A G E N D A
ISLE OF WIGHT COUNTY PLANNING COMMISSION
August 23, 2022

1. CALL TO ORDER

INVOCATION

PLEDGE OF ALLEGIANCE

2. ROLL CALL/DETERMINATION OF A QUORUM

BRIAN CARROLL, CHAIRMAN
BOBBY BOWSER, VICE-CHAIRMAN
CYNTHIA TAYLOR
JAMES FORD
THOMAS DUERIG
JENNIFER S. BOYKIN
GEORGE RAWLS
THOMAS J. DISTEFANO
RICK SIENKIEWICZ

3. ACTION ON REQUESTS TO WITHDRAW OR TABLE PENDING AGENDA ITEMS

4. APPROVAL OF AGENDA

5. CONSENT AGENDA

A. JULY 26, 2022 REGULAR MEETING MINUTES

B. AUGUST 4, 2022 BOARD OF SUPERVISORS' WORK SESSION ACTION LIST

6. CITIZENS' COMMENTS

7. PUBLIC HEARINGS

A. AUTO AUCTION SALVAGE YARD CONDITIONAL ZONING REQUEST

Application (ZA-4-21) of Advanced Construction Development, LLC, applicant, and Locust Grove Partners, LP and H&B Railroad Company, Inc. property owners, for a change and amendment to existing zoning to Conditional-Limited Industrial (C-LI) to allow an auction establishment and a scrap and salvage service on approximately 5 acres of property with tax map number 42-06-015 located on the north side of the western terminus of IWIP Road (Rte. 1032) together with approximately 70 acres of property with tax map number 42-01-006 located at 17094 Benns Church Boulevard (Rte. 10)

8. OLD BUSINESS

9. NEW BUSINESS

A. COUNTY ATTORNEY'S REPORT

B. PLANNING DIRECTOR'S REPORT

10. CLOSED MEETING

11. ADJOURNMENT

PLANNING REPORT

ATTACHMENTS:

Description	Type	Upload Date
JULY 26, 2022 REGULAR MEETING MINUTES	Cover Memo	8/17/2022

MINUTES OF THE MEETING OF THE ISLE OF WIGHT COUNTY PLANNING COMMISSION HELD ON THE TWENTY-SIXTH DAY OF JULY IN THE YEAR TWO THOUSAND AND TWENTY-TWO

CALL TO ORDER

Brian Carroll, Chairman, called the Isle of Wight County Planning Commission meeting to order at 6:00 PM on July 26, 2022, in the Board of Supervisors Room at the Isle of Wight County Courthouse, Isle of Wight, Virginia.

INVOCATION

Commissioner Ford delivered the invocation.

PLEDGE OF ALLEGIANCE

Chairman Carroll invited everyone present to join in the Pledge of Allegiance.

ROLL CALL/DETERMINATION OF A QUORUM

PRESENT
Brian Carroll, Chairman
Bobby Bowser, Vice-Chairman
Cynthia Taylor
James Ford
Thomas Duerig
Jennifer Boykin
Thomas Distefano

A quorum was determined.

ABSENT
George Rawls

ALSO IN ATTENDANCE
Robert W. Jones, Jr., County Attorney
Amy Ring, Community Development Director
Jeryl Phillips, Assistant Director of Planning and Zoning
Sandy Robinson, Zoning Coordinator
Amanda Landrus, Secretary

ACTION ON REQUESTS TO WITHDRAW OR TABLE PENDING AGENDA ITEMS

Chairman Carroll asked if there were any requests to table or withdrawal agenda items. Amy Ring, Community Development Director, stated there were no requests.

APPROVAL OF AGENDA

Chairman Carroll called for a vote to approve the agenda. Commissioner Bowser made a motion to approve the agenda. Commissioner Duerig seconded the motion. Chairman Carroll asked for all in favor to signify by saying aye. The motion passed unanimously.

APPROVAL OF CONSENT AGENDA

Chairman Carroll called for a vote to approve the consent agenda. Commissioner Boykin made a motion to approve the consent agenda. Commissioner Bowser seconded the motion. Chairman Carroll asked for all in favor to signify by saying aye. The motion passed unanimously.

CITIZENS' COMMENTS

Chairman Carroll opened the floor for any citizen comments. There being no comments, Chairman Carroll closed citizen comments.

PUBLIC HEARINGS

Chairman Carroll called for the public hearing on the following application:

> Application of Royal Farms, applicant, and James River Crossings, Inc., property owner, for a conditional use permit (CUP-11-21) for a Royal Farms convenience store and gas station on 5.11 acres located on the east side of Carrollton Boulevard (Rte. 17) on property with tax map number 34-01-070E. The property is in the Conditional – General Commercial zoning district.

Amy Ring, Community Development Director, gave and overview by giving the following PowerPoint presentation.

Royal Farms Convenience Store & Gasoline Station Conditional Use Permit (CUP11-21) Request

Local Roots, Global Reach

Planning Commission Regular Meeting
July 26, 2022

SITE DESCRIPTION

Tax Map ID#:	34-01-070E
Location :	Northeast corner of the intersection between Carrollton Boulevard (Rte. 17) and the new Spadea Way
Current Zoning :	Conditional-General Commercial (C-GC)
Election District:	D2
Proposed Use:	5,154 SF convenience store, gasoline station with 12 pumps & detached 1,248 SF drive-through car wash

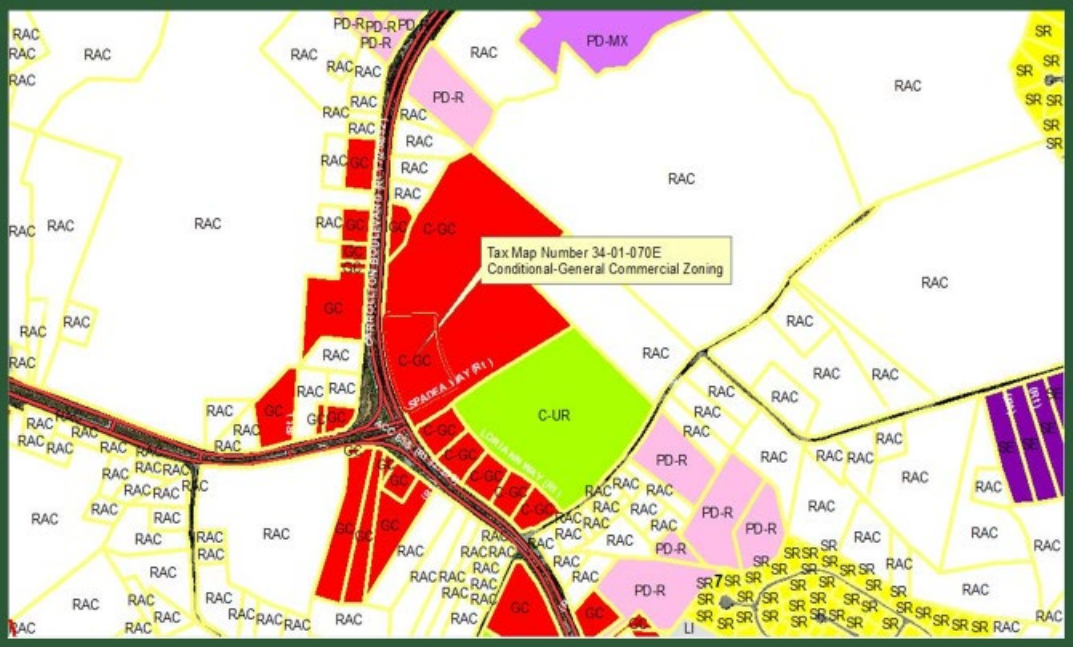
Local Roots, Global Reach



SITE LOCATION



FUTURE RECOMMENDED LAND USE MAP



ZONING MAP



East View from Site Down Spadea Way



North View from Site



West View from Site Towards Route 17

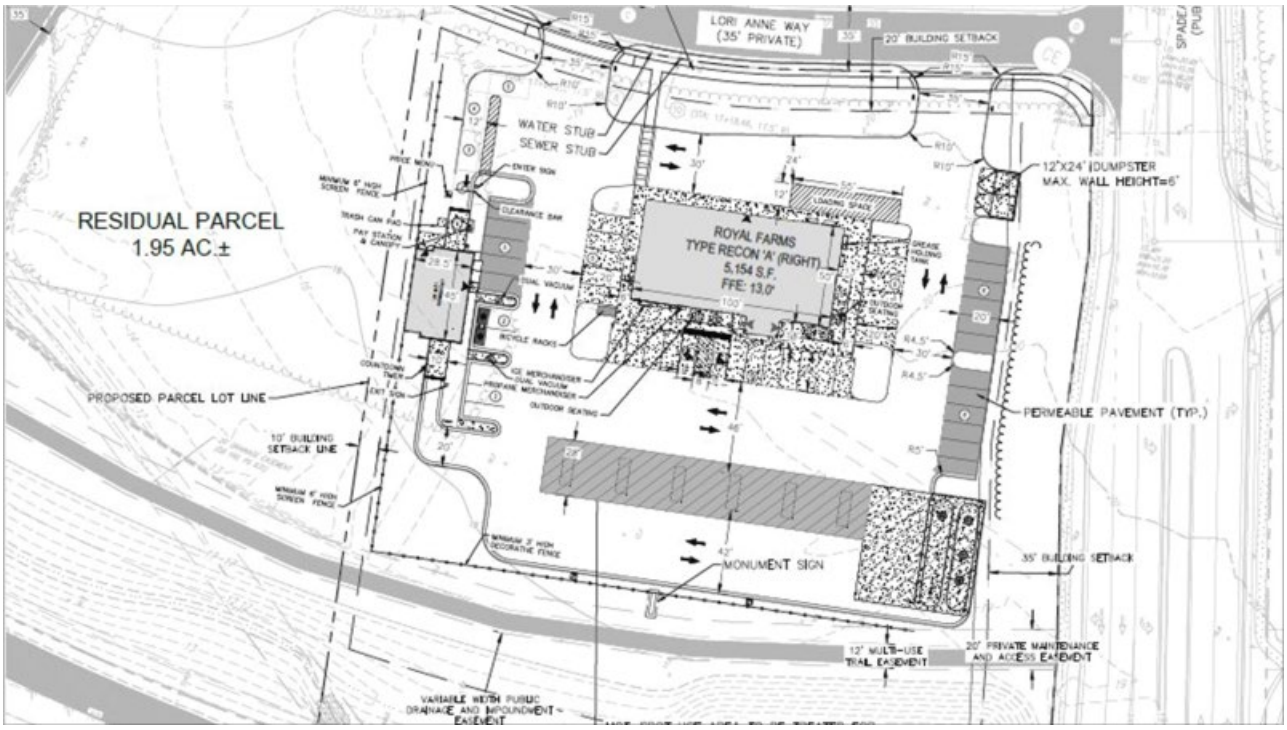


South View from Site Towards Suffolk

BACKGROUND

- Past use is agricultural and silvicultural use.
- No existing structures or environmentally sensitive features on the site.

Local Roots, Global Reach





Building Elevation



Building Elevation



Building Elevation

DEPARTMENTAL & AGENCY REVIEW

- Emergency Services - No concerns noted.
- Economic Development - No concerns noted.
- Utility Services - No concerns noted.
- Environmental Planner - No concerns noted.
- Transportation Project Manager - No concerns noted.
- VDOT - All previous comments have been satisfactorily addressed.
- Sheriff's Office - No concerns noted.
- County Attorney - No concerns noted with the application.

Local Roots, Global Reach

CRITERIA FOR CUP CONSIDERATION (Section 1-1017)

1. Will not be detrimental to or endanger the public health, safety, and general welfare;
2. Will not be injurious to the use and enjoyment of other nearby property nor substantially impair the use of other property within the immediate proximity;
3. Adequate utilities, water, sewer or septic system, access roads, storm drainage and/or other necessary public facilities and improvements will be provided;
4. Adequate measures will be taken for ingress and egress/traffic control;
5. Not contrary to the goals and objectives of the Comprehensive Plan;
6. Will conform to ordinance regulations; and
7. Will not result in a multiplicity or saturation of similar uses in the same general neighborhood of the proposed use.

Local Roots, Global Reach

ADDITIONAL CONSIDERATIONS FOR BOARD

1. Number of persons working on the site & proposed hours of operation;
2. Conditions, for roads, sidewalks, parking facilities, vehicle access, and peak periods of traffic,
3. Orderly growth of the community and the fiscal impact on the County;
4. Effect of odors, dust, gas, smoke, fumes, vibration, glare, and noise;
5. Impacts to public facilities and the ability of the County or persons to supply public services;
6. Consistency with acceptable engineering and planning practices;
7. Location of structures in the vicinity of schools, houses of worship, theaters, hospitals, and similar places of public use;
8. Consistency of the proposal with County ordinances and plans;
9. Environmental impacts and opportunities for recreation and open space; and
10. Preservation of cultural and historic resource landmarks.

Local Roots, Global Reach

STAFF ANALYSIS

Strengths:

- Proposed uses are generally consistent with the County's future recommended land use plan;
- Proposed uses will generate additional employment opportunities and tax revenues necessary to fund future public services and facilities; and
- Proposed business will provide additional local retail and services to community members.

Weaknesses:

- Proposed car wash located along the northern property line is oriented so that the bay door faces Route 17, however, negative visual impacts may be mitigated by installing additional landscaping in front of the western-facing bay door in order to screen it from view.

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RECOMMENDATION

- Staff's analysis of the project finds the criteria for granting the conditional use permit are met. Negative visual impacts from the open bay door of the car wash facing Route 17 may be mitigated by installing additional landscaping in front of the western-facing bay door in order to screen it from view.

- Based on the strengths of the application, staff recommends approval with the condition that the open bay doors of the car wash facing Route 17 be screened from view with landscaping in general conformance with the preliminary landscape concept plan dated June 29, 2022, and as approved by the Zoning Administrator.

Chairman Carroll opened the public hearing and invited the applicant to speak.

William Riddick, applicant representative, stated there is no better place for a gas station in the county right now. Mr. Riddick stated they agree with condition to add additional landscape in front of the carwash and asked that the Planning Commission recommend approval to this application and send to the board.

There being no public comments, Chairman Carroll closed the public hearing and called for discussion from the Planning Commission.

Commissioner Bowser asked for a view of the proposed landscape.

Amy Ring showed the location of where the landscaping is proposed and stated that the view to the bay doors will be screened.

Commissioner Taylor added that the landscaping plan was in the attachments on the agenda.

Amy Ring stated that when the landscaping plan comes in for preliminary site plan review, the applicant will be required to meet the minimum standards for the landscaping ordinance and provide the additional landscape for screening of the carwash bay doors.

Commissioner Taylor stated that there is not a proposal for any curb cuts on Rout 17 and the property is being accessed through internal streets which is a benefit to keep traffic flowing on Route 17.

Commissioner Taylor made the motion to recommend approval of the Conditional Use Permit to the Board of Supervisors with the condition as noted. Commissioner Bowser seconded the motion, which was adopted with Commissioners Bowser, Boykin, Distefano, Duerig, Ford, Taylor, and Carroll voting in favor of the motion, an no Commissioners voting against the motion (7-0).

Motion was carried and will go to the Board of Supervisors on August 18, 2022.

OLD BUSINESS

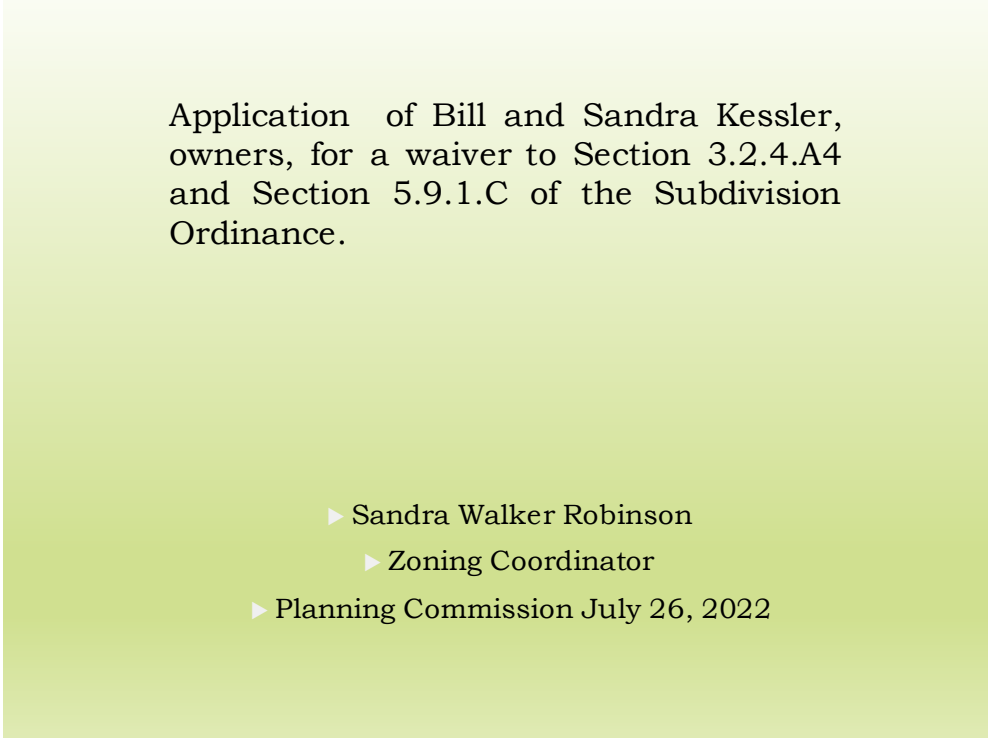
Amy Ring confirmed there was no items under Old Business.

NEW BUSINESS

Chairman Carroll called for the New Business Items.

The application of Bill and Sandra Kessler, owners, for a waiver to Section 3.2.4.A.4 and Section 5.9.1.C of the Subdivision Ordinance. The purpose of the application is to seek a waiver to allow a family member transfer from tax map parcel 59-01-017C on a private easement that serves two existing lots.

Sandy Robinson, Zoning Coordinator, gave an overview by presenting the following PowerPoint presentation.



Details

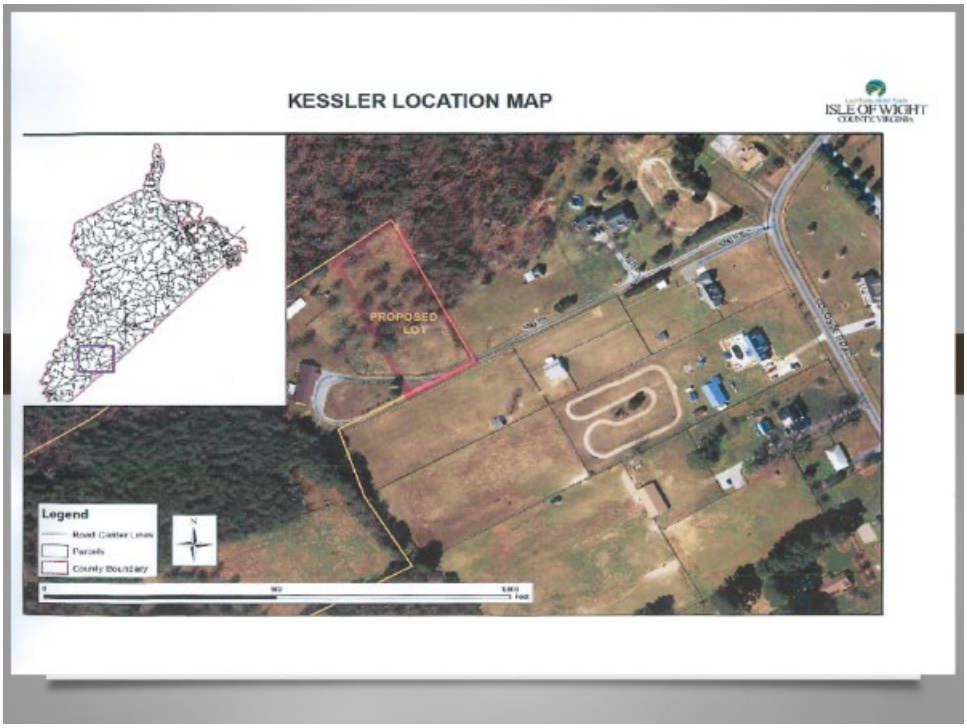
- Tax Map ID#: 59-01-017C
- Location: Colosse Road
- Current Zoning: RAC
- Election District: (D5) Carrsville
- Purpose: To create a family member subdivision lot on a private easement that serves two existing lots.

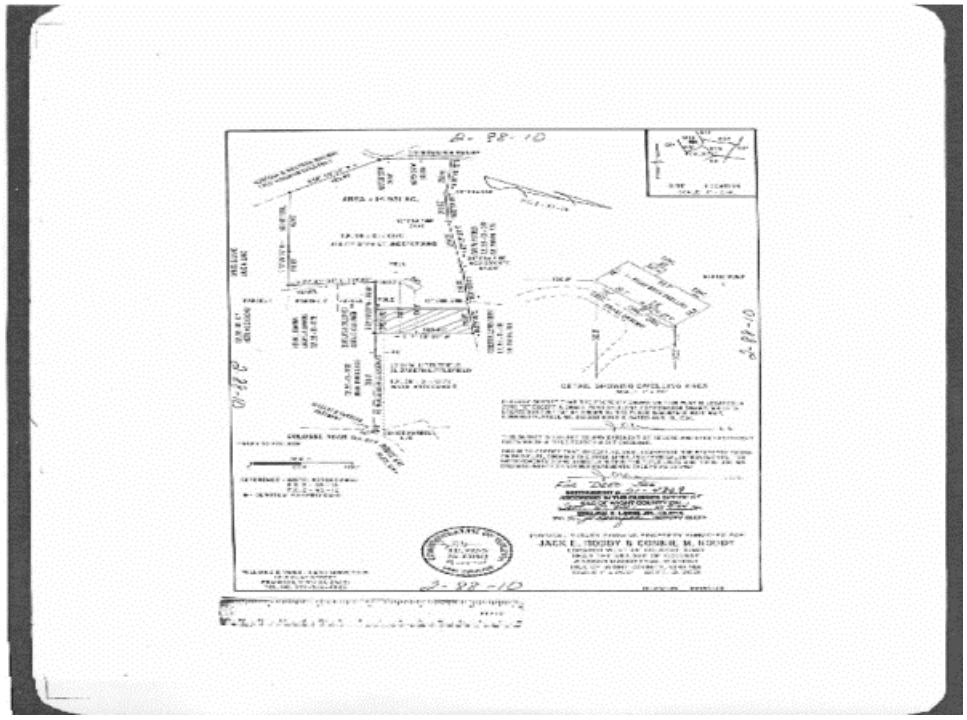
Background

- The parcel was established in 1996 originally contained 21.4 acres. It was subdivided in 1997 and now contains 14.98 acres. The parcel is served by a private ingress/egress easement of 40 feet to provide access to Colosse Road (Rt. 641) which serves two existing lots.
- The parcel was purchased by the current owners in 2017 with the intention to create at least one (1) lot for a child under the family member transfer provision of the Subdivision Ordinance.

Background

- The Subdivision Ordinance was amended in 2021 to only allow one lot from a tract to be accessed from a single easement of right-of-way unless approved by the Board of Supervisors and upon recommendation from the Planning Commission.
- There are already two (2) parcels accessing the private ingress/egress easement.





Kessler Entrance



Comprehensive Land Use Plan Review

- The property is designated Rural Agricultural Conservation on the Future Recommended Land Use Map.
- The proposal is consistent with the future recommended land use plan.

Ordinance Review

- Section 3.2.A.4: no more than one family member subdivision lot may be created from a single tract of land which is accessed from a single easement of right-of-way unless approved by the Board of Supervisors upon recommendation from the Planning Commission.
- Section 5.9.1.C: all new streets must be public and comply with VDOT road standards.

Agency Review

- VDOT comments that the entrance be shown to meet the required stopping sight distance for the posted speed limit.
- The lot has been approved for installation of a septic system and primary drainfield as required.

Staff Conclusion

Section 3.2.10.E of the Ordinance lists criteria for a waiver from the Subdivision Ordinance requirements. In order to approve a request for a waiver, the Board of Supervisors shall make an affirmative finding that all of the criteria are met. Below is a list of the criteria with staff's findings.

1. That granting the waiver will not have an adverse impact on land use compatibility.

Staff finds the proposed use is consistent with the residential and rural uses of surrounding properties.

2. That strict adherence to the general regulations would result in substantial injustice or hardship.

Staff finds no hardship, because the lot is currently being used for its intended single family residential use.

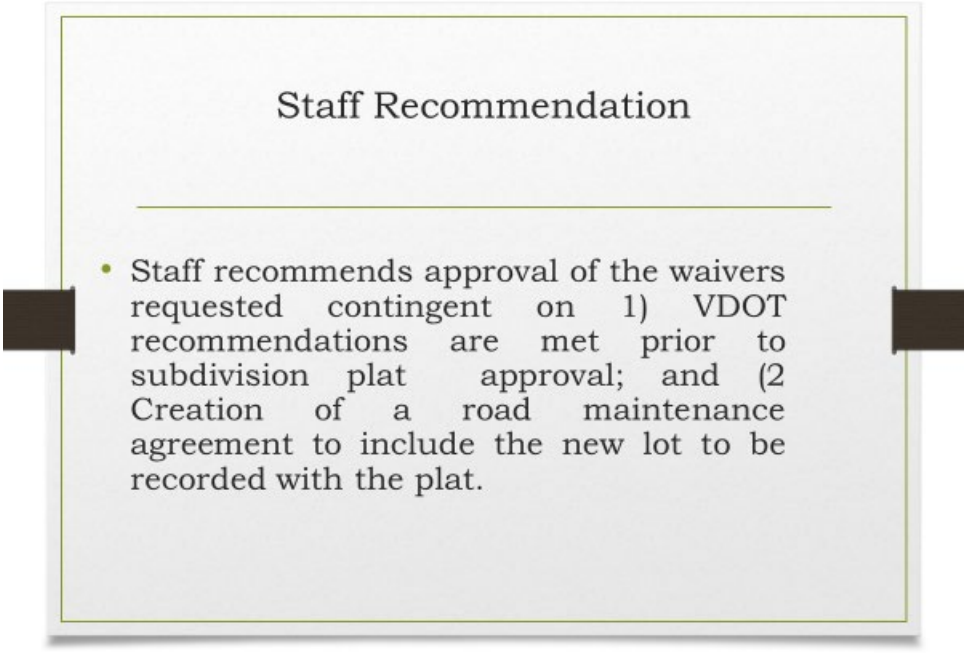
3. The waiver has not been opposed in writing by the county, VDOT engineer, or health official.

VDOT does not oppose the application. The Health Department does not oppose the application.

4. That granting the administrative waiver shall be consistent with the purposes and intent of this ordinance.

Staff finds that the purpose and intent of the Ordinance is to promote the orderly development of the County and to protect the public health, safety and welfare by ensuring access by emergency service vehicles. Staff could support the request with the following conditions:

1. VDOT recommendations are met prior to subdivision plat approval; and
2. Creation of a road maintenance agreement to include the new lot to be recorded with the plat.



Commissioner Taylor asked if any property owner that accesses the ingress/egress easement will be apart of the road maintenance agreement.

Bobby Jones, County Attorney, stated that only the two lots because of this subdivision would be responsible to maintain the entire road without contribution of the third-party lot, if they so choose.

Commissioner Taylor asked if the road maintenance agreement encumbers the county for enforcement.

Sandy Robinson stated the county does not enforce the agreement; it is between the property owners.

Commissioner Carroll asked what happens if this application was to be approved and a road maintenance agreement established and the landowner that owns the property does not sign it.

Bobby Jones, County Attorney, stated the county would not obligate the property owner to sign it, only the two lots resulting from the subdivision would be required to sign the agreement and maintain the road without any contribution from the third-party lot.

Commissioner Boykin asked if the Kessler's are the property owner of the road.

Sandy Robinson stated they have a 40-foot ingress-egress easement but does not own it.

Bobby Jones, County Attorney, stated that someone owns the underlying feet, however the applicant has a deeded easement which makes them responsible for maintenance.

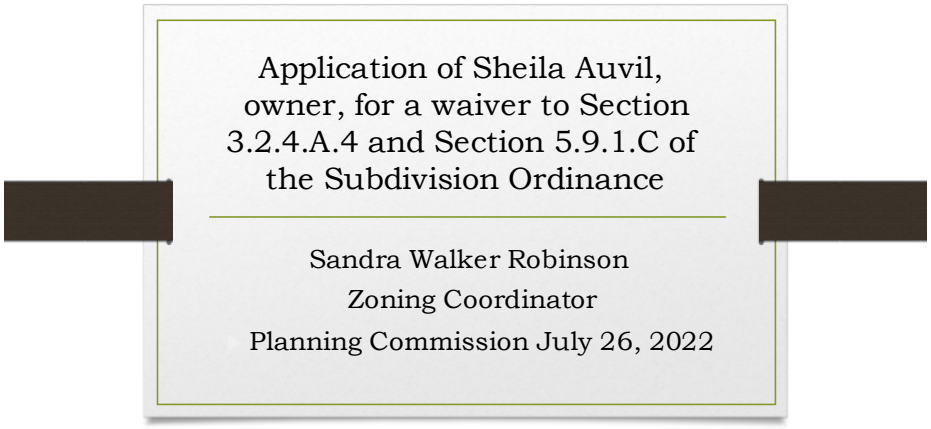
Commissioner Boykin made the motion to recommend approval of the subdivision ordinance waiver request to the Board of Supervisors with the two conditions that staff recommends. Commissioner Duerig seconded the motion, which was adopted with Commissioners Bowser, Boykin, Distefano, Duerig, Ford, Taylor, and Carroll voting in favor of the motion, an no Commissioners voting against the motion (7-0).

Motion was carried and will go to the Board of Supervisors on August 18, 2022.

Chairman Carroll called for the second New Business Item.

The application of Sheila Auvil, owner, for a waiver to Section 3.2.4.A.4 and Section 5.9.1.C of the Subdivision Ordinance. The purpose of the application is to seek a waiver to allow a family member transfer from tax map parcel 03-03-001 on a private driveway not built to public standards which serves more than two lots.

Sandy Robinson, Zoning Coordinator, gave an overview by presenting the following PowerPoint presentation.



Details

- Tax Map ID#: 03-03-001
- Location: Kingbrook Lane
- Current Zoning: RAC
- Election District: (D3) Hardy
- Purpose: To create a family member transfer on a private easement the serves more than two existing lots.

Background

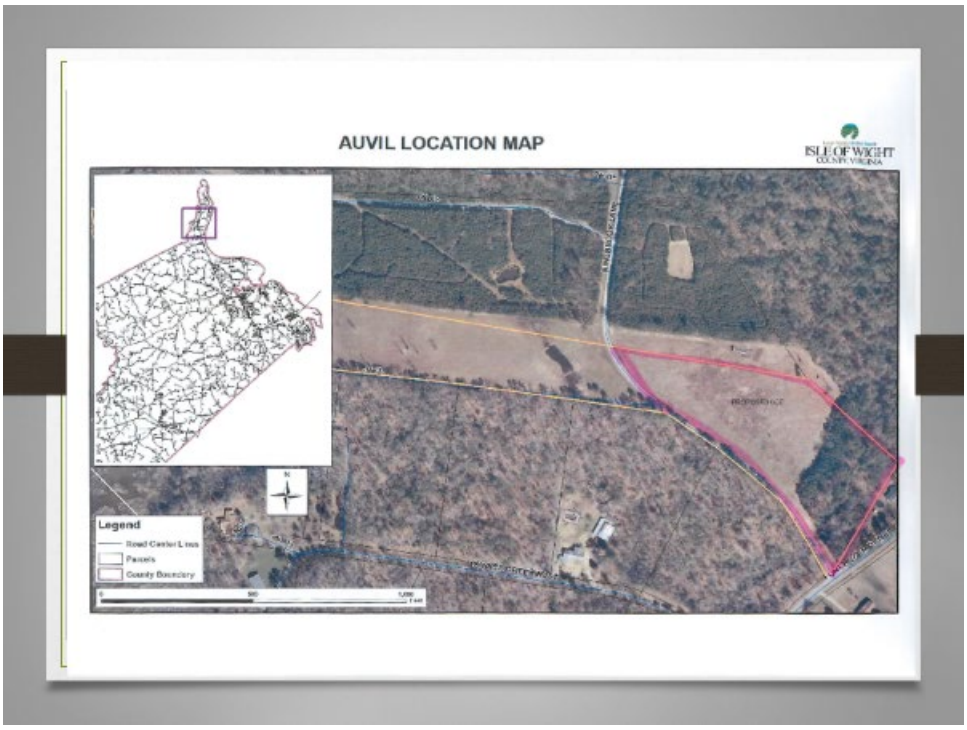
- The parcel was established in 1996 containing 21 acres. The parcel is served by a 50' private ingress/egress easement known as Kingbrook Lane which provides access to Fort Huger Drive (Rt 676).
- The parcel was purchased by the current owner in 2015.

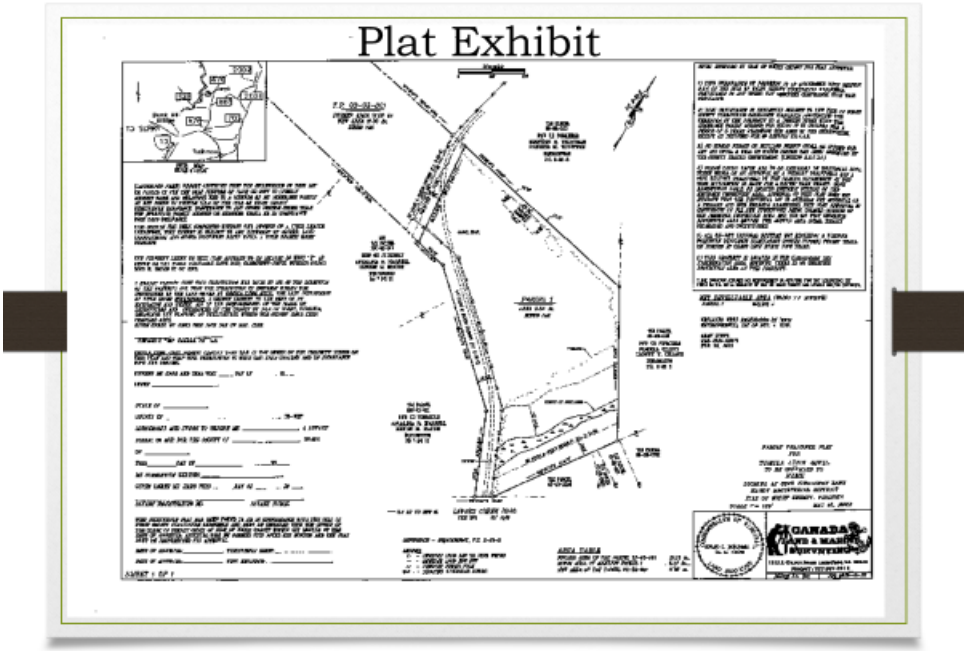
Background

- According to the owner she began to pursue the creation of the lot for her daughter in 2019 when the Subdivision Ordinance which allowed no more than four (4) lots from a tract served by a private easement.
- The Subdivision Ordinance was amended in 2021 to only allow one lot from a tract to be accessed from a single easement of right-of-way unless approved by the Board of Supervisors and upon recommendation from the Planning Commission.

Background

- There are already nine (9) parcels of land known as Lawnes Creek Estates on the ingress/egress easement.


AUVIL LOCATION MAP
ISLE OF WIGHT
COUNTY VIRGINIA
Legend
Road Center Lines
Parcels
County Boundary


Plat Exhibit

Auvil Entrance



Comprehensive Land Use Plan Review

- The property is designated Rural Agricultural Conservation on the Future Recommended Land Use Map.
- The proposal is consistent with the future recommended land use plan.

Ordinance Review

- Section 3.2.A.4: no more than one family member subdivision lot may be created from a single tract of land which is accessed from a single easement of right-of-way unless approved by the Board of Supervisors upon recommendation from the Planning Commission.
- Section 5.9.1.C: all new streets must be public and comply with VDOT road standards.

Agency Review

- VDOT recommends the entrance at the intersection of Kingbrook Lane and Fort Huger Drive be improved as a moderate volume commercial entrance and the required intersection site distance for the posted speed limit be shown.
- The parcel has been approved for installation of a septic system for a primary and reserve drainfield as required.
- A wetlands delineation has been performed and confirmed by the Army Corps of Engineers as required.

Staff Conclusion

Section 3.2.10.E of the Ordinance lists criteria for a waiver from the Subdivision Ordinance requirements. In order to approve a request for a waiver, the Board of Supervisors shall make an affirmative finding that all of the criteria are met. Below is a list of the criteria with staff's findings.

1. That granting the waiver will not have an adverse impact on land use compatibility.

Staff finds the proposed use is consistent with the residential and rural uses of surrounding properties.

2. That strict adherence to the general regulations would result in substantial injustice or hardship.

Staff finds no hardship, because the lot is currently being used for its intended single family residential use.

3. The waiver has not been opposed in writing by the county, VDOT engineer, or health official.

VDOT does not oppose the application. The Health Department does not oppose the application.

4. That granting the administrative waiver shall be consistent with the purposes and intent of this ordinance.

Staff finds that the purpose and intent of the Ordinance is to promote the orderly development of the County and to protect the public health, safety and welfare by ensuring access by emergency service vehicles. Staff could support the request with the following conditions:

1.VDOT recommendations are met prior to subdivision plat approval; and
2.Creation of a road maintenance agreement to include the new lot to be recorded with the plat.

Staff Recommendation

- Staff recommends approval of the waivers requested contingent on:
- 1. VDOT recommendations are met prior to subdivision plat approval; and
- 2. The deed for the new lot specifies adherence to the existing road maintenance agreement as part of the subdivision plat approval.

Bobby Jones, County Attorney, stated that if a parent lot is required to have a road maintenance agreement its offspring would be required to be as well.

Commissioner Distefano asked what the difference between a commercial entrance is compared to the existing entrance.

Sandy Robinson stated the difference is width.

Commissioner Duerig made the motion to recommend approval of the subdivision ordinance waiver request to the Board of Supervisors with the conditions that staff recommends. Commissioner Taylor seconded the motion, which was adopted with Commissioners Bowser, Boykin, Distefano, Duerig, Ford, Taylor, and Carroll voting in favor of the motion, an no Commissioners voting against the motion (7-0).

Motion was carried and will go to the Board of Supervisors on August 18, 2022.

COUNTY ATTORNEY'S REPORT

Bobby Jones confirmed there was no items for the County Attorney's Report.

CLOSED MEETING

Chairman Carroll confirmed there were no items to discuss in closed meeting.

Commissioner Taylor asked if there is any information on the fall retreat.

Amy Ring stated it is in discussion to have a joint retreat on solar farm ordinances and more information would be forth coming in the next few months.

Commissioner Ford asked if there would be trip to a solar facility.

Amy Ring stated she has reached out to a few solar farm developers asking for local well-established sites with good examples of landscaping buffers and mitigation measures in place that we could look at.

Commissioner Bowser asked if there were any solar sites that have lived its life and has been turned back over.

Amy Ring stated that it was too soon to see any facilities that have lived its life.

Commissioner Distefano asked what the long-term projection looks like for solar facilities and what that may look like in twenty years. Commissioner Distefano added that he has a concern that we are over building them.

Chairman Carroll asked if there is a requirement to when they must be in production by.

Amy Ring stated that the conditional use permit process states the use must be established on site within two years unless an extension is approved as a condition on their permit, or they come back before the Planning Commission to ask for permission.

Commissioner Boykin asked what the status is of Ho-Fel.

Amy Ring stated that it is still under review, an application has been submitted to add on to the facility.

Amy Ring stated that the General Assembly passed a bill to allow for a one-year extension for any conditional use permits, site plans, or rezonings.

Commissioner Boykin asked the status of the Windsor PV Solar Farm.

Amy Ring stated that because of the bill passed by the General Assembly, their conditional use permit is still active. Amy Ring added that there is currently another solar project in review, Carver, that is located right behind this one.

Commissioner Boykin asked when this one will be ready to go before the Planning Commission.

Amy Ring stated it will be a few months before the Planning Commission will see the Carver Solar application.

Amy Ring asked that feedback on additional topics the Planning Commission would like to discuss at their retreat to be emailed to her.

ADJOURNMENT

There being no further information to discuss, Chairman Carroll adjourned the meeting at 6:40 PM.

Adopted this _____day of _____, 2022.

_____
Chairman, Isle of Wight County Planning Commission

Attest: _____
Secretary

PLANNING REPORT

ATTACHMENTS:

Description	Type	Upload Date
AUGUST 4, 2022 BOARD OF SUPERVISORS' WORK SESSION ACTION LIST	Cover Memo	8/17/2022

ACTION LIST
BOARD OF SUPERVISORS' WORK SESSION
AUGUST 4, 2022

1. Supervisor Acree moved that Vice-Chairman McCarty be allowed to join the meeting electronically from 8018 Angel Lane in Roanoke, Virginia due to his inability to arrive in time to attend the meeting. The motion was adopted (4-0) with Supervisors Acree, Rosie, Grice and Jefferson voting in favor of the motion and no Supervisors voting against the motion.

   Vice-Chairman McCarty joined the meeting.

2. APPROVAL OF AGENDA

   Supervisor Acree moved that the agenda be approved. The motion was adopted (5-0) with Supervisors Jefferson, McCarty, Acree, Grice and Rosie voting in favor of the motion and no Supervisors voting against the motion.

3. COUNTY ADMINISTRATOR'S REPORT

   A. The Board received a proposal for a bike park at Nike Park from Andrew Gibber and Kyle Martindale who agreed to return with a business plan and details regarding parking.

   B. Chris Morello, Director of Economic Development, Judy Winslow, Director of Tourism and Jessica Healey, President, Chamber of Commerce, provided a presentation on the roles of Tourism, Economic Development and the Chamber of Commerce.

   C. Channell Way/Deep Bottom Road Median Break Options: Jamie Oliver, Transportation Manager, is to return with additional information on crash data, visibility issues and timeline for installation.

      Assignment: Oliver

   D. The results of the 2022 bond issuance were revealed by County Administrator Keaton.

4. CLOSED MEETING

   There was no action taken following the closed meeting.

PLANNING REPORT

APPLICATION:

Application (ZA-4-21) of Advanced Construction Development, LLC, applicant, and Locust Grove Partners, LP and H&B Railroad Company, Inc. property owners, for a change and amendment to existing zoning to Conditional-Limited Industrial (C-LI) to allow an auction establishment and a scrap and salvage service on approximately 5 acres of property with tax map number 42-06-015 located on the north side of the western terminus of IWIP Road (Rte. 1032) together with approximately 70 acres of property with tax map number 42-01-006 located at 17094 Benns Church Boulevard (Rte. 10)

ELECTION DISTRICT:

D4

LOCATION:

The project is proposed to be located on two adjacent properties located on the north side of the western terminus of IWIP Road (Rte. 1032) as well as a portion of the farm located at 17094 Benns Church Boulevard (Rte. 10). The parcel on IWIP road is bounded by IWIP Road to the south, by farmland to the north, by a vacant wooded parcel to the west, and by a warehouse and vehicle storage yard in the IWIP industrial park.

The second parcel 42-01-006 is bounded to the south by the IWIP Road parcel in the IWIP industrial park, tax map number 42-06-015, to the east by Benns Church Boulevard (Rte. 10), and to the north and west by agricultural and forest uses and a borrow pit. Only a portion of this property is proposed to be used for the salvage yard and will consist mostly of currently open farmland.

BACKGROUND:

The subject properties are identified as Tax Map Parcel 42-06-015 (located on IWIP Road) and a portion of Tax Parcel 42-01-006.
The property on IWIP Road with tax parcel number 42-06-015 is part of the Isle of Wight Industrial Park and is zoned Conditional-Limited Industrial for the uses permitted in the Limited Industrial Zoning District, including:

- Blacksmith shop;
- Welding and machine shops;
- Retail food stores;
- Auto and home appliance services;
- Office buildings;
- Service stations;
- Lumber and building supply, including cabinet manufacturers, plumbing, electrical, and
- Machinery sales and service.

According to County records, the parcel was created in July 2002 as part of the planned industrial park. The current use of the property is equipment storage for the property owner, H&B Railroad Company, Inc.

Approximately 70 acres of the adjacent site located on tax parcel number 42-01-006 is also included in the application which is shown on the attached concept plan. The property has historically been used for farming and silvicultural uses. There is both an overhead powerline easement and thirty foot wide gas line easement that traverses the proposed project site. There are two existing livestock buildings located within the project area which will be demolished as part of the proposed improvements.

DESCRIPTION:

The applicant, Advanced Construction Development, LLC, requests conditional rezoning of the two subject parcels to establish the proposed commercial use of "Auction Establishment" as defined in Section 3-6000 and the industrial use of “Scrap and Salvage Service” as defined in Section 3-7000 of the Zoning Ordinance to establish a business known as Insurance Auto Auctions (IAAI) that receives, inspects, temporarily stores, and auctions automobiles via the internet.

The applicant describes IAAI is a remarketer of vehicles made available for sale by insurance companies, dealerships, rental companies and fleet leasing companies, many of which were involved in collisions, floods, or recovered from thefts and as a result of repossessions. IAAI contracts with such companies to receive and re-market the vehicles, which are then delivered to the site on commercial vehicle carriers. Before IAAI takes possession of the vehicles, any concerns with petroleum or other fluids are addressed. They are delivered to the site on commercial vehicle carriers.

Upon arrival, the vehicles are inspected in an effort to prevent any possible contaminant leaks. Any leaks discovered during such inspection shall be contained prior to placement of the vehicle in the storage area. As the potential environmental damage of draining and fluid recovery processes is greater than the potential exposure from a release from a stationary vehicle, IAAI does not dismantle vehicles, drain fluids, or sell vehicle parts.

The vehicles are photographed and are properly stored in an organized manner on the yard while awaiting sale. All vehicles are sold remotely via internet auction to registered buyers. Although the general public will not be allowed to come to the site for any vehicle sales, some registered buyers may visit the site on the day prior to the auction to view vehicles.

Each vehicle is sold as a single unit (meaning not dismantled nor sold in parts). There shall be no dismantling, servicing or maintenance of vehicles on the grounds of this facility. No parts shall be offered for sale from vehicles stored at this facility. All vehicles sold from this facility will be sold in the same condition in which they arrived at the time of delivery to the site.

Following the sale, vehicles are retrieved by buyers, via commercial vehicle carriers contracted by such buyers. IAAI does offer some delivery services at present and intends to expand delivery services in the future, although such delivery service would not change the aggregate total deliveries to or from the site. A full description of the business is included in the community impact statement narrative attached to this report.

Economic Impacts:

Improvements to the site will consist of an office and storage yard located on parcel 42-01-006. The anticipated $9 million in site improvements include an office building, employee and customer parking, storage yard, and storm drainage system. The business will create thirty full-time, on-site jobs, including managerial positions.

Public Services and Facilities:

The proposed development will utilize both private well and wastewater system. According to Emergency Services, fire suppression needs, including a dry hydrant and access to the wet pond on site, may be addressed at site plan review. No additional public service needs are anticipated.

Traffic Impacts:

Traffic will access the site from IWIP Road. No access is proposed from Route 10. According to the traffic impact analysis (TIA), the anticipated daily traffic is 190 vehicle trips per day. Out of the 190 trips, it is anticipated that fifty of those will be trucks delivering and picking up cars. Most of the traffic will be using Route 10 between IWIP and Brewers Neck. Based on the TIA, existing turn lanes are sufficient to meet the projected needs, and no significant negative impacts to the surrounding roadway network are anticipated. No new road improvements are recommended. A copy of the TIA is attached to this report.

Environmental Features:

The US Army Corps of Engineers has confirmed 2.28 acres of forested nontidal wetlands and 0.56 acres of scrub shrub nontidal wetlands on tax parcel number 42-01-006. The recorded plat for 42-06-015 shows the limits of previously delineated Resource Protection Area (RPA) buffer a copy of which is attached to this report. The concept plan also includes the location of the wetlands on the proposed site as well as RPA buffer areas.

According to the Department of Conservation and Recreation, the project site lies with the Cat Ponds Conservation Site. Conservation sites are recommended preservation areas based on the presence of significant natural resources, such as the coastal plain seasonal pond habitat in this site. The site is also home to the rare lance-leaved rose gentian that is a state rare perennial herb that inhabits such areas. An advisory letter from DCR is attached to this staff report for your review along with a map of the conservation site boundary. The letter recommends avoidance of these areas, but if avoidance is not possible, that ground disturbing activities be limited east of the farm road along the western boundary of the site and avoidance of forested areas.

The applicant's concept plan does show no development past the existing gravel road and clearing of 2.33 acres of woodland outside of the RPA buffer areas.

Stormwater/Drainage Management:

Potential pollutant sources exist at IAAI that may adversely impact storm water runoff. Storm water may carry pollutants to storm ditches, drains, and eventually, bodies of water, such as streams, rivers, lakes, or oceans. A full description of IAA's contaminant prevention plan is attached to this staff report. In summary, IAAI exercises the following practices to minimize soil and water contaminants:

- Visual inspections of vehicles brought to the branch to assess integrity of vehicle fluid systems and identify the need for repair or remedy of vehicle hydraulic/mechanical systems that could leak significant materials on the property.
- Visual inspections of travel aisles in the storage yard for evidence of releases of significant materials and identifying the cause of the release when possible.
- Removal of the miscellaneous debris (i.e., loose vehicle parts that may have inadvertently fallen off of the host vehicle), as necessary, to prevent possible damage to site vehicles.
- Regular maintenance of site vehicles and equipment to prevent de minimis releases.
- Careful handling of vehicles, to minimize the potential for damage to vehicle systems, which may in turn cause a release.
- Proper handling, storage and inventory of significant materials, when necessary in the storage yard and within the branch garage or warehouse.
- Orderly storage and inventory of stored vehicles.
- Prompt, routine removal of de minimis releases.
- Continued training of IAA personnel regarding good housekeeping practices.

Any future development on the site will be required to meet current stormwater management regulations prior to final site plan approval.

Historical Resources:

According to the County's records, this site lies within a high probability area for archeological resources. As result, the applicant performed a Phase I Cultural Resources Survey in July 2021 for the original site area for tax map numbers 42-01-006 and 42-06-008.

The results of the July 2021 study identified 30 isolated finds, no previously-identified archaeological resources, two new archaeological resources, one previously-identified architectural resource, and no new architectural resources. The study does not recommend further work for any of the sites, as they are not eligible for listing on the National Register of Historic Places.

In May 2022, the applicant provided a Phase I Cultural Resources Survey for tax map number 42-06-015. The survey identified no isolated finds, one new archeological site, and no new architectural resources. The report recommends no additional work, since none of the finds are potentially eligible for listing.

The study has been shared with both the Isle of Wight County Museum and the Department of Historic Resources for their archives. The proposed project is approximately 570 feet from Locust Grove, the closest historic architectural resource, located at 17076 Benns Church Boulevard, built around 1857.

Adjacent Land Use Impacts:

Adjacent properties include other industrial uses and agricultural and silvicultural uses. To the west of the project site, the adjacent properties with tax map numbers 41-01-052 and 42-01-007D are in a conservation easement.

Visual Impacts:

The project site lies mostly in a vacant farm field on tax parcel 42-01-006. Although the property has road frontage on Route 10, the project site will be approximately 450 feet from the road at its closest point. The project also lies approximately 570 feet from the nearest historic property, Locust Grove. Visibility will be further limited by required screening in accordance with the Ordinance and a minimum required setback for all industrial uses of 100 feet in the LI zoning district. An illustrative distance map and screen buffer perspective rendering is attached for your reference.

The property also lies in the Newport Development Service Overlay (NDSO) District and will have to meet nonresidential design criteria, including that for screening and fencing. The attached concept plan is for illustrative purposes only, and any final site plan will need to meet current ordinance requirements. For example, the metal fence as shown on on the conceptual plan will not be permitted per Section 6-2020.A.7 of the NDSO requirements.

COMPREHENSIVE LAND USE PLAN:

The recommended future land use designation for both properties is Planned Industrial (PI) and Environmental Conservation (EC) along the wetland and stream areas. The PI land use consists of some light industrial and all heavy industrial and manufacturing uses as well as warehousing, distribution, and uses which may negatively impact surrounding development. Preservation of environmental features still occurs, and development is connected to residential

uses with vehicular and pedestrian access but should be buffered.

The EC land use is identified for the protection of a variety of sensitive environmental features found in the County and serves to create natural connections for wildlife, protect commercial and recreational fisheries, and to provide breaks in and between developments. Specific locations of Environmental Conservation areas should be determined with site specific delineations during the plan of development review process.

Both sites were included in the Newport Development Service District (DSD) with the adoption of the County's Comprehensive Plan in 2020. DSDs are a specific area identified for development to occur. Outside of the DSD boundaries all land is intended to stay in rural and agricultural uses and environmental protection.

The proposed commercial and industrial use is consistent with the future recommend land use designations.

ORDINANCE REVIEW:

The proposed zoning district designation is Conditional-Limited Industrial subject to the attached proffered conditions. An auction establishment is permitted by right in the LI zoning district while a scrap and salvage yard is permitted with a conditional use permit which may be approved during a conditional rezoning application. In addition, the site also lies in the NDSO and CBPA overlay districts which require enhanced design criteria for new development.

If the Board of Supervisors approves the change in zoning, the project will need to undergo subdivision, site plan, and building permit review. The project will be required to demonstrate any necessary state and federal permits as well.

The proffered conditions are as follows:

1. Each vehicle shall be sold as a single unit (meaning not dismantled nor sold in parts). There shall be no dismantling, servicing or maintenance of vehicles on the grounds of this facility. No parts shall be offered for sale from vehicles stored at this facility. All vehicles sold from this facility shall be sold in the same condition in which they arrived at the time of delivery to the site.
2. Upon arrival, the vehicles shall be inspected to prevent any possible contaminant leaks. Any leaks discovered during such inspection shall be contained prior to placement of the vehicle in the storage area. IAA shall not dismantle vehicles, drain fluids, or sell vehicle parts.

3. Normal operating hours shall not exceed from 6:00 am until 10:00 pm daily; except that in the case of regional catastrophes, such as a hurricane or widespread flooding, in which case(s) the facility may accept vehicle deliveries outside normal operating hours. The drop zone shall be segregated from the remainder of the yard by interior fencing.

AGENCY REVIEW:

Staff distributed the application to the following departments and agencies for their review and comment:

- Emergency Services
- Economic Development
- General Services
- Transportation Project Manager
- Environmental Planner
- Virginia Department of Transportation
- Sheriff's Office

All outstanding concerns have been addressed by the applicant.

STAFF CONCLUSIONS:

Strengths:

1. The proposed uses are consistent with the future recommended land use designation in the Comprehensive Plan.
2. The proposed business will create additional job opportunities and tax revenues to meet future public service and facility needs in the County.

Weaknesses:

1. The project lies within the Cat Pond Conservation Area, however, the applicant has proposed no impacts to wetland areas and minimize their impact to existing wooded areas according to their concept plan, although this is not explicitly stated in their proffers.

STAFF RECOMMENDATION:

Based on the strengths of the application, staff recommends approval of the project with the proffered conditions.

ATTACHMENTS:

Description	Type	Upload

		Date
ZA-04-21 Application	Backup Material	8/17/2022
ZA-04-21 Proffer Statement	Backup Material	8/17/2022
Community Impact Statement	Backup Material	8/17/2022
Concept Plan	Backup Material	8/17/2022
Screening Perspective Rendering	Backup Material	8/17/2022
Other IAAI Location Pictures	Backup Material	8/17/2022
Distance Map Graphic	Backup Material	8/17/2022
Traffic Impact Analysis	Backup Material	8/17/2022
Preliminary Site Analysis	Backup Material	8/17/2022
Water Quality Impact Assessment	Backup Material	8/17/2022
42-01-006 Corps Wetland Confirmation	Backup Material	8/17/2022
42-06-015 Plat with RPA	Backup Material	8/17/2022
DCR Cat Pond Comment Letter	Backup Material	8/17/2022
Stormwater and Runoff Prevention Plan	Backup Material	8/17/2022
Phase I CRS Addendum May 2022	Backup Material	8/17/2022
Phase I Cultural Resources Survey 2021	Backup Material	8/17/2022
Property Location Map	Backup Material	8/17/2022
Future Land Use Map	Backup Material	8/17/2022
Property Zoning Map	Backup Material	8/17/2022
ZA-4-21 Auto Auction PC Resolution	Backup Material	8/17/2022

ISLE OF WIGHT
COUNTY, VIRGINIA
DEPARTMENT OF PLANNING AND ZONING

MUNIS # 23438
ZA-04-21

* AMENDED

APPLICATION FOR REZONING/CONDITIONAL ZONING AMENDMENT

This application should be used to petition for a change to the Official Zoning Map or for an amendment of zoning conditions. The following application requirements are consistent with the procedures set forth in Section 1-1015, *Amendments*, of the Isle of Wight County Zoning Ordinance, as amended.

[ ] Rezoning

[X] Conditional Rezoning (Are voluntary proffered conditions attached?): X Yes _____ No

Request to change the subject property(s) from the RAC & C-LI to the C-LI zoning district.

Proposed Use or Activity: Auto Auction and Auto Storage Yard, as defined in Section 3-7000 as "Scrap and salvage service."

[X] Amendment to Conditional Zoning

Request to change conditional zoning as follows (Attach current and proposed conditions): _____
As to 42-01-015, have its conditional use amended to allow Scrap and salvage service. See below.

B. PROJECT DESCRIPTION:

Project Name: Isle of Wight Auto Auction

Property Address (if any): Isle of Wight Industial Park Road, Smithfield

Election District: Windsor

Comprehensive Plan Designation: Planned Industrial & Environmental Conservation

The rezoning will apply to 74.79+/- acres out of 314.64 total acres

Tax Parcel Identification # 42-06-015 Number of Acres to be Rezoned: 5.07+/-

Requesting Zoning District Change from: C-LI to have its conditional use amended to ~~allow Scrap~~ and salvage service.

Tax Parcel Identification # 42-01-006 Number of Acres to be Rezoned: 69.73+/-

Requesting Zoning District Change from: RAC to C-LI

Tax Parcel Identification #_____ Number of Acres to be Rezoned: _____

Requesting Zoning District Change from: _____ to _____

Proposed Utilities (check all that apply): Public Water_____ Private Well _____

Public Sewer_____ Private Septic _____

C. **APPLICATION INFORMATION:**

Applicant(s) Name(s): Advanced Construction Development, LLC

Address: 10444 Greenbriar Place, Suite A

City, State, Zip Code: Oklahoma City, Oklahoma 73159

Phone No.: (405) 691-4949 Email: sfulkerson@fulkersonlawoffice.com Fax No.: (405) 691-4595

Property Owner(s) Name(s): H & B Railroad Company Inc. and Locust Grove Partners LP

Address: PO Box 571

City, State, Zip Code: Carrollton, VA 23314

Phone No.: _____ Email: _____ Fax No.: _____

8-1-2022

Applicant Signature **Date**

Locust Grove Partners, LP

Owner Signature *if different* **Date**

Second Owner signature: H & B Railroad Company Inc. _____ Date: _____

NOTICE: THE ATTACHED CHECKLIST MUST BE COMPLETED, CERTIFIED, AND SUBMITTED OR THE APPLICATION WILL BE CONSIDERED INCOMPLETE.

Remit Application to: Isle of Wight County Central Permitting, 17140 Monument Circle, Suite 100
P. O. Box 80, Isle of Wight, Virginia 23397

FOR OFFICE USE ONLY: AMENDED APPLICATION

Complete Application Received On: 8/3/2022 Fees Paid: _____

Tax Query: [X] Current [ ] Delinquent Distribution Date: FOR PC PUBLIC HEARING ON 8/23/2022

Posted/Date to Post: _____

AGENCIES REFERRALS:

_____ Department of Conservation & Recreation
_____ Economic Development
_____ Emergency Services
_____ General Services
_____ Environmental Planner
_____ Health Department
_____ Transportation Manager
_____ Commission of Revenue
_____ Other _____

_____ Inspections
_____ Sheriff's Office
_____ Town of Smithfield
_____ Town of Windsor
_____ VDOT
_____ Schools
_____ Budget & Finance
_____ County Attorney

Verified By: _____ Date: 8/3/2022

C. **APPLICATION INFORMATION:**

Applicant(s) Name(s): Advanced Construction Development, LLC

Address: 10444 Greenbriar Place, Suite A

City, State, Zip Code: Oklahoma City, Oklahoma 73159

Phone No.: (405) 691-4949 Email: sfulkerson@fulkersonlawoffice.com Fax No.: (405) 691-4595

Property Owner(s) Name(s): H & B Railroad Company Inc. and Locust Grove Partners LP

Address: PO Box 571

City, State, Zip Code: Carrollton, VA 23314

Phone No.:_____ Email:_____ Fax No.:_____

Robert P Sykes 8/2/2022

~~Applicant Signature~~ Date

Locust Grove Partners, LP

Owner Signature *if different* **Date**

Second Owner signature: H & B Railroad Company Inc._____ Date: _____

NOTICE: THE ATTACHED CHECKLIST MUST BE COMPLETED, CERTIFIED, AND SUBMITTED OR THE APPLICATION WILL BE CONSIDERED INCOMPLETE.

Remit Application to: Isle of Wight County Central Permitting, 17140 Monument Circle, Suite 100
P. O. Box 80, Isle of Wight, Virginia 23397

FOR OFFICE USE ONLY:

Complete Application Received On:_____ Fees Paid: _____

Tax Query: [ ] Current [ ] Delinquent Distribution Date: _____

Posted/Date to Post: _____

AGENCIES REFERRALS:

_____ Department of Conservation & Recreation
_____ Economic Development
_____ Emergency Services
_____ General Services
_____ Environmental Planner
_____ Health Department
_____ Transportation Manager
_____ Commission of Revenue
_____ Other _____

_____ Inspections
_____ Sheriff's Office
_____ Town of Smithfield
_____ Town of Windsor
_____ VDOT
_____ Schools
_____ Budget & Finance
_____ County Attorney

Verified By:_____ Date: _____

C. **APPLICATION INFORMATION:**

Applicant(s) Name(s): Advanced Construction Development, LLC

Address: 10444 Greenbriar Place, Suite A

City, State, Zip Code: Oklahoma City, Oklahoma 73159

Phone No.: (405) 691-4949 Email: sfulkerson@fulkersonlawoffice.com Fax No.: (405) 691-4595

Property Owner(s) Name(s): H & B Railroad Company Inc. and Locust Grove Partners LP

Address: PO Box 571

City, State, Zip Code: Carrollton, VA 23314

Phone No.:_____ Email:_____ Fax No.:_____

_____

Applicant Signature **Date**

Locust Grove Partners, LP

_____

Owner Signature *if different* **Date**

Second Owner signature: H & B Railroad Company Inc. _____ Date: 8/1/2022

NOTICE: THE ATTACHED CHECKLIST MUST BE COMPLETED, CERTIFIED, AND SUBMITTED OR THE APPLICATION WILL BE CONSIDERED INCOMPLETE.

