of the Rivers and Harbors Act of 1899 (RHA) (33 U.S.C. § 403).

The site in question is shown on the enclosed depiction entitled "Site Map – Kaiser Tract Ravenel Commercial Properties Charleston County, SC" and dated July 3, 2018, prepared by Sabine & Waters, Inc. Based on an on-site inspection, a review of aerial photography, topographic maps, National Wetlands Inventory maps, LIDAR, soil survey information, and Wetland Determination Data Form(s), this office has determined that the referenced site, as shown on the referenced depiction, does not contain any aquatic resources that are subject to regulatory jurisdiction under Section 404 of the CWA or Section 10 of the RHA.

Enclosed is a form describing the basis of jurisdiction for the area(s) in question. It should also be noted that some or all of these areas may be regulated by other state or local government entities. Specifically, you are encouraged to contact the South Carolina Department of Health and Environmental Control, Bureau of Water or the Department of Ocean and Coastal Resource Management, to determine the limits of their jurisdiction.

Please be advised that this AJD is valid for five (5) years from the date of this letter unless new information warrants revision before the expiration date. This AJD is an appealable action under the Corps of Engineers administrative appeal procedures defined at 33 CFR Part 331. The administrative appeal options, process and appeals request form is attached for your convenience and use.

This AJD has been conducted pursuant to Corps of Engineers' regulatory authority to identify the limits of Corps of Engineers' jurisdiction for the particular site identified in this request. This AJD may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are USDA program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service, prior to starting work.

In all future correspondence concerning this matter, please refer to file number SAC-2018-01542. A copy of this letter is being forwarded to certain State and/or Federal agencies for their information. If you have any questions concerning this matter, please contact Leslie Estill, Project Manager, at (843) 329-8039.

Sincerely,

Tracy Sanders
Biologist

Enclosures:
Approved Jurisdictional Determination Form
Notification of Appeal Options
Depiction entitled "Site Map – Kaiser Tract Ravenel Commercial Properties Charleston County, SC"

Copies Furnished:

Mr. Barry Gumb
Qyarry Lake Plantation, LLC
525 East Bay Street, Suite 100
Charleston, South Carolina 29403

South Carolina Department of
Health and Environmental Control
Bureau of Water
2600 Bull Street
Columbia, South Carolina 29201

South Carolina Department of Health
and Environmental Control
Office of Ocean and Coastal
Resource Management
1362 McMillan Avenue, Suite 400
Charleston, South Carolina 29405

EXTERNAL SOURCES: NAIP 2017 TRUE COLOR AERIAL, U.S. CENSUS ROADS, CHARLESTON COUNTY GIS PARCEL

Created By: Stephen Bennett
Date Created: July 3, 2018
Copyright 2018 Sabine & Waters, Inc

Sabine & Waters, Inc.
Environmental Land Management Consultants
PO Box 1072 Summerville, SC 29484
843 871 5383 (phone) 843 871 2050 (fax)

Disclaimer: This map is a graphic representation of data obtained from various sources. All efforts have been made to warrant the accuracy of this map. However, Sabine & Waters, Inc. disclaims all responsibility and liability for the use of this map.

REVISED: 7/3/2018

SITE MAP - KAISER TRACT
RAVENEL COMMERCIAL PROPERTIES
CHARLESTON COUNTY, SC

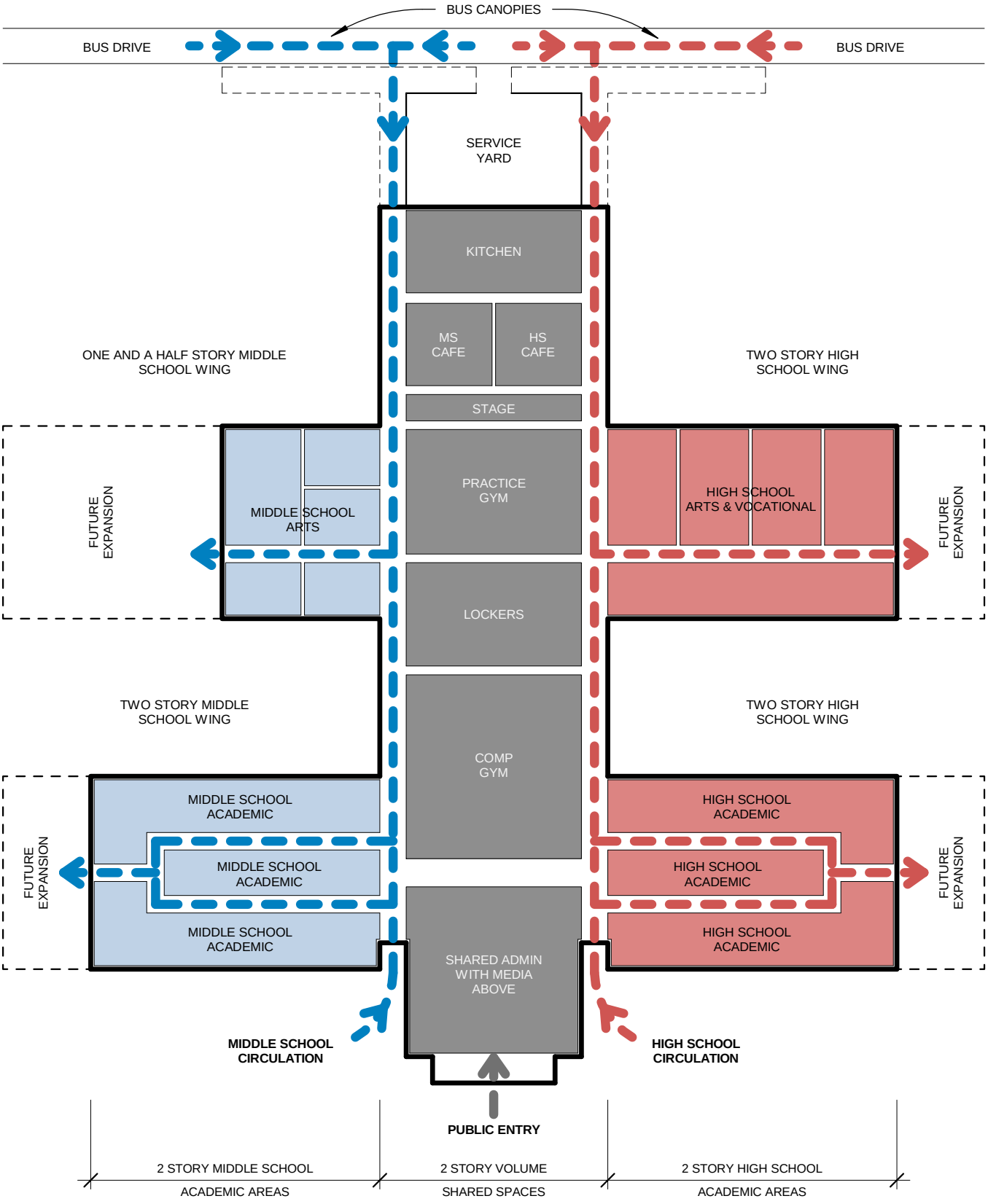
0 450 900
Feet

LEGEND

PROPERTY BOUNDARY: +/- 107.2 AC
ROADS

APPENDIX F:

ARCHITECTURAL SITE PLAN

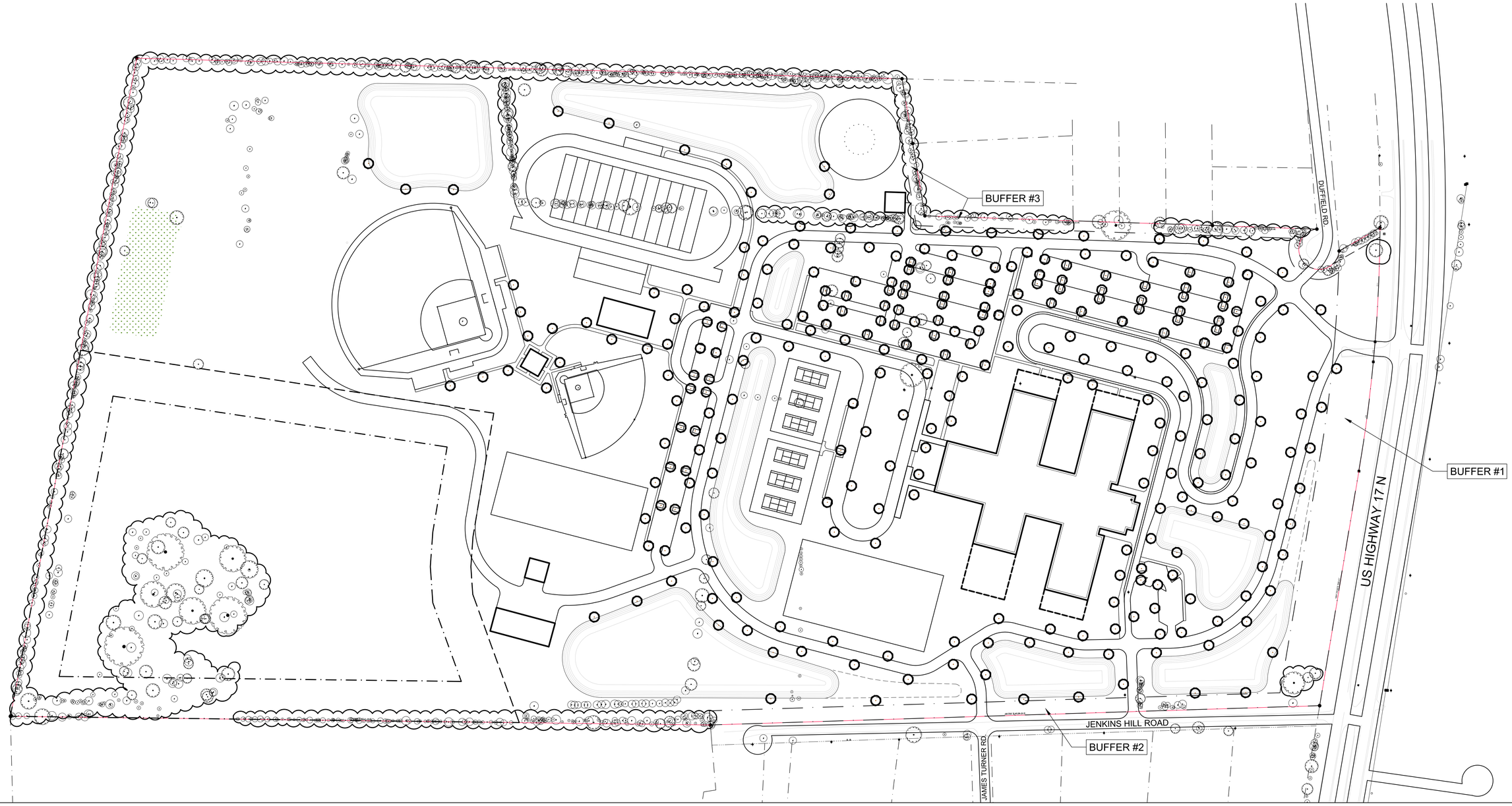


PROPOSED MASSING DIAGRAM

LS3P

APPENDIX G:

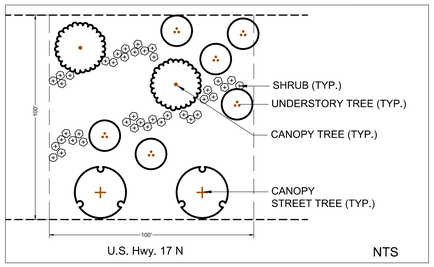
LANDSCAPE SKETCH PLAN



Legend

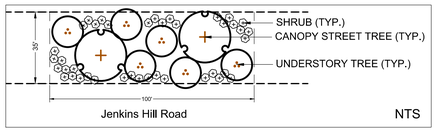
- existing grand tree (24"+ dbh)
- existing protected tree (8"-24" dbh)

Typical Land use Buffer Plantings



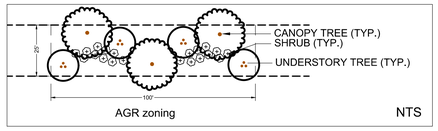
Buffer #1 (located along U.S. Hwy 17 N)
100' Type S3 - total length 1,193 lf

plant type	per 100'	multiplier	total
canopy/street tree	4	11.93	48*
understory tree	6	11.93	72
shrubs	40	11.93	478



Buffer #2 (located along Jenkins Hill Road)
35' - total length 1,411 lf

plant type	per 100'	multiplier	total
canopy/street tree	2	14.11	29*
understory tree	6	14.11	85
shrubs	40	14.11	565



Buffer #3 (located along west property line adj. to AGR zoning)
25' Type B - total length 1,538 lf

plant type	per 100'	multiplier	total
canopy/street tree	3	15.38	47*
understory tree	4	15.38	62
shrubs	20	15.38	308

*Notes:
1. Per Charleston County ZLDR, 2 street trees are required per 100 lf in S3 buffers and may count toward the canopy tree requirement.
2. Existing trees may count toward canopy tree requirements.
3. Typical Buffer Plantings shown are conceptual. Quantities will be met per requirements noted with final planting locations to be determined and approved by Charleston County Planning Staff.

Site Location Map

SEAMONWHITESIDE

NOTE: THIS PLAN IS CONCEPTUAL IN NATURE AND SUBJECT TO CHANGE.

0 50 100 200
SCALE: 1" = 100'

LANDSCAPING SKETCH PLAN
AWENDAW / MCCLELLANVILLE HIGH SCHOOL / MIDDLE SCHOOL

CHARLESTON COUNTY SCHOOL DISTRICT
CHARLESTON COUNTY, SOUTH CAROLINA
02/17/2020

APPENDIX H:

UTILITY PLANS

1.77 AC POND

DRAINAGE PIPE

2.41 AC POND

2.67 AC POND

1.30 AC POND

0.27 AC POND

DRAINAGE PIPE

PROPERTY LINE

DRAINAGE PIPE

PROPOSED BUILDING

JAMES TURNER ROAD

JENKINS HILL ROAD

0.81 AC POND

DRAINAGE DITCH

DRAINAGE PIPE

0.41 AC POND

0.92 AC POND

DUFFIELD ROAD

SITE OUTFALL

DRAINAGE PIPE

1.00 AC POND

DRAINAGE DITCH

HIGHWAY 17

N

W

E

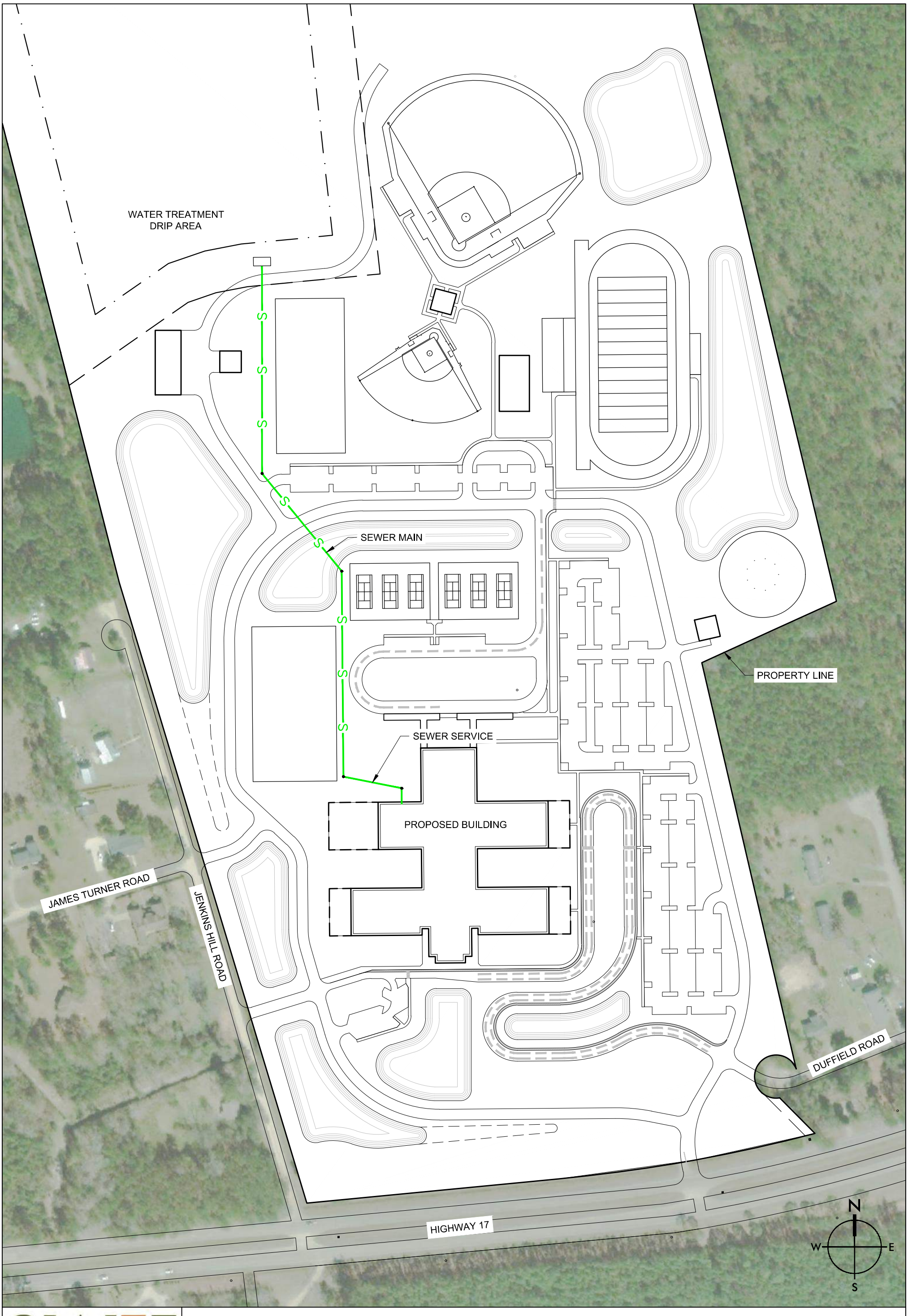
S

SEAMONWHITESIDE

AWENDAW / McCLELLANVILLE HIGH / MIDDLE SCHOOL
PROJECT #8067
DATE: 02/18/20
SCALE: 1:200

CONCEPTUAL DRAINAGE PLAN

PLOTTED:2/18/2020 12:02 PM, BY Kelton McCants N:\8067\CDWG\Exhibits\Drainage Exhibit (11x17).dwg



SEAMONWHITESIDE

AWENDAW / McCLELLANVILLE HIGH / MIDDLE SCHOOL
PROJECT #8067
DATE: 02/18/20
SCALE: 1:200

CONCEPTUAL SEWER PLAN

PLOTTED:2/18/2020 12:02 PM, BY Kelton McCants N:\8067\CDWG\Exhibits\Sewer Exhibit (11x17).dwg

WELL

8" WATER MAIN

PROPERTY LINE

PROPOSED BUILDING

DRY STANDPIPE

JAMES TURNER ROAD

JENKINS HILL ROAD

DUFFIELD ROAD

HIGHWAY 17

N

W

E

S

SEAMONWHITESIDE

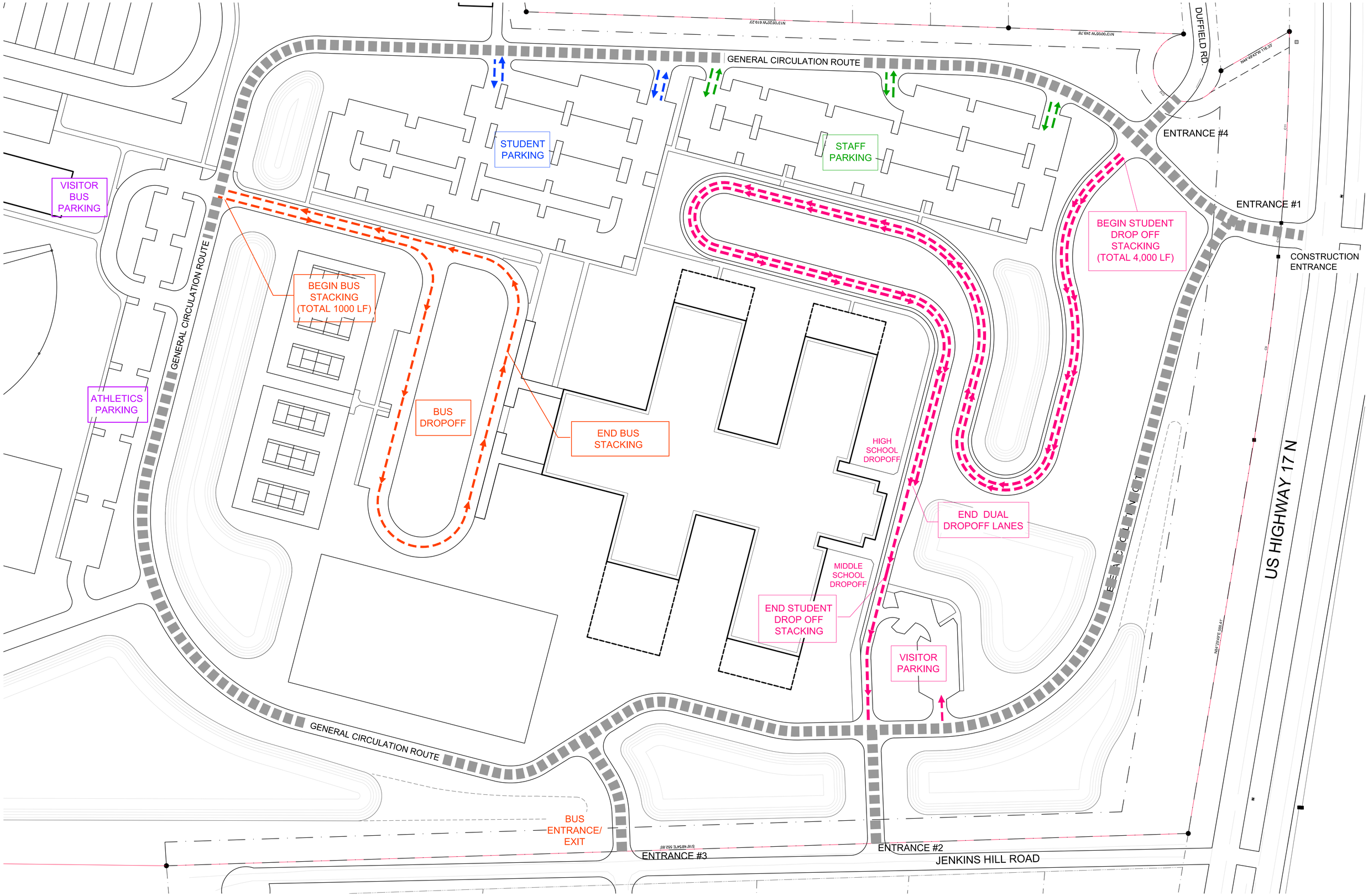
AWENDAW / McCLELLANVILLE HIGH / MIDDLE SCHOOL
PROJECT #8067
DATE: 02/18/20
SCALE: 1:200

CONCEPTUAL WATER PLAN

PLOTTED:2/18/2020 12:01 PM, BY Kelton McCants N:\8067\CDWG\Exhibits\Water Exhibit (11x17).dwg

APPENDIX I:

CIRCULATION PLAN



SEAMONWHITESIDE

NOTE: THIS PLAN IS CONCEPTUAL IN NATURE AND SUBJECT TO CHANGE.

0 50 100 200
SCALE: 1" = 100'

TRAFFIC CIRCULATION PLAN

AWENDAW / MCCLELLANVILLE HIGH SCHOOL / MIDDLE SCHOOL

CHARLESTON COUNTY SCHOOL DISTRICT
CHARLESTON COUNTY, SOUTH CAROLINA
02/17/2020

APPENDIX J:

TRAFFIC IMPACT & ACCESS STUDY

TRAFFIC IMPACT AND ACCESS STUDY

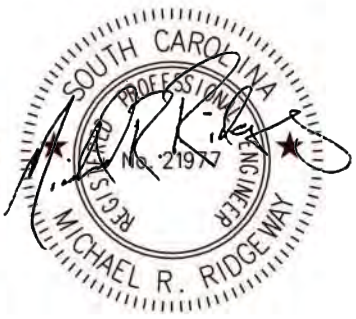
HIGH SCHOOL/MIDDLE SCHOOL IN AWENDAW
CHARLESTON COUNTY, SC

Prepared for:

SEAMON WHITESIDE + ASSOCIATES
501 Wando Park Boulevard, Suite 200
Mount Pleasant, SC 29464

Prepared by:

RIDGEWAY TRAFFIC CONSULTING, LLC
1720 Dutch Fork Road, Suite F
Irmo, SC 29063



2/27/20

RIDGEWAY
TRAFFIC CONSULTING
803-361-9044

SUBMITTED FEBRUARY 2020

PROJECT DESCRIPTION & EXISTING CONDITIONS

Ridgeway Traffic Consulting (RTC) has been retained to evaluate the traffic and transportation impacts resulting from the construction of a new high school/middle school campus for the Charleston County School District near Awendaw, South Carolina.