Remit Application to: Isle of Wight County Central Permitting, 17140 Monument Circle, Suite 100
P. O. Box 80, Isle of Wight, Virginia 23397

FOR OFFICE USE ONLY:

Complete Application Received On:_____ Fees Paid: _____

Tax Query: [ ] Current [ ] Delinquent Distribution Date: _____

Posted/Date to Post: _____

AGENCIES REFERRALS:

_____ Department of Conservation & Recreation
_____ Economic Development
_____ Emergency Services
_____ General Services
_____ Environmental Planner
_____ Health Department
_____ Transportation Manager
_____ Commission of Revenue
_____ Other _____

_____ Inspections
_____ Sheriff's Office
_____ Town of Smithfield
_____ Town of Windsor
_____ VDOT
_____ Schools
_____ Budget & Finance
_____ County Attorney

Verified By:_____ Date: _____

COUNTY OF ISLE OF WIGHT
DISCLOSURE OF REAL ESTATE HOLDINGS

Applicant Advanced Construction Development, LLC

Address 10444 Greenbriar Place, Suite A
Street

Oklahoma City — Oklahoma — 73159
City — State — Zip

REAL ESTATE HOLDINGS TO BE AFFECTED

Location or Address	Description
No other holdings affected.	

OTHER OWNERS OF AFFECTED REAL ESTATE
(Not Required for Corporation whose stock is traded on a national or local stock exchange or having more than 500 shareholders.)

Name of Individuals Corporation/Partnership Business Association	Address
Locust Grove Partners, LP	17076 Benns Church Blvd., Smithfield, VA 23430
H & B Railroad Company Inc	P O Box 571, Carrollton, VA 23314

Does any member of the Isle of Wight County Planning Commission or governing body have any interest in such property, either individually, by ownership of stock in a corporation owning such land, partnership, as the beneficiary of a trust, or the settlor of a revocable trust, or whether a member of the immediate household of any member of the Planning Commission or governing body has any such interest? Yes X No
If yes, names of members:

I do solemnly swear that the foregoing statement(s) and attachments(s), if any, are complete, correct, and true.

Applicant: Advanced Construction Development, LLC Applicant: [signature] Date: 8-1-2022
Printed or Typed Name — Signature

State of Oklahoma
County of Cleveland

Subscribed and sworn to before me Angela Scheets, A Notary Public in and for the County of Cleveland, State of Oklahoma, this 1st day of August, 2022.

Angela Scheets #14001679
Notary Public

ANGELA SCHEETS NOTARY PUBLIC # 14001679 EXP. 02/21/26 STATE OF OKLAHOMA

My Commission Expires 02-21-2026

SIGNATURE PAGE

Applicant: Advanced Construction Development, LLC
Printed or Typed Name

Applicant: [signature] Date: 8-1-2022
Signature

State of Oklahoma
County of Cleveland

Subscribed and sworn to before me Angela Scheets, A Notary Public in and for the County of Cleveland, State of Oklahoma, this 1st day of August, 2022.

Angela Scheets # 14001679
Notary Public

My Commission Expires 02-21-2026

ANGELA SCHEETS NOTARY PUBLIC # 14001679 EXP. 02/21/26 STATE OF OKLAHOMA

Owner: Locust Grove Partners, LP
Printed or Typed Name

Owner: _____ Date: _____
Signature

Commonwealth of Virginia
County of Isle of Wight

Subscribed and sworn to before me _____,
A Notary Public in and for the County of Isle of Wight,
Commonwealth of Virginia, this _____ day of _____, 2022.

_____
Notary Public

My Commission Expires _____

Owner: H & B Railroad Company Inc
_____
Printed or Typed Name

Owner: _____ Date: _____
Signature

Commonwealth of Virginia
County/City of _____

Subscribed and sworn to before me _____,
A Notary Public in and for the County/City of _____,
Commonwealth of Virginia, thisday of _____, 2022.

_____
Notary Public

My Commission Expires _____

SIGNATURE PAGE

Applicant: Advanced Construction Development, LLC
Printed or Typed Name
Applicant:_____ Date:_____
Signature

State of Oklahoma
County of Cleveland

Subscribed and sworn to before me_____,A Notary Public in and for the County of Cleveland, State of Oklahoma, this _____ day of _____, 2022.

_____
Notary Public
My Commission Expires_____

Owner: Locust Grove Partners, LP
Printed or Typed Name
Owner: Robert P. Taylor Date: 8/2/2022
Signature

Commonwealth of Virginia
County of Isle of Wight

Subscribed and sworn to before me Robert P. Taylor,
A Notary Public in and for the County of Isle of Wight,
Commonwealth of Virginia, this 2nd day of August 2022.

Angela Y. Hunt
Notary Public
My Commission Expires March 31, 2026

ANGELA Y HUNT
NOTARY PUBLIC
REG. # 7991468
COMMONWEALTH OF VIRGINIA
MY COMMISSION EXPIRES MARCH 31, 2026

Owner: H & B Railroad Company Inc
Printed or Typed Name
Owner:_____ Date:_____
Signature

Commonwealth of Virginia
County/City of _____

Subscribed and sworn to before me_____,
A Notary Public in and for the County/City of _____,
Commonwealth of Virginia, thisday of _____, 2022.

_____
Notary Public
My Commission Expires_____

SIGNATURE PAGE

Applicant: Advanced Construction Development, LLC
Printed or Typed Name

Applicant: _____ Date: _____
Signature

State of Oklahoma
County of Cleveland

Subscribed and sworn to before me _____, A Notary Public in and for the County of Cleveland, State of Oklahoma, this _____ day of _____, 2022.

_____
Notary Public

My Commission Expires _____

Owner: Locust Grove Partners, LP
Printed or Typed Name

Owner: _____ Date: _____
Signature

Commonwealth of Virginia
County of Isle of Wight

Subscribed and sworn to before me _____,
A Notary Public in and for the County of Isle of Wight,
Commonwealth of Virginia, this _____ day of _____, 2022.

_____
Notary Public

My Commission Expires _____

Owner: H & B Railroad Company Inc
Daniel B. Mann, President
Printed or Typed Name

Owner: _____, President Date: 8/1/2022
Signature

Commonwealth of Virginia
County/City of Chesapeake

Subscribed and sworn to before me Kaelani R. Garcia,
A Notary Public in and for the County/City of Chesapeake
Commonwealth of Virginia this day of August 1st, 2022.

_____
Notary Public

My Commission Expires 02/29/2024

KAELANI RENEE GARCIA
COMMONWEALTH OF VIRGINIA
REGISTRATION NO. 7864872
MY COMM. EXPIRES 02/29/2024
NOTARY PUBLIC

8 of 8.

AMENDED PROFFER STATEMENT

The Applicant, Advanced Construction Development, LLC, requests (i) parcel Tax Map No: 42-06-015 have its conditional zoning amended to allow the following proposed use: Auto Auction and Auto Storage Yard, as defined in Isle of Wight Code of Ordinances, Appendix B, Article III, Section 3-7000, as "Scrap and Salvage Service," and (ii) a conditional rezoning for a portion of parcel Tax Map No: 42-01-006 also for the same proposed use labeled "Scrap and Salvage Service."

These Amended Proffer Statements ("Proffers") supersede any and all prior proposed proffers.

These Proffers are made as of the 2 of August, 2022 by Advanced Construction Development, LLC ("Applicant"), developer of Tax Map Number 42-06-015, and a portion of 42-01-006 for an approximate aggregate total of 74.79 acres of land which is referred to herein as the "Subject Property." Applicant has filed a rezoning application with the Isle of Wight County Planning and Zoning Department requesting (i) the conditional zoning of parcel Tax Map No: 42-06-015 be amended to allow "Scrap and Salvage Service," and (ii) a conditional rezoning for a portion of parcel Tax Map No: 42-01-006 from Rural Agricultural Conservation (RAC) to Conditional – Limited Industrial (C-LI). Applicant voluntarily proffers that the development of the Subject Property proposed for rezoning under this application shall be in strict accordance with the conditions set forth below.

These Proffers are the only conditions offered on this rezoning, and any prior proffers on the Subject Property are hereby superseded by these proffers and any and all previous proffers on the Subject Property are hereby void and of no further force and effect.

All improvements, land, easements, dedications, gifts, proffers and other conveyances to the County shall be in fee simple, without cloud of title or encumbrance of any kind.

1. Each vehicle shall be sold as a single unit (meaning not dismantled nor sold in parts). There shall be no dismantling, servicing or maintenance of vehicles on the grounds of this facility. No parts shall be offered for sale from vehicles stored at this facility. All vehicles sold from this facility shall be sold in the same condition in which they arrived at the time of delivery to the site.

2. Upon arrival, the vehicles shall be inspected to prevent any possible contaminant leaks. Any leaks discovered during such inspection shall be contained prior to placement of the vehicle in the storage area. IAAI shall not dismantle vehicles, drain fluids, or sell vehicle parts.

3. Normal operating hours shall not exceed from 6:00 am until 10:00 pm daily; except that in the case of regional catastrophes, such as a hurricane or widespread flooding, in which case(s) the facility may accept vehicle deliveries outside normal operating hours. The drop zone shall be segregated from the remainder of the yard by interior fencing.

[The remainder of this page left blank intentionally]

Applicant: Advanced Construction Development, LLC

Applicant: _____ Date: 8-1-2022
Signature

State of Oklahoma: County of Cleveland
Subscribed and sworn to before me Angela Scheets,
A Notary Public in and for the County of Cleveland, State of Oklahoma,
this 1st day of August, 2022.

ANGELA SCHEETS NOTARY PUBLIC # 14001679 EXP. 02/21/26 STATE OF OKLAHOMA

_____ My Commission Expires: 02-21-2026
Notary Public

(Owners' signatures follow in separate pages.)

Applicant: Advanced Construction Development, LLC

Applicant: _____ Date: _____
Signature

State of Oklahoma: County of Cleveland
Subscribed and sworn to before me _____,
A Notary Public in and for the County of Cleveland, State of Oklahoma,
this _____ day of August, 2022.

_____ My Commission Expires: _____
Notary Public Notary Registration Number: _____

Owner: Locust Grove Partners, LP

Owner: _____ Date: 8/2/2022
Signature

COMMONWEALTH OF VIRGINIA
COUNTY/CITY OF Isle of Wight, to wit:

The foregoing instrument was acknowledged before me this 2nd day of August, 2022 by Robert P. Taylor.

Angela Y. Hunt Notary Registration Number: 7991468
Notary Public My commission expires: March 31, 2026

ANGELA Y HUNT
NOTARY PUBLIC
REG. # 7991468
COMMONWEALTH OF VIRGINIA
MY COMMISSION EXPIRES MARCH 31. 2026

Owner: H & B Railroad Company Inc.

Owner: _____ Date: _____
Signature

COMMONWEALTH OF VIRGINIA
COUNTY/CITY OF _____, to wit:

The foregoing instrument was acknowledged before me this ___ day of August, 2022 by _____.

_____ Notary Registration Number: _____
Notary Public My commission expires: _____

Applicant: Advanced Construction Development, LLC

Applicant: _____ Date: _____
Signature

State of Oklahoma: County of Cleveland
Subscribed and sworn to before me _____,
A Notary Public in and for the County of Cleveland, State of Oklahoma,
this _____ day of August, 2022.

_____ My Commission Expires: _____
Notary Public Notary Registration Number: _____

Owner: Locust Grove Partners, LP

Owner: _____ Date: _____
Signature

COMMONWEALTH OF VIRGINIA
COUNTY/CITY OF _____, to wit:

The foregoing instrument was acknowledged before me this ___ day of August, 2022 by _____.

_____ Notary Registration Number: _____
Notary Public My commission expires: _____

Owner: H & B Railroad Company Inc.

Owner: _____ Date: 8/1/2022
Signature

COMMONWEALTH OF VIRGINIA
COUNTY/CITY OF CHESAPEAKE, to wit:

The foregoing instrument was acknowledged before me this 1ST day of August, 2022 by DANIEL MOORE, PRESIDENT OF H&B RAILROAD COMPANY INC.

_____ Notary Registration Number: 7864872
Notary Public My commission expires: 02/29/2024

KAELANI RENEE GARCIA
NOTARY PUBLIC
COMMONWEALTH OF VIRGINIA
REGISTRATION NO. 7864872
MY COMM. EXPIRES 02/29/2024

AMENDED COMMUNITY IMPACT STATEMENT
and PROJECT NARRATIVE
8/1/2022

INTRODUCTION

The Applicant, Advanced Construction Development, LLC, requests conditional rezoning of two parcels, 42-06-015 and a portion of 42-01-006, for the purpose of a proposed use, "Scrap and Salvage Service", as defined in the Isle of Wight County Ordinance Sec. 3-7000 for a development called IAA, Inc. ("IAAI") that receives, inspects, temporarily stores, and auctions automobiles via the internet. The process is as follows:

- IAAI is a remarketer of vehicles made available for sale by insurance companies, dealerships, rental companies and fleet leasing companies, many of which were involved in collisions, floods, or recovered from thefts and as a result of repossessions;

- IAAI contracts with such companies to receive and re-market the vehicles, which are then delivered to the site on commercial vehicle carriers;

- Before IAAI takes possession of the vehicles, any concerns with petroleum or other fluids are addressed. They are delivered to the site on commercial vehicle carriers;

- Upon arrival, the vehicles are inspected in an effort to prevent any possible contaminant leaks. Any leaks discovered during such inspection shall be contained prior to placement of the vehicle in the storage area. As the potential environmental damage of draining and fluid recovery processes is greater than the potential exposure from a release from a stationary vehicle, IAAI does not dismantle vehicles, drain fluids, or sell vehicle parts;

- The vehicles are photographed and are properly stored in an organized manner on the yard while awaiting sale;

- All vehicles are sold remotely via internet auction to registered buyers; the general public will not be allowed to come to the site for any vehicle sales; however, some registered buyers may visit the site on the day prior to the auction to view vehicles;

- Each vehicle is sold as a single unit (meaning not dismantled nor sold in parts). There shall be no dismantling, servicing or maintenance of vehicles on the grounds of this facility. No parts shall be offered for sale from vehicles stored at this facility. All vehicles sold from this facility will be sold in the same condition in which they arrived at the time of delivery to the site; and

- Following the sale, vehicles are retrieved by buyers, via commercial vehicle carriers contracted by such buyers. IAAI does offer some delivery services at present and intends to expand delivery services in the future, although such delivery service would not change the aggregate total deliveries to or from the site.

IAAI runs world-class operations, and has expanded its business, adding over 100 facilities in the last 10 years. Currently IAAI employs nearly 4,200 people, and has over 200 facilities throughout the U.S., Canada and the United Kingdom.

It is the environmental policy of IAAI to comply with all applicable laws, regulations, permits, and orders. IAAI has Best Management Practices ("BMPs"), attached hereto as Exhibit C, to proactively conduct operations at its branches in an environmentally responsible manner. BMPs are tailored to each branch based on site-specific considerations such as site conditions, improvements located on and equipment used at the branch, branch operations, and state and local environmental laws and requirements at the given time. IAAI's operational statement regarding BMPs anticipated for the Subject Property in connection with fluid management have been provided to the Isle of Wight County under separate cover. IAAI carries a pollution liability policy, which covers all of its locations throughout the U.S. and Canada. This policy shall cover the Subject Property and, if required by law, shall name the Isle of Wight County as an additional insured.

NARRATIVE DESCRIPTION OF THE PROPERTY

The 42-06-015 Subject Property

Parcel 42-06-015 has 5.07 acres,[1] is currently zoned LI, and fronts IWIP Road (the "42-06-015 Subject Property"). On the west, south and east are parcels being used industrially, and on the north, agriculturally.

The 42-01-006 Subject Property

With 256.3 acres, Parcel 42-01-006, currently zoned RAC, is comprised of five (5) separate lots, four (4) of which are east of Benns Church Blvd (Virginia State Route 10), and are not part of this rezoning application.

The portion of Parcel 42-01-006 that is the subject of this rezoning application lies west of Benns Church Blvd, and consists of 69.73 acres (the "42-01-006 Subject Property," and together with the 42-06-015 Subject Property, the "Subject Properties.") To the east, southwest and west of this parcel are forested lands, the north is agricultural and the southeast is industrial.

Boundary Line Adjustment

As the rezoning application is approved, the Applicant will request a boundary line adjustment, so that the newly rezoned portion of Parcel 42-01-006 will be fused with Parcel 42-06-015, leaving the latter as the sole parcel with the new zoning consisting of 74.79 acres.

The remainder of Parcel 42-01-006 (outside of the proposed project), consisting of 186.57 acres, will retain its current RAC zoning.

[1] All acreage references are approximate.

The Subject Properties.

The County has designated the parcels comprising the Subject Properties for future industrial development by land planning designation. The Applicant is requesting a rezoning of the Subject Properties to C-LI, Conditional-Limited Industrial. The aggregate acreage of the Subject Properties to be rezoned is approximately 74.79 acres. See Figure 2, Preliminary Concept Plan.

VISUAL IMPACT ANALYSIS

The fence around the proposed development shall be of a construction that is harmonious with the surrounding landscape. Pursuant to current ordinance, a six foot (6 ft) tall metal fence shall be constructed along the proposed property boundary with the existing commerce park and a six foot (6 ft) tall wood or vinyl fence shall be constructed along the east side of the proposed project that is visible from the southbound land of Route 10. A ten-foot (10 ft) landscape buffer (per zoning ordinance) will shield the use from detrimental impacts to the rural landscape as seen from Route 10 on the east and north sides. Please see the Preliminary Concept Plan and color rendering titled SCREENING BUFFER PERSPECTIVE as well as the photo of the northbound view attached hereto.

FISCAL IMPACT ANALYSIS

1. Introduction

The purpose of this report is to describe estimates of the fiscal revenues and expenditures that a proposed automobile storage and auction will generate for Isle of Wight County. Fiscal impacts are those that directly affect a county's budget.

The proposed auto auction business involves receiving, inspecting and selling, in an internet auction format, vehicles that have been damaged in accidents, floods, or recovered after being stolen.

This business is expected to generate little additional need for public services such as emergency medical services, police and fire protection. In turn, the construction and operation of the business will generate significant additional tax revenue for the County. A significant portion of the forecasted contribution from this business will be derived from a real estate tax increase.

All dollar figures in this report are expressed in 2020 dollars, without adjusting for projected inflation. Employment estimates are used, but no attribution is made as to the residence location of any employees. The fiscal impacts flow primarily from the construction efforts and the additional tax revenues.

2. Net New Capital/Construction Investment

The owner of the subject property will invest in (a) office remodeling and (b) site improvements required to operate the business. The estimated net investment amounts are as follows:

(a) Office building (including landscaping and parking lot)		$ 1,200,000
(b) Site Improvements:		
Fencing	$ 350,000	
Landscaping	125,000	
Stormwater	800,000	
Earthwork	900,000	
Soil stabilization	1,200,000	
Rock base	3,300,000	
Asphalt millings/sealed	1,125,000	
Subtotal		7,800,000
Total		$ 9,000,000

The total estimated new capital investment is around $9 million, excluding land purchase price and other costs and expenses.

3. Increased tax revenue

As of 7/26/22, the Subject Properties (as defined in the Narrative) have a Total Assessed Value of $736,900.00, which at a tax rate of $0.85 per $100 of assessed value, generates a yearly $6,263.65 in tax revenue for the County.

The post-construction tax assessed value can be estimated using the purchase price of the Subject Properties and the estimated construction costs. Based on such inputs, the forecasted tax assessed value would be $15 million. Such value would be taxed at the rate of $0.85 per $100 of assessed value, generating a yearly $127,500.00 in tax revenue for the County. This would be a net increase of over $120,000 in real estate tax revenues.

4. Increased employment

It is anticipated that the business will require 30 full-time, on-site jobs, including managerial positions.

5. County Business License

Isle of Wight County will collect $0.20 per $100 in gross revenues.

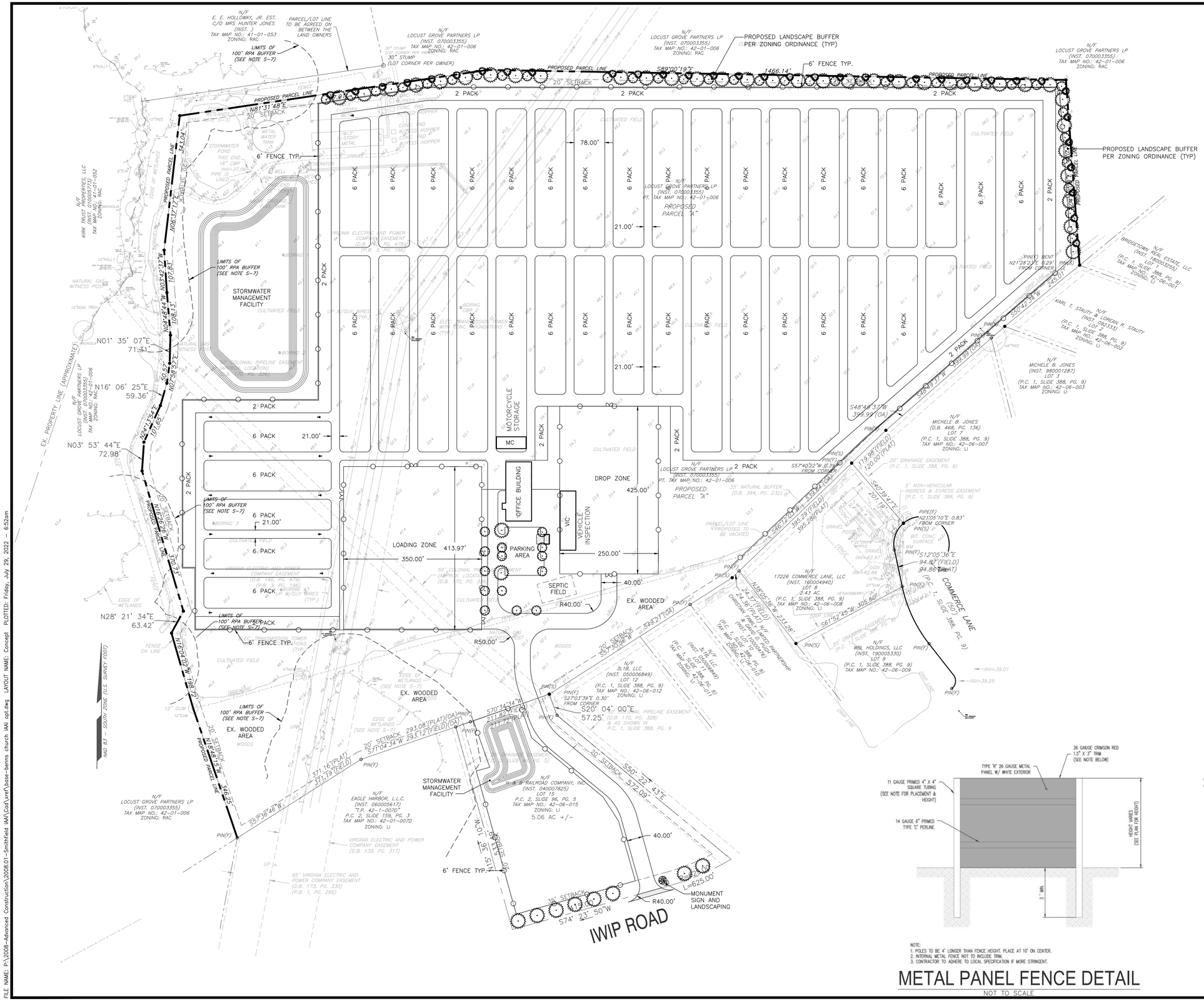
IAAI (NYSE: IAA), the proposed operator of the project, reports employing nearly 4,000 people and running over 200 facilities throughout the U.S., Canada and the United Kingdom. IAAI considers the sales per location, and the expected sales per new location, to be confidential, and individual site sales information is not disclosed.

6. County Equipment Tax

The estimated value of the machinery and tools to be used in this business are:

Three (3) Volvo L-90 H frontend loaders	$ 775,000
Infrared camera and other systems	125,000
Miscellaneous equipment	50,000
Office computers and information	200,000
Subtotal	$ 1,150,000

Isle of Wight County is expected to collect $4.50 per $100 on 40% of the equipment value.


PROPOSED LANDSCAPE BUFFER PER ZONING ORDINANCE (TYP)
6' FENCE TYP.
PROPOSED PARCEL LINE
20' SETBACK
2 PACK
6 PACK
78.00'
21.00'
LIMITS OF 100' RPA BUFFER (SEE NOTE 5-7)
STORMWATER MANAGEMENT FACILITY
MOTORCYCLE STORAGE
MC
OFFICE BUILDING
DROP ZONE
425.00'
LOADING ZONE
413.97'
350.00'
PARKING AREA
VEHICLE INSPECTION
VIC
250.00'
40.00'
SEPTIC FIELD
R40.00'
R50.00'
EX. WOODED AREA
STORMWATER MANAGEMENT FACILITY
IWIP ROAD
L=625.00
MONUMENT SIGN AND LANDSCAPING
6' FENCE TYP.
N/F LOCUST GROVE PARTNERS LP (INST. 070003355) TAX MAP NO.: 42-01-006 ZONING: RAC
N/F E. E. HOLLOWAY, JR. EST. C/O MRS HUNTER JONES (INST.) TAX MAP NO.: 41-01-053 ZONING: RAC
PARCEL/LOT LINE TO BE AGREED ON BETWEEN THE LAND OWNERS
30" STUMP (LOT CORNER PER OWNER)
S89°00'19"E 1466.14'
N81°31'48"E 343.04'
N08°32'17"E 2.30' (LIES OUT)
N01° 35' 07"E 71.31'
N16° 06' 25"E 59.36'
N03° 53' 44"E 72.98'
N24°13'54"E 91.65'
N28° 21' 34"E 63.42'
N16°04'02"W 198.27'
N16°46'46"W 346.25'
S57°36'46"W
N/F KIRK TRUST PROPERTIES, LLC (INST. 010005773) TAX MAP NO.: 41-01-052 ZONING: RAC
N/F VIRGINIA ELECTRIC AND POWER COMPANY EASEMENT (D.B. 440, PG. 472) (P.B. 1, PG. 196)
N/F COLONIAL PIPELINE EASEMENT (APPROX. LOCATION) (D.B. 170, PG. 328)
N/F VIRGINIA ELECTRIC AND POWER COMPANY EASEMENT (D.B. 139, PG. 317)
95' VIRGINIA ELECTRIC AND POWER COMPANY EASEMENT (D.B. 175, PG. 330) (P.B. 1, PG. 295)
N/F EAGLE HARBOR, L.L.C. (INST. 060005617) T.P. 42-1-007D P.C. 2, SLIDE 159, PG. 3 TAX MAP NO.: 42-01-007D ZONING: LI
N/F R. & S. RAILROAD COMPANY, INC. (INST. 040007825) LOT 15 P.C. 2, SLIDE 96, PG. 5 TAX MAP NO.: 42-06-015 ZONING: LI 5.06 AC +/-
N/F 3L1B, LLC (INST. 050006849) LOT 12 (P.C. 1, SLIDE 388, PG. 9) TAX MAP NO.: 42-06-012 ZONING: LI
N/F 17226 COMMERCE LANE, LLC (INST. 160004940) LOT 8 2.43 AC. (P.C. 1, SLIDE 388, PG. 9) TAX MAP NO.: 42-06-008 ZONING: LI
N/F WSL HOLDINGS, LLC (INST. 190005330) LOT 9 (P.C. 1, SLIDE 388, PG. 9) TAX MAP NO.: 42-06-009
N/F MICHELE B. JONES (D.B. 468, PG. 136) LOT 7 (P.C. 1, SLIDE 388, PG. 9) TAX MAP NO.: 42-06-007 ZONING: LI
N/F MICHELE B. JONES (INST. 980001287) LOT 3 (P.C. 1, SLIDE 388, PG. 9) TAX MAP NO.: 42-06-003 ZONING: LI
N/F KARL T. STAUTS & LOREEN R. STAUTS (INST. 092333) LOT 2 (P.C. 1, SLIDE 388, PG. 9) TAX MAP NO.: 42-06-002 ZONING: LI
N/F BRIDGETOWN REAL ESTATE, LLC (INST. 180003295) LOT 1 (P.C. SLIDE 388, PG. 9) TAX MAP NO.: 42-06-001 ZONING: LI
S48°43'37"W 395.99' (OA)
S40°19'47"E 201.12'
S50°42'04"W 242.01'
S57°40'22"W 0.39' FROM CORNER
119.98'(FIELD) 120.00'(PLAT)
PIPE(F) N21°05'10"E 0.83' FROM CORNER
S12°05'36"E 94.82'(FIELD) (94.8'+/-PLAT)
N48°05'36"W 233.28'
24.27'(FIELD) 24.36'(PLAT)
S56°52'45"W 305.60'
COMMERCE LANE (50') (P.C. 1, SLIDE 388, PG. 9)
S70°34'14"W 211.82'(FIELD) 211.8'+/-(PLAT)
S20° 04' 00"E 57.25'
S71°04'34"W 293.12'(FIELD)(OA) 293.08'(PLAT)(OA)
S71°19'(FIELD) S71°16'(PLAT)
S50° 22' 43"E
S72° 00' 43"E
S74° 23' 50"W
PIN(F) BENT N21°28'27"E 0.29' FROM CORNER
PIN(F) 0.39' FROM CORNER
PIN(S) 0.30' FROM CORNER
PIN(F) 0.30' FROM CORNER
PIN(F) 0.33' FROM CORNER
PIN(F) 0.39' FROM CORNER
PIN(F) 0.83' FROM CORNER
PIN(F) 0.29' FROM CORNER
PIN(F



SCREENING BUFFER PERSPECTIVE

ADVANCED CONSTRUCTION AUTOMOBILE AUCTION
1726 COMMERCE LANE
ISLE OF WIGHT COUNTY, VA

LANDARCH STUDIO, LLC
G.I. JOSEPH VAUGHN
CLARB CERTIFIED
LANDSCAPE ARCHITECT
480 CLOUD VIEW CT
PROSPER TX 75078
972-827-5677


IAA Locations
Insurance Auto Auctions
MAIN ENTRANCE

St. Louis, MO

St. Louis, MO

Los Angeles - South, CA


Miami North, FL

Tampa North, FL

Chicago North, IL




Lafayette, LA

New Orleans East, LA

Baltimore, MD



Long Island, NY


Calverton, NY

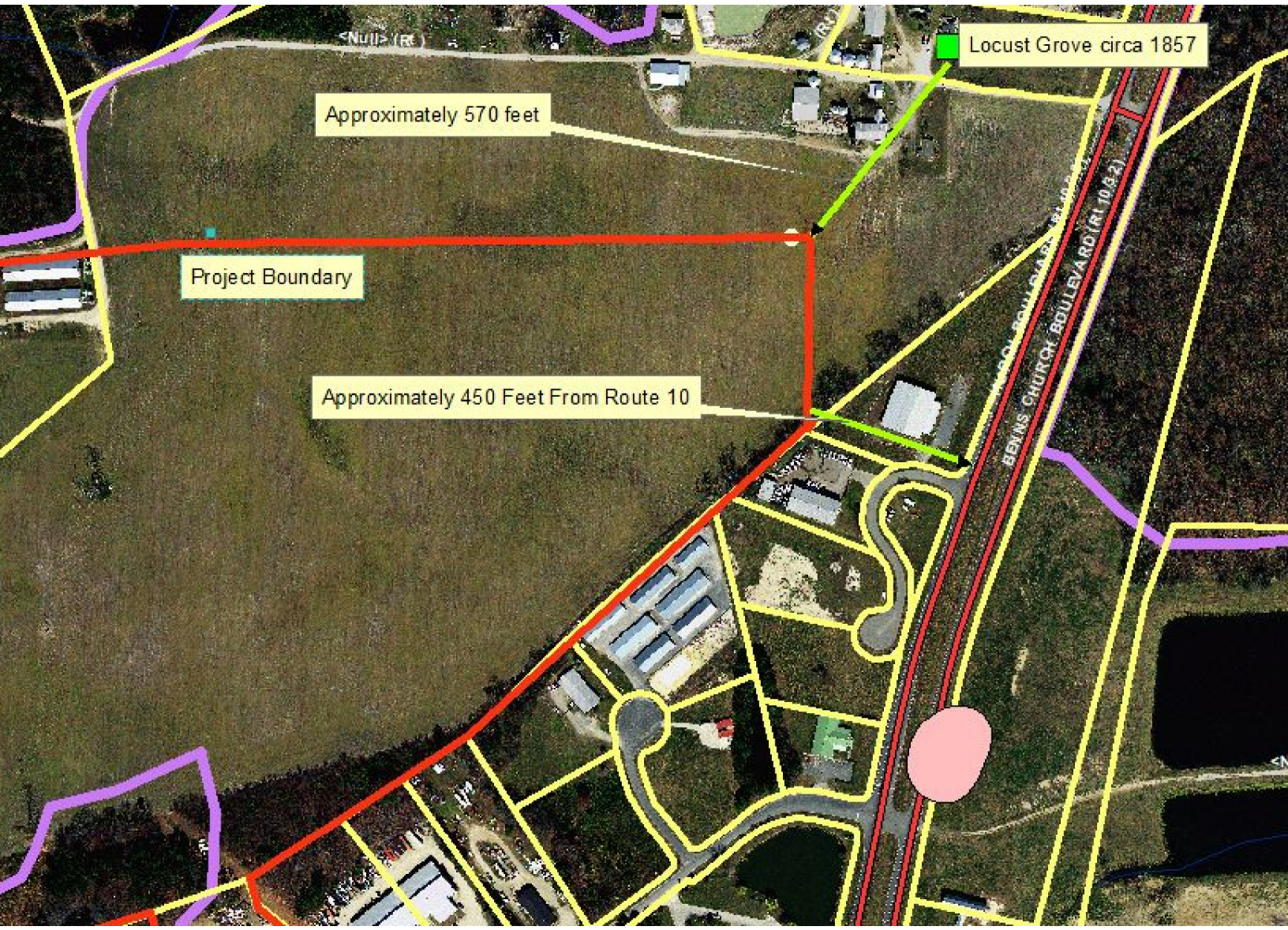
Englishtown, NJ

Knoxville, TN

Houston South, TX

Canvey Island, UK




Locust Grove circa 1857
Approximately 570 feet
Project Boundary
Approximately 450 Feet From Route 10

RAMEY KEMP ASSOCIATES
Moving forward.

T 804 217 8560

4343 Cox Road
Glen Allen, VA 23060

November 16, 2020

Ms. Jamie Oliver
Transportation Manager
Isle of Wight County
PO Box 80
Isle of Wight, Virginia 23397
Phone: (757) 365-1653

Reference: **Benn's Church Auto Auction** – Traffic Impact Analysis (TIA)
Isle of Wight County, Virginia

Dear Ms. Oliver,

Ramey Kemp & Associates, Inc. (RKA) has performed a Traffic Impact Analysis (TIA) for the proposed auto auction site that is approximately 75 acres, of which approximately 13 acres will be utilized for daily business operations. The site is located at the end of Commerce Lane, west of Route 10 (Benn's Church Boulevard), and the proposed access plan includes maintaining the existing connection to Commerce Lane. It should be noted that the proposed auto auction is not open to the public and the auctions are held electronically.

If approved, the proposed site is expected to be built in 2021. Figure 1 shows the site location and study intersections, and Figure 2 shows the conceptual site plan.

The purpose of this letter report is to provide the following:

- Trip generation calculations
- Evaluation of turn lane warrants for the study intersections
- Capacity and queueing analysis of the study intersections

Existing Roadway Conditions

Route 10 (Benn's Church Boulevard) is a four-lane divided Principal Arterial with an average daily traffic (ADT) volume of approximately 11,000 vehicles per day (vpd), and a posted speed limit of 55 miles per hour (mph) in the vicinity of the site.

Isle of Wight Industrial Park Road (IWIP Road) is a local roadway with an ADT volume of approximately 260 vpd and an assumed speed limit of 25 mph.

Figure 3 shows the existing lane configuration.

Existing Traffic Volumes
VDOT provided AM and PM peak hour traffic counts for the intersection of Benn's Church Boulevard at Benn's Grant Boulevard. The counts were conducted in August 2017 and were grown by an annual rate of 2.0% for three years to estimate the 2020 existing volumes.

The AM peak hour (7:00 to 9:00 AM) and PM peak hour (4:00 to 6:00 PM) turning movement volumes for the following intersections were conducted by Peggy Malone & Associates during the week of September 28:

- Benn's Church Boulevard at Brewer's Neck Boulevard
- Brewer's Neck Boulevard at Benn's Grant Boulevard / Queen Anne's Court

The turning movement counts, at the intersection of Benn's Church Boulevard at Isle of Wight Industrial Park Road, were conducted during the week of August 17.

Note that the Benn's Church Boulevard at Benn's Grant Boulevard traffic counts were used to balance all other intersection volumes. This was done to account for COVID-19 traffic volume reductions.

The traffic count data are enclosed, and the existing 2020 volumes are shown in Figure 4.

Background Traffic Growth
Based on historical ADT's and discussion with the County and VDOT, the 2020 peak hour traffic volumes were grown by an annual rate of 2.0% for one year to estimate the 2021 peak hour traffic volumes. The no-build 2021 volumes are shown in Figure 5.

Trip Generation
The trip generation potential of the proposed site during a typical weekday, AM peak hour, and PM peak hour was estimated based on traffic count data collected at a similar sized site in Suffolk, Virginia. The counts were conducted the week of August 17th and the traffic count data is enclosed. Table 1 summarizes the trip generation calculations of the proposed auto auction.

Table 1
Auto Auction – Trip Generation – Typical Weekday

Trip Types	Average Daily Traffic (vpd)		AM Peak Hour (vph)		PM Peak Hour (vph)	
	Enter[1]	Exit[1]	Enter	Exit	Enter	Exit
Cars (non-deliveries / pick-ups)	140	140	12	2	5	9
Trucks (deliveries / pick-ups)	50	50	1	0	6	3
Total Auto Auction (13 acres)	**190**	**190**	**13**	**2**	**11**	**12**

1 – It was estimated that the AM and PM peak hour each represent 10% of the daily traffic

Site Traffic Distribution
The following primary site traffic distribution was applied based on a review of the existing traffic volumes:

- 75% to / from the north on Benn's Church Boulevard
- 25% to / from the south on Benn's Church Boulevard

Figure 6 site trip distribution and Figure 7 shows the site trip assignment. Figure 8 shows the projected 2021 build-out peak hour traffic volumes.

Traffic Capacity Analysis
Traffic capacity analysis for the study intersections was performed using Synchro 10, which is a comprehensive software package that allows the user to model signalized and unsignalized intersections to determine levels-of-service based on the thresholds specified in the Highway Capacity Manual (HCM) 6th Edition.

Table 2 summarizes the capacity analysis results for the signalized intersection of Benn's Church Boulevard at Brewer's Neck Boulevard, and the Synchro output is enclosed for reference.

Table 2
Level-of-Service Summary for Benn's Church Boulevard at Brewer's Neck Boulevard

CONDITION	LANE GROUP	AM PEAK HOUR				PM PEAK HOUR			
		Lane LOS	Lane Delay (sec)	Queue (ft)	Overall LOS (Delay)	Lane LOS	Lane Delay (sec)	Queue (ft)	Overall LOS (Delay)
Existing (2020) Traffic Conditions	WBR NBT SBL SBT	A B B A	4.5 15.0 15.4 0.0	226 97 117 0	A (9.7 sec)	B C B A	16.1 23.7 12.3 0.1	511 146 124 0	B (13.3 sec)
No-Build (2021) Traffic Conditions	WBR NBT SBL SBT	A B B A	4.6 15.5 15.2 0.0	231 6 113 0	A (9.7 sec)	B C B A	16.2 23.8 12.2 0.1	519 147 126 0	B (13.3 sec)
Build (2021) Traffic Conditions	WBR NBT SBL SBT	A B B A	4.5 16.6 15.2 0.0	229 105 113 0	A (9.8 sec)	B C B A	16.2 23.6 12.2 0.1	519 147 126 0	B (13.3 sec)

Capacity analysis indicates that the intersection currently operates at LOS A during the AM peak hour and LOS B during the PM peak hour. Under no-build conditions, the intersection is expected to continue to operate at LOS A during the AM peak hour and LOS B during the PM peak hour.

Under build conditions, the intersection is expected to operate at LOS A during the AM peak hour and LOS B during the PM peak hour.

No improvements are recommended at this intersection.

Table 3 summarizes the capacity analysis results for the signalized intersection of Brewer's Neck Boulevard at Benn's Grant Boulevard / Queen Anne's Court, and the Synchro output is enclosed for reference.

Table 3
Level-of-Service Summary for Brewer's Neck Boulevard at Benn's Grant Boulevard / Queen Anne's Court

CONDITION	LANE GROUP	AM PEAK HOUR				PM PEAK HOUR			
		Lane LOS	Lane Delay (sec)	Queue (ft)	Overall LOS (Delay)	Lane LOS	Lane Delay (sec)	Queue (ft)	Overall LOS (Delay)
Existing (2020) Traffic Conditions	EBL	D	50.8	10	B (17.8 sec)	D	52.0	13	C (23.4 sec)
	EBT/R	C	21.7	349		D	41.3	453	
	WBL	D	47.5	283		C	33.2	566	
	WBT	A	9.0	196		B	10.8	386	
	WBR	A	0.0	0		A	0.0	0	
	NBL/T	D	51.0	5		E	57.0	7	
	NBR	A	1.6	13		A	1.5	16	
	SBL/T	D	46.9	22		D	46.3	17	
	SBR	A	0.0	0		A	0.0	0	
No-Build (2021) Traffic Conditions	EBL	D	51.5	10	B (17.9 sec)	D	52.1	14	C (23.9 sec)
	EBT/R	C	22.1	355		D	43.5	460	
	WBL	D	47.2	286		C	33.1	575	
	WBT	A	9.1	199		B	10.8	391	
	WBR	A	0.0	0		A	0.0	0	
	NBL/T	D	51.0	5		D	54.0	7	
	NBR	A	1.6	13		A	1.4	13	
	SBL/T	D	46.9	22		D	46.3	17	
	SBR	A	0.0	0		A	0.0	0	
Build (2021) Traffic Conditions	EBL	D	50.5	10	B (17.9 sec)	D	52.0	13	C (25.3 sec)
	EBT/R	C	22.4	345		D	48.4	460	
	WBL	D	45.8	297		C	32.7	594	
	WBT	A	9.0	199		B	10.8	392	
	WBR	A	0.0	0		A	0.0	0	
	NBL/T	D	51.5	5		D	55.0	6	
	NBR	A	1.5	13		A	1.4	16	
	SBL/T	D	46.8	22		D	46.3	17	
	SBR	A	0.0	0		A	0.0	0	

Capacity analysis indicates that the intersection currently operates at LOS B during the AM peak hour and LOS C during the PM peak hour. Under no-build conditions the intersection is expected to continue to operate at LOS B during the AM peak hour and LOS C during the PM peak hour.

Under build conditions, the intersection is expected to operate at LOS B during the AM peak hour and LOS C during the PM peak hour.

No improvements are warranted at this intersection.

Table 4 summarizes the capacity analysis results for the signalized intersection of Benn's Church Boulevard at Benn's Grant Boulevard, and the Synchro output is enclosed for reference.

Table 4
Level-of-Service Summary for Benn's Church Boulevard at Benn's Grant Boulevard

CONDITION	LANE GROUP	AM PEAK HOUR				PM PEAK HOUR			
		Lane LOS	Lane Delay (sec)	Queue (ft)	Overall LOS (Delay)[3]	Lane LOS	Lane Delay (sec)	Queue (ft)	Overall LOS (Delay)[3]
Existing (2020) Traffic Conditions	EBL	D	46.6	21	B (11.7 sec)	D	47.8	35	B (16.3 sec)
	EBT	D	42.9	42		D	45.1	51	
	EBR	A	0.1	0		A	0.1	0	
	WBL	B	19.8	24		C	21.0	28	
	WBT	A	8.6	12		B	11.5	22	
	WBR	A	0.0	0		A	0.0	0	
	NBL	D	46.6	21		D	46.0	6	
	NBT	B	12.2	57		B	15.3	97	
	NBR	A	1.1	24		A	0.9	20	
	SBT	B	16.1	87		B	20.0	177	
	SBR	A	0.0	0		A	0.1	0	
No-Build (2021) Traffic Conditions	EBL	D	46.6	21	B (11.7 sec)	D	47.8	35	B (16.2 sec)
	EBT	D	42.9	42		D	44.2	42	
	EBR	A	0.1	0		A	0.1	0	
	WBL	B	19.9	25		C	21.2	28	
	WBT	A	8.4	12		B	11.6	22	
	WBR	A	0.0	0		A	0.0	0	
	NBL	D	46.6	21		D	46.0	6	
	NBT	B	12.2	58		B	15.3	98	
	NBR	A	1.1	24		A	0.9	20	
	SBT	B	16.1	88		C	20.0	178	
	SBR	A	0.0	0		A	0.1	0	
Build (2021) Traffic Conditions	EBL	D	46.6	21	B (11.9 sec)	D	47.8	35	B (16.5 sec)
	EBT	D	42.9	42		D	45.1	51	
	EBR	A	0.1	0		A	0.1	0	
	WBL	C	20.1	28		C	21.9	29	
	WBT	A	8.3	11		B	11.4	22	
	WBR	A	0.0	0		A	0.0	0	
	NBL	D	46.6	21		D	46.0	6	
	NBT	B	12.4	58		B	15.5	98	
	NBR	A	1.1	24		A	0.9	21	
	SBT	B	16.4	88		C	20.2	178	
	SBR	A	0.0	0		A	0.1	0	

Capacity analysis indicates intersection currently operates at LOS B during the AM and PM peak hours. Under no-build conditions, the intersection is expected to continue to operate at LOS B during the AM and PM peak hours.

Under build conditions, the intersection is expected to operate at LOS B during the AM and PM peak hours.

No improvements are warranted at this intersection.

Table 5 summarizes the capacity analysis results for the unsignalized intersection of Benn's Church Boulevard at IWIP Road, and the Synchro output is enclosed for reference.

Table 5
Level-of-Service Summary for Benn's Church Boulevard at IWIP Road

CONDITION	LANE GROUP	AM PEAK HOUR				PM PEAK HOUR			
		Lane LOS	Lane Delay (sec)	Queue (ft)	Overall LOS (Delay)[3]	Lane LOS	Lane Delay (sec)	Queue (ft)	Overall LOS (Delay)[3]
Existing (2020) Traffic Conditions	EBL/R[1]	C	18.4	3	N/A	C	22.2	5	N/A
	NBU/L[2]	A	8.9	0		B	14.2	0	
	NBT	-	-	-		-	-	-	
	SBU[2]	B	11.1	0		B	11.8	0	
	SBT	-	-	-		-	-	-	
	SBR	-	-	-		-	-	-	
No-Build (2021) Traffic Conditions	EBL/R[1]	C	18.6	3	N/A	C	22.5	5	N/A
	NBU/L[2]	A	8.9	0		B	14.3	0	
	NBT	-	-	-		-	-	-	
	SBU[2]	B	11.2	0		B	11.9	0	
	SBT	-	-	-		-	-	-	
	SBR	-	-	-		-	-	-	
Build (2021) Traffic Conditions	EBL/R[1]	C	16.4	3	N/A	D	26.6	13	N/A
	NBU/L[2]	A	9.1	0		B	11.9	0	
	NBT	-	-	-		-	-	-	
	SBU[2]	B	11.2	0		B	10.8	0	
	SBT	-	-	-		-	-	-	
	SBR	-	-	-		-	-	-	

1. Level of service for minor approach
2. Level of service for major street left turn movement
3. HCM methodology does not provide lane group or overall LOS, delay, and queue lengths for major street through movements or right turns at unsignalized intersections

Capacity analysis indicates that the minor street left-turn movement currently operates with short delays (less than 25 seconds) during the AM and PM peak hours. Under no-build conditions the minor street left-turn movement is expected to continue to operate with short delays (less than 25 seconds) during the AM and PM peak hours.

Under build conditions, the minor street left-turn movement is expected to operate with short delays (less than 25 seconds) during the AM peak hour and with moderate delays (between 25 and 50 seconds) during the PM peak hour, with queue lengths of one vehicle or less.

No improvements are warranted or recommended at this intersection.

Recommendations
The existing turn lanes on Benn's Church Boulevard are sufficient to contain the projected queues. Based on the trip generation potential of the site, no improvements are warranted or recommended for build-out of the auto auction site. Additionally, the proposed auto auction will not have a significant negative impact on the surrounding roadway network.

We appreciate your attention to this matter. Please contact me at (804) 217-8560 if you have any questions about this report.

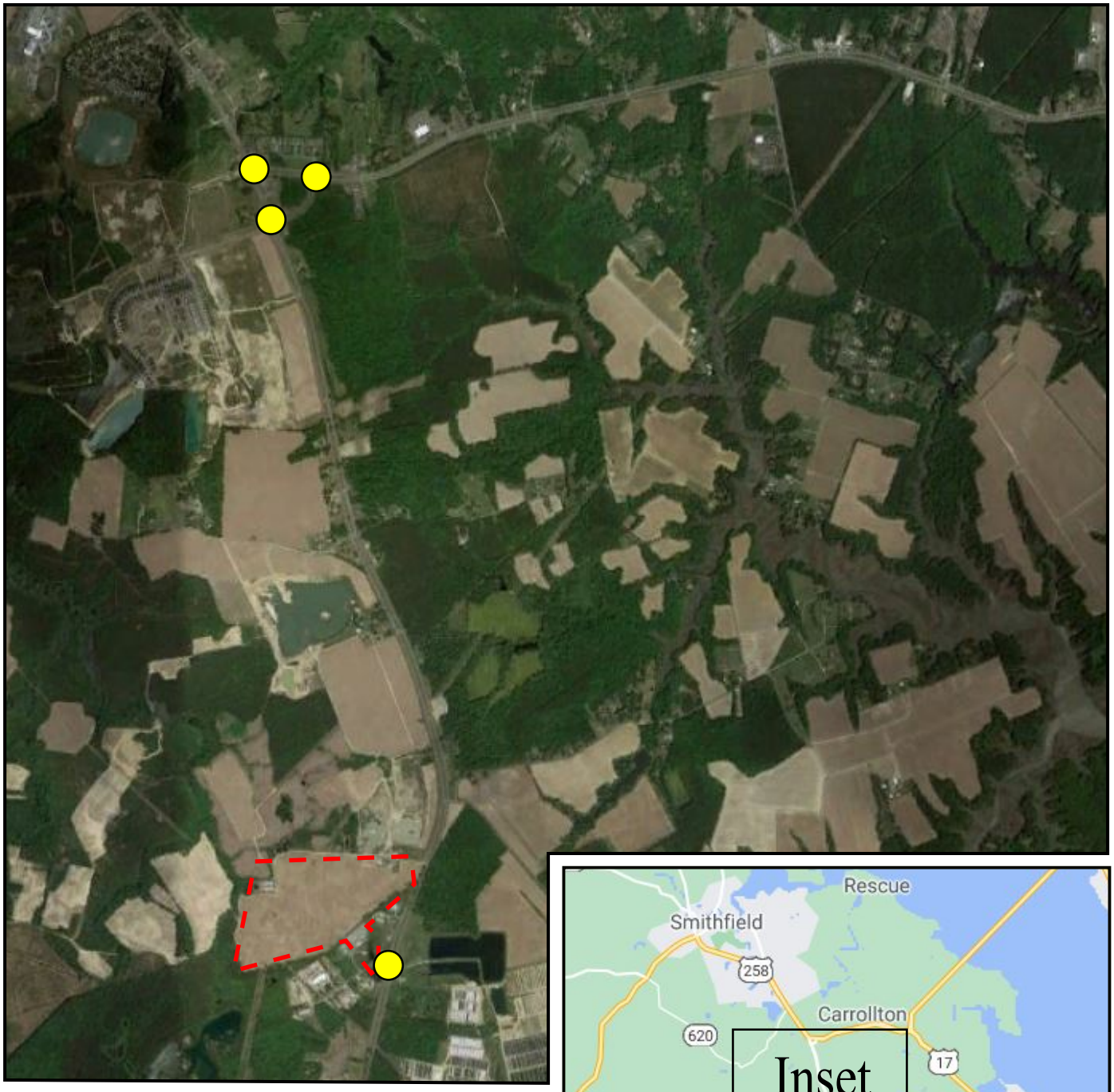
Sincerely yours,
Ramey Kemp & Associates, Inc.



Michael Bailey, P.E., PTOE
Senior Traffic Operations Project Manager

Enclosures: Figures, Traffic count data, Synchro output

Copy to: Mr. Josh Norris, VDOT
Mr. Elmer Tolle III, CFM, Blakeway Corporation



Inset



Overview

LEGEND

N

Study Intersection

Site Boundary

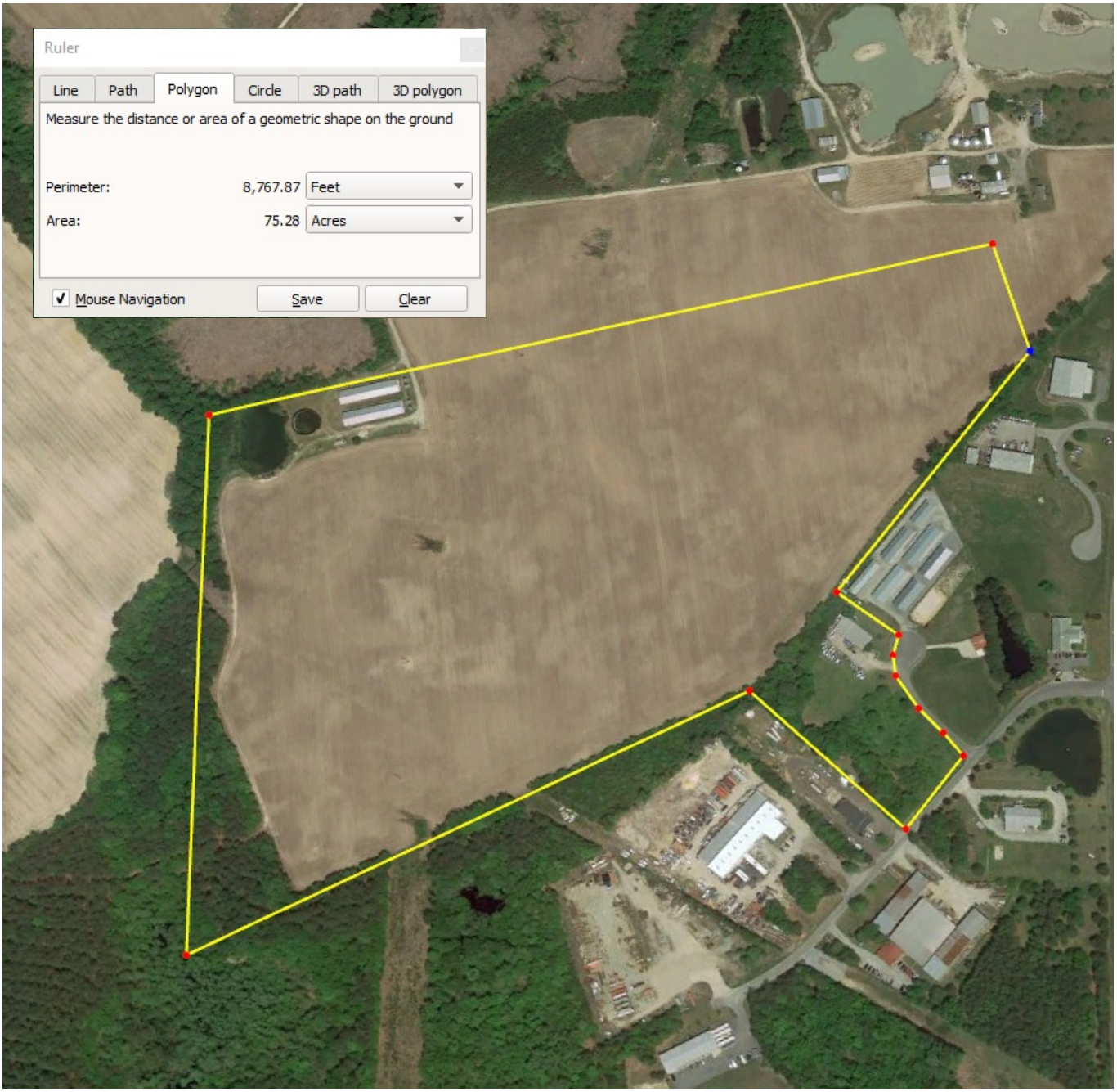
Moving forward.
RKA
RAMEY KEMP ASSOCIATES

Benn's Church Auto Auction
Isle of Wight County, Virginia

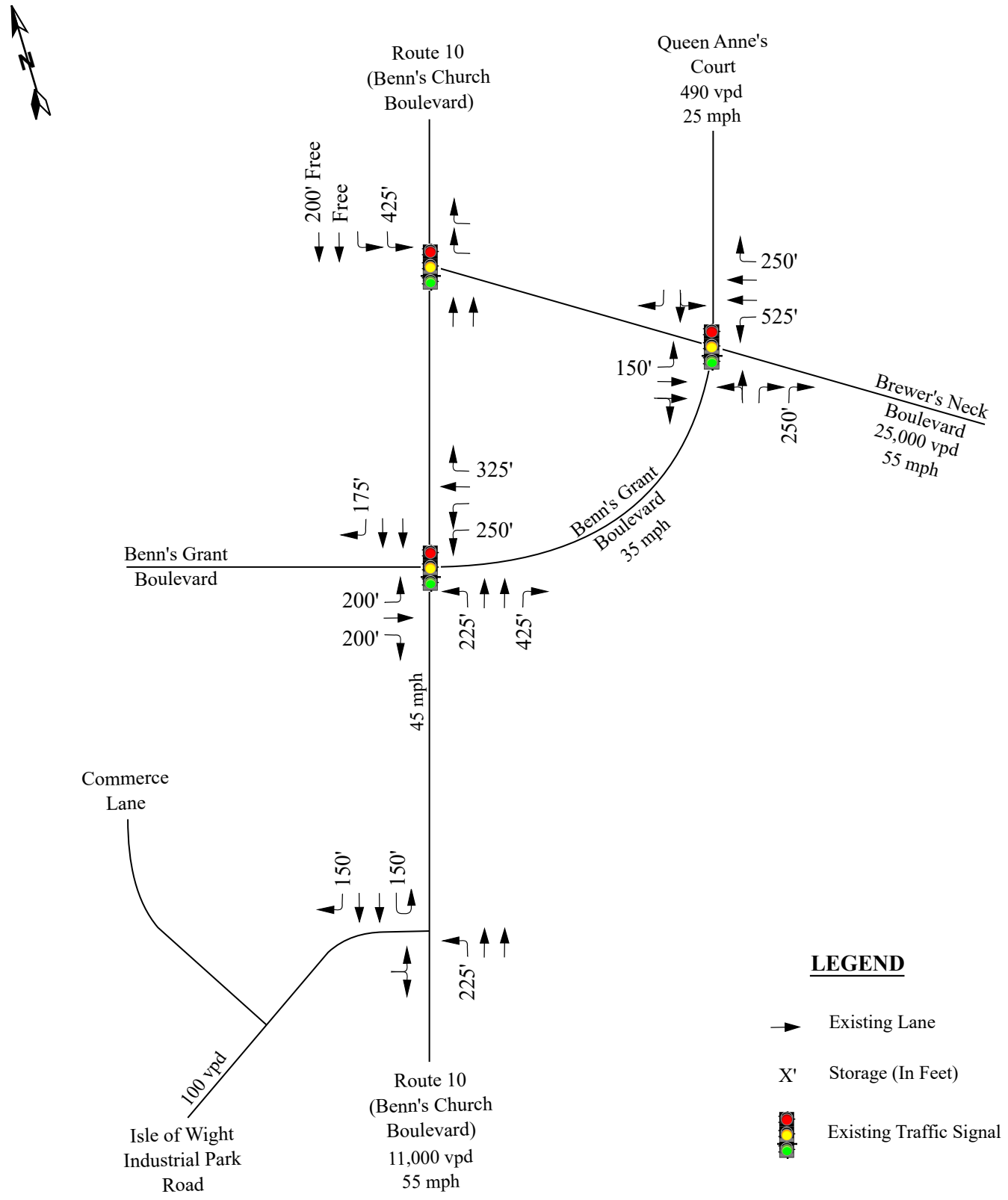
Site Location and
Study Intersections

Scale: Not to Scale

Figure 1



Moving forward. RKA RAMEY KEMP ASSOCIATES	Benn's Church Auto Auction Isle of Wight County, Virginia	Conceptual Site Plan Scale: Not to Scale | Figure 2

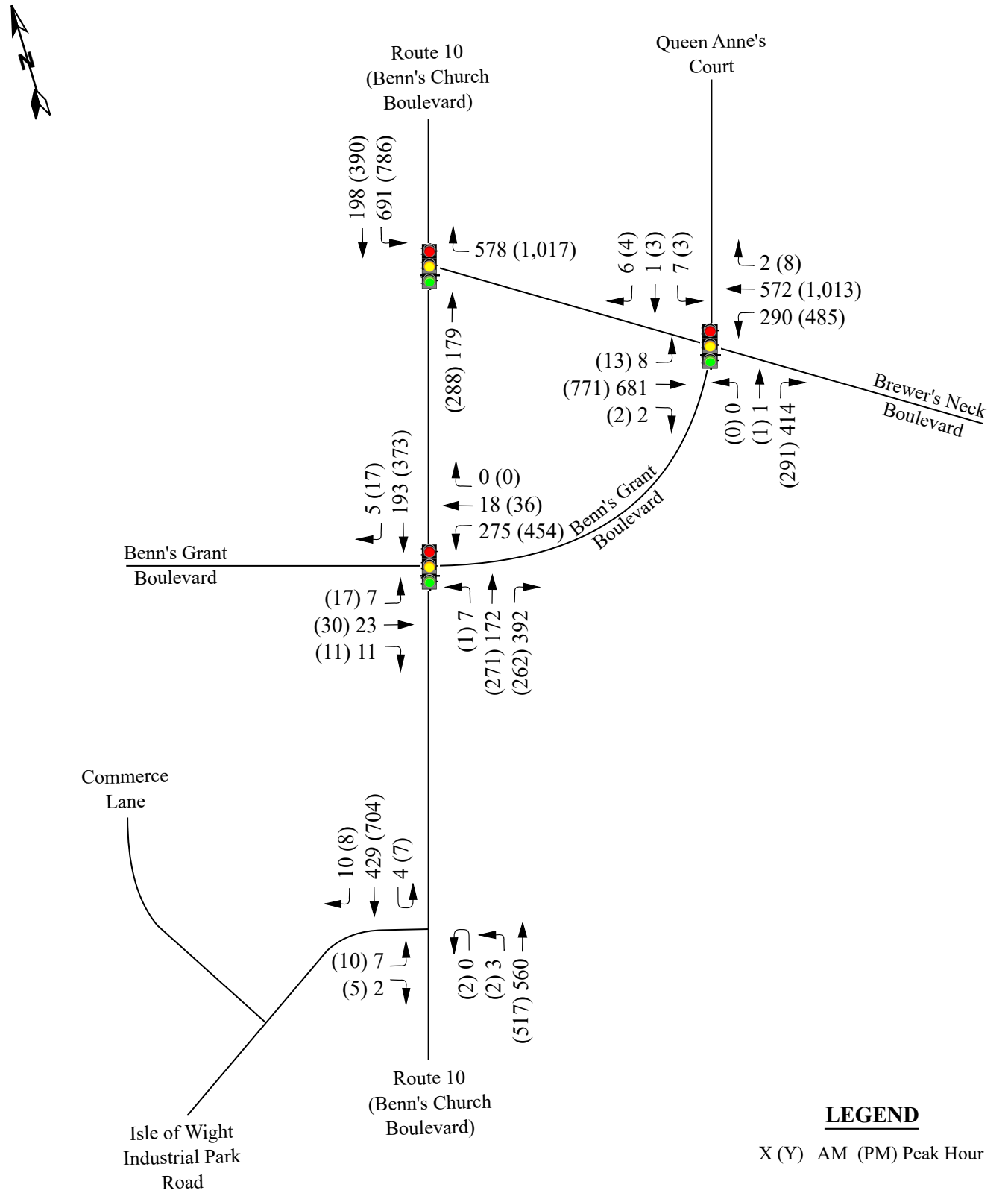


Moving forward.
RKA
RAMEY KEMP ASSOCIATES

Benn's Church Auto Auction
Isle of Wight County, Virginia

Existing
Lane Configurations

Scale: Not to Scale | Figure 3



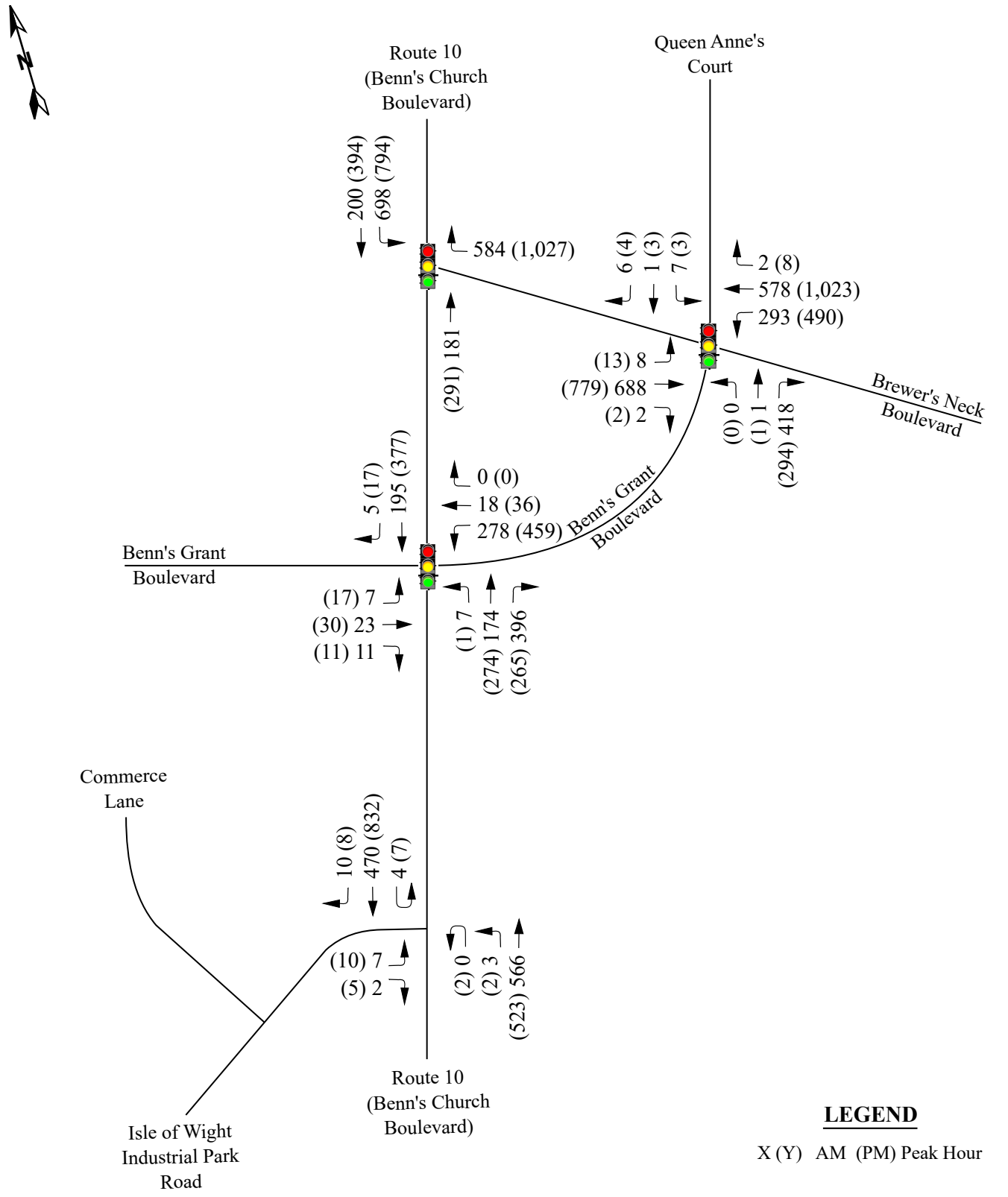
Moving forward.
RKA
RAMEY KEMP ASSOCIATES

Benn's Church Auto Auction
Isle of Wight County, Virginia

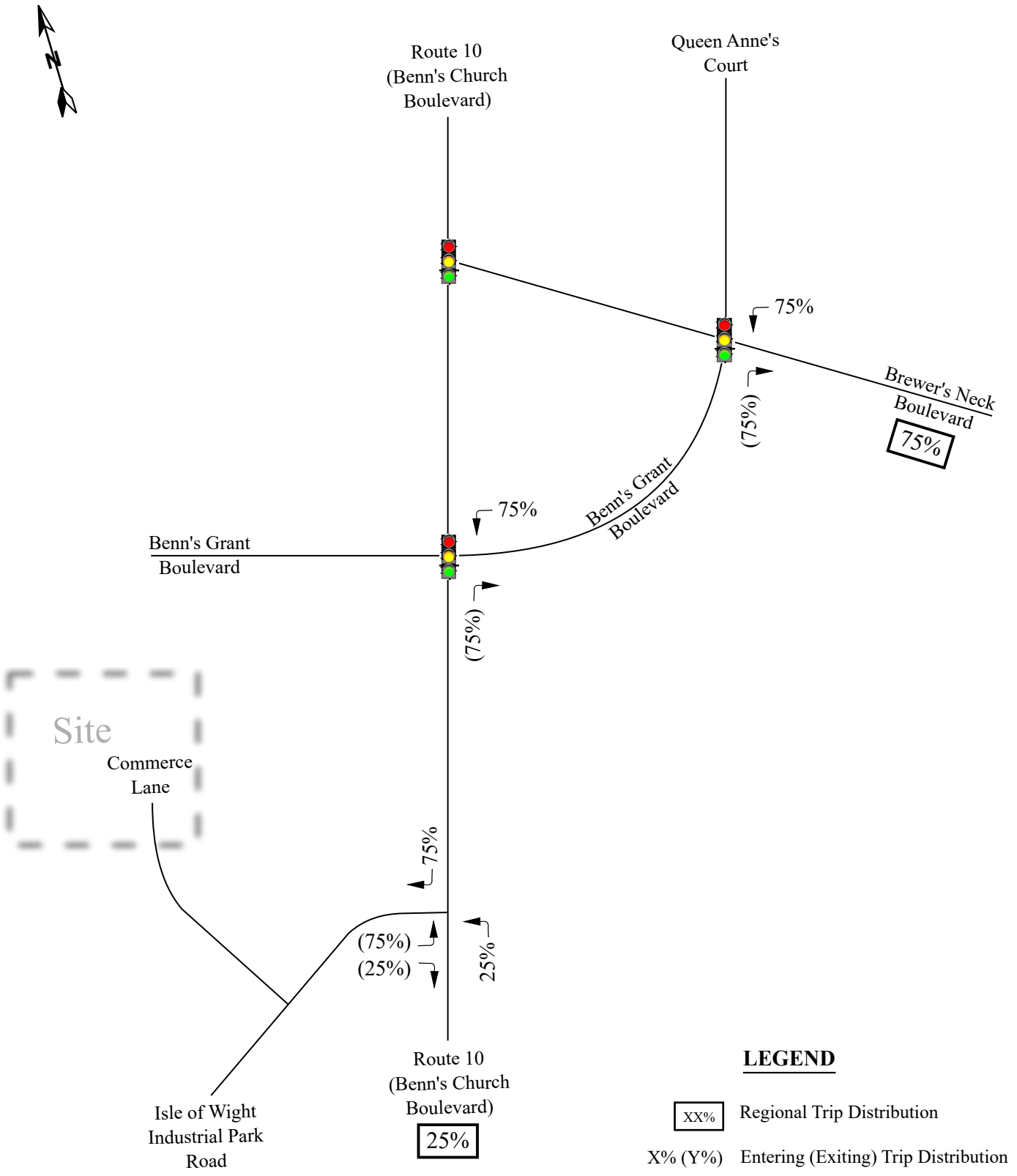
Existing (2020)
Peak Hour Traffic Volumes

Scale: Not to Scale

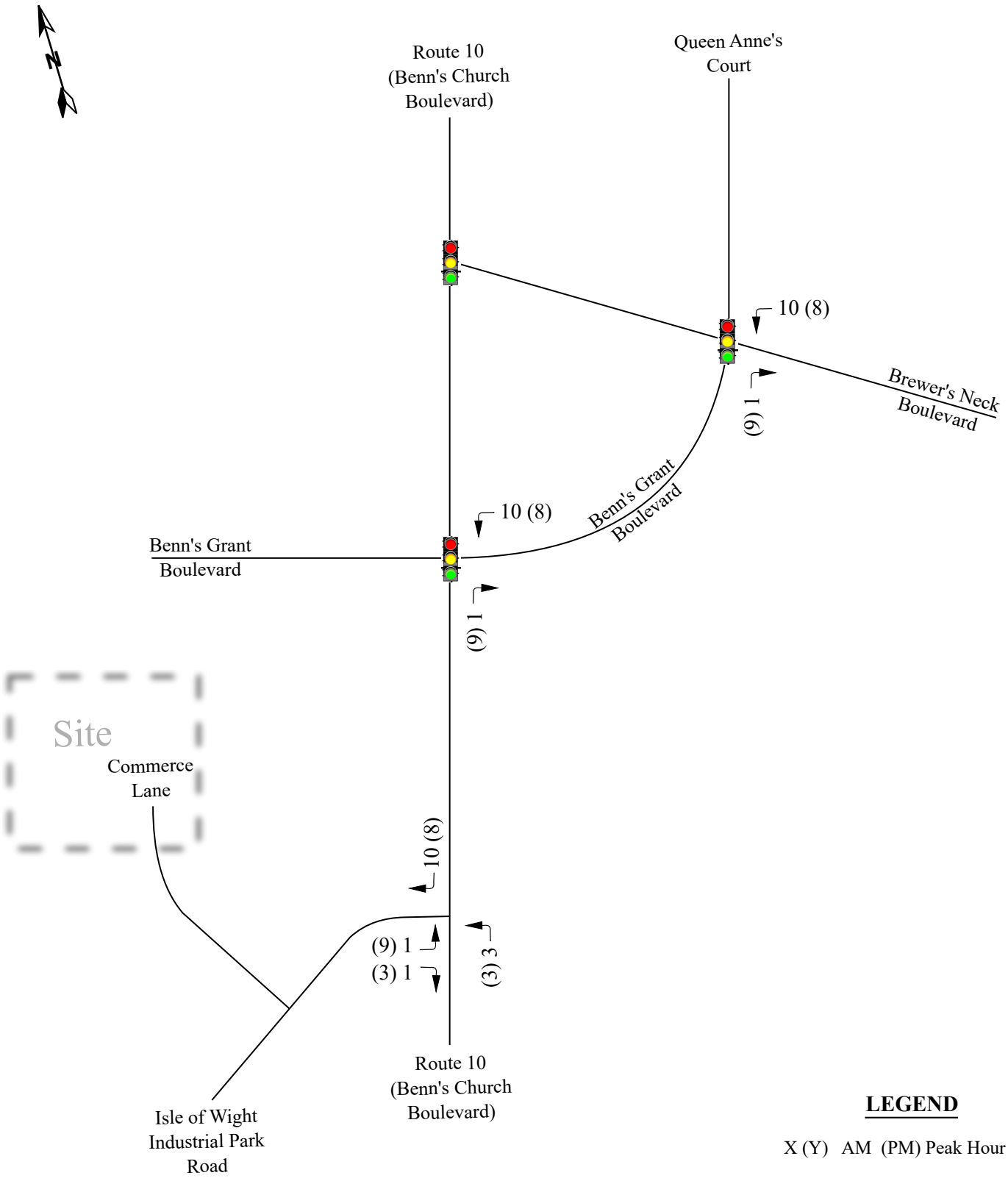
Figure 4



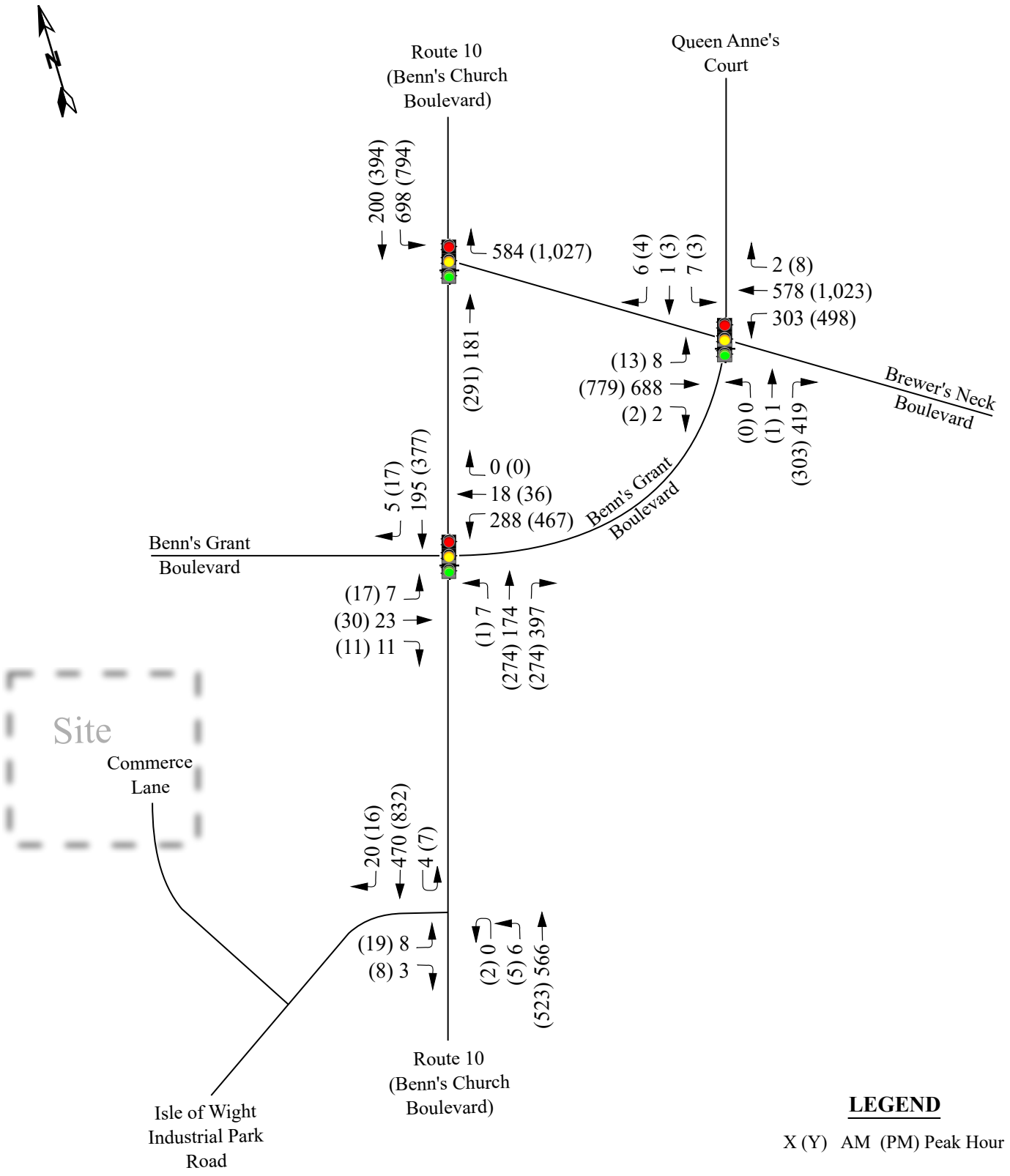
Moving forward. RKA RAMEY KEMP ASSOCIATES	Benn's Church Auto Auction Isle of Wight County, Virginia	No-Build (2021) Peak Hour Traffic Volumes Scale: Not to Scale | Figure 5



RAMEY KEMP ASSOCIATES	Benn's Church Auto Auction Isle of Wight County, Virginia	Site Trip Distribution Scale: Not to Scale | Figure 6



Moving forward. RKA RAMEY KEMP ASSOCIATES	Benn's Church Auto Auction Isle of Wight County, Virginia	Site Trip Assignment Scale: Not to Scale | Figure 7



Moving forward. RKA RAMEY KEMP ASSOCIATES	Benn's Church Auto Auction Isle of Wight County, Virginia	Build (2021) Peak Hour Traffic Volumes Scale: Not to Scale | Figure 8

Peggy Malone & Associates
904-992-8072

File Name : 1-Benns Church Blvd & Brewer's Neck Blvd AM
Site Code :
Start Date : 10/1/2020
Page No : 1

Groups Printed- Cars

	Benns Church Blvd Southbound				Brewers Neck Blvd Westbound			Benns Church Blvd Northbound			
Start Time	Thru	Left	Peds	App. Total	Right	Peds	App. Total	Thru	Peds	App. Total	Int. Total
07:00 AM	40	184	0	224	89	0	89	21	0	21	334
07:15 AM	36	159	0	195	113	0	113	32	0	32	340
07:30 AM	44	177	0	221	120	0	120	36	0	36	377
07:45 AM	40	151	0	191	177	0	177	40	0	40	408
Total	160	671	0	831	499	0	499	129	0	129	1459
08:00 AM	37	143	0	180	130	0	130	37	0	37	347
08:15 AM	31	178	0	209	111	0	111	27	0	27	347
08:30 AM	23	144	0	167	106	0	106	30	0	30	303
08:45 AM	48	143	0	191	116	0	116	23	0	23	330
Total	139	608	0	747	463	0	463	117	0	117	1327
Grand Total	299	1279	0	1578	962	0	962	246	0	246	2786
Apprch %	18.9	81.1	0		100	0		100	0		
Total %	10.7	45.9	0	56.6	34.5	0	34.5	8.8	0	8.8	

	Benns Church Blvd Southbound			Brewers Neck Blvd Westbound		Benns Church Blvd Northbound		
Start Time	Thru	Left	App. Total	Right	App. Total	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1								
Peak Hour for Entire Intersection Begins at 07:30 AM								
07:30 AM	**44**	177	**221**	120	120	36	36	377
07:45 AM	40	151	191	**177**	**177**	**40**	**40**	**408**
08:00 AM	37	143	180	130	130	37	37	347
08:15 AM	31	**178**	209	111	111	27	27	347
Total Volume	152	649	801	538	538	140	140	1479
% App. Total	19	81		100		100		
PHF	.864	.912	.906	.760	.760	.875	.875	.906

Peggy Malone & Associates
904-992-8072

File Name : 1-Benns Church Blvd & Brewer's Neck Blvd AM
Site Code :
Start Date : 10/1/2020
Page No : 1

Groups Printed- Trucks

	Benns Church Blvd Southbound				Brewers Neck Blvd Westbound			Benns Church Blvd Northbound			
Start Time	Thru	Left	Peds	App. Total	Right	Peds	App. Total	Thru	Peds	App. Total	Int. Total
07:00 AM	1	0	0	1	9	0	9	2	0	2	12
07:15 AM	1	5	0	6	4	0	4	5	0	5	15
07:30 AM	3	10	0	13	11	0	11	1	0	1	25
07:45 AM	2	9	0	11	15	0	15	6	0	6	32
Total	7	24	0	31	39	0	39	14	0	14	84
08:00 AM	7	5	0	12	6	0	6	2	0	2	20
08:15 AM	2	18	0	20	8	0	8	2	0	2	30
08:30 AM	3	14	0	17	21	0	21	2	0	2	40
08:45 AM	3	11	0	14	10	0	10	7	0	7	31
Total	15	48	0	63	45	0	45	13	0	13	121
Grand Total	22	72	0	94	84	0	84	27	0	27	205
Apprch %	23.4	76.6	0		100	0		100	0		
Total %	10.7	35.1	0	45.9	41	0	41	13.2	0	13.2	

	Benns Church Blvd Southbound			Brewers Neck Blvd Westbound		Benns Church Blvd Northbound		
Start Time	Thru	Left	App. Total	Right	App. Total	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1								
Peak Hour for Entire Intersection Begins at 07:45 AM								
07:45 AM	2	9	11	15	15	**6**	**6**	32
08:00 AM	**7**	5	12	6	6	2	2	20
08:15 AM	2	**18**	**20**	8	8	2	2	30
08:30 AM	3	14	17	**21**	**21**	2	2	**40**
Total Volume	14	46	60	50	50	12	12	122
% App. Total	23.3	76.7		100		100		
PHF	.500	.639	.750	.595	.595	.500	.500	.763

Peggy Malone & Associates
904-992-8072

File Name : 1-Benns Church Blvd & Brewer's Neck Blvd AM
Site Code :
Start Date : 10/1/2020
Page No : 1

Groups Printed- Combined

	Benns Church Blvd Southbound				Brewers Neck Blvd Westbound			Benns Church Blvd Northbound			
Start Time	Thru	Left	Peds	App. Total	Right	Peds	App. Total	Thru	Peds	App. Total	Int. Total
07:00 AM	41	184	0	225	98	0	98	23	0	23	346
07:15 AM	37	164	0	201	117	0	117	37	0	37	355
07:30 AM	47	187	0	234	131	0	131	37	0	37	402
07:45 AM	42	160	0	202	192	0	192	46	0	46	440
Total	167	695	0	862	538	0	538	143	0	143	1543
08:00 AM	44	148	0	192	136	0	136	39	0	39	367
08:15 AM	33	196	0	229	119	0	119	29	0	29	377
08:30 AM	26	158	0	184	127	0	127	32	0	32	343
08:45 AM	51	154	0	205	126	0	126	30	0	30	361
Total	154	656	0	810	508	0	508	130	0	130	1448
Grand Total	321	1351	0	1672	1046	0	1046	273	0	273	2991
Apprch %	19.2	80.8	0		100	0		100	0		
Total %	10.7	45.2	0	55.9	35	0	35	9.1	0	9.1	

	Benns Church Blvd Southbound			Brewers Neck Blvd Westbound		Benns Church Blvd Northbound		
Start Time	Thru	Left	App. Total	Right	App. Total	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1								
Peak Hour for Entire Intersection Begins at 07:30 AM								
07:30 AM	**47**	187	**234**	131	131	37	37	402
07:45 AM	42	160	202	**192**	**192**	**46**	**46**	**440**
08:00 AM	44	148	192	136	136	39	39	367
08:15 AM	33	**196**	229	119	119	29	29	377
Total Volume	166	691	857	578	578	151	151	1586
% App. Total	19.4	80.6		100		100		
PHF	.883	.881	.916	.753	.753	.821	.821	.901

Peggy Malone & Associates
904-992-8072

File Name : 1-Benns Church Blvd & Brewer's Neck Blvd PM
Site Code :
Start Date : 10/1/2020
Page No : 1

Groups Printed- Cars

	Benns Church Blvd Southbound				Brewers Neck Blvd Westbound			Benns Church Blvd Northbound			
Start Time	Thru	Left	Peds	App. Total	Right	Peds	App. Total	Thru	Peds	App. Total	Int. Total
04:00 PM	77	172	0	249	261	0	261	63	0	63	573
04:15 PM	88	213	0	301	231	0	231	60	0	60	592
04:30 PM	56	207	0	263	230	0	230	65	0	65	558
04:45 PM	71	177	0	248	255	0	255	70	0	70	573
Total	292	769	0	1061	977	0	977	258	0	258	2296
05:00 PM	71	157	0	228	245	0	245	69	0	69	542
05:15 PM	63	183	0	246	265	0	265	60	0	60	571
05:30 PM	68	146	0	214	251	0	251	54	0	54	519
05:45 PM	44	142	0	186	212	0	212	57	0	57	455
Total	246	628	0	874	973	0	973	240	0	240	2087
Grand Total	538	1397	0	1935	1950	0	1950	498	0	498	4383
Apprch %	27.8	72.2	0		100	0		100	0		
Total %	12.3	31.9	0	44.1	44.5	0	44.5	11.4	0	11.4	

	Benns Church Blvd Southbound			Brewers Neck Blvd Westbound		Benns Church Blvd Northbound		
Start Time	Thru	Left	App. Total	Right	App. Total	Thru	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1								
Peak Hour for Entire Intersection Begins at 04:00 PM								
04:00 PM	77	172	249	**261**	**261**	63	63	573
04:15 PM	**88**	**213**	**301**	231	231	60	60	**592**
04:30 PM	56	207	263	230	230	65	65	558
04:45 PM	71	177	248	255	255	**70**	**70**	573
Total Volume	292	769	1061	977	977	258	258	2296
% App. Total	27.5	72.5		100		100		
PHF	.830	.903	.881	.936	.936	.921	.921	.970

Peggy Malone & Associates
904-992-8072

File Name : 1-Benns Church Blvd & Brewer's Neck Blvd PM
Site Code :
Start Date : 10/1/2020
Page No : 1

Groups Printed- Trucks

	Benns Church Blvd Southbound				Brewers Neck Blvd Westbound			Benns Church Blvd Northbound			
Start Time	Thru	Left	Peds	App. Total	Right	Peds	App. Total	Thru	Peds	App. Total	Int. Total
04:00 PM	2	5	0	7	11	0	11	4	0	4	22
04:15 PM	4	3	0	7	10	0	10	3	0	3	20
04:30 PM	1	6	0	7	6	0	6	3	0	3	16
04:45 PM	1	3	0	4	7	0	7	0	0	0	11
Total	8	17	0	25	34	0	34	10	0	10	69
05:00 PM	2	8	0	10	7	0	7	1	0	1	18
05:15 PM	1	5	0	6	1	0	1	1	0	1	8
05:30 PM	1	6	0	7	4	0	4	0	0	0	11
05:45 PM	0	3	0	3	3	0	3	1	0	1	7
Total	4	22	0	26	15	0	15	3	0	3	44
Grand Total	12	39	0	51	49	0	49	13	0	13	113
Apprch %	23.5	76.5	0		100	0		100	0		
Total %	10.6	34.5	0	45.1	43.4	0	43.4	11.5	0	11.5	

	Benns Church Blvd Southbound			Brewers Neck Blvd Westbound		Benns Church Blvd Northbound		
Start Time	Thru	Left	App. Total	Right	App. Total	Thru	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1								
Peak Hour for Entire Intersection Begins at 04:00 PM								
04:00 PM	2	5	**7**	**11**	**11**	**4**	**4**	**22**
04:15 PM	**4**	3	7	10	10	3	3	20
04:30 PM	1	**6**	7	6	6	3	3	16
04:45 PM	1	3	4	7	7	0	0	11
Total Volume	8	17	25	34	34	10	10	69
% App. Total	32	68		100		100		
PHF	.500	.708	.893	.773	.773	.625	.625	.784

Peggy Malone & Associates
904-992-8072

File Name : 1-Benns Church Blvd & Brewer's Neck Blvd PM
Site Code :
Start Date : 10/1/2020
Page No : 1

Groups Printed- Combined

	Benns Church Blvd Southbound				Brewers Neck Blvd Westbound			Benns Church Blvd Northbound			
Start Time	Thru	Left	Peds	App. Total	Right	Peds	App. Total	Thru	Peds	App. Total	Int. Total
04:00 PM	79	177	0	256	272	0	272	67	0	67	595
04:15 PM	92	216	0	308	241	0	241	63	0	63	612
04:30 PM	57	213	0	270	236	0	236	68	0	68	574
04:45 PM	72	180	0	252	262	0	262	70	0	70	584
Total	300	786	0	1086	1011	0	1011	268	0	268	2365
05:00 PM	73	165	0	238	252	0	252	70	0	70	560
05:15 PM	64	188	0	252	266	0	266	61	0	61	579
05:30 PM	69	152	0	221	255	0	255	54	0	54	530
05:45 PM	44	145	0	189	215	0	215	58	0	58	462
Total	250	650	0	900	988	0	988	243	0	243	2131
Grand Total	550	1436	0	1986	1999	0	1999	511	0	511	4496
Apprch %	27.7	72.3	0		100	0		100	0		
Total %	12.2	31.9	0	44.2	44.5	0	44.5	11.4	0	11.4	

	Benns Church Blvd Southbound			Brewers Neck Blvd Westbound		Benns Church Blvd Northbound		
Start Time	Thru	Left	App. Total	Right	App. Total	Thru	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1								
Peak Hour for Entire Intersection Begins at 04:00 PM								
04:00 PM	79	177	256	**272**	**272**	67	67	595
04:15 PM	**92**	**216**	**308**	241	241	63	63	**612**
04:30 PM	57	213	270	236	236	68	68	574
04:45 PM	72	180	252	262	262	**70**	**70**	584
Total Volume	300	786	1086	1011	1011	268	268	2365
% App. Total	27.6	72.4		100		100		
PHF	.815	.910	.881	.929	.929	.957	.957	.966

Peggy Malone & Associates
904-992-8072

File Name : 2-Queen Annes Court-Benns Grant & Brewers Neck Blvd AM
Site Code :
Start Date : 10/1/2020
Page No : 1

Groups Printed- Cars

	Queen Annes Court Southbound					Brewers Neck Blvd Westbound					Benns Grant Blvd Northbound					Brewers Neck Blvd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	2	0	2	0	4	0	90	32	0	122	77	1	0	0	78	0	176	0	0	176	380
07:15 AM	1	1	2	0	4	1	114	48	0	163	94	1	0	0	95	0	161	0	0	161	423
07:30 AM	0	0	2	0	2	1	121	55	0	177	61	0	0	0	61	2	172	3	0	177	417
07:45 AM	3	0	2	0	5	0	158	62	0	220	64	0	0	0	64	0	152	3	0	155	444
Total	6	1	8	0	15	2	483	197	0	682	296	2	0	0	298	2	661	6	0	669	1664
08:00 AM	2	0	1	0	3	0	132	48	0	180	60	0	0	0	60	0	142	2	0	144	387
08:15 AM	3	0	4	0	7	0	103	38	0	141	52	0	0	0	52	0	157	0	0	157	357
08:30 AM	1	0	2	0	3	2	111	47	0	160	74	0	0	0	74	0	160	2	0	162	399
08:45 AM	3	0	0	0	3	1	118	57	0	176	49	0	0	0	49	0	143	1	0	144	372
Total	9	0	7	0	16	3	464	190	0	657	235	0	0	0	235	0	602	5	0	607	1515
Grand Total	15	1	15	0	31	5	947	387	0	1339	531	2	0	0	533	2	1263	11	0	1276	3179
Apprch %	48.4	3.2	48.4	0		0.4	70.7	28.9	0		99.6	0.4	0	0		0.2	99	0.9	0		
Total %	0.5	0	0.5	0	1	0.2	29.8	12.2	0	42.1	16.7	0.1	0	0	16.8	0.1	39.7	0.3	0	40.1	

	Queen Annes Court Southbound				Brewers Neck Blvd Westbound				Benns Grant Blvd Northbound				Brewers Neck Blvd Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	1	**1**	**2**	4	**1**	114	48	163	**94**	**1**	0	**95**	0	161	0	161	423
07:30 AM	0	0	2	2	1	121	55	177	61	0	0	61	**2**	**172**	**3**	**177**	417
07:45 AM	**3**	0	2	**5**	0	**158**	**62**	**220**	64	0	0	64	0	152	3	155	**444**
08:00 AM	2	0	1	3	0	132	48	180	60	0	0	60	0	142	2	144	387
Total Volume	6	1	7	14	2	525	213	740	279	1	0	280	2	627	8	637	1671
% App. Total	42.9	7.1	50		0.3	70.9	28.8		99.6	0.4	0		0.3	98.4	1.3		
PHF	.500	.250	.875	.700	.500	.831	.859	.841	.742	.250	.000	.737	.250	.911	.667	.900	.941

Peggy Malone & Associates
904-992-8072

File Name : 2-Queen Annes Court-Benns Grant & Brewers Neck Blvd AM
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Start Date : 10/1/2020
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Groups Printed- Trucks

	Queen Annes Court Southbound					Brewers Neck Blvd Westbound					Benns Grant Blvd Northbound					Brewers Neck Blvd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	9	3	0	12	4	0	0	0	4	0	1	0	0	1	17
07:15 AM	0	0	0	0	0	0	5	6	0	11	6	0	0	0	6	0	5	0	0	5	22
07:30 AM	0	0	0	0	0	0	11	4	0	15	3	0	0	0	3	0	10	0	0	10	28
07:45 AM	0	0	0	0	0	0	15	4	0	19	1	0	0	0	1	0	9	0	0	9	29
Total	0	0	0	0	0	0	40	17	0	57	14	0	0	0	14	0	25	0	0	25	96
08:00 AM	0	0	0	0	0	0	7	2	0	9	8	0	0	0	8	0	5	0	0	5	22
08:15 AM	0	0	1	0	1	1	8	6	0	15	7	0	0	0	7	0	14	0	0	14	37
08:30 AM	0	0	0	0	0	0	20	1	0	21	6	0	0	0	6	0	17	0	0	17	44
08:45 AM	0	0	0	0	0	0	12	6	0	18	1	0	0	0	1	0	11	0	0	11	30
Total	0	0	1	0	1	1	47	15	0	63	22	0	0	0	22	0	47	0	0	47	133
Grand Total	0	0	1	0	1	1	87	32	0	120	36	0	0	0	36	0	72	0	0	72	229
Apprch %	0	0	100	0		0.8	72.5	26.7	0		100	0	0	0		0	100	0	0		
Total %	0	0	0.4	0	0.4	0.4	38	14	0	52.4	15.7	0	0	0	15.7	0	31.4	0	0	31.4	

	Queen Annes Court Southbound				Brewers Neck Blvd Westbound				Benns Grant Blvd Northbound				Brewers Neck Blvd Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	0	0	0	0	7	2	9	**8**	0	0	**8**	0	5	0	5	22
08:15 AM	0	0	**1**	**1**	**1**	8	**6**	15	7	0	0	7	0	14	0	14	37
08:30 AM	0	0	0	0	0	**20**	1	**21**	6	0	0	6	0	**17**	0	**17**	**44**
08:45 AM	0	0	0	0	0	12	6	18	1	0	0	1	0	11	0	11	30
Total Volume	0	0	1	1	1	47	15	63	22	0	0	22	0	47	0	47	133
% App. Total	0	0	100		1.6	74.6	23.8		100	0	0		0	100	0		
PHF	.000	.000	.250	.250	.250	.588	.625	.750	.688	.000	.000	.688	.000	.691	.000	.691	.756

Peggy Malone & Associates
904-992-8072

File Name : 2-Queen Annes Court-Benns Grant & Brewers Neck Blvd AM
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Groups Printed- Combined

	Queen Annes Court Southbound					Brewers Neck Blvd Westbound					Benns Grant Blvd Northbound					Brewers Neck Blvd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	2	0	2	0	4	0	99	35	0	134	81	1	0	0	82	0	177	0	0	177	397
07:15 AM	1	1	2	0	4	1	119	54	0	174	100	1	0	0	101	0	166	0	0	166	445
07:30 AM	0	0	2	0	2	1	132	59	0	192	64	0	0	0	64	2	182	3	0	187	445
07:45 AM	3	0	2	0	5	0	173	66	0	239	65	0	0	0	65	0	161	3	0	164	473
Total	6	1	8	0	15	2	523	214	0	739	310	2	0	0	312	2	686	6	0	694	1760
08:00 AM	2	0	1	0	3	0	139	50	0	189	68	0	0	0	68	0	147	2	0	149	409
08:15 AM	3	0	5	0	8	1	111	44	0	156	59	0	0	0	59	0	171	0	0	171	394
08:30 AM	1	0	2	0	3	2	131	48	0	181	80	0	0	0	80	0	177	2	0	179	443
08:45 AM	3	0	0	0	3	1	130	63	0	194	50	0	0	0	50	0	154	1	0	155	402
Total	9	0	8	0	17	4	511	205	0	720	257	0	0	0	257	0	649	5	0	654	1648
Grand Total	15	1	16	0	32	6	1034	419	0	1459	567	2	0	0	569	2	1335	11	0	1348	3408
Apprch %	46.9	3.1	50	0		0.4	70.9	28.7	0		99.6	0.4	0	0		0.1	99	0.8	0		
Total %	0.4	0	0.5	0	0.9	0.2	30.3	12.3	0	42.8	16.6	0.1	0	0	16.7	0.1	39.2	0.3	0	39.6	

	Queen Annes Court Southbound				Brewers Neck Blvd Westbound				Benns Grant Blvd Northbound				Brewers Neck Blvd Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	1	**1**	**2**	4	**1**	119	54	174	**100**	**1**	0	**101**	0	166	0	166	445
07:30 AM	0	0	2	2	1	132	59	192	64	0	0	64	**2**	**182**	**3**	**187**	445
07:45 AM	**3**	0	2	**5**	0	**173**	**66**	**239**	65	0	0	65	0	161	3	164	**473**
08:00 AM	2	0	1	3	0	139	50	189	68	0	0	68	0	147	2	149	409
Total Volume	6	1	7	14	2	563	229	794	297	1	0	298	2	656	8	666	1772
% App. Total	42.9	7.1	50		0.3	70.9	28.8		99.7	0.3	0		0.3	98.5	1.2		
PHF	.500	.250	.875	.700	.500	.814	.867	.831	.743	.250	.000	.738	.250	.901	.667	.890	.937

Peggy Malone & Associates
904-992-8072

File Name : 2-Queen Annes Court-Benns Grant & Brewers Neck Blvd PM
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Groups Printed- Cars

	Queen Annes Court Southbound					Brewers Neck Blvd Westbound					Benns Grant Blvd Northbound					Brewers Neck Blvd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	1	1	0	2	2	257	134	0	393	71	0	0	0	71	0	166	0	0	166	632
04:15 PM	3	1	0	0	4	1	238	90	0	329	59	1	0	0	60	0	200	3	0	203	596
04:30 PM	0	1	1	0	2	2	222	102	0	326	59	0	0	0	59	0	195	9	1	205	592
04:45 PM	0	0	1	0	1	2	267	91	0	360	64	0	0	0	64	2	170	1	0	173	598
Total	3	3	3	0	9	7	984	417	0	1408	253	1	0	0	254	2	731	13	1	747	2418
05:00 PM	1	0	0	0	1	2	240	80	0	322	56	0	0	0	56	0	164	0	0	164	543
05:15 PM	2	1	0	0	3	3	271	72	0	346	57	0	0	0	57	0	181	1	0	182	588
05:30 PM	3	1	2	0	6	2	245	79	0	326	60	0	1	0	61	0	137	1	0	138	531
05:45 PM	2	0	1	0	3	3	211	65	0	279	58	0	1	0	59	0	136	3	0	139	480
Total	8	2	3	0	13	10	967	296	0	1273	231	0	2	0	233	0	618	5	0	623	2142
Grand Total	11	5	6	0	22	17	1951	713	0	2681	484	1	2	0	487	2	1349	18	1	1370	4560
Apprch %	50	22.7	27.3	0		0.6	72.8	26.6	0		99.4	0.2	0.4	0		0.1	98.5	1.3	0.1		
Total %	0.2	0.1	0.1	0	0.5	0.4	42.8	15.6	0	58.8	10.6	0	0	0	10.7	0	29.6	0.4	0	30	

	Queen Annes Court Southbound				Brewers Neck Blvd Westbound				Benns Grant Blvd Northbound				Brewers Neck Blvd Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	**1**	**1**	2	**2**	257	**134**	**393**	**71**	0	0	**71**	0	166	0	166	**632**
04:15 PM	**3**	1	0	**4**	1	238	90	329	59	**1**	0	60	0	**200**	3	203	596
04:30 PM	0	1	1	2	2	222	102	326	59	0	0	59	0	195	**9**	**204**	591
04:45 PM	0	0	1	1	2	**267**	91	360	64	0	0	64	**2**	170	1	173	598
Total Volume	3	3	3	9	7	984	417	1408	253	1	0	254	2	731	13	746	2417
% App. Total	33.3	33.3	33.3		0.5	69.9	29.6		99.6	0.4	0		0.3	98	1.7		
PHF	.250	.750	.750	.563	.875	.921	.778	.896	.891	.250	.000	.894	.250	.914	.361	.914	.956

Peggy Malone & Associates
904-992-8072

File Name : 2-Queen Annes Court-Benns Grant & Brewers Neck Blvd PM
Site Code :
Start Date : 10/1/2020
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Groups Printed- Trucks

	Queen Annes Court Southbound					Brewers Neck Blvd Westbound					Benns Grant Blvd Northbound					Brewers Neck Blvd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	8	5	0	13	5	0	0	0	5	0	4	0	0	4	22
04:15 PM	1	0	0	0	1	1	8	4	0	13	1	0	0	0	1	0	3	0	0	3	18
04:30 PM	0	0	0	0	0	0	5	4	0	9	1	0	0	0	1	0	3	0	0	3	13
04:45 PM	0	0	0	0	0	0	8	4	0	12	1	0	0	0	1	0	4	0	0	4	17
Total	1	0	0	0	1	1	29	17	0	47	8	0	0	0	8	0	14	0	0	14	70
05:00 PM	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	8	0	0	8	15
05:15 PM	0	0	0	0	0	0	3	2	0	5	0	0	0	0	0	0	5	0	0	5	10
05:30 PM	0	0	0	0	0	0	3	2	0	5	3	0	0	0	3	0	6	0	0	6	14
05:45 PM	0	0	0	0	0	0	4	1	0	5	1	0	0	0	1	0	2	0	0	2	8
Total	0	0	0	0	0	0	17	5	0	22	4	0	0	0	4	0	21	0	0	21	47
Grand Total	1	0	0	0	1	1	46	22	0	69	12	0	0	0	12	0	35	0	0	35	117
Apprch %	100	0	0	0		1.4	66.7	31.9	0		100	0	0	0		0	100	0	0		
Total %	0.9	0	0	0	0.9	0.9	39.3	18.8	0	59	10.3	0	0	0	10.3	0	29.9	0	0	29.9	

	Queen Annes Court Southbound				Brewers Neck Blvd Westbound				Benns Grant Blvd Northbound				Brewers Neck Blvd Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	**8**	**5**	**13**	**5**	0	0	**5**	0	**4**	0	**4**	**22**
04:15 PM	**1**	0	0	**1**	**1**	8	4	13	1	0	0	1	0	3	0	3	18
04:30 PM	0	0	0	0	0	5	4	9	1	0	0	1	0	3	0	3	13
04:45 PM	0	0	0	0	0	8	4	12	1	0	0	1	0	4	0	4	17
Total Volume	1	0	0	1	1	29	17	47	8	0	0	8	0	14	0	14	70
% App. Total	100	0	0		2.1	61.7	36.2		100	0	0		0	100	0		
PHF	.250	.000	.000	.250	.250	.906	.850	.904	.400	.000	.000	.400	.000	.875	.000	.875	.795

Peggy Malone & Associates
904-992-8072

File Name : 2-Queen Annes Court-Benns Grant & Brewers Neck Blvd PM
Site Code :
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Groups Printed- Combined

	Queen Annes Court Southbound					Brewers Neck Blvd Westbound					Benns Grant Blvd Northbound					Brewers Neck Blvd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	1	1	0	2	2	265	139	0	406	76	0	0	0	76	0	170	0	0	170	654
04:15 PM	4	1	0	0	5	2	246	94	0	342	60	1	0	0	61	0	203	3	0	206	614
04:30 PM	0	1	1	0	2	2	227	106	0	335	60	0	0	0	60	0	198	9	1	208	605
04:45 PM	0	0	1	0	1	2	275	95	0	372	65	0	0	0	65	2	174	1	0	177	615
Total	4	3	3	0	10	8	1013	434	0	1455	261	1	0	0	262	2	745	13	1	761	2488
05:00 PM	1	0	0	0	1	2	247	80	0	329	56	0	0	0	56	0	172	0	0	172	558
05:15 PM	2	1	0	0	3	3	274	74	0	351	57	0	0	0	57	0	186	1	0	187	598
05:30 PM	3	1	2	0	6	2	248	81	0	331	63	0	1	0	64	0	143	1	0	144	545
05:45 PM	2	0	1	0	3	3	215	66	0	284	59	0	1	0	60	0	138	3	0	141	488
Total	8	2	3	0	13	10	984	301	0	1295	235	0	2	0	237	0	639	5	0	644	2189
Grand Total	12	5	6	0	23	18	1997	735	0	2750	496	1	2	0	499	2	1384	18	1	1405	4677
Apprch %	52.2	21.7	26.1	0		0.7	72.6	26.7	0		99.4	0.2	0.4	0		0.1	98.5	1.3	0.1		
Total %	0.3	0.1	0.1	0	0.5	0.4	42.7	15.7	0	58.8	10.6	0	0	0	10.7	0	29.6	0.4	0	30	

	Queen Annes Court Southbound				Brewers Neck Blvd Westbound				Benns Grant Blvd Northbound				Brewers Neck Blvd Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	**1**	**1**	2	**2**	265	**139**	**406**	**76**	0	0	**76**	0	170	0	170	**654**
04:15 PM	**4**	1	0	**5**	2	246	94	342	60	**1**	0	61	0	**203**	3	206	614
04:30 PM	0	1	1	2	2	227	106	335	60	0	0	60	0	198	**9**	**207**	604
04:45 PM	0	0	1	1	2	**275**	95	372	65	0	0	65	**2**	174	1	177	615
Total Volume	4	3	3	10	8	1013	434	1455	261	1	0	262	2	745	13	760	2487
% App. Total	40	30	30		0.5	69.6	29.8		99.6	0.4	0		0.3	98	1.7		
PHF	.250	.750	.750	.500	1.00	.921	.781	.896	.859	.250	.000	.862	.250	.917	.361	.918	.951

Peggy Malone & Associates
(888) 247-8602

File Name : Benns Church Rd & Benns Grant Blvd AM
Site Code :
Start Date : 8/10/2017
Page No : 1

Groups Printed- Car

	Benns Church Rd Southbound					Benns Grant Blvd Westbound					Benns Church Rd Northbound					Benns Grant Blvd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:00 AM	0	17	0	0	17	0	1	16	0	17	65	32	0	0	97	0	3	0	0	3	134
06:15 AM	0	24	0	0	24	0	1	20	0	21	68	47	0	0	115	0	7	0	0	7	167
06:30 AM	3	36	0	0	39	0	5	23	0	28	65	34	0	0	99	1	6	3	0	10	176
06:45 AM	1	27	0	0	28	0	4	33	0	37	84	29	0	0	113	0	5	1	0	6	184
Total	4	104	0	0	108	0	11	92	0	103	282	142	0	0	424	1	21	4	0	26	661
07:00 AM	0	36	0	0	36	0	5	45	0	50	76	26	1	0	103	0	7	1	0	8	197
07:15 AM	0	46	0	0	46	0	2	47	0	49	89	39	1	0	129	2	6	2	0	10	234
07:30 AM	0	38	0	0	38	0	1	65	0	66	78	34	4	0	116	4	3	2	0	9	229
07:45 AM	4	38	0	0	42	0	4	50	0	54	60	35	0	0	95	3	2	1	1	7	198
Total	4	158	0	0	162	0	12	207	0	219	303	134	6	0	443	9	18	6	1	34	858
08:00 AM	1	35	0	0	36	0	0	43	0	43	55	24	1	0	80	2	4	1	0	7	166
08:15 AM	3	41	0	0	44	0	4	27	0	31	45	42	1	0	88	3	2	2	0	7	170
08:30 AM	0	35	0	0	35	0	3	23	0	26	36	27	0	0	63	1	3	1	0	5	129
08:45 AM	0	42	0	0	42	0	1	27	0	28	24	32	1	0	57	1	4	4	0	9	136
Total	4	153	0	0	157	0	8	120	0	128	160	125	3	0	288	7	13	8	0	28	601
Grand Total	12	415	0	0	427	0	31	419	0	450	745	401	9	0	1155	17	52	18	1	88	2120
Apprch %	2.8	97.2	0	0		0	6.9	93.1	0		64.5	34.7	0.8	0		19.3	59.1	20.5	1.1		
Total %	0.6	19.6	0	0	20.1	0	1.5	19.8	0	21.2	35.1	18.9	0.4	0	54.5	0.8	2.5	0.8	0	4.2	

	Benns Church Rd Southbound				Benns Grant Blvd Westbound				Benns Church Rd Northbound				Benns Grant Blvd Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	36	0	36	0	**5**	45	50	76	26	1	103	0	**7**	1	8	197
07:15 AM	0	**46**	0	**46**	0	2	47	49	**89**	**39**	1	**129**	2	6	**2**	**10**	**234**
07:30 AM	0	38	0	38	0	1	**65**	**66**	78	34	**4**	116	**4**	3	2	9	229
07:45 AM	**4**	38	0	42	0	4	50	54	60	35	0	95	3	2	1	6	197
Total Volume	4	158	0	162	0	12	207	219	303	134	6	443	9	18	6	33	857
% App. Total	2.5	97.5	0		0	5.5	94.5		68.4	30.2	1.4		27.3	54.5	18.2		
PHF	.250	.859	.000	.880	.000	.600	.796	.830	.851	.859	.375	.859	.563	.643	.750	.825	.916

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Groups Printed- Truck

	Benns Church Rd Southbound					Benns Grant Blvd Westbound					Benns Church Rd Northbound					Benns Grant Blvd Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:00 AM	0	0	0	0	0	0	0	0	0	0	3	1	0	0	4	0	0	0	0	0	4
06:15 AM	0	2	0	0	2	0	0	1	0	1	3	2	0	0	5	0	0	0	0	0	8
06:30 AM	0	4	0	0	4	0	0	1	0	1	2	0	0	0	2	0	0	1	0	1	8
06:45 AM	0	2	0	0	2	0	0	1	0	1	2	5	0	0	7	0	1	0	0	1	11
Total	0	8	0	0	8	0	0	3	0	3	10	8	0	0	18	0	1	1	0	2	31
07:00 AM	0	1	0	0	1	0	0	3	0	3	6	1	0	0	7	0	0	0	0	0	11
07:15 AM	0	1	0	0	1	0	0	2	0	2	6	4	0	0	10	0	0	0	0	0	13
07:30 AM	0	0	0	0	0	0	0	6	0	6	4	1	0	0	5	0	0	0	0	0	11
07:45 AM	0	1	0	0	1	0	3	11	0	14	8	3	0	0	11	0	1	0	0	1	27
Total	0	3	0	0	3	0	3	22	0	25	24	9	0	0	33	0	1	0	0	1	62
08:00 AM	0	2	0	0	2	0	3	13	0	16	8	2	0	0	10	0	4	0	0	4	32
08:15 AM	0	4	0	0	4	0	1	8	0	9	9	6	0	0	15	0	1	0	0	1	29
08:30 AM	0	4	0	0	4	0	3	6	0	9	14	2	0	0	16	0	1	0	0	1	30
08:45 AM	0	1	0	0	1	0	1	5	0	6	2	4	0	0	6	0	2	0	0	2	15
Total	0	11	0	0	11	0	8	32	0	40	33	14	0	0	47	0	8	0	0	8	106
Grand Total	0	22	0	0	22	0	11	57	0	68	67	31	0	0	98	0	10	1	0	11	199
Apprch %	0	100	0	0		0	16.2	83.8	0		68.4	31.6	0	0		0	90.9	9.1	0		
Total %	0	11.1	0	0	11.1	0	5.5	28.6	0	34.2	33.7	15.6	0	0	49.2	0	5	0.5	0	5.5	

	Benns Church Rd Southbound				Benns Grant Blvd Westbound				Benns Church Rd Northbound				Benns Grant Blvd Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	1	0	1	0	**3**	11	14	8	3	0	11	0	1	0	1	27
08:00 AM	0	2	0	2	0	3	**13**	**16**	8	2	0	10	0	**4**	0	**4**	**32**
08:15 AM	0	**4**	0	**4**	0	1	8	9	9	**6**	0	15	0	1	0	1	29
08:30 AM	0	4	0	4	0	3	6	9	**14**	2	0	**16**	0	1	0	1	30
Total Volume	0	11	0	11	0	10	38	48	39	13	0	52	0	7	0	7	118
% App. Total	0	100	0		0	20.8	79.2		75	25	0		0	100	0		
PHF	.000	.688	.000	.688	.000	.833	.731	.750	.696	.542	.000	.813	.000	.438	.000	.438	.922

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Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:00 AM	0	17	0	0	17	0	1	16	0	17	68	33	0	0	101	0	3	0	0	3	138
06:15 AM	0	26	0	0	26	0	1	21	0	22	71	49	0	0	120	0	7	0	0	7	175
06:30 AM	3	40	0	0	43	0	5	24	0	29	67	34	0	0	101	1	6	4	0	11	184
06:45 AM	1	29	0	0	30	0	4	34	0	38	86	34	0	0	120	0	6	1	0	7	195
Total	4	112	0	0	116	0	11	95	0	106	292	150	0	0	442	1	22	5	0	28	692
07:00 AM	0	37	0	0	37	0	5	48	0	53	82	27	1	0	110	0	7	1	0	8	208
07:15 AM	0	47	0	0	47	0	2	49	0	51	95	43	1	0	139	2	6	2	0	10	247
07:30 AM	0	38	0	0	38	0	1	71	0	72	82	35	4	0	121	4	3	2	0	9	240
07:45 AM	4	39	0	0	43	0	7	61	0	68	68	38	0	0	106	3	3	1	1	8	225
Total	4	161	0	0	165	0	15	229	0	244	327	143	6	0	476	9	19	6	1	35	920
08:00 AM	1	37	0	0	38	0	3	56	0	59	63	26	1	0	90	2	8	1	0	11	198
08:15 AM	3	45	0	0	48	0	5	35	0	40	54	48	1	0	103	3	3	2	0	8	199
08:30 AM	0	39	0	0	39	0	6	29	0	35	50	29	0	0	79	1	4	1	0	6	159
08:45 AM	0	43	0	0	43	0	2	32	0	34	26	36	1	0	63	1	6	4	0	11	151
Total	4	164	0	0	168	0	16	152	0	168	193	139	3	0	335	7	21	8	0	36	707
Grand Total	12	437	0	0	449	0	42	476	0	518	812	432	9	0	1253	17	62	19	1	99	2319
Apprch %	2.7	97.3	0	0		0	8.1	91.9	0		64.8	34.5	0.7	0		17.2	62.6	19.2	1		
Total %	0.5	18.8	0	0	19.4	0	1.8	20.5	0	22.3	35	18.6	0.4	0	54	0.7	2.7	0.8	0	4.3	

	Benns Church Rd Southbound				Benns Grant Blvd Westbound				Benns Church Rd Northbound				Benns Grant Blvd Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	37	0	37	0	5	48	53	82	27	1	110	0	**7**	1	8	208
07:15 AM	0	**47**	0	**47**	0	2	49	51	**95**	**43**	1	**139**	2	6	**2**	**10**	**247**
07:30 AM	0	38	0	38	0	1	**71**	**72**	82	35	**4**	121	**4**	3	2	9	240
07:45 AM	**4**	39	0	43	0	**7**	61	68	68	38	0	106	3	3	1	7	224
Total Volume	4	161	0	165	0	15	229	244	327	143	6	476	9	19	6	34	919
% App. Total	2.4	97.6	0		0	6.1	93.9		68.7	30	1.3		26.5	55.9	17.6		
PHF	.250	.856	.000	.878	.000	.536	.806	.847	.861	.831	.375	.856	.563	.679	.750	.850	.930

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Groups Printed- Car

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Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:00 PM	6	51	0	0	57	0	3	47	0	50	38	51	1	0	90	0	5	1	0	6	203
02:15 PM	1	49	0	0	50	0	0	49	0	49	52	52	0	0	104	1	0	3	0	4	207
02:30 PM	0	51	0	0	51	0	3	38	0	41	42	44	0	0	86	2	2	4	0	8	186
02:45 PM	0	48	0	0	48	0	1	55	0	56	50	52	3	0	105	0	3	2	0	5	214
Total	7	199	0	0	206	0	7	189	0	196	182	199	4	0	385	3	10	10	0	23	810
03:00 PM	2	49	0	0	51	0	4	45	0	49	43	45	0	0	88	0	0	6	0	6	194
03:15 PM	2	50	0	0	52	0	0	60	0	60	37	43	1	0	81	0	4	2	0	6	199
03:30 PM	0	54	0	0	54	0	4	62	0	66	24	46	0	0	70	0	2	1	0	3	193
03:45 PM	6	48	0	0	54	0	6	99	0	105	41	42	1	0	84	1	0	2	0	3	246
Total	10	201	0	0	211	0	14	266	0	280	145	176	2	0	323	1	6	11	0	18	832
04:00 PM	2	60	0	0	62	0	5	105	0	110	58	49	2	0	109	0	3	1	0	4	285
04:15 PM	5	86	0	0	91	0	2	91	0	93	60	41	0	0	101	3	1	1	0	5	290
04:30 PM	1	68	3	0	72	0	8	87	0	95	53	47	0	0	100	3	1	1	0	5	272
04:45 PM	4	69	0	0	73	0	1	92	0	93	53	57	1	0	111	3	4	3	0	10	287
Total	12	283	3	0	298	0	16	375	0	391	224	194	3	0	421	9	9	6	0	24	1134
05:00 PM	3	81	0	0	84	0	6	103	0	109	54	54	0	0	108	1	3	6	0	10	311
05:15 PM	6	84	0	0	90	0	6	88	0	94	56	65	0	0	121	2	5	4	0	11	316
05:30 PM	5	57	0	0	62	0	4	94	0	98	45	60	0	0	105	0	3	5	0	8	273
05:45 PM	7	42	0	0	49	0	4	71	0	75	55	49	1	0	105	1	0	0	1	2	231
Total	21	264	0	0	285	0	20	356	0	376	210	228	1	0	439	4	11	15	1	31	1131
06:00 PM	4	36	0	0	40	0	9	54	0	63	51	41	1	0	93	0	1	2	0	3	199
06:15 PM	3	42	0	0	45	0	3	52	0	55	28	41	1	0	70	0	7	3	0	10	180
06:30 PM	4	26	0	0	30	0	5	48	0	53	27	26	4	0	57	1	6	3	0	10	150
06:45 PM	3	30	0	0	33	2	4	31	0	37	32	38	1	0	71	0	2	0	0	2	143
Total	14	134	0	0	148	2	21	185	0	208	138	146	7	0	291	1	16	8	0	25	672
Grand Total	64	1081	3	0	1148	2	78	1371	0	1451	899	943	17	0	1859	18	52	50	1	121	4579
Apprch %	5.6	94.2	0.3	0		0.1	5.4	94.5	0		48.4	50.7	0.9	0		14.9	43	41.3	0.8		
Total %	1.4	23.6	0.1	0	25.1	0	1.7	29.9	0	31.7	19.6	20.6	0.4	0	40.6	0.4	1.1	1.1	0	2.6	

	Benns Church Rd Southbound				Benns Grant Blvd Westbound				Benns Church Rd Northbound				Benns Grant Blvd Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	4	69	0	73	0	1	92	93	53	57	**1**	111	**3**	4	3	10	287
05:00 PM	3	81	0	84	0	**6**	**103**	**109**	54	54	0	108	1	3	**6**	10	311
05:15 PM	**6**	**84**	0	**90**	0	6	88	94	**56**	**65**	0	**121**	2	**5**	4	**11**	**316**
05:30 PM	5	57	0	62	0	4	94	98	45	60	0	105	0	3	5	8	273
Total Volume	18	291	0	309	0	17	377	394	208	236	1	445	6	15	18	39	1187
% App. Total	5.8	94.2	0		0	4.3	95.7		46.7	53	0.2		15.4	38.5	46.2		
PHF	.750	.866	.000	.858	.000	.708	.915	.904	.929	.908	.250	.919	.500	.750	.750	.886	.939

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Groups Printed- Truck

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Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:00 PM	0	0	0	0	0	0	5	6	0	11	5	1	0	0	6	0	1	0	0	1	18
02:15 PM	0	4	0	0	4	0	1	11	0	12	5	0	0	0	5	0	7	0	0	7	28
02:30 PM	0	5	0	0	5	0	7	3	0	10	10	2	0	0	12	0	4	0	0	4	31
02:45 PM	0	0	0	0	0	0	1	4	0	5	1	1	0	0	2	0	7	0	0	7	14
Total	0	9	0	0	9	0	14	24	0	38	21	4	0	0	25	0	19	0	0	19	91
03:00 PM	0	3	0	0	3	0	2	6	0	8	2	1	0	0	3	0	1	0	0	1	15
03:15 PM	0	1	0	0	1	0	3	1	0	4	5	3	1	0	9	0	1	0	0	1	15
03:30 PM	0	3	0	0	3	0	7	1	0	8	3	1	0	0	4	0	3	1	0	4	19
03:45 PM	0	2	0	0	2	0	4	3	0	7	3	4	0	0	7	0	6	0	0	6	22
Total	0	9	0	0	9	0	16	11	0	27	13	9	1	0	23	0	11	1	0	12	71
04:00 PM	0	1	0	0	1	0	5	3	0	8	0	3	0	0	3	0	6	0	0	6	18
04:15 PM	0	0	0	0	0	0	1	5	0	6	0	0	0	0	0	0	0	0	0	0	6
04:30 PM	0	4	0	0	4	0	0	1	0	1	1	0	0	0	1	0	6	0	0	6	12
04:45 PM	0	1	0	0	1	0	2	5	0	7	1	0	0	0	1	0	0	0	0	0	9
Total	0	6	0	0	6	0	8	14	0	22	2	3	0	0	5	0	12	0	0	12	45
05:00 PM	0	1	0	0	1	0	5	2	0	7	0	3	0	0	3	0	3	0	0	3	14
05:15 PM	0	3	0	0	3	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	8
05:30 PM	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	1	2	0	0	3	5
05:45 PM	0	0	0	0	0	0	2	1	0	3	3	0	0	0	3	1	3	0	0	4	10
Total	0	4	0	0	4	0	10	4	0	14	3	3	0	0	6	2	11	0	0	13	37
06:00 PM	0	0	0	0	0	0	0	0	0	0	2	1	0	0	3	0	0	0	0	0	3
06:15 PM	0	0	0	0	0	0	0	2	0	2	1	1	0	0	2	0	0	0	0	0	4
06:30 PM	0	1	0	0	1	0	0	0	0	0	4	1	0	0	5	0	1	0	0	1	7
06:45 PM	0	0	0	0	0	0	0	1	0	1	2	1	0	0	3	0	0	0	0	0	4
Total	0	1	0	0	1	0	0	3	0	3	9	4	0	0	13	0	1	0	0	1	18
Grand Total	0	29	0	0	29	0	48	56	0	104	48	23	1	0	72	2	54	1	0	57	262
Apprch %	0	100	0	0		0	46.2	53.8	0		66.7	31.9	1.4	0		3.5	94.7	1.8	0		
Total %	0	11.1	0	0	11.1	0	18.3	21.4	0	39.7	18.3	8.8	0.4	0	27.5	0.8	20.6	0.4	0	21.8	