Evaluation of the transportation impacts associated with the proposed project first requires a thorough description and quantification of the proposed project and the project site, which is included in the following sections.

PROJECT DESCRIPTION

The project proposal is to construct a new combined high school/middle school campus along the north side of US 17 in the proximity of Kaiser Farm Road in rural Charleston County near Awendaw, South Carolina. **Figure 1** depicts the site location in relation to the local and regional roadway system.

Access for the school is currently proposed via a main entrance for students, staff and parent drop-offs/pick-ups to US 17 in the current location Kaiser Farm Road where an existing median break is provided. A second entrance for students, staff and parent drop-offs will be provided to Jenkins Hill Road. The bus loop will be serviced via a separate connection to Jenkins Hill Road. Connectivity to the east to Duffield Road is also proposed.

Details/recommendations for the site access drives are provided in the Mitigation section of this report.

Under the current development plan, the school is anticipated to open in the Fall of 2025, which is the horizon year analyzed for this report. **Figure 2** depicts the conceptual plan for the school.

GEOMETRICS AND TRAFFIC CONTROL

A comprehensive field inventory of the site and study area has been conducted. The field inventory included a collection of geometric data, traffic volumes, and traffic control within the study area.

Study Area Roadway

US 17 – is a four-lane divided major arterial across site frontage with two lanes provided in each direction separated by a grassed median. The posted speed limit across site frontage is currently 60 miles-per-hour (mph). This roadway is maintained by the SCDOT.

The existing lane geometrics and traffic control characteristics for the study area roadways/intersections are graphically depicted in **Figure 3.**

N

NOT TO SCALE

Figure 1

SITE LOCATION MAP

High School/Middle School In Awendaw

RIDGEWAY TRAFFIC CONSULTING
803-361-9044

NOTE: THIS PLAN IS CONCEPTUAL IN NATURE AND SUBJECT TO CHANGE BASED ON FINAL SURVEY DATA, DEVELOPMENT PROGRAM INFORMATION, MUNICIPAL AND REGULATORY INPUT , ETC. IT IS INTENDED TO BE USED ONLY AS A RESOURCE TO ESTABLISH THE POTENTIAL FOR VARIOUS DEVELOPMENT SCENARIOS.

02/19/2020

0 100 200 400 800

AZIMUTH

SEAMONWHITESIDE

Figure 2

PROPOSED SITE PLAN

High School/Middle School In Awendaw

RIDGEWAY TRAFFIC CONSULTING
803-361-9044

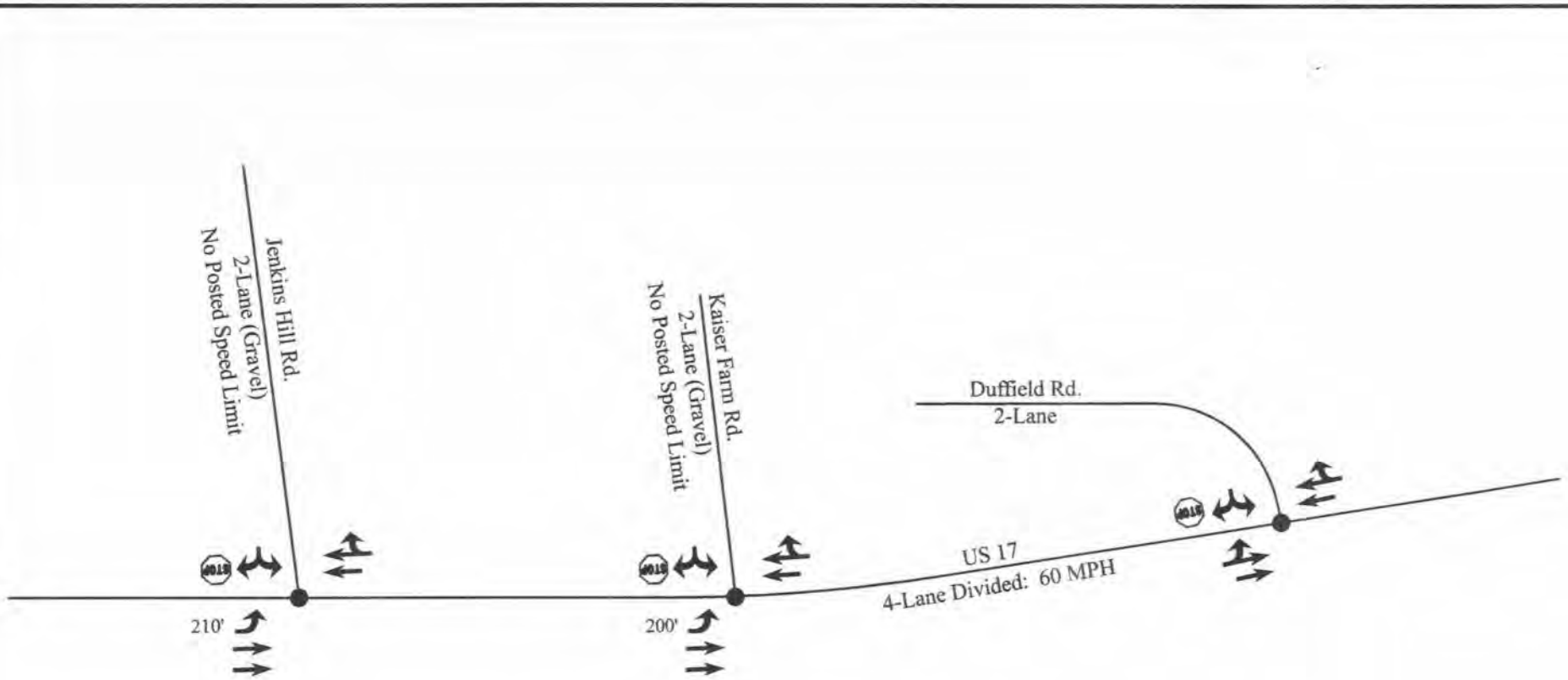
TRAFFIC VOLUMES

In order to determine the existing traffic volume flow patterns within the study area, manual turning movement counts were gathered for the weekday morning (7:00-9:00 AM) and afternoon (2:00 – 6:00 PM) peak time periods for the following study area intersections along US 17:

- US 17 at Jenkins Hill Road; and
- US 17 at Duffield Road.

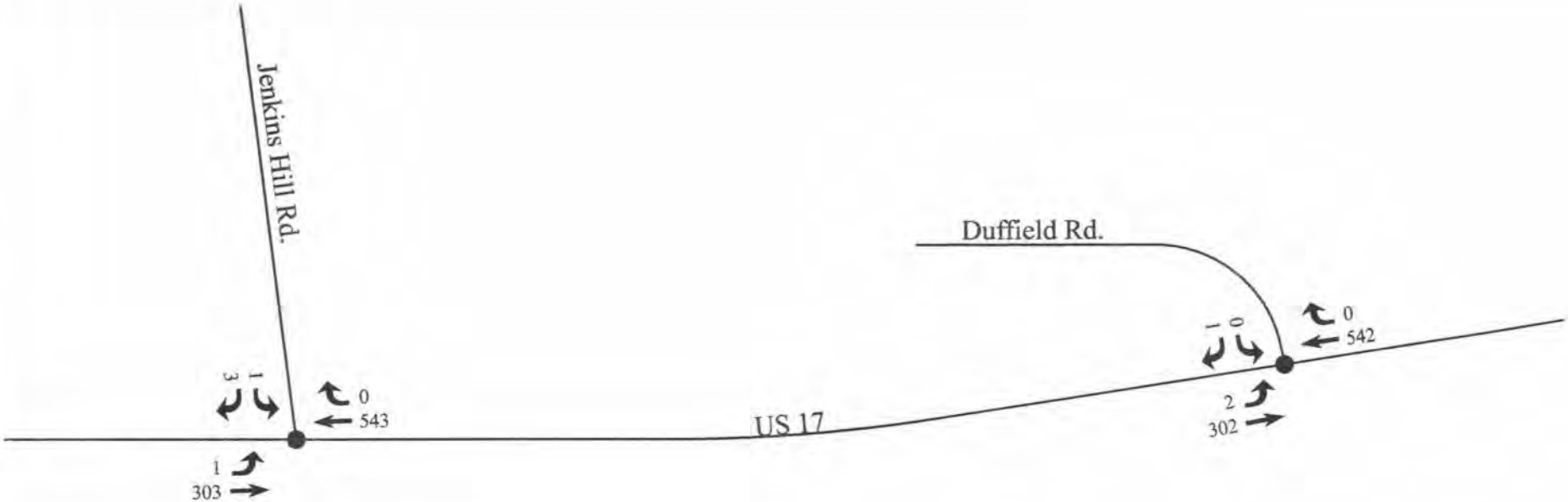
The PM peak hour was expanded by two hours to pick up times when the school is anticipated to peak in the afternoon, which is before the commuter PM peak. The AM peak hour for the school is anticipated to coincide with the typical commuter peak.

The existing peak-hour traffic flow networks for the weekday AM, School PM and Commuter PM peak-hour periods are shown graphically in **Figures 4A-4C**.



RIDGEWAY TRAFFIC CONSULTING

Figure 3
EXISTING GEOMETRY & TRAFFIC CONTROL
High School/Middle School In Awendaw



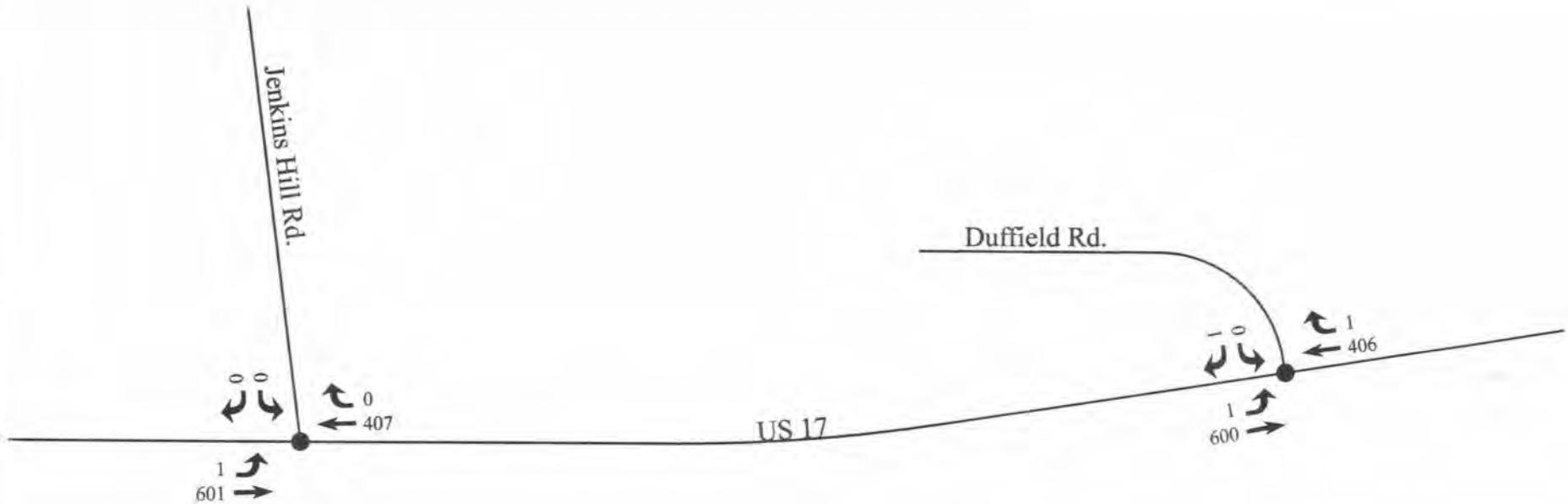
● = Unsignalized Intersection

N

NOT TO SCALE

RIDGEWAY TRAFFIC CONSULTING

Figure 4A
EXISTING 2019 TRAFFIC VOLUMES
AM PEAK HOUR
High School/Middle School In Awendaw

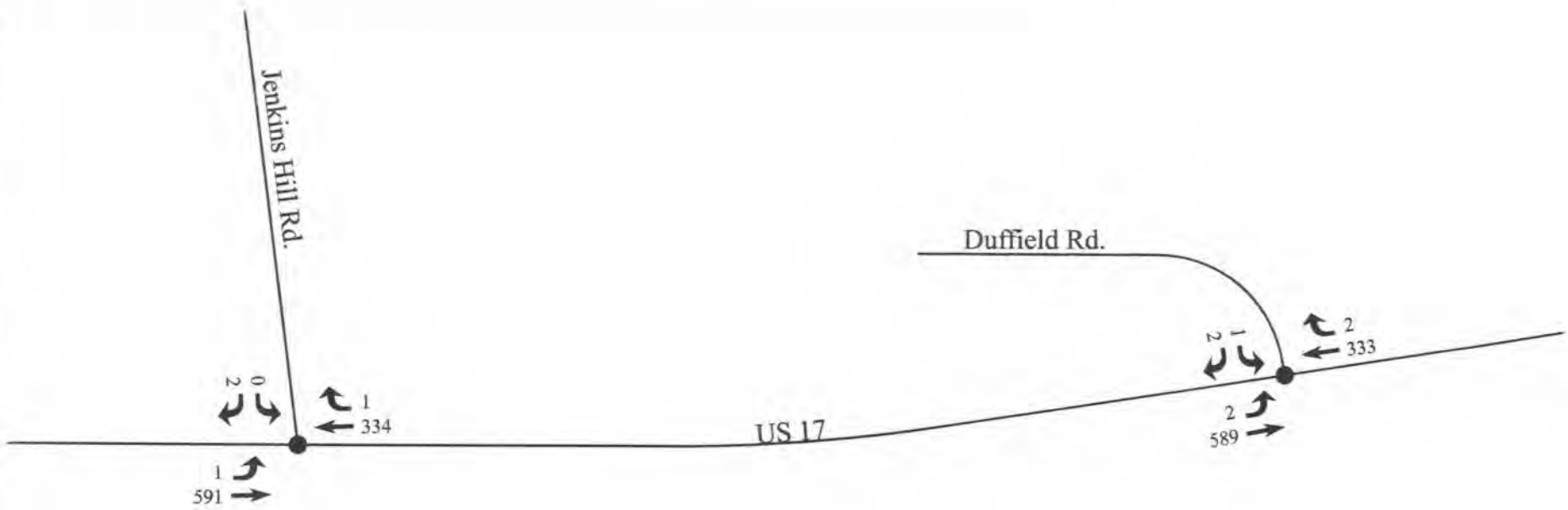


● = Unsignalized Intersection

NOT TO SCALE

RIDGEWAY TRAFFIC CONSULTING

Figure 4B
EXISTING 2019 TRAFFIC VOLUMES
SCHOOL PM PEAK HOUR
High School/Middle School In Awendaw



● = Unsignalized Intersection

N

NOT TO SCALE

RIDGEWAY TRAFFIC CONSULTING

Figure 4C
EXISTING 2019 TRAFFIC VOLUMES
PM PEAK HOUR
High School/Middle School In Awendaw

PROBABLE IMPACTS OF THE PROJECT

To estimate the impact of site-generated traffic volumes on the roadway network under Future conditions, Existing traffic volumes in the study area were projected to the Year 2025, which is when the proposed school is expected to be constructed and operational. Traffic volumes on the roadway network at this time will include all existing traffic, any new traffic due to normal traffic growth, and any traffic related to specific developments that are presently approved and expected to be completed by 2025 (in excess of normal traffic volume growth). Consideration of these factors resulted in the development of 2025 No-Build traffic volumes. Anticipated site-generated traffic volumes were then super-imposed upon the 2025 No-Build traffic flow networks to reflect 2025 Build conditions including the proposed development.

BACKGROUND TRAFFIC GROWTH

Traffic growth on area roadways is a function of the expected land development both within the immediate area as well as the surrounding region. Several methods can be used to estimate this growth. A procedure frequently employed identifies the location and type of approved/permitted development. This produces a realistic estimate of growth for local traffic. However, the drawback of this procedure is that the potential growth in population and traffic growth external to the study area would not be accounted for in the traffic projections.

An alternative procedure estimates an annual percentage increase in traffic growth and applies that percentage to all traffic volumes under study. The drawback to such a procedure is that some turning movement volumes may be growing at either a higher or lower rate at particular intersections. To provide a conservative analysis framework, both procedures have been applied.

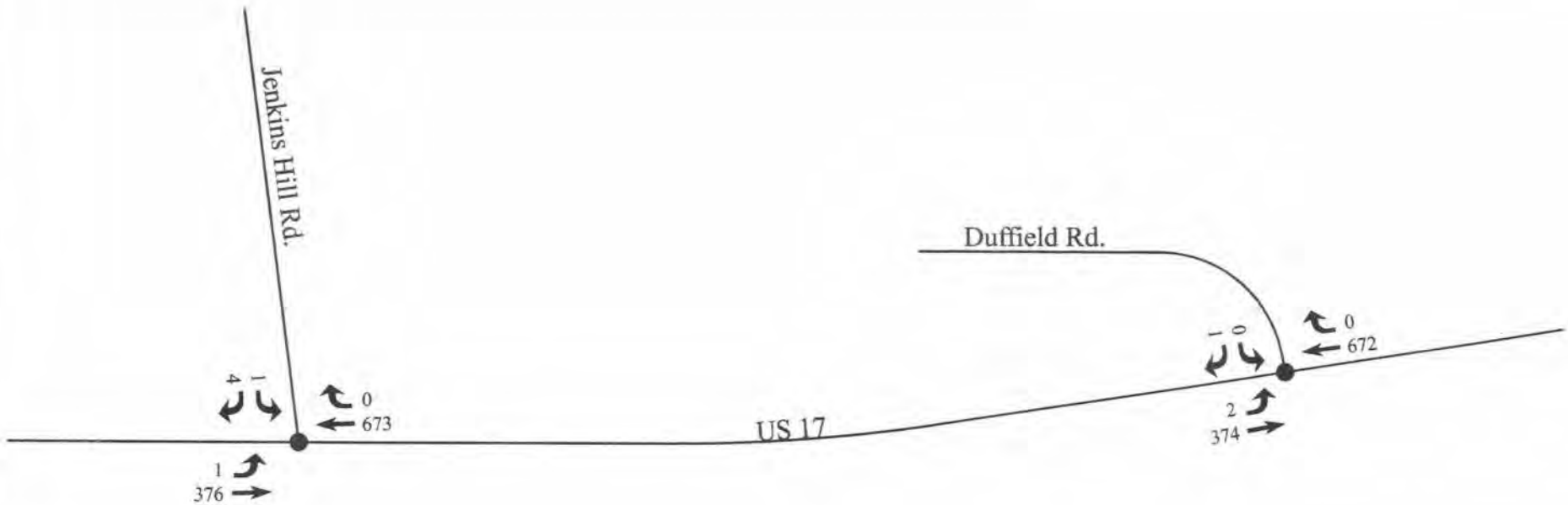
Specific Development

No specific background developments were identified for inclusion in future traffic volumes beyond normal annual growth.

Annual Growth

Based on a review of historical SCDOT traffic data for US 17 between Awendaw and McClellanville (Station #137), growth has been moderate over the past five years based on a 2013 reported volume of 9,400 vehicles-per-day (vpd) and a 2018 reported volume of 11,100 vpd. Based on this data, a 4-percent annual growth rate was developed and utilized for this report.

The anticipated 2025 No-Build AM and PM peak-hour traffic volumes, which include the 4-percent annual growth rate, are graphically depicted in **Figures 5A-5C** for the AM, School PM and Commuter PM peak hours.

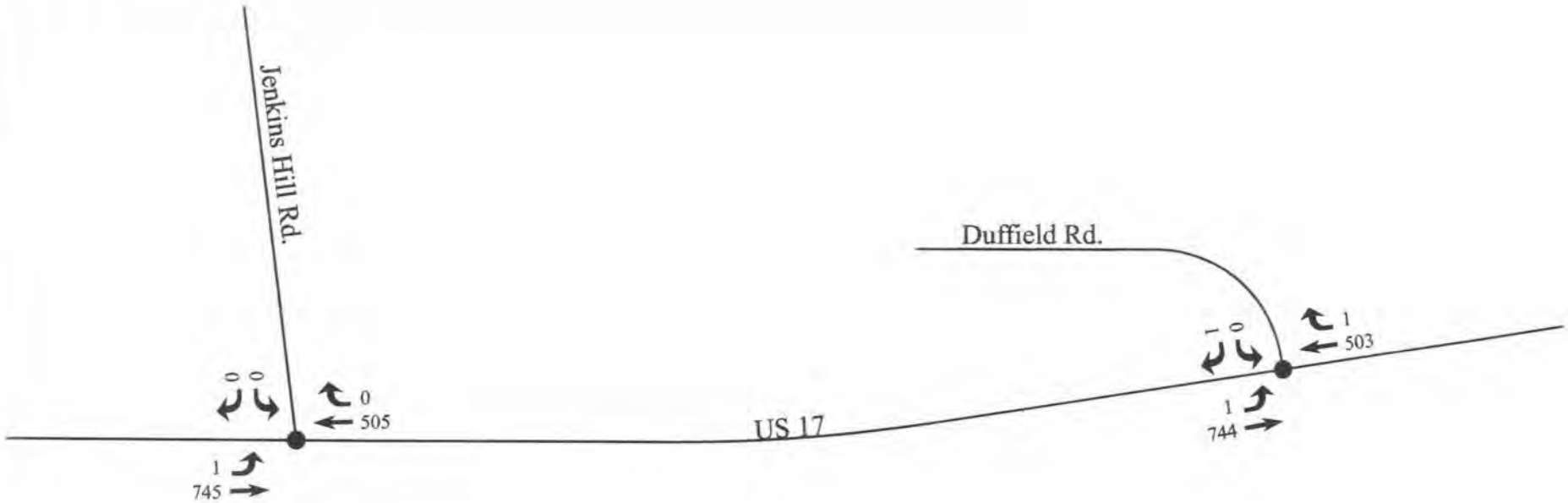


● = Unsignalized Intersection

NOT TO SCALE

RIDGEWAY TRAFFIC CONSULTING

Figure 5A
2025 NO-BUILD TRAFFIC VOLUMES
AM PEAK HOUR
High School/Middle School In Awendaw



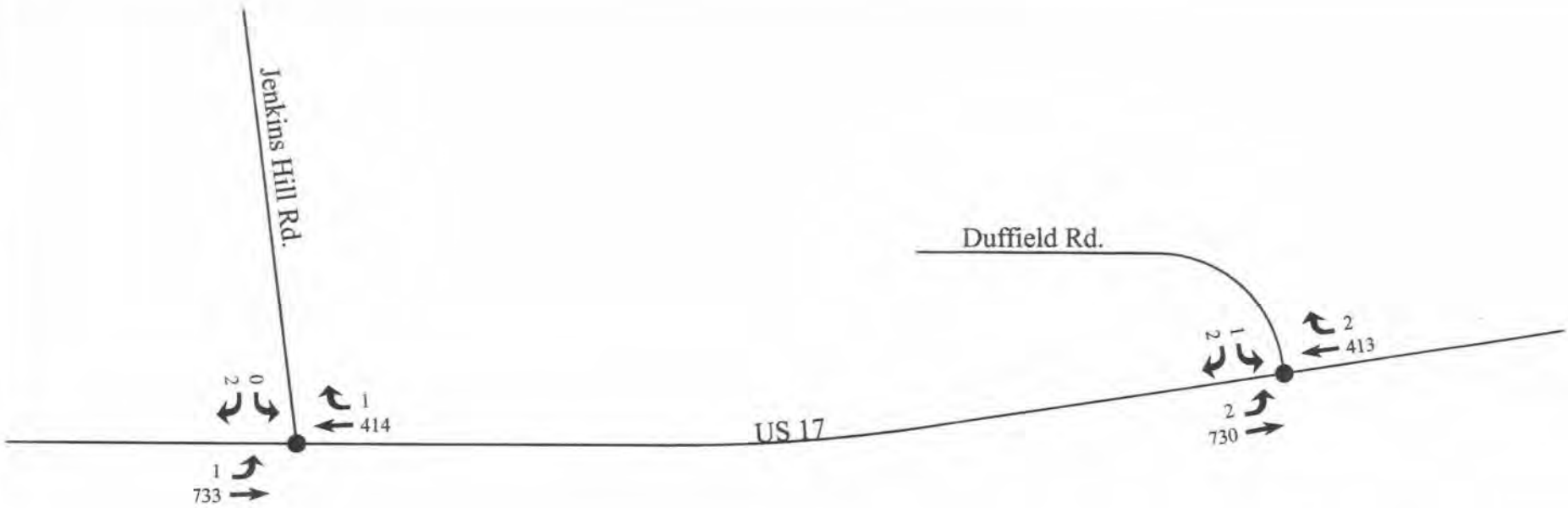
● = Unsignalized Intersection

N

NOT TO SCALE

RIDGEWAY TRAFFIC CONSULTING

Figure 5B
2025 NO-BUILD TRAFFIC VOLUMES
SCHOOL PM PEAK HOUR
High School/Middle School In Awendaw



● = Unsignalized Intersection

N

NOT TO SCALE

RIDGEWAY TRAFFIC CONSULTING

Figure 5C
2025 NO-BUILD TRAFFIC VOLUMES
PM PEAK HOUR
High School/Middle School In Awendaw

PLANNED ROADWAY IMPROVEMENTS

No funded roadway improvement projects were identified within the study area that are expected to add capacity by the time the project is completed.