	Benns Church Rd Southbound				Benns Grant Blvd Westbound				Benns Church Rd Northbound				Benns Grant Blvd Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 02:00 PM																	
02:00 PM	0	0	0	0	0	5	6	11	5	1	0	6	0	1	0	1	18
02:15 PM	0	4	0	4	0	1	**11**	**12**	5	0	0	5	0	**7**	0	**7**	28
02:30 PM	0	**5**	0	**5**	0	**7**	3	10	**10**	**2**	0	**12**	0	4	0	4	**31**
02:45 PM	0	0	0	0	0	1	4	5	1	1	0	2	0	7	0	7	14
Total Volume	0	9	0	9	0	14	24	38	21	4	0	25	0	19	0	19	91
% App. Total	0	100	0		0	36.8	63.2		84	16	0		0	100	0		
PHF	.000	.450	.000	.450	.000	.500	.545	.792	.525	.500	.000	.521	.000	.679	.000	.679	.734

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Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:00 PM	6	51	0	0	57	0	8	53	0	61	43	52	1	0	96	0	6	1	0	7	221
02:15 PM	1	53	0	0	54	0	1	60	0	61	57	52	0	0	109	1	7	3	0	11	235
02:30 PM	0	56	0	0	56	0	10	41	0	51	52	46	0	0	98	2	6	4	0	12	217
02:45 PM	0	48	0	0	48	0	2	59	0	61	51	53	3	0	107	0	10	2	0	12	228
Total	7	208	0	0	215	0	21	213	0	234	203	203	4	0	410	3	29	10	0	42	901
03:00 PM	2	52	0	0	54	0	6	51	0	57	45	46	0	0	91	0	1	6	0	7	209
03:15 PM	2	51	0	0	53	0	3	61	0	64	42	46	2	0	90	0	5	2	0	7	214
03:30 PM	0	57	0	0	57	0	11	63	0	74	27	47	0	0	74	0	5	2	0	7	212
03:45 PM	6	50	0	0	56	0	10	102	0	112	44	46	1	0	91	1	6	2	0	9	268
Total	10	210	0	0	220	0	30	277	0	307	158	185	3	0	346	1	17	12	0	30	903
04:00 PM	2	61	0	0	63	0	10	108	0	118	58	52	2	0	112	0	9	1	0	10	303
04:15 PM	5	86	0	0	91	0	3	96	0	99	60	41	0	0	101	3	1	1	0	5	296
04:30 PM	1	72	3	0	76	0	8	88	0	96	54	47	0	0	101	3	7	1	0	11	284
04:45 PM	4	70	0	0	74	0	3	97	0	100	54	57	1	0	112	3	4	3	0	10	296
Total	12	289	3	0	304	0	24	389	0	413	226	197	3	0	426	9	21	6	0	36	1179
05:00 PM	3	82	0	0	85	0	11	105	0	116	54	57	0	0	111	1	6	6	0	13	325
05:15 PM	6	87	0	0	93	0	8	88	0	96	56	65	0	0	121	2	8	4	0	14	324
05:30 PM	5	57	0	0	62	0	5	95	0	100	45	60	0	0	105	1	5	5	0	11	278
05:45 PM	7	42	0	0	49	0	6	72	0	78	58	49	1	0	108	2	3	0	1	6	241
Total	21	268	0	0	289	0	30	360	0	390	213	231	1	0	445	6	22	15	1	44	1168
06:00 PM	4	36	0	0	40	0	9	54	0	63	53	42	1	0	96	0	1	2	0	3	202
06:15 PM	3	42	0	0	45	0	3	54	0	57	29	42	1	0	72	0	7	3	0	10	184
06:30 PM	4	27	0	0	31	0	5	48	0	53	31	27	4	0	62	1	7	3	0	11	157
06:45 PM	3	30	0	0	33	2	4	32	0	38	34	39	1	0	74	0	2	0	0	2	147
Total	14	135	0	0	149	2	21	188	0	211	147	150	7	0	304	1	17	8	0	26	690
Grand Total	64	1110	3	0	1177	2	126	1427	0	1555	947	966	18	0	1931	20	106	51	1	178	4841
Apprch %	5.4	94.3	0.3	0		0.1	8.1	91.8	0		49	50	0.9	0		11.2	59.6	28.7	0.6		
Total %	1.3	22.9	0.1	0	24.3	0	2.6	29.5	0	32.1	19.6	20	0.4	0	39.9	0.4	2.2	1.1	0	3.7	

	Benns Church Rd Southbound				Benns Grant Blvd Westbound				Benns Church Rd Northbound				Benns Grant Blvd Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	1	72	**3**	76	0	8	88	96	54	47	0	101	**3**	7	1	11	284
04:45 PM	4	70	0	74	0	3	97	100	54	57	**1**	112	3	4	3	10	296
05:00 PM	3	82	0	85	0	**11**	**105**	**116**	54	57	0	111	1	6	**6**	13	**325**
05:15 PM	**6**	**87**	0	**93**	0	8	88	96	**56**	**65**	0	**121**	2	**8**	4	**14**	324
Total Volume	14	311	3	328	0	30	378	408	218	226	1	445	9	25	14	48	1229
% App. Total	4.3	94.8	0.9		0	7.4	92.6		49	50.8	0.2		18.8	52.1	29.2		
PHF	.583	.894	.250	.882	.000	.682	.900	.879	.973	.869	.250	.919	.750	.781	.583	.857	.945

Site ID: ADT 1
Unit #:
Location: IAAI Driveway & Portsmouth Blvd (I/O)
Direction: SOUTH
Lane: 1

File: D0818001.PRN
Job #: C/M/H
GPS: 36.75217,-76.52136

TIME	1	2	3	Total
00:15	0	0	0	0
00:30	0	0	0	0
00:45	1	0	0	1
01:00	0	0	0	0
Hour Total	1	0	0	1
01:15	0	0	0	0
01:30	0	0	0	0
01:45	0	0	0	0
02:00	0	0	0	0
Hour Total	0	0	0	0
02:15	0	0	0	0
02:30	0	0	0	0
02:45	0	0	0	0
03:00	0	0	0	0
Hour Total	0	0	0	0
03:15	0	0	0	0
03:30	0	0	0	0
03:45	0	0	0	0
04:00	0	0	0	0
Hour Total	0	0	0	0
04:15	0	0	0	0
04:30	0	0	0	0
04:45	1	0	0	1
05:00	0	0	0	0
Hour Total	1	0	0	1
05:15	1	0	0	1
05:30	0	0	0	0
05:45	0	0	0	0
06:00	0	0	0	0
Hour Total	1	0	0	1
06:15	0	0	0	0
06:30	0	0	0	0
06:45	0	0	0	0
07:00	0	0	0	0
Hour Total	0	0	0	0
07:15	0	0	0	0
07:30	0	0	0	0
07:45	0	0	0	0
08:00	7	0	0	7
Hour Total	7	0	0	7
08:15	5	1	0	6
08:30	4	1	0	5
08:45	1	0	0	1
09:00	0	1	0	1
Hour Total	10	3	0	13

Site ID: ADT 1 File: D0818001.PRN
Unit #: Job #: C/M/H
Location: IAAI Driveway & Portsmouth Blvd (I/O) GPS: 36.75217,-76.52136
Direction: SOUTH
Lane: 1

TIME	1	2	3	Total
09:15	0	2	0	2
09:30	0	0	0	0
09:45	0	1	0	1
10:00	0	1	0	1
Hour Total	0	4	0	4
10:15	0	3	0	3
10:30	0	0	1	1
10:45	0	1	0	1
11:00	1	0	0	1
Hour Total	1	4	1	6
11:15	0	2	0	2
11:30	2	0	0	2
11:45	1	0	0	1
12:00	1	1	0	2
Hour Total	4	3	0	7
12:15	2	3	0	5
12:30	1	1	0	2
12:45	1	1	0	2
13:00	3	2	0	5
Hour Total	7	7	0	14
13:15	2	3	0	5
13:30	1	0	0	1
13:45	1	0	0	1
14:00	1	0	0	1
Hour Total	5	3	0	8
14:15	3	0	1	4
14:30	1	3	0	4
14:45	0	3	1	4
15:00	0	2	0	2
Hour Total	4	8	2	14
15:15	2	2	0	4
15:30	2	1	0	3
15:45	0	1	0	1
16:00	0	1	0	1
Hour Total	4	5	0	9
16:15	1	2	0	3
16:30	1	0	0	1
16:45	1	1	0	2
17:00	2	2	1	5
Hour Total	5	5	1	11
17:15	0	1	0	1
17:30	0	2	0	2
17:45	0	1	1	2
18:00	0	0	1	1
Hour Total	0	4	2	6

Site ID: ADT 1 File: D0818001.PRN
Unit #: Job #: C/M/H
Location: IAAI Driveway & Portsmouth Blvd (I/O) GPS: 36.75217,-76.52136
Direction: SOUTH
Lane: 1

TIME	1	2	3	Total
18:15	2	1	0	3
18:30	0	0	0	0
18:45	0	1	0	1
19:00	0	0	0	0
Hour Total	2	2	0	4
19:15	0	0	0	0
19:30	0	1	0	1
19:45	0	0	0	0
20:00	0	0	0	0
Hour Total	0	1	0	1
20:15	0	0	0	0
20:30	0	0	0	0
20:45	0	0	0	0
21:00	0	0	0	0
Hour Total	0	0	0	0
21:15	0	0	0	0
21:30	0	0	0	0
21:45	0	0	0	0
22:00	0	0	0	0
Hour Total	0	0	0	0
22:15	0	0	0	0
22:30	0	0	0	0
22:45	0	0	0	0
23:00	0	0	0	0
Hour Total	0	0	0	0
23:15	0	0	0	0
23:30	0	0	0	0
23:45	0	0	0	0
24:00	0	0	0	0
Hour Total	0	0	0	0
DAY TOTAL	52	49	6	107
PERCENTS	48.6%	45.8%	5.6%	100.0%

Passenger Vehicles 100.0% Trucks & Buses 0.0%

AM Times	08:00	09:30	09:45	08:00
AM Peaks	17	5	1	19
PM Times	12:15	14:30	14:00	12:15
PM Peaks	7	10	2	14

Site ID: ADT 1
Unit #:
Location: IAAI Driveway & Portsmouth Blvd (I/O)
Direction: SOUTH
Lane: 1

File: D0818001.PRN
Job #: C/M/H
GPS: 36.75217,-76.52136

TIME	1	2	3	Total
00:15	0	0	0	0
Hour Total	0	0	0	0
DAY TOTAL	0	0	0	0
PERCENTS	0.0%	0.0%	0.0%	0.0%

Passenger Vehicles NaN

Trucks & Buses NaN

AM Times
AM Peaks

PM Times
PM Peaks

GRAND TOTAL	52	6		
	49	107		
PERCENTS	48.6%	45.8%	5.6%	100.0%

Site ID: ADT 1
Unit #:
Location: IAAI Driveway & Portsmouth Blvd (I/O)
Direction: NORTH
Lane: 2

File: D0818001.PRN
Job #: C/M/H
GPS: 36.75217,-76.52136

TIME	1	2	3	Total
00:15	0	0	0	0
00:30	0	0	0	0
00:45	0	0	0	0
01:00	1	0	0	1
Hour Total	1	0	0	1
01:15	0	0	0	0
01:30	0	0	0	0
01:45	0	0	0	0
02:00	0	0	0	0
Hour Total	0	0	0	0
02:15	0	0	0	0
02:30	0	0	0	0
02:45	0	0	0	0
03:00	0	0	0	0
Hour Total	0	0	0	0
03:15	0	0	0	0
03:30	0	0	0	0
03:45	0	0	0	0
04:00	0	0	0	0
Hour Total	0	0	0	0
04:15	0	0	0	0
04:30	0	0	0	0
04:45	1	0	0	1
05:00	0	0	0	0
Hour Total	1	0	0	1
05:15	1	0	0	1
05:30	0	0	0	0
05:45	0	0	0	0
06:00	0	0	0	0
Hour Total	1	0	0	1
06:15	0	0	0	0
06:30	0	0	0	0
06:45	0	0	0	0
07:00	0	0	0	0
Hour Total	0	0	0	0
07:15	0	0	0	0
07:30	0	0	0	0
07:45	0	0	0	0
08:00	2	0	0	2
Hour Total	2	0	0	2
08:15	0	0	0	0
08:30	1	1	0	2
08:45	0	1	0	1
09:00	1	0	0	1
Hour Total	2	2	0	4

Site ID: ADT 1 File: D0818001.PRN
Unit #: Job #: C/M/H
Location: IAAI Driveway & Portsmouth Blvd (I/O) GPS: 36.75217,-76.52136
Direction: NORTH
Lane: 2

TIME	1	2	3	Total
09:15	0	0	0	0
09:30	0	0	0	0
09:45	0	3	0	3
10:00	0	0	0	0
Hour Total	0	3	0	3
10:15	1	1	0	2
10:30	0	1	0	1
10:45	0	2	1	3
11:00	0	0	0	0
Hour Total	1	4	1	6
11:15	0	0	0	0
11:30	0	0	0	0
11:45	3	1	0	4
12:00	1	1	0	2
Hour Total	4	2	0	6
12:15	2	2	0	4
12:30	1	3	0	4
12:45	1	2	0	3
13:00	1	0	0	1
Hour Total	5	7	0	12
13:15	4	1	0	5
13:30	1	2	0	3
13:45	2	2	0	4
14:00	0	0	0	0
Hour Total	7	5	0	12
14:15	1	1	0	2
14:30	2	0	0	2
14:45	1	2	0	3
15:00	2	0	0	2
Hour Total	6	3	0	9
15:15	1	4	1	6
15:30	0	2	0	2
15:45	1	2	0	3
16:00	0	2	0	2
Hour Total	2	10	1	13
16:15	2	1	0	3
16:30	1	2	0	3
16:45	4	0	0	4
17:00	2	0	0	2
Hour Total	9	3	0	12
17:15	6	2	1	9
17:30	0	1	0	1
17:45	0	1	0	1
18:00	0	0	0	0
Hour Total	6	4	1	11

Site ID: ADT 1 File: D0818001.PRN
Unit #: Job #: C/M/H
Location: IAAI Driveway & Portsmouth Blvd (I/O) GPS: 36.75217,-76.52136
Direction: NORTH
Lane: 2

TIME	1	2	3	Total
18:15	0	0	0	0
18:30	1	2	0	3
18:45	0	4	0	4
19:00	0	0	0	0
Hour Total	1	6	0	7
19:15	2	0	0	2
19:30	0	2	0	2
19:45	1	0	0	1
20:00	0	0	0	0
Hour Total	3	2	0	5
20:15	1	0	0	1
20:30	0	0	0	0
20:45	0	0	0	0
21:00	0	0	0	0
Hour Total	1	0	0	1
21:15	0	0	0	0
21:30	0	0	0	0
21:45	0	0	0	0
22:00	0	0	0	0
Hour Total	0	0	0	0
22:15	0	0	0	0
22:30	0	0	0	0
22:45	0	0	0	0
23:00	0	0	0	0
Hour Total	0	0	0	0
23:15	0	0	0	0
23:30	0	0	0	0
23:45	0	0	0	0
24:00	0	0	0	0
Hour Total	0	0	0	0
DAY TOTAL	52	51	3	106
PERCENTS	49.1%	48.1%	2.8%	100.0%

Passenger Vehicles 100.0% Trucks & Buses 0.0%

AM Times	11:15	09:45	10:00	09:45
AM Peaks	4	5	1	6
PM Times	16:30	15:15	14:30	16:30
PM Peaks	13	10	1	18

Site ID: ADT 1 File: D0818001.PRN
Unit #: Job #: C/M/H
Location: IAAI Driveway & Portsmouth Blvd (I/O) GPS: 36.75217,-76.52136
Direction: NORTH
Lane: 2

TIME	1	2	3	Total
00:15	0	0	0	0
Hour Total	0	0	0	0
DAY TOTAL	0	0	0	0
PERCENTS	0.0%	0.0%	0.0%	0.0%

Passenger Vehicles NaN Trucks & Buses NaN

AM Times
AM Peaks

PM Times
PM Peaks

GRAND TOTAL	52	51	3	106
PERCENTS	49.1%	48.1%	2.8%	100.0%

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File Name : Benns Church Blvd & Isle of Wight Ind. Park AM
Site Code :
Start Date : 8/18/2020
Page No : 1

Groups Printed- Cars

	Benns Church Rd Southbound			Benns Church Rd Northbound			IOW Industrial Park Blvd Eastbound				
Start Time	Right	U-Turn	App. Total	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Int. Total
07:00 AM	3	0	3	1	0	1	0	0	0	0	4
07:15 AM	3	0	3	3	0	3	2	1	0	3	9
07:30 AM	2	3	5	0	0	0	0	1	0	1	6
07:45 AM	3	1	4	2	0	2	0	1	0	1	7
Total	11	4	15	6	0	6	2	3	0	5	26
08:00 AM	2	0	2	3	0	3	0	1	0	1	6
08:15 AM	1	2	3	1	0	1	1	0	0	1	5
08:30 AM	5	0	5	2	0	2	0	2	0	2	9
08:45 AM	2	0	2	3	0	3	0	0	0	0	5
Total	10	2	12	9	0	9	1	3	0	4	25
Grand Total	21	6	27	15	0	15	3	6	0	9	51
Apprch %	77.8	22.2		100	0		33.3	66.7	0		
Total %	41.2	11.8	52.9	29.4	0	29.4	5.9	11.8	0	17.6	

	Benns Church Rd Southbound		Benns Church Rd Northbound		IOW Industrial Park Blvd Eastbound			
Start Time	Right	App. Total	Left	App. Total	Right	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1								
Peak Hour for Entire Intersection Begins at 07:15 AM								
07:15 AM	**3**	**3**	**3**	**3**	**2**	**1**	**3**	**9**
07:30 AM	2	2	0	0	0	1	1	3
07:45 AM	3	3	2	2	0	1	1	6
08:00 AM	2	2	3	3	0	1	1	6
Total Volume	10	10	8	8	2	4	6	24
% App. Total	100		100		33.3	66.7		
PHF	.833	.833	.667	.667	.250	1.00	.500	.667

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File Name : Benns Church Blvd & Isle of Wight Ind. Park AM
Site Code :
Start Date : 8/18/2020
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Groups Printed- Trucks

	Benns Church Rd Southbound			Benns Church Rd Northbound			IOW Industrial Park Blvd Eastbound				
Start Time	Right	U-Turn	App. Total	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Int. Total
07:00 AM	1	1	2	0	0	0	0	0	0	0	2
07:15 AM	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	3	0	3	3
Total	1	1	2	0	0	0	0	3	0	3	5
08:00 AM	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	1	1	0	0	0	0	0	0	0	1
08:30 AM	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	1	1	0	0	0	0	0	0	0	1
Total	0	2	2	0	0	0	0	0	0	0	2
Grand Total	1	3	4	0	0	0	0	3	0	3	7
Apprch %	25	75		0	0		0	100	0		
Total %	14.3	42.9	57.1	0	0	0	0	42.9	0	42.9	

	Benns Church Rd Southbound		Benns Church Rd Northbound		IOW Industrial Park Blvd Eastbound			
Start Time	Right	App. Total	Left	App. Total	Right	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1								
Peak Hour for Entire Intersection Begins at 07:00 AM								
07:00 AM	**1**	**1**	0	0	0	0	0	1
07:15 AM	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	**3**	**3**	**3**
Total Volume	1	1	0	0	0	3	3	4
% App. Total	100		0		0	100		
PHF	.250	.250	.000	.000	.000	.250	.250	.333

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File Name : Benns Church Blvd & Isle of Wight Ind. Park AM
Site Code :
Start Date : 8/18/2020
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Groups Printed- Pedestrians

	Benns Church Rd Southbound			Benns Church Rd Northbound			IOW Industrial Park Blvd Eastbound				
Start Time	Right	U-Turn	App. Total	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0	0		
Total %											

	Benns Church Rd Southbound		Benns Church Rd Northbound		IOW Industrial Park Blvd Eastbound			
Start Time	Right	App. Total	Left	App. Total	Right	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1								
Peak Hour for Entire Intersection Begins at 07:00 AM								
07:00 AM	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0
% App. Total	0		0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000

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File Name : Benns Church Blvd & Isle of Wight Ind. Park AM
Site Code :
Start Date : 8/18/2020
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Groups Printed- Cars - Trucks

	Benns Church Rd Southbound			Benns Church Rd Northbound			IOW Industrial Park Blvd Eastbound				
Start Time	Right	U-Turn	App. Total	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Int. Total
07:00 AM	4	1	5	1	0	1	0	0	0	0	6
07:15 AM	3	0	3	3	0	3	2	1	0	3	9
07:30 AM	2	3	5	0	0	0	0	1	0	1	6
07:45 AM	3	1	4	2	0	2	0	4	0	4	10
Total	12	5	17	6	0	6	2	6	0	8	31
08:00 AM	2	0	2	3	0	3	0	1	0	1	6
08:15 AM	1	3	4	1	0	1	1	0	0	1	6
08:30 AM	5	0	5	2	0	2	0	2	0	2	9
08:45 AM	2	1	3	3	0	3	0	0	0	0	6
Total	10	4	14	9	0	9	1	3	0	4	27
Grand Total	22	9	31	15	0	15	3	9	0	12	58
Apprch %	71	29		100	0		25	75	0		
Total %	37.9	15.5	53.4	25.9	0	25.9	5.2	15.5	0	20.7	
Cars	21	6	27	15	0	15	3	6	0	9	51
% Cars	95.5	66.7	87.1	100	0	100	100	66.7	0	75	87.9
Trucks	1	3	4	0	0	0	0	3	0	3	7
% Trucks	4.5	33.3	12.9	0	0	0	0	33.3	0	25	12.1

	Benns Church Rd Southbound		Benns Church Rd Northbound		IOW Industrial Park Blvd Eastbound			
Start Time	Right	App. Total	Left	App. Total	Right	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1								
Peak Hour for Entire Intersection Begins at 07:15 AM								
07:15 AM	**3**	**3**	**3**	**3**	**2**	1	3	**9**
07:30 AM	2	2	0	0	0	1	1	3
07:45 AM	3	3	2	2	0	**4**	**4**	9
08:00 AM	2	2	3	3	0	1	1	6
Total Volume	10	10	8	8	2	7	9	27
% App. Total	100		100		22.2	77.8		
PHF	.833	.833	.667	.667	.250	.438	.563	.750

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Groups Printed- Cars

	Benns Church Rd Southbound			Benns Church Rd Northbound			IOW Industrial Park Blvd Eastbound				
Start Time	Right	U-Turn	App. Total	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Int. Total
04:00 PM	1	2	3	1	0	1	2	4	0	6	10
04:15 PM	2	1	3	1	1	2	1	3	0	4	9
04:30 PM	2	0	2	0	0	0	2	1	0	3	5
04:45 PM	2	2	4	0	0	0	0	2	0	2	6
Total	7	5	12	2	1	3	5	10	0	15	30
05:00 PM	0	0	0	0	1	1	3	5	0	8	9
05:15 PM	1	1	2	0	0	0	1	1	0	2	4
05:30 PM	3	5	8	0	0	0	2	2	0	4	12
05:45 PM	0	1	1	0	0	0	0	1	0	1	2
Total	4	7	11	0	1	1	6	9	0	15	27
Grand Total	11	12	23	2	2	4	11	19	0	30	57
Apprch %	47.8	52.2		50	50		36.7	63.3	0		
Total %	19.3	21.1	40.4	3.5	3.5	7	19.3	33.3	0	52.6	

	Benns Church Rd Southbound		Benns Church Rd Northbound		IOW Industrial Park Blvd Eastbound			
Start Time	Right	App. Total	Left	App. Total	Right	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1								
Peak Hour for Entire Intersection Begins at 04:00 PM								
04:00 PM	1	1	**1**	**1**	**2**	**4**	**6**	**8**
04:15 PM	**2**	**2**	1	1	1	3	4	7
04:30 PM	2	2	0	0	2	1	3	5
04:45 PM	2	2	0	0	0	2	2	4
Total Volume	7	7	2	2	5	10	15	24
% App. Total	100		100		33.3	66.7		
PHF	.875	.875	.500	.500	.625	.625	.625	.750

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Groups Printed- Trucks

	Benns Church Rd Southbound			Benns Church Rd Northbound			IOW Industrial Park Blvd Eastbound				
Start Time	Right	U-Turn	App. Total	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Int. Total
04:00 PM	0	1	1	0	1	1	0	0	0	0	2
04:15 PM	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	1	1	2	0	0	0	0	0	0	0	2
04:45 PM	0	0	0	0	0	0	0	0	0	0	0
Total	1	2	3	0	1	1	0	0	0	0	4
05:00 PM	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	1	0	1	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	1	0	1	1
Grand Total	1	2	3	0	1	1	0	1	0	1	5
Apprch %	33.3	66.7		0	100		0	100	0		
Total %	20	40	60	0	20	20	0	20	0	20	

	Benns Church Rd Southbound		Benns Church Rd Northbound		IOW Industrial Park Blvd Eastbound			
Start Time	Right	App. Total	Left	App. Total	Right	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1								
Peak Hour for Entire Intersection Begins at 04:00 PM								
04:00 PM	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0
04:30 PM	**1**	**1**	0	0	0	0	0	**1**
04:45 PM	0	0	0	0	0	0	0	0
Total Volume	1	1	0	0	0	0	0	1
% App. Total	100		0		0	0		
PHF	.250	.250	.000	.000	.000	.000	.000	.250

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Groups Printed- Pedestrians

	Benns Church Rd Southbound			Benns Church Rd Northbound			IOW Industrial Park Blvd Eastbound				
Start Time	Right	U-Turn	App. Total	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0	0		
Total %											

	Benns Church Rd Southbound		Benns Church Rd Northbound		IOW Industrial Park Blvd Eastbound			
Start Time	Right	App. Total	Left	App. Total	Right	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1								
Peak Hour for Entire Intersection Begins at 04:00 PM								
04:00 PM	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0
% App. Total	0		0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000

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Groups Printed- Cars - Trucks

	Benns Church Rd Southbound			Benns Church Rd Northbound			IOW Industrial Park Blvd Eastbound				
Start Time	Right	U-Turn	App. Total	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Int. Total
04:00 PM	1	3	4	1	1	2	2	4	0	6	12
04:15 PM	2	1	3	1	1	2	1	3	0	4	9
04:30 PM	3	1	4	0	0	0	2	1	0	3	7
04:45 PM	2	2	4	0	0	0	0	2	0	2	6
Total	8	7	15	2	2	4	5	10	0	15	34
05:00 PM	0	0	0	0	1	1	3	5	0	8	9
05:15 PM	1	1	2	0	0	0	1	1	0	2	4
05:30 PM	3	5	8	0	0	0	2	3	0	5	13
05:45 PM	0	1	1	0	0	0	0	1	0	1	2
Total	4	7	11	0	1	1	6	10	0	16	28
Grand Total	12	14	26	2	3	5	11	20	0	31	62
Apprch %	46.2	53.8		40	60		35.5	64.5	0		
Total %	19.4	22.6	41.9	3.2	4.8	8.1	17.7	32.3	0	50	
Cars	11	12	23	2	2	4	11	19	0	30	57
% Cars	91.7	85.7	88.5	100	66.7	80	100	95	0	96.8	91.9
Trucks	1	2	3	0	1	1	0	1	0	1	5
% Trucks	8.3	14.3	11.5	0	33.3	20	0	5	0	3.2	8.1

	Benns Church Rd Southbound		Benns Church Rd Northbound		IOW Industrial Park Blvd Eastbound			
Start Time	Right	App. Total	Left	App. Total	Right	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1								
Peak Hour for Entire Intersection Begins at 04:00 PM								
04:00 PM	1	1	**1**	**1**	**2**	**4**	**6**	**8**
04:15 PM	2	2	1	1	1	3	4	7
04:30 PM	**3**	**3**	0	0	2	1	3	6
04:45 PM	2	2	0	0	0	2	2	4
Total Volume	8	8	2	2	5	10	15	25
% App. Total	100		100		33.3	66.7		
PHF	.667	.667	.500	.500	.625	.625	.625	.781

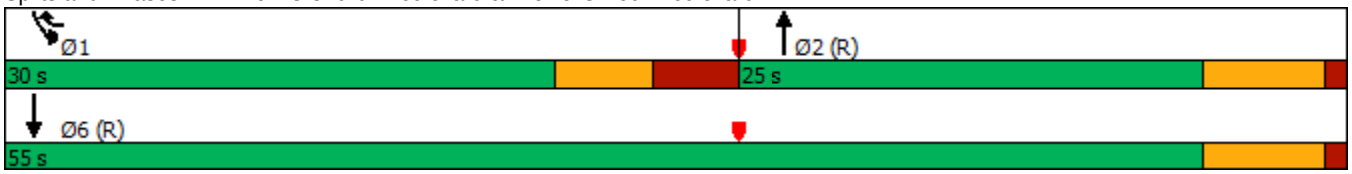
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	578	179	0	691	198
Future Volume (vph)	0	578	179	0	691	198
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	425	
Storage Lanes	0	2		0	1	
Taper Length (ft)	100				100	
Satd. Flow (prot)	0	2608	3343	0	3273	3343
Flt Permitted					0.950	
Satd. Flow (perm)	0	2608	3343	0	3273	3343
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		916				
Link Speed (mph)	45		45			45
Link Distance (ft)	1056		981			678
Travel Time (s)	16.0		14.9			10.3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	9%	8%	2%	7%	8%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	642	199	0	768	220
Turn Type		Over	NA		Prot	NA
Protected Phases		1	2		1	6
Permitted Phases						
Detector Phase		1	2		1	6
Switch Phase						
Minimum Initial (s)		15.0	10.0		15.0	15.0
Minimum Split (s)		22.5	23.0		22.5	23.0
Total Split (s)		30.0	25.0		30.0	55.0
Total Split (%)		54.5%	45.5%		54.5%	100.0%
Yellow Time (s)		4.0	5.0		4.0	5.0
All-Red Time (s)		3.5	1.0		3.5	1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		7.5	6.0		7.5	6.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode		None	C-Min		None	C-Min
Act Effct Green (s)		21.0	20.5		21.0	55.0
Actuated g/C Ratio		0.38	0.37		0.38	1.00
v/c Ratio		0.41	0.16		0.61	0.07
Control Delay		4.5	15.0		15.4	0.0
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		4.5	15.0		15.4	0.0
LOS		A	B		B	A
Approach Delay	4.5		15.0			12.0
Approach LOS	A		B			B
Queue Length 50th (ft)		0	21		101	0
Queue Length 95th (ft)		226	97		117	0
Internal Link Dist (ft)	976		901			598
Turn Bay Length (ft)					425	
Base Capacity (vph)		1643	1313		1406	3343

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.39	0.15		0.55	0.07

Intersection Summary

Area Type: Other
Cycle Length: 55
Actuated Cycle Length: 55
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 9.7 Intersection LOS: A
Intersection Capacity Utilization 39.8% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: Benns Church Boulevard & Brewer's Neck Boulevard



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	681	2	290	572	2	1	1	414	7	1	6
Future Volume (vph)	8	681	2	290	572	2	1	1	414	7	1	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	525		250	0		250	0		0
Storage Lanes	1		0	1		1	0		1	0		1
Taper Length (ft)	100			100			100			100		
Satd. Flow (prot)	1770	3374	0	1687	3343	1077	0	1836	2656	0	1615	1599
Flt Permitted	0.950			0.950				0.469			0.944	
Satd. Flow (perm)	1770	3374	0	1687	3343	1077	0	882	2656	0	1594	1599
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						223			445			298
Link Speed (mph)		55			55			35			25	
Link Distance (ft)		1056			1813			1225			436	
Travel Time (s)		13.1			22.5			23.9			11.9	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	7%	2%	7%	8%	50%	1%	1%	7%	14%	1%	1%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	734	0	312	615	2	0	2	445	0	9	6
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	pt+ov	Perm	NA	Perm
Protected Phases	5	2		1	6			3	3 1		4	
Permitted Phases						6	3			4		4
Detector Phase	5	2		1	6	6	3	3	3 1	4	4	4
Switch Phase												
Minimum Initial (s)	10.0	25.0		10.0	25.0	25.0	5.0	5.0		10.0	10.0	10.0
Minimum Split (s)	19.5	31.5		23.0	32.5	32.5	23.0	23.0		23.0	23.0	23.0
Total Split (s)	20.0	33.0		31.0	44.0	44.0	23.0	23.0		23.0	23.0	23.0
Total Split (%)	18.2%	30.0%		28.2%	40.0%	40.0%	20.9%	20.9%		20.9%	20.9%	20.9%
Yellow Time (s)	5.0	5.5		5.0	5.5	5.5	3.5	3.5		4.0	4.0	4.0
All-Red Time (s)	4.5	1.0		4.0	1.0	1.0	4.5	4.5		4.0	4.0	4.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	9.5	6.5		9.0	6.5	6.5		8.0			8.0	8.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lead		Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Min		None	C-Min	C-Min	None	None		None	None	None
Act Effct Green (s)	10.0	44.9		28.0	78.0	78.0		6.4	40.2		10.0	10.0
Actuated g/C Ratio	0.09	0.41		0.25	0.71	0.71		0.06	0.37		0.09	0.09
v/c Ratio	0.06	0.53		0.73	0.26	0.00		0.04	0.36		0.06	0.01
Control Delay	50.8	21.7		47.5	9.0	0.0		51.0	1.6		46.9	0.0
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	50.8	21.7		47.5	9.0	0.0		51.0	1.6		46.9	0.0
LOS	D	C		D	A	A		D	A		D	A
Approach Delay		22.1			21.9			1.8			28.1	
Approach LOS		C			C			A			C	
Queue Length 50th (ft)	7	170		201	39	0		1	0		6	0
Queue Length 95th (ft)	m10	#349		283	196	0		m5	13		22	0
Internal Link Dist (ft)		976			1733			1145			356	
Turn Bay Length (ft)	150			525		250			250			
Base Capacity (vph)	168	1378		433	2370	828		120	1317		217	475

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0		0	0	0		0	0		0	0
Spillback Cap Reductn	0	0		0	0	0		0	0		0	0
Storage Cap Reductn	0	0		0	0	0		0	0		0	0
Reduced v/c Ratio	0.05	0.53		0.72	0.26	0.00		0.02	0.34		0.04	0.01

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 15 (14%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 17.8 Intersection LOS: B
Intersection Capacity Utilization 64.8% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Benns Grant Boulevard/Queen Annes Court & Brewer's Neck Boulevard



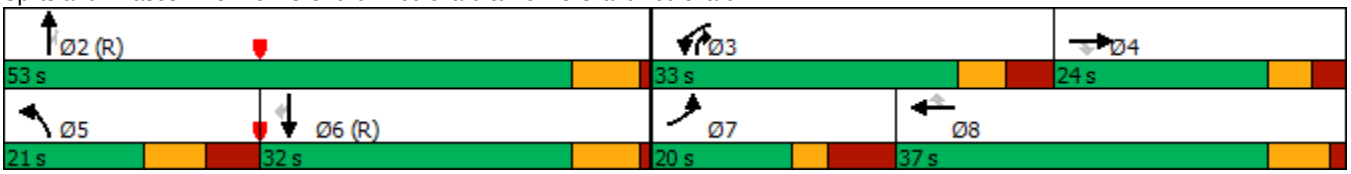
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	23	11	275	18	1	7	172	392	0	193	5
Future Volume (vph)	7	23	11	275	18	1	7	172	392	0	193	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		200	250		325	225		425	0		175
Storage Lanes	1		1	1		1	1		1	0		1
Taper Length (ft)	100			100			100			100		
Satd. Flow (prot)	1770	1810	1583	3183	1583	1583	1770	3406	1509	0	3539	1583
Flt Permitted	0.950			0.950			0.950					
Satd. Flow (perm)	1770	1810	1583	3183	1583	1583	1770	3406	1509	0	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			293			213			422			293
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		1344			1225			1996			981	
Travel Time (s)		26.2			23.9			30.2			14.9	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	5%	2%	10%	20%	2%	2%	6%	7%	2%	2%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	8	25	12	296	19	1	8	185	422	0	208	5
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov		NA	Perm
Protected Phases	7	4		3	8		5	2	3		6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	3		6	6
Switch Phase												
Minimum Initial (s)	10.0	15.0	15.0	10.0	15.0	15.0	10.0	15.0	10.0		15.0	15.0
Minimum Split (s)	18.5	22.5	22.5	18.0	23.0	23.0	19.5	23.5	18.0		23.5	23.5
Total Split (s)	20.0	24.0	24.0	33.0	37.0	37.0	21.0	53.0	33.0		32.0	32.0
Total Split (%)	18.2%	21.8%	21.8%	30.0%	33.6%	33.6%	19.1%	48.2%	30.0%		29.1%	29.1%
Yellow Time (s)	3.0	3.5	3.5	4.0	5.0	5.0	5.0	5.5	4.0		5.5	5.5
All-Red Time (s)	5.5	3.0	3.0	4.0	1.5	1.5	4.5	1.0	4.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	8.5	6.5	6.5	8.0	6.5	6.5	9.5	6.5	8.0		6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead		Lead		Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	None		C-Min	C-Min
Act Effct Green (s)	10.0	15.0	15.0	16.6	27.3	27.3	10.0	66.0	92.3		62.1	62.1
Actuated g/C Ratio	0.09	0.14	0.14	0.15	0.25	0.25	0.09	0.60	0.84		0.56	0.56
v/c Ratio	0.05	0.10	0.03	0.62	0.05	0.00	0.05	0.09	0.32		0.10	0.00
Control Delay	46.6	42.9	0.1	19.8	8.6	0.0	46.6	12.2	1.1		16.1	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	46.6	42.9	0.1	19.8	8.6	0.0	46.6	12.2	1.1		16.1	0.0
LOS	D	D	A	B	A	A	D	B	A		B	A
Approach Delay		32.1			19.0			5.0			15.7	
Approach LOS		C			B			A			B	
Queue Length 50th (ft)	5	16	0	115	13	0	5	33	0		37	0
Queue Length 95th (ft)	21	42	0	m24	m12	m0	21	57	24		87	0
Internal Link Dist (ft)		1264			1145			1916			901	
Turn Bay Length (ft)	200		200	250		325	225		425			175
Base Capacity (vph)	185	287	498	723	494	641	185	2042	1371		1996	1020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0		0	0
Reduced v/c Ratio	0.04	0.09	0.02	0.41	0.04	0.00	0.04	0.09	0.31		0.10	0.00

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 88 (80%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 11.7 Intersection LOS: B
Intersection Capacity Utilization 52.1% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Benns Church Boulevard & Benns Grant Boulevard



Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Lane Configurations								
Traffic Vol, veh/h	7	2	1	3	560	4	465	10
Future Vol, veh/h	7	2	1	3	560	4	465	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	-	None
Storage Length	0	-	-	225	-	150	-	150
Veh in Median Storage, #	0	-	-	-	0	-	0	-
Grade, %	0	-	-	-	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92
Heavy Vehicles, %	43	2	2	2	6	2	2	10
Mvmt Flow	8	2	1	3	609	4	505	11

Major/Minor	Minor2		Major1			Major2		
Conflicting Flow All	826	253	505	516	0	609	-	0
Stage 1	513	-	-	-	-	-	-	-
Stage 2	313	-	-	-	-	-	-	-
Critical Hdwy	7.66	6.94	6.44	4.14	-	6.44	-	-
Critical Hdwy Stg 1	6.66	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.66	-	-	-	-	-	-	-
Follow-up Hdwy	3.93	3.32	2.52	2.22	-	2.52	-	-
Pot Cap-1 Maneuver	240	746	687	1046	-	590	-	-
Stage 1	463	-	-	-	-	-	-	-
Stage 2	606	-	-	-	-	-	-	-
Platoon blocked, %					-		-	-
Mov Cap-1 Maneuver	237	746	924	924	-	590	-	-
Mov Cap-2 Maneuver	237	-	-	-	-	-	-	-
Stage 1	461	-	-	-	-	-	-	-
Stage 2	602	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.4	0.1	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBU	SBT	SBR
Capacity (veh/h)	924	-	279	590	-	-
HCM Lane V/C Ratio	0.005	-	0.035	0.007	-	-
HCM Control Delay (s)	8.9	-	18.4	11.1	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0	-	-

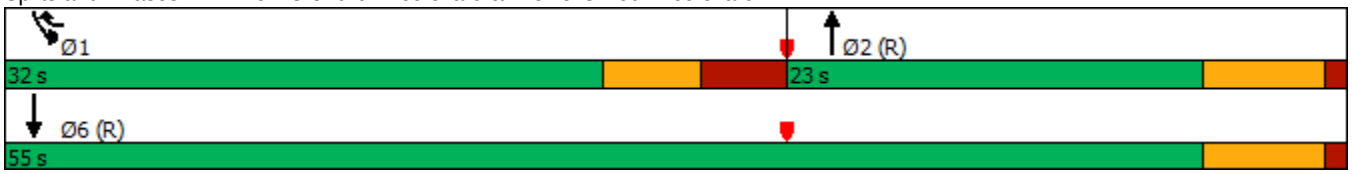
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	1017	288	0	786	390
Future Volume (vph)	0	1017	288	0	786	390
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	425	
Storage Lanes	0	2		0	1	
Taper Length (ft)	100				100	
Satd. Flow (prot)	0	2760	3471	0	3433	3505
Flt Permitted					0.950	
Satd. Flow (perm)	0	2760	3471	0	3433	3505
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		521				
Link Speed (mph)	45		45			45
Link Distance (ft)	1056		981			678
Travel Time (s)	16.0		14.9			10.3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	3%	4%	2%	2%	3%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1094	310	0	845	419
Turn Type		Over	NA		Prot	NA
Protected Phases		1	2		1	6
Permitted Phases						
Detector Phase		1	2		1	6
Switch Phase						
Minimum Initial (s)		15.0	10.0		15.0	15.0
Minimum Split (s)		22.5	23.0		22.5	23.0
Total Split (s)		32.0	23.0		32.0	55.0
Total Split (%)		58.2%	41.8%		58.2%	100.0%
Yellow Time (s)		4.0	5.0		4.0	5.0
All-Red Time (s)		3.5	1.0		3.5	1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		7.5	6.0		7.5	6.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode		None	C-Min		None	C-Min
Act Effct Green (s)		24.4	17.1		24.4	55.0
Actuated g/C Ratio		0.44	0.31		0.44	1.00
v/c Ratio		0.72	0.29		0.56	0.12
Control Delay		16.1	23.7		12.3	0.1
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		16.1	23.7		12.3	0.1
LOS		B	C		B	A
Approach Delay	16.1		23.7			8.2
Approach LOS	B		C			A
Queue Length 50th (ft)		107	7		94	0
Queue Length 95th (ft)		511	146		124	0
Internal Link Dist (ft)	976		901			598
Turn Bay Length (ft)					425	
Base Capacity (vph)		1598	1202		1651	3505

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.68	0.26		0.51	0.12

Intersection Summary

Area Type: Other
Cycle Length: 55
Actuated Cycle Length: 55
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 13.3 Intersection LOS: B
Intersection Capacity Utilization 55.2% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 1: Benns Church Boulevard & Brewer's Neck Boulevard



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	771	2	485	1013	1	1	1	291	3	3	4
Future Volume (vph)	13	771	2	485	1013	1	1	1	291	3	3	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	525		250	0		250	0		0
Storage Lanes	1		0	1		1	0		1	0		1
Taper Length (ft)	100			100			100			100		
Satd. Flow (prot)	1770	3539	0	1736	3505	1429	0	1818	2760	0	1634	1583
Flt Permitted	0.950			0.950				0.484				
Satd. Flow (perm)	1770	3539	0	1736	3505	1429	0	902	2760	0	1674	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						223			313			298
Link Speed (mph)		55			55			35			25	
Link Distance (ft)		1056			1813			1225			436	
Travel Time (s)		13.1			22.5			23.9			11.9	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	2%	4%	3%	13%	2%	2%	3%	25%	2%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	831	0	522	1089	1	0	2	313	0	6	4
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	pt+ov	Perm	NA	Perm
Protected Phases	5	2		1	6			3	3 1		4	
Permitted Phases						6	3			4		4
Detector Phase	5	2		1	6	6	3	3	3 1	4	4	4
Switch Phase												
Minimum Initial (s)	10.0	25.0		10.0	25.0	25.0	5.0	5.0		10.0	10.0	10.0
Minimum Split (s)	19.5	31.5		23.0	32.5	32.5	23.0	23.0		23.0	23.0	23.0
Total Split (s)	19.0	32.0		32.0	45.0	45.0	23.0	23.0		23.0	23.0	23.0
Total Split (%)	17.3%	29.1%		29.1%	40.9%	40.9%	20.9%	20.9%		20.9%	20.9%	20.9%
Yellow Time (s)	5.0	5.5		5.0	5.5	5.5	3.5	3.5		4.0	4.0	4.0
All-Red Time (s)	4.5	1.0		4.0	1.0	1.0	4.5	4.5		4.0	4.0	4.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	9.5	6.5		9.0	6.5	6.5		8.0			8.0	8.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lead		Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Min		None	C-Min	C-Min	None	None		None	None	None
Act Effct Green (s)	10.0	28.8		47.9	77.9	77.9		6.2	61.5		10.0	10.0
Actuated g/C Ratio	0.09	0.26		0.44	0.71	0.71		0.06	0.56		0.09	0.09
v/c Ratio	0.09	0.90		0.69	0.44	0.00		0.04	0.19		0.04	0.01
Control Delay	52.0	41.3		33.2	10.8	0.0		57.0	1.5		46.3	0.0
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	52.0	41.3		33.2	10.8	0.0		57.0	1.5		46.3	0.0
LOS	D	D		C	B	A		E	A		D	A
Approach Delay		41.5			18.0			1.8			27.8	
Approach LOS		D			B			A			C	
Queue Length 50th (ft)	11	179		291	82	0		1	0		4	0
Queue Length 95th (ft)	m13	#453		#566	386	0		m7	16		17	0
Internal Link Dist (ft)		976			1733			1145			356	
Turn Bay Length (ft)	150			525		250			250			
Base Capacity (vph)	160	927		755	2482	1077		123	1712		228	473

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0		0	0	0		0	0		0	0
Spillback Cap Reductn	0	0		0	0	0		0	0		0	0
Storage Cap Reductn	0	0		0	0	0		0	0		0	0
Reduced v/c Ratio	0.09	0.90		0.69	0.44	0.00		0.02	0.18		0.03	0.01

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 25 (23%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 125
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 23.4 Intersection LOS: C
Intersection Capacity Utilization 75.2% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Benns Grant Boulevard/Queen Annes Court & Brewer's Neck Boulevard



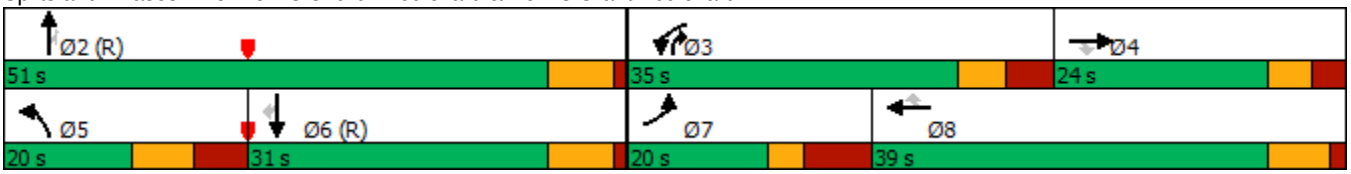
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	30	11	454	36	1	1	271	262	0	373	17
Future Volume (vph)	17	30	11	454	36	1	1	271	262	0	373	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		200	250		325	225		425	0		175
Storage Lanes	1		1	1		1	1		1	0		1
Taper Length (ft)	100			100			100			100		
Satd. Flow (prot)	1770	1284	1583	3433	1462	1583	1770	3539	1583	0	3505	1583
Flt Permitted	0.950			0.950			0.950					
Satd. Flow (perm)	1770	1284	1583	3433	1462	1583	1770	3539	1583	0	3505	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			293			213			282			293
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		1344			1225			1996			981	
Travel Time (s)		26.2			23.9			30.2			14.9	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	48%	2%	2%	30%	2%	2%	2%	2%	2%	3%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	32	12	488	39	1	1	291	282	0	401	18
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov		NA	Perm
Protected Phases	7	4		3	8		5	2	3		6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	3		6	6
Switch Phase												
Minimum Initial (s)	10.0	15.0	15.0	10.0	15.0	15.0	10.0	15.0	10.0		15.0	15.0
Minimum Split (s)	18.5	22.5	22.5	18.0	23.0	23.0	19.5	23.5	18.0		23.5	23.5
Total Split (s)	20.0	24.0	24.0	35.0	39.0	39.0	20.0	51.0	35.0		31.0	31.0
Total Split (%)	18.2%	21.8%	21.8%	31.8%	35.5%	35.5%	18.2%	46.4%	31.8%		28.2%	28.2%
Yellow Time (s)	3.0	3.5	3.5	4.0	5.0	5.0	5.0	5.5	4.0		5.5	5.5
All-Red Time (s)	5.5	3.0	3.0	4.0	1.5	1.5	4.5	1.0	4.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	8.5	6.5	6.5	8.0	6.5	6.5	9.5	6.5	8.0		6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead		Lead		Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	None		C-Min	C-Min
Act Effct Green (s)	10.0	15.0	15.0	21.9	28.9	28.9	10.0	60.7	92.3		56.8	56.8
Actuated g/C Ratio	0.09	0.14	0.14	0.20	0.26	0.26	0.09	0.55	0.84		0.52	0.52
v/c Ratio	0.11	0.18	0.03	0.71	0.10	0.00	0.01	0.15	0.21		0.22	0.02
Control Delay	47.8	45.1	0.1	21.0	11.5	0.0	46.0	15.3	0.9		20.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	47.8	45.1	0.1	21.0	11.5	0.0	46.0	15.3	0.9		20.0	0.1
LOS	D	D	A	C	B	A	D	B	A		B	A
Approach Delay		37.2			20.3			8.2			19.1	
Approach LOS		D			C			A			B	
Queue Length 50th (ft)	12	20	0	136	9	0	1	60	0		85	0
Queue Length 95th (ft)	35	51	0	28	m22	m0	6	97	20		177	0
Internal Link Dist (ft)		1264			1145			1916			901	
Turn Bay Length (ft)	200		200	250		325	225		425			175
Base Capacity (vph)	185	204	498	850	464	648	168	1951	1390		1808	958

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0		0	0
Reduced v/c Ratio	0.10	0.16	0.02	0.57	0.08	0.00	0.01	0.15	0.20		0.22	0.02

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 88 (80%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 16.3 Intersection LOS: B
Intersection Capacity Utilization 54.2% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Benns Church Boulevard & Benns Grant Boulevard



Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Lane Configurations								
Traffic Vol, veh/h	10	5	2	2	517	7	823	8
Future Vol, veh/h	10	5	2	2	517	7	823	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	-	None
Storage Length	0	-	-	225	-	150	-	150
Veh in Median Storage, #	0	-	-	-	0	-	0	-
Grade, %	0	-	-	-	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	50	2	2	29	2	13
Mvmt Flow	11	5	2	2	562	8	895	9

Major/Minor	Minor2		Major1			Major2		
Conflicting Flow All	1200	448	895	904	0	562	-	0
Stage 1	911	-	-	-	-	-	-	-
Stage 2	289	-	-	-	-	-	-	-
Critical Hdwy	6.84	6.94	7.4	4.14	-	6.98	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	3	2.22	-	2.79	-	-
Pot Cap-1 Maneuver	178	558	270	748	-	535	-	-
Stage 1	352	-	-	-	-	-	-	-
Stage 2	735	-	-	-	-	-	-	-
Platoon blocked, %					-		-	-
Mov Cap-1 Maneuver	174	558	395	395	-	535	-	-
Mov Cap-2 Maneuver	174	-	-	-	-	-	-	-
Stage 1	348	-	-	-	-	-	-	-
Stage 2	724	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	22.2	0.1	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBU	SBT	SBR
Capacity (veh/h)	395	-	226	535	-	-
HCM Lane V/C Ratio	0.011	-	0.072	0.014	-	-
HCM Control Delay (s)	14.2	-	22.2	11.8	-	-
HCM Lane LOS	B	-	C	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	0	-	-



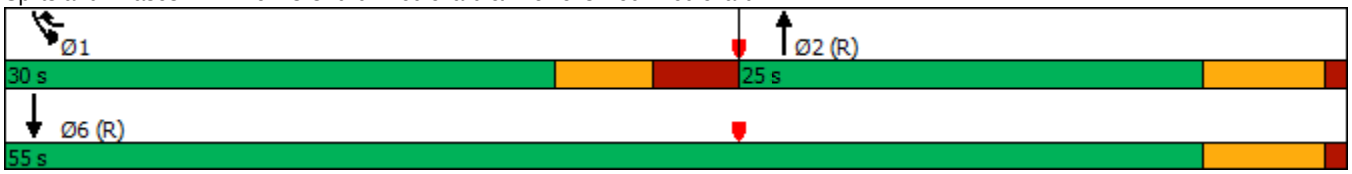
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	584	181	0	698	200
Future Volume (vph)	0	584	181	0	698	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	425	
Storage Lanes	0	2		0	1	
Taper Length (ft)	100				100	
Satd. Flow (prot)	0	2608	3343	0	3273	3343
Flt Permitted					0.950	
Satd. Flow (perm)	0	2608	3343	0	3273	3343
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		909				
Link Speed (mph)	45		45			45
Link Distance (ft)	1056		981			678
Travel Time (s)	16.0		14.9			10.3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	9%	8%	2%	7%	8%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	649	201	0	776	222
Turn Type		Over	NA		Prot	NA
Protected Phases		1	2		1	6
Permitted Phases						
Detector Phase		1	2		1	6
Switch Phase						
Minimum Initial (s)		15.0	10.0		15.0	15.0
Minimum Split (s)		22.5	23.0		22.5	23.0
Total Split (s)		30.0	25.0		30.0	55.0
Total Split (%)		54.5%	45.5%		54.5%	100.0%
Yellow Time (s)		4.0	5.0		4.0	5.0
All-Red Time (s)		3.5	1.0		3.5	1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		7.5	6.0		7.5	6.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode		None	C-Min		None	C-Min
Act Effct Green (s)		21.3	20.2		21.3	55.0
Actuated g/C Ratio		0.39	0.37		0.39	1.00
v/c Ratio		0.41	0.16		0.61	0.07
Control Delay		4.6	15.5		15.2	0.0
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		4.6	15.5		15.2	0.0
LOS		A	B		B	A
Approach Delay	4.6		15.5			11.8
Approach LOS	A		B			B
Queue Length 50th (ft)		0	21		102	0
Queue Length 95th (ft)		231	6		113	0
Internal Link Dist (ft)	976		901			598
Turn Bay Length (ft)					425	
Base Capacity (vph)		1646	1311		1419	3343

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.39	0.15		0.55	0.07

Intersection Summary

Area Type: Other
Cycle Length: 55
Actuated Cycle Length: 55
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 9.7 Intersection LOS: A
Intersection Capacity Utilization 40.0% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: Benns Church Boulevard & Brewer's Neck Boulevard



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	688	2	293	578	2	1	1	418	7	1	6
Future Volume (vph)	8	688	2	293	578	2	1	1	418	7	1	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	525		250	0		250	0		0
Storage Lanes	1		0	1		1	0		1	0		1
Taper Length (ft)	100			100			100			100		
Satd. Flow (prot)	1770	3374	0	1687	3343	1077	0	1836	2656	0	1615	1599
Flt Permitted	0.950			0.950				0.469			0.944	
Satd. Flow (perm)	1770	3374	0	1687	3343	1077	0	882	2656	0	1594	1599
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						223			449			298
Link Speed (mph)		55			55			35			25	
Link Distance (ft)		1056			1813			1225			436	
Travel Time (s)		13.1			22.5			23.9			11.9	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	7%	2%	7%	8%	50%	1%	1%	7%	14%	1%	1%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	742	0	315	622	2	0	2	449	0	9	6
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	pt+ov	Perm	NA	Perm
Protected Phases	5	2		1	6			3	3 1		4	
Permitted Phases						6	3			4		4
Detector Phase	5	2		1	6	6	3	3	3 1	4	4	4
Switch Phase												
Minimum Initial (s)	10.0	25.0		10.0	25.0	25.0	5.0	5.0		10.0	10.0	10.0
Minimum Split (s)	19.5	31.5		23.0	32.5	32.5	23.0	23.0		23.0	23.0	23.0
Total Split (s)	20.0	33.0		31.0	44.0	44.0	23.0	23.0		23.0	23.0	23.0
Total Split (%)	18.2%	30.0%		28.2%	40.0%	40.0%	20.9%	20.9%		20.9%	20.9%	20.9%
Yellow Time (s)	5.0	5.5		5.0	5.5	5.5	3.5	3.5		4.0	4.0	4.0
All-Red Time (s)	4.5	1.0		4.0	1.0	1.0	4.5	4.5		4.0	4.0	4.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	9.5	6.5		9.0	6.5	6.5		8.0			8.0	8.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lead		Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Min		None	C-Min	C-Min	None	None		None	None	None
Act Effct Green (s)	10.0	44.6		28.3	78.0	78.0		6.4	40.5		10.0	10.0
Actuated g/C Ratio	0.09	0.41		0.26	0.71	0.71		0.06	0.37		0.09	0.09
v/c Ratio	0.06	0.54		0.73	0.26	0.00		0.04	0.36		0.06	0.01
Control Delay	51.5	22.1		47.2	9.1	0.0		51.0	1.6		46.9	0.0
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	51.5	22.1		47.2	9.1	0.0		51.0	1.6		46.9	0.0
LOS	D	C		D	A	A		D	A		D	A
Approach Delay		22.4			21.8			1.8			28.1	
Approach LOS		C			C			A			C	
Queue Length 50th (ft)	7	172		202	40	0		1	0		6	0
Queue Length 95th (ft)	m10	#355		286	199	0		m5	13		22	0
Internal Link Dist (ft)		976			1733			1145			356	
Turn Bay Length (ft)	150			525		250			250			
Base Capacity (vph)	168	1369		436	2370	828		120	1324		217	475

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0		0	0	0		0	0		0	0
Spillback Cap Reductn	0	0		0	0	0		0	0		0	0
Storage Cap Reductn	0	0		0	0	0		0	0		0	0
Reduced v/c Ratio	0.05	0.54		0.72	0.26	0.00		0.02	0.34		0.04	0.01

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 15 (14%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 17.9 Intersection LOS: B
Intersection Capacity Utilization 65.0% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Benns Grant Boulevard/Queen Annes Court & Brewer's Neck Boulevard



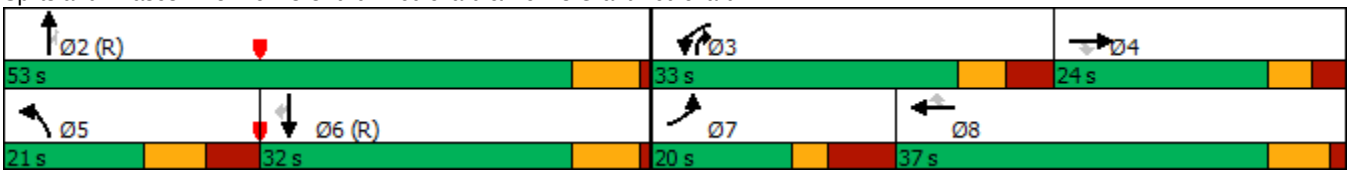
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	23	11	278	18	1	7	174	396	0	195	5
Future Volume (vph)	7	23	11	278	18	1	7	174	396	0	195	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		200	250		325	225		425	0		175
Storage Lanes	1		1	1		1	1		1	0		1
Taper Length (ft)	100			100			100			100		
Satd. Flow (prot)	1770	1810	1583	3183	1583	1583	1770	3406	1509	0	3539	1583
Flt Permitted	0.950			0.950			0.950					
Satd. Flow (perm)	1770	1810	1583	3183	1583	1583	1770	3406	1509	0	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			293			213			426			293
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		1344			1225			1996			981	
Travel Time (s)		26.2			23.9			30.2			14.9	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	5%	2%	10%	20%	2%	2%	6%	7%	2%	2%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	8	25	12	299	19	1	8	187	426	0	210	5
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov		NA	Perm
Protected Phases	7	4		3	8		5	2	3		6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	3		6	6
Switch Phase												
Minimum Initial (s)	10.0	15.0	15.0	10.0	15.0	15.0	10.0	15.0	10.0		15.0	15.0
Minimum Split (s)	18.5	22.5	22.5	18.0	23.0	23.0	19.5	23.5	18.0		23.5	23.5
Total Split (s)	20.0	24.0	24.0	33.0	37.0	37.0	21.0	53.0	33.0		32.0	32.0
Total Split (%)	18.2%	21.8%	21.8%	30.0%	33.6%	33.6%	19.1%	48.2%	30.0%		29.1%	29.1%
Yellow Time (s)	3.0	3.5	3.5	4.0	5.0	5.0	5.0	5.5	4.0		5.5	5.5
All-Red Time (s)	5.5	3.0	3.0	4.0	1.5	1.5	4.5	1.0	4.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	8.5	6.5	6.5	8.0	6.5	6.5	9.5	6.5	8.0		6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead		Lead		Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	None		C-Min	C-Min
Act Effct Green (s)	10.0	15.0	15.0	16.7	27.4	27.4	10.0	65.9	92.3		62.0	62.0
Actuated g/C Ratio	0.09	0.14	0.14	0.15	0.25	0.25	0.09	0.60	0.84		0.56	0.56
v/c Ratio	0.05	0.10	0.03	0.62	0.05	0.00	0.05	0.09	0.32		0.11	0.00
Control Delay	46.6	42.9	0.1	19.9	8.4	0.0	46.6	12.2	1.1		16.1	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	46.6	42.9	0.1	19.9	8.4	0.0	46.6	12.2	1.1		16.1	0.0
LOS	D	D	A	B	A	A	D	B	A		B	A
Approach Delay		32.1			19.1			5.0			15.8	
Approach LOS		C			B			A			B	
Queue Length 50th (ft)	5	16	0	117	13	0	5	33	0		37	0
Queue Length 95th (ft)	21	42	0	m25	m12	m0	21	58	24		88	0
Internal Link Dist (ft)		1264			1145			1916			901	
Turn Bay Length (ft)	200		200	250		325	225		425			175
Base Capacity (vph)	185	287	498	723	495	641	185	2039	1371		1994	1019

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0		0	0
Reduced v/c Ratio	0.04	0.09	0.02	0.41	0.04	0.00	0.04	0.09	0.31		0.11	0.00

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 88 (80%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 11.7 Intersection LOS: B
Intersection Capacity Utilization 52.1% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Benns Church Boulevard & Benns Grant Boulevard



Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Lane Configurations								
Traffic Vol, veh/h	7	2	1	3	566	4	470	10
Future Vol, veh/h	7	2	1	3	566	4	470	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	-	None
Storage Length	0	-	-	225	-	150	-	150
Veh in Median Storage, #	0	-	-	-	0	-	0	-
Grade, %	0	-	-	-	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92
Heavy Vehicles, %	43	2	2	2	6	2	2	10
Mvmt Flow	8	2	1	3	615	4	511	11

Major/Minor	Minor2		Major1			Major2		
Conflicting Flow All	835	256	511	522	0	615	-	0
Stage 1	519	-	-	-	-	-	-	-
Stage 2	316	-	-	-	-	-	-	-
Critical Hdwy	7.66	6.94	6.44	4.14	-	6.44	-	-
Critical Hdwy Stg 1	6.66	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.66	-	-	-	-	-	-	-
Follow-up Hdwy	3.93	3.32	2.52	2.22	-	2.52	-	-
Pot Cap-1 Maneuver	236	743	681	1041	-	585	-	-
Stage 1	459	-	-	-	-	-	-	-
Stage 2	604	-	-	-	-	-	-	-
Platoon blocked, %					-		-	-
Mov Cap-1 Maneuver	233	743	919	919	-	585	-	-
Mov Cap-2 Maneuver	233	-	-	-	-	-	-	-
Stage 1	457	-	-	-	-	-	-	-
Stage 2	600	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.6	0.1	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBU	SBT	SBR
Capacity (veh/h)	919	-	275	585	-	-
HCM Lane V/C Ratio	0.005	-	0.036	0.007	-	-
HCM Control Delay (s)	8.9	-	18.6	11.2	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0	-	-

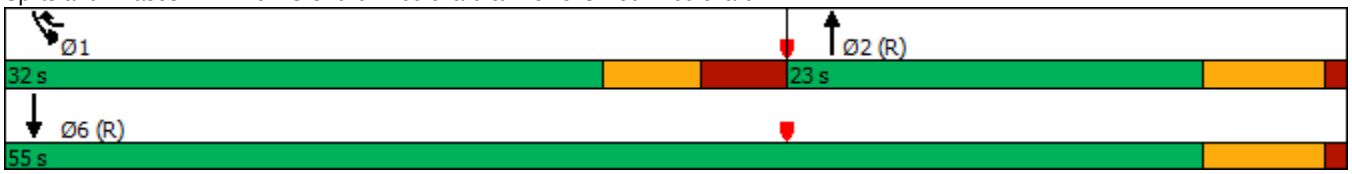
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	1027	291	0	794	394
Future Volume (vph)	0	1027	291	0	794	394
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	425	
Storage Lanes	0	2		0	1	
Taper Length (ft)	100				100	
Satd. Flow (prot)	0	2760	3471	0	3433	3505
Flt Permitted					0.950	
Satd. Flow (perm)	0	2760	3471	0	3433	3505
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		515				
Link Speed (mph)	45		45			45
Link Distance (ft)	1056		981			678
Travel Time (s)	16.0		14.9			10.3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	3%	4%	2%	2%	3%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1104	313	0	854	424
Turn Type		Over	NA		Prot	NA
Protected Phases		1	2		1	6
Permitted Phases						
Detector Phase		1	2		1	6
Switch Phase						
Minimum Initial (s)		15.0	10.0		15.0	15.0
Minimum Split (s)		22.5	23.0		22.5	23.0
Total Split (s)		32.0	23.0		32.0	55.0
Total Split (%)		58.2%	41.8%		58.2%	100.0%
Yellow Time (s)		4.0	5.0		4.0	5.0
All-Red Time (s)		3.5	1.0		3.5	1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		7.5	6.0		7.5	6.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode		None	C-Min		None	C-Min
Act Effct Green (s)		24.6	16.9		24.6	55.0
Actuated g/C Ratio		0.45	0.31		0.45	1.00
v/c Ratio		0.73	0.29		0.56	0.12
Control Delay		16.2	23.8		12.2	0.1
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		16.2	23.8		12.2	0.1
LOS		B	C		B	A
Approach Delay	16.2		23.8			8.2
Approach LOS	B		C			A
Queue Length 50th (ft)		109	7		95	0
Queue Length 95th (ft)		519	147		126	0
Internal Link Dist (ft)	976		901			598
Turn Bay Length (ft)					425	
Base Capacity (vph)		1595	1191		1652	3505

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.69	0.26		0.52	0.12

Intersection Summary

Area Type: Other
Cycle Length: 55
Actuated Cycle Length: 55
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 13.3 Intersection LOS: B
Intersection Capacity Utilization 55.5% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 1: Benns Church Boulevard & Brewer's Neck Boulevard



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	779	2	490	1023	8	1	1	294	3	3	4
Future Volume (vph)	13	779	2	490	1023	8	1	1	294	3	3	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	525		250	0		250	0		0
Storage Lanes	1		0	1		1	0		1	0		1
Taper Length (ft)	100			100			100			100		
Satd. Flow (prot)	1770	3539	0	1736	3505	1429	0	1818	2760	0	1634	1583
Flt Permitted	0.950			0.950				0.484				
Satd. Flow (perm)	1770	3539	0	1736	3505	1429	0	902	2760	0	1674	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						223			316			298
Link Speed (mph)		55			55			35			25	
Link Distance (ft)		1056			1813			1225			436	
Travel Time (s)		13.1			22.5			23.9			11.9	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	2%	4%	3%	13%	2%	2%	3%	25%	2%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	840	0	527	1100	9	0	2	316	0	6	4
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	pt+ov	Perm	NA	Perm
Protected Phases	5	2		1	6			3	3 1		4	
Permitted Phases						6	3			4		4
Detector Phase	5	2		1	6	6	3	3	3 1	4	4	4
Switch Phase												
Minimum Initial (s)	10.0	25.0		10.0	25.0	25.0	5.0	5.0		10.0	10.0	10.0
Minimum Split (s)	19.5	31.5		23.0	32.5	32.5	23.0	23.0		23.0	23.0	23.0
Total Split (s)	19.0	32.0		32.0	45.0	45.0	23.0	23.0		23.0	23.0	23.0
Total Split (%)	17.3%	29.1%		29.1%	40.9%	40.9%	20.9%	20.9%		20.9%	20.9%	20.9%
Yellow Time (s)	5.0	5.5		5.0	5.5	5.5	3.5	3.5		4.0	4.0	4.0
All-Red Time (s)	4.5	1.0		4.0	1.0	1.0	4.5	4.5		4.0	4.0	4.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	9.5	6.5		9.0	6.5	6.5		8.0			8.0	8.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lead		Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Min		None	C-Min	C-Min	None	None		None	None	None
Act Effct Green (s)	10.0	28.6		48.1	77.9	77.9		6.2	61.7		10.0	10.0
Actuated g/C Ratio	0.09	0.26		0.44	0.71	0.71		0.06	0.56		0.09	0.09
v/c Ratio	0.09	0.91		0.69	0.44	0.01		0.04	0.19		0.04	0.01
Control Delay	52.1	43.5		33.1	10.8	0.0		54.0	1.4		46.3	0.0
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	52.1	43.5		33.1	10.8	0.0		54.0	1.4		46.3	0.0
LOS	D	D		C	B	A		D	A		D	A
Approach Delay		43.6			17.9			1.8			27.8	
Approach LOS		D			B			A			C	
Queue Length 50th (ft)	11	182		291	83	0		1	0		4	0
Queue Length 95th (ft)	m14	#460		#575	391	0		m7	13		17	0
Internal Link Dist (ft)		976			1733			1145			356	
Turn Bay Length (ft)	150			525		250			250			
Base Capacity (vph)	160	920		759	2482	1077		123	1719		228	473

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0		0	0	0		0	0		0	0
Spillback Cap Reductn	0	0		0	0	0		0	0		0	0
Storage Cap Reductn	0	0		0	0	0		0	0		0	0
Reduced v/c Ratio	0.09	0.91		0.69	0.44	0.01		0.02	0.18		0.03	0.01

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 25 (23%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 135
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 23.9 Intersection LOS: C
Intersection Capacity Utilization 75.7% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Benns Grant Boulevard/Queen Annes Court & Brewer's Neck Boulevard



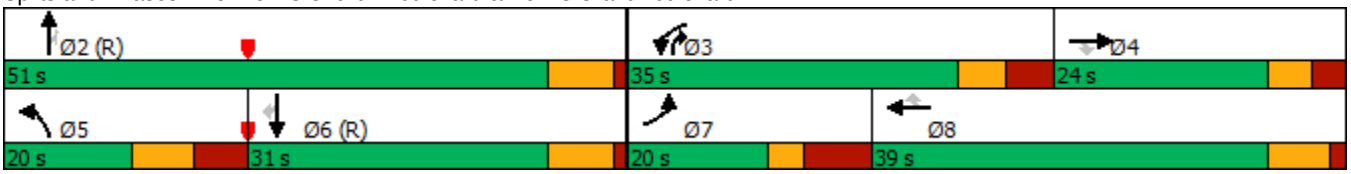
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	23	11	459	36	1	1	274	265	0	377	17
Future Volume (vph)	17	23	11	459	36	1	1	274	265	0	377	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		200	250		325	225		425	0		175
Storage Lanes	1		1	1		1	1		1	0		1
Taper Length (ft)	100			100			100			100		
Satd. Flow (prot)	1770	1284	1583	3433	1462	1583	1770	3539	1583	0	3505	1583
Flt Permitted	0.950			0.950			0.950					
Satd. Flow (perm)	1770	1284	1583	3433	1462	1583	1770	3539	1583	0	3505	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			293			213			285			293
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		1344			1225			1996			981	
Travel Time (s)		26.2			23.9			30.2			14.9	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	48%	2%	2%	30%	2%	2%	2%	2%	2%	3%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	25	12	494	39	1	1	295	285	0	405	18
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov		NA	Perm
Protected Phases	7	4		3	8		5	2	3		6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	3		6	6
Switch Phase												
Minimum Initial (s)	10.0	15.0	15.0	10.0	15.0	15.0	10.0	15.0	10.0		15.0	15.0
Minimum Split (s)	18.5	22.5	22.5	18.0	23.0	23.0	19.5	23.5	18.0		23.5	23.5
Total Split (s)	20.0	24.0	24.0	35.0	39.0	39.0	20.0	51.0	35.0		31.0	31.0
Total Split (%)	18.2%	21.8%	21.8%	31.8%	35.5%	35.5%	18.2%	46.4%	31.8%		28.2%	28.2%
Yellow Time (s)	3.0	3.5	3.5	4.0	5.0	5.0	5.0	5.5	4.0		5.5	5.5
All-Red Time (s)	5.5	3.0	3.0	4.0	1.5	1.5	4.5	1.0	4.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	8.5	6.5	6.5	8.0	6.5	6.5	9.5	6.5	8.0		6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead		Lead		Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	None		C-Min	C-Min
Act Effct Green (s)	10.0	15.0	15.0	22.1	29.1	29.1	10.0	60.5	92.3		56.6	56.6
Actuated g/C Ratio	0.09	0.14	0.14	0.20	0.26	0.26	0.09	0.55	0.84		0.51	0.51
v/c Ratio	0.11	0.14	0.03	0.72	0.10	0.00	0.01	0.15	0.21		0.22	0.02
Control Delay	47.8	44.2	0.1	21.2	11.6	0.0	46.0	15.3	0.9		20.0	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	47.8	44.2	0.1	21.2	11.6	0.0	46.0	15.3	0.9		20.0	0.1
LOS	D	D	A	C	B	A	D	B	A		C	A
Approach Delay		35.8			20.5			8.3			19.2	
Approach LOS		D			C			A			B	
Queue Length 50th (ft)	12	16	0	138	9	0	1	61	0		86	0
Queue Length 95th (ft)	35	42	0	28	m22	m0	6	98	20		178	0
Internal Link Dist (ft)		1264			1145			1916			901	
Turn Bay Length (ft)	200		200	250		325	225		425			175
Base Capacity (vph)	185	204	498	848	464	648	168	1947	1389		1804	957

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0		0	0
Reduced v/c Ratio	0.10	0.12	0.02	0.58	0.08	0.00	0.01	0.15	0.21		0.22	0.02

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 88 (80%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 16.2 Intersection LOS: B
Intersection Capacity Utilization 54.3% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Benns Church Boulevard & Benns Grant Boulevard



Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Lane Configurations								
Traffic Vol, veh/h	10	5	2	2	523	7	832	8
Future Vol, veh/h	10	5	2	2	523	7	832	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	-	None
Storage Length	0	-	-	225	-	150	-	150
Veh in Median Storage, #	0	-	-	-	0	-	0	-
Grade, %	0	-	-	-	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	50	2	2	29	2	13
Mvmt Flow	11	5	2	2	568	8	904	9

Major/Minor	Minor2		Major1			Major2		
Conflicting Flow All	1212	452	904	913	0	568	-	0
Stage 1	920	-	-	-	-	-	-	-
Stage 2	292	-	-	-	-	-	-	-
Critical Hdwy	6.84	6.94	7.4	4.14	-	6.98	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	3	2.22	-	2.79	-	-
Pot Cap-1 Maneuver	175	555	266	742	-	530	-	-
Stage 1	349	-	-	-	-	-	-	-
Stage 2	732	-	-	-	-	-	-	-
Platoon blocked, %					-		-	-
Mov Cap-1 Maneuver	171	555	389	389	-	530	-	-
Mov Cap-2 Maneuver	171	-	-	-	-	-	-	-
Stage 1	346	-	-	-	-	-	-	-
Stage 2	721	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	22.5	0.1	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBU	SBT	SBR
Capacity (veh/h)	389	-	222	530	-	-
HCM Lane V/C Ratio	0.011	-	0.073	0.014	-	-
HCM Control Delay (s)	14.3	-	22.5	11.9	-	-
HCM Lane LOS	B	-	C	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	0	-	-

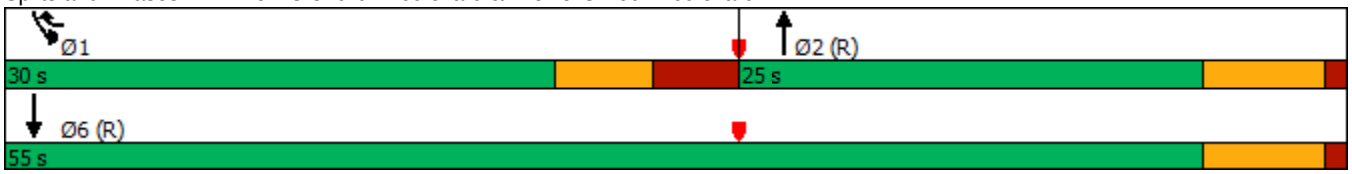
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	584	181	0	698	200
Future Volume (vph)	0	584	181	0	698	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	425	
Storage Lanes	0	2		0	1	
Taper Length (ft)	100				100	
Satd. Flow (prot)	0	2656	3374	0	3303	3343
Flt Permitted					0.950	
Satd. Flow (perm)	0	2656	3374	0	3303	3343
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		909				
Link Speed (mph)	45		45			45
Link Distance (ft)	1056		981			678
Travel Time (s)	16.0		14.9			10.3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	7%	7%	2%	6%	8%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	649	201	0	776	222
Turn Type		Over	NA		Prot	NA
Protected Phases		1	2		1	6
Permitted Phases						
Detector Phase		1	2		1	6
Switch Phase						
Minimum Initial (s)		15.0	10.0		15.0	15.0
Minimum Split (s)		22.5	23.0		22.5	23.0
Total Split (s)		30.0	25.0		30.0	55.0
Total Split (%)		54.5%	45.5%		54.5%	100.0%
Yellow Time (s)		4.0	5.0		4.0	5.0
All-Red Time (s)		3.5	1.0		3.5	1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		7.5	6.0		7.5	6.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode		None	C-Min		None	C-Min
Act Effct Green (s)		21.2	20.3		21.2	55.0
Actuated g/C Ratio		0.39	0.37		0.39	1.00
v/c Ratio		0.41	0.16		0.61	0.07
Control Delay		4.5	16.6		15.2	0.0
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		4.5	16.6		15.2	0.0
LOS		A	B		B	A
Approach Delay	4.5		16.6			11.8
Approach LOS	A		B			B
Queue Length 50th (ft)		0	21		102	0
Queue Length 95th (ft)		229	105		113	0
Internal Link Dist (ft)	976		901			598
Turn Bay Length (ft)					425	
Base Capacity (vph)		1664	1326		1429	3343

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.39	0.15		0.54	0.07

Intersection Summary

Area Type: Other
Cycle Length: 55
Actuated Cycle Length: 55
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 9.8 Intersection LOS: A
Intersection Capacity Utilization 40.0% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: Benns Church Boulevard & Brewer's Neck Boulevard



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	688	2	303	578	2	1	1	419	7	1	6
Future Volume (vph)	8	688	2	303	578	2	1	1	419	7	1	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	525		250	0		250	0		0
Storage Lanes	1		0	1		1	0		1	0		1
Taper Length (ft)	100			100			100			100		
Satd. Flow (prot)	1770	3471	0	1687	3374	1583	0	1818	2682	0	1783	1583
Flt Permitted	0.950			0.950				0.469			0.944	
Satd. Flow (perm)	1770	3471	0	1687	3374	1583	0	874	2682	0	1758	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						223			451			298
Link Speed (mph)		55			55			35			25	
Link Distance (ft)		1056			1813			1225			436	
Travel Time (s)		13.1			22.5			23.9			11.9	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	4%	2%	7%	7%	2%	2%	2%	6%	2%	2%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	742	0	326	622	2	0	2	451	0	9	6
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	pt+ov	Perm	NA	Perm
Protected Phases	5	2		1	6			3	3 1		4	
Permitted Phases						6	3			4		4
Detector Phase	5	2		1	6	6	3	3	3 1	4	4	4
Switch Phase												
Minimum Initial (s)	10.0	25.0		10.0	25.0	25.0	5.0	5.0		10.0	10.0	10.0
Minimum Split (s)	19.5	31.5		23.0	32.5	32.5	23.0	23.0		23.0	23.0	23.0
Total Split (s)	20.0	33.0		31.0	44.0	44.0	23.0	23.0		23.0	23.0	23.0
Total Split (%)	18.2%	30.0%		28.2%	40.0%	40.0%	20.9%	20.9%		20.9%	20.9%	20.9%
Yellow Time (s)	5.0	5.5		5.0	5.5	5.5	3.5	3.5		4.0	4.0	4.0
All-Red Time (s)	4.5	1.0		4.0	1.0	1.0	4.5	4.5		4.0	4.0	4.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	9.5	6.5		9.0	6.5	6.5		8.0			8.0	8.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lead		Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Min		None	C-Min	C-Min	None	None		None	None	None
Act Effct Green (s)	10.0	43.4		29.5	78.0	78.0		6.4	41.7		10.0	10.0
Actuated g/C Ratio	0.09	0.39		0.27	0.71	0.71		0.06	0.38		0.09	0.09
v/c Ratio	0.06	0.54		0.72	0.26	0.00		0.04	0.35		0.06	0.01
Control Delay	50.5	22.4		45.8	9.0	0.0		51.5	1.5		46.8	0.0
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	50.5	22.4		45.8	9.0	0.0		51.5	1.5		46.8	0.0
LOS	D	C		D	A	A		D	A		D	A
Approach Delay		22.7			21.6			1.7			28.1	
Approach LOS		C			C			A			C	
Queue Length 50th (ft)	7	173		208	40	0		1	0		6	0
Queue Length 95th (ft)	m10	#345		297	199	0		m5	13		22	0
Internal Link Dist (ft)		976			1733			1145			356	
Turn Bay Length (ft)	150			525		250			250			
Base Capacity (vph)	168	1368		453	2392	1187		119	1357		239	473

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0		0	0	0		0	0		0	0
Spillback Cap Reductn	0	0		0	0	0		0	0		0	0
Storage Cap Reductn	0	0		0	0	0		0	0		0	0
Reduced v/c Ratio	0.05	0.54		0.72	0.26	0.00		0.02	0.33		0.04	0.01

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 15 (14%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 17.9 Intersection LOS: B
Intersection Capacity Utilization 65.5% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Benns Grant Boulevard/Queen Annes Court & Brewer's Neck Boulevard



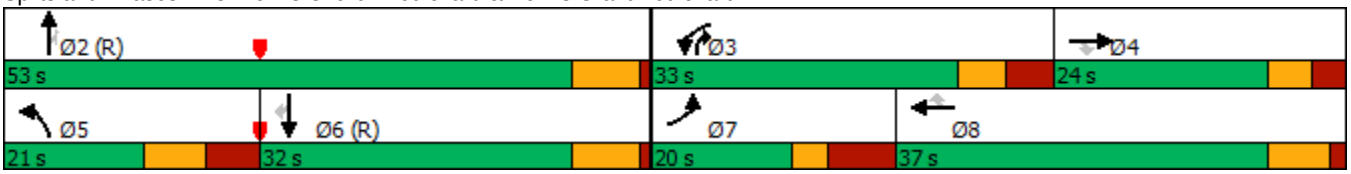
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	23	11	288	18	1	7	174	397	0	195	5
Future Volume (vph)	7	23	11	288	18	1	7	174	397	0	195	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		200	250		325	225		425	0		175
Storage Lanes	1		1	1		1	1		1	0		1
Taper Length (ft)	100			100			100			100		
Satd. Flow (prot)	1770	1810	1583	3183	1583	1583	1770	3406	1509	0	3539	1583
Flt Permitted	0.950			0.950			0.950					
Satd. Flow (perm)	1770	1810	1583	3183	1583	1583	1770	3406	1509	0	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			293			213			427			293
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		1344			1225			1996			981	
Travel Time (s)		26.2			23.9			30.2			14.9	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	5%	2%	10%	20%	2%	2%	6%	7%	2%	2%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	8	25	12	310	19	1	8	187	427	0	210	5
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov		NA	Perm
Protected Phases	7	4		3	8		5	2	3		6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	3		6	6
Switch Phase												
Minimum Initial (s)	10.0	15.0	15.0	10.0	15.0	15.0	10.0	15.0	10.0		15.0	15.0
Minimum Split (s)	18.5	22.5	22.5	18.0	23.0	23.0	19.5	23.5	18.0		23.5	23.5
Total Split (s)	20.0	24.0	24.0	33.0	37.0	37.0	21.0	53.0	33.0		32.0	32.0
Total Split (%)	18.2%	21.8%	21.8%	30.0%	33.6%	33.6%	19.1%	48.2%	30.0%		29.1%	29.1%
Yellow Time (s)	3.0	3.5	3.5	4.0	5.0	5.0	5.0	5.5	4.0		5.5	5.5
All-Red Time (s)	5.5	3.0	3.0	4.0	1.5	1.5	4.5	1.0	4.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	8.5	6.5	6.5	8.0	6.5	6.5	9.5	6.5	8.0		6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead		Lead		Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	None		C-Min	C-Min
Act Effct Green (s)	10.0	15.0	15.0	17.2	27.9	27.9	10.0	65.4	92.3		61.5	61.5
Actuated g/C Ratio	0.09	0.14	0.14	0.16	0.25	0.25	0.09	0.59	0.84		0.56	0.56
v/c Ratio	0.05	0.10	0.03	0.62	0.05	0.00	0.05	0.09	0.32		0.11	0.00
Control Delay	46.6	42.9	0.1	20.1	8.3	0.0	46.6	12.4	1.1		16.4	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	46.6	42.9	0.1	20.1	8.3	0.0	46.6	12.4	1.1		16.4	0.0
LOS	D	D	A	C	A	A	D	B	A		B	A
Approach Delay		32.1			19.4			5.1			16.0	
Approach LOS		C			B			A			B	
Queue Length 50th (ft)	5	16	0	120	13	0	5	34	0		38	0
Queue Length 95th (ft)	21	42	0	28	m11	m0	21	58	24		88	0
Internal Link Dist (ft)		1264			1145			1916			901	
Turn Bay Length (ft)	200		200	250		325	225		425			175
Base Capacity (vph)	185	287	498	723	498	643	185	2024	1369		1977	1013

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0		0	0
Reduced v/c Ratio	0.04	0.09	0.02	0.43	0.04	0.00	0.04	0.09	0.31		0.11	0.00

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 88 (80%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 11.9 Intersection LOS: B
Intersection Capacity Utilization 52.1% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Benns Church Boulevard & Benns Grant Boulevard



Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Lane Configurations								
Traffic Vol, veh/h	8	3	1	6	566	4	470	20
Future Vol, veh/h	8	3	1	6	566	4	470	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	-	None
Storage Length	0	-	-	225	-	150	-	150
Veh in Median Storage, #	0	-	-	-	0	-	0	-
Grade, %	0	-	-	-	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92
Heavy Vehicles, %	13	34	2	16	2	2	2	5
Mvmt Flow	9	3	1	7	615	4	511	22

Major/Minor	Minor2		Major1			Major2		
Conflicting Flow All	843	256	511	533	0	615	-	0
Stage 1	519	-	-	-	-	-	-	-
Stage 2	324	-	-	-	-	-	-	-
Critical Hdwy	7.06	7.58	6.44	4.42	-	6.44	-	-
Critical Hdwy Stg 1	6.06	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.06	-	-	-	-	-	-	-
Follow-up Hdwy	3.63	3.64	2.52	2.36	-	2.52	-	-
Pot Cap-1 Maneuver	282	655	681	939	-	585	-	-
Stage 1	532	-	-	-	-	-	-	-
Stage 2	674	-	-	-	-	-	-	-
Platoon blocked, %					-		-	-
Mov Cap-1 Maneuver	277	655	890	890	-	585	-	-
Mov Cap-2 Maneuver	277	-	-	-	-	-	-	-
Stage 1	527	-	-	-	-	-	-	-
Stage 2	669	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.4	0.1	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBU	SBT	SBR
Capacity (veh/h)	890	-	329	585	-	-
HCM Lane V/C Ratio	0.009	-	0.036	0.007	-	-
HCM Control Delay (s)	9.1	-	16.4	11.2	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	0	-	-

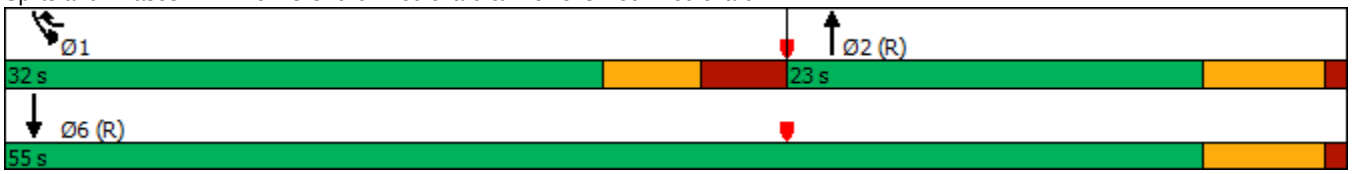
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	1027	291	0	794	394
Future Volume (vph)	0	1027	291	0	794	394
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	425	
Storage Lanes	0	2		0	1	
Taper Length (ft)	100				100	
Satd. Flow (prot)	0	2760	3471	0	3433	3505
Flt Permitted					0.950	
Satd. Flow (perm)	0	2760	3471	0	3433	3505
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		515				
Link Speed (mph)	45		45			45
Link Distance (ft)	1056		981			678
Travel Time (s)	16.0		14.9			10.3
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	3%	4%	2%	2%	3%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1104	313	0	854	424
Turn Type		Over	NA		Prot	NA
Protected Phases		1	2		1	6
Permitted Phases						
Detector Phase		1	2		1	6
Switch Phase						
Minimum Initial (s)		15.0	10.0		15.0	15.0
Minimum Split (s)		22.5	23.0		22.5	23.0
Total Split (s)		32.0	23.0		32.0	55.0
Total Split (%)		58.2%	41.8%		58.2%	100.0%
Yellow Time (s)		4.0	5.0		4.0	5.0
All-Red Time (s)		3.5	1.0		3.5	1.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0
Total Lost Time (s)		7.5	6.0		7.5	6.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Recall Mode		None	C-Min		None	C-Min
Act Effct Green (s)		24.6	16.9		24.6	55.0
Actuated g/C Ratio		0.45	0.31		0.45	1.00
v/c Ratio		0.73	0.29		0.56	0.12
Control Delay		16.2	23.6		12.2	0.1
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		16.2	23.6		12.2	0.1
LOS		B	C		B	A
Approach Delay	16.2		23.6			8.2
Approach LOS	B		C			A
Queue Length 50th (ft)		109	105		95	0
Queue Length 95th (ft)		519	147		126	0
Internal Link Dist (ft)	976		901			598
Turn Bay Length (ft)					425	
Base Capacity (vph)		1595	1191		1652	3505

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.69	0.26		0.52	0.12

Intersection Summary

Area Type: Other
Cycle Length: 55
Actuated Cycle Length: 55
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 13.3 Intersection LOS: B
Intersection Capacity Utilization 55.5% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 1: Benns Church Boulevard & Brewer's Neck Boulevard



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	779	2	498	1023	8	1	1	303	3	3	4
Future Volume (vph)	13	779	2	498	1023	8	1	1	303	3	3	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	525		250	0		250	0		0
Storage Lanes	1		0	1		1	0		1	0		1
Taper Length (ft)	100			100			100			100		
Satd. Flow (prot)	1770	3539	0	1719	3505	1429	0	1818	2733	0	1818	1292
Flt Permitted	0.950			0.950				0.484				
Satd. Flow (perm)	1770	3539	0	1719	3505	1429	0	902	2733	0	1863	1292
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						223			326			298
Link Speed (mph)		55			55			35			25	
Link Distance (ft)		1056			1813			1225			436	
Travel Time (s)		13.1			22.5			23.9			11.9	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	2%	5%	3%	13%	2%	2%	4%	2%	2%	25%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	840	0	535	1100	9	0	2	326	0	6	4
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA	pt+ov	Perm	NA	Perm
Protected Phases	5	2		1	6			3	3 1		4	
Permitted Phases						6	3			4		4
Detector Phase	5	2		1	6	6	3	3	3 1	4	4	4
Switch Phase												
Minimum Initial (s)	10.0	25.0		10.0	25.0	25.0	5.0	5.0		10.0	10.0	10.0
Minimum Split (s)	19.5	31.5		23.0	32.5	32.5	23.0	23.0		23.0	23.0	23.0
Total Split (s)	19.0	32.0		32.0	45.0	45.0	23.0	23.0		23.0	23.0	23.0
Total Split (%)	17.3%	29.1%		29.1%	40.9%	40.9%	20.9%	20.9%		20.9%	20.9%	20.9%
Yellow Time (s)	5.0	5.5		5.0	5.5	5.5	3.5	3.5		4.0	4.0	4.0
All-Red Time (s)	4.5	1.0		4.0	1.0	1.0	4.5	4.5		4.0	4.0	4.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	9.5	6.5		9.0	6.5	6.5		8.0			8.0	8.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lead		Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Min		None	C-Min	C-Min	None	None		None	None	None
Act Effct Green (s)	10.0	27.7		49.0	77.9	77.9		6.2	62.6		10.0	10.0
Actuated g/C Ratio	0.09	0.25		0.45	0.71	0.71		0.06	0.57		0.09	0.09
v/c Ratio	0.09	0.94		0.70	0.44	0.01		0.04	0.19		0.04	0.01
Control Delay	52.0	48.4		32.7	10.8	0.0		55.0	1.4		46.3	0.0
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	52.0	48.4		32.7	10.8	0.0		55.0	1.4		46.3	0.0
LOS	D	D		C	B	A		D	A		D	A
Approach Delay		48.5			17.9			1.8			27.8	
Approach LOS		D			B			A			C	
Queue Length 50th (ft)	11	291		283	83	0		1	0		4	0
Queue Length 95th (ft)	m13	#460		#594	392	0		m6	16		17	0
Internal Link Dist (ft)		976			1733			1145			356	
Turn Bay Length (ft)	150			525		250			250			
Base Capacity (vph)	160	890		766	2482	1077		123	1727		254	433

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0		0	0	0		0	0		0	0
Spillback Cap Reductn	0	0		0	0	0		0	0		0	0
Storage Cap Reductn	0	0		0	0	0		0	0		0	0
Reduced v/c Ratio	0.09	0.94		0.70	0.44	0.01		0.02	0.19		0.02	0.01

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 25 (23%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 135
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 25.3 Intersection LOS: C
Intersection Capacity Utilization 75.7% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Benns Grant Boulevard/Queen Annes Court & Brewer's Neck Boulevard



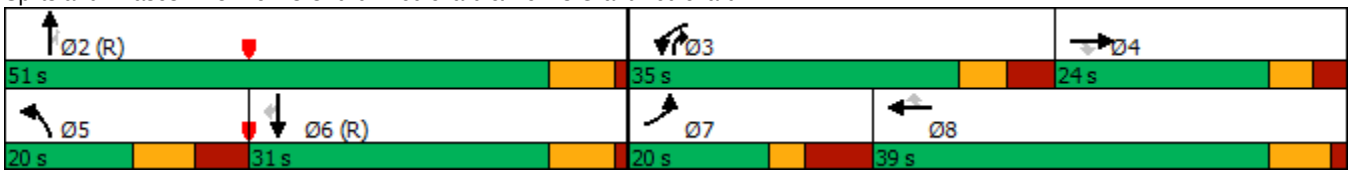
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	30	11	467	36	1	1	274	274	0	377	17
Future Volume (vph)	17	30	11	467	36	1	1	274	274	0	377	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		200	250		325	225		425	0		175
Storage Lanes	1		1	1		1	1		1	0		1
Taper Length (ft)	100			100			100			100		
Satd. Flow (prot)	1770	1284	1583	3400	1462	1583	1770	3539	1583	0	3505	1583
Flt Permitted	0.950			0.950			0.950					
Satd. Flow (perm)	1770	1284	1583	3400	1462	1583	1770	3539	1583	0	3505	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			293			213			295			293
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		1344			1225			1996			981	
Travel Time (s)		26.2			23.9			30.2			14.9	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	48%	2%	3%	30%	2%	2%	2%	2%	2%	3%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	32	12	502	39	1	1	295	295	0	405	18
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov		NA	Perm
Protected Phases	7	4		3	8		5	2	3		6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	3		6	6
Switch Phase												
Minimum Initial (s)	10.0	15.0	15.0	10.0	15.0	15.0	10.0	15.0	10.0		15.0	15.0
Minimum Split (s)	18.5	22.5	22.5	18.0	23.0	23.0	19.5	23.5	18.0		23.5	23.5
Total Split (s)	20.0	24.0	24.0	35.0	39.0	39.0	20.0	51.0	35.0		31.0	31.0
Total Split (%)	18.2%	21.8%	21.8%	31.8%	35.5%	35.5%	18.2%	46.4%	31.8%		28.2%	28.2%
Yellow Time (s)	3.0	3.5	3.5	4.0	5.0	5.0	5.0	5.5	4.0		5.5	5.5
All-Red Time (s)	5.5	3.0	3.0	4.0	1.5	1.5	4.5	1.0	4.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	8.5	6.5	6.5	8.0	6.5	6.5	9.5	6.5	8.0		6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead		Lead		Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes		Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	None		C-Min	C-Min
Act Effct Green (s)	10.0	15.0	15.0	22.3	29.3	29.3	10.0	60.3	92.3		56.4	56.4
Actuated g/C Ratio	0.09	0.14	0.14	0.20	0.27	0.27	0.09	0.55	0.84		0.51	0.51
v/c Ratio	0.11	0.18	0.03	0.73	0.10	0.00	0.01	0.15	0.21		0.23	0.02
Control Delay	47.8	45.1	0.1	21.9	11.4	0.0	46.0	15.5	0.9		20.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Delay	47.8	45.1	0.1	21.9	11.4	0.0	46.0	15.5	0.9		20.2	0.1
LOS	D	D	A	C	B	A	D	B	A		C	A
Approach Delay		37.2			21.1			8.2			19.3	
Approach LOS		D			C			A			B	
Queue Length 50th (ft)	12	20	0	147	9	0	1	61	0		87	0
Queue Length 95th (ft)	35	51	0	29	m22	m0	6	98	21		178	0
Internal Link Dist (ft)		1264			1145			1916			901	
Turn Bay Length (ft)	200		200	250		325	225		425			175
Base Capacity (vph)	185	204	498	840	465	649	168	1938	1388		1795	953

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0		0	0
Reduced v/c Ratio	0.10	0.16	0.02	0.60	0.08	0.00	0.01	0.15	0.21		0.23	0.02

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 88 (80%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 16.5 Intersection LOS: B
Intersection Capacity Utilization 54.6% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Benns Church Boulevard & Benns Grant Boulevard



Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBU	NBL	NBT	SBU	SBT	SBR
Lane Configurations								
Traffic Vol, veh/h	19	8	2	5	523	7	832	16
Future Vol, veh/h	19	8	2	5	523	7	832	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	-	None
Storage Length	0	-	-	225	-	150	-	150
Veh in Median Storage, #	0	-	-	-	0	-	0	-
Grade, %	0	-	-	-	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92
Heavy Vehicles, %	11	24	2	20	2	2	2	37
Mvmt Flow	21	9	2	5	568	8	904	17

Major/Minor	Minor2		Major1			Major2		
Conflicting Flow All	1218	452	904	921	0	568	-	0
Stage 1	920	-	-	-	-	-	-	-
Stage 2	298	-	-	-	-	-	-	-
Critical Hdwy	7.02	7.38	6.44	4.5	-	6.44	-	-
Critical Hdwy Stg 1	6.02	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.02	-	-	-	-	-	-	-
Follow-up Hdwy	3.61	3.54	2.52	2.4	-	2.52	-	-
Pot Cap-1 Maneuver	161	499	383	635	-	627	-	-
Stage 1	328	-	-	-	-	-	-	-
Stage 2	701	-	-	-	-	-	-	-
Platoon blocked, %					-		-	-
Mov Cap-1 Maneuver	156	499	531	531	-	627	-	-
Mov Cap-2 Maneuver	156	-	-	-	-	-	-	-
Stage 1	323	-	-	-	-	-	-	-
Stage 2	692	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	26.6	0.2	0.1
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBU	SBT	SBR
Capacity (veh/h)	531	-	196	627	-	-
HCM Lane V/C Ratio	0.014	-	0.15	0.012	-	-
HCM Control Delay (s)	11.9	-	26.6	10.8	-	-
HCM Lane LOS	B	-	D	B	-	-
HCM 95th %tile Q(veh)	0	-	0.5	0	-	-

REZONING SUPPLEMENTAL MATERIAL

for the

PROPOSED INDUSTRIAL DEVELOPMENT

at

ISLE OF WIGHT INDUSTRIAL PARK

Revised
April 1, 2022

Site Improvements

The subject properties are identified as Tax Map Parcel 42-06-015 (*located on IWIP Road*) and a portion of Tax Parcel 42-01-006. The proposed project area consists of approximately 74.79 acres. The development will consist of an office and storage yard located on parcel 42-01-006 as shown below in ***Figure 2.0***. These infrastructure improvements include office building, employee/customer parking, storage yard, and storm drainage system.



Figure 1.0 – Existing Conditions

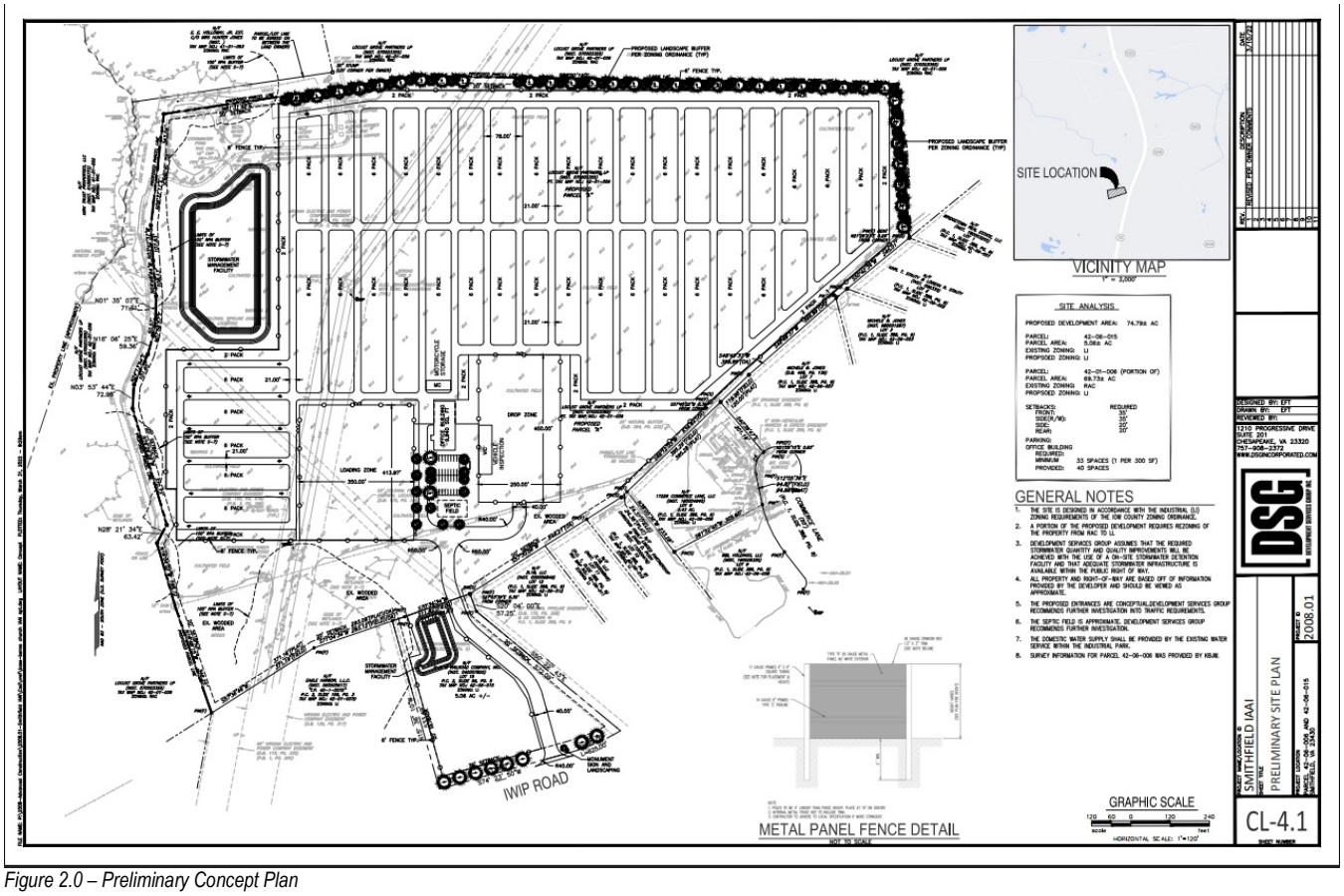


Figure 2.0 – Preliminary Concept Plan

Preliminary Site Analysis

Information Data as per Section 7-1004A

1(a) Soils - Based on GET Solutions geotechnical report, the project area consists of sand to medium clay soils.

Table II – Subsurface Soil Conditions

Average Depth (ft)	Stratum	Description	Ranges of SPT(1) N-Values
0 to 0.17 – 0.5	Surficial	➢ 2 to 6 inches of Topsoil	–
0.17 – 0.5 to 2 – 4	I	➢ SAND (SM, SC-SM, SC) *A deposit of medium stiff CLAY (CL) was encountered at a depth of 0.17 to 2 feet (BMP-2) and a deposit of soft CLAY (CL) was encountered at a depth of 2 to 4 feet (CBR-7).	2 – 7
2 – 4 to 10 – 15	II	➢ CLAY (CL, CH) ➢ SAND (SM, SC-SM, SC)	Cohesive 4 – 22 Granular 4 – 20

Note: (1) SPT = Standard Penetration Test, N-Values in Blows-per-foot (uncorrected).

Figure 3.0 – Soil Conditions provided by GET Solutions.

Ground Water

The initial groundwater level was recorded at the boring locations and as observed through the relative wetness of the recovered soil samples during the drilling operations. The initial groundwater level was measured to occur at depths ranging from 7.5 to 14 feet below the existing site grades.

Table III – Temporary Well Readings

Boring ID	Initial Groundwater Depth (ft)(1)	Stabilized Groundwater Depth (ft)(1) June 18, 2020
BMP-1	10	2.1
BMP-2	8	2.8
BMP-3	9	1.5
BMP-4	14	1.4

Notes: (1) Depth below existing site grade.

Figure 4.0 – Temporary Well Readings provided by GET Solutions.

The estimated seasonal high groundwater table (ESHWT) can fluctuate from year to year depending on many factors that include, but not limited to, natural drainage, tidal patterns, manmade drainage, surrounding development, and frequency and magnitude of rainfall patterns. Based on observations of the surrounding topography and nearby lakes in conjunction with the current performance of existing drainage features, we estimated the seasonal high groundwater table to coincide with the stabilized groundwater readings in Figure 4.0

b) Topography – The existing topography of the project limits consists of ground elevations ranging from 51.7 to 42.4 and draining east to west as shown on the preliminary site plan provided.

c) Existing Vegetation – The proposed project limits are primarily comprised of an agricultural farm field previously producing various crops common in this region. There are portions of wooded areas along the southern property line. All wooded areas are designated on the preliminary site plan.

d) Existing Structures – There are three existing buildings located within the project limits. Two (2) livestock buildings located in the northwestern corner of parcel 42-01-006. The two (2) livestock buildings will be demolished as part of the proposed improvements.

e) Historical and Architectural Significance – According to Virginia Department of Historic Resources (DHR), Isle of Wight County has six (6) homes or farms listed on the historic register. None of the six are located on or near the proposed project limits. Based on Isle of Wight's Archaeological Site Distribution exhibit within the current Comprehensive Plan provided by William and Mary Center for Archaeological Research, and dated 2005, no archaeological sites appear to be on the proposed project limits. Based upon our review of the report and current state records, there is no evidence identifying any of the parcels related to this project having moderate to high probability of archaeological resources. In fact, 17076 Benn's Church Boulevard (parcel 42-01-006C adjacent to our project) was reviewed by Virginia DHR and was determined to be "Not Eligible" for historical and archaeological purposes. DHR performed a Phase 1 during their site investigation to make this determination. This information can be found on Virginia Cultural Resources Information System (VCRIS). Multiple sites were studied as noted on VCRIS. All but one site was found to be "Not Eligible". 15362 Mount Holly Creek Lane located on the east side of Route 10 to the south of the project area was the only site meeting DHR requirements.

f) Environmentally Sensitive Lands – The project limits have been delineated by our sub-consultant Bay Environmental and all wetland information has been field located and shown on the preliminary site plan. Bay Environmental is currently in the process of having the Army Corps of Engineers field verify and provide a confirmation letter. The letter will be provided to the County during the site plan review process for their records. The proposed project does not propose any impacts to the existing wetlands and all proposed improvements are located outside of the existing 100' CBPA buffer as shown on the preliminary site plan.

g) Relationship of the site to existing road networks – The proposed project limits will have road frontage and access to IWIP Road within the existing industrial park as shown on the preliminary site plan. No other access will be provided to the site. A Traffic Impact Analysis (TIA) was performed for the proposed use as requested by the County and VDOT and is included with the application. The proposed development is projected to generate approximately 132 to 160 Average Daily Trips (ADT). Even though the proposed development is less than 200 ADT, the Department of Planning's staff has requested a Traffic Impact Analysis (TIA). Ramey Kemp Associates prepared the TIA report and was tasked by VDOT and the County to study the intersections of Benn's Church Boulevard at Brewer's Neck Boulevard, Brewer's Neck Boulevard at Benn's Grant Boulevard, Benn's Church Boulevard at Benn's Grant Boulevard, and Benn's Church Boulevard at IWIP Road. The TIA analyzed the existing and proposed traffic counts for 2020 and 2021 and determined that no improvements are warranted from the proposed development.

h) Public Water and Sewer Facilities

Water Level of Service

The proposed office building will utilize the existing community water service serving the industrial park for domestic water service. No changes in water demand are proposed with this use. The office building does not require a fire sprinkler system based on current building and fire codes. Based on ISO fire flow

calculations, the existing building requires 1,250 gpm hose demand. The proposed use will utilize existing fire hydrants/standpipes within the industrial park to address the fire flow requirements.

Sewer Level of Service

The proposed office building shall install and utilize a septic system to address sanitary sewer flows. Per VDH Table 5.1, the septic tank shall have a capacity of 1,050 gallons and will be located along the southside of the building. All construction permit documents will be submitted to the Virginia Department of Health for approval.

i) **Emergency Vehicles** – The proposed use shall provide drive aisles throughout the development that meet fire access requirements.

j) Schools – The proposed development is an industrial use and will not impact the existing school's capacity or function. There are no schools located within one mile of the project limits.

k) Recreation - The proposed development is an industrial use and will not impact the existing public recreation facilities. There are no public recreation facilities located within one mile of the project limits.

l) Essential Services – The proposed use is an automobile auction facility. The use requires an area to store the vehicles and access to public roadways. It has been determined that all services needed to perform the daily operation will be provided with the proposed improvements as shown on the preliminary site plan.

m) Adjoining Land Uses - The proposed development is located within and adjacent to the existing industrial park. The project limits are bond to the north and west by the residual parcel 42-01-006 zoned RAC. Construction activity will access the project through IWIP Road. As part of the proposed improvements, site lighting will be installed if required to address any safety concerns within the employee/customer parking lot. The storage yard will be screened with a solid metal fence with landscaping along the outside face of the facing along the northern proposed property line or defined by the zoning ordinance.

n) Local and Regional Plans – Isle of Wight County recently proposed the project limits to be included as industrial use in their updated Comprehensive Plan. The proposed use will act as an extension of the existing industrial park. No known regional plans currently.

o) Pedestrian Pathways – Due to the nature of the use and location within the existing industrial park, there are no pedestrian pathways existing or proposed at this time. The proposed development only has road frontage along IWIP Road located in the industrial park.

Water Quality Impact Assessment

The subject property is currently undeveloped with minimal vegetation. Most of the property is currently being used for agricultural purposes as shown in ***Figure 1.0*** above. Surface elevations appear to range from about 53'to 42' above sea level. The property currently drains to the west through a series of drainage ditches and overland flow into an existing private stormwater management facility located in the northwestern corner of the proposed property limits. The project area is located within the Chesapeake Bay Preservation Overlay District and is designated as a Resource Management Area (RMA). All proposed development areas are located outside of the 100' Resource Protection (RPA) buffer.

The project will be designed using DEQ's II B stormwater design criteria with Virginia's Runoff Reduction Method (VRRM). The proposed development will be required to remove approximately 83.3 pounds of phosphorus. Any required water quantity reduction will be achieved using several Level 2 Wet Pond/stormwater management facilities located in the northwestern and southwestern portion of the property. The stormwater management facility will be designed and constructed in accordance with Virginia Stormwater BMP Clearinghouse.

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WATER QUALITY IMPACT ASSEMENT

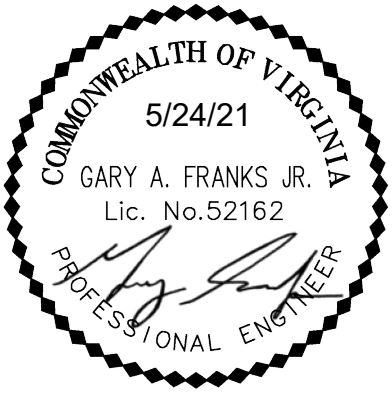
for the

PROPOSED INDUSTRIAL DEVELOPMENT

at

ISLE OF WIGHT INDUSTRIAL PARK

Revised
May 24, 2021



Smithfield IAAI

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APPENDIX A – PRELIMINARY DEQ'S VRRM CALCULATIONS

APPENDIX B – REPORT OF SUBSURFACE EXPLORATION AND GEOTECHNICAL ENGINEERING SERVICES

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Overview

The subject properties are identified as Tax Map Parcel 42-06-008 (*17226 Commerce Lane*) and a portion of Tax Parcel 42-01-006. The proposed development is an automobile auction facility. The proposed project area consists of approximately 72.81 acres. The development will consist of an office located at 17226 Commerce Lane and storage yard located to the north of the existing office as shown below in ***Figure 2.0***. These infrastructure improvements include employee/customer parking, storage yard, and storm drainage system.



Figure 1.0 – Existing Conditions

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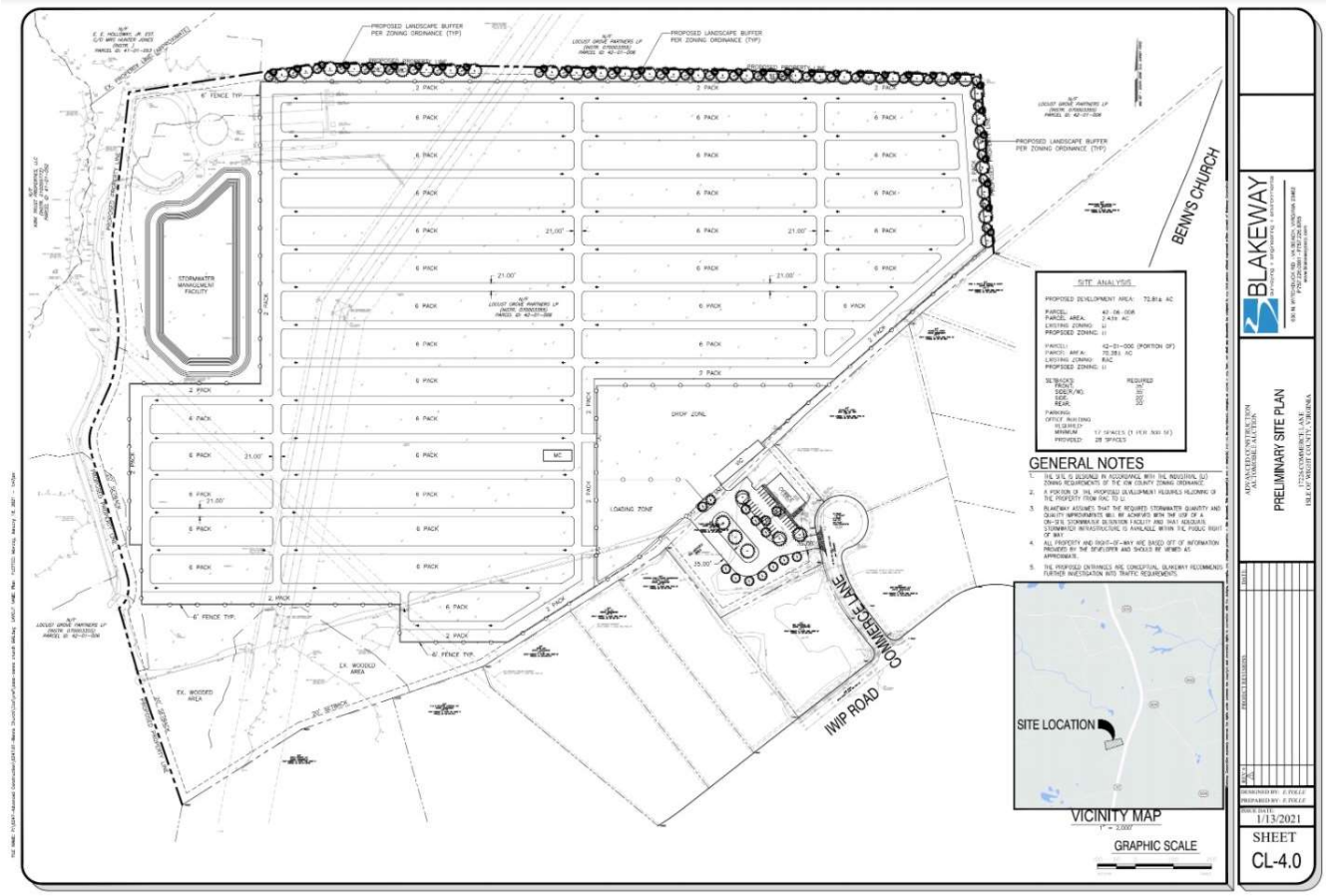


Figure 2.0 – Preliminary Concept Plan

Existing Conditions

Topography – The existing topography of the project limits consists of ground elevations ranging from 51.7 to 42.4 and draining east to west. Portion of the existing sheet flow discharges into the existing pond in the northwest portion of the project area.

Existing Vegetation – The proposed project limits are primarily comprised of an agricultural farm field previously producing various crops common in this region. There are portions of wooded areas along the southern property line and in the northwestern corner of 17226 Commerce Lane. All wooded areas are designated on the concept plan in relation to the proposed improvements.

Existing Structures – There are three existing buildings located within the project limits. The existing office building located at 17226 Commerce Lane and two livestock buildings located in the northwestern corner of parcel 42-01-006. The office building will continue to be used as an office for the proposed use and the two livestock buildings will be demolished as part of the proposed improvements.

Wetlands and RPA – As part of our preliminary site investigation a wetland delineation was performed within the proposed project limits. The wetland delineation identified approximately 1.05 acres of wetlands within the proposed property limits located in southwestern portion of the property. Other wetlands were located outside of the proposed property along the western portion of the residual parcel. A 100' CBPA buffer has been included on all wetlands associated with Chesapeake Bay Protection Areas and are shown on the concept plan. No proposed improvements will encroach the 100' buffer nor impact the existing wetlands.

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Soils Designation

Based on GET Solutions geotechnical report, the project area consists of sand to medium clay soils.

Table II – Subsurface Soil Conditions

Average Depth (ft)	Stratum	Description	Ranges of SPT(1) N-Values
0 to 0.17 – 0.5	Surficial	➢ 2 to 6 inches of Topsoil	–
0.17 – 0.5 to 2 – 4	I	➢ SAND (SM, SC-SM, SC) *A deposit of medium stiff CLAY (CL) was encountered at a depth of 0.17 to 2 feet (BMP-2) and a deposit of soft CLAY (CL) was encountered at a depth of 2 to 4 feet (CBR-7).	2 – 7
2 – 4 to 10 – 15	II	➢ CLAY (CL, CH) ➢ SAND (SM, SC-SM, SC)	Cohesive 4 – 22 Granular 4 – 20

Note: (1) SPT = Standard Penetration Test, N-Values in Blows-per-foot (uncorrected).

Figure 3.0 – Soil Conditions provided by GET Solutions.

Ground Water

The initial groundwater level was recorded at the boring locations and as observed through the relative wetness of the recovered soil samples during the drilling operations. The initial groundwater level was measured to occur at depths ranging from 7.5 to 14 feet below the existing site grades.

Table III – Temporary Well Readings

Boring ID	Initial Groundwater Depth (ft)(1)	Stabilized Groundwater Depth (ft)(1) June 18, 2020
BMP-1	10	2.1
BMP-2	8	2.8
BMP-3	9	1.5
BMP-4	14	1.4

Notes: (1) Depth below existing site grade.

Figure 4.0 – Temporary Well Readings provided by GET Solutions.

The estimated seasonal high groundwater table (ESHWT) can fluctuate from year to year depending on many factors that include, but not limited to, natural drainage, tidal patterns, manmade drainage, surrounding development, and frequency and magnitude of rainfall patterns. Based on observations of the surrounding topography and nearby lakes in conjunction with the current performance of existing drainage features, we estimated the seasonal high groundwater table to coincide with the stabilized groundwater readings in Figure 4.0

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Proposed Development

The development consists of utilizing the existing office building located at 17226 Commerce Lane and constructing an employee and customer parking lot adjacent to the existing building that meets County requirements. The remaining improvements will include the construction of the storage yard for the vehicles to be auctioned. The yard's perimeter will be screened with a 6' solid fence and landscaping meeting the County's buffer requirements.

Buffer Area Encroachments – As mentioned previously, the proposed development will not require any encroachment into the existing 100' CBPA areas as shown on the concept plan.

Designation of Wetlands – The existing wetlands were identified by Bay Environmental and confirmed by the Army Corps of Engineers.

Public Water and Sewer Facilities

Water Level of Service

The existing office building will continue to utilize the existing community water service serving the industrial park for domestic water service. No changes in water demand are proposed with this use. The existing office building does not require a fire sprinkler system based on current building and fire codes. Based on ISO fire flow calculations, the existing building requires 1,250 gpm hose demand. The proposed use will utilize existing fire hydrants/standpipes within the industrial park to address the fire flow requirements.

Sewer Level of Service

Based on the information provided by the County and Virginia Health Department, the existing office building utilizes a traditional septic system that was installed in 1992. The septic tank has a capacity of 750 gallons and is located along the eastern side of the building and the property line.

Landscape and Environmental Elements – The proposed development will be designed to meet the County's landscape requirements for parking lot and perimeter buffers. The proposed improvements do not require any removal of vegetation within the 100' CBPA buffer. The proposed development shall remove approximately 2.33 acres of woodland outside of the 100' CBPA buffer to install the site improvements.

Water Quality Measures

The subject property is currently undeveloped with minimal vegetation. Most of the property is currently being used for agricultural purposes as shown in ***Figure 1.0*** above. Surface elevations appear to range from about 53'to 42' above sea level. The property currently drains to the west through a series of drainage ditches and overland flow into an existing private stormwater management facility located in the northwestern corner of the proposed property limits. The project area is located within the Chesapeake Bay Preservation Overlay District and is designated as a Resource Management Area (RMA). All proposed development areas are located outside of the 100' Resource Protection (RPA) buffer.

The project will be designed using DEQ's II B stormwater design criteria with Virginia's Runoff Reduction Method (VRRM). The proposed development will be required to remove approximately 72.5 pounds of phosphorus. Any required water quantity reduction will be achieved using a Level 2 Wet Pond/stormwater management facility located in the northwestern portion of the property. Any remaining pollutant removal will be achieved by purchasing nutrient credits from an approved nutrient bank through DEQ. The stormwater

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management facility will be designed and constructed in accordance with Virginia Stormwater BMP Clearinghouse.

Water Quantity Measures

The proposed BMP is in the low portion of the property and the site will be graded to drain all proposed runoff into the BMP via overland flow and/or a combination of an underground conveyance system sized to meet all local and state requirements. Both the proposed stormwater management facility and onsite drainage system will be designed in accordance with DEQ's water quantity requirements for the 1-year, 10-year, and 100-year storm events.

Erosion and Sediment Control Measures

The proposed project shall construct and maintain all erosion and sediment control measures in accordance with the latest edition of the Virginia Erosion and Sediment Control Handbook. Typical erosion and sediment control measures anticipated for project shall include but not limited to, silt fencing, inlet protection, outlet protection, temporary sediment basins, tree protection, diversion dikes, temporary seeding, and a construction entrance.