SITE-GENERATED TRAFFIC

Traffic volumes generated by the proposed school campus were forecasted using the Tenth Edition of the Institute of Transportation Engineers (ITE) *Trip Generation* Manual[1]. Land-Use codes #522 (Middle School/Junior High School) and #530 (High School) were used to project site traffic. **Table 1** summarizes the anticipated trip generation characteristics for the campus.

Table 1
PROJECT TRIP GENERATION SUMMARY[1]
High School/ Middle School In Awendaw

Time Period	500 Student Middle School (a)	500 Student High School (b)	Total Trips (a+b)
AM Peak-Hour			
Enter	157	174	**331**
Exit	133	86	**219**
Total	290	260	**550**
PM Peak-Hour (School)			
Enter	80	68	**148**
Exit	95	144	**239**
Total	175	212	**387**
PM Peak-Hour (Commuter)			
Enter	42	34	**76**
Exit	43	36	**79**
Total	85	70	**155**

[1] ITE *Trip Generation* manual, 10th Edition: LUC 522 (Middle/Jr. High School) & LUC 530 (High School)

As shown, the proposed campus is expected to generate a total of 550 trips (331 entering, 219 exiting) during the AM peak-hour, with 387 trips (148 entering, 239 exiting) during the school PM peak-hour. During the typical commuter PM peak hour, a total of 155 trips (76 entering, 79 exiting) can be expected.

Distribution Pattern

Traffic for the new school been assigned based on observed patterns in the area and information provided by the School District. This pattern is shown in **Table 2**. In general, 70-percent of students for the campus are expected to arrive from the west (Awendaw and Mount Pleasant), with the balance from the east (McClellanville). Exiting movements during the AM are expected to be more heavily weighted to the west due to parents that drop a student from the east and then continue towards Mount Pleasant. This pattern is expected to be reversed during the PM hours.

[1] *Trip Generation*, Tenth Edition; Institute of Transportation Engineers; Washington, DC.

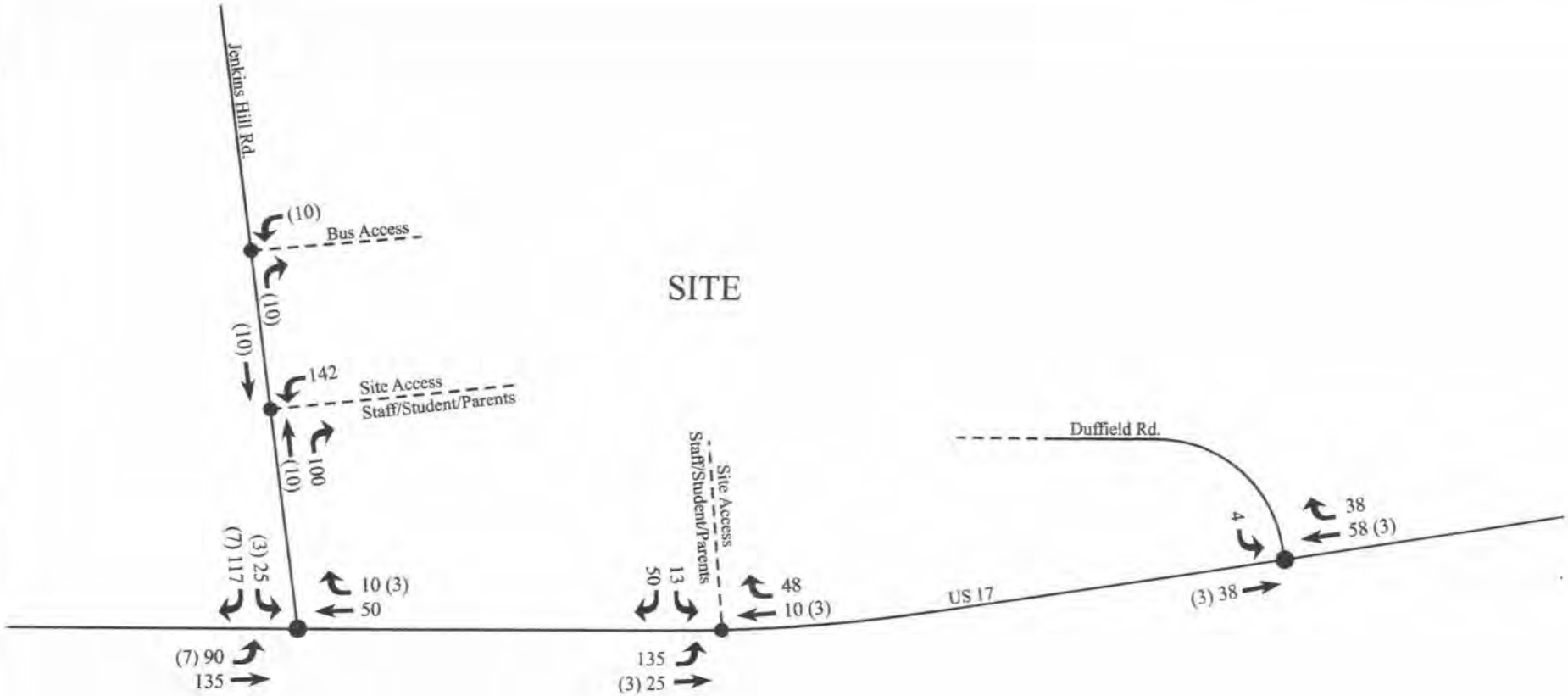
Table 2
PROJECT TRIP-DISTRIBUTION SUMMARY[1]
High School/ Middle School In Awendaw

		AM PEAK-HOUR		PM PEAK-HOUR SCHOOL		PM PEAK-HOUR COMMUTER	
Roadway	**Direction To/From**	**Enter**	**Exit**	**Enter**	**Exit**	**Enter**	**Exit**
US 17	East (McClellanville)	30	20	20	30	20	30
	West (Awendaw/ Mt. Pleasant)	70	80	80	70	80	70
	Total	**100**	**100**	**100**	**100**	**100**	**100**

The site-generated traffic presented in Table 1 has been distributed within the study area roadway network as shown by the distribution pattern shown in Table 2. This has resulted in the site-generated specific volumes for the study area as depicted in **Figures 6A-6C**.

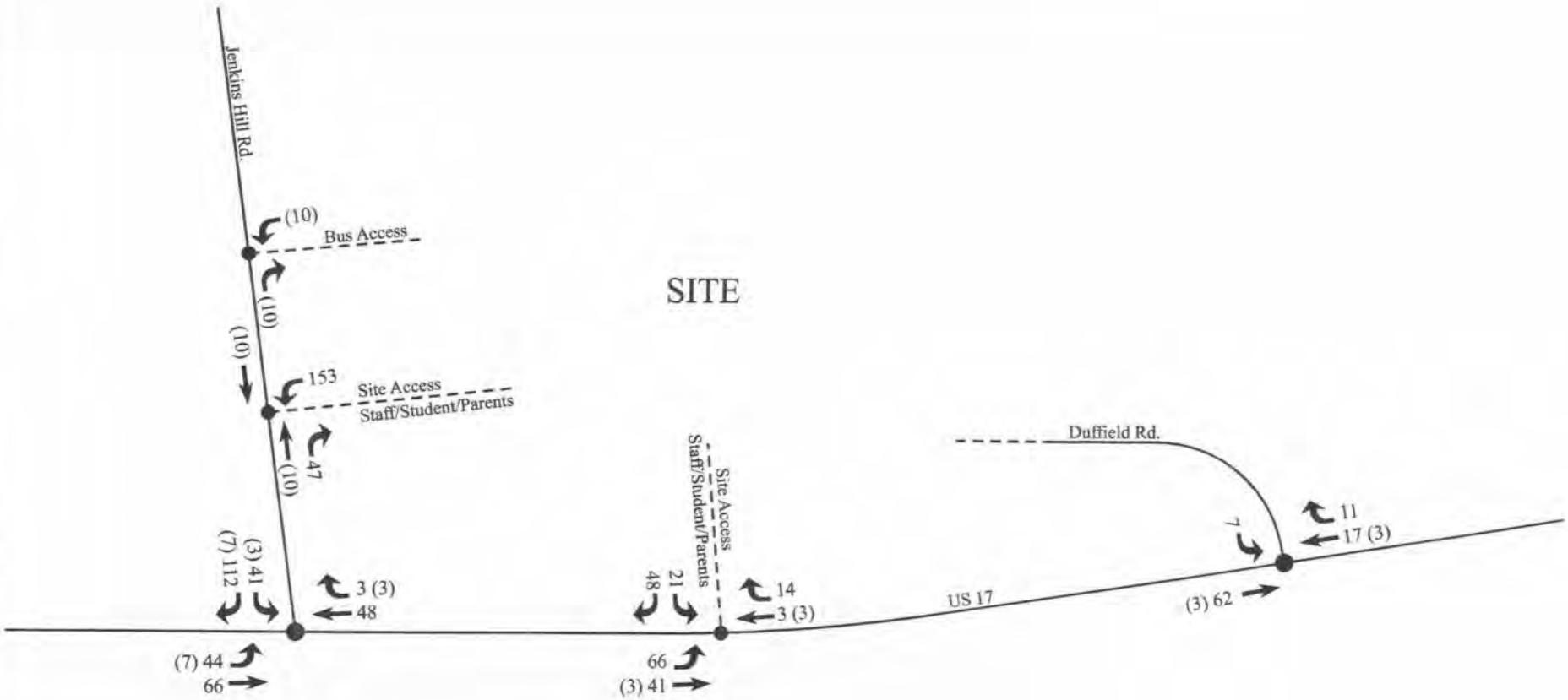
BUILD TRAFFIC VOLUMES

The site-generated traffic volumes shown in Figures 6A-6C have been added to the 2025 No-Build traffic volumes (Figures 5A-5C) to represent 2025 Build traffic volume conditions which are depicted graphically in **Figures 7A-7C.** These volumes were used as the basis for analysis to determine potential improvement measures necessary to mitigate traffic impacts caused by the project.



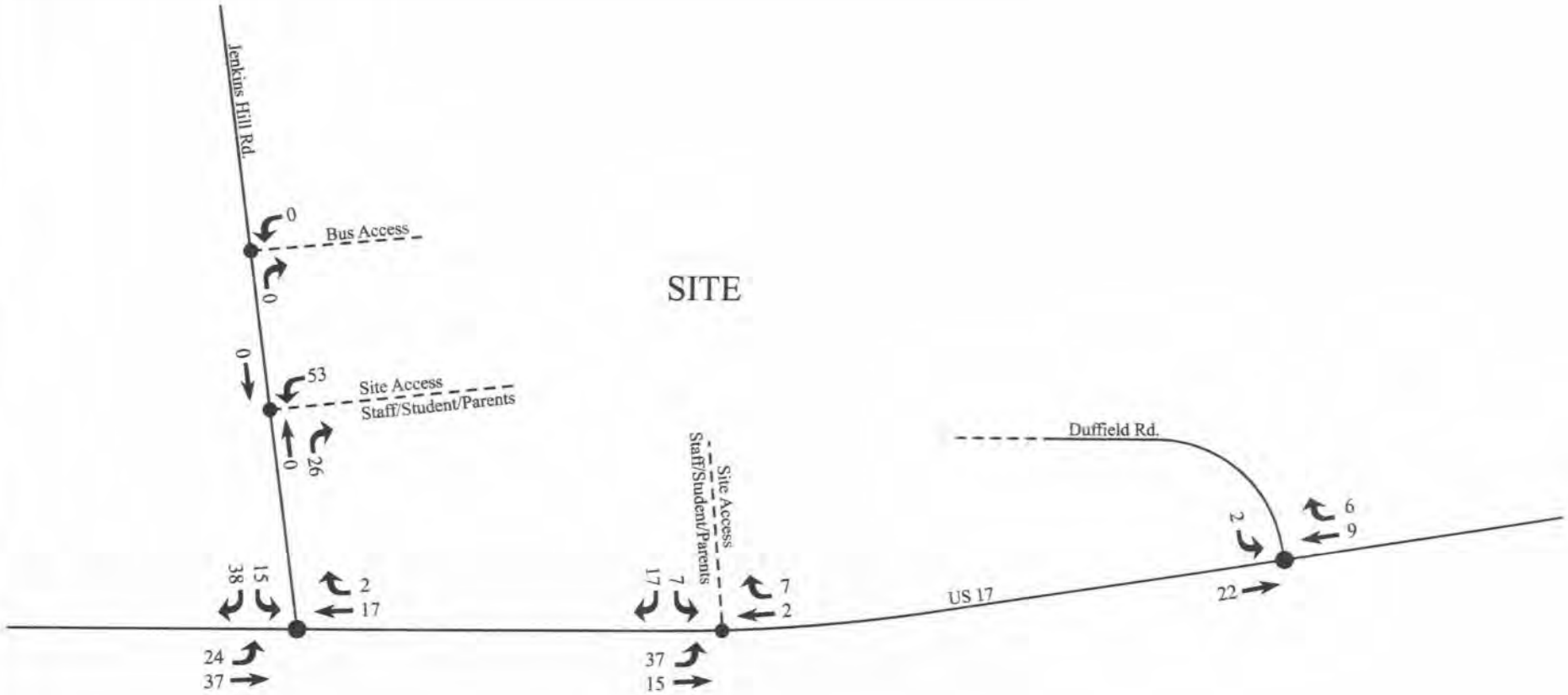
RIDGEWAY TRAFFIC CONSULTING

Figure 6A
SITE-GENERATED TRAFFIC VOLUMES
AM PEAK HOUR
High School/Middle School In Awendaw



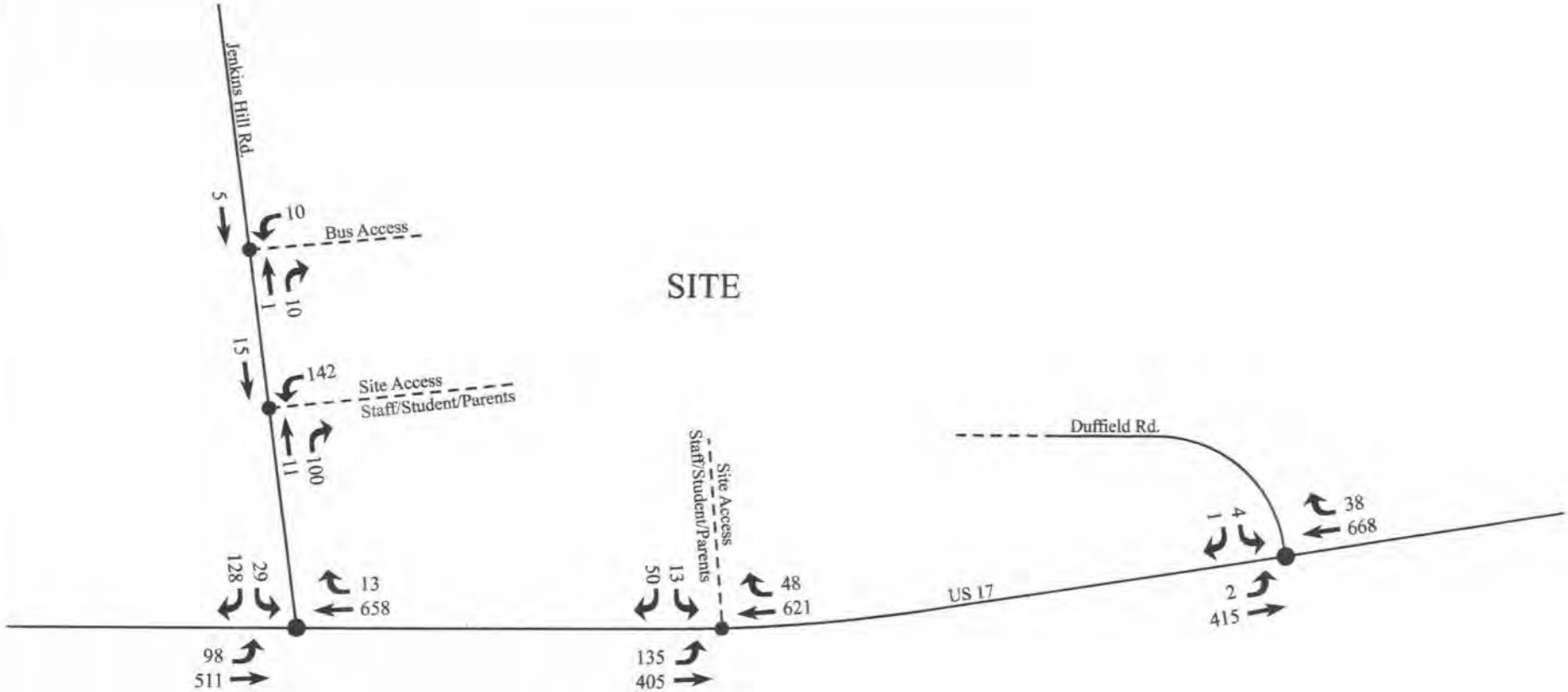
RIDGEWAY TRAFFIC CONSULTING

Figure 6B
SITE-GENERATED TRAFFIC VOLUMES
SCHOOL PM PEAK HOUR
High School/Middle School In Awendaw



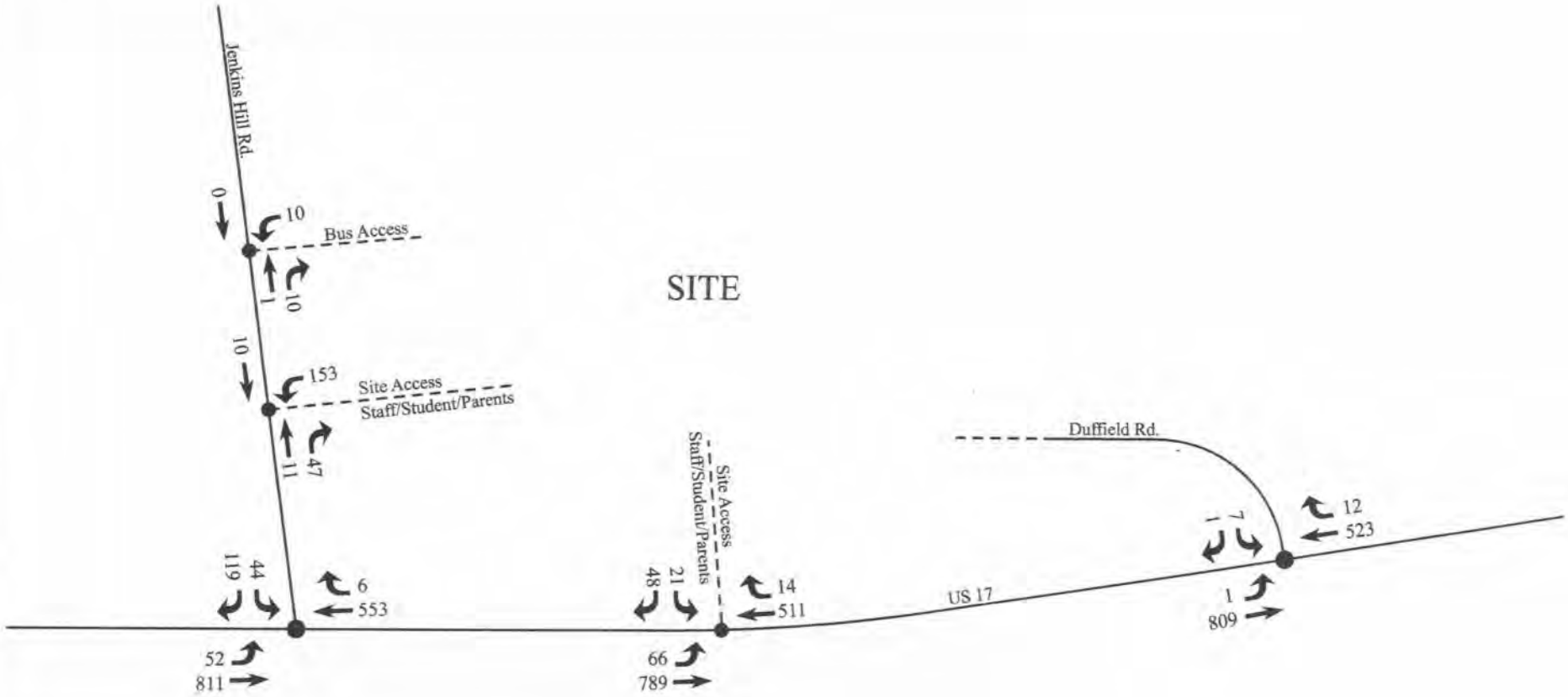
RIDGEWAY TRAFFIC CONSULTING

Figure 6C
SITE-GENERATED TRAFFIC VOLUMES
PM PEAK HOUR
High School/Middle School In Awendaw



RIDGEWAY TRAFFIC CONSULTING

Figure 7A
2025 BUILD TRAFFIC VOLUMES
AM PEAK HOUR
High School/Middle School In Awendaw



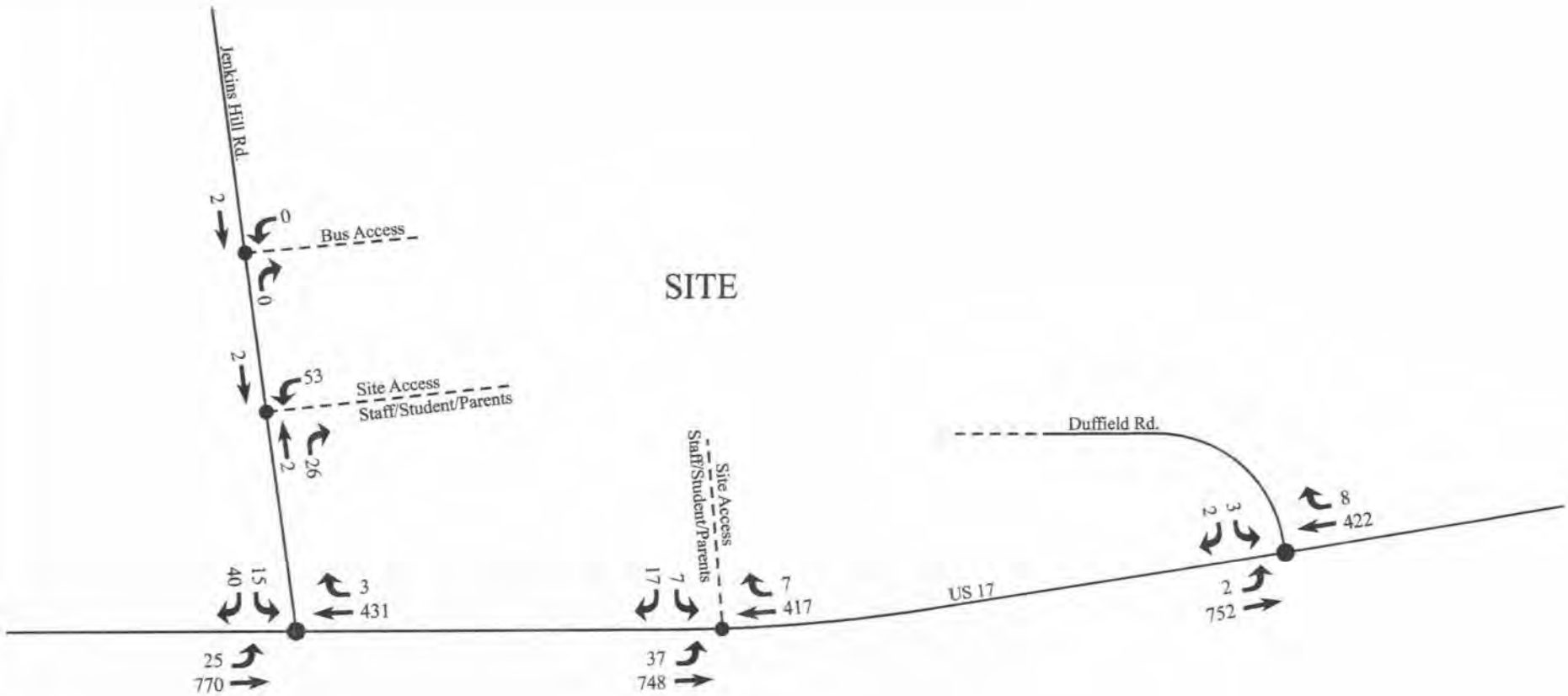
● = Unsignalized Intersection
000 = Passenger Vehicles
(000) = Buses

N

NOT TO SCALE

RIDGEWAY TRAFFIC CONSULTING

Figure 7B
2025 BUILD TRAFFIC VOLUMES
SCHOOL PM PEAK HOUR
High School/Middle School In Awendaw



RIDGEWAY TRAFFIC CONSULTING

Figure 7C
2025 BUILD TRAFFIC VOLUMES
PM PEAK HOUR
High School/Middle School In Awendaw

TRAFFIC OPERATIONS ANALYSIS

Measuring existing and future traffic volumes quantifies traffic flow within the study area. To assess quality of flow, capacity analyses were conducted under Existing, No-Build, and Build traffic volume conditions. Capacity analyses provide an indication of how well the study area intersections serve existing and future traffic demands.