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Appendix A

DEQ Virginia Runoff Reduction Method Re-Development Compliance Spreadsheet - Version 3.0

◉ 2011 BMP Standards and Specifications ○ 2013 Draft BMP Standards and Specifications

Project Name:	Smithfield - IAAI
Date:	16-Nov-20
Linear Development Project?	No

CLEAR ALL

data input cells
constant values
calculation cells
final results

Site Information

Post-Development Project (Treatment Volume and Loads)

Enter Total Disturbed Area *(acres)* → 64.81

Maximum reduction required:	20%
The site's net increase in impervious cover (acres) is:	40.38
Post-Development TP Load Reduction for Site (lb/yr):	72.51

Check:

BMP Design Specifications List:	2011 Stds & Specs
Linear project?	No
Land cover areas entered correctly?	✔
Total disturbed area entered?	✔

Pre-ReDevelopment Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals
Forest/Open Space (acres) -- undisturbed, protected forest/open space or reforested land					0.00
Managed Turf (acres) -- disturbed, graded for yards or other turf to be mowed/managed			63.83		63.83
Impervious Cover (acres)			0.98		0.98
					64.81

Post-Development Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals	
Forest/Open Space (acres) -- undisturbed, protected forest/open space or reforested land			2.93		2.93	*
Managed Turf (acres) -- disturbed, graded for yards or other turf to be mowed/managed			20.52		20.52	
Impervious Cover (acres)			41.36		41.36	
Area Check	OK.	OK.	OK.	OK.	64.81	

** Forest/Open Space areas must be protected in accordance with the Virginia Runoff Reduction Method*

Constants

Annual Rainfall (inches)	43
Target Rainfall Event (inches)	1.00
Total Phosphorus (TP) EMC (mg/L)	0.26
Total Nitrogen (TN) EMC (mg/L)	1.86
Target TP Load (lb/acre/yr)	0.41
Pj (unitless correction factor)	0.90

Runoff Coefficients (Rv)

	A Soils	B Soils	C Soils	D Soils
Forest/Open Space	0.02	0.03	0.04	0.05
Managed Turf	0.15	0.20	0.22	0.25
Impervious Cover	0.95	0.95	0.95	0.95

LAND COVER SUMMARY -- PRE-REDEVELOPMENT

Land Cover Summary-Pre		
Pre-ReDevelopment	**Listed**	**Adjusted[1]**
Forest/Open Space Cover (acres)	0.00	0.00
Weighted Rv(forest)	0.00	0.00
% Forest	0%	0%
Managed Turf Cover (acres)	63.83	23.45
Weighted Rv(turf)	0.22	0.22
% Managed Turf	98%	96%
Impervious Cover (acres)	0.98	0.98
Rv(impervious)	0.95	0.95
% Impervious	2%	4%
Total Site Area (acres)	**64.81**	**24.43**
Site Rv	**0.23**	**0.25**

LAND COVER SUMMARY -- POST DEVELOPMENT

Land Cover Summary-Post (Final)	
Post ReDev. & New Impervious	
Forest/Open Space Cover (acres)	2.93
Weighted Rv(forest)	0.04
% Forest	5%
Managed Turf Cover (acres)	20.52
Weighted Rv (turf)	0.22
% Managed Turf	32%
Impervious Cover (acres)	41.36
Rv(impervious)	0.95
% Impervious	64%
Final Site Area (acres)	**64.81**
Final Post Dev Site Rv	**0.68**

Land Cover Summary-Post	
Post-ReDevelopment	
Forest/Open Space Cover (acres)	2.93
Weighted Rv(forest)	0.04
% Forest	12%
Managed Turf Cover (acres)	20.52
Weighted Rv (turf)	0.22
% Managed Turf	84%
ReDev. Impervious Cover (acres)	0.98
Rv(impervious)	0.95
% Impervious	4%
Total ReDev. Site Area (acres)	**24.43**
ReDev Site Rv	**0.23**

Land Cover Summary-Post	
Post-Development New Impervious	
New Impervious Cover (acres)	40.38
Rv(impervious)	0.95

Treatment Volume and Nutrient Load

Pre-ReDevelopment Treatment Volume (acre-ft)	1.2478	0.5075
Pre-ReDevelopment Treatment Volume (cubic feet)	54,354	22,107
Pre-ReDevelopment TP Load (lb/yr)	**34.15**	**13.89**
Pre-ReDevelopment TP Load per acre (lb/acre/yr)	0.53	0.57
Baseline TP Load (lb/yr) (**0.41 lbs/acre/yr** applied to pre-redevelopment area excluding pervious land proposed for new impervious cover)		*10.02*

Final Post-Development Treatment Volume (acre-ft)	3.6603
Final Post-Development Treatment Volume (cubic feet)	159,443
Final Post-Development TP Load (lb/yr)	**100.18**
Final Post-Development TP Load per acre (lb/acre/yr)	1.55

Treatment Volume and Nutrient Load

Post-ReDevelopment Treatment Volume (acre-ft)	0.4636
Post-ReDevelopment Treatment Volume (cubic feet)	20,192
Post-ReDevelopment Load (TP) (lb/yr)*	**12.69**
Post-ReDevelopment TP Load per acre (lb/acre/yr)	0.52
Max. Reduction Required (Below Pre-ReDevelopment Load)	**20%**
TP Load Reduction Required for Redeveloped Area (lb/yr)	**1.58**

Post-Development Treatment Volume (acre-ft)	3.1968
Post-Development Treatment Volume (cubic feet)	139,250
Post-Development TP Load (lb/yr)	**87.49**
TP Load Reduction Required for New Impervious Area (lb/yr)	**70.93**

[1] *Adjusted Land Cover Summary:*
Pre ReDevelopment land cover minus pervious land cover (forest/open space or managed turf) acreage proposed for new impervious cover.

Adjusted total acreage is consistent with Post-ReDevelopment acreage (minus acreage of new impervious cover).

Column I shows load reduction requirement for new impervious cover (based on new development load limit, 0.41 lbs/acre/year).

Post-Development Requirement for Site Area

TP Load Reduction Required (lb/yr)	**72.51**

Nitrogen Loads (Informational Purposes Only)

Pre-ReDevelopment TN Load (lb/yr)	244.31	Final Post-Development TN Load (Post-ReDevelopment & New Impervious) (lb/yr)	716.65

Drainage Area A

CLEAR BMP AREAS

Drainage Area A Land Cover (acres)

	A Soils	B Soils	C Soils	D Soils	Totals	Land Cover Rv
Forest/Open Space (acres)					0.00	0.00
Managed Turf (acres)			15.00		15.00	0.22
Impervious Cover (acres)			41.00		41.00	0.95
				Total	56.00	

Total Phosphorus Available for Removal in D.A. A (lb/yr)	96.36
Post Development Treatment Volume in D.A. A (ft^3)	153,368

Stormwater Best Management Practices (RR = Runoff Reduction)

--Select from dropdown lists--

Practice	Runoff Reduction Credit (%)	Managed Turf Credit Area (acres)	Impervious Cover Credit Area (acres)	Volume from Upstream Practice (ft^3)	Runoff Reduction (ft^3)	Remaining Runoff Volume (ft^3)	Total BMP Treatment Volume (ft^3)	Phosphorus Removal Efficiency (%)	Phosphorus Load from Upstream Practices (lb)	Untreated Phosphorus Load to Practice (lb)	Phosphorus Removed By Practice (lb)	Remaining Phosphorus Load (lb)	Downstream Practice to be Employed	Nitrogen Removal Efficiency (%)	Nitrogen Load from Upstream Practices (lbs)	Untreated Nitrogen Load to Practice (lbs)	Nitrogen Removed By Practice (lbs)	Remaining Nitrogen Load (lbs)
1. Vegetated Roof (RR)														**1. Vegetated Roof (RR)**				
1.a. Vegetated Roof #1 (Spec #5)	45				0	0	0	0		0.00	0.00	0.00		0		0.00	0.00	0.00
1.b. Vegetated Roof #2 (Spec #5)	60				0	0	0	0		0.00	0.00	0.00		0		0.00	0.00	0.00
2. Rooftop Disconnection (RR)														**2. Rooftop Disconnection (RR)**				
2.a. Simple Disconnection to A/B Soils (Spec #1)	50			0	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
2.b. Simple Disconnection to C/D Soils (Spec #1)	25			0	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
2.c. To Soil Amended Filter Path as per specifications (existing C/D soils) (Spec #4)	50			0	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
2.d. To Dry Well or French Drain #1, Micro-Infilration #1 (Spec #8)	50			0	0	0	0	25	0.00	0.00	0.00	0.00		15	0.00	0.00	0.00	0.00
2.e. To Dry Well or French Drain #2, Micro-Infiltration #2 (Spec #8)	90			0	0	0	0	25	0.00	0.00	0.00	0.00		15	0.00	0.00	0.00	0.00
2.f. To Rain Garden #1, Micro-Bioretention #1 (Spec #9)	40			0	0	0	0	25	0.00	0.00	0.00	0.00		40	0.00	0.00	0.00	0.00
2.g. To Rain Garden #2, Micro-Bioretention #2 (Spec #9)	80			0	0	0	0	50	0.00	0.00	0.00	0.00		60	0.00	0.00	0.00	0.00
2.h. To Rainwater Harvesting (Spec #6)	80			0	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
2.i. To Stormwater Planter, Urban Bioretention (Spec #9, Appendix A)	40			0	0	0	0	25	0.00	0.00	0.00	0.00		40	0.00	0.00	0.00	0.00
3. Permeable Pavement (RR)														**3. Permeable Pavement (RR)**				
3.a. Permeable Pavement #1 (Spec #7)	45			0	0	0	0	25	0.00	0.00	0.00	0.00		25	0.00	0.00	0.00	0.00
3.b. Permeable Pavement #2 (Spec #7)	75				0	0	0	25		0.00	0.00	0.00		25		0.00	0.00	0.00
4. Grass Channel (RR)														**4. Grass Channel (RR)**				
4.a. Grass Channel A/B Soils (Spec #3)	20			0	0	0	0	15	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
4.b. Grass Channel C/D Soils (Spec #3)	10			0	0	0	0	15	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
4.c. Grass Channel with Compost Amended Soils as per specs (see Spec #4)	30			0	0	0	0	15	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
5. Dry Swale (RR)														**5. Dry Swale (RR)**				
5.a. Dry Swale #1 (Spec #10)	40			0	0	0	0	20	0.00	0.00	0.00	0.00		25	0.00	0.00	0.00	0.00
5.b. Dry Swale #2 (Spec #10)	60			0	0	0	0	40	0.00	0.00	0.00	0.00		35	0.00	0.00	0.00	0.00
6. Bioretention (RR)														**6. Bioretention (RR)**				
6.a. Bioretention #1 or Micro-Bioretention #1 or Urban Bioretention (Spec #9)	40			0	0	0	0	25	0.00	0.00	0.00	0.00		40	0.00	0.00	0.00	0.00
6.b. Bioretention #2 or Micro-Bioretention #2 (Spec #9)	80			0	0	0	0	50	0.00	0.00	0.00	0.00		60	0.00	0.00	0.00	0.00
7. Infiltration (RR)														**7. Infiltration (RR)**				
7.a. Infiltration #1 (Spec #8)	50			0	0	0	0	25	0.00	0.00	0.00	0.00		15	0.00	0.00	0.00	0.00
7.b. Infiltration #2 (Spec #8)	90			0	0	0	0	25	0.00	0.00	0.00	0.00		15	0.00	0.00	0.00	0.00
8. Extended Detention Pond (RR)														**8. Extended Detention Pond (RR)**				
8.a. ED #1 (Spec #15)	0			0	0	0	0	15	0.00	0.00	0.00	0.00		10	0.00	0.00	0.00	0.00
8.b. ED #2 (Spec #15)	15			0	0	0	0	15	0.00	0.00	0.00	0.00		10	0.00	0.00	0.00	0.00
9. Sheetflow to Filter/Open Space (RR)														**9. Sheetflow to Filter/Open Space (RR)**				
9.a. Sheetflow to Conservation Area, A/B Soils (Spec #2)	75			0	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
9.b. Sheetflow to Conservation Area, C/D Soils (Spec #2)	50			0	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
9.c. Sheetflow to Vegetated Filter Strip, A Soils or Compost Amended B/C/D Soils (Spec #2 & #4)	50			0	0	0	0	0	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00

TOTAL IMPERVIOUS COVER TREATED (ac)	0.00	AREA CHECK: OK.
TOTAL MANAGED TURF AREA TREATED (ac)	0.00	AREA CHECK: OK.
TOTAL RUNOFF REDUCTION IN D.A. A (ft^3)	0	
TOTAL PHOSPHORUS AVAILABLE FOR REMOVAL IN D.A. A (lb/yr)	96.36	
TOTAL PHOSPHORUS REMOVED WITH RUNOFF REDUCTION PRACTICES IN D.A. A (lb/yr)	0.00	
TOTAL PHOSPHORUS REMAINING AFTER APPLYING RUNOFF REDUCTION PRACTICES IN D.A. A (lb/yr)	96.36	

SEE WATER QUALITY COMPLIANCE TAB FOR SITE COMPLIANCE CALCULATIONS

TOTAL RUNOFF REDUCTION IN D.A. A (ft^3)	0
NITROGEN REMOVED WITH RUNOFF REDUCTION PRACTICES IN D.A. A (lb/yr)	0.00

SEE WATER QUALITY COMPLIANCE TAB FOR SITE CALCULATIONS (Information Only)

10. Wet Swale (no RR)													**10. Wet Swale (Coastal Plain) (no RR)**				
10.a. Wet Swale #1 (Spec #11)	0			0	0	0	0	20	0.00	0.00	0.00	0.00		25	0.00	0.00	0.00	0.00
10.b. Wet Swale #2 (Spec #11)	0			0	0	0	0	40	0.00	0.00	0.00	0.00		35	0.00	0.00	0.00	0.00
11. Filtering Practices (no RR)													**11. Filtering Practices (no RR)**				
11.a.Filtering Practice #1 (Spec #12)	0			0	0	0	0	60	0.00	0.00	0.00	0.00		30	0.00	0.00	0.00	0.00
11.b. Filtering Practice #2 (Spec #12)	0			0	0	0	0	65	0.00	0.00	0.00	0.00		45	0.00	0.00	0.00	0.00
12. Constructed Wetland (no RR)													**12. Constructed Wetland (no RR)**				
12.a.Constructed Wetland #1 (Spec #13)	0			0	0	0	0	50	0.00	0.00	0.00	0.00		25	0.00	0.00	0.00	0.00
12.b. Constructed Wetland #2 (Spec #13)	0			0	0	0	0	75	0.00	0.00	0.00	0.00		55	0.00	0.00	0.00	0.00
13. Wet Ponds (no RR)													**13. Wet Ponds (no RR)**				
13.a. Wet Pond #1 (Spec #14)	0			0	0	0	0	50	0.00	0.00	0.00	0.00		30	0.00	0.00	0.00	0.00
13.b. Wet Pond #1 (Coastal Plain) (Spec #14)	0			0	0	0	0	45	0.00	0.00	0.00	0.00		20	0.00	0.00	0.00	0.00
13.c. Wet Pond #2 (Spec #14)	0	15.00	41.00	0	0	153,368	153,368	75	0.00	96.25	72.19	24.06		40	0.00	688.57	275.43	413.14
13.d. Wet Pond #2 (Coastal Plain) (Spec #14)	0			0	0	0	0	65	0.00	0.00	0.00	0.00		30	0.00	0.00	0.00	0.00
14. Manufactured Treatment Devices (no RR)													**14. Manufactured BMP (no RR)**				
14.a. Manufactured Treatment Device-Hydrodynamic	0			0	0	0	0	20	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
14.b. Manufactured Treatment Device-Filtering	0			0	0	0	0	50	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00
14.c. Manufactured Treatment Device-Generic	0			0	0	0	0	20	0.00	0.00	0.00	0.00		0	0.00	0.00	0.00	0.00

TOTAL IMPERVIOUS COVER TREATED (ac)	41.00	AREA CHECK: OK.
TOTAL MANAGED TURF AREA TREATED (ac)	15.00	AREA CHECK: OK.
TOTAL PHOSPHORUS REMOVAL REQUIRED ON SITE (lb/yr)	72.51	
TOTAL PHOSPHORUS AVAILABLE FOR REMOVAL IN D.A. A (lb/yr)	96.36	
TOTAL PHOSPHORUS REMOVED WITHOUT RUNOFF REDUCTION PRACTICES IN D.A. A (lb/yr)	72.19	
TOTAL PHOSPHORUS REMOVED WITH RUNOFF REDUCTION PRACTICES IN D.A. A (lb/yr)	0.00	
TOTAL PHOSPHORUS LOAD REDUCTION ACHIEVED IN D.A. A (lb/yr)	72.19	
TOTAL PHOSPHORUS REMAINING AFTER APPLYING BMP LOAD REDUCTIONS IN D.A. A (lb/yr)	24.17	

SEE WATER QUALITY COMPLIANCE TAB FOR SITE COMPLIANCE CALCULATIONS

NITROGEN REMOVED WITH RUNOFF REDUCTION PRACTICES IN D.A. A (lb/yr)	0.00
NITROGEN REMOVED WITHOUT RUNOFF REDUCTION PRACTICES IN D.A. A (lb/yr)	275.43
TOTAL NITROGEN REMOVED IN D.A. A (lb/yr)	275.43

Site Results (Water Quality Compliance)

Area Checks	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	AREA CHECK
FOREST/OPEN SPACE (ac)	0.00	0.00	0.00	0.00	0.00	OK.
IMPERVIOUS COVER (ac)	41.00	0.00	0.00	0.00	0.00	OK.
IMPERVIOUS COVER TREATED (ac)	41.00	0.00	0.00	0.00	0.00	OK.
MANAGED TURF AREA (ac)	15.00	0.00	0.00	0.00	0.00	OK.
MANAGED TURF AREA TREATED (ac)	15.00	0.00	0.00	0.00	0.00	OK.
AREA CHECK	OK.	OK.	OK.	OK.	OK.	

Site Treatment Volume (ft^3)	159,443

Runoff Reduction Volume and TP By Drainage Area

	D.A. A	D.A. B	D.A. C	D.A. D	D.A. E	TOTAL
RUNOFF REDUCTION VOLUME ACHIEVED (ft^3)	0	0	0	0	0	0
TP LOAD AVAILABLE FOR REMOVAL (lb/yr)	96.36	0.00	0.00	0.00	0.00	96.36
TP LOAD REDUCTION ACHIEVED (lb/yr)	72.19	0.00	0.00	0.00	0.00	72.19
TP LOAD REMAINING (lb/yr)	24.17	0.00	0.00	0.00	0.00	24.17
NITROGEN LOAD REDUCTION ACHIEVED (lb/yr)	275.43	0.00	0.00	0.00	0.00	275.43

Total Phosphorus

FINAL POST-DEVELOPMENT TP LOAD (lb/yr)	100.18
TP LOAD REDUCTION REQUIRED (lb/yr)	72.51
TP LOAD REDUCTION ACHIEVED (lb/yr)	72.19
TP LOAD REMAINING (lb/yr):	27.99
REMAINING TP LOAD REDUCTION REQUIRED (lb/yr):	0.32

Total Nitrogen (For Information Purposes)

POST-DEVELOPMENT LOAD (lb/yr)	716.65
NITROGEN LOAD REDUCTION ACHIEVED (lb/yr)	275.43
REMAINING POST-DEVELOPMENT NITROGEN LOAD (lb/yr)	441.23

Appendix B

REPORT OF SUBSURFACE EXPLORATION AND GEOTECHNICAL ENGINEERING SERVICES

Route 10 Parking and Storage Lot

Smithfield, Virginia

G E T Project No: VB20-119G
July 23, 2020

PREPARED FOR:

BLAKEWAY
surveying + engineering + environmental

5465 Greenwich Road • Virginia Beach, VA 23462
Phone: (757)-518-1703

July 23, 2020

TO: **Blakeway Corporation**
630 N. Witchduck Rd.
Virginia Beach, VA 23462

Attn: Mr. Elmer F. Tolle III, CFM

RE: Report of Subsurface Exploration and Geotechnical Engineering Services
Route 10 Parking and Storage Lot
Smithfield, Virginia
G E T Project No: VB20-119G

Dear Mr. Tolle:

In compliance with your instructions, we have completed our Geotechnical Engineering Services for the referenced project. The results of this study, together with our recommendations, are presented in this report.

Often, because of design and construction details that occur on a project, questions arise concerning subsurface conditions. **G E T Solutions, Inc.** would be pleased to continue its role as Geotechnical Engineer during the project implementation.

Thank you for the opportunity to work with you on this project. We trust that the information contained herein meets your immediate need, and should you have any questions or if we could be of further assistance, please do not hesitate to contact us.

Respectfully Submitted,
G E T Solutions, Inc.

Grey Weber, EIT
Project Engineer

COMMONWEALTH OF VIRGINIA
CHRIS M. CATON
Lic. No. 046947
PROFESSIONAL ENGINEER

Chris M. Caton, PE, PG, PMP
Senior Geotechnical Engineer
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Copies: (1) Client update

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EXECUTIVE SUMMARY

The project site is located at 17226 Commerce Lane in Smithfield, Virginia. The proposed construction will consist of building a new parking facility that consists of a large vehicle storage lot and stormwater management ponds. It is expected that the finish surface of the vehicle storage lot will be comprised of crushed asphalt, and the finished grades are anticipated to coincide with current grades; thus, cuts and fills are not expected to exceed 1 foot.

Our field exploration program included eight (8) 10-foot deep SPT borings, designated as CBR-1 through CBR-8, that were drilled within the proposed pavement areas and four (4) 15-foot deep SPT borings, designated as BMP-1 through BMP-4, that were drilled within the proposed stormwater management areas.

The initial groundwater level was measured to occur at depths ranging from 7.5 to 14 feet below existing grades at the boring locations. Stabilized groundwater readings were taken at the temporary groundwater monitoring well locations, designated as BMP-1 through BMP-4. A summary of the subsurface and groundwater conditions encountered at the SPT soil test borings is presented in Section 3 of this report.

A field-testing program during construction is recommended, which should include subgrade proofrolling and compaction testing to verify the stability of the shallow subsurface soils.

The shallow subsurface SAND (SM, SC-SM, SC) and CLAY (CL) soils encountered at the boring locations do not appear to meet the criteria recommended in this report for reuse as structural fill; however, may be used as fill in green areas.

This summary briefly discusses some of the major topics mentioned in the attached report. Accordingly, this report should be read in its entirety to thoroughly evaluate the contents.

1.0 PROJECT INFORMATION

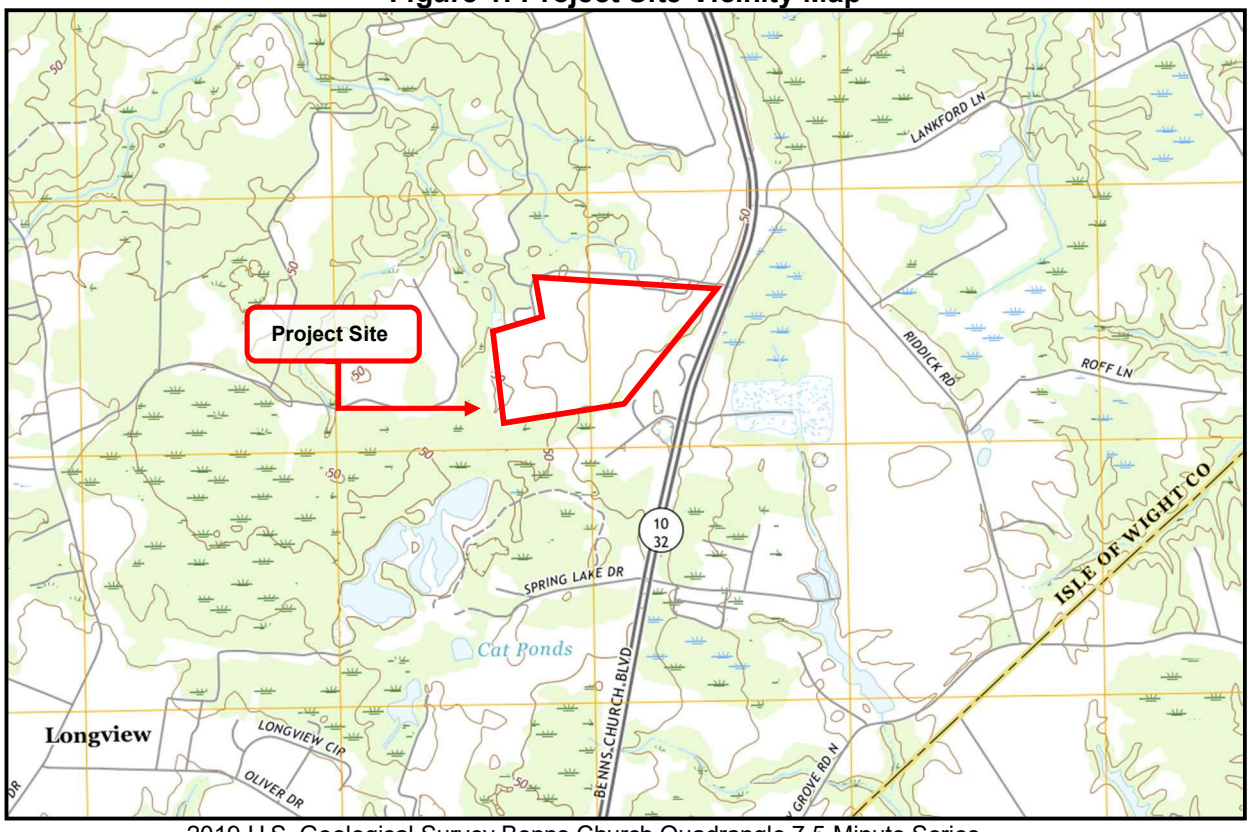
1.1 Project Authorization

G E T Solutions, Inc. has completed our subsurface exploration and geotechnical engineering services for the proposed Route 10 Parking and Storage Lot project located within Isle of Wight County in Smithfield, Virginia. The geotechnical engineering services were conducted in general accordance with the scope presented in **G E T** Proposal No. PVB19-432G dated June 26, 2019. Authorization to proceed with our services was received from the client in the form of an electronic mail dated May 21, 2020.

1.2 Project Site Location and Description

The project site is located at 17226 Commerce Lane in Smithfield, Virginia. The proposed project site is a 75-acre property consisting of an undeveloped, open grass area. Trees are located along a majority of the proposed project site except for the north, which is bordered by a dirt access road. This single-lane road, which runs besides the north and east edge of the site, services adjacent farmland. Overhead powerlines traverse the site to several transmission towers that are oriented through the southwest and northwest areas. Based on visual observations, the site appears to be relatively level with less than 1 foot of elevation change over 50 feet, with a recent topographic survey establishing site elevations at 40 to 60 feet NAVD 88. A site vicinity map is provided in Figure 1.

Figure 1: Project Site Vicinity Map



2019 U.S. Geological Survey Benns Church Quadrangle 7.5-Minute Series

1.3 Project Construction Description

The proposed construction will consist of building a new parking facility that consists of a large vehicle storage lot and stormwater management (BMP) ponds. It is expected that the finish surface of the vehicle storage lot will be comprised of crushed asphalt, and the finished grades are anticipated to coincide with current grades; thus, cuts and fills are not expected to exceed 1 foot.

If any of the noted information is incorrect or has changed, please inform G E T Solutions, Inc. so that we may amend the recommendations presented in this report, if appropriate.

1.4 Purpose and Scope of Services

The purpose of this study was to obtain information on the general subsurface conditions at the proposed project site. The subsurface conditions encountered were then evaluated with respect to the available project characteristics. In this regard, engineering assessments for the following items were formulated:

1. General assessment of the soils revealed by the borings performed at the site.

2. General location and description of potentially deleterious material encountered in the borings that may interfere with construction progress or the parking lot's performance, including existing fills or surficial/subsurface organics.

4. Engineering criteria for placement and compaction of approved structural fill material.

5. Evaluation of the on-site soils for re-use as structural fill.

6. Determine pertinent information regarding the groundwater conditions at the site for stormwater management purposes.

The scope of services did not include an environmental assessment for determining the presence or absence of wetlands or hazardous or toxic material in the soil, bedrock, surface water, groundwater or air, on or below or around this site. Prior to development of this site, an environmental assessment is advisable.

2.0 FIELD AND LABORATORY PROCEDURES

2.1 Field Exploration

In order to explore the general subsurface soil types and to aid in developing associated design parameters, the following exploration program was performed:

- Eight (8) 10-foot deep SPT borings, designated as CBR-1 through CBR-8, were drilled within the proposed pavement areas.

- Eight (8) bulk soil samples were collected from borings CBR-1 through CBR-8 within the proposed pavement areas. The bulk subgrade samples were collected from approximately 0.33 to 3 feet below existing grade and were returned to our laboratory and subjected to CBR testing in accordance with ASTM and VTM standards.

- Four (4) 15-foot deep SPT borings, designated as BMP-1 through BMP-4, were drilled within the proposed stormwater management areas. Additionally, temporary groundwater monitoring wells were installed at each of the BMP borings to obtain stabilized groundwater readings.

Standard Penetration Tests were performed in the field in general accordance with ASTM D1586. The tests were performed continuously from the existing ground surface to depths of 10 and 12 feet, and at 5-foot intervals thereafter starting at a depth of 13-feet. The soil samples were obtained with a standard 1.4" I.D., 2" O.D., 30" long split-spoon sampler. The sampler was driven with blows of a 140 lb. hammer falling 30 inches, using a safety hammer. The number of blows required to drive the sampler each 6-inch increment of penetration was recorded and is shown on the boring logs. The sum of the second and third penetration increments is termed the SPT N-value (uncorrected for automatic hammer and overburden pressure). A representative portion of each disturbed split-spoon sample was collected with each SPT, placed in a sealed glass jar, and returned to our laboratory for review.

The SPT boring locations were established by the design team and staked in the field by a representative of **G E T Solutions, Inc.** with the use of a hand-held Global Positioning System (GPS) device utilizing GPS coordinates and by corroborating with easily identifiable landmarks. Upon completion of the soil borings, the boreholes were backfilled for safety considerations, with the exception of the temporary wells which were left in place for future readings. Approximate soil boring locations are shown on the attached "Boring Location Plan" (Appendix I) which was developed by **G E T Solutions, Inc**. based on a site plan provided by the client.

2.2 Laboratory Testing

Representative portions of all soil samples collected during drilling operations were labeled, preserved and transferred to our laboratory in accordance with ASTM D4220 for classification and analysis. Soil descriptions on the boring logs are provided using visual-manual methods in general accordance with ASTM D2488 using the Unified Soil Classification System (USCS). Soil samples that were selected for index testing were classified in general accordance with ASTM D2487. It should be noted that some variation can be expected between samples classified using the visual-manual procedure (ASTM D2488) and the USCS (ASTM D2487). A summary of the soil classification system is provided in Appendix II.

Representative split-spoon and bulk soil samples were selected and subjected to natural moisture, #200 sieve wash, and Atterberg Limits testing in order to corroborate the visual classification. These test results are presented in Appendix III and on the soil test boring logs provided in Appendix IV. A generalized soil profile is provided in Appendix V.

The bulk soil samples were also subjected to Standard Proctor and CBR testing in general accordance with ASTM and VTM standards, respectively. The stress-strain curve was plotted for each specimen. If necessary, the stress-strain curves were corrected by adjusting the location of the origin for concave shaped curves. Subsequently, the CBR values were selected at 0.1-inch penetration using the corrected load values. A summary of the CBR test results is presented in Table I, and the Proctor curves, Particle Size Distribution Reports, and CBR curves are provided in Appendix VI.

Table I – CBR Test Results

Boring ID	Depth Below Grade (ft)	USCS	w_N (%)	Passing #200 Sieve (%)	Max. Dry Density (pcf)	Optimum Moisture (%)	CBR Value	Swell (%)
CBR-1	1 – 3	SC-SM	17	35.6	117.4	13.3	8.4	0.1
CBR-2	0.33 – 2	SM	11	19.5	115.7	11.2	32.3	0
CBR-3	1 – 3	SC	10	20.9	118.2	10.5	13.5	0.1
CBR-4	1 – 3	SC	15	32.6	119.6	11.4	20.4	0.1
CBR-5	0.33 – 2	SM	13	16.6	108.9	13.1	19.3	0
CBR-6	1 – 3	SC	14	34.3	120.2	10.6	12.1	0.1
CBR-7	1 – 3	CL	21	65.8	108.5	15.2	12.9	0.6
CBR-8	1 – 3	SC-SM	14	31.3	118.5	11.4	11.8	0.2

3.0 SITE AND SUBSURFACE CONDITIONS

3.1 Site Geology

The project site lies within a major physiographic province called the Atlantic Coastal Plain. Numerous transgressions and regressions of the Atlantic Ocean have deposited marine, lagoonal, and fluvial (stream lain) sediments. The regional geology is very complex, and generally consists of interbedded layers of varying mixtures of sands, silts and clays. Based on our review of existing geologic and soil boring data, the geologic stratigraphy encountered in our subsurface explorations generally consisted of marine deposited Sands, Silts and Clays.

3.2 Subsurface Soil Conditions

A summary of the subsurface soil conditions encountered at the SPT boring locations is presented in Table II.

Table II – Subsurface Soil Conditions

Average Depth (ft)	Stratum	Description	Ranges of SPT(1) N-Values
0 to 0.17 – 0.5	Surficial	➢ 2 to 6 inches of Topsoil	–
0.17 – 0.5 to 2 – 4	I	➢ SAND (SM, SC-SM, SC) *A deposit of medium stiff CLAY (CL) was encountered at a depth of 0.17 to 2 feet (BMP-2) and a deposit of soft CLAY (CL) was encountered at a depth of 2 to 4 feet (CBR-7).	2 – 7
2 – 4 to 10 – 15	II	➢ CLAY (CL, CH) ➢ SAND (SM, SC-SM, SC)	Cohesive 4 – 22 Granular 4 – 20

Note: (1) SPT = Standard Penetration Test, N-Values in Blows-per-foot (uncorrected).

The subsurface descriptions are of a generalized nature provided to highlight the major soil strata encountered. The records of the subsurface exploration are included in Appendix IV (Boring Logs) and in Appendix V (Generalized Soil Profile) which should be reviewed for specific information as to the individual borings. The stratifications shown on the records of the subsurface exploration represent the conditions only at the actual boring locations. Variations may occur and should be expected between boring locations. The stratifications represent the approximate boundary between subsurface materials and the transition may be gradual. It is noted that the "Topsoil" designation references the presence of surficial organic laden soil and does not represent any particular quality specification. It is recommended that this material be tested for approval prior to use as topsoil.

3.3 Groundwater Discussion

The initial groundwater level was recorded at the boring locations and as observed through the relative wetness of the recovered soil samples during the drilling operations. The initial groundwater level was measured to occur at depths ranging from 7.5 to 14 feet below the existing site grades. As an exception, the initial groundwater level was not encountered at boring locations CBR-4, CBR-5, CBR-6, and CBR-8 to the depths explored.

The soils encountered at this site at the presumed groundwater level consisted of relatively impermeable soils (soils predominantly comprised of Silt and Clay). Drilling fluids (drilling mud and water) were introduced into the bore holes during the drilling operations further impairing the ability to accurately determine the groundwater levels. In addition, as subsurface soils begin to dry moisture moves upwards through the soil profile by means of capillary action. Based on the subsurface soil composition (soils containing more than 30% of fines by weight), these initial groundwater readings (based on the relative wetness of the soils) could be in part attributed to the capillary action of the soils.

Stabilized groundwater readings were taken at the temporary groundwater monitoring well locations (designated as BMP-1 through BMP-4). The groundwater information associated with these wells is presented in Table III.

Table III – Temporary Well Readings

Boring ID	Initial Groundwater Depth (ft)[1]	Stabilized Groundwater Depth (ft)[1] June 18, 2020
BMP-1	10	2.1
BMP-2	8	2.8
BMP-3	9	1.5
BMP-4	14	1.4

Notes: (1) Depth below existing site grade.

The estimated seasonal high groundwater table (ESHWT) can fluctuate from year to year depending on many factors that include, but not limited to, natural drainage, tidal patterns, man-made drainage, surrounding development, and frequency and magnitude of rainfall patterns. Based on observations of the surrounding topography and nearby lakes in conjunction with the current performance of existing drainage features, we estimated the seasonal high groundwater table to coincide with the stabilized groundwater readings in Table III.

Water seepage, at varying elevations, should be expected within the side walls of open cut areas due to relatively impermeable soils located above the groundwater elevation. It is important to note that even small quantities of persistent seepage may complicate construction operations when excavations extend near or below areas of saturated soil. Construction difficulties resulting from near surface groundwater or excess soil moisture will be much less likely if work is conducted during the dry season.

Originally, infiltration testing was proposed at the BMP boring locations; however, due to presence SAND (SC) with an appreciable amount of fines and relatively impermeable CLAY (CL) soils located at and above the groundwater elevation and the shallow depths of the groundwater table, these tests were not performed. Based on the field exploration and corroborated with the soil classifications, the hydraulic conductivity of the SAND (SC) and CLAY (CL) soils located throughout the site is estimated to be on the order of 0.01 inches per hour or less, which corresponds to a Hydrologic Soil Group D (USDA *Part 630 Hydrology National Engineering Handbook*).

4.0 EVALUATIONS AND RECOMMENDATIONS

Our recommendations are based on the previously discussed project information, our interpretation of the soil test borings and laboratory data, and our observations during our site reconnaissance. If the proposed construction should vary from what was described, we request the opportunity to review our recommendations and make any necessary changes.

4.1 Clearing and Grading

The proposed construction areas should be cleared by means of removing the surficial topsoil material and any other unsuitable materials. It is estimated that a cut of up to 6 inches in depth will be required to remove the topsoil materials; however, this cut is expected to extend deeper in isolated areas to remove deeper deposits of organic soils or unsuitable soils, which become evident during the clearing. The proposed parking lot will likely require stabilization of the subgrade soils; therefore, the project's budget should include an allowance for subgrade improvements (undercut and backfill with structural fill). It is recommended that the clearing operations extend laterally at least 5 feet beyond the perimeter of the proposed construction area.

The results of our field exploration program indicated that the soils below the surficial materials were generally comprised of SAND (SM, SC) soils and isolated CLAY (CL) soils. Also, bulk soil samples indicated natural moisture contents of up to 5.8% above optimum moisture (as determined by means of laboratory testing). Accordingly, combinations of excess surface moisture from precipitation ponding on the site and the construction traffic, including heavy compaction equipment, may create pumping and general deterioration of the bearing capabilities of the surface soils. Therefore, undercutting to remove very soft/loose soils should be anticipated. The extent of the undercut will be determined in the field during construction based on the outcome of the field-testing procedures (subgrade proofroll).

Inherently wet subgrade soils combined with potential poor site drainage make this site particularly susceptible to subgrade deterioration; thus, it is recommended that the grading operations be performed during the drier months of the year (historically April through November as indicated by the NCDC *Climate Atlas of the United States*). This should minimize these potential problems, although they likely will not be eliminated. In addition, the site should be graded to enhance surface water runoff to reduce the ponding of water. In the event of heavy rainfall within areas to receive fill, we recommend that the grading operations cease until the site has had a chance to dry. If the subgrade becomes deteriorated due to the above-mentioned or other reasons, difficulty maneuvering construction equipment and machinery is likely. Similar projects have required significant improvements to stabilize or bridge unstable subgrade soils, which tend to deteriorate when exposed to construction traffic and moisture.

The undercut and backfill should be performed under the observation of a representative of **G E T Solutions, Inc.** who will evaluate the composition of the recovered soils. Recommendations concerning the subgrade improvements (as necessary) will be provided in the field following the testing procedures.

4.2 Subgrade Preparation

Following the clearing operation, the exposed subgrade soils should be densified with a large static drum roller. After the subgrade soils have been densified, they should be evaluated by **G E T Solutions, Inc.** for stability. Accordingly, the subgrade soils should be proofrolled to check for pockets of loose material hidden beneath a crust of better soil. Several passes should be made by a large rubber-tired roller or loaded dump truck over the construction areas. The number of passes will be determined in the field by the Geotechnical Engineer depending on the soil conditions. Any pumping or unstable areas observed during proofrolling (beyond the initial cut) should be undercut and/or stabilized at the direction of the Geotechnical Engineer.

During the subgrade testing (proofrolling), isolated areas of unstable subgrade soils are likely, thus requiring ground improvements. Soil instabilities may be noted during the proofroll due to high soil moisture contents. In this case, drying the subgrade soils (to within +/- 2% of the optimum moisture) should be attempted prior to ground improvements. If drying the soils is not a feasible option, the subgrade improvements can be performed by means of cement stabilization (granular soils) of the shallow unstable soils.

4.3 Structural Fill and Placement

Any material to be used for structural fill should be evaluated and tested by **G E T Solutions, Inc.** prior to placement to determine if they are suitable for the intended use. Suitable structural fill material should consist of sand or gravel containing less than 20% by weight of fines (SP, SM, SW, GP, GW), having a liquid limit less than 20 and plastic limit less than 6, and should be free of rubble, organics, clay, debris and other unsuitable material.

All structural fill should be compacted to a dry density of at least 98% of the Standard Proctor maximum dry density (ASTM D698) unless specified differently in this report. In general, the compaction should be accomplished by placing the fill in maximum 10-inch loose lifts and mechanically compacting each lift to at least the specified minimum dry density. A representative of **G E T Solutions, Inc.** should perform field density tests on each lift as necessary to assure that adequate compaction is achieved.

Care should be used when operating the compactors near existing structures to avoid transmission of the vibrations that could cause settlement damage or disturb occupants. In this regard, it is recommended that the vibratory roller remain at least 25 feet away from existing structures; these areas should be compacted with small, hand-operated compaction equipment.

4.4 Suitability of On-site Soils

Based on the laboratory testing program, the shallow subsurface SAND (SM, SC-SM, SC) and CLAY (CL) soils encountered at the boring locations do not appear to meet the criteria recommended in this report for reuse as structural fill; however, may be used as fill in green areas. Further classification testing (natural moisture content, gradation analysis, and Proctor testing) should be performed in the field during construction to evaluate the suitability of excavated soils for reuse as structural fill. The project's budget should include an allowance for imported structural fill.

The reason for the disqualification of the subsurface SAND (SC, SC-SM, SM) soils is that soils with large amounts of fine (generally >20%) are difficult to compact when wet, and would typically experience sponginess and instability during compaction if the moisture content is above their optimum moisture. It is noted, however, that when these soils are dried to or below optimum moisture and compacted, they perform adequately as fill. As such, the challenge becomes one of manipulating the moisture of these soils to achieve the desired degree of compaction. Also, utilizing proper compaction equipment (such as sheepsfoot rollers in combination with smooth steel drum rollers) generally increases the likelihood of achieving the desired degree of compaction, not to mention that this is further simplified if attempted during a dry season and establishing proper drainage patterns around the fill (so that they don't become saturated).

It has been our experience that under favorable weather conditions, where the moisture content of similar soils is manipulated to within 2 to 3 percentage points of optimum, compaction of these soils is achievable. A single rain event, however, may delay these proceedings by several days.

If the contractor attempts to reuse the on-site SAND soils, extensive moisture manipulation would be required prior to their reuse. This moisture manipulation could be accomplished by mechanically aerating, disking, and/or scarifying the cohesive soils. However due to their high fines content (Silt/Clay) and current moisture levels, it is not likely this would be a cost-effective operation and would likely delay the construction schedule. As an alternative, these soils could be treated with cement to aid in stabilization.

4.5 Parking/Storage Lot Recommendations

Following the proofrolling operations and the repair of any unsuitable areas, the exposed subgrade soils should be lined with a geosynthetic fabric/grid, Mirafi HP270N or equivalent. The fabric should then be overlain with 10 inches of crushed asphalt compacted to at least 98% of the Standard Proctor maximum dry density (ASTM D698). A representative of **G E T Solutions, Inc.** should perform field density testing to assure that adequate compaction is achieved. Considering the nature of the shallow subsurface soils, some localized subsidence (pothole, unevenness/unlevelness of the finished project) should be expected. It is anticipated that additional maintenance will be required over the lifetime of the storage lot (addition of crushed asphalt and periodic millings) with the bulk of improvements happening early on and tapering off as the subgrade soils improve.

4.6 Site Utility Installation

The base of the utility trenches should be observed by a qualified inspector prior to the pipe placement to verify the suitability of the bearing soils. It is expected that the utilities will be bearing in moist to wet granular and cohesive soils. In instances where unsuitable bearing soils are encountered, some stabilization may be required to provide suitable bedding. This stabilization is commonly accomplished by adding 12 inches or more of bedding stone (Type VDOT No. 57 or similar). The resulting excavations should be backfilled with structural fill, as described in Section 4.3 of this report. Soils containing appreciable amounts of fines or deleterious debris should be discarded or used as fill within green areas. Imported fill should be included in the construction budget for backfilling the utility excavations within the construction areas.

4.7 Dewatering

It is expected that dewatering will be required for excavations that extend near or below the existing groundwater table. Temporary dewatering will impact construction and be dependent on construction methods and scheduling. For those reasons, we recommend the Contractor be solely responsible for the design, installation, maintenance, and performance of all temporary dewatering systems. The dewatering system should be designed to maintain a controlled environment suitable for the proposed construction and specified construction methods. Where temporary shoring is employed, the dewatering system should be compatible with the type of shoring to be used. We recommend the Contractor verify groundwater conditions and evaluate dewatering requirements prior to construction.

Lowering the groundwater table during dewatering activities will result in an increase in effective stresses and may induce settlements of the soils underlying adjacent structures/pavements. Additionally, hydraulic compaction of predominately granular soils (e.g. SP, SM, SC soils) should be anticipated as a result of lowering the groundwater table. We recommend that the dewatering be performed such that the groundwater level is lowered no more than approximately 5 feet below the proposed excavation depth. It may be advantageous to install settlement monuments in areas where dewatering by means of well pointing is required.

4.8 Excavation Stability

The shallow subsurface soil within the project limits is comprised of granular and cohesive soil, which the Contractor should anticipate having relatively little cohesion and have a high potential for caving. Additionally, water seepage at varying elevations should be expected within the side walls of the open cut areas, increasing the potential for caving. Based on these mentioned characteristics, it is recommended that all subsurface soils be considered Type C in accordance with Occupational Safety and Health Administration (OSHA) criteria.

Temporary Slopes

In Federal Register, Volume 54, No. 209 (October, 1989), the United States Department of Labor, Occupational Safety and Health Administration (OSHA) amended its "Construction Standards for Excavations, 29 CFR, part 1926, Subpart P". This document was issued to better ensure the safety of workmen entering trenches or excavations. It is mandated by this federal regulation that all excavations, whether they be utility trenches, basement excavations, or footing excavations, be constructed in accordance with the new (OSHA) guidelines. It is our understanding that these regulations are being strictly enforced and if they are not closely followed, the owner and the Contractor could be liable for substantial penalties.

Temporary slopes may not be a feasible option. The Contractor is solely responsible for designing and constructing stable, temporary excavations and should shore, slope, or bench the sides of the excavations as required to maintain stability of both the excavation sides and bottom. The Contractor's responsible person, as defined in 29 CFR Part 1926, should evaluate the soil exposed in the excavations as part of the Contractor's safety procedures. In no case should slope height, slope inclination, or excavation depth, including utility trench excavation depth, exceed those specified in local, state, and federal safety regulations.

Shoring

Shoring design and installation should be the responsibility of the Contractor. Shoring systems required for this project should be designed by a professional engineer. Shoring systems should be designed to provide positive restraint of trench walls in an effort to protect against lateral deformation that may result in ground cracks, settlement, and/or other ground movements that may affect adjacent underground utilities and pavements as well as surface improvements. The Contractor should be made aware of this potential condition in order that preventative measures can be implemented or repair measures provided for.

Depending on the shoring system used, the removal process may create voids along the walls of the excavations. If these voids are left in place and are significant, backfill and/or the retained soil may shift laterally resulting in settlement of overlying structures/pavements. As such, care should be taken to remove the shoring systems and backfill the trenches in a manner as to not create these voids.
In all cases, the Contractor should select an excavation and/or shoring scheme that will protect adjacent and overlying improvements, including below grade utilities.

We are providing this information solely as a service to our client. **G E T Solutions, Inc.** is not assuming responsibility for construction site safety or the Contractor's activities; such responsibility is not being implied and should not be inferred.

5.0 REPORT LIMITATIONS

The recommendations submitted are based on the available soil information obtained by **G E T Solutions, Inc.** and the information supplied by the client and their designated agents for the proposed project. If there are any revisions to the plans for this project or if deviations from the subsurface conditions noted in this report are encountered during construction, **G E T Solutions, Inc.** should be notified immediately to determine if changes in the recommendations are required. If **G E T Solutions, Inc.** is not retained to perform these functions, **G E T Solutions, Inc.** cannot be responsible for the impact of those conditions on the geotechnical recommendations for the project.

The Geotechnical Engineer warrants that the findings, recommendations, specifications or professional advice contained herein have been made in accordance with generally accepted professional geotechnical engineering practices in the local area. No other warranties are implied or expressed.

After the plans and specifications are more complete, the Geotechnical Engineer should be provided the opportunity to review the final design plans and specifications to make sure our engineering recommendations have been properly incorporated into the design documents, in order that the earthwork and foundation recommendations may be properly interpreted and implemented. At that time, it may be necessary to submit supplementary recommendations.

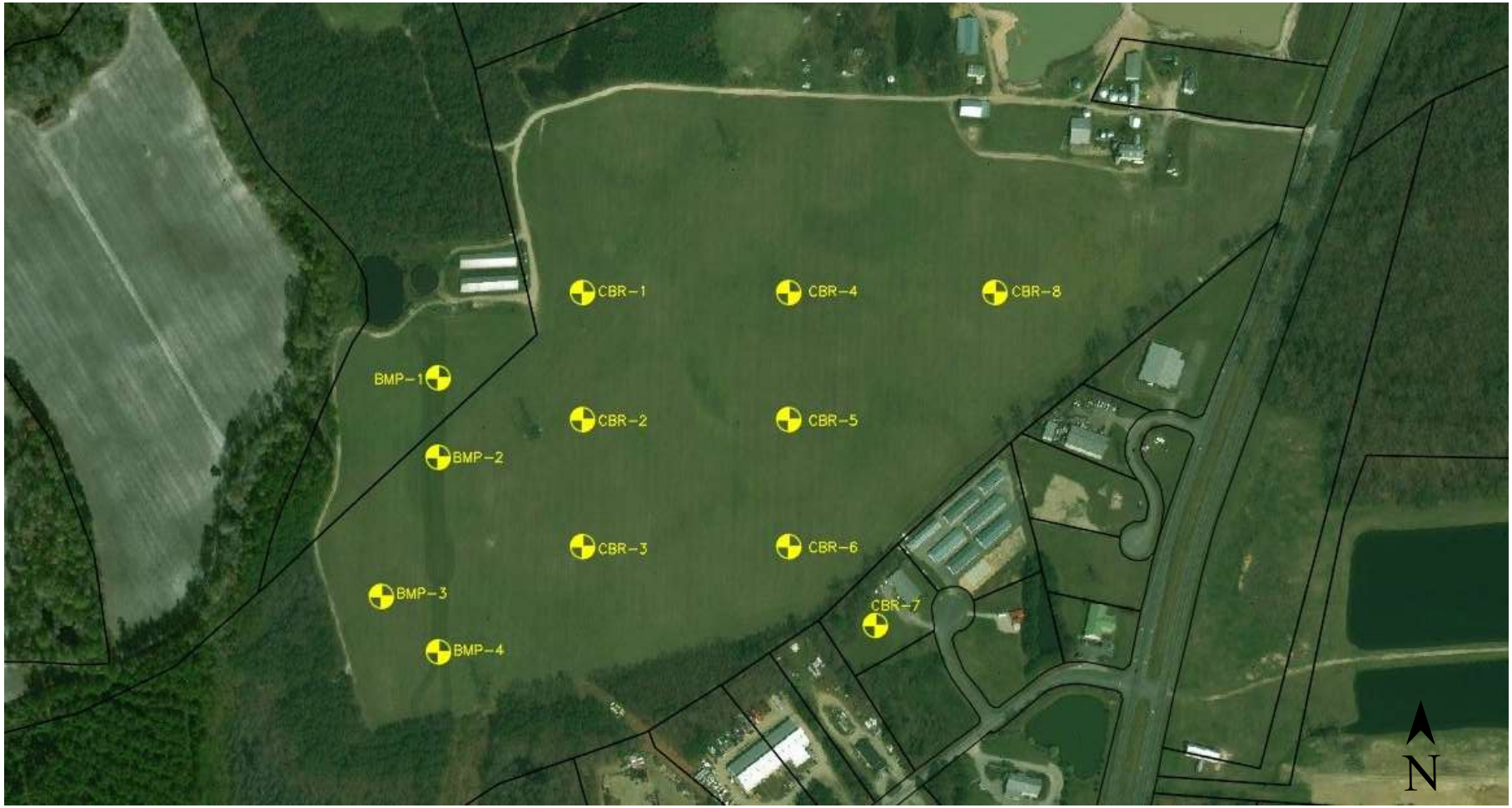
This report has been prepared for the exclusive use of the client and their designated agents for the specific application to the proposed Route 10 Parking and Storage Lot project in Smithfield, Virginia.

APPENDICES

APPENDIX I	BORING LOCATION PLAN
APPENDIX II	CLASSIFICATION SYSTEM FOR SOIL EXPLORATION
APPENDIX III	SUMMARY OF LABORATORY CLASSIFICATION RESULTS
APPENDIX IV	BORING LOGS
APPENDIX V	GENERALIZED SOIL PROFILE
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APPENDIX I

BORING LOCATION PLAN



BORING LOCATION PLAN

PROJECT: Route 10 Parking and Storage Lot

PROJECT LOCATION: Smithfield, Virginia

PROJECT NO: VB20-119G

CLIENT: Blakeway Corporation

GET Solutions, Inc.

APPENDIX II

CLASSIFICATION SYSTEM FOR SOIL EXPLORATION

GET Solutions, Inc.
Geotechnical • Environmental • Testing

Virginia Beach
5465 Greenwich Road
Virginia Beach, VA 23462
(757) 518-1703

Williamsburg
701 Alexander Lee Parkway
Williamsburg, Virginia 23185
(757) 564-6452

Elizabeth City
504 East Elizabeth St. Suite 2
Elizabeth City, NC 27909
(252) 335-9765

CLASSIFICATION SYSTEM FOR SOIL EXPLORATION

Standard Penetration Test (SPT), N-value

Standard Penetration Tests (SPT) were performed in the field in general accordance with ASTM D 1586. The soil samples were obtained with a standard 1.4" I.D., 2" O.D., 30" long split-spoon sampler. The sampler was driven with blows of a 140 lb. hammer falling 30 inches. The number of blows required to drive the sampler each 6-inch increment (4 increments for each soil sample) of penetration was recorded and is shown on the boring logs. The sum of the second and third penetration increments is termed the SPT N-value.

NON COHESIVE SOILS

(SILT, SAND, GRAVEL and Combinations)

Relative Density

Very Loose	4 blows/ft. or less
Loose	5 to 10 blows/ft.
Medium Dense	11 to 30 blows/ft.
Dense	31 to 50 blows/ft.
Very Dense	51 blows/ft. or more

Particle Size Identification

Boulders		8 inch diameter or more
Cobbles		3 to 8 inch diameter
Gravel	Coarse	1 to 3 inch diameter
	Medium	$^1/_2$ to 1 inch diameter
	Fine	$^1/_4$ to $^1/_2$ inch diameter
Sand	Coarse	2.00 mm to $^1/_4$ inch (diameter of pencil lead)
	Medium	0.42 to 2.00 mm (diameter of broom straw)
	Fine	0.074 to 0.42 mm (diameter of human hair)
Silt		0.002 to 0.074 mm (cannot see particles)

COHESIVE SOILS

(CLAY, SILT and Combinations)

Consistency

Very Soft	2 blows/ft. or less
Soft	3 to 4 blows/ft.
Medium Stiff	5 to 8 blows/ft.
Stiff	9 to 15 blows/ft.
Very Stiff	16 to 30 blows/ft.
Hard	31 blows/ft. or more

Relative Proportions

Descriptive Term	Percent
Trace	0-5
Few	5-10
Little	15-25
Some	30-45
Mostly	50-100

Strata Changes

In the column "Description" on the boring log, the horizontal lines represent approximate strata changes.

Groundwater Readings

Groundwater conditions will vary with environmental variations and seasonal conditions, such as the frequency and magnitude of rainfall patterns, as well as tidal influences and man-made influences, such as existing swales, drainage ponds, underdrains and areas of covered soil (paved parking lots, side walks, etc.).

CLASSIFICATION SYMBOLS (ASTM D 2487 and D 2488)

Coarse Grained Soils

More than 50% retained on No. 200 sieve

GW - Well-graded Gravel
GP - Poorly graded Gravel
GW-GM - Well-graded Gravel w/Silt
GW-GC - Well-graded Gravel w/Clay
GP-GM - Poorly graded Gravel w/Silt
GP-GC - Poorly graded Gravel w/Clay
GM - Silty Gravel
GC - Clayey Gravel
GC-GM - Silty, Clayey Gravel
SW - Well-graded Sand
SP - Poorly graded Sand
SW-SM - Well-graded Sand w/Silt
SW-SC - Well-graded Sand w/Clay
SP-SM - Poorly graded Sand w/Silt
SP-SC - Poorly graded Sand w/Clay
SM - Silty Sand
SC - Clayey Sand
SC-SM - Silty, Clayey Sand

Fine-Grained Soils

50% or more passes the No. 200 sieve

CL - Lean Clay
CL-ML - Silty Clay
ML - Silt
OL - Organic Clay/Silt
Liquid Limit 50% or greater
CH - Fat Clay
MH - Elastic Silt
OH - Organic Clay/Silt

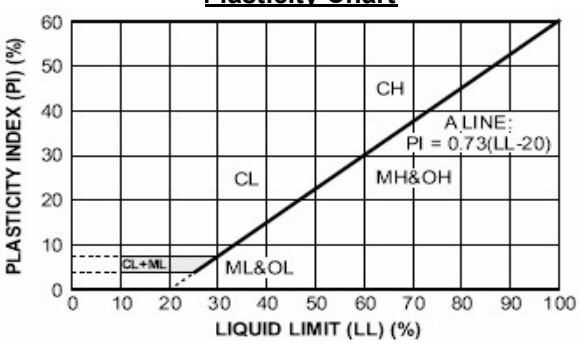
Highly Organic Soils

PT - Peat

Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows:

Less than 5 percent	GW, GP, SW,SP
More than 12 percent	GM, GC, SM, SC
5 to 12 percent	Borderline cases requiring dual symbols

Plasticity Chart



APPENDIX III

SUMMARY OF LABORATORY CLASSIFICATION RESULTS

SUMMARY OF LABORATORY RESULTS

GET Solutions, INC.

CLIENT Blakeway Corporation **PROJECT NAME** Route 10 Parking and Storage Lot

PROJECT NUMBER VB20-119G **PROJECT LOCATION** Isle of Wight, Virginia

Borehole	Depth	Liquid Limit	Plastic Limit	Plasticity Index	Maximum Size (mm)	%<#200 Sieve	Class-ification	Water Content (%)	Dry Density (pcf)	Satur-ation (%)	Void Ratio
BMP-1	1.0							11.7			
BMP-1	3.0							17.0			
BMP-1	5.0							20.6			
BMP-1	7.0							20.1			
BMP-1	9.0							30.1			
BMP-1	11.0	71	24	47	0.075	65	CH	31.3			
BMP-1	14.0							45.0			
BMP-2	5.0	51	25	26	0.075	88	CH	25.0			
BMP-3	3.0	31	14	17	0.075	27	SC	20.6			
BMP-4	1.0							10.9			
BMP-4	3.0							19.5			
BMP-4	5.0							21.4			
BMP-4	7.0	41	18	23	0.075	77	CL	20.3			
BMP-4	9.0							16.5			
BMP-4	11.0							13.6			
BMP-4	14.0							17.4			
CBR-1	2.0	20	13	7	4.75	33	SC-SM	16.9			
CBR-1	7.0	34	15	19	0.075	42	SC	22.7			
CBR-2	1.0	NP	NP	NP	4.75	19	SM	11.1			
CBR-2	9.0	23	13	10	0.075	45	SC	15.2			
CBR-3	2.0	20	11	9	4.75	21	SC	9.7			
CBR-3	7.0	53	19	34	0.075	42	SC	18.6			
CBR-4	2.0	21	12	9	4.75	33	SC	15.4			
CBR-5	1.0	NP	NP	NP	4.75	17	SM	13.3			
CBR-5	5.0	24	11	13	0.075	46	SC	14.7			
CBR-6	2.0	20	12	8	4.75	34	SC	13.9			
CBR-7	2.0	27	16	11	4.75	66	CL	20.8			
CBR-7	7.0	33	14	19	0.075	30	SC	18.2			
CBR-8	2.0	16	12	4	4.75	31	SC-SM	13.8			
CBR-8	3.0	31	13	18	0.075	33	SC	17.9			

(1) GET - LABORATORY TEST SUMMARY - GET_STANDARD_DATATEMPLATE(03-17-14).GDT - 7/13/20 11:10 - G:\GINT\PROJECTS\VB20\VB20-119 ROUTE 10 PARKING AND STORAGE LOT.GPJ

APPENDIX IV

BORING LOGS

RECORD OF SUBSURFACE EXPLORATION

Virginia Beach
5465 Greenwich Road
Virginia Beach, VA 23642
757-518-1703

Williamsburg
1592-E Penniman Road
Williamsburg, VA 23185
757-564-6452

Elizabeth City
106 Capital Trace Unit E
Elizabeth City, NC 27909
252-335-9765

Jacksonville
415-A Western Blvd
Jacksonville, NC 28546
910-478-9915

BORING ID
BMP-1

PROJECT NAME: **Route 10 Parking and Storage Lot**
PROJECT NUMBER: **VB20-119G**
CLIENT: **Blakeway Corporation**
SURFACE ELEVATION (NAVD 88) (ft): **46.0**
PROJECT LOCATION: **Isle of Wight, Virginia**
LOGGED BY: **G. Weber**
BORING LOCATION: **See attached Boring Location Plan**
DATE STARTED: **6/5/2020**
DRILLING METHOD(S): **Rotary wash "mud"**
DATE COMPLETED: **6/5/2020**
GROUNDWATER*: INITIAL (ft) ▽: **10** AFTER **312** HOURS (ft) ▼: **2.1** CAVE-IN (ft) ▽: ___
DRILLER: **GET Solutions, Inc.**
The initial groundwater readings are not intended to indicate the static groundwater level.

Elevation (ft)	Depth (ft)	STRATA DESCRIPTION	Strata Legend	Sample ID	Sample Type	Sample Recovery (in.)	Blow Counts (N-Values)	%<#200
45	0	0.3 3 inches of Topsoil Light brown, fine to medium, SILTY SAND, contains clay nodules, loose, moist (SM)		1	SS	19	2-3-2-2 (5)	
		2.0 Light gray mottled orange, fine to medium, CLAYEY SAND, contains fine organic material, medium dense, moist to wet (SC) Wet below 2.1 feet		2	SS	18	2-5-6-7 (11)	
	5			3	SS	20	7-8-9-8 (17)	
40		6.0 Light brown mottled orange, fine, SILTY SAND, contains clay nodules, medium dense, wet (SM)		4	SS	20	6-7-8-6 (15)	
		8.0 Light gray mottled orange to dark gray, Sandy FAT CLAY, soft to stiff, wet (CH)		5	SS	24	5-5-5-11 (10)	
	10			6	SS	24	5-3-3-2 (6)	65
35				7	SS	24	2-2-2-2 (4)	
	15	15.0 Boring terminated at 15 feet below existing grade.						

TEST RESULTS
Plastic Limit X——X Liquid Limit
Water Content - ●
Penetration - ▨
10 20 30 40 50 60 70

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

Sample Type(s):
SS - Split Spoon

Notes:

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BORING ID
BMP-2

PROJECT NAME: **Route 10 Parking and Storage Lot**
CLIENT: **Blakeway Corporation**
PROJECT LOCATION: **Isle of Wight, Virginia**
BORING LOCATION: **See attached Boring Location Plan**
DRILLING METHOD(S): **Rotary wash "mud"**
GROUNDWATER*: INITIAL (ft) ▽: **8** AFTER **312** HOURS (ft) ▼: **2.8** CAVE-IN (ft) ▽: ___
The initial groundwater readings are not intended to indicate the static groundwater level.

PROJECT NUMBER: **VB20-119G**
SURFACE ELEVATION (NAVD 88) (ft): **46.2**
LOGGED BY: **G. Weber**
DATE STARTED: **6/5/2020**
DATE COMPLETED: **6/5/2020**
DRILLER: **GET Solutions, Inc.**

Elevation (ft)	Depth (ft)	STRATA DESCRIPTION	Strata Legend	Sample ID	Sample Type	Sample Recovery (in.)	Blow Counts (N-Values)	%<#200	TEST RESULTS
46.2	0	0.2 2 inches of Topsoil							
		Brown to light gray mottled orange, LEAN CLAY, few to little sand, contains fine organic material, medium stiff to stiff, moist to wet (CL)		1	SS	16	2-2-3-2 (5)		
45				2	SS	17	4-4-6-6 (10)		
		Wet below 2.8 feet							
		4.0 Light gray mottled orange, FAT CLAY, few sand, stiff, wet (CH)		3	SS	21	6-7-7-7 (14)	88	
	5	6.0 Gray, fine to coarse, CLAYEY SAND, some to mostly gravel, medium dense, moist to wet (SC)		4	SS	20	8-8-9-9 (17)		
40				5	SS	12	5-6-7-7 (13)		
	10	10.0 Orange-brown, fine to coarse, SILTY SAND, loose, wet (SM)		6	SS	24	2-4-3-4 (7)		
35									
				7	SS	24	2-3-4-3 (7)		
		14.5							
	15	15.0 Light gray, fine, CLAYEY SAND, loose, wet (SC)							
		Boring terminated at 15 feet below existing grade.							

TEST RESULTS: Plastic Limit X——X Liquid Limit; Water Content - ●; Penetration - ▨; 10 20 30 40 50 60 70

Sample Type(s):
SS - Split Spoon

Notes:

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

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BORING ID
BMP-3

PROJECT NAME: **Route 10 Parking and Storage Lot**
PROJECT NUMBER: **VB20-119G**
CLIENT: **Blakeway Corporation**
SURFACE ELEVATION (NAVD 88) (ft): **50.8**
PROJECT LOCATION: **Isle of Wight, Virginia**
LOGGED BY: **G. Weber**
BORING LOCATION: **See attached Boring Location Plan**
DATE STARTED: **6/5/2020**
DRILLING METHOD(S): **Rotary wash "mud"**
DATE COMPLETED: **6/5/2020**
GROUNDWATER*: INITIAL (ft) ▽: **9** AFTER **312** HOURS (ft) ▼: **1.5** CAVE-IN (ft) ▽: ___
DRILLER: **GET Solutions, Inc.**
The initial groundwater readings are not intended to indicate the static groundwater level.

Elevation (ft)	Depth (ft)	STRATA DESCRIPTION	Strata Legend	Sample ID	Sample Type	Sample Recovery (in.)	Blow Counts (N-Values)	%<#200	TEST RESULTS (Plastic Limit X—X Liquid Limit; Water Content - ●; Penetration - ▨; 10 20 30 40 50 60 70)
50	0	0.3 3 inches of Topsoil Light brown, fine, SILTY SAND, loose, moist to wet (SM)		1	SS	18	2-3-3-3 (6)		
		Wet below 1.5 feet							
		2.0 Brown, fine to medium, CLAYEY SAND, loose, wet (SC)		2	SS	14	2-3-3-3 (6)	27	
	5	Color change to Gray mottled orange below 4 feet		3	SS	24	2-4-4-6 (8)		
45		6.0 Gray mottled orange, LEAN CLAY, trace to some sand, stiff to very stiff, wet (CL)		4	SS	24	6-6-7-9 (13)		
				5	SS	24	6-7-8-10 (15)		
	10			6	SS	23	7-8-9-9 (17)		
40		Color change to Dark gray mottled gray below 13 feet		7	SS	24	9-10-10-11 (20)		
	15	15.0 Boring terminated at 15 feet below existing grade.							

Sample Type(s):
SS - Split Spoon

Notes:

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

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BORING ID
BMP-4

PROJECT NAME: **Route 10 Parking and Storage Lot**
PROJECT NUMBER: **VB20-119G**
CLIENT: **Blakeway Corporation**
SURFACE ELEVATION (NAVD 88) (ft): **49.9**
PROJECT LOCATION: **Isle of Wight, Virginia**
LOGGED BY: **G. Weber**
BORING LOCATION: **See attached Boring Location Plan**
DATE STARTED: **6/5/2020**
DRILLING METHOD(S): **Rotary wash "mud"**
DATE COMPLETED: **6/5/2020**
GROUNDWATER*: INITIAL (ft) ▽: **14** AFTER **312** HOURS (ft) ▼: **1.4** CAVE-IN (ft) ▽: ___
DRILLER: **GET Solutions, Inc.**
The initial groundwater readings are not intended to indicate the static groundwater level.

Elevation (ft)	Depth (ft)	STRATA DESCRIPTION	Strata Legend	Sample ID	Sample Type	Sample Recovery (in.)	Blow Counts (N-Values)	%<#200	TEST RESULTS
	0.3	4 inches of Topsoil							
		Light brown, fine, SILTY SAND, very loose, moist to wet (SM)		1	SS	11	2-2-2-2 (4)		
		Wet below 1.4 feet							
	2.0	Light gray mottled orange, fine to medium, CLAYEY SAND, very loose, wet (SC)		2	SS	17	1-2-2-3 (4)		
	4.0	Dark gray mottled gray, LEAN CLAY, little to some sand, stiff to very stiff, wet (CL)		3	SS	20	3-5-6-8 (11)		
45	5			4	SS	22	6-9-10-9 (19)	77	
				5	SS	24	7-8-10-9 (18)		
40	10	Color change to Dark gray mottled orange below 10 feet		6	SS	24	6-8-9-7 (17)		
		Color change to Light gray below 13 feet		7	SS	24	9-10-12-14 (22)		
35	15	15.0							
		Boring terminated at 15 feet below existing grade.							

TEST RESULTS
Plastic Limit X——X Liquid Limit
Water Content - ●
Penetration - ▨
10 20 30 40 50 60 70

Sample Type(s):
SS - Split Spoon

Notes:

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BORING ID
CBR-1

PROJECT NAME: **Route 10 Parking and Storage Lot**
PROJECT NUMBER: **VB20-119G**
CLIENT: **Blakeway Corporation**
SURFACE ELEVATION (NAVD 88) (ft): **44.8**
PROJECT LOCATION: **Isle of Wight, Virginia**
LOGGED BY: **G. Weber**
BORING LOCATION: **See attached Boring Location Plan**
DATE STARTED: **6/5/2020**
DRILLING METHOD(S): **Rotary wash "mud"**
DATE COMPLETED: **6/5/2020**
GROUNDWATER*: INITIAL (ft) ▽: **8** AFTER ____ HOURS (ft) ▼: ____ CAVE-IN (ft) ▽: ____
DRILLER: **GET Solutions, Inc.**
The initial groundwater readings are not intended to indicate the static groundwater level.

Elevation (ft)	Depth (ft)	STRATA DESCRIPTION	Strata Legend	Sample ID	Sample Type	Sample Recovery (in.)	Blow Counts (N-Values)	%<#200	TEST RESULTS
	0.4	5 inches of Topsoil							
		Brown, fine, SILTY SAND, loose, moist (SM)		1	SS	15	2-3-3-2 (6)		
	2.0	Light gray mottled orange, fine to medium, SILTY CLAYEY SAND, loose, moist (SC-SM)		2	SS	14	1-3-4-4 (7)	33	
	4.0	Light gray mottled orange, fine to medium, CLAYEY SAND, loose to medium dense, moist to wet (SC)		3	SS	20	3-3-4-5 (7)		
40	5			4	SS	23	3-5-6-6 (11)	42	
▽		Color change to Light gray, wet below 8 feet		5	SS	21	4-4-4-4 (8)		
35	10	10.0							
		Boring terminated at 10 feet below existing grade.							

TEST RESULTS
Plastic Limit X——X Liquid Limit
Water Content - ●
Penetration - ▨
10 20 30 40 50 60 70

Sample Type(s):
SS - Split Spoon

Notes:

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BORING ID
CBR-2

PROJECT NAME: **Route 10 Parking and Storage Lot**
PROJECT NUMBER: **VB20-119G**
CLIENT: **Blakeway Corporation**
SURFACE ELEVATION (NAVD 88) (ft): **50.4**
PROJECT LOCATION: **Isle of Wight, Virginia**
LOGGED BY: **G. Weber**
BORING LOCATION: **See attached Boring Location Plan**
DATE STARTED: **6/5/2020**
DRILLING METHOD(S): **Rotary wash "mud"**
DATE COMPLETED: **6/5/2020**
GROUNDWATER*: INITIAL (ft) ▽: **7.75** AFTER ___ HOURS (ft) ▼: ___ CAVE-IN (ft) ▽: ___
DRILLER: **GET Solutions, Inc.**
The initial groundwater readings are not intended to indicate the static groundwater level.

Elevation (ft)	Depth (ft)	STRATA DESCRIPTION	Strata Legend	Sample ID	Sample Type	Sample Recovery (in.)	Blow Counts (N-Values)	%<#200	TEST RESULTS
50	0.3	4 inches of Topsoil							
		Brown, fine to medium, SILTY SAND, loose, moist (SM)		1	SS	16	1-2-3-3 (5)	19	
	2.0	Orange-brown, fine to medium, very loose to medium dense, moist to wet (SC)		2	SS	14	2-2-2-2 (4)		
		Color change to Light gray mottled orange below 4 feet		3	SS	21	2-3-4-7 (7)		
45	5	Wet below 7.75 feet ▽		4	SS	23	5-8-9-16 (17)		
				5	SS	24	1-4-5-8 (9)	45	
	10	10.0 Boring terminated at 10 feet below existing grade.							

Plastic Limit X——X Liquid Limit
Water Content - ●
Penetration - ▨
10 20 30 40 50 60 70

Sample Type(s):
SS - Split Spoon

Notes:

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

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BORING ID
CBR-3

PROJECT NAME: **Route 10 Parking and Storage Lot**
CLIENT: **Blakeway Corporation**
PROJECT LOCATION: **Isle of Wight, Virginia**
BORING LOCATION: **See attached Boring Location Plan**
DRILLING METHOD(S): **Rotary wash "mud"**
GROUNDWATER*: INITIAL (ft) ▽: **7.5** AFTER ____ HOURS (ft) ▼: ____ CAVE-IN (ft) ▽: ____
The initial groundwater readings are not intended to indicate the static groundwater level.

PROJECT NUMBER: **VB20-119G**
SURFACE ELEVATION (NAVD 88) (ft): **52.0**
LOGGED BY: **G. Weber**
DATE STARTED: **6/5/2020**
DATE COMPLETED: **6/5/2020**
DRILLER: **GET Solutions, Inc.**

Elevation (ft)	Depth (ft)	STRATA DESCRIPTION	Strata Legend	Sample ID	Sample Type	Sample Recovery (in.)	Blow Counts (N-Values)	%<#200	TEST RESULTS
	0.3	4 inches of Topsoil							
		Brown, fine to medium, SILTY SAND, contains fine organic material, very loose, moist (SM)		1	SS	12	1-2-2-3 (4)		
50	2.0	Brown, fine to medium, CLAYEY SAND, loose to medium dense, moist to wet (SC)		2	SS	14	2-3-4-4 (7)	21	
		Color change to Light gray mottled orange below 4 feet		3	SS	17	2-4-6-10 (10)		
45	5	Wet below 7.5 feet		4	SS	20	6-8-12-16 (20)	42	
	8.0	Light gray mottled orange, LEAN CLAY, little sand, very stiff, wet (CL)		5	SS	22	8-8-8-10 (16)		
	10	10.0 Boring terminated at 10 feet below existing grade.							

Plastic Limit X——X Liquid Limit
Water Content - ●
Penetration - ▨
10 20 30 40 50 60 70

Sample Type(s):
SS - Split Spoon

Notes:

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

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BORING ID
CBR-4

PROJECT NAME: **Route 10 Parking and Storage Lot**
CLIENT: **Blakeway Corporation**
PROJECT LOCATION: **Isle of Wight, Virginia**
BORING LOCATION: **See attached Boring Location Plan**
DRILLING METHOD(S): **Rotary wash "mud"**
GROUNDWATER*: INITIAL (ft) ▽: ___ AFTER ___ HOURS (ft) ▼: ___ CAVE-IN (ft) ▽: ___
The initial groundwater readings are not intended to indicate the static groundwater level.

PROJECT NUMBER: **VB20-119G**
SURFACE ELEVATION (NAVD 88) (ft): **51.5**
LOGGED BY: **G. Weber**
DATE STARTED: **6/5/2020**
DATE COMPLETED: **6/5/2020**
DRILLER: **GET Solutions, Inc.**

Elevation (ft)	Depth (ft)	STRATA DESCRIPTION	Strata Legend	Sample ID	Sample Type	Sample Recovery (in.)	Blow Counts (N-Values)	%<#200	TEST RESULTS
		5 inches of Topsoil							
	0.4	Brown, fine to medium, SILTY SAND, contains fine organic material, very loose (SM)		1	SS	14	1-2-2-1 (4)		
50	2.0	Brown, fine to medium, CLAYEY SAND, loose (SC)		2	SS	15	1-2-3-3 (5)	33	
	5	Color change to Gray mottled orange below 4 feet		3	SS	18	2-5-4-6 (9)		
	6.0	Gray mottled orange, LEAN CLAY, few sand, very stiff (CL)		4	SS	23	8-8-9-10 (17)		
45				5	SS	20	9-10-10-12 (20)		
	10	10.0 Boring terminated at 10 feet below existing grade.							

TEST RESULTS: Plastic Limit X——X Liquid Limit; Water Content - ●; Penetration - ▨; 10 20 30 40 50 60 70

Sample Type(s):
SS - Split Spoon

Notes: Water table not encountered at time of drilling

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

RECORD OF SUBSURFACE EXPLORATION

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BORING ID
CBR-5

PROJECT NAME: **Route 10 Parking and Storage Lot**
CLIENT: **Blakeway Corporation**
PROJECT LOCATION: **Isle of Wight, Virginia**
BORING LOCATION: **See attached Boring Location Plan**
DRILLING METHOD(S): **Rotary wash "mud"**
GROUNDWATER*: INITIAL (ft) ▽: ___ AFTER ___ HOURS (ft) ▼: ___ CAVE-IN (ft) ▽: ___
The initial groundwater readings are not intended to indicate the static groundwater level.

PROJECT NUMBER: **VB20-119G**
SURFACE ELEVATION (NAVD 88) (ft): **51.2**
LOGGED BY: **G. Weber**
DATE STARTED: **6/5/2020**
DATE COMPLETED: **6/5/2020**
DRILLER: **GET Solutions, Inc.**

Elevation (ft)	Depth (ft)	STRATA DESCRIPTION	Strata Legend	Sample ID	Sample Type	Sample Recovery (in.)	Blow Counts (N-Values)	%<#200	TEST RESULTS
		4 inches of Topsoil							
	0.3	Light gray, fine to medium, SILTY SAND, contains clay nodules, very loose to loose (SM)		1	SS	17	1-2-2-3 (4)	17	
50		Color change to Orange-brown below 2 feet		2	SS	14	2-3-2-2 (5)		
	4.0	Light gray mottled orange, fine to medium, CLAYEY SAND, loose (SC)		3	SS	24	3-3-4-4 (7)	46	
45	5 6.0	Light gray mottled orange, LEAN CLAY, little sand, stiff to very stiff (CL)		4	SS	24	4-5-7-6 (12)		
				5	SS	22	9-9-11-12 (20)		
	10 10.0	Boring terminated at 10 feet below existing grade.							

TEST RESULTS: Plastic Limit X——X Liquid Limit; Water Content - ●; Penetration - ▨; 10 20 30 40 50 60 70

Sample Type(s):
SS - Split Spoon

Notes: Water table not encountered at time of drilling

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

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BORING ID
CBR-6

PROJECT NAME: **Route 10 Parking and Storage Lot**
CLIENT: **Blakeway Corporation**
PROJECT LOCATION: **Isle of Wight, Virginia**
BORING LOCATION: **See attached Boring Location Plan**
DRILLING METHOD(S): **Rotary wash "mud"**
GROUNDWATER*: INITIAL (ft) ▽: ___ AFTER ___ HOURS (ft) ▼: ___ CAVE-IN (ft) ▽: ___
The initial groundwater readings are not intended to indicate the static groundwater level.

PROJECT NUMBER: **VB20-119G**
SURFACE ELEVATION (NAVD 88) (ft): **53.4**
LOGGED BY: **G. Weber**
DATE STARTED: **6/5/2020**
DATE COMPLETED: **6/5/2020**
DRILLER: **GET Solutions, Inc.**

Elevation (ft)	Depth (ft)	STRATA DESCRIPTION	Strata Legend	Sample ID	Sample Type	Sample Recovery (in.)	Blow Counts (N-Values)	%<#200	TEST RESULTS
	0.3	3 inches of Topsoil							
		Dark brown, fine, SILTY SAND, loose (SM)		1	SS	15	1-3-2-2 (5)		
	2.0							34	
		Brown, fine to medium, CLAYEY SAND, loose (SC)		2	SS	16	2-3-4-4 (7)		
50	4.0								
		Gray mottled red, LEAN CLAY, little sand, very stiff (CL)		3	SS	21	6-8-9-8 (17)		
	5			4	SS	24	6-8-10-11 (18)		
45				5	SS	21	10-10-11-10 (21)		
	10	10.0							
		Boring terminated at 10 feet below existing grade.							

Plastic Limit X——X Liquid Limit
Water Content - ●
Penetration - ▨
10 20 30 40 50 60 70

Sample Type(s):
SS - Split Spoon

Notes: Water table not encountered at time of drilling

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

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910-478-9915

BORING ID
CBR-7

PROJECT NAME: **Route 10 Parking and Storage Lot**
PROJECT NUMBER: **VB20-119G**
CLIENT: **Blakeway Corporation**
SURFACE ELEVATION (NAVD 88) (ft): **50.3**
PROJECT LOCATION: **Isle of Wight, Virginia**
LOGGED BY: **G. Weber**
BORING LOCATION: **See attached Boring Location Plan**
DATE STARTED: **6/5/2020**
DRILLING METHOD(S): **Rotary wash "mud"**
DATE COMPLETED: **6/5/2020**
GROUNDWATER*: INITIAL (ft) ▽: **8** AFTER ____ HOURS (ft) ▼: ____ CAVE-IN (ft) ▽: ____
DRILLER: **GET Solutions, Inc.**

The initial groundwater readings are not intended to indicate the static groundwater level.

Elevation (ft)	Depth (ft)	STRATA DESCRIPTION	Strata Legend	Sample ID	Sample Type	Sample Recovery (in.)	Blow Counts (N-Values)	%<#200
50	0	6 inches of Topsoil						
	0.5	Dark brown, fine, SILTY SAND, contains clay nodules and fine organic material, loose, moist (SM)		1	SS	18	2-3-3-2 (6)	
	2.0	Brown, Sandy LEAN CLAY, soft, moist (CL)		2	SS	19	2-2-2-4 (4)	66
	4.0	Light gray mottled orange, fine to medium, CLAYEY SAND, loose to medium dense, moist to wet (SC)		3	SS	24	4-4-5-6 (9)	
45	5			4	SS	24	6-6-7-6 (13)	30
		Wet below 8 feet		5	SS	24	5-6-7-6 (13)	
	10	10.0 Boring terminated at 10 feet below existing grade.						

TEST RESULTS
Plastic Limit X——X Liquid Limit
Water Content - ●
Penetration - ▨
10 20 30 40 50 60 70

Sample Type(s):
SS - Split Spoon

Notes:

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

RECORD OF SUBSURFACE EXPLORATION

Virginia Beach
5465 Greenwich Road
Virginia Beach, VA 23642
757-518-1703

Williamsburg
1592-E Penniman Road
Williamsburg, VA 23185
757-564-6452

Elizabeth City
106 Capital Trace Unit E
Elizabeth City, NC 27909
252-335-9765

Jacksonville
415-A Western Blvd
Jacksonville, NC 28546
910-478-9915

BORING ID
CBR-8

PROJECT NAME: **Route 10 Parking and Storage Lot**
CLIENT: **Blakeway Corporation**
PROJECT LOCATION: **Isle of Wight, Virginia**
BORING LOCATION: **See attached Boring Location Plan**
DRILLING METHOD(S): **Rotary wash "mud"**
GROUNDWATER*: INITIAL (ft) ▽: ___ AFTER ___ HOURS (ft) ▼: ___ CAVE-IN (ft) ▽: ___
The initial groundwater readings are not intended to indicate the static groundwater level.

PROJECT NUMBER: **VB20-119G**
SURFACE ELEVATION (NAVD 88) (ft): **55.8**
LOGGED BY: **G. Weber**
DATE STARTED: **6/5/2020**
DATE COMPLETED: **6/5/2020**
DRILLER: **GET Solutions, Inc.**

Elevation (ft)	Depth (ft)	STRATA DESCRIPTION	Strata Legend	Sample ID	Sample Type	Sample Recovery (in.)	Blow Counts (N-Values)	%<#200	TEST RESULTS
55	0.3	3 inches of Topsoil							
		Light brown, fine to medium, SILTY SAND, contains fine organic material, very loose (SM)		1	SS	15	1-1-2-2 (3)		
	2.0							31	
		Brown, fine to medium, SILTY CLAYEY SAND, very loose (SC-SM)		2	SS	15	1-1-1-2 (2)	33	
	4.0								
	5	Gray mottled orange, fine to medium, CLAYEY SAND, loose (SC)		3	SS	24	2-3-5-6 (8)		
50	6.0								
		Gray mottled orange, LEAN CLAY, little sand, stiff to very stiff (CL)		4	SS	24	5-6-7-11 (13)		
				5	SS	24	8-8-11-11 (19)		
	10	10.0							
		Boring terminated at 10 feet below existing grade.							

TEST RESULTS: Plastic Limit X——X Liquid Limit; Water Content - ●; Penetration - ▨; 10 20 30 40 50 60 70

Sample Type(s):
SS - Split Spoon

Notes: Water table not encountered at time of drilling

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

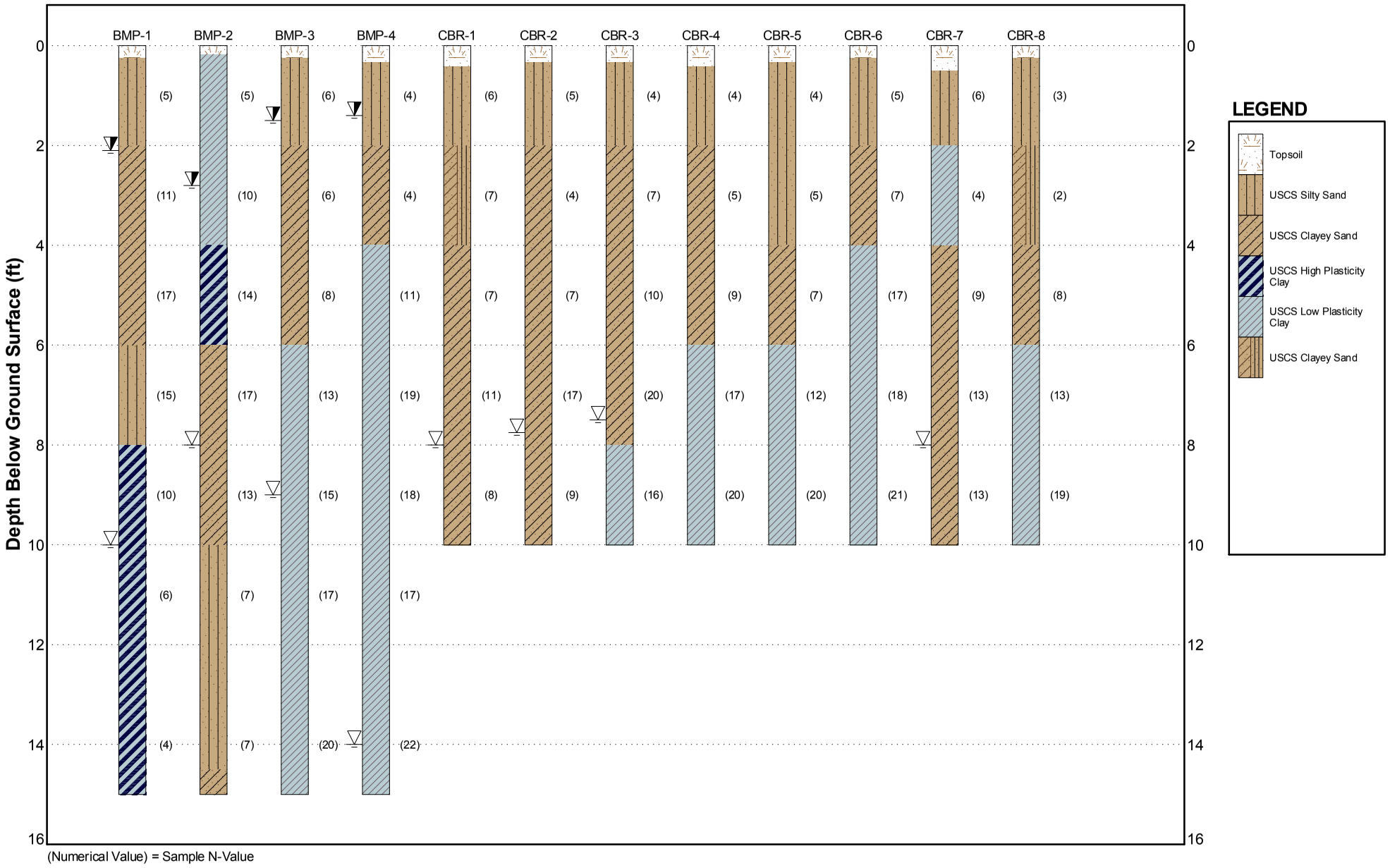
APPENDIX V

GENERALIZED SOIL PROFILE

GET Solutions, Inc.
Geotechnical • Environmental • Testing

GENERALIZED SOIL PROFILE

PROJECT NAME: **Route 10 Parking and Storage Lot**
PROJECT NUMBER: **VB20-119G**
PROJECT LOCATION: **Isle of Wight, Virginia**
CLIENT: **Blakeway Corporation**

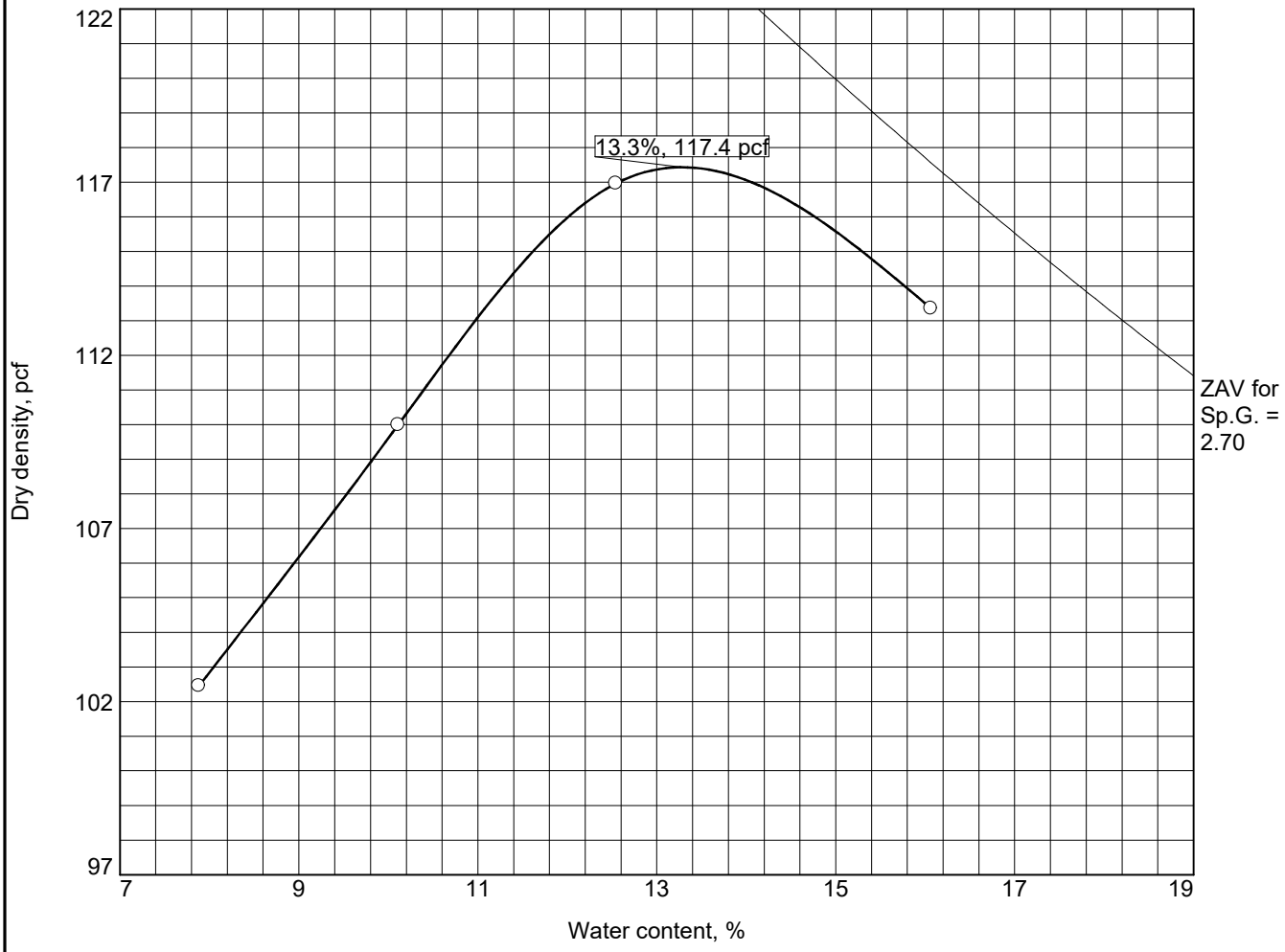


(Numerical Value) = Sample N-Value

APPENDIX VI

CBR TEST RESULTS

MOISTURE DENSITY RELATIONSHIP (PROCTOR CURVE)



Test specification: ASTM D 698-12 Method A Standard

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
12-36 in.	SC-SM	A-4(0)	17		21	8	0.1	35.6

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 117.4 pcf Optimum moisture = 13.3 %	Gray, SILTY CLAYEY SAND

Project No. VB20-119G **Client:** Blakeway Corporation
Project: Route 10 Parking and Storage Lot

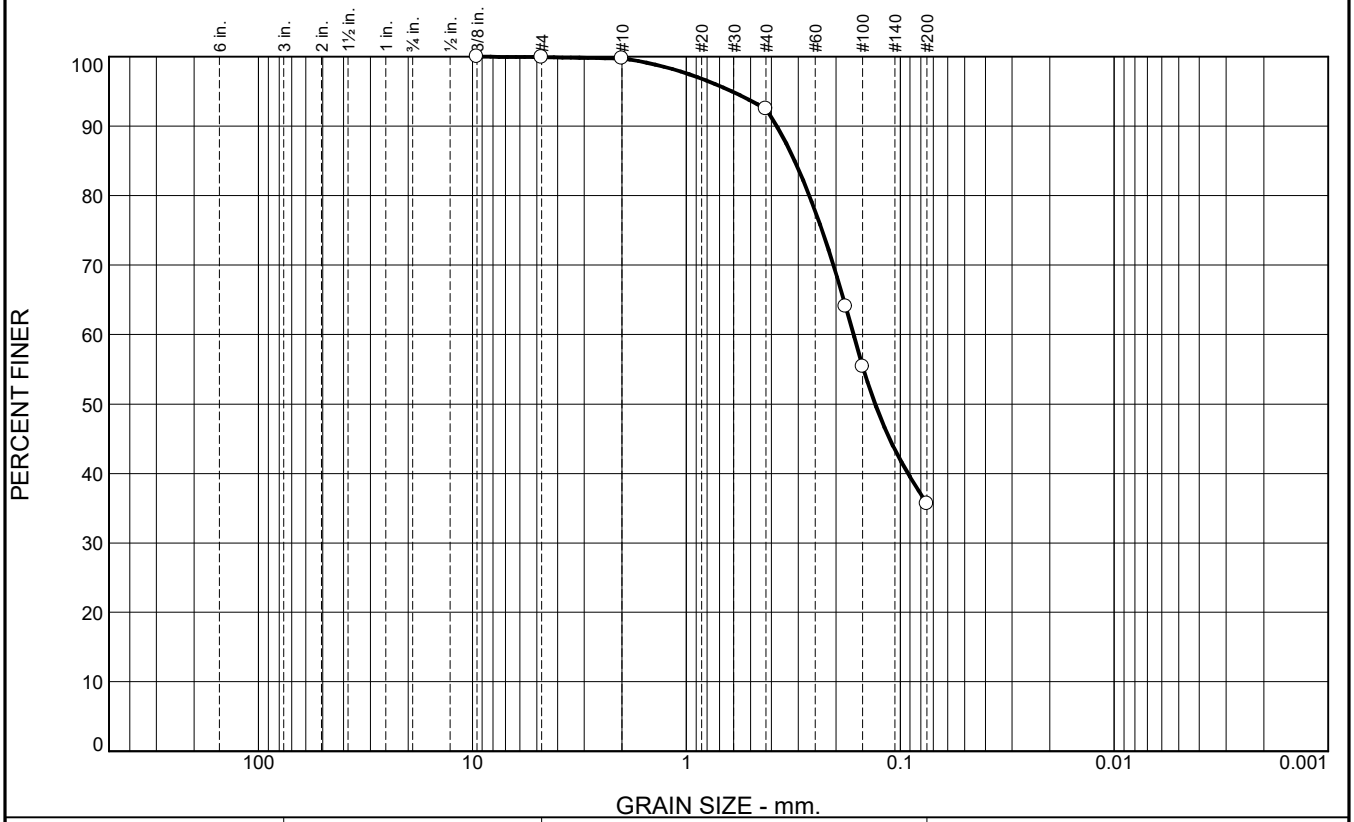
○**Location:** CBR-1 **Sample Number:** CBR-1

Remarks:
Sample Obtained 6/5/20

GET SOLUTIONS, INC.

Figure 1

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.2	7.2	56.9	35.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.7		
#40	92.5		
#80	64.0		
#100	55.4		
#200	35.6		

* (no specification provided)

Material Description

Gray, SILTY CLAYEY SAND

Atterberg Limits

PL= 13 LL= 21 PI= 8

Coefficients

D_{90}= 0.3780 D_{85}= 0.3118 D_{60}= 0.1655
D_{50}= 0.1311 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC-SM AASHTO= A-4(0)

Remarks

Sample Obtained 6/5/20

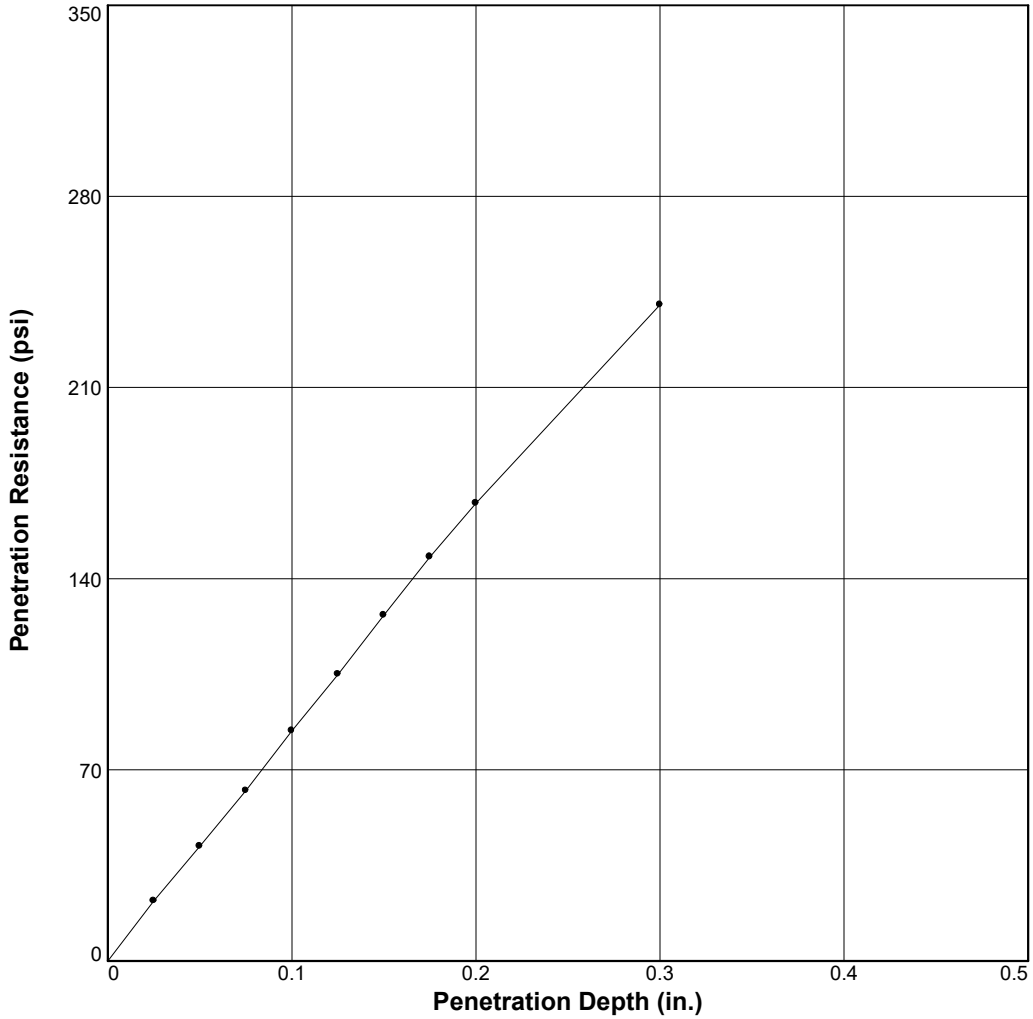
Location: CBR-1
Sample Number: CBR-1 **Depth:** 12-36 in. **Date:** 6/5/20

GET SOLUTIONS, INC.

Client: Blakeway Corporation
Project: Route 10 Parking and Storage Lot

Project No: VB20-119G **Figure** 1A

BEARING RATIO TEST REPORT
VTM-8 (2013)



	Molded			Soaked			CBR (%)		Linearity Correction (in.)	Surcharge (lbs.)	Max. Swell (%)
	Density (pcf)	Percent of Max. Dens.	Moisture (%)	Density (pcf)	Percent of Max. Dens.	Moisture (%)	0.10 in.	0.20 in.			
1 ○	117.3	99.9	13.5	117.1	99.8	14.1	8.4	11.2	0.000	10	0.1
2 △											
3 □											

Material Description	USCS	Max. Dens. (pcf)	Optimum Moisture (%)	LL	PI
Gray, SILTY CLAYEY SAND	SC-SM	117.4	13.3	21	8

Project No: VB20-119G

Project: Route 10 Parking and Storage Lot

Location: CBR-1

Sample Number: CBR-1 **Depth:** 12-36 in.

Date: 6/5/20

Test Description/Remarks:

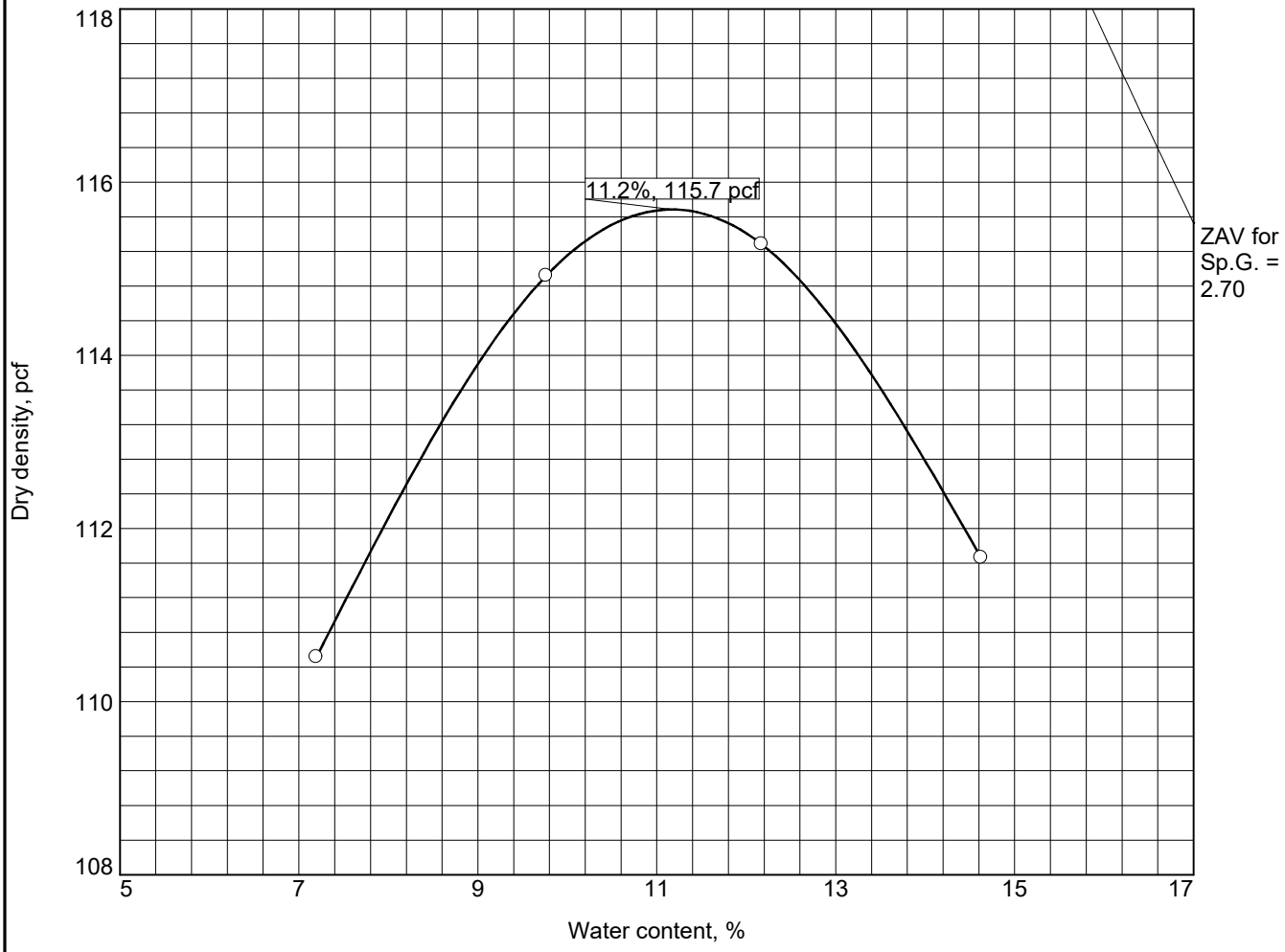
Resiliency Factor = 3.0

BEARING RATIO TEST REPORT

GET SOLUTIONS, INC.

Figure 1B

MOISTURE DENSITY RELATIONSHIP (PROCTOR CURVE)



Test specification: ASTM D 698-12 Method A Standard

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
4-24 in.	SM	A-2-4(0)	11		NP	NP	0.1	19.5

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 115.7 pcf Optimum moisture = 11.2 %	Brown, SILTY SAND

Project No. VB20-119G **Client:** Blakeway Corporation
Project: Route 10 Parking and Storage Lot

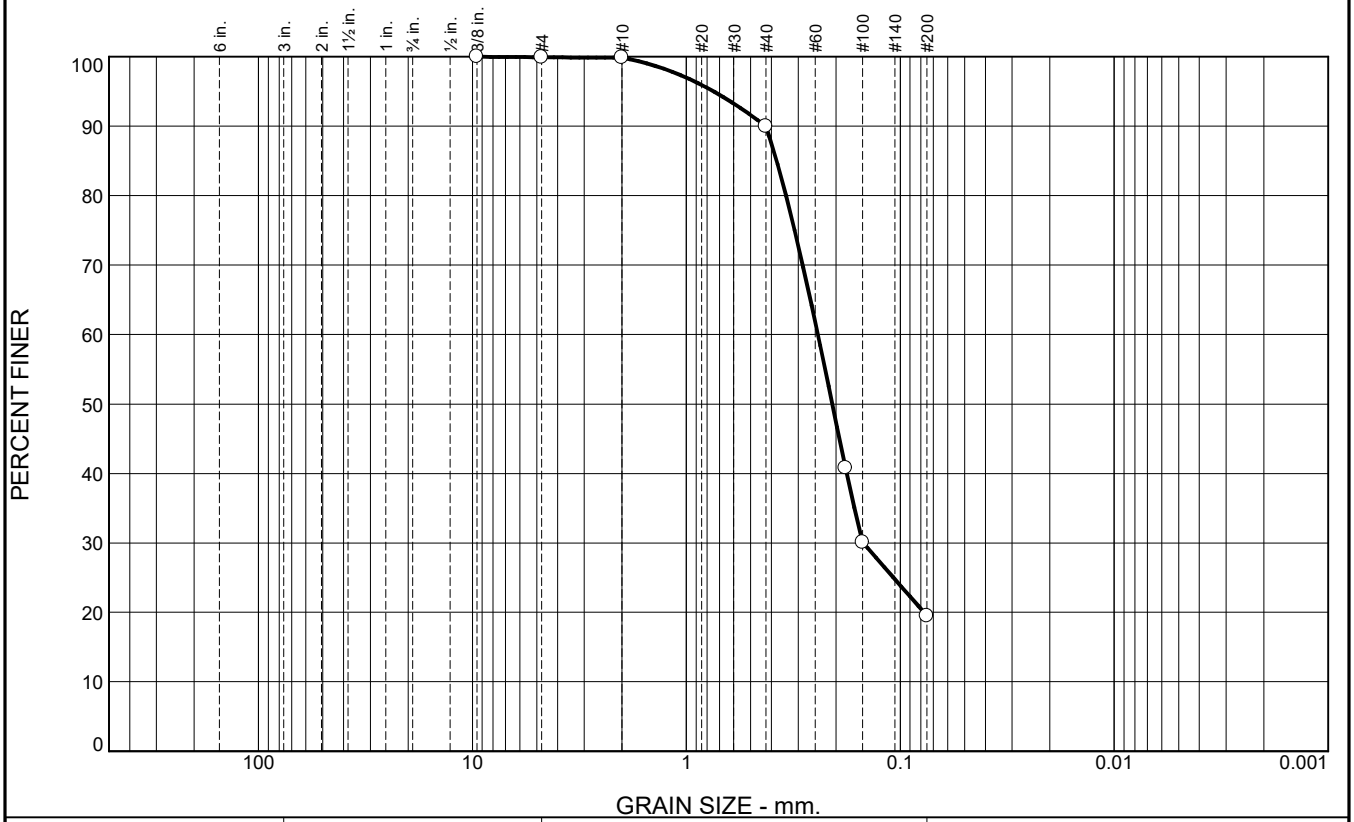
○**Location:** CBR-2 **Sample Number:** CBR-2

Remarks:
Sample Obtained 6/5/20

GET SOLUTIONS, INC.

Figure 2

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.1	9.8	70.5	19.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.8		
#40	90.0		
#80	40.8		
#100	30.1		
#200	19.5		

* (no specification provided)

Material Description

Brown, SILTY SAND

Atterberg Limits

PL= NP LL= NP PI= NP

Coefficients

D_{90}= 0.4267 D_{85}= 0.3784 D_{60}= 0.2428
D_{50}= 0.2078 D_{30}= 0.1493 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO= A-2-4(0)

Remarks

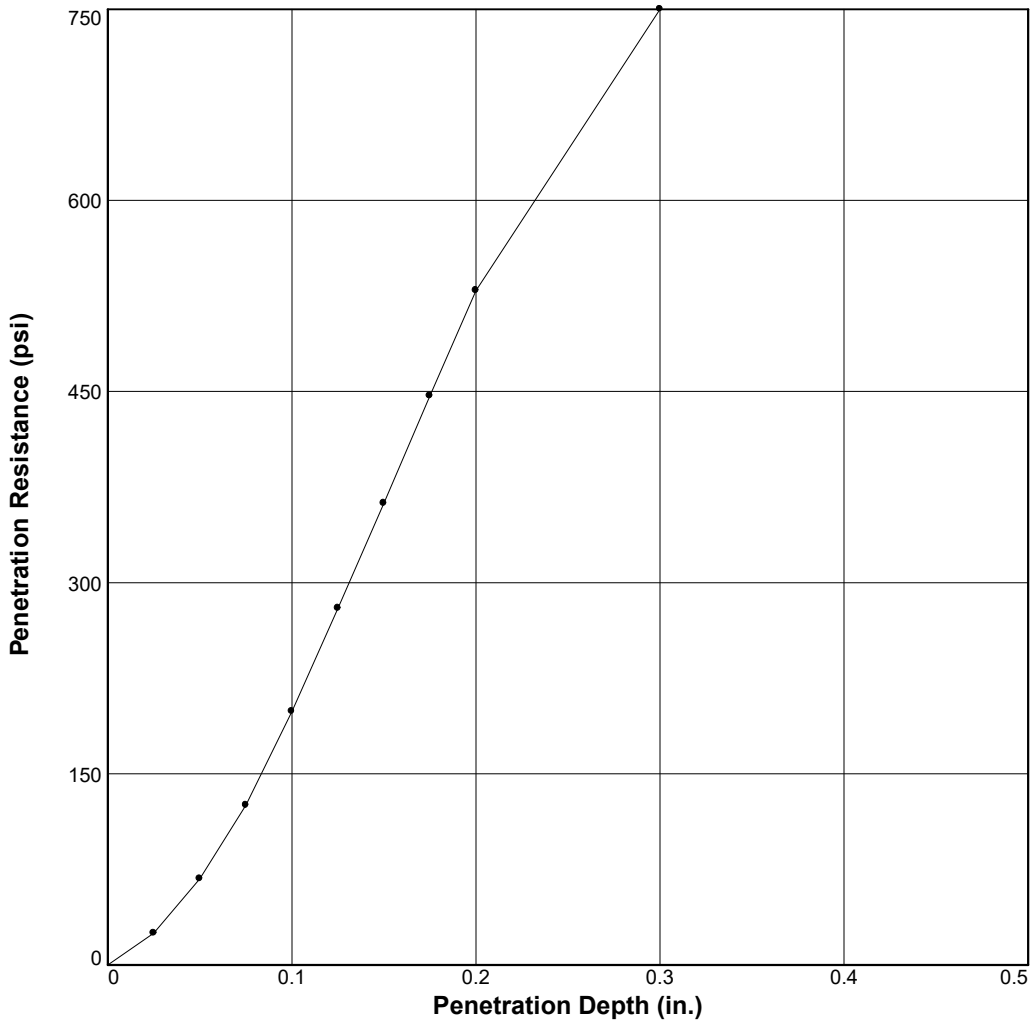
Sample Obtained 6/5/20

Location: CBR-2
Sample Number: CBR-2 **Depth:** 4-24 in. **Date:** 6/5/20

GET SOLUTIONS, INC.

Client: Blakeway Corporation
Project: Route 10 Parking and Storage Lot
Project No: VB20-119G **Figure** 2A

BEARING RATIO TEST REPORT
VTM-8 (2013)



	Molded			Soaked			CBR (%)		Linearity Correction (in.)	Surcharge (lbs.)	Max. Swell (%)
	Density (pcf)	Percent of Max. Dens.	Moisture (%)	Density (pcf)	Percent of Max. Dens.	Moisture (%)	0.10 in.	0.20 in.			
1 ○	115.2	99.6	10.9	115.2	99.6	11.5	32.3	40.9	0.038	10	0
2 △											
3 □											

Material Description	USCS	Max. Dens. (pcf)	Optimum Moisture (%)	LL	PI
Brown, SILTY SAND	SM	115.7	11.2	NP	NP

Project No: VB20-119G

Project: Route 10 Parking and Storage Lot

Location: CBR-2

Sample Number: CBR-2 **Depth:** 4-24 in.

Date: 6/5/20

Test Description/Remarks:

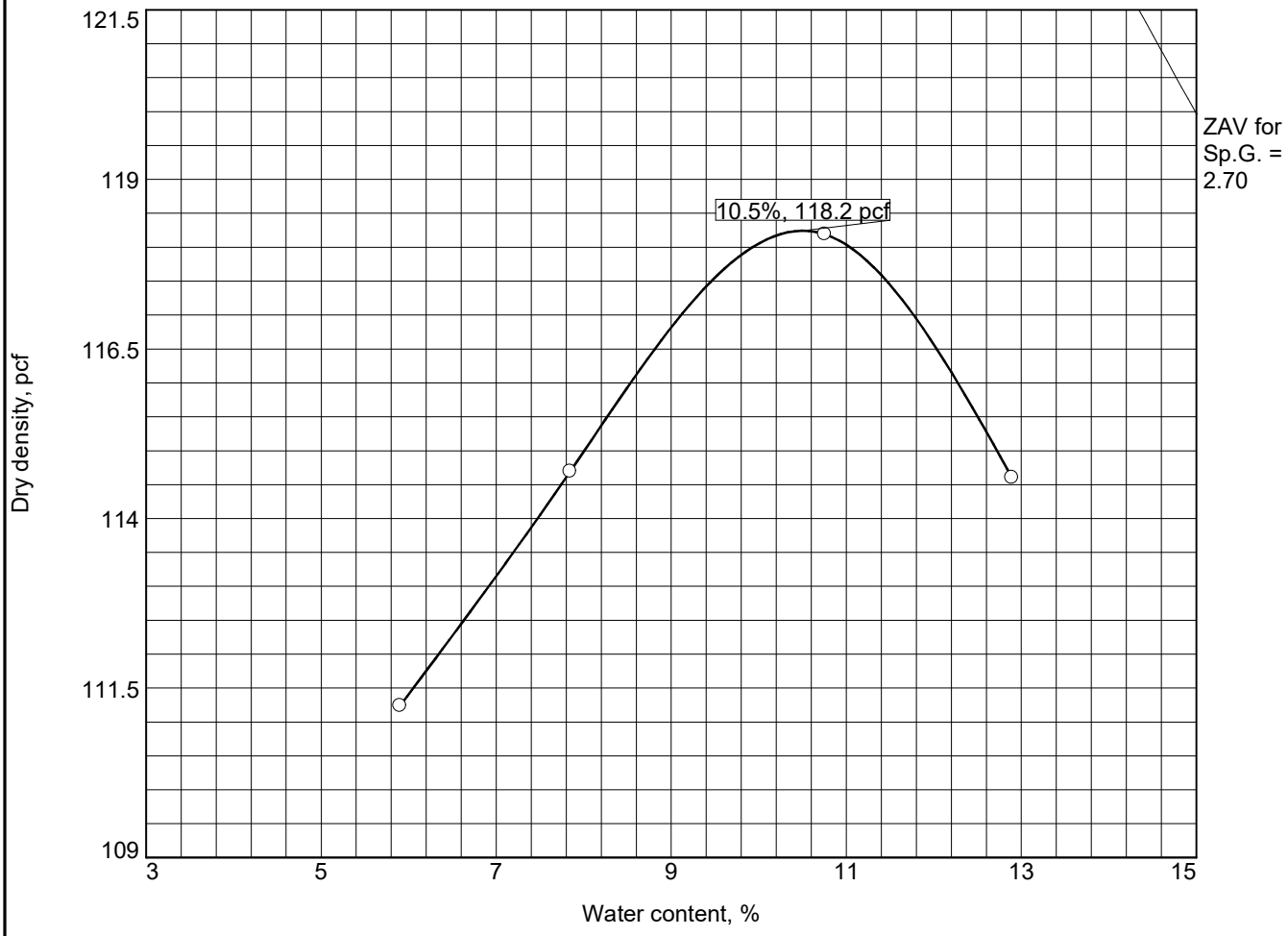
Resiliency Factor = 3.0

BEARING RATIO TEST REPORT

GET SOLUTIONS, INC.

Figure 2B

MOISTURE DENSITY RELATIONSHIP (PROCTOR CURVE)



Test specification: ASTM D 698-12 Method A Standard

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
12-36 in.	SC	A-2-6(0)	10		22	11	0.1	20.9

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 118.2 pcf Optimum moisture = 10.5 %	Brown, CLAYEY SAND

Project No. VB20-119G **Client:** Blakeway Corporation
Project: Route 10 Parking and Storage Lot

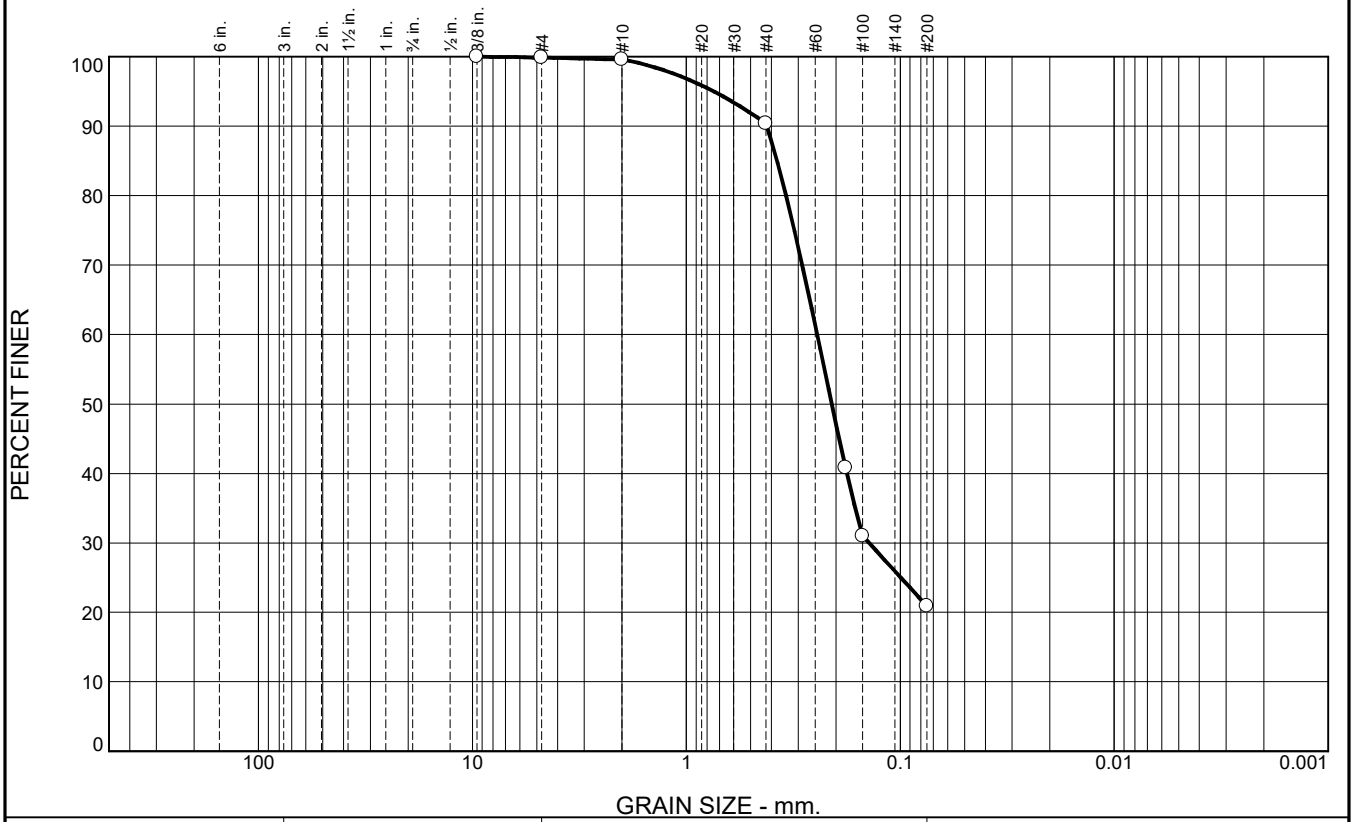
○**Location:** CBR-3 **Sample Number:** CBR-3

Remarks:
Sample Obtained 6/5/20

GET SOLUTIONS, INC.

Figure 3

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.3	9.2	69.5	20.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.6		
#40	90.4		
#80	40.8		
#100	31.0		
#200	20.9		

* (no specification provided)

Material Description

Brown, CLAYEY SAND

Atterberg Limits

PL= 11 LL= 22 PI= 11

Coefficients

D_{90}= 0.4210 D_{85}= 0.3767 D_{60}= 0.2446
D_{50}= 0.2089 D_{30}= 0.1401 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-2-6(0)

Remarks

Sample Obtained 6/5/20

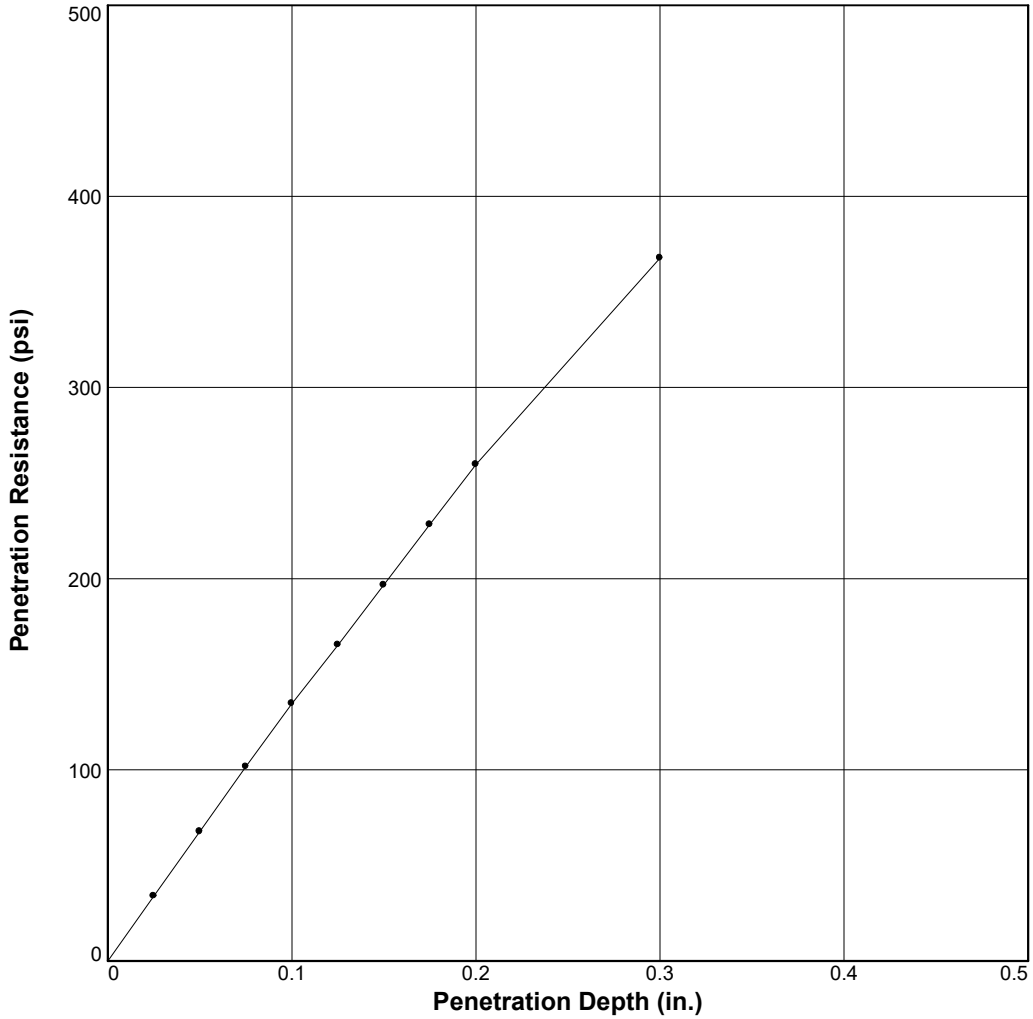
Location: CBR-3
Sample Number: CBR-3 **Depth:** 12-36 in. **Date:** 6/5/20

GET SOLUTIONS, INC.