METHODOLOGY

Level-of-Service

A primary result of capacity analyses is the assignment of level-of-service (LOS) to traffic facilities under various traffic flow conditions. The concept of level-of-service is defined as a qualitative measure describing operational conditions within a traffic stream and their perception by motorists and/or passengers. A level-of-service definition provides an index to quality of traffic flow in terms of such factors as speed, travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety.

Six levels-of-service are defined for each type of facility. They are given letter designations from A to F, with LOS A representing the best operating conditions and LOS F the worst.

Since the level-of-service of a traffic facility is a function of the traffic flows placed upon it, such a facility may operate at a wide range of levels-of-service, depending on the time of day, day of week, or period of a year.

ANALYSIS RESULTS

Intersection analyses have been conducted for the study area intersections under Existing, and Future 2025 (No-Build & Build) conditions. The results of these analyses are shown in **Table 3.** The intersection analysis worksheets are contained in the Appendix at the end of this report.

Table 3
LEVEL-OF-SERVICE SUMMARY
High School/ Middle School In Awendaw

Unsignalized Intersections	Time Period	EXISTING 2019 CONDITIONS Delay[a]	EXISTING 2019 CONDITIONS LOS[b]	FUTURE 2025 NO-BUILD CONDITIONS Delay	FUTURE 2025 NO-BUILD CONDITIONS LOS	FUTURE 2025 BUILD CONDITIONS Delay	FUTURE 2025 BUILD CONDITIONS LOS
US 17 at Jenkins Hill Road	AM	10.8	B	11.6	B	20.0	C
	PM School	8.2	A	8.5	A	18.8	B
	PM	9.5	A	9.8	A	12.1	B
US 17 at Duffield Road	AM	10.1	B	10.7	B	13.8	B
	PM School	9.6	A	10.0	B	13.2	B
	PM	10.2	B	10.8	B	11.8	B
US 17 at Main School Access (Students, Staff, Parents)	AM					14.0	B
	PM School					12.9	B
	PM					11.1	B
Jenkins Hill Road at Site Access (Students, Staff, Parents)	AM					10.7	B
	PM School					10.3	B
	PM					9.0	A
Jenkins Hill Road at Bus Access	AM					8.7	A
	PM School					8.6	A
	PM					-	A

a. Delay in seconds-per-vehicle.
b. LOS = Level-of-Service.

GENERAL NOTES:

1. For unsignalized intersections, Delay is representative of the critical movement.

As shown, under Existing conditions, analyses indicate good operations for both unsignalized intersections along US 17 on each side of the proposed school site. Volumes along US 17 are moderate during the peak hours, however STOP controlled movements are currently low at both intersections and acceptable gaps are available for side-street traffic.

Under 2025 No-Build conditions, which account for 4-percent annual background growth in traffic, operations are expected to remain similar to Existing conditions, with only slight increases in delay.

Analysis of 2025 Build Conditions indicate that acceptable service levels (LOS C or better) will be present within the study area. A drop in one service level is anticipated at the US 17 at Jenkins Hill Road during each peak hour, however no significant delays are projected. It should be noted that these service levels are projected based on existing geometry. Recommendations for this intersection based on SCDOT requirements adjacent to school sites are provided and analyzed in the next section of this report. The US 17 at Duffield Road intersection is expected to maintain LOS B as with No-Build Conditions.

The direct school access to US 17 is expected to operate well at LOS B during all peak hours with the incorporation of recommended geometry and traffic control detail in the next section of this report.

The direct site access drives to Jenkins Hill Road are expected to operate with low delays due to minimal conflicting traffic along Jenkins Hill Road. Recommendations for these two access points are detailed in the next section of this report.

MITIGATION

The final phase of the analysis process is to identify mitigating measures which may either minimize the impact of the project on the transportation system or tend to alleviate poor service levels not caused by the project. Measures considered necessary to mitigate roadway system deficiencies are discussed below as they relate to the impacts of the proposed project.

PROPOSED SITE ACCESS

Access for the proposed campus is proposed via a direct access to US 17, two connections to Jenkins Hill Road (one for buses only) and a connection to Duffield Road to the east. Recommendations for each access drive are provided as follows:

US 17 at Site Access: This intersection will serve as a primary access for the campus serving parent drop-offs/pick-ups, student drivers and staff, etc. This access is proposed in the location of the existing Kaiser Farm Road, for which a median break exists within US 17. The following geometry is recommended for this intersection:

- ***Eastbound (US 17) Approach:*** The existing left-turn lane for this approach will need to be upgraded to provide for 250-ft of storage with 200-ft. of taper. The existing storage for this lane is approximately 200-ft. Final design should be coordinated with SCDOT and may require an offset design as the existing turn lane is a standard parallel design;

- ***Westbound (US 17) Approach:*** SCDOT standards call for a dedicated right-turn with 250-ft. of storage and 200-ft. of taper. Due to the driveway for a single-family home to the east, the storage and taper will need to be modified for the approximate 370-ft. of available frontage. One option would be a 170-ft lane with 200-ft. of taper as storage is not anticipated to be an issue; and

- ***Southbound (Site Access):*** Construct new access with one entering lane and two exiting lanes designated as a separate left-turn lane and separate right-turn lane. A minimum of 200-ft of storage is recommended for the right-turn lane. Place new approach under STOP sign control.

Jenkins Hill Road at Southern Access: This intersection will also serve as a primary access for the campus serving parent drop-offs/pick-ups, student drivers and staff, etc. This access is proposed approximately 450-ft. north of US 17, which is considered good separation. The following geometry is recommended for this intersection:

- ***Northbound (Jenkins Hill Road) Approach:*** A dedicated right-turn lane is recommended for this approach to separate traffic entering the school from bus traffic that will continue north;

- ***Southbound (Jenkins Hill Road) Approach:*** Movements from the north into the access are expected to be negligible and a dedicated left-turn lane is not recommended; and

- ***Westbound (Site Access):*** Construct new access with one entering lane and one exiting lane. Place new approach under STOP sign control.

Jenkins Hill Road at Northern Access (Buses): This intersection will service only bus traffic during school operations and is located approximately 400-ft. north the southern access, which is considered good separation. Based on the minimal conflicting volumes, single lane approaches are recommended for all approaches to this intersection. Turning radii should be designed for bus traffic. The westbound site access approach should be placed under STOP sign control.

Duffield Road Connectivity: The existing master plan calls for an extension of Duffield Road into the site. While this would provide an additional connection to US 17, the following should be noted:

1) While Duffield Road can be expected to service some school traffic oriented to/from the east, these movements could be accommodated at the other school access drives. Analyses for this option are presented later in this report.

2) While it would not be logical for school traffic oriented from Awendaw/Mount Pleasant to utilize this intersection, the eastbound left-turn movement would still be allowed, which may require a dedicated left-turn lane within the median of US 17, not based on traffic volumes, but based on safety due to the high-speed nature of US 17 in this area. If the connection to the school is provided, it is likely also that a westbound right-turn deceleration lane would be required.

Stacking

The conceptual plan for the school indicates approximately 4,000-feet of double-lane stacking, which exceeds SCDOT guidelines, and should be more than enough accommodate anticipated on-site stacking.

OFF-SITE IMPROVEMENTS

US 17 at Jenkins Hill Road

This intersection will be critical for school traffic as all bus traffic will utilize this intersection as well as significant entrances and exists for passenger vehicles. The following improvements are recommended for this intersection:

- ***Eastbound (US 17) Approach:*** The existing left-turn lane for this approach will need to be upgraded to provide for 250-ft of storage with 200-ft. of taper. The existing storage for this lane is approximately 210-ft. Final design should be coordinated with SCDOT and may require an offset design as the existing turn lane is a standard parallel design;

- ***Westbound (US 17) Approach:*** SCDOT standards call for a dedicated right-turn with 250-ft. of storage and 200-ft. of taper.

- ***Southbound (Jenkins Hill Road):*** Widen the southbound approach to provide for separate left and right-turn lanes. A minimum of 200-ft of storage is recommended for the right-turn lane. Maintain STOP sign control for the intersection.

Capacity analyses have been conducted to evaluate the proposed mitigation measures for the intersection of US 17 at Jenkins Hill Road and for the intersection of US 17 at the direct site access with the Duffield Road connection eliminated and volumes reassigned. The results of these analyses are shown in **Table 4**.

Table 4
MITIGATED LEVEL-OF-SERVICE SUMMARY
High School/ Middle School In Awendaw

Unsignalized Intersections	Time Period	FUTURE 2025 NO-BUILD CONDITIONS Delay[a]	FUTURE 2025 NO-BUILD CONDITIONS LOS[b]	FUTURE 2025 BUILD CONDITIONS Delay	FUTURE 2025 BUILD CONDITIONS LOS	FUTURE 2025 BUILD CONDITIONS MITIGATED Delay	FUTURE 2025 BUILD CONDITIONS MITIGATED LOS
US 17 at Jenkins Hill Road	AM	11.6	B	20.0	C	15.0	C
	PM School	8.5	A	18.8	B	14.1	B
	PM	9.8	A	12.1	B	11.5	B
US 17 at Main School Access (Students, Staff, Parents)	AM			14.0	B	14.8	B
	PM School			12.9	B	13.6	B
	PM			11.1	B	11.3	B

a. Delay in seconds-per-vehicle.
b. LOS = Level-of-Service.

GENERAL NOTES:
1. For unsignalized intersections, Delay is representative of the critical movement.

As shown, the proposed turn-lane improvements for the US 17 at Jenkins Hill Road will have a positive impact on the intersection. Analysis also indicate that the US 17 at site access intersection could accommodate additional volumes that were assigned to the Duffield Road connection without significant increases in delay.

CONCLUSIONS

The traffic study has been prepared to evaluate the traffic impacts and access needs for a combined high school/middle school campus along the north side of US 17 in the proximity of Kaiser Farm Road in rural Charleston County near Awendaw, South Carolina. The school is being planned for 500 middle school students and 500 high school students. A horizon year of 2025 has been reviewed for this report.

Access for the school is currently proposed via a main entrance for students, staff and parent drop-offs/pick-ups to US 17 in the current location Kaiser Farm Road where an existing median break is provided. A second entrance for students, staff and parent drop-offs will be provided to Jenkins Hill Road. The bus loop will be serviced via a separate connection to Jenkins Hill Road. Connectivity to the east to Duffield Road is also proposed.

Turn lane improvements have been recommended for the main intersection to US 17 and the intersection of US 17 at Jenkins Hill Road that will minimize impacts on US 17 through volumes and provide for good traffic operations. Conflicting traffic volumes along Jenkins Hill Road are expected to be minimal although a right-turn lane is recommended at the southern access to separate passenger vehicles and buses that will continue north.

While the proposed extension of Duffield Road into the site would service some traffic oriented to/from the east (McClellanville), analyses indicate that the site can function acceptably without this connection. If this connection is provided, there may be improvements required for the US 17 at Duffield Road intersection as there is currently not a deceleration lane for US 17 in either direction.

APPENDIX

- Count Data
- Capacity Analyses

COUNT DATA

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File Name : US 17 @ Jenkins Hill Rd
Site Code : 00092619
Start Date : 09/26/2019
Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	Jenkins Hill Rd Southbound				US 17 Westbound				Northbound				US 17 Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	0	0	1	0	0	124	1	0	0	0	0	0	0	66	0	1	193
07:15	0	0	2	0	0	141	0	0	0	0	0	0	0	78	0	0	221
07:30	0	0	1	0	0	145	0	0	0	0	0	0	0	73	0	0	219
07:45	1	0	0	0	0	126	0	0	0	0	0	0	0	70	1	0	198
Total	1	0	4	0	0	536	1	0	0	0	0	0	0	287	1	1	831
08:00	0	0	0	0	0	131	0	0	0	0	0	0	1	63	0	0	195
08:15	0	0	0	0	0	110	0	0	0	0	0	0	0	68	0	0	178
08:30	0	0	2	0	0	113	0	0	0	0	0	0	0	73	0	0	188
08:45	0	0	0	0	0	105	0	0	0	0	0	0	1	62	0	0	168
Total	0	0	2	0	0	459	0	0	0	0	0	0	2	266	0	0	729
14:00	1	0	0	0	0	79	1	0	0	0	0	0	0	128	0	1	210
14:15	1	0	0	0	0	91	0	0	0	0	0	0	0	121	0	0	213
14:30	0	0	0	0	0	118	0	0	0	0	0	0	2	146	1	0	267
14:45	0	0	0	0	0	90	1	0	0	0	0	0	1	152	0	0	244
Total	2	0	0	0	0	378	2	0	0	0	0	0	3	547	1	1	934
15:00	0	0	0	0	0	107	0	0	0	0	0	0	1	148	0	0	256
15:15	0	0	0	0	0	105	0	0	0	0	0	0	0	141	0	0	246
15:30	0	0	0	0	0	111	0	0	0	0	0	0	0	140	0	0	251
15:45	0	0	0	0	0	84	0	0	0	0	0	0	0	170	0	0	254
Total	0	0	0	0	0	407	0	0	0	0	0	0	1	599	0	0	1007
16:00	0	0	1	0	0	91	0	0	0	0	0	0	0	151	0	0	243
16:15	0	0	1	0	0	98	0	0	0	0	0	0	1	176	0	0	276
16:30	0	0	0	0	0	69	0	0	0	0	0	0	0	142	0	0	211
16:45	0	0	0	0	0	76	1	0	0	0	0	0	0	122	0	0	199
Total	0	0	2	0	0	334	1	0	0	0	0	0	1	591	0	0	929
17:00	0	0	2	0	0	91	1	0	0	0	0	0	0	140	0	0	234
17:15	1	0	1	0	0	87	0	0	0	0	0	0	0	134	0	0	223
17:30	0	0	0	0	0	63	1	0	0	0	0	0	0	123	0	0	187
17:45	0	0	0	0	0	85	1	0	0	0	0	0	0	118	0	0	204
Total	1	0	3	0	0	326	3	0	0	0	0	0	0	515	0	0	848
Grand Total	4	0	11	0	0	2440	7	0	0	0	0	0	7	2805	2	2	5278
Apprch %	26.7	0	73.3	0	0	99.7	0.3	0	0	0	0	0	0.2	99.6	0.1	0.1	
Total %	0.1	0	0.2	0	0	46.2	0.1	0	0	0	0	0	0.1	53.1	0	0	
Passenger Vehicles	4	0	11	0	0	2316	7	0	0	0	0	0	7	2654	1	2	5002
% Passenger Vehicles	100	0	100	0	0	94.9	100	0	0	0	0	0	100	94.6	50	100	94.8
Heavy Vehicles	0	0	0	0	0	100	0	0	0	0	0	0	0	131	1	0	232
% Heavy Vehicles	0	0	0	0	0	4.1	0	0	0	0	0	0	0	4.7	50	0	4.4
Buses	0	0	0	0	0	24	0	0	0	0	0	0	0	20	0	0	44
% Buses	0	0	0	0	0	1	0	0	0	0	0	0	0	0.7	0	0	0.8

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File Name : US 17 @ Jenkins Hill Rd
Site Code : 00092619
Start Date : 09/26/2019
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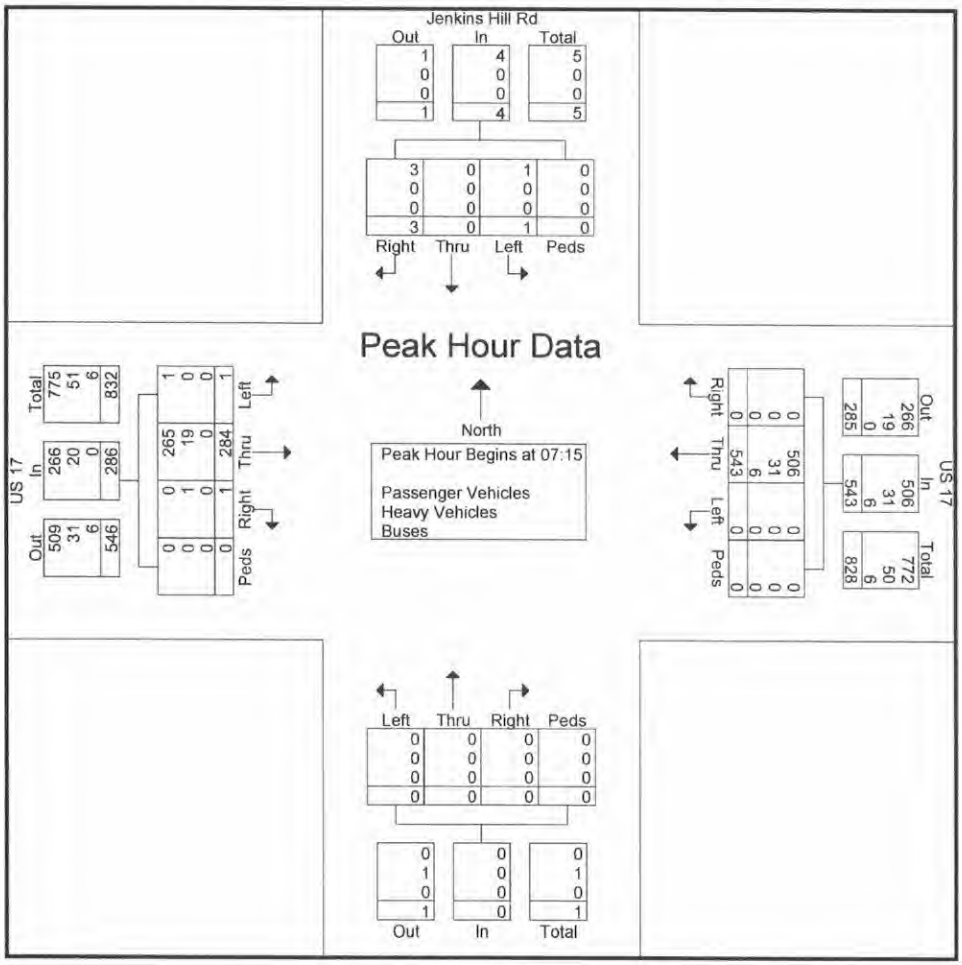
	Jenkins Hill Rd Southbound					US 17 Westbound					Northbound					US 17 Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15																					
07:15	0	0	**2**	0	**2**	0	141	0	0	141	0	0	0	0	0	0	**78**	0	0	**78**	**221**
07:30	0	0	1	0	1	0	**145**	0	0	**145**	0	0	0	0	0	0	73	0	0	73	219
07:45	**1**	0	0	0	1	0	126	0	0	126	0	0	0	0	0	0	70	**1**	0	71	198
08:00	0	0	0	0	0	0	131	0	0	131	0	0	0	0	0	**1**	63	0	0	64	195
Total Volume	1	0	3	0	4	0	543	0	0	543	0	0	0	0	0	1	284	1	0	286	833
% App. Total	25	0	75	0		0	100	0	0		0	0	0	0		0.3	99.3	0.3	0		
PHF	.250	.000	.375	.000	.500	.000	.936	.000	.000	.936	.000	.000	.000	.000	.000	.250	.910	.250	.000	.917	.942
Passenger Vehicles	1	0	3	0	4	0	506	0	0	506	0	0	0	0	0	1	265	0	0	266	776
% Passenger Vehicles																					
Heavy Vehicles	0	0	0	0	0	0	31	0	0	31	0	0	0	0	0	0	19	1	0	20	51
% Heavy Vehicles	0	0	0	0	0	0	5.7	0	0	5.7	0	0	0	0	0	0	6.7	100	0	7.0	6.1
Buses	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	6
% Buses	0	0	0	0	0	0	1.1	0	0	1.1	0	0	0	0	0	0	0	0	0	0	0.7



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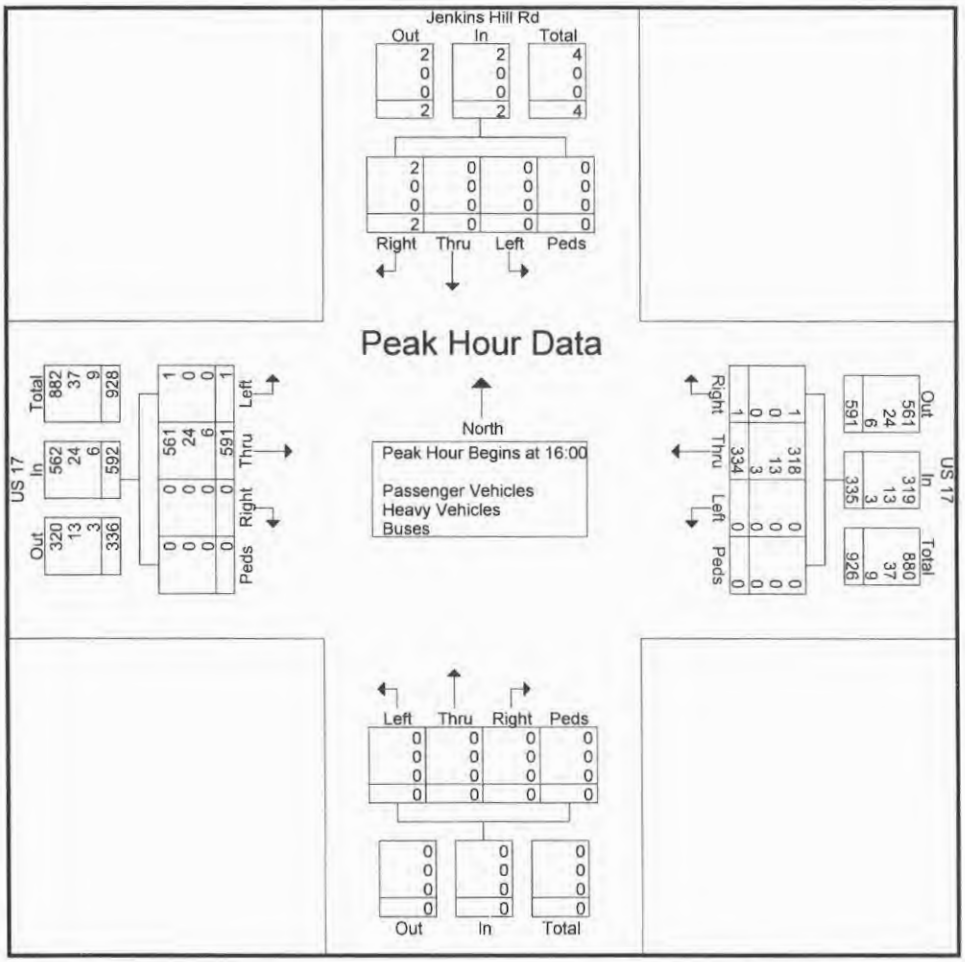
File Name : US 17 @ Jenkins Hill Rd
Site Code : 00092619
Start Date : 09/26/2019
Page No : 5