Client: Blakeway Corporation
Project: Route 10 Parking and Storage Lot

Project No: VB20-119G **Figure** 3A

BEARING RATIO TEST REPORT
VTM-8 (2013)



	Molded			Soaked			CBR (%)		Linearity Correction (in.)	Surcharge (lbs.)	Max. Swell (%)
	Density (pcf)	Percent of Max. Dens.	Moisture (%)	Density (pcf)	Percent of Max. Dens.	Moisture (%)	0.10 in.	0.20 in.			
1 ○	117.4	99.3	10.7	117.3	99.2	11.5	13.5	17.3	0.000	10	0.1
2 △											
3 □											

Material Description	USCS	Max. Dens. (pcf)	Optimum Moisture (%)	LL	PI
Brown, CLAYEY SAND	SC	118.2	10.5	22	11

Project No: VB20-119G

Project: Route 10 Parking and Storage Lot

Location: CBR-3

Sample Number: CBR-3 **Depth:** 12-36 in.

Date: 6/5/20

Test Description/Remarks:

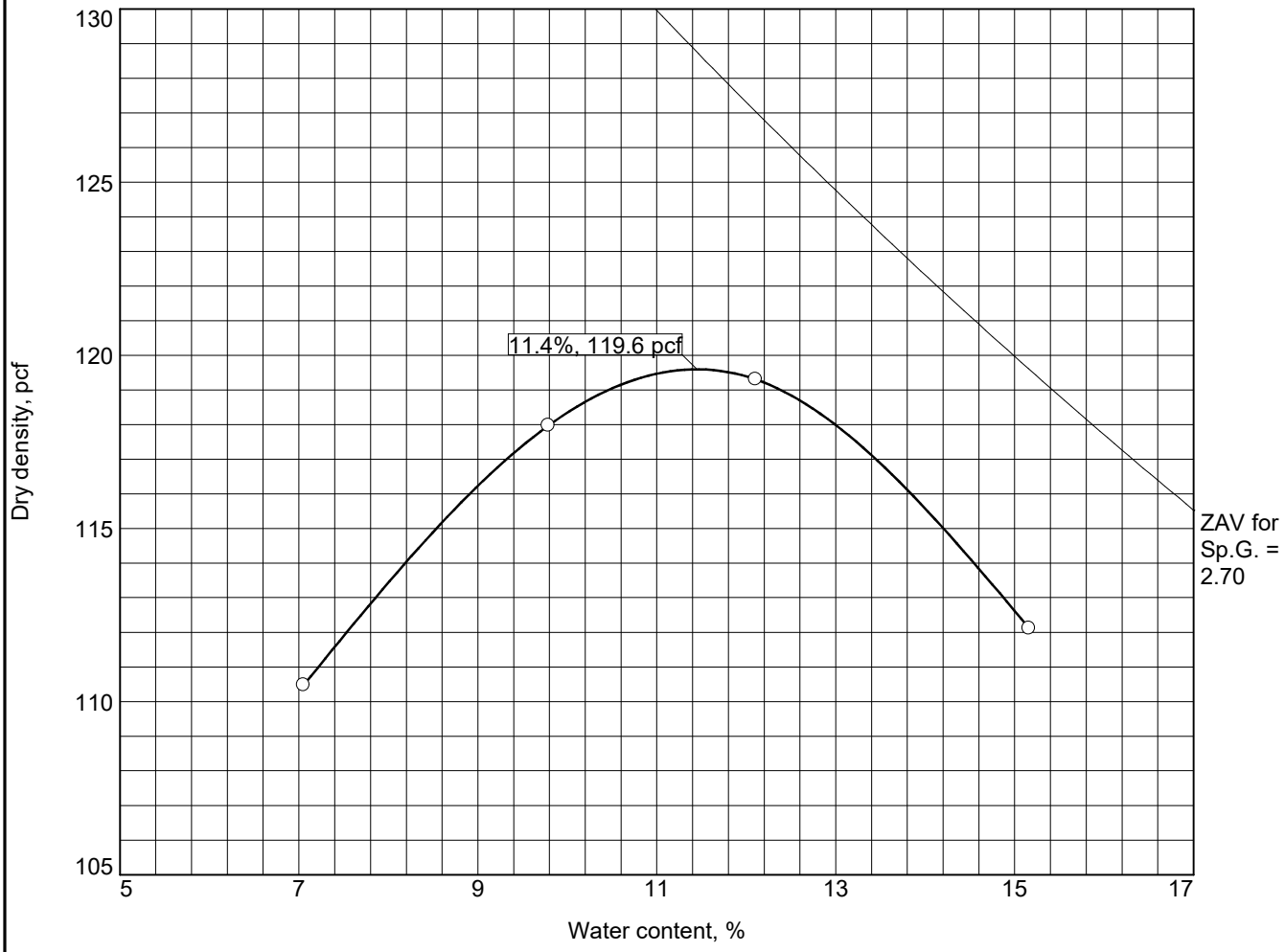
Resiliency Factor = 3.0

BEARING RATIO TEST REPORT

GET SOLUTIONS, INC.

Figure 3B

MOISTURE DENSITY RELATIONSHIP (PROCTOR CURVE)



Test specification: ASTM D 698-12 Method A Standard

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
12-36 in.	SC	A-2-4(0)	15		21	9	0.1	32.6

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 119.6 pcf Optimum moisture = 11.4 %	Brown, CLAYEY SAND

Project No. VB20-119G **Client:** Blakeway Corporation
Project: Route 10 Parking and Storage Lot

○**Location:** CBR-4 **Sample Number:** CBR-4

Remarks:
Sample Obtained 6/5/20

GET SOLUTIONS, INC.

Figure 4

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.2	7.4	59.7	32.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.7		
#40	92.3		
#80	51.3		
#100	41.6		
#200	32.6		

* (no specification provided)

Material Description

Brown, CLAYEY SAND

Atterberg Limits

PL= 12 LL= 21 PI= 9

Coefficients

D_{90}= 0.3957 D_{85}= 0.3471 D_{60}= 0.2100
D_{50}= 0.1760 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-2-4(0)

Remarks

Sample Obtained 6/5/20

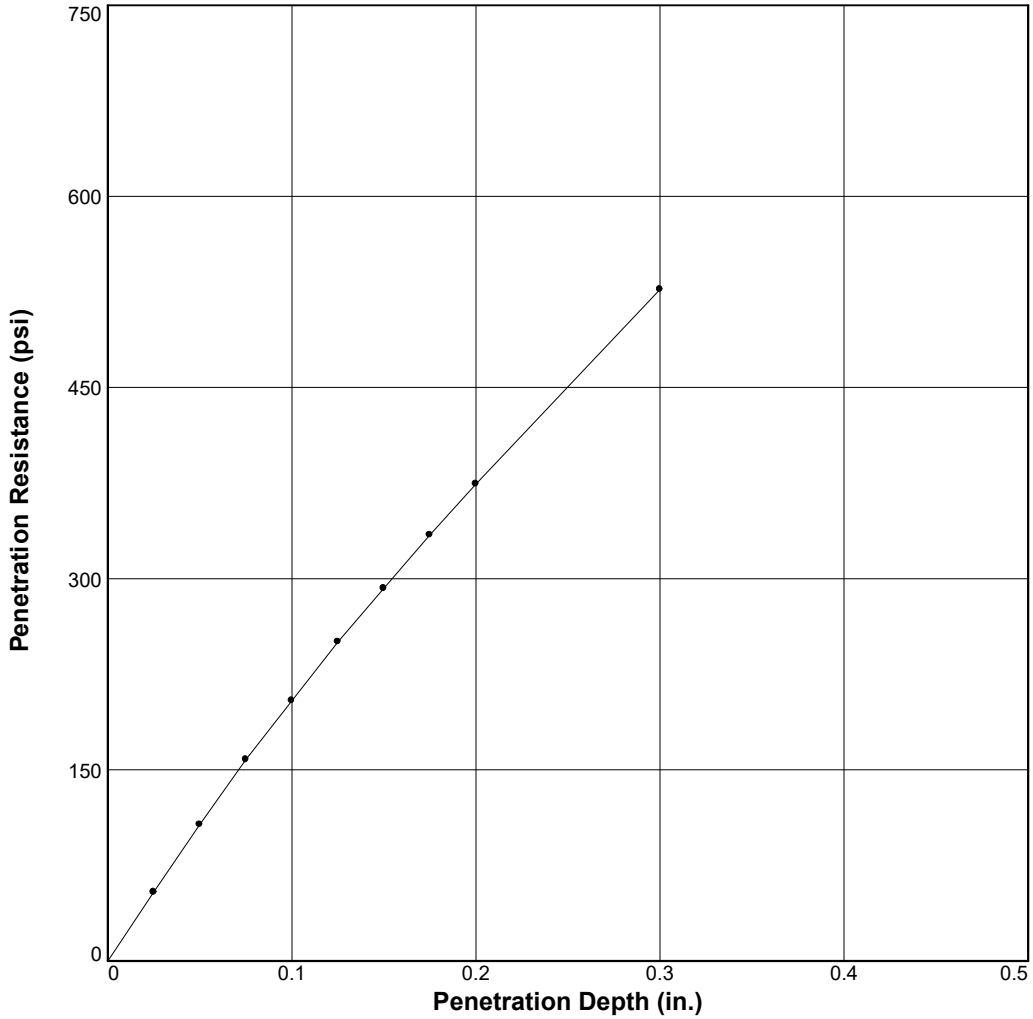
Location: CBR-4
Sample Number: CBR-4 **Depth:** 12-36 in. **Date:** 6/5/20

GET SOLUTIONS, INC.

Client: Blakeway Corporation
Project: Route 10 Parking and Storage Lot

Project No: VB20-119G **Figure** 4A

BEARING RATIO TEST REPORT
VTM-8 (2013)



	Molded			Soaked			CBR (%)		Linearity Correction (in.)	Surcharge (lbs.)	Max. Swell (%)
	Density (pcf)	Percent of Max. Dens.	Moisture (%)	Density (pcf)	Percent of Max. Dens.	Moisture (%)	0.10 in.	0.20 in.			
1 ○	119.6	100	11.1	119.5	99.9	11.6	20.4	25.0	0.000	10	0.1
2 △											
3 □											

Material Description	USCS	Max. Dens. (pcf)	Optimum Moisture (%)	LL	PI
Brown, CLAYEY SAND	SC	119.6	11.4	21	9

Project No: VB20-119G

Project: Route 10 Parking and Storage Lot

Location: CBR-4

Sample Number: CBR-4 **Depth:** 12-36 in.

Date: 6/5/20

Test Description/Remarks:

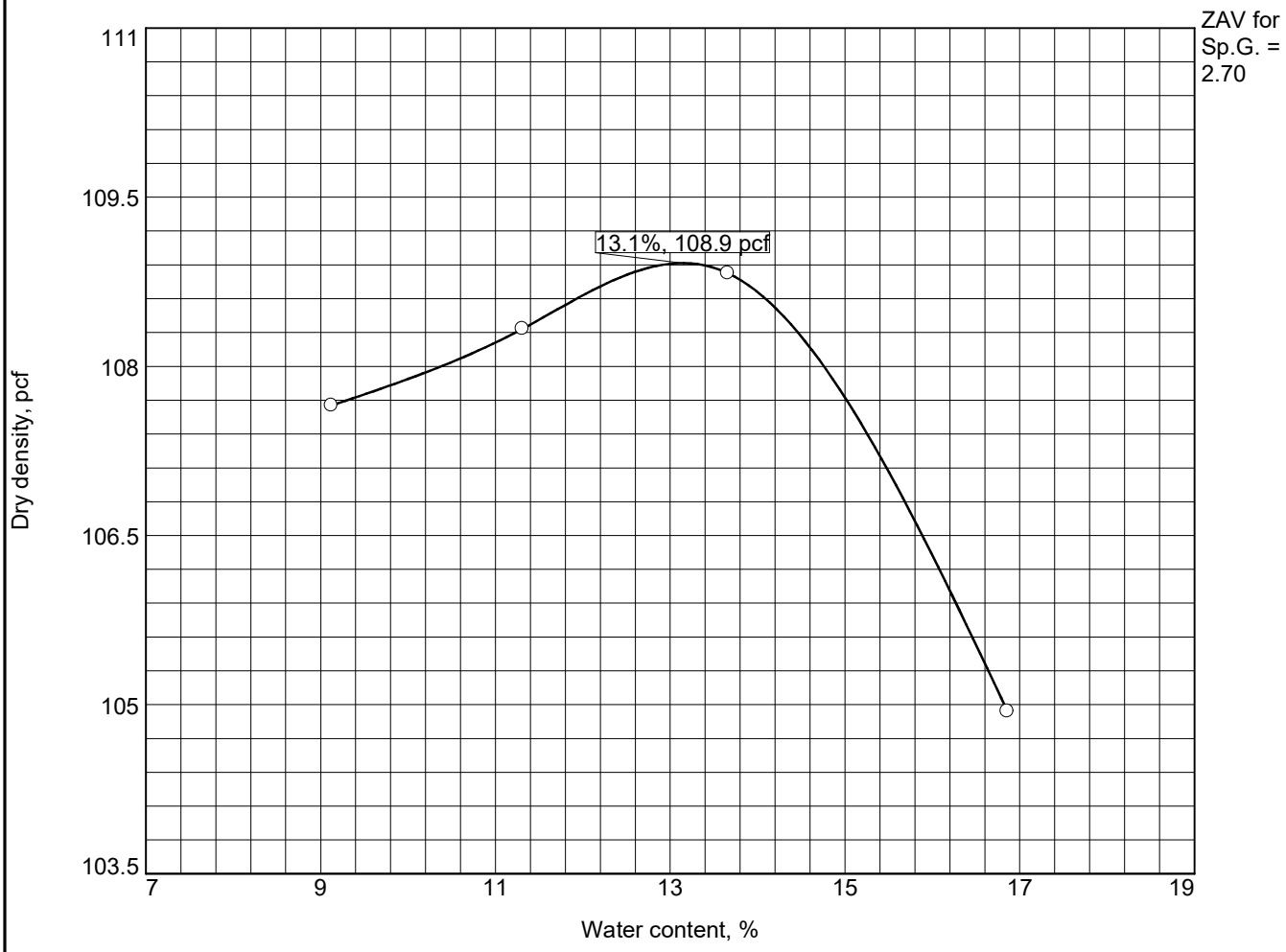
Resiliency Factor = 3.0

BEARING RATIO TEST REPORT

GET SOLUTIONS, INC.

Figure 4B

MOISTURE DENSITY RELATIONSHIP (PROCTOR CURVE)



Test specification: ASTM D 698-12 Method A Standard

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
4-24 in.	SM	A-2-4(0)	13		NP	NP	0.0	16.6

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 108.9 pcf Optimum moisture = 13.1 %	Gray, SILTY SAND

Project No. VB20-119G **Client:** Blakeway Corporation
Project: Route 10 Parking and Storage Lot

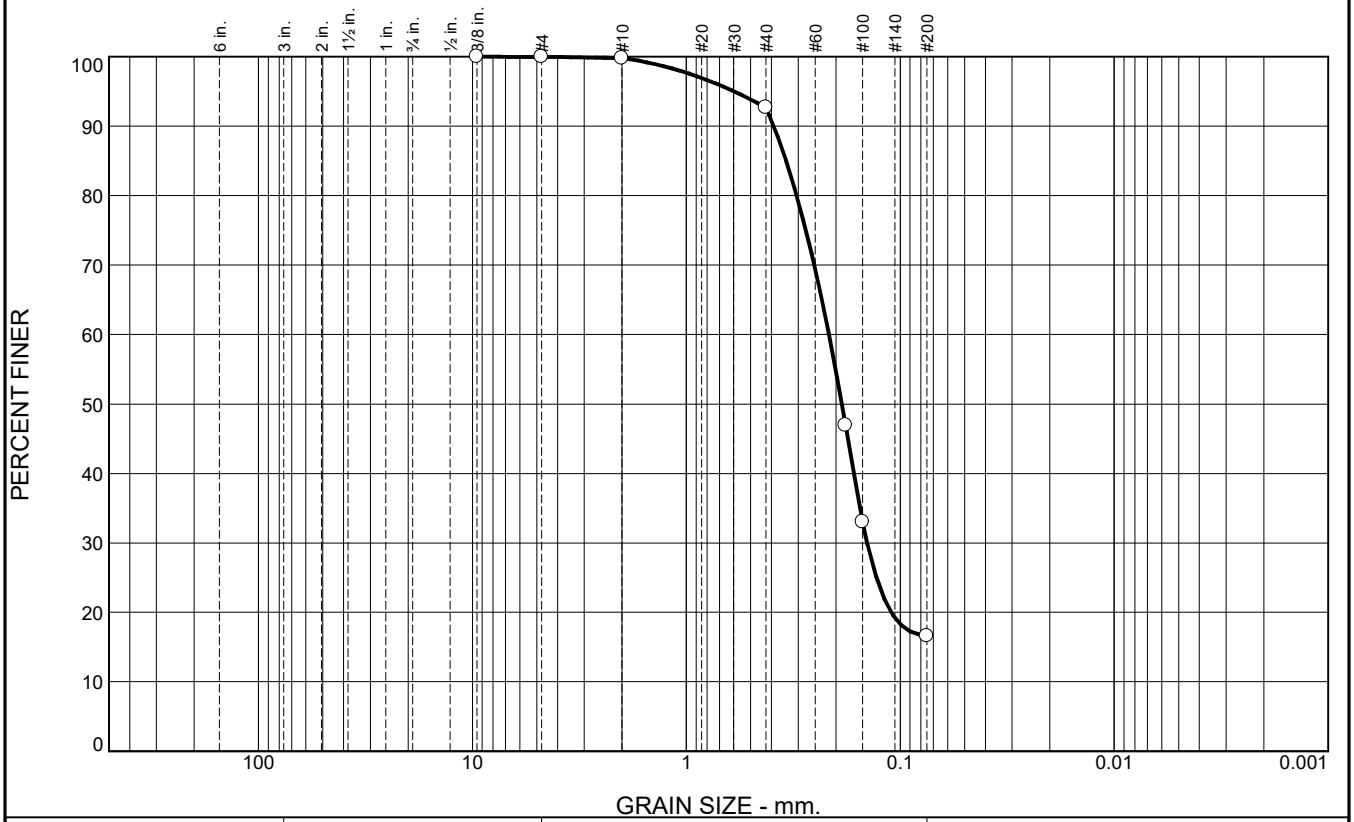
○**Location:** CBR-5 **Sample Number:** CBR-5

Remarks:
Sample Obtained 6/5/20

GET SOLUTIONS, INC.

Figure 5

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	7.1	76.1	16.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	100.0		
#10	99.8		
#40	92.7		
#80	46.9		
#100	33.0		
#200	16.6		

* (no specification provided)

Material Description

Gray, SILTY SAND

Atterberg Limits

PL= NP LL= NP PI= NP

Coefficients

D_{90}= 0.3904 D_{85}= 0.3416 D_{60}= 0.2154
D_{50}= 0.1873 D_{30}= 0.1429 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO= A-2-4(0)

Remarks

Sample Obtained 6/5/20

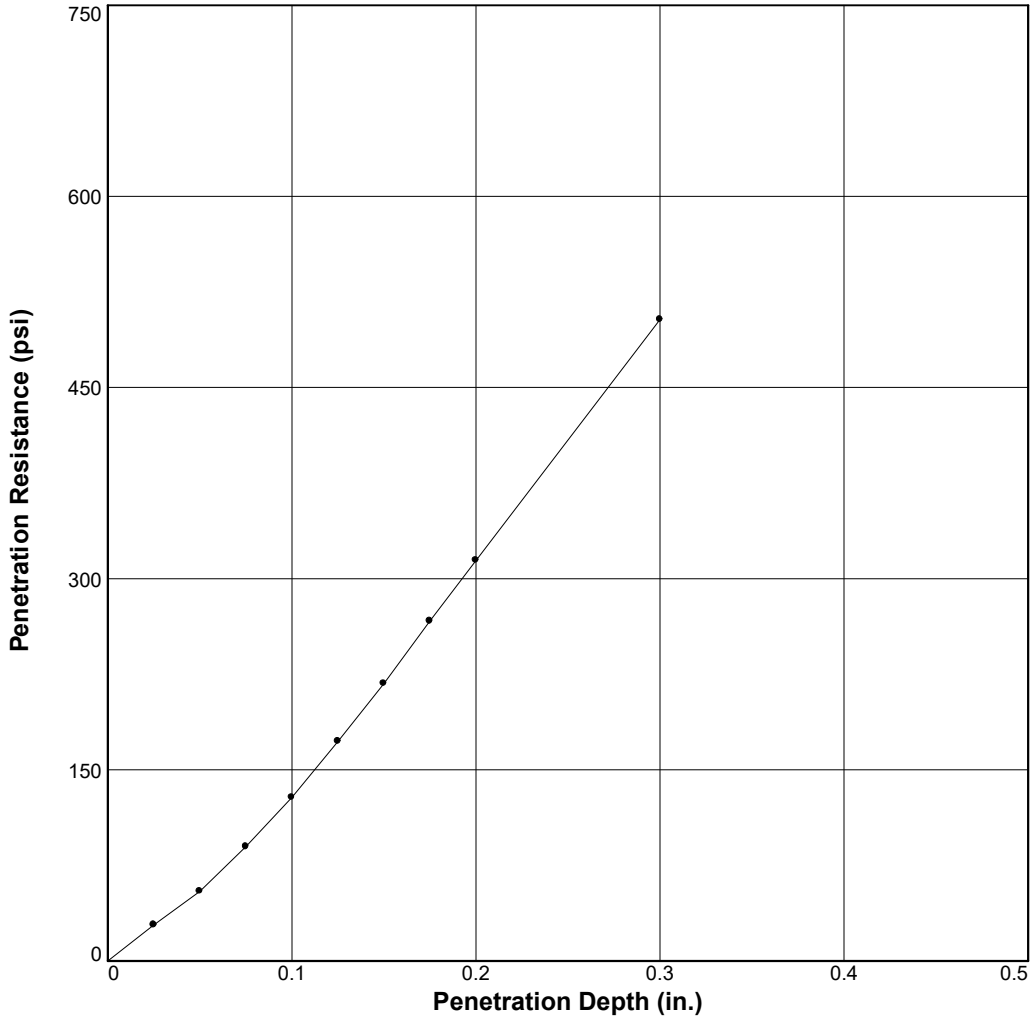
Location: CBR-5
Sample Number: CBR-5 **Depth:** 4-24 in. **Date:** 6/5/20

GET SOLUTIONS, INC.

Client: Blakeway Corporation
Project: Route 10 Parking and Storage Lot

Project No: VB20-119G **Figure** 5A

BEARING RATIO TEST REPORT
VTM-8 (2013)



	Molded			Soaked			CBR (%)		Linearity Correction (in.)	Surcharge (lbs.)	Max. Swell (%)
	Density (pcf)	Percent of Max. Dens.	Moisture (%)	Density (pcf)	Percent of Max. Dens.	Moisture (%)	0.10 in.	0.20 in.			
1 ○	108.5	99.6	13.1	108.5	99.6	13.7	19.3	25.6	0.037	10	0
2 △											
3 □											

Material Description	USCS	Max. Dens. (pcf)	Optimum Moisture (%)	LL	PI
Gray, SILTY SAND	SM	108.9	13.1	NP	NP

Project No: VB20-119G

Project: Route 10 Parking and Storage Lot

Location: CBR-5

Sample Number: CBR-5 **Depth:** 4-24 in.

Date: 6/5/20

Test Description/Remarks:

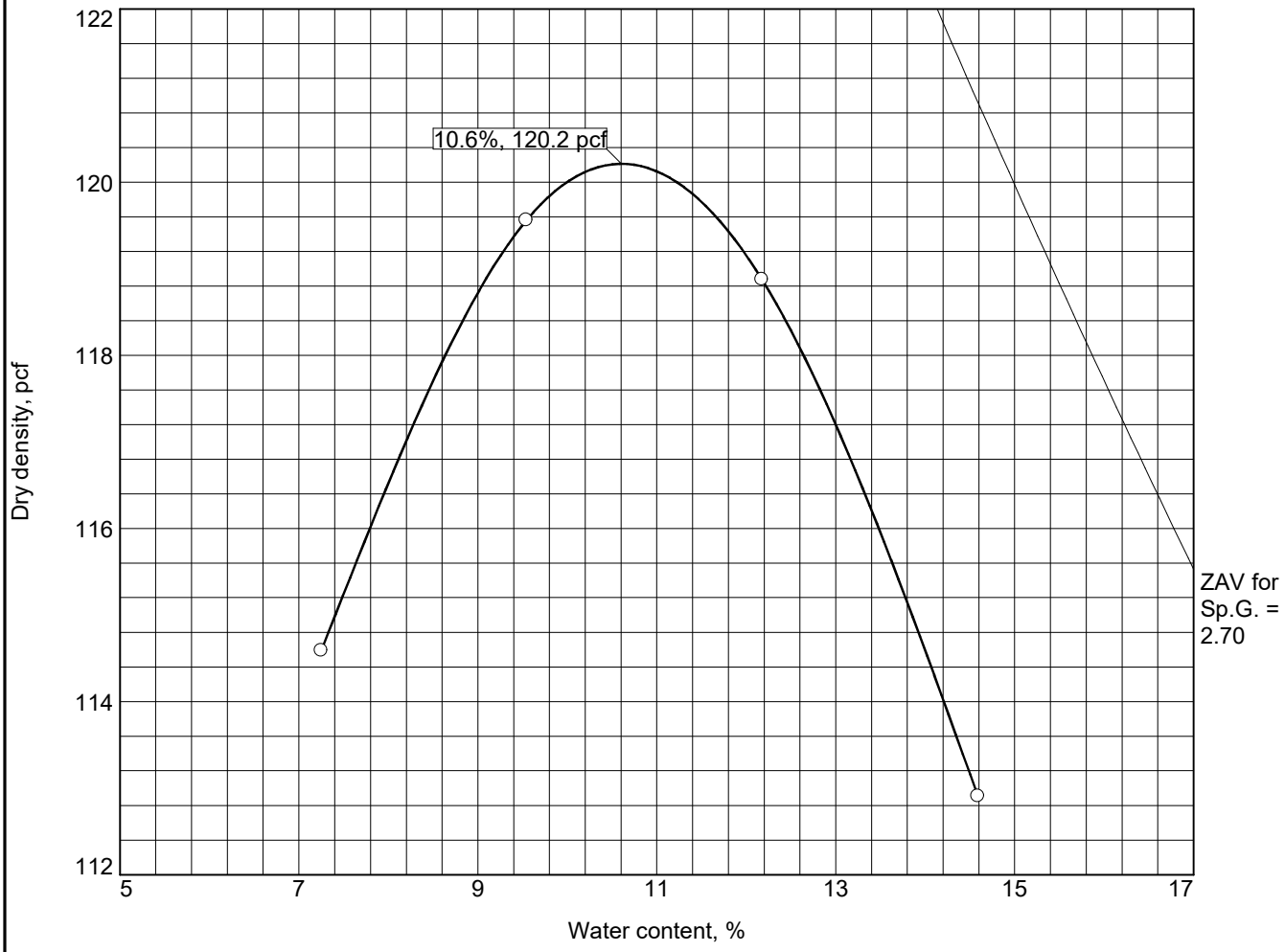
Resiliency Factor = 3.0

BEARING RATIO TEST REPORT

GET SOLUTIONS, INC.

Figure 5B

MOISTURE DENSITY RELATIONSHIP (PROCTOR CURVE)



Test specification: ASTM D 698-12 Method A Standard

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
12-36 in.	SC	A-2-4(0)	14		21	9	0.1	34.3

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 120.2 pcf Optimum moisture = 10.6 %	Brown, CLAYEY SAND

Project No. VB20-119G **Client:** Blakeway Corporation
Project: Route 10 Parking and Storage Lot

○**Location:** CBR-6 **Sample Number:** CBR-6

Remarks:
Sample Obtained 6/5/20

GET SOLUTIONS, INC.

Figure 6

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	0.1	8.6	56.9	34.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
.375	100.0		
#4	99.9		
#10	99.8		
#40	91.2		
#80	51.8		
#100	43.3		
#200	34.3		

* (no specification provided)

Material Description

Brown, CLAYEY SAND

Atterberg Limits

PL= 12 LL= 21 PI= 9

Coefficients

D_{90}= 0.4094 D_{85}= 0.3572 D_{60}= 0.2110
D_{50}= 0.1736 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-2-4(0)

Remarks

Sample Obtained 6/5/20

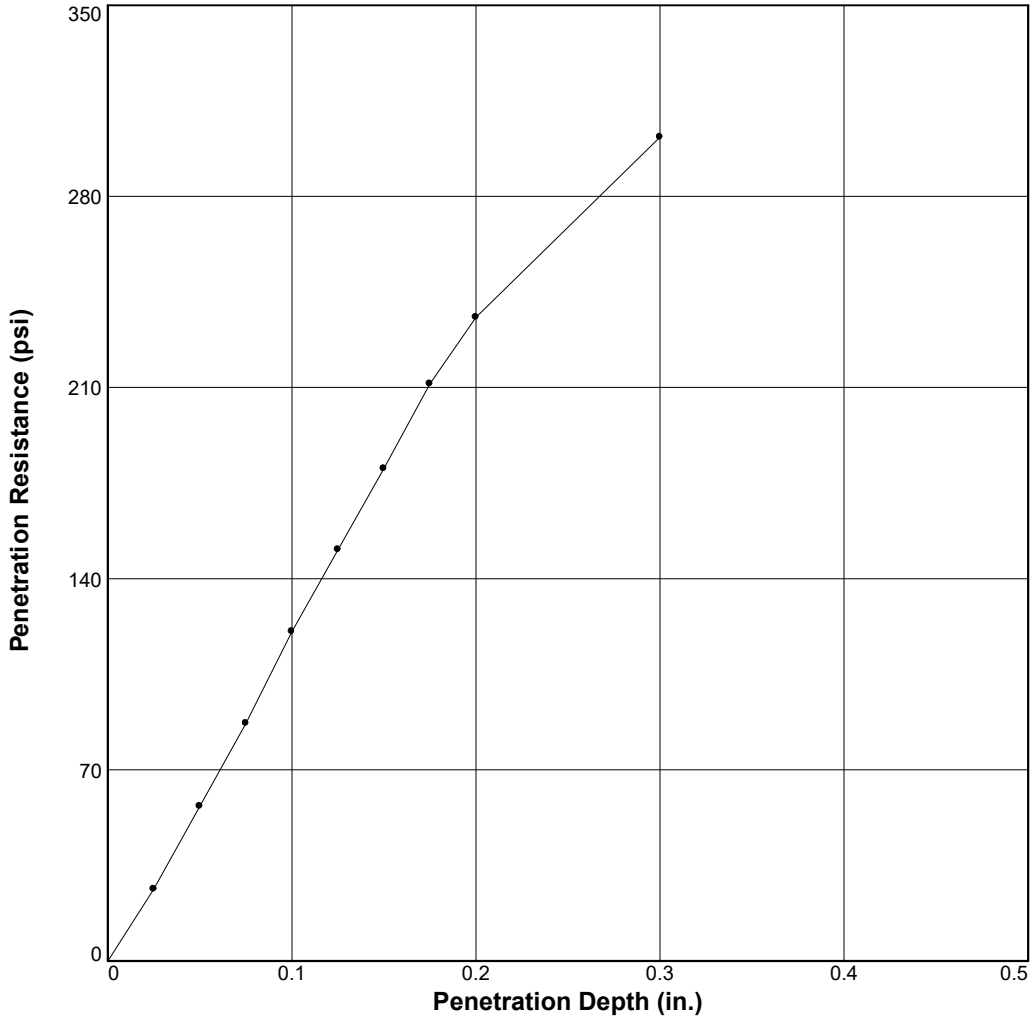
Location: CBR-6
Sample Number: CBR-6 **Depth:** 12-36 in. **Date:** 6/5/20

GET SOLUTIONS, INC.

Client: Blakeway Corporation
Project: Route 10 Parking and Storage Lot

Project No: VB20-119G **Figure** 6A

BEARING RATIO TEST REPORT
VTM-8 (2013)



	Molded			Soaked			CBR (%)		Linearity Correction (in.)	Surcharge (lbs.)	Max. Swell (%)
	Density (pcf)	Percent of Max. Dens.	Moisture (%)	Density (pcf)	Percent of Max. Dens.	Moisture (%)	0.10 in.	0.20 in.			
1 ○	119.8	99.7	10.2	119.7	99.6	12.3	12.1	15.7	0.000	10	0.1
2 △											
3 □											

Material Description	USCS	Max. Dens. (pcf)	Optimum Moisture (%)	LL	PI
Brown, CLAYEY SAND	SC	120.2	10.6	21	9

Project No: VB20-119G

Project: Route 10 Parking and Storage Lot

Location: CBR-6

Sample Number: CBR-6 **Depth:** 12-36 in.

Date: 6/5/20

Test Description/Remarks:

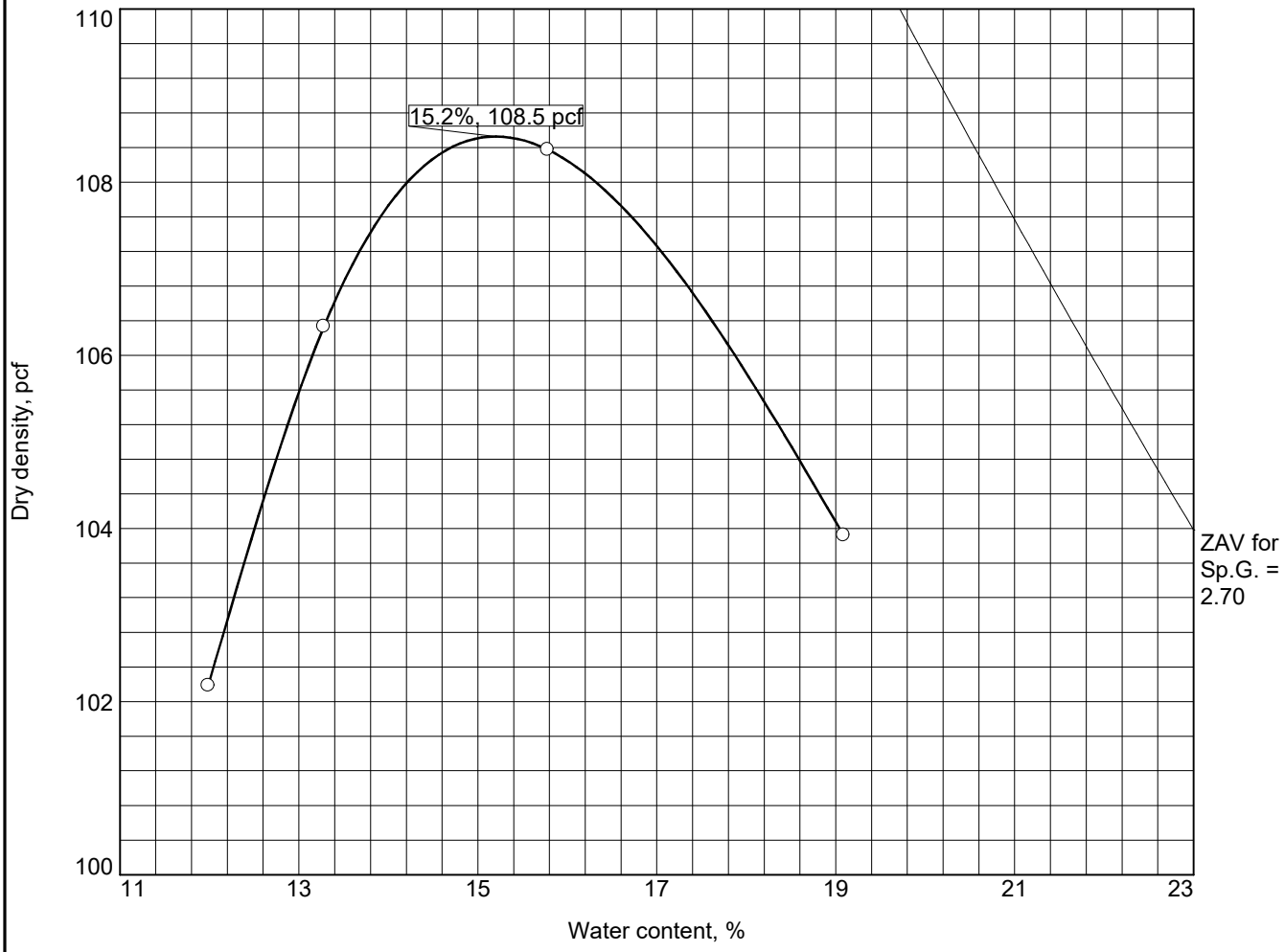
Resiliency Factor = 3.0

BEARING RATIO TEST REPORT

GET SOLUTIONS, INC.

Figure 6B

MOISTURE DENSITY RELATIONSHIP (PROCTOR CURVE)



Test specification: ASTM D 698-12 Method A Standard

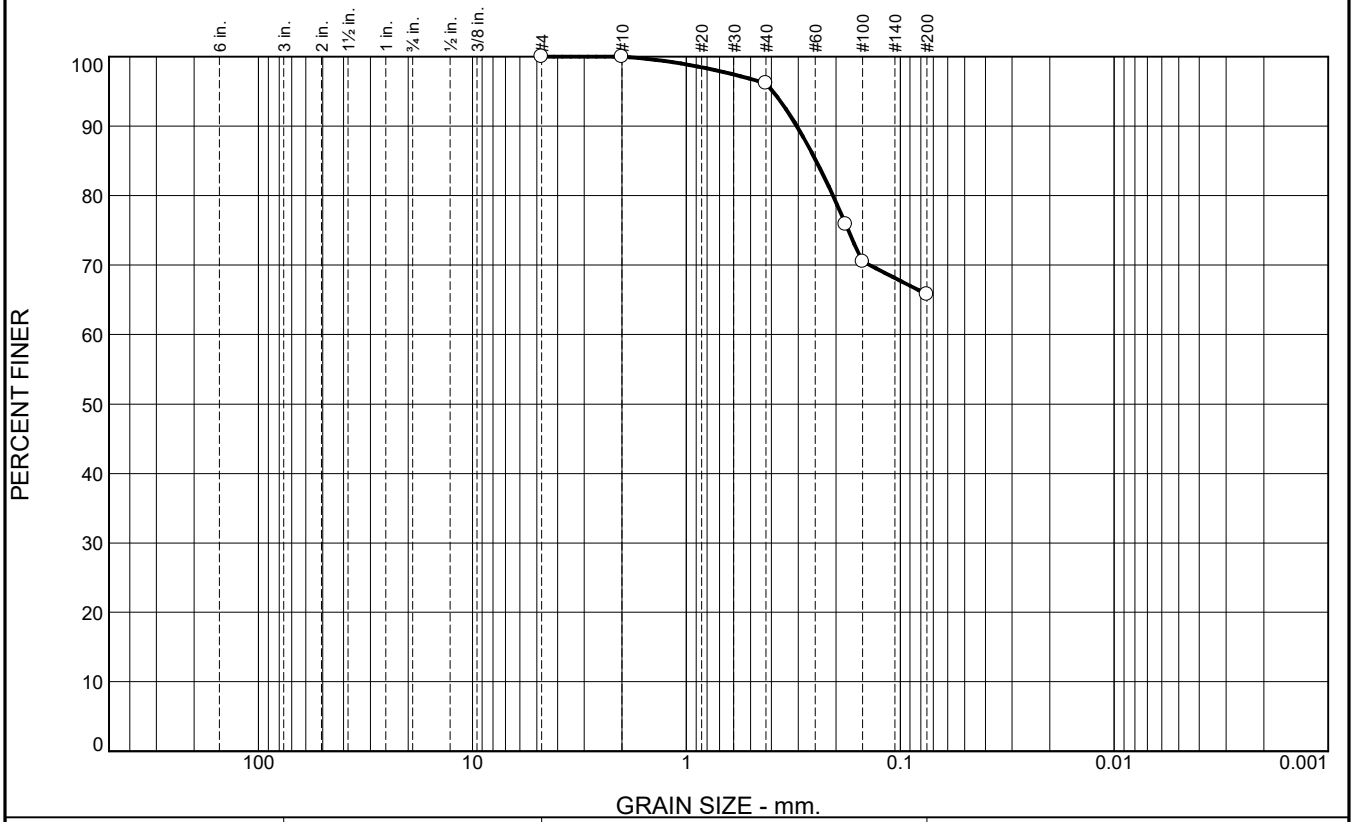
Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
12-36 in.	CL	A-6(5)	21		28	12	0.0	65.8

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 108.5 pcf Optimum moisture = 15.2 %	Brown, Sandy LEAN CLAY
Project No. VB20-119G **Client:** Blakeway Corporation **Project:** Route 10 Parking and Storage Lot ○**Location:** CBR-7 **Sample Number:** CBR-7	**Remarks:** Sample Obtained 6/5/20

GET SOLUTIONS, INC.

Figure 7

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	3.8	30.4	65.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	100.0		
#40	96.2		
#80	75.9		
#100	70.5		
#200	65.8		

* (no specification provided)

Material Description

Brown, Sandy LEAN CLAY

Atterberg Limits

PL= 16 LL= 28 PI= 12

Coefficients

D_{90}= 0.3043 D_{85}= 0.2475 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= CL AASHTO= A-6(5)

Remarks

Sample Obtained 6/5/20

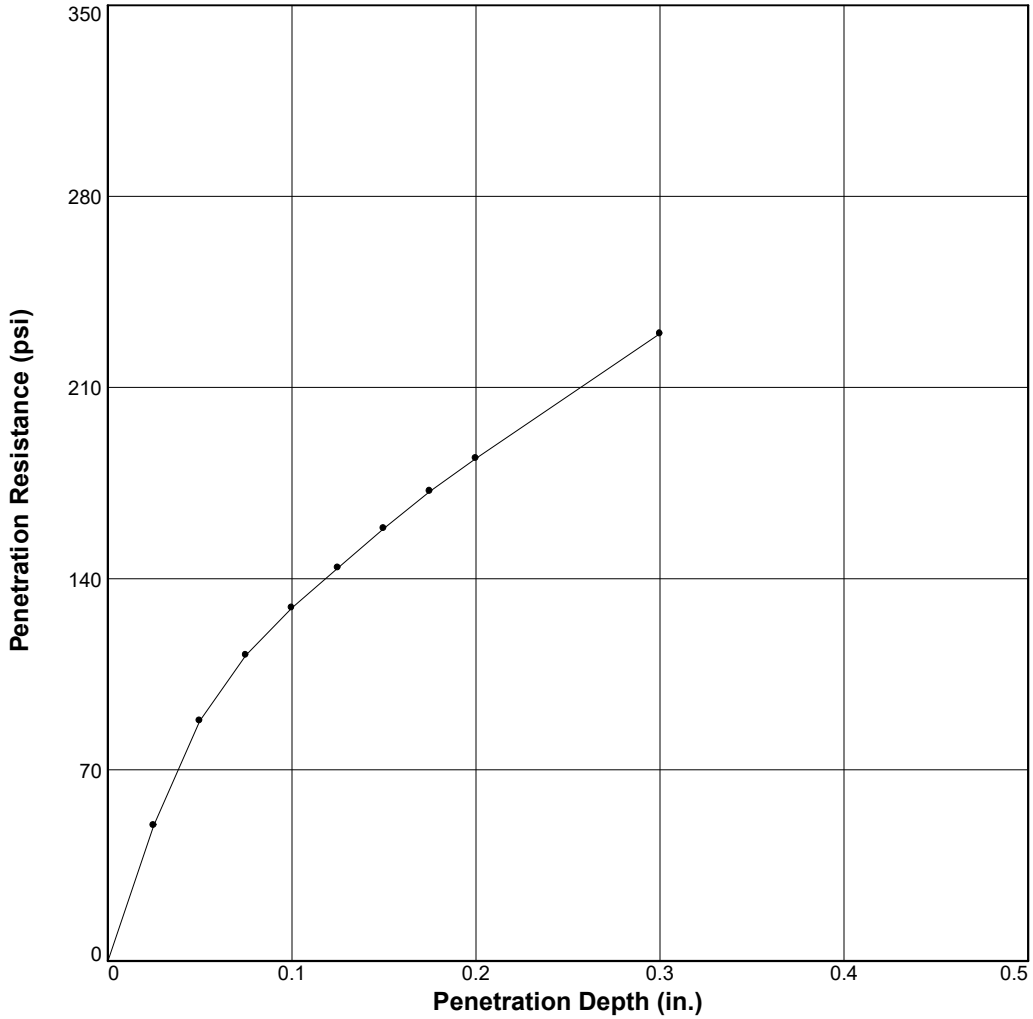
Location: CBR-7
Sample Number: CBR-7 **Depth:** 12-36 in. **Date:** 6/5/20

GET SOLUTIONS, INC.

Client: Blakeway Corporation
Project: Route 10 Parking and Storage Lot

Project No: VB20-119G **Figure** 7A

BEARING RATIO TEST REPORT
VTM-8 (2013)



	Molded			Soaked			CBR (%)		Linearity Correction (in.)	Surcharge (lbs.)	Max. Swell (%)
	Density (pcf)	Percent of Max. Dens.	Moisture (%)	Density (pcf)	Percent of Max. Dens.	Moisture (%)	0.10 in.	0.20 in.			
1 ○	108.3	99.8	14.7	107.6	99.2	17.9	12.9	12.3	0.000	10	0.6
2 △											
3 □											

Material Description	USCS	Max. Dens. (pcf)	Optimum Moisture (%)	LL	PI
Brown, Sandy LEAN CLAY	CL	108.5	15.2	28	12

Project No: VB20-119G

Project: Route 10 Parking and Storage Lot

Location: CBR-7

Sample Number: CBR-7 **Depth:** 12-36 in.

Date: 6/5/20

Test Description/Remarks:

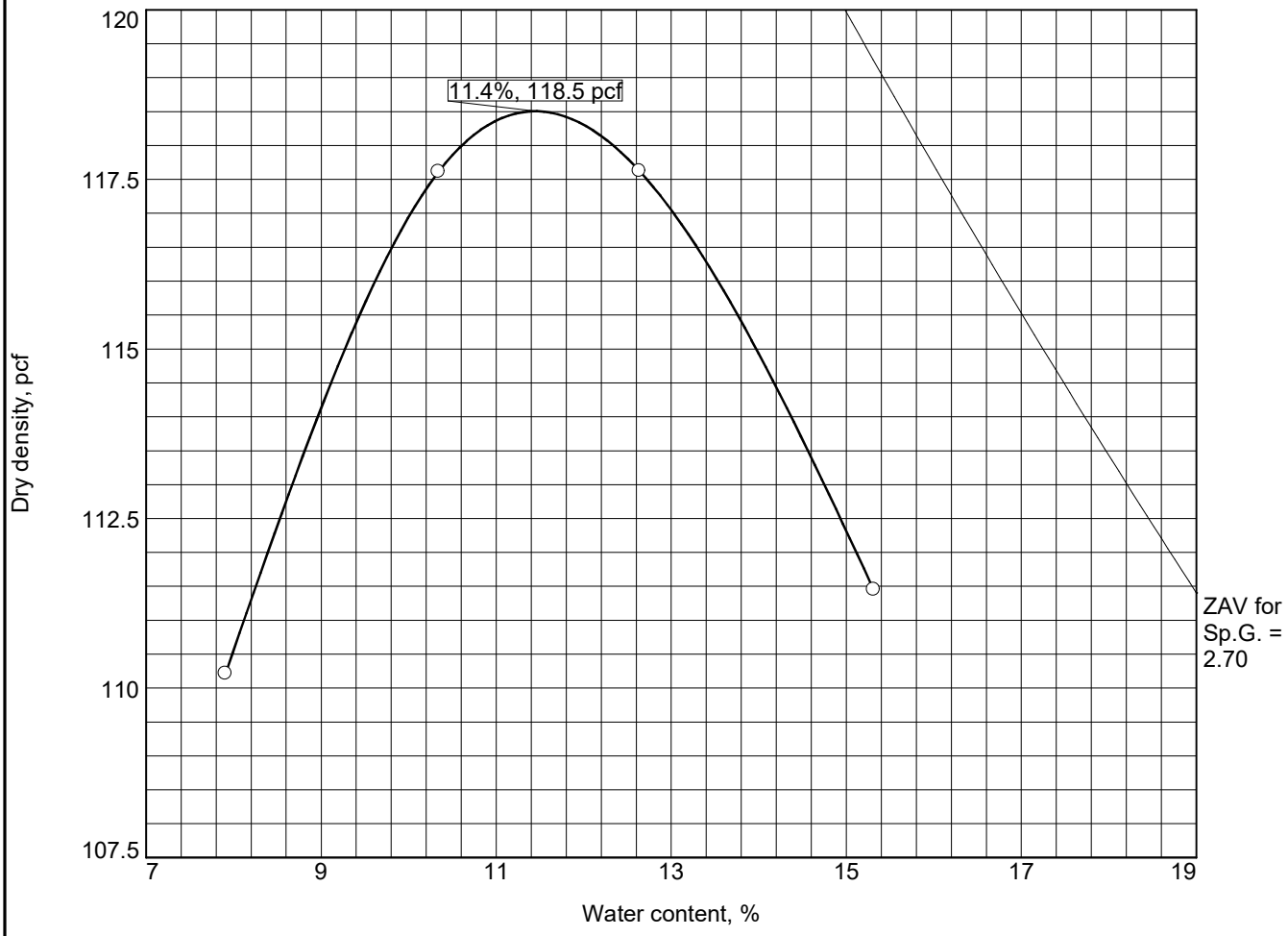
Resiliency Factor = 2.0

BEARING RATIO TEST REPORT

GET SOLUTIONS, INC.

Figure 7B

MOISTURE DENSITY RELATIONSHIP (PROCTOR CURVE)



Test specification: ASTM D 698-12 Method A Standard

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
12-36 in.	SC-SM	A-2-4(0)	14		15	3	0.0	31.3

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 118.5 pcf Optimum moisture = 11.4 %	Brown, SILTY CLAYEY SAND

Project No. VB20-119G **Client:** Blakeway Corporation
Project: Route 10 Parking and Storage Lot

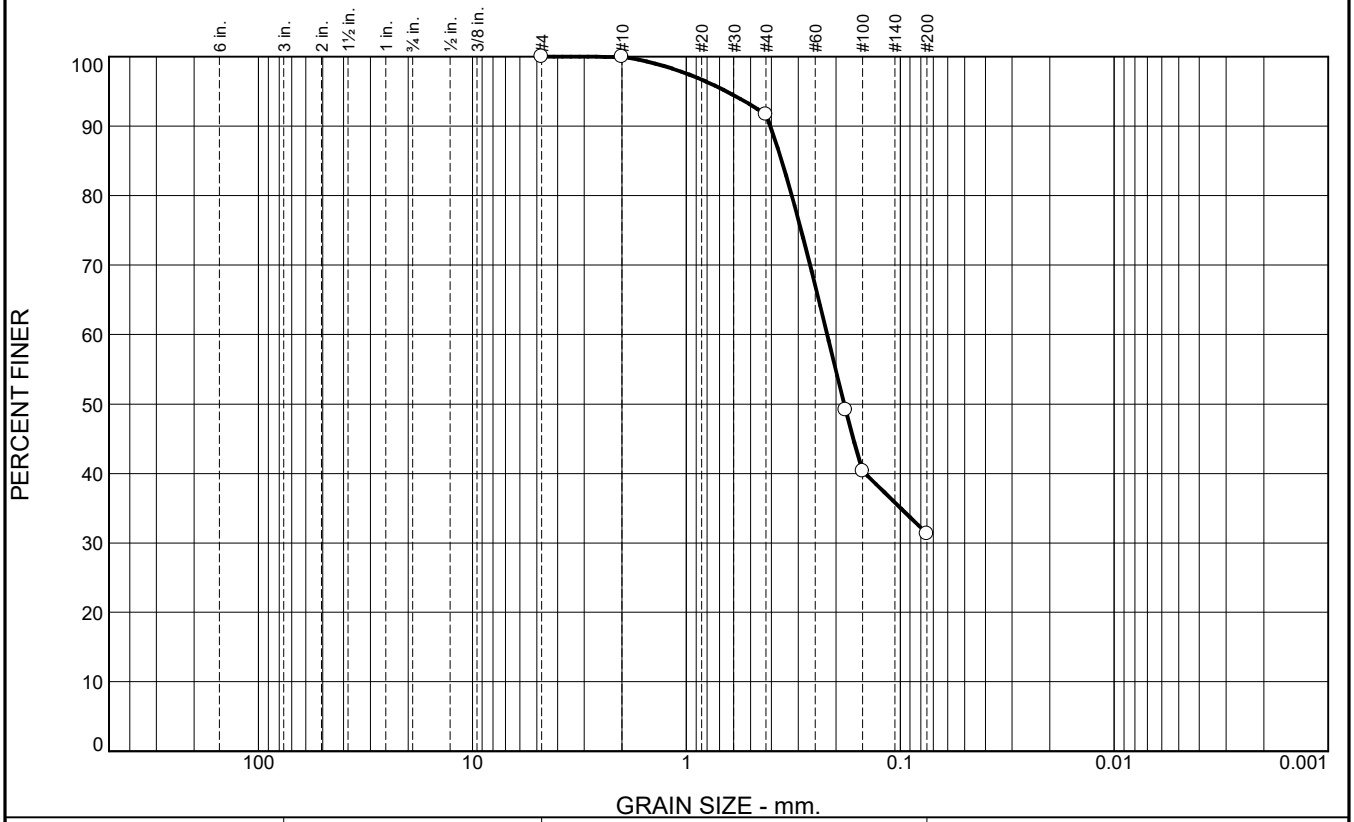
○**Location:** CBR-8 **Sample Number:** CBR-8

Remarks:
Sample Obtained 6/5/20

GET SOLUTIONS, INC.

Figure 8

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	8.3	60.4	31.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	100.0		
#40	91.7		
#80	49.2		
#100	40.3		
#200	31.3		

* (no specification provided)

Material Description

Brown, SILTY CLAYEY SAND

Atterberg Limits

PL= 12 LL= 15 PI= 3

Coefficients

D_{90}= 0.4054 D_{85}= 0.3582 D_{60}= 0.2197
D_{50}= 0.1828 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC-SM AASHTO= A-2-4(0)

Remarks

Sample Obtained 6/5/20

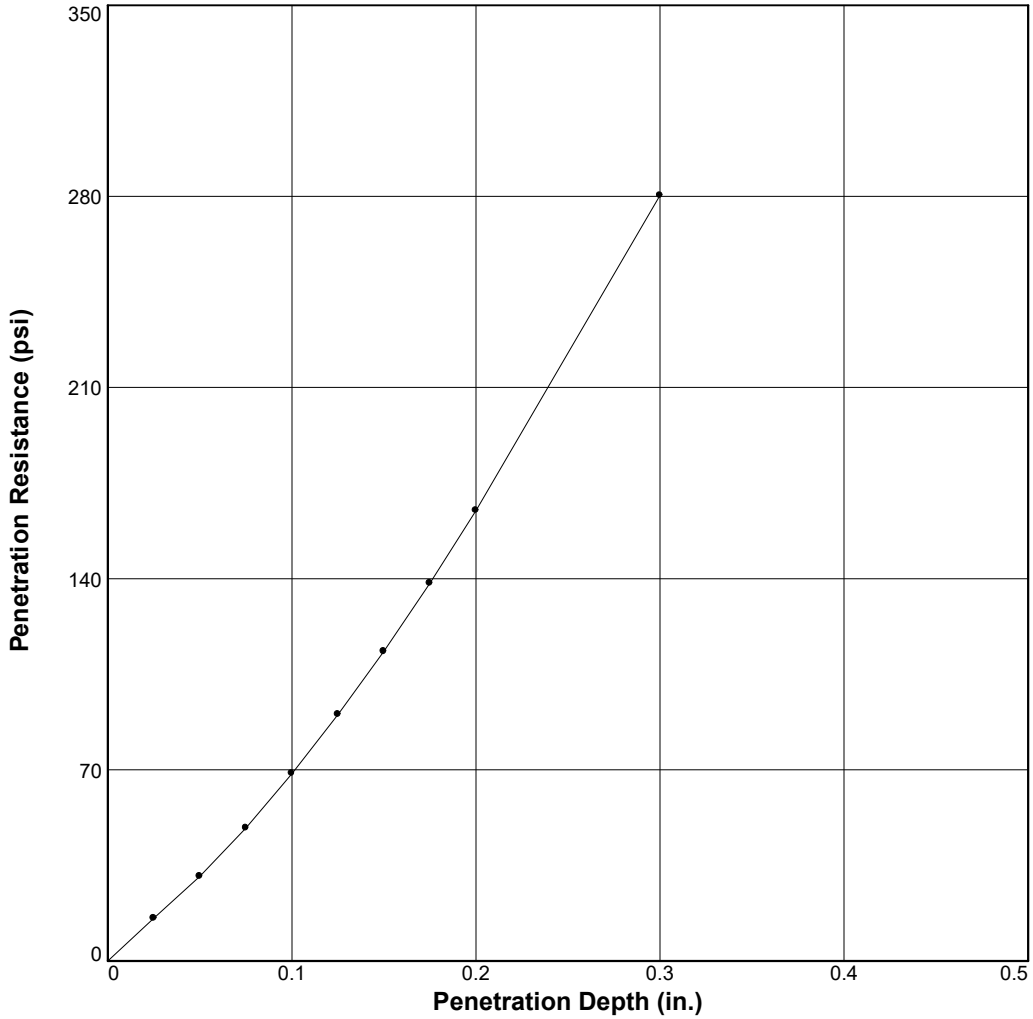
Location: CBR-8
Sample Number: CBR-8 **Depth:** 12-36 in. **Date:** 6/5/20

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Client: Blakeway Corporation
Project: Route 10 Parking and Storage Lot

Project No: VB20-119G **Figure** 8A

BEARING RATIO TEST REPORT
VTM-8 (2013)



	Molded			Soaked			CBR (%)		Linearity Correction (in.)	Surcharge (lbs.)	Max. Swell (%)
	Density (pcf)	Percent of Max. Dens.	Moisture (%)	Density (pcf)	Percent of Max. Dens.	Moisture (%)	0.10 in.	0.20 in.			
1 ○	117.3	99	11.7	117.1	98.8	12.4	11.8	15.2	0.055	10	0.2
2 △											
3 □											

Material Description	USCS	Max. Dens. (pcf)	Optimum Moisture (%)	LL	PI
Brown, SILTY CLAYEY SAND	SC-SM	118.5	11.4	15	3

Project No: VB20-119G

Project: Route 10 Parking and Storage Lot

Location: CBR-8

Sample Number: CBR-8 **Depth:** 12-36 in.

Date: 6/5/20

Test Description/Remarks:

Resiliency Factor = 3.0

BEARING RATIO TEST REPORT

GET SOLUTIONS, INC.

Figure 8B



Legend

- Study Area ~ 80.23 acres
- Excavated Stormwater Pond~ 0.66 acres PFO
- Wetlands ~ 2.28 acres
- PSS Wetlands ~ 0.56 acres
- Perennial Stream ~ 337.08 linear feet
- Intermittent Stream ~ 112.84 linear feet
- Other Streams ~ 371.96 linear feet
- Wetland Line
- Data Points

N W E S

0 100 200 400 600 800 Feet

Source: Isle of Wight County Parcel Data; State of Virginia 2017 Infrared Orthophotographs; Wetlands and Streams Marked Using Trimble R1

Scale: 1 in = 400 ft
Bay #: 20-073-01
Date: 02/09/2022
Prepared by: OCC
Reviewed by: AJLC
VA PWD #: 3402000113

Figure 2: Site Conditions
Wetland Delineation
17226 Commerce Lane
Isle of Wight County, Virginia

BAY ENVIRONMENTAL, INC.
Environmental Consulting Services

DEPARTMENT OF THE ARMY
US ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
FORT NORFOLK
803 FRONT STREET
NORFOLK VA 23510-1011

February 10, 2022

PRELIMINARY JURISDICTIONAL DETERMINATION (PJD)

Eastern Virginia Regulatory Section
NAO-2021-00628 (Cypress Creek)

Mr. Robert Taylor
Locust Grove Partners, LP
17076 Benns Church Road
Smithfield, VA 23430

Dear Mr. Taylor:

This letter is in regard to your request for a preliminary jurisdictional determination of the aquatic resources for 80.23 acres located west of Benns Church Boulevard and at 17226 Commerce Lane in Isle of Wight County, Virginia (all or portions of Isle of Wight County Tax Parcel Identification Numbers (TPINs): 42-06-008, 42-06-009, 41-01-052, 41-01-053, and 42-01-006A) hereinafter referred to as project area.

The map entitled "Figure 2: Site Conditions Wetland Delineation 17226 Commerce Lane Isle of Wight, Virginia" dated 05/03/2021 and revised on February 9, 2022, by Bay Environmental and received February 9, 2022 (copy enclosed) provides the location of the aquatic resources on the property referenced above. The parcel contains approximately 3.5 acres of aquatic resources and approximately 822 linear feet of jurisdictional stream channel.

These aquatic resources exhibit wetland criteria as defined in the 1987 Corps of Engineers Wetland Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region. This preliminary jurisdictional determination and associated aquatic resource delineation map may be submitted with a permit application. This letter is not confirming the Cowardin classifications of these aquatic resources.

Please be aware that you may be required to obtain a Corps permit for any discharge of dredged and/or fill material, either temporary or permanent, into a water of the U.S. In addition, you may be required to obtain a Corps permit for certain activities occurring within, under, or over a navigable water of the U.S. subject to the Section 10 of the Rivers and Harbors Act. Furthermore, you may be required to obtain state and local authorizations, including a Virginia Water Protection Permit from the Virginia Department of Environmental Quality (DEQ), a permit from the Virginia Marine Resources Commission (VMRC), and/or a permit from your local wetlands board.

This is a preliminary jurisdictional determination and is not a legally binding determination regarding whether Corps jurisdiction applies to the aquatic resources in question. To determine Corps' jurisdiction, you may request and obtain an approved jurisdictional determination.

This delineation of aquatic resources can be relied upon for no more than five years from the date of this letter. New information may warrant revision. Enclosed is a copy of the "Preliminary Jurisdictional Determination Form". Please review the document, sign, and return one copy to the Corps, either by email (Melissa.a.nash@usace.army.mil) or by standard mail to 803 Front Street Norfolk, VA 23510

If you have any questions, please contact me either by telephone at (757) 201-7489 or by email at melissa.a.nash@usace.army.mil .

Sincerely,

Melissa A Nash

Melissa Nash
Eastern Virginia
Regulatory Section

Enclosure(s):

cc:

Amy Conley, Bay Environmental, Inc.

Appendix 2 - PRELIMINARY JURISDICTIONAL DETERMINATION (PJD) FORM

BACKGROUND INFORMATION

A. **REPORT COMPLETION DATE FOR PJD:** 10-FEB-2022

B. **NAME AND ADDRESS OF PERSON REQUESTING PJD:**
Amy Conley
Bay Environmental
648 Independence Parkway
Chesapeake, VA 23320

Locust Grove Partners LP
17076 Benns Church Road
Smithfield, VA 23430

C. **DISTRICT OFFICE, FILE NAME, AND NUMBER:**
NAO, 17226 Commerce Lane JD, NAO-2021-00628

D. **PROJECT LOCATION(S) AND BACKGROUND INFORMATION:**
(USE THE TABLE BELOW TO DOCUMENT MULTIPLE AQUATIC RESOURCES