	Jenkins Hill Rd Southbound					US 17 Westbound					Northbound					US 17 Eastbound					
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
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:00																					
16:00	0	0	**1**	0	**1**	0	91	0	0	91	0	0	0	0	0	0	151	0	0	151	243
16:15	0	0	1	0	1	0	**98**	0	0	**98**	0	0	0	0	0	**1**	**176**	0	0	**177**	**276**
16:30	0	0	0	0	0	0	69	0	0	69	0	0	0	0	0	0	142	0	0	142	211
16:45	0	0	0	0	0	0	76	**1**	0	77	0	0	0	0	0	0	122	0	0	122	199
Total Volume	0	0	2	0	2	0	334	1	0	335	0	0	0	0	0	1	591	0	0	592	929
% App. Total	0	0	100	0		0	99.7	0.3	0		0	0	0	0		0.2	99.8	0	0		
PHF	.000	.000	.500	.000	.500	.000	.852	.250	.000	.855	.000	.000	.000	.000	.000	.250	.839	.000	.000	.836	.841
Passenger Vehicles	0	0	2	0	2	0	318	1	0	319	0	0	0	0	0	1	561	0	0	562	883
% Passenger Vehicles																					
Heavy Vehicles	0	0	0	0	0	0	13	0	0	13	0	0	0	0	0	0	24	0	0	24	37
% Heavy Vehicles	0	0	0	0	0	0	3.9	0	0	3.9	0	0	0	0	0	0	4.1	0	0	4.1	4.0
Buses	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	6	0	0	6	9
% Buses	0	0	0	0	0	0	0.9	0	0	0.9	0	0	0	0	0	0	1.0	0	0	1.0	1.0



SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201
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File Name : US 17 @ Duffield Rd
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Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	Duffield Rd Southbound				US 17 Westbound				Northbound				US 17 Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	0	0	1	0	0	113	0	0	0	0	0	0	0	63	0	0	177
07:15	0	0	0	0	0	139	0	0	0	0	0	0	1	76	0	0	216
07:30	0	0	0	0	0	140	0	0	0	0	0	0	0	72	0	0	212
07:45	0	0	0	0	0	131	0	0	0	0	0	0	1	91	1	0	224
Total	0	0	1	0	0	523	0	0	0	0	0	0	2	302	1	0	829
08:00	0	0	0	0	0	116	0	0	0	0	1	0	0	60	0	0	177
08:15	0	0	0	0	0	103	0	0	0	0	0	0	0	67	0	0	170
08:30	0	0	1	1	0	113	0	0	0	0	0	0	0	72	0	0	187
08:45	0	0	1	0	0	107	0	0	0	0	0	0	0	64	0	0	172
Total	0	0	2	1	0	439	0	0	0	0	1	0	0	263	0	0	706
14:00	0	0	2	0	0	82	1	0	0	0	0	0	1	130	0	0	216
14:15	0	0	0	0	0	92	0	0	0	0	0	0	0	122	0	0	214
14:30	1	0	1	0	0	114	2	0	0	0	0	0	2	145	0	0	265
14:45	1	0	0	0	0	94	0	0	0	0	0	0	1	151	0	0	247
Total	2	0	3	0	0	382	3	0	0	0	0	0	4	548	0	0	942
15:00	0	0	0	0	0	109	0	0	0	0	0	0	0	150	0	0	259
15:15	0	0	0	0	0	104	0	0	0	0	0	0	0	136	1	0	241
15:30	0	0	0	0	0	107	1	0	0	0	0	0	1	139	0	0	248
15:45	0	0	1	0	0	80	0	0	0	0	0	0	0	175	0	0	256
Total	0	0	1	0	0	400	1	0	0	0	0	0	1	600	1	0	1004
16:00	0	0	1	0	0	94	1	0	0	0	0	0	0	150	0	0	246
16:15	0	0	0	0	0	93	0	0	0	0	0	0	2	177	0	0	272
16:30	1	0	1	0	0	74	1	0	0	0	1	0	0	134	0	0	212
16:45	0	0	0	0	0	71	0	0	0	0	0	0	0	120	0	0	191
Total	1	0	2	0	0	332	2	0	0	0	1	0	2	581	0	0	921
17:00	0	0	0	0	0	96	1	0	0	0	0	0	0	146	0	0	243
17:15	0	0	1	0	0	81	0	0	0	0	0	0	0	135	0	0	217
17:30	0	0	2	0	0	70	0	0	0	0	0	0	1	120	0	0	193
17:45	0	0	0	0	0	77	0	0	0	0	0	0	0	118	0	0	195
Total	0	0	3	0	0	324	1	0	0	0	0	0	1	519	0	0	848
Grand Total	3	0	12	1	0	2400	7	0	0	0	2	0	10	2813	2	0	5250
Apprch %	18.8	0	75	6.2	0	99.7	0.3	0	0	0	100	0	0.4	99.6	0.1	0	
Total %	0.1	0	0.2	0	0	45.7	0.1	0	0	0	0	0	0.2	53.6	0	0	
Passenger Vehicles	3	0	12	1	0	2210	6	0	0	0	2	0	10	2612	2	0	4858
% Passenger Vehicles	100	0	100	100	0	92.1	85.7	0	0	0	100	0	100	92.9	100	0	92.5
Heavy Vehicles	0	0	0	0	0	166	1	0	0	0	0	0	0	180	0	0	347
% Heavy Vehicles	0	0	0	0	0	6.9	14.3	0	0	0	0	0	0	6.4	0	0	6.6
Buses	0	0	0	0	0	24	0	0	0	0	0	0	0	21	0	0	45
% Buses	0	0	0	0	0	1	0	0	0	0	0	0	0	0.7	0	0	0.9

SHORT COUNTS, LLC

735 Maryland St
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File Name : US 17 @ Duffield Rd
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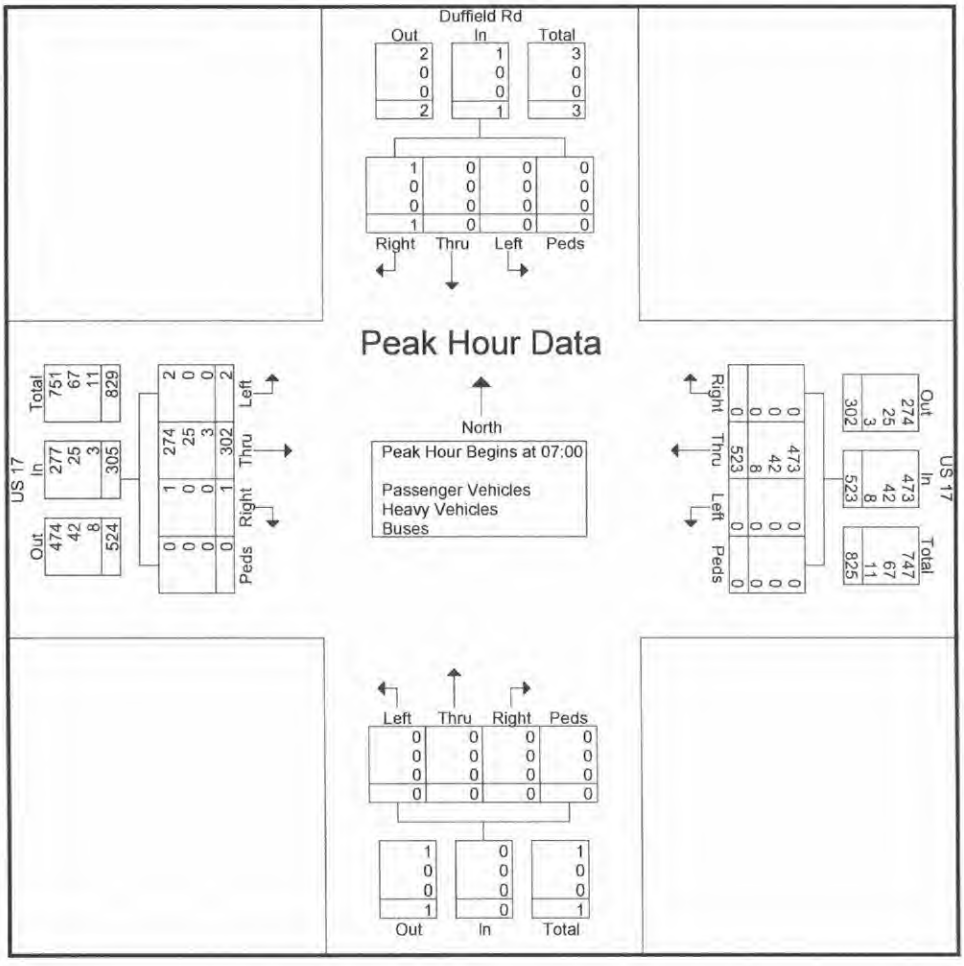
	Duffield Rd Southbound					US 17 Westbound					Northbound					US 17 Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00																					
07:00	0	0	**1**	0	**1**	0	113	0	0	113	0	0	0	0	0	0	63	0	0	63	177
07:15	0	0	0	0	0	0	139	0	0	139	0	0	0	0	0	**1**	76	0	0	77	216
07:30	0	0	0	0	0	0	**140**	0	0	**140**	0	0	0	0	0	0	72	0	0	72	212
07:45	0	0	0	0	0	0	131	0	0	131	0	0	0	0	0	1	**91**	**1**	0	**93**	**224**
Total Volume	0	0	1	0	1	0	523	0	0	523	0	0	0	0	0	2	302	1	0	305	829
% App. Total	0	0	100	0		0	100	0	0		0	0	0	0		0.7	99	0.3	0		
PHF	.000	.000	.250	.000	.250	.000	.934	.000	.000	.934	.000	.000	.000	.000	.000	.500	.830	.250	.000	.820	.925
Passenger Vehicles	0	0	1	0	1	0	473	0	0	473	0	0	0	0	0	2	274	1	0	277	751
% Passenger Vehicles																					
Heavy Vehicles	0	0	0	0	0	0	42	0	0	42	0	0	0	0	0	0	25	0	0	25	67
% Heavy Vehicles	0	0	0	0	0	0	8.0	0	0	8.0	0	0	0	0	0	0	8.3	0	0	8.2	8.1
Buses	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	3	0	0	3	11
% Buses	0	0	0	0	0	0	1.5	0	0	1.5	0	0	0	0	0	0	1.0	0	0	1.0	1.3



SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201

We can't say we're the Best, but you Can!

File Name : US 17 @ Duffield Rd
Site Code :
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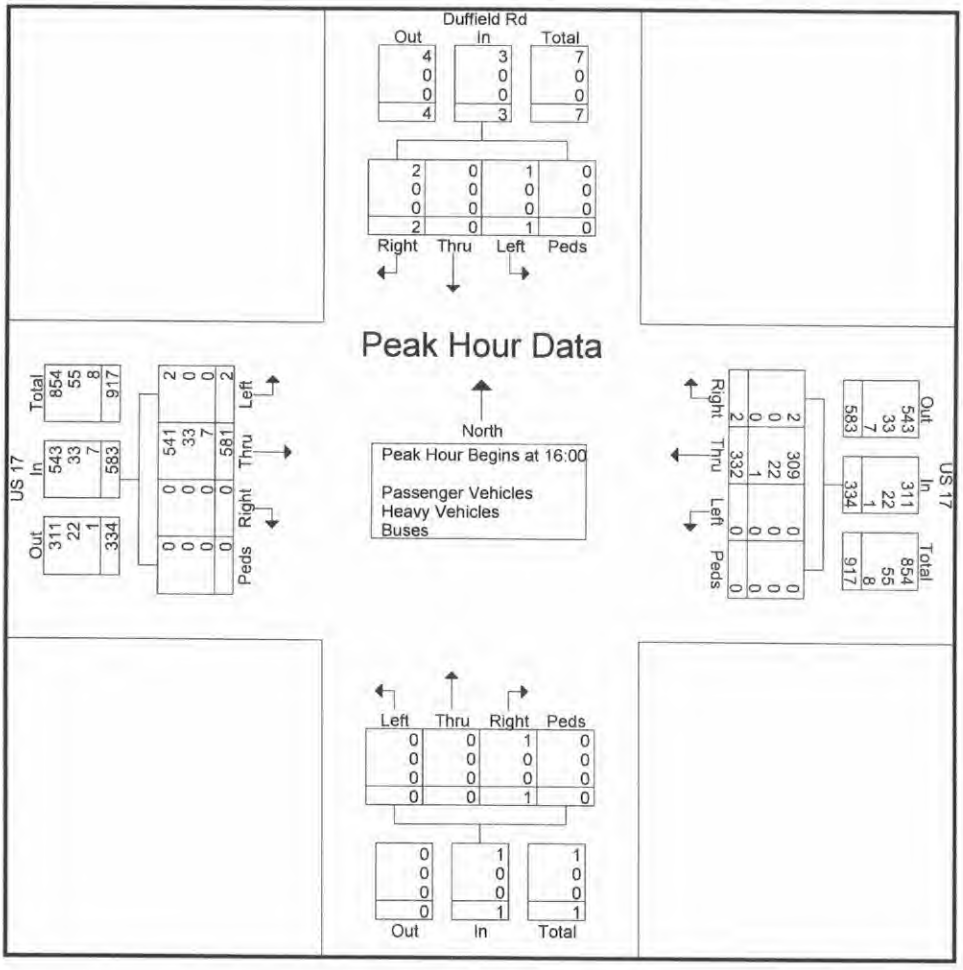
	Duffield Rd Southbound					US 17 Westbound					Northbound					US 17 Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:00																					
16:00	0	0	**1**	0	1	0	**94**	**1**	0	**95**	0	0	0	0	0	0	150	0	0	150	246
16:15	0	0	0	0	0	0	93	0	0	93	0	0	0	0	0	**2**	**177**	0	0	**179**	**272**
16:30	**1**	0	1	0	**2**	0	74	1	0	75	0	0	**1**	0	**1**	0	134	0	0	134	212
16:45	0	0	0	0	0	0	71	0	0	71	0	0	0	0	0	0	120	0	0	120	191
Total Volume	1	0	2	0	3	0	332	2	0	334	0	0	1	0	1	2	581	0	0	583	921
% App. Total	33.3	0	66.7	0		0	99.4	0.6	0		0	0	100	0		0.3	99.7	0	0		
PHF	.250	.000	.500	.000	.375	.000	.883	.500	.000	.879	.000	.000	.250	.000	.250	.250	.821	.000	.000	.814	.847
Passenger Vehicles	1	0	2	0	3	0	309	2	0	311	0	0	1	0	1	2	541	0	0	543	858
% Passenger Vehicles																					
Heavy Vehicles	0	0	0	0	0	0	22	0	0	22	0	0	0	0	0	0	33	0	0	33	55
% Heavy Vehicles	0	0	0	0	0	0	6.6	0	0	6.6	0	0	0	0	0	0	5.7	0	0	5.7	6.0
Buses	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	7	0	0	7	8
% Buses	0	0	0	0	0	0	0.3	0	0	0.3	0	0	0	0	0	0	1.2	0	0	1.2	0.9



CAPACITY ANALYSES

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	303	543	0	1	3
Future Vol, veh/h	1	303	543	0	1	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	329	590	0	1	3

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	590	0	-	0	757	295
Stage 1	-	-	-	-	590	-
Stage 2	-	-	-	-	167	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	982	-	-	-	344	701
Stage 1	-	-	-	-	517	-
Stage 2	-	-	-	-	845	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	982	-	-	-	344	701
Mov Cap-2 Maneuver	-	-	-	-	476	-
Stage 1	-	-	-	-	516	-
Stage 2	-	-	-	-	845	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	982	-	-	-	627
HCM Lane V/C Ratio	0.001	-	-	-	0.007
HCM Control Delay (s)	8.7	-	-	-	10.8
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	302	542	0	0	1
Future Vol, veh/h	2	302	542	0	0	1
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	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	328	589	0	0	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	589	0	-	0	757	295
Stage 1	-	-	-	-	589	-
Stage 2	-	-	-	-	168	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	982	-	-	-	344	701
Stage 1	-	-	-	-	517	-
Stage 2	-	-	-	-	844	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	982	-	-	-	343	701
Mov Cap-2 Maneuver	-	-	-	-	476	-
Stage 1	-	-	-	-	516	-
Stage 2	-	-	-	-	844	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	10.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	982	-	-	-	701
HCM Lane V/C Ratio	0.002	-	-	-	0.002
HCM Control Delay (s)	8.7	0	-	-	10.1
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	601	407	0	0	0
Future Vol, veh/h	1	601	407	0	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	200	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	653	442	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	442	0	-	0	771	221
Stage 1	-	-	-	-	442	-
Stage 2	-	-	-	-	329	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1114	-	-	-	337	783
Stage 1	-	-	-	-	615	-
Stage 2	-	-	-	-	701	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1114	-	-	-	337	783
Mov Cap-2 Maneuver	-	-	-	-	517	-
Stage 1	-	-	-	-	614	-
Stage 2	-	-	-	-	701	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1114	-	-	-	-
HCM Lane V/C Ratio	0.001	-	-	-	-
HCM Control Delay (s)	8.2	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	600	406	1	0	1
Future Vol, veh/h	1	600	406	1	0	1
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	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	652	441	1	0	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	442	0	-	0	770	221
Stage 1	-	-	-	-	442	-
Stage 2	-	-	-	-	328	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1114	-	-	-	337	783
Stage 1	-	-	-	-	615	-
Stage 2	-	-	-	-	702	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1114	-	-	-	337	783
Mov Cap-2 Maneuver	-	-	-	-	518	-
Stage 1	-	-	-	-	614	-
Stage 2	-	-	-	-	702	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1114	-	-	-	783
HCM Lane V/C Ratio	0.001	-	-	-	0.001
HCM Control Delay (s)	8.2	0	-	-	9.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	591	334	1	0	2
Future Vol, veh/h	1	591	334	1	0	2
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	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	704	398	1	0	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	399	0	-	0	753	200
Stage 1	-	-	-	-	399	-
Stage 2	-	-	-	-	354	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1156	-	-	-	346	808
Stage 1	-	-	-	-	647	-
Stage 2	-	-	-	-	681	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1156	-	-	-	346	808
Mov Cap-2 Maneuver	-	-	-	-	528	-
Stage 1	-	-	-	-	646	-
Stage 2	-	-	-	-	681	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1156	-	-	-	808
HCM Lane V/C Ratio	0.001	-	-	-	0.003
HCM Control Delay (s)	8.1	-	-	-	9.5
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	589	333	2	1	2
Future Vol, veh/h	2	589	333	2	1	2
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	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	693	392	2	1	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	394	0	-	0	744	197
Stage 1	-	-	-	-	393	-
Stage 2	-	-	-	-	351	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1161	-	-	-	350	811
Stage 1	-	-	-	-	651	-
Stage 2	-	-	-	-	684	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1161	-	-	-	349	811
Mov Cap-2 Maneuver	-	-	-	-	531	-
Stage 1	-	-	-	-	649	-
Stage 2	-	-	-	-	684	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1161	-	-	-	690
HCM Lane V/C Ratio	0.002	-	-	-	0.005
HCM Control Delay (s)	8.1	0	-	-	10.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	303	543	0	1	3
Future Vol, veh/h	1	303	543	0	1	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	408	732	0	1	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	732	0	-	0	938	366
Stage 1	-	-	-	-	732	-
Stage 2	-	-	-	-	206	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	868	-	-	-	263	631
Stage 1	-	-	-	-	437	-
Stage 2	-	-	-	-	808	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	868	-	-	-	263	631
Mov Cap-2 Maneuver	-	-	-	-	403	-
Stage 1	-	-	-	-	437	-
Stage 2	-	-	-	-	808	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	868	-	-	-	553
HCM Lane V/C Ratio	0.002	-	-	-	0.01
HCM Control Delay (s)	9.2	-	-	-	11.6
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	302	542	0	0	1
Future Vol, veh/h	2	302	542	0	0	1
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	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	407	731	0	0	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	731	0	-	0	941	366
Stage 1	-	-	-	-	731	-
Stage 2	-	-	-	-	210	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	869	-	-	-	262	631
Stage 1	-	-	-	-	437	-
Stage 2	-	-	-	-	805	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	869	-	-	-	261	631
Mov Cap-2 Maneuver	-	-	-	-	401	-
Stage 1	-	-	-	-	435	-
Stage 2	-	-	-	-	805	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	10.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	869	-	-	-	631
HCM Lane V/C Ratio	0.003	-	-	-	0.002
HCM Control Delay (s)	9.2	0	-	-	10.7
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	601	407	0	0	0
Future Vol, veh/h	1	601	407	0	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	200	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	810	549	0	0	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	549	0	-	0	956	275
Stage 1	-	-	-	-	549	-
Stage 2	-	-	-	-	407	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1017	-	-	-	256	722
Stage 1	-	-	-	-	542	-
Stage 2	-	-	-	-	641	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1017	-	-	-	256	722
Mov Cap-2 Maneuver	-	-	-	-	448	-
Stage 1	-	-	-	-	541	-
Stage 2	-	-	-	-	641	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1017	-	-	-	-
HCM Lane V/C Ratio	0.001	-	-	-	-
HCM Control Delay (s)	8.5	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↑	↑↕		↾	
Traffic Vol, veh/h	1	600	406	1	0	1
Future Vol, veh/h	1	600	406	1	0	1
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	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	809	547	1	0	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	548	0	-	0	955	274
Stage 1	-	-	-	-	548	-
Stage 2	-	-	-	-	407	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1018	-	-	-	256	724
Stage 1	-	-	-	-	543	-
Stage 2	-	-	-	-	641	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1018	-	-	-	255	724
Mov Cap-2 Maneuver	-	-	-	-	449	-
Stage 1	-	-	-	-	542	-
Stage 2	-	-	-	-	641	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1018	-	-	-	724
HCM Lane V/C Ratio	0.001	-	-	-	0.002
HCM Control Delay (s)	8.5	0	-	-	10
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	591	334	1	0	2
Future Vol, veh/h	1	591	334	1	0	2
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	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	872	493	1	0	3

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	494	0	-	0	932	247
Stage 1	-	-	-	-	494	-
Stage 2	-	-	-	-	438	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1066	-	-	-	265	753
Stage 1	-	-	-	-	579	-
Stage 2	-	-	-	-	618	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1066	-	-	-	265	753
Mov Cap-2 Maneuver	-	-	-	-	461	-
Stage 1	-	-	-	-	578	-
Stage 2	-	-	-	-	618	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1066	-	-	-	753
HCM Lane V/C Ratio	0.001	-	-	-	0.004
HCM Control Delay (s)	8.4	-	-	-	9.8
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		⋎	
Traffic Vol, veh/h	2	589	333	2	1	2
Future Vol, veh/h	2	589	333	2	1	2
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	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	859	486	3	1	3

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	489	0	-	0	924	245
Stage 1	-	-	-	-	488	-
Stage 2	-	-	-	-	436	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1070	-	-	-	268	755
Stage 1	-	-	-	-	583	-
Stage 2	-	-	-	-	619	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1070	-	-	-	267	755
Mov Cap-2 Maneuver	-	-	-	-	462	-
Stage 1	-	-	-	-	580	-
Stage 2	-	-	-	-	619	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	10.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1070	-	-	-	623
HCM Lane V/C Ratio	0.003	-	-	-	0.007
HCM Control Delay (s)	8.4	0	-	-	10.8
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	98	511	658	13	29	128
Future Vol, veh/h	98	511	658	13	29	128
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	60	92	92	60	60	60
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	163	555	715	22	48	213

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	737	0	-	0	1330	369
Stage 1	-	-	-	-	726	-
Stage 2	-	-	-	-	604	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	865	-	-	-	146	628
Stage 1	-	-	-	-	440	-
Stage 2	-	-	-	-	508	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	865	-	-	-	119	628
Mov Cap-2 Maneuver	-	-	-	-	260	-
Stage 1	-	-	-	-	357	-
Stage 2	-	-	-	-	508	-

Approach	EB	WB	SB
HCM Control Delay, s	2.3	0	20
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	865	-	-	-	498
HCM Lane V/C Ratio	0.189	-	-	-	0.525
HCM Control Delay (s)	10.1	-	-	-	20
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.7	-	-	-	3

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↑	↑↕		↾	
Traffic Vol, veh/h	2	415	668	38	4	1
Future Vol, veh/h	2	415	668	38	4	1
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	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	60	60	60
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	451	726	63	7	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	789	0	-	0	988	395
Stage 1	-	-	-	-	758	-
Stage 2	-	-	-	-	230	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	827	-	-	-	244	604
Stage 1	-	-	-	-	423	-
Stage 2	-	-	-	-	786	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	827	-	-	-	243	604
Mov Cap-2 Maneuver	-	-	-	-	388	-
Stage 1	-	-	-	-	422	-
Stage 2	-	-	-	-	786	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	13.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	827	-	-	-	418
HCM Lane V/C Ratio	0.003	-	-	-	0.02
HCM Control Delay (s)	9.4	0	-	-	13.8
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	135	405	621	48	13	50
Future Vol, veh/h	135	405	621	48	13	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	200	0	0
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	60	92	92	60	60	60
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	225	440	675	80	22	83

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	755	0	-	0	1345	338
Stage 1	-	-	-	-	675	-
Stage 2	-	-	-	-	670	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	851	-	-	-	143	658
Stage 1	-	-	-	-	467	-
Stage 2	-	-	-	-	470	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	851	-	-	-	105	658
Mov Cap-2 Maneuver	-	-	-	-	209	-
Stage 1	-	-	-	-	344	-
Stage 2	-	-	-	-	470	-

Approach	EB	WB	SB
HCM Control Delay, s	3.6	0	14
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	851	-	-	-	209	658
HCM Lane V/C Ratio	0.264	-	-	-	0.104	0.127
HCM Control Delay (s)	10.7	-	-	-	24.2	11.3
HCM Lane LOS	B	-	-	-	C	B
HCM 95th %tile Q(veh)	1.1	-	-	-	0.3	0.4

Intersection	
Int Delay, s/veh	5.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	142	0	11	100	0	15
Future Vol, veh/h	142	0	11	100	0	15
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	60	60	60	60	60	60
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	237	0	18	167	0	25

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	127	102	0	0	185	0
Stage 1	102	-	-	-	-	-
Stage 2	25	-	-	-	-	-
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	868	953	-	-	1390	-
Stage 1	922	-	-	-	-	-
Stage 2	998	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	868	953	-	-	1390	-
Mov Cap-2 Maneuver	868	-	-	-	-	-
Stage 1	922	-	-	-	-	-
Stage 2	998	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	868	1390	-
HCM Lane V/C Ratio	-	-	0.273	-	-
HCM Control Delay (s)	-	-	10.7	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	1.1	0	-

Intersection	
Int Delay, s/veh	3.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	0	1	10	0	5
Future Vol, veh/h	10	0	1	10	0	5
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	60	60	60	60	60	60
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	0	2	17	0	8

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	19	11	0	0	19	0
Stage 1	11	-	-	-	-	-
Stage 2	8	-	-	-	-	-
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	998	1070	-	-	1597	-
Stage 1	1012	-	-	-	-	-
Stage 2	1015	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	998	1070	-	-	1597	-
Mov Cap-2 Maneuver	998	-	-	-	-	-
Stage 1	1012	-	-	-	-	-
Stage 2	1015	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	998	1597	-
HCM Lane V/C Ratio	-	-	0.017	-	-
HCM Control Delay (s)	-	-	8.7	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	52	811	553	6	44	119
Future Vol, veh/h	52	811	553	6	44	119
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	60	92	92	60	60	60
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	87	882	601	10	73	198

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	611	0	-	0	1221	306
Stage 1	-	-	-	-	606	-
Stage 2	-	-	-	-	615	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	964	-	-	-	172	690
Stage 1	-	-	-	-	507	-
Stage 2	-	-	-	-	502	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	964	-	-	-	157	690
Mov Cap-2 Maneuver	-	-	-	-	325	-
Stage 1	-	-	-	-	461	-
Stage 2	-	-	-	-	502	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	18.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	964	-	-	-	529
HCM Lane V/C Ratio	0.09	-	-	-	0.514
HCM Control Delay (s)	9.1	-	-	-	18.8
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.3	-	-	-	2.9

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	809	523	12	7	1
Future Vol, veh/h	1	809	523	12	7	1
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	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	60	60	60
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	879	568	20	12	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	588	0	-	0	1020	294
Stage 1	-	-	-	-	578	-
Stage 2	-	-	-	-	442	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	983	-	-	-	233	702
Stage 1	-	-	-	-	524	-
Stage 2	-	-	-	-	615	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	983	-	-	-	233	702
Mov Cap-2 Maneuver	-	-	-	-	428	-
Stage 1	-	-	-	-	523	-
Stage 2	-	-	-	-	615	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	13.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	983	-	-	-	450
HCM Lane V/C Ratio	0.001	-	-	-	0.03
HCM Control Delay (s)	8.7	0	-	-	13.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	66	789	511	14	21	48
Future Vol, veh/h	66	789	511	14	21	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	200	0	0
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	60	92	92	60	60	60
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	110	858	555	23	35	80

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	578	0	-	0	1204	278
Stage 1	-	-	-	-	555	-
Stage 2	-	-	-	-	649	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	992	-	-	-	177	719
Stage 1	-	-	-	-	539	-
Stage 2	-	-	-	-	482	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	992	-	-	-	157	719
Mov Cap-2 Maneuver	-	-	-	-	310	-
Stage 1	-	-	-	-	479	-
Stage 2	-	-	-	-	482	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	12.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	992	-	-	-	310	719
HCM Lane V/C Ratio	0.111	-	-	-	0.113	0.111
HCM Control Delay (s)	9.1	-	-	-	18.1	10.6
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.4	-	-	-	0.4	0.4

Intersection	
Int Delay, s/veh	7.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	153	0	11	47	0	10
Future Vol, veh/h	153	0	11	47	0	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	60	60	60	60	60	60
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	255	0	18	78	0	17

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	74	57	0	0	96	0
Stage 1	57	-	-	-	-	-
Stage 2	17	-	-	-	-	-
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	930	1009	-	-	1498	-
Stage 1	966	-	-	-	-	-
Stage 2	1006	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	930	1009	-	-	1498	-
Mov Cap-2 Maneuver	930	-	-	-	-	-
Stage 1	966	-	-	-	-	-
Stage 2	1006	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	930	1498	-
HCM Lane V/C Ratio	-	-	0.274	-	-
HCM Control Delay (s)	-	-	10.3	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	1.1	0	-

Intersection	
Int Delay, s/veh	3.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	0	1	10	0	0
Future Vol, veh/h	10	0	1	10	0	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	60	60	60	60	60	60
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	0	2	17	0	0

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	13	11	0	0	19	0
Stage 1	11	-	-	-	-	-
Stage 2	2	-	-	-	-	-
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	1006	1070	-	-	1597	-
Stage 1	1012	-	-	-	-	-
Stage 2	1021	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	1006	1070	-	-	1597	-
Mov Cap-2 Maneuver	1006	-	-	-	-	-
Stage 1	1012	-	-	-	-	-
Stage 2	1021	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1006	1597	-
HCM Lane V/C Ratio	-	-	0.017	-	-
HCM Control Delay (s)	-	-	8.6	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	25	770	431	3	15	40
Future Vol, veh/h	25	770	431	3	15	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	60	84	84	60	60	60
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	42	917	513	5	25	67

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	518	0	-	0	1059	259
Stage 1	-	-	-	-	516	-
Stage 2	-	-	-	-	543	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1044	-	-	-	220	740
Stage 1	-	-	-	-	564	-
Stage 2	-	-	-	-	546	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1044	-	-	-	211	740
Mov Cap-2 Maneuver	-	-	-	-	396	-
Stage 1	-	-	-	-	541	-
Stage 2	-	-	-	-	546	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	12.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1044	-	-	-	598
HCM Lane V/C Ratio	0.04	-	-	-	0.153
HCM Control Delay (s)	8.6	-	-	-	12.1
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	752	422	8	3	2
Future Vol, veh/h	2	752	422	8	3	2
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	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	60	60	60
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	885	496	13	5	3

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	509	0	-	0	950	255
Stage 1	-	-	-	-	503	-
Stage 2	-	-	-	-	447	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1052	-	-	-	258	744
Stage 1	-	-	-	-	573	-
Stage 2	-	-	-	-	611	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1052	-	-	-	257	744
Mov Cap-2 Maneuver	-	-	-	-	454	-
Stage 1	-	-	-	-	571	-
Stage 2	-	-	-	-	611	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1052	-	-	-	538
HCM Lane V/C Ratio	0.002	-	-	-	0.015
HCM Control Delay (s)	8.4	0	-	-	11.8
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	37	748	417	7	7	17
Future Vol, veh/h	37	748	417	7	7	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	200	0	0
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	60	92	92	60	60	60
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	62	813	453	12	12	28

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	465	0	-	0	984	227
Stage 1	-	-	-	-	453	-
Stage 2	-	-	-	-	531	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1093	-	-	-	246	776
Stage 1	-	-	-	-	607	-
Stage 2	-	-	-	-	554	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1093	-	-	-	232	776
Mov Cap-2 Maneuver	-	-	-	-	406	-
Stage 1	-	-	-	-	572	-
Stage 2	-	-	-	-	554	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1093	-	-	-	406	776
HCM Lane V/C Ratio	0.056	-	-	-	0.029	0.037
HCM Control Delay (s)	8.5	-	-	-	14.1	9.8
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.2	-	-	-	0.1	0.1

Intersection	
Int Delay, s/veh	5.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	53	0	2	26	0	2
Future Vol, veh/h	53	0	2	26	0	2
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	60	60	60	60	60	60
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	88	0	3	43	0	3

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	28	25	0	0	46	0
Stage 1	25	-	-	-	-	-
Stage 2	3	-	-	-	-	-
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	987	1051	-	-	1562	-
Stage 1	998	-	-	-	-	-
Stage 2	1020	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	987	1051	-	-	1562	-
Mov Cap-2 Maneuver	987	-	-	-	-	-
Stage 1	998	-	-	-	-	-
Stage 2	1020	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	987	1562	-
HCM Lane V/C Ratio	-	-	0.089	-	-
HCM Control Delay (s)	-	-	9	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	2	0	0	2
Future Vol, veh/h	0	0	2	0	0	2
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	60	60	60	60	60	60
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	3	0	0	3

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	6	3	0	0	3	0
Stage 1	3	-	-	-	-	-
Stage 2	3	-	-	-	-	-
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	1015	1081	-	-	1619	-
Stage 1	1020	-	-	-	-	-
Stage 2	1020	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	1015	1081	-	-	1619	-
Mov Cap-2 Maneuver	1015	-	-	-	-	-
Stage 1	1020	-	-	-	-	-
Stage 2	1020	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	- -	1619	-
HCM Lane V/C Ratio	-	- -	-	-
HCM Control Delay (s)	-	- 0	0	-
HCM Lane LOS	-	- A	A	-
HCM 95th %tile Q(veh)	-	- -	0	-

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	98	511	658	13	29	127
Future Vol, veh/h	98	511	658	13	29	127
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	200	0	200
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	60	92	92	60	60	60
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	163	555	715	22	48	212

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	737	0	-	0	1319	358
Stage 1	-	-	-	-	715	-
Stage 2	-	-	-	-	604	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	865	-	-	-	149	638
Stage 1	-	-	-	-	446	-
Stage 2	-	-	-	-	508	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	865	-	-	-	121	638
Mov Cap-2 Maneuver	-	-	-	-	262	-
Stage 1	-	-	-	-	362	-
Stage 2	-	-	-	-	508	-

Approach	EB	WB	SB
HCM Control Delay, s	2.3	0	15
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	865	-	-	-	262	638
HCM Lane V/C Ratio	0.189	-	-	-	0.184	0.332
HCM Control Delay (s)	10.1	-	-	-	21.8	13.4
HCM Lane LOS	B	-	-	-	C	B
HCM 95th %tile Q(veh)	0.7	-	-	-	0.7	1.4

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	135	405	621	86	17	50
Future Vol, veh/h	135	405	621	86	17	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	200	0	0
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	60	92	92	60	60	60
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	225	440	675	143	28	83

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	818	0	-	0	1345	338
Stage 1	-	-	-	-	675	-
Stage 2	-	-	-	-	670	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	806	-	-	-	143	658
Stage 1	-	-	-	-	467	-
Stage 2	-	-	-	-	470	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	806	-	-	-	103	658
Mov Cap-2 Maneuver	-	-	-	-	207	-
Stage 1	-	-	-	-	337	-
Stage 2	-	-	-	-	470	-

Approach	EB	WB	SB
HCM Control Delay, s	3.8	0	14.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	806	-	-	-	207	658
HCM Lane V/C Ratio	0.279	-	-	-	0.137	0.127
HCM Control Delay (s)	11.2	-	-	-	25.1	11.3
HCM Lane LOS	B	-	-	-	D	B
HCM 95th %tile Q(veh)	1.1	-	-	-	0.5	0.4

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	52	811	553	6	44	119
Future Vol, veh/h	52	811	553	6	44	119
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	200	0	200
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	60	92	92	60	60	60
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	87	882	601	10	73	198

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	611	0	-	0	1216	301
Stage 1	-	-	-	-	601	-
Stage 2	-	-	-	-	615	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	964	-	-	-	173	695
Stage 1	-	-	-	-	510	-
Stage 2	-	-	-	-	502	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	964	-	-	-	157	695
Mov Cap-2 Maneuver	-	-	-	-	326	-
Stage 1	-	-	-	-	464	-
Stage 2	-	-	-	-	502	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	14.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	964	-	-	-	326	695
HCM Lane V/C Ratio	0.09	-	-	-	0.225	0.285
HCM Control Delay (s)	9.1	-	-	-	19.2	12.2
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0.8	1.2

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	66	789	511	25	28	48
Future Vol, veh/h	66	789	511	25	28	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	200	0	0
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	60	92	92	60	60	60
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	110	858	555	42	47	80

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	597	0	-	0	1204	278
Stage 1	-	-	-	-	555	-
Stage 2	-	-	-	-	649	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	976	-	-	-	177	719
Stage 1	-	-	-	-	539	-
Stage 2	-	-	-	-	482	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	976	-	-	-	157	719
Mov Cap-2 Maneuver	-	-	-	-	310	-
Stage 1	-	-	-	-	478	-
Stage 2	-	-	-	-	482	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	13.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	976	-	-	-	310	719
HCM Lane V/C Ratio	0.113	-	-	-	0.151	0.111
HCM Control Delay (s)	9.2	-	-	-	18.7	10.6
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.4	-	-	-	0.5	0.4

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	25	770	431	3	15	40
Future Vol, veh/h	25	770	431	3	15	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	200	0	200
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	60	84	84	60	60	60
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	42	917	513	5	25	67

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	518	0	-	0	1056	257
Stage 1	-	-	-	-	513	-
Stage 2	-	-	-	-	543	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1044	-	-	-	221	742
Stage 1	-	-	-	-	566	-
Stage 2	-	-	-	-	546	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1044	-	-	-	212	742
Mov Cap-2 Maneuver	-	-	-	-	397	-
Stage 1	-	-	-	-	543	-
Stage 2	-	-	-	-	546	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	11.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1044	-	-	-	397	742
HCM Lane V/C Ratio	0.04	-	-	-	0.063	0.09
HCM Control Delay (s)	8.6	-	-	-	14.7	10.3
HCM Lane LOS	A	-	-	-	B	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2	0.3

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	37	748	417	13	9	17
Future Vol, veh/h	37	748	417	13	9	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	200	0	0
Veh in Median Storage, #	-	0	0	-	2	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	60	92	92	60	60	60
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	62	813	453	22	15	28

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	475	0	-	0	984	227
Stage 1	-	-	-	-	453	-
Stage 2	-	-	-	-	531	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1083	-	-	-	246	776
Stage 1	-	-	-	-	607	-
Stage 2	-	-	-	-	554	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1083	-	-	-	232	776
Mov Cap-2 Maneuver	-	-	-	-	406	-
Stage 1	-	-	-	-	572	-
Stage 2	-	-	-	-	554	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	11.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1083	-	-	-	406	776
HCM Lane V/C Ratio	0.057	-	-	-	0.037	0.037
HCM Control Delay (s)	8.5	-	-	-	14.2	9.8
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.2	-	-	-	0.1	0.1

APPENDIX K:

HISTORICAL & ARCHAEOLOGICAL SURVEY

6.0 HISTORICAL USE INFORMATION

6.1 Aerial Photograph Review

ECS reviewed aerial photographs of the subject property and immediately surrounding properties for evidence of former usage which may indicate potential environmental issues. The aerial photographs were obtained from EDR. The aerial photographs reviewed were dated 1941, 1953, 1958, 1960, 1968, 1979, 1983, 1989, 1994, 2005, 2009, 2013, and 2017. Aerial photographs dated prior to 1941 were not available for review. The ECS review is dependent on the quality and scale of the photographs. The following is a description of relevant information from the aerial photographs:

Year(s)	Subject Property	Adjoining Properties	REC? (yes or no)
1946	A school is located on the southwest corner of the subject property, a residence is depicted north of the school building and a residence is located on the east side of the property. Agricultural land is located on the southern portion of the property and wooded land on the northern portion of the property	North - Wooded land East - Agricultural land, a residence, and wooded land South - Highway 17 followed by wooded land West - Agricultural land, residences, and wooded land	No
1953	Similar to the 1946 Aerial Photograph, except there appear to be additional structures on the east side of the subject property.	North - Wooded land East - Agricultural land, wooded land, and residences South - Highway 17 followed by wooded land West - Residences, agricultural land, and wooded land	No
1958 and 1960	Similar to the 1953 Aerial photograph, except the school buildings have been removed on the southwest corner of the subject property and some of the residences no longer appear to be on the east side of the property.	North - Wooded land East - Wooded land, agricultural land, and residences South - Highway 17 followed by wooded land West - Residences, agricultural land, and residences	No

Year(s)	Subject Property	Adjoining Properties	REC? (yes or no)
1968	The subject property contains agricultural structures, agricultural land, and dirt roads running from Highway 17 to the central portion of the property with a round-a-bout.	North - Wooded land East - Agricultural land and residences followed by wooded land South - Highway 17 followed by wooded land West - Residences and wooded land	No
1979	Similar to the 1968 Aerial Photograph, except there are several additional agricultural structures depicted on the property and a small pond appears to the north of the round-a-bout.	North - Wooded land East - Wooded land and residences South - Highway 17 followed by wooded land and a residence West - Wooded land and residences	No
1983 and 1989	The subject property is developed with agricultural land throughout the property, associated agricultural structures on the south side of the property, and a small pond on the northwest side of the subject property.	North - Wooded land East - Wooded land and residences South - Highway 17 followed by wooded land and a residence West - Wooded land and residences	No
1994	Similar to the 1989 Aerial photograph, except a pond appears on the northeast corner of the property.	Similar to the 1989 Aerial Photograph, except properties to the east and west appear to be under development.	No
2005, 2009, 2013, and 2017	The subject property is developed with three agricultural structures on the central portion of the subject property and agricultural land and a lake at the northeast corner of the subject property.	North - Wooded land East - Wooded land and residences South - Highway 17 followed by wooded land and residences West - Jenkins Hill Road followed by residences, wooded land, and ponds	No

6.2 Sanborn Fire Insurance Map Review

In an effort to identify past uses, ECS utilized EDR to search for historical Sanborn Fire Insurance

Maps (Sanborn) for the subject property and surrounding area. Sanborn maps were not available for this area. The absence of such maps generally indicates that the subject property is located in an area where Sanborn maps were not produced because the area was rural or it was not economically feasible. ECS does not expect the lack of Sanborn maps to impact our ability to render a professional opinion concerning the subject property given the amount of historical information obtained from our research, the USGS topographic map, aerial photographs, city directories, and other historical records obtained. A copy of the Unmapped Property report is included within Appendix IV.

6.3 Property Tax Files

Property tax files may include records of past ownership, appraisals, maps, sketches, photos or other information kept by the local jurisdiction for property tax assessment purposes. According to the Charleston County tax assessor on-line information, the subject property is owned by Quarry Lake Plantation, LLC. The subject property is listed as a 107.20-acre parcel with an identification number of 7110000052. Additionally, the Charleston County tax assessor on-line information indicated the subject property was developed with a 576 square foot detached living area constructed in 1971, a 3,024 square foot general purpose building constructed in 1971, a 3,750 square foot general purpose building constructed in 1986, a 2,688 square foot hay storage building, a 1,160 square foot hay storage building, and a 120 square foot utility shed built in 1971.

6.4 Recorded Land Title Records

Recorded land title records may include leases, land contracts, and AULs recorded by the local jurisdiction. Land title records may provide only a list of the names of previous owners and may be of limited use; however, they may provide useful information about uses or occupancy of the property when employed in combination with other sources.

ECS was not provided with Land Title Records. ECS reviewed the following deeds available on the Charleston County Register of Deeds we

- Deed Book 0510, Page 591, dated October 13, 2015. Quarry Lake Plantation, LLC, a South Carolina Limited Liability Company, obtained the property from Juvar, LLC, a South Carolina Limited Liability Company.
- Deed Book C544, Page 845, dated July 7, 2005. Juvar, LLC, a South Carolina limited liability company, obtained the property from Ursula S Kaiser, as a capital contribution to and in return for memberships in Juvar, LLC.
- Deed Book Y393, Page 095, dated December 31, 2001. The Kaiser Company, a South Carolina limited partnership, by Ursula S. Kaiser as President of U.S. Kaiser, LLC obtained the property from Ursula S. Kaiser.
- Deed Book F295, Page 107, dated December 30, 1997. Kaiser Company, a partnership, obtained the property from Robert L. Kaiser, Jr., Ann Marie K. Forsberg, Vincent P. Kaiser, Ursula K. Ferguson, and Jane L. K. Clarkin.

6.5 Historical USGS Topographic Maps

Topographic maps are produced by the United States Geological Survey (USGS) for various time periods. ECS reviewed topographic maps of the subject property and immediately surrounding

properties for evidence of former usage which may indicate potential environmental issues. The topographic maps were obtained from EDR and were dated 1943, 1973, 1992, and 2014. Topographic maps dated prior to 1943 were not available for review. The following is a description of relevant information from the topographic maps:

Year(s)	Subject Property	Adjoining Properties	REC? (yes or no)
1943	Two residences and two buildings apparently associated with St James School appear on the south side of the property, with wooded land and an old railroad grade on the northern portion of the subject property.	North - Steed Creek Swamp East - An unpaved Road South -A primary highway followed by wooded land and residences West- An unpaved road followed by residences	No
1973 and 1992	In addition to the four buildings depicted on the 1943 Topographic Map, six commercial structures and a road with a roundabout are depicted on the central portion of the subject property	North - Steed Creek Swamp East - A commercial building followed by a road South - A primary highway followed by wooded land and a residence West - Residences and commercial buildings	No
2014	Due to the level of detail of the 2014 Topographic Maps, no strucuttres are depicted on the subject property or the surrounding properties. Kaiser Fram road is depicted on the southern portion of the subject property	North - Wooded land East - Wooded land followed by Duffield Road South - Highway 17 followed by wooded land West - Wooded land	No

6.6 City Directory Review

One of the ASTM standard historical sources to be reviewed for previous subject property uses is local street directories, commonly known as City Directories. The purpose of the directory review is to identify past occupants of the subject property, adjoining properties, or nearby properties. In some rural areas, street directories information is limited.

ECS reviewed city directories obtained from EDR. The directories reviewed were dated 1992, 1995, 2000, 2005, 2010, and 2014. The directories reviewed prior to 1992 did not provide listings for the subject property or surrounding area. Directories dated prior to 1992 were not available for review. The subject property address utilized for the research was US Highway 17. A copy of the city directory

report is included in Appendix IV. The following is a description of relevant information from the city directories:

Year(s)	Subject Property	Adjoining Properties	REC? (yes or no)
1992	No Listings	West - Residence (1175 Jenkins Hill Road)	No
1995	No Listings	West - Residences (7743 N Hwy 17, 1161 Jenkins Hill Road, and 1175 Jenkins Hill Road)	No
2000	No Listings	West - Residences (1119, 1169, and 1175 Jenkins Hill Road)	No
2005	Horse Haven Farms (7820 N Hwy 17)	West - Residences (1119 and 1175 Jenkins Hill Road)	No
2010	No Listings	West - (1119, 1131, 1161, and 1175 Jenkins Hill Road)	No
2014	Occupant Unknown, Steven P Tockmakis	West - Residences (1119 and 1175 Jenkins Hill Road)	No

6.7 Building Department Records

The term building department records means those records of the local government indicating permissions of the local government to construct, alter or demolish improvements on the property.

ECS contacted the Charleston County Building Services Department to determine if they had historical information regarding construction dates, inspections, or other information regarding the subject property. A Freedom of Information Act request was submitted to the Building Department on August 20, 2019. No information has been received at the time of the report completion. If information is received that changes the conclusions or recommendations of this report, ECS will forward the information to the Client.

6.8 Zoning/Land Use Records

The term zoning/land use records refers to records of the local government indicating the uses permitted by the government in particular zones within its jurisdictions.

ECS reviewed zoning/land use records obtained from the Charleston County GIS Map. The subject property is currently zoned for agricultural use (AG-10).

6.9 Other Historical Sources

Other credible historical sources may be reviewed to identify past uses of the subject property. These

sources may include websites, county or state road maps, historical society documents, or local library information.

The SC DHEC was contacted to determine if they had historical information regarding environmental issues or responses at the subject property. A Freedom of Information Act request was submitted to the SC DHEC on August 20, 2019. According to the SC DHEC, there were no regulatory files available for review for the subject property.

6.10 Previous Reports

Newkirk Environmental Inc. previously conducted a Phase I Environmental Site Assessment for the subject property in December 14, 2018. The report indicated that the subject property consisted of undeveloped agricultural land with farm buildings. The report did not identify on-site or off-site RECs at the time the Phase I ESA was completed. ECS cannot attest to the accuracy of the information reviewed.

6.11 Historical Use Summary

According to historical research, it appears that the subject property was developed with St. James School on the southwest corner of the property, residences on the southwest and east side of the property and agricultural land from at least the early 1940's through the early 1950's. The school structures and residential structures were removed from the subject property in the early 1950's. From the mid-1950's through present day, the subject property has been utilized for agricultural purposes with varying configurations of associated agricultural outbuildings and a residence on the central portion of the property. Historical records prior to 1941 were not reasonably ascertainable for the subject property.

The subject property was historically and is currently used as agricultural land. Such use of the subject property may have included the storage and use of beneficial agricultural products such as fungicides, herbicides, and/or fertilizers. The legal use (i.e., in accordance with the manufacturers' specifications and customary practices) of such substances, in the course of standard operational practices does not constitute a "release to the environment." Further, reasonably ascertainable information was not observed during the course of our assessment, including historical records review, or field reconnaissance observations regarding current site use and site history, that a past release of such substances had occurred. Therefore, the mere presence of this historical land use does not meet the definition of a REC.

Historical aerial photographs depict apparent residential structures on the subject property that were not located on the subject property during our site reconnaissance. ECS does not have technical evidence how these structures were heated, or if the structures utilized septic tanks or water supply wells. Based on the age, it is possible that the structures were heated with oil stored in USTs. ECS did not observe evidence of USTs, septic tanks, or water supply wells associated with these historic structures during our site reconnaissance. While not considered a REC, if encountered during site development, USTs, septic systems, and water supply wells should be closed in accordance with applicable laws.

Our review of historical information for adjoining or nearby properties identified the area as

originally agricultural and rural that transitioned to residential and rural.

No obvious indications of RECs were identified in the historical data review.

Rice/Kaiser Tract

N HIGHWAY 17

MC CLELLANVILLE, SC 29458

Inquiry Number: 5753289.8

August 16, 2019

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800 352 0050
www.edrnet.com

EDR Aerial Photo Decade Package

08/16/19

Site Name:

Rice/Kaiser Tract
N HIGHWAY 17
MC CLELLANVILLE, SC 2945
EDR Inquiry # 5753289.8

Client Name:

ECS Southeast, LLP
3820 Faber Place Drive
North Charleston, SC 29405
Contact: Nicole Miller

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
2017	1"=500'	Flight Year: 2017	USDA/NAIP
2013	1"=500'	Flight Year: 2013	USDA/NAIP
2009	1"=500'	Flight Year: 2009	USDA/NAIP
2005	1"=500'	Flight Year: 2005	USDA/NAIP
1994	1"=750'	Flight Date: February 25, 1994	USGS
1989	1"=500'	Acquisition Date: February 09, 1989	USGS/DOQQ
1983	1"=500'	Flight Date: March 22, 1983	USDA
1979	1"=500'	Flight Date: October 27, 1979	USDA
1968	1"=500'	Flight Date: April 26, 1968	USGS
1960	1"=500'	Flight Date: September 14, 1960	USGS
1958	1"=500'	Flight Date: January 27, 1958	USGS
1953	1"=500'	Flight Date: March 27, 1953	USDA
1941	1"=500'	Flight Date: November 03, 1941	USDA

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NQUIRY #: 5753289.8
YEAR: 2017
= 500'
N
EDR


NQUIRY #: 5753289.8
YEAR: 2013
= 500'
N
EDR


NQUIRY #: 5753289.8
YEAR: 2009
= 500'
N
EDR


NQUIRY #: 5753289.8
YEAR: 2005
= 500'
N
EDR

NQUIRY #: 5753289.8

YEAR: 1994

= 750'

N

EDR

Subject boundary not shown because it exceeds image extent or image is not georeferenced.


NQUIRY #: 5753289.8
YEAR: 1989
= 500'
N
EDR


NQUIRY #: 5753289.8
YEAR: 1983
= 500'
N
EDR


NQUIRY #: 5753289.8
YEAR: 1979
= 500'
N
EDR


IQUIRY #: 5753289.8
YEAR: 1968
= 500'
N
EDR


IQUIRY #: 5753289.8
YEAR: 1960
= 500'
N
EDR


IQUIRY #: 5753289.8
YEAR: 1958
= 500'
N
EDR


NQUIRY #: 5753289.8
YEAR: 1953
= 500'
N
EDR


QUIRY #: 5753289.8
YEAR: 1941
= 500'
N
EDR

Rice/Kaiser Tract
N HIGHWAY 17
MC CLELLANVILLE, SC 29458

Inquiry Number: 5753289.3
August 14, 2019

Certified Sanborn® Map Report

6 Armstrong Road 4th floor
Shelton CT 06484
Toll Free 800 352 0050
www.edrnet.com

Certified Sanborn® Map Report

08/14/19

Site Name:	Client Name:
Rice/Kaiser Tract	ECS Southeast, LLP
N HIGHWAY 17	3820 Faber Place Drive
MC CLELLANVILLE, SC 2945[illegible]	North Charleston, SC 29405
EDR Inquiry # 5753289.3	Contact: Nicole Miller

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by ECS Southeast, LLP 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 # 543B-44E3-AF30

PO # Rice/Kaiser Tract

Project Rice/Kaiser Tract

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 #: 543B-44E3-AF30

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

ECS Southeast, LLP (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.

Rice/Kaiser Tract
N HIGHWAY 17
MC CLELLANVILLE, SC 29458

Inquiry Number: 5753289.4
August 14, 2019

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

08/14/19

Site Name:	Client Name:
Rice/Kaiser Tract	ECS Southeast, LLP
N HIGHWAY 17	3820 Faber Place Drive
MC CLELLANVILLE, SC 2945(	North Charleston, SC 29405
EDR Inquiry # 5753289.4	Contact: Nicole Miller

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by ECS Southeast, LLP 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:

P.O.#	Rice/Kaiser Tract
Project:	Rice/Kaiser Tract

Coordinates:

Latitude:	33.043741 33° 2' 37" North
Longitude:	-79.59841 -79° 35' 54" West
UTM Zone:	Zone 17 North
UTM X Meters:	630871.39
UTM Y Meters:	3657009.03
Elevation:	18.00' above sea level

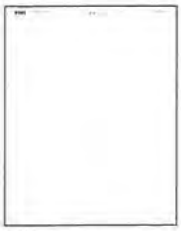
Maps Provided:

2014
1992
1973
1943

Topo Sheet Key

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

2014 Source Sheets



Awendaw

7.5-minute, 24000

1992 Source Sheets

Awendaw

7.5-minute, 24000
Aerial Photo Revised 1973

1973 Source Sheets

Awendaw

7.5-minute, 24000
Aerial Photo Revised 1973

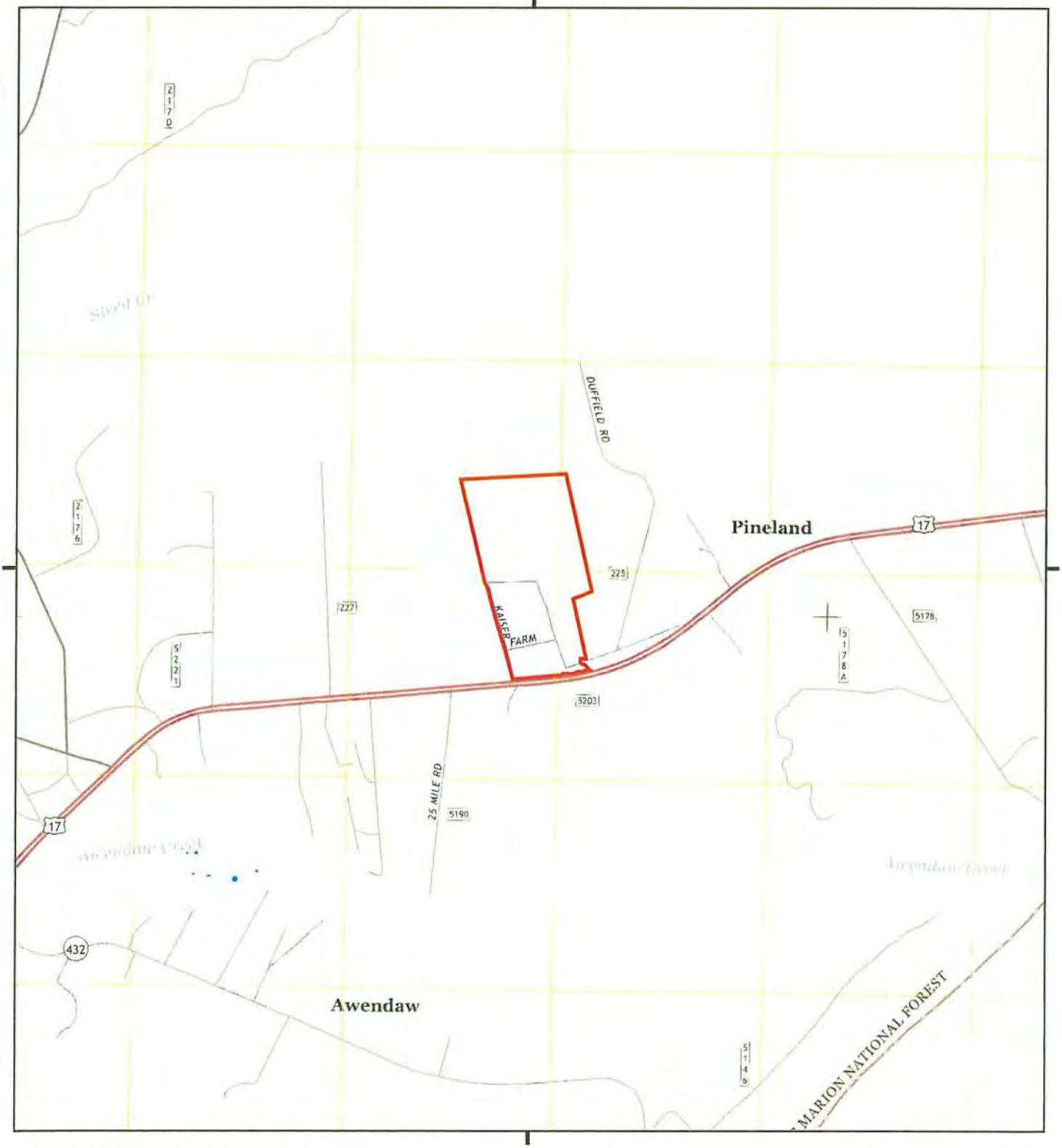
1943 Source Sheets

Awendaw

7.5-minute, 24000
Aerial Photo Revised 1942

Historical Topo Map

2014



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

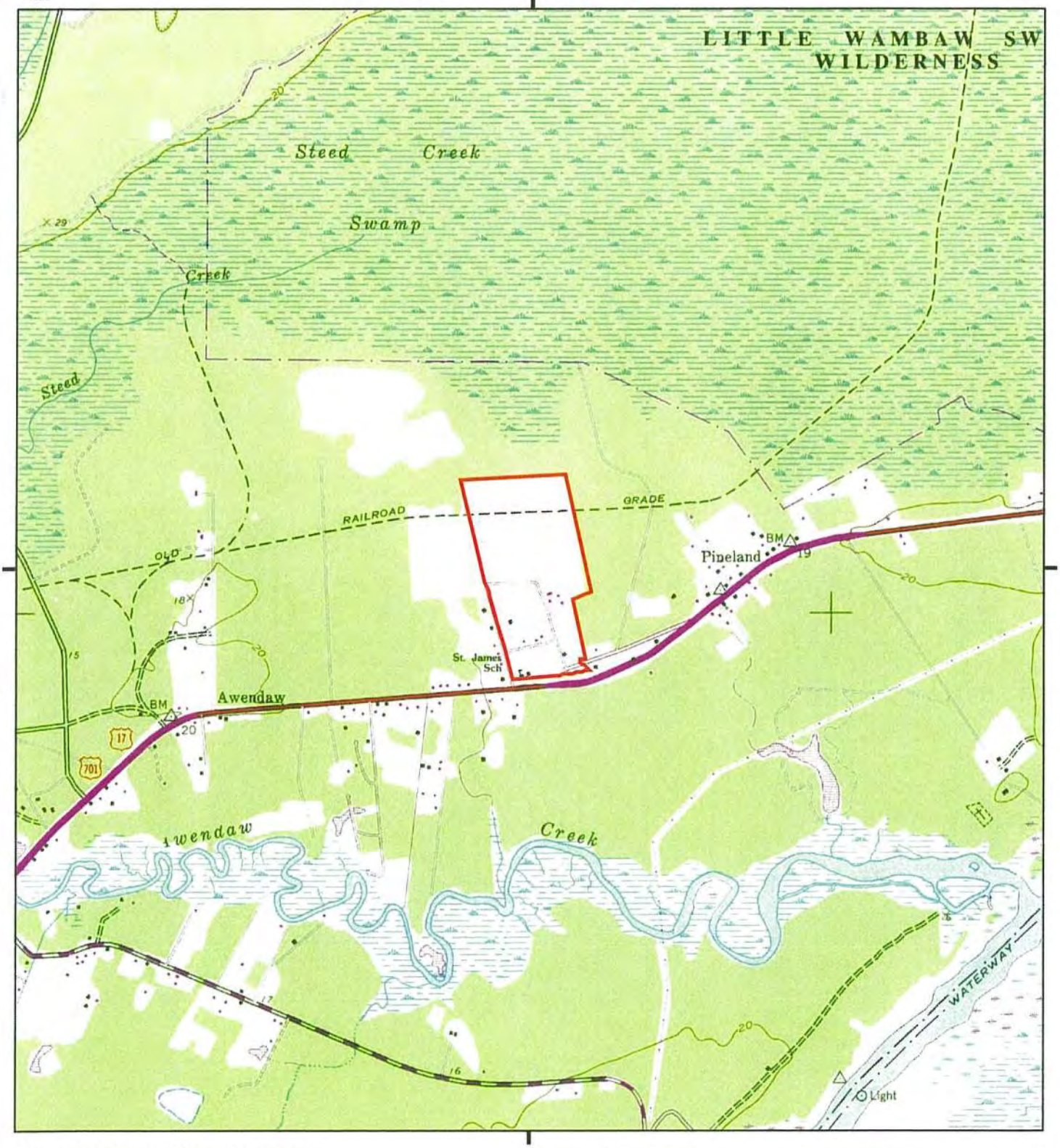
TP, Awendaw, 2014, 7.5-minute

SITE NAME: Rice/Kaiser Tract
ADDRESS: N HIGHWAY 17
MC CLELLANVILLE, SC 29458
CLIENT: ECS Southeast, LLP

N

Historical Topo Map

1992



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

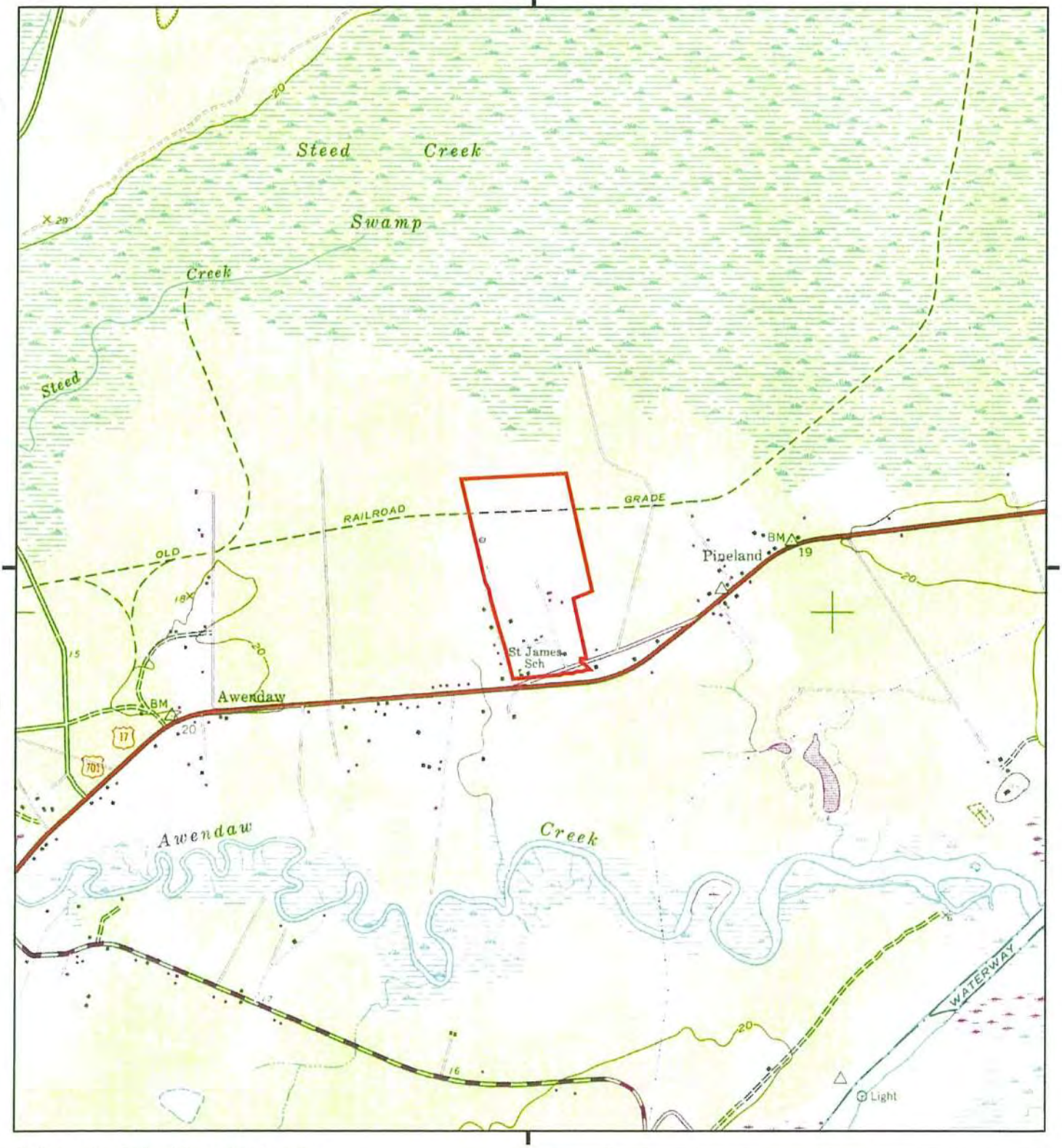
TP, Awendaw, 1992, 7.5-minute

SITE NAME: Rice/Kaiser Tract
ADDRESS: N HIGHWAY 17
MC CLELLANVILLE, SC 29458
CLIENT: ECS Southeast, LLP

N

Historical Topo Map

1973



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

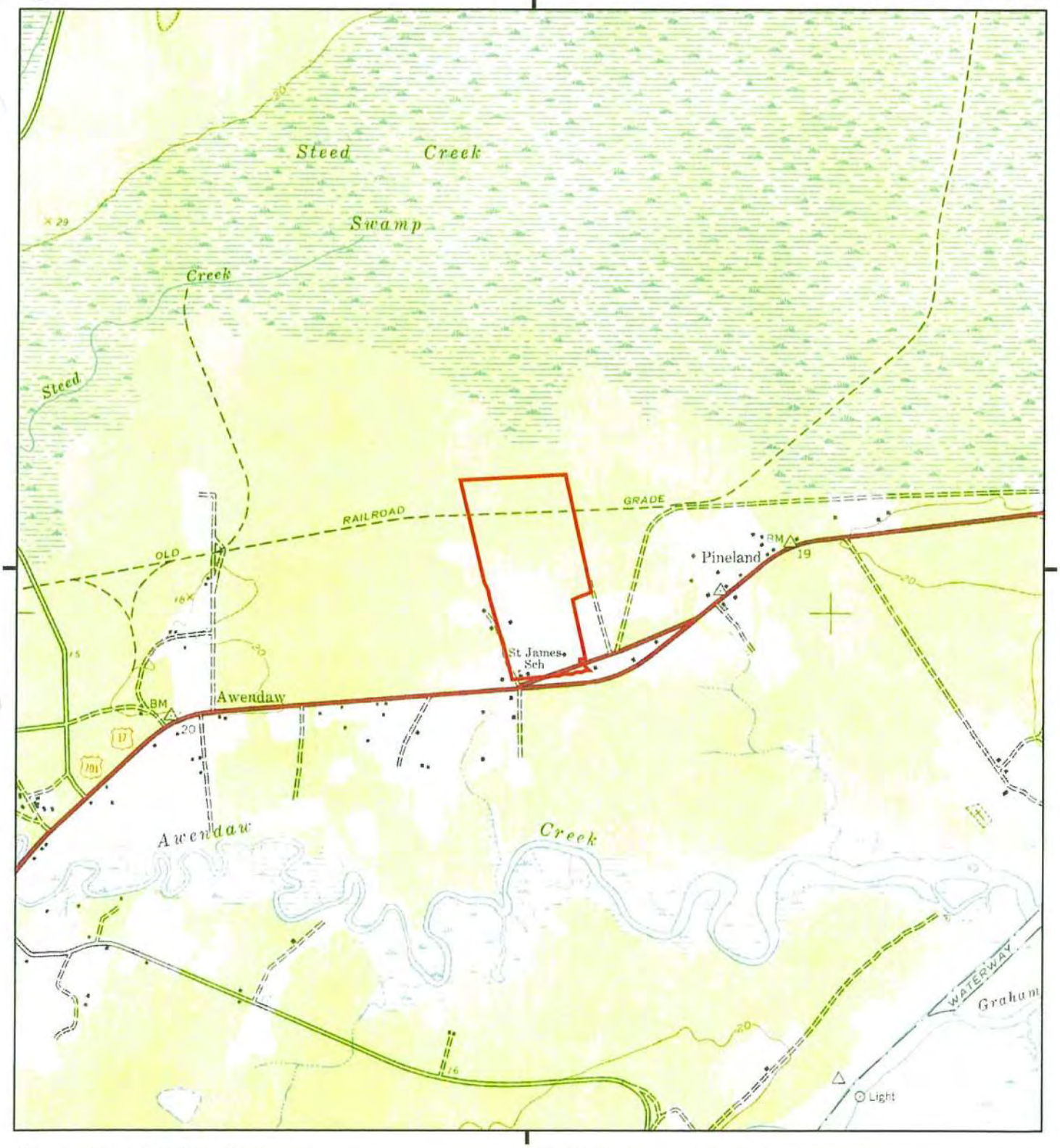
TP, Awendaw, 1973, 7.5-minute

SITE NAME: Rice/Kaiser Tract
ADDRESS: N HIGHWAY 17
MC CLELLANVILLE, SC 29458
CLIENT: ECS Southeast, LLP

N

Historical Topo Map

1943



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, Awendaw, 1943, 7.5-minute

SITE NAME: Rice/Kaiser Tract
ADDRESS: N HIGHWAY 17
MC CLELLANVILLE, SC 29458
CLIENT: ECS Southeast, LLP

N

Rice/Kaiser Tract
N HIGHWAY 17
MC CLELLANVILLE, SC 29458

Inquiry Number: 5753289.5
August 19, 2019

The EDR-City Directory Image Report

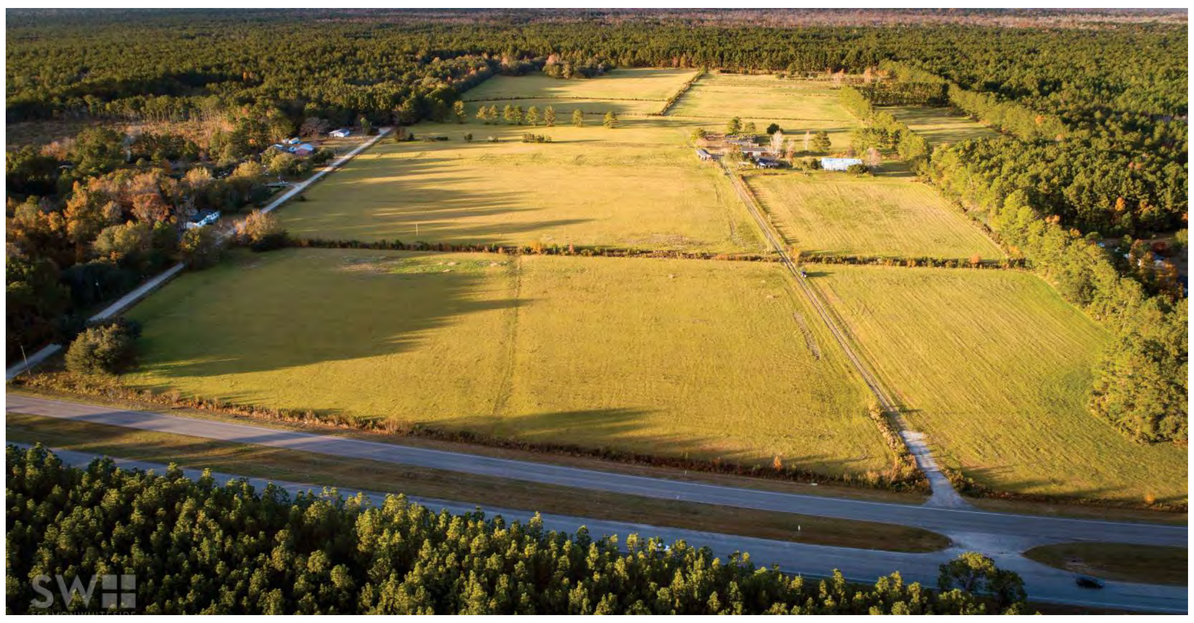
EDR® Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

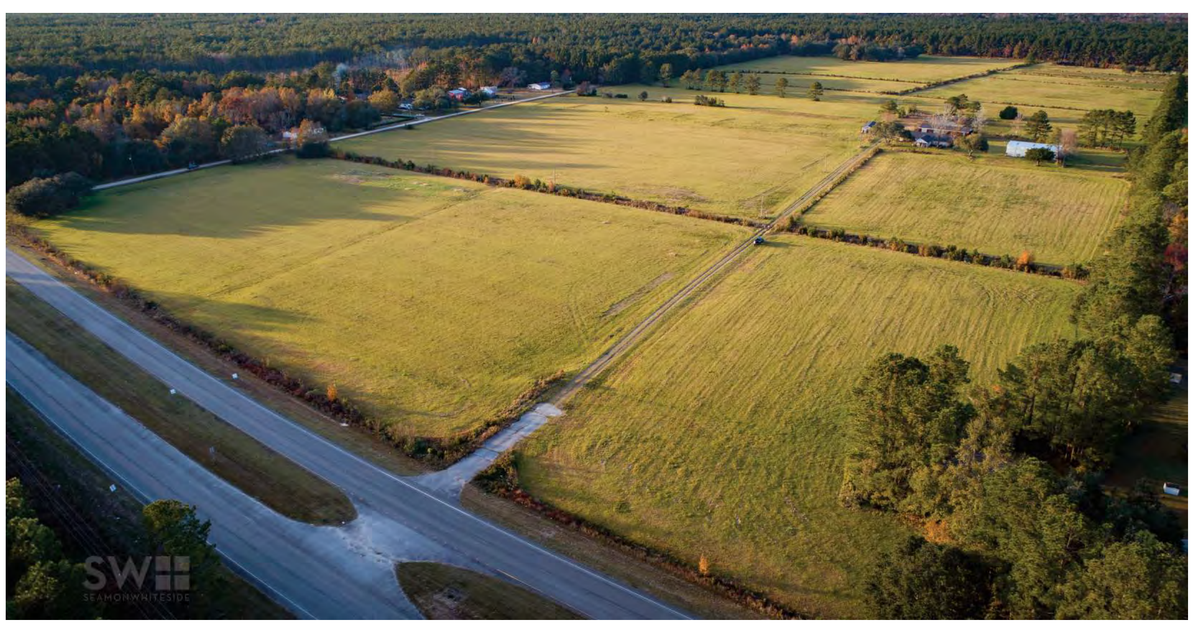
APPENDIX L:

SITE PHOTOGRAPHY

1 VIEW LOOKING NORTHEAST AT SITE FROM HWY. 17

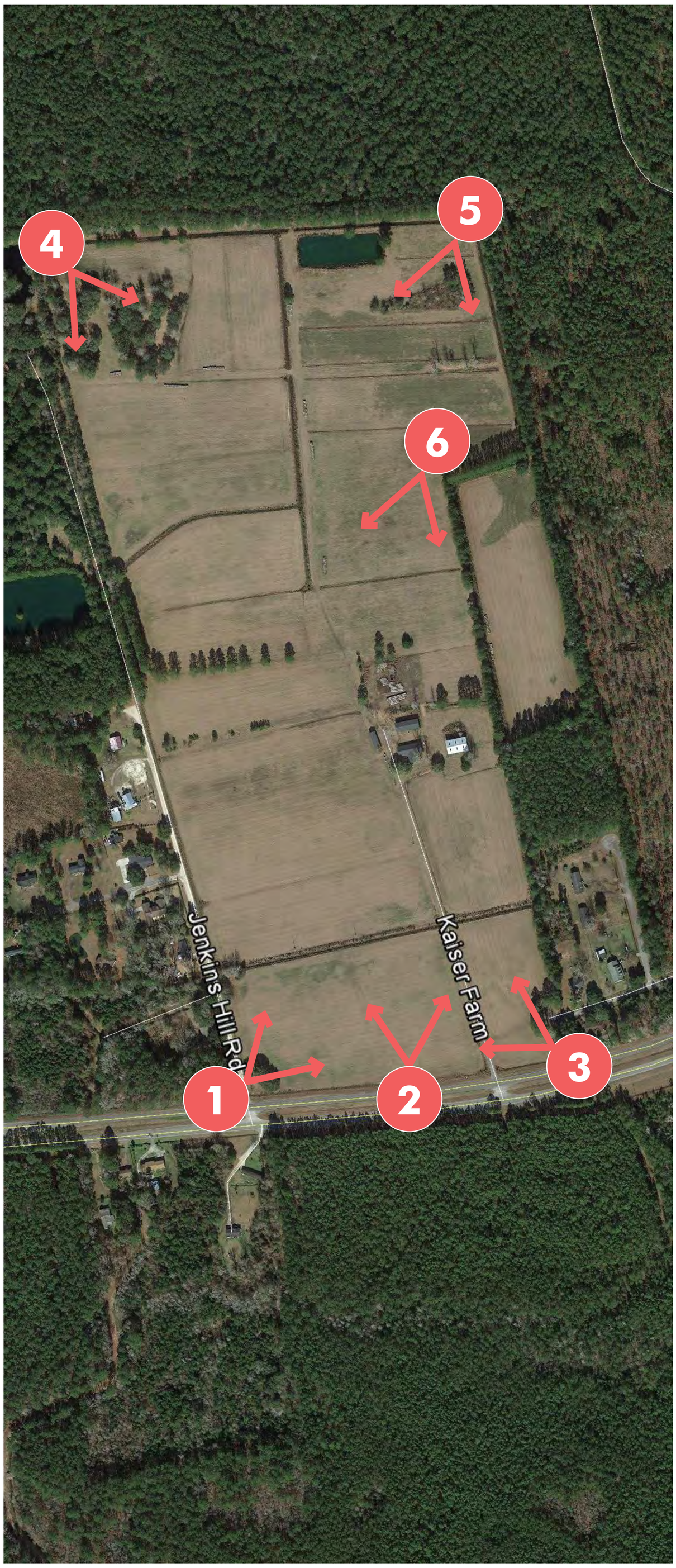


2 VIEW LOOKING NORTH AT SITE FROM HWY. 17

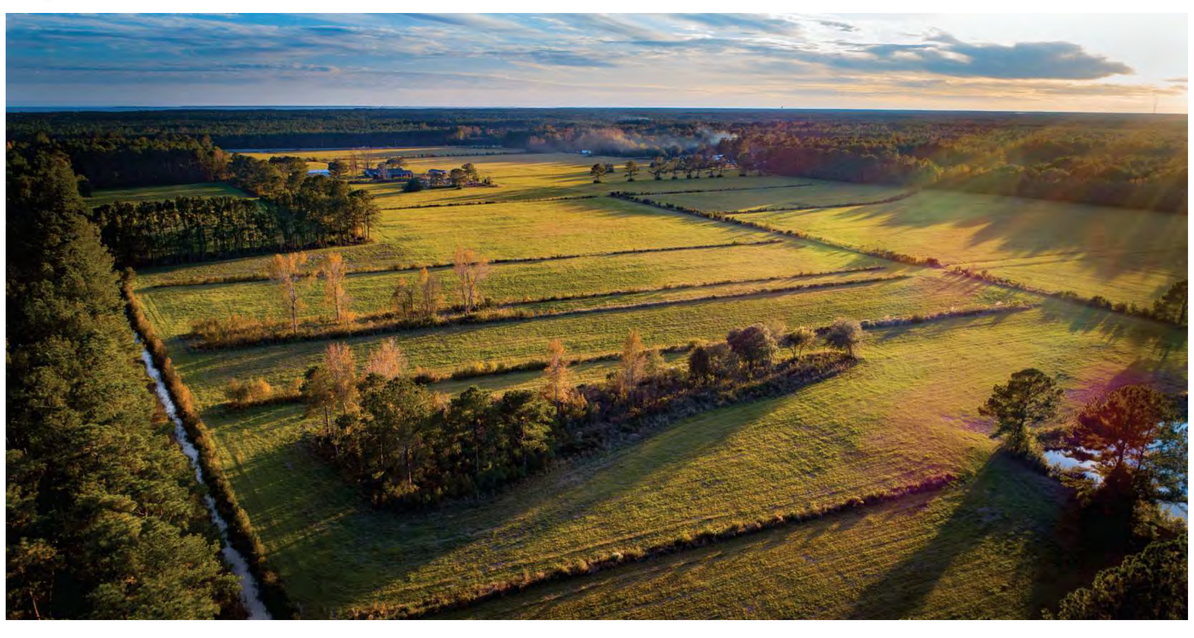


3 VIEW LOOKING NORTHWEST AT SITE FROM HWY. 17

4 VIEW LOOKING SOUTHEAST



AERIAL OF PROJECT SITE



5 VIEW LOOKING SOUTHWEST

6 VIEW LOOKING SOUTHWEST

NOTE: THIS PLAN IS CONCEPTUAL IN NATURE AND SUBJECT TO CHANGE.

SEAMONWHITESIDE

EXISTING CONDITIONS PHOTOS

CHARLESTON COUNTY PUBLIC SCHOOLS

12/5/2019

APPENDIX M:

LETTERS OF COORDINATION

Berkeley Electric Cooperative, Inc.

Your Touchstone Energy® Cooperative

February 19, 2020

Seamon Whiteside
C/o: Preston Busbee
501 Wando Park Boulevard, Suite 200
Mount Pleasant, SC 29464

Re: Power Availability for New School Site Located in McClellanville
Charleston County, SC
TMS 711-00-00-052

Dear Preston:

Berkeley Electric Cooperative will supply the electrical distribution requirements for the above referenced location. We look forward to extending our facilities to meet the needs of this property.

All services that are rendered will be under our service rules and regulations at the time of service. If you have any questions, please don't hesitate to give me a call.

Sincerely,

Kevin Mims
Supervisor of Distribution Design

KM/ts

Enclosure

Cc: Thomas Barnette, Manager of Construction and Maintenance
Nick VanAllen, Awendaw District Line Superintendent
Paul Elsey, Awendaw District Service Planner
Preston Busbee, Seamon Whiteside (emailed copy)
File

DAVID ABRAMS, JD
Director

CHARLESTON COUNTY
SOUTH CAROLINA

Emergency Medical Services

843.202.6700
Fax: 843.202.6712
dabrams@charlestoncounty.org
Lonnie Hamilton, III Public Services Building
4045 Bridge View Drive, Suite B309
North Charleston, SC 29405-7464

February 13, 2020

Ms. Anna Lewis
Seamon Whiteside
501 Wando Park Blvd.
Suite 200
Mount Pleasant, SC 29464

RE: TMS# 710-00-00-052

Dear Ms. Lewis,

The Charleston County Emergency Medical Services (EMS) Department acknowledges your intention to rezone the above referenced properties. Charleston County EMS is the advanced life support paramedic first response and transport agency for this location – and all medical and trauma related incidents will need to be reported to this agency. This can be accomplished through the Charleston County Consolidated Dispatch Center by dialing 911.

EMS staff will be available to attend your scheduled Site Plan Review with Charleston County Planning Staff should our input be needed. If you have any questions or concerns please do not hesitate in contacting me.

Sincerely,

James Ciali
Assistant Chief

Preston Busbee

From: Mike S. Bowers <MBowers@charlestoncounty.org>
Sent: Thursday, February 27, 2020 11:55 AM
To: Preston Busbee
Cc: Larry D. Hall
Subject: Re: Letter of coordination

To whom it may concern,

Please allow this e-mail to serve as our (Awendaw-McClellanville Consolidated Fire Protection District) part of the required Letter of Coordination for the project at Hwy 17 and Jenkins Hill Road (Kaiser Farm). We provided Fire and First Responder Medical Response to this property as it is part of our Fire Protection District.

If you have any questions, or concerns, please contact me using the information below.

Michael S. Bowers
C-Shift Battalion Chief
Public Information Officer/Training Officer
Awendaw-McClellanville Consolidated Fire District
6384 Maxville Road
Awendaw, SC 29429
Cell (803) 600-7338
Work (843) 928-3000
Call Sign Battalion 902

"In many cases fires don't kill firefighters, and equipment doesn't save them. Decisions Do"

From: Preston Busbee <PBusbee@SeamonWhiteside.com>
Sent: Thursday, February 27, 2020 10:41 AM
To: Mike S. Bowers <MBowers@charlestoncounty.org>
Subject: RE: Letter of coordination

Chief Mike,

Thanks for reaching out.

The specific site is located at Kaiser Farm at TMS 711-00-00-052 and I have attached a location map for reference. The letter would just state that your departments provides fire service for this location.

Thank you and let me know if you have any questions.

SEAMONWHITESIDE

Preston Busbee

From: Meekins, David J <MeekinsDJ@scdot.org>
Sent: Wednesday, March 11, 2020 8:39 AM
To: Preston Busbee; JuLeigh Fleming
Cc: Mary Martinich
Subject: RE: District 1 Middle High School (TMS 710-00-00-052) - Proof of Coordination Letter

Preston,

Thank you for providing the conceptual plan for the proposed new Lincoln Middle / High School Campus to be located outside of McClellanville on US 17 near the intersection of Duffield Road. Per our site review on February 4, 2020, and as stated in the subsequent report issued on February 12, 2020, we have assessed potential access locations and necessary roadway improvements to accommodate the additional traffic generated by the school.

Moving forward, SCDOT Headquarters and District Six Traffic Engineering offices will coordinate with your office during the plan phase and will issue a final concurrence once all items are addressed on the plans. Once concurrence has been received, you may initiate the permitting process for work performed on SCDOT maintained roadways. Please be aware that any work performed on Charleston County roadways will require additional coordination with the County regarding any requirements they may have, including their permitting process.

Please let me know if I can be of further assistance.

David J. Meekins
SCDOT - Traffic Engineering
School Operations – Room 217
955 Park Street
Post Office Box 191
Columbia, SC 29201-3959
803-737-1911
Meekinsdj@scdot.org

Safety 1st – Live By It!
Let 'em Work, Let 'em Live!

From: Preston Busbee <PBusbee@SeamonWhiteside.com>
Sent: Tuesday, March 10, 2020 4:20 PM
To: Meekins, David J <MeekinsDJ@scdot.org>; Fleming, Juleigh B. <FlemingJB@scdot.org>

2020

SCHOOL SITE INFORMATION

Date Reviewed	2/4/2020
County	Charleston
Location	US 17 & Jenkins Hill Rd (Off-System) with Duffield Rd (Off-System)
School Type	Lincoln Middle & High Schools - Combined Facility

Recommendations

Attending - Rick Holt (Cumming Corp), Eric Aichele (LS3P), Preston Busbee (Seamon Whiteside), Jack Bonnette (OSF), David Meekins (SCDOT)

This property was reviewed for the purpose of constructing a combined Middle and High School facility. The property is located 8 miles west of McClellanville and has approximately 1,185-feet of frontage along US 17 and 1,530-feet along Jenkins Hill Road (Off-System). Proposed student enrollment is 1000 total (500 MS/500 HS) with 250 student parking spaces and 120 staff.

US 17 is a four-lane divided highway (earthen median) with a posted speed limit of 60 MPH and an Annual Average Daily Traffic (AADT) volume of 11,100. Existing left-turn lane provisions at median breaks on US 17 occur at the intersections with Jenkins Hill Road and the Kaiser Farm driveway. A conceptual plan illustrated proposed access occurring from Jenkins Hill Road, the Kaiser Farm driveway, and at the end of Duffield Road. SCDOT indicated that roadway improvements are necessary and include right-turn lanes at all the proposed access locations, modifications to offset and increase storage of the existing left-turn lanes at Jenkins Hill Road and the Kaiser Farm driveway, and a new offset left turn lane at Duffield Road.

Jenkins Hill Road is a narrow dirt road that presently serves several residences, therefore, it was indicated that improvements are necessary to widen and pave to a width of 24-feet and include a four-lane configuration at its intersecting with US 17, consisting of 2-ingress lanes (left/right) and 2-egress lanes (left/right) to accommodate the increase and change in use by school traffic. Since Jenkins Hill Road is an Off-System road, the engineer should contact Charleston County to inquire about any standards and requirements they may have regarding this construction.

Duffield Road is approximately 18-feet wide and 1,650-feet long that presently serves several residences and dead ends at the east side of the property. It was proposed as low volume use only for staff or emergency access. Since Jenkins Hill Road is also an Off-System road, the engineer should contact Charleston County to inquire about any guidelines they may have regarding the proposed change in use.

All roadway improvements are to be completed prior to the school's opening and the associated costs are the responsibility of the School District. These cost could include additional right-of-way and any above or below ground utility relocations. Therefore, the School District should anticipate and budget accordingly for these improvements as part of the overall construction costs.

Finally, SCDOT recommended that the architect and engineer hired by the School District work closely with SCDOT's Traffic Engineering Headquarters office in Columbia, SC (David Meekins) on any conceptual site layout. The school site and roadway improvement plans would need to be reviewed and concurred with by SCDOT's Traffic Engineering Headquarters office prior to applying online for an encroachment permit from SCDOT.

Office of the Sheriff

County of Charleston

Sheriff J. Al Cannon, Jr.

February 26, 2020

Seamon, Whiteside and Associates, Inc.
Attn: Mary Martinich
501 Wando Park Blvd.
Suite 200
Mt. Pleasant, SC, 29464

re: Letter of Coordination

Ms. Martinich,

The Charleston County Sheriff's Office acknowledges your intention to develop property located in the area of 1119 Jenkins Hill Road, Awendaw, South Carolina, 29429. This location is currently under the jurisdiction of this agency.

Please understand that *all* law enforcement matters will need to be reported to this agency. This can be accomplished by calling the **Charleston County Consolidated Dispatch Center** at **843-743-7200** or dialing **911 for emergencies**. Additional information can be accessed on our agency website at www.ccso.charlestoncounty.org.

If you have any questions, feel free to contact this office via telephone or by email.

Regards,

Sgt. H. M. Phillips

Sergeant Harold M. Phillips
Community Affairs
Charleston County Sheriff's Office
(843) 529-6221
hphillips@charlestoncounty.org

Preston Busbee

From: McCall, Danny W - Taylors, SC <dwayne.mccall@usps.gov>
Sent: Monday, January 27, 2020 3:13 PM
To: Preston Busbee
Cc: Nelson, Ronice N - Mcclellanville, SC; McCall, Danny W - Taylors, SC
Subject: RE: District 1 Middle High School Coordination Letter

Mr. Busbee,

Thank you for contacting the US Postal Service. Below is the coordination information requested.

The Postal Service will deliver mail to any customer provided the delivery points meet the following requirements:

- Roads or Streets must be passible.
- Roads or Streets must be non-private.
- Roads or Streets must be properly maintained.
- Mail carriers must not be subjected to loose or feral animals.
- A centralized location must be established to prevent the mail carrier from leaving the conveyance of the vehicle and traveling on foot a long distance. Location must be approved by Local Postal Official.
- The delivery point is established with safety considerations for mail carrier and customer.
- The delivery point offers a means to properly turn around without backing.
- The delivery point must not exceed half mile one way from the mail carrier's previous delivery point.
- The delivery apparatus must be postal approved.
- There must not be any barriers, gates, ravines, ditches or load limited bridges preventing the mail carrier from safely and efficiently conducting mail delivery.

It is highly recommended you or a representative contact the Awendaw/McClellanville Postmaster, Ms. Ronice Nelson, for further dialogue on the selected area and discuss the mode of mail delivery and its location.

Thank you,

Wayne McCall
Operations Programs Support Specialist
Growth Management Coordinator
Greater S.C. District
864-244-1896
803-206-4862

From: Preston Busbee [mailto:PBusbee@SeamonWhiteside.com]
Sent: Monday, January 27, 2020 3:04 PM
To: McCall, Danny W - Taylors, SC <dwayne.mccall@usps.gov>

Cc: Anna Lewis <ALewis@SeamonWhiteside.com>; Betsy Ellingson <BEllingson@SeamonWhiteside.com>; Mary Martinich <MMartinich@seamonwhiteside.com>
Subject: [EXTERNAL] District 1 Middle High School Coordination Letter

Danny,

I hope you are well. We are working on a proposed Middle/High School located in McClellanville off of HWY 17. The site location is known as Kaiser Farm and is located at TMS: 710-00-00-052. I have attached a site location map for your reference.

In order for this project to move forward, we are submitting a Planned Development to Charleston County. As part of the guidelines, the county is asking us to compile Proof of Coordination letters from several different service providers. Can you provided a USPS proof of coordination for this proposed school site.

Thank you for your help.

SEAMONWHITESIDE

Preston Busbee
Civil Engineering Project Manager
(803) 606-4972 cell
PBusbee@SeamonWhiteside.com
www.seamonwhiteside.com

8067

Steven L. Thigpen, P. E.
Director of Public Works

CHARLESTON COUNTY
SOUTH CAROLINA

843.202.7600
Fax: 843.202.7601
sthigpen@charlestoncounty.org
Lonnie Hamilton III Public Services Building
4045 Bridge View Drive, Suite A301
North Charleston, SC 29405

February 20, 2020

Ms. Mary Martinich
Seamon Whiteside
501 Wando Park Boulevard, Suite 200
Mount Pleasant, SC 29464

RE: AWENDAW / MCCLELLANVILLE MIDDLE SCHOOL HIGH SCHOOL
PLANNED DEVELOPMENT TMS # 711-00-00-052

Dear Ms. Martinich:

We have reviewed the draft Awendaw / McClellanville Middle School High School Planned Development for construction of an institutional / educational development on Highway 17 at TMS No. 711-00-00-052. At present, this letter represents sufficient coordination with the Public Works Stormwater Division in order to continue the revised planned development rezoning process for the property.

As long as the proposed operations development is in compliance with the Charleston County Stormwater Program Permitting Standards and Procedures Manual you should be able to obtain a permit. Additional review, coordination, and approval by the Public Works Department will be required during the County Stormwater permitting review and process.

Sincerely,

Chris Wannamaker, P.E.
Stormwater Program Manager

cc: Niki Grimball - Charleston County Planning Department

APPENDIX N:

EXISTING BUILDINGS

Kaiser Farm Structures

1

2

3

4 (Carriage House front and back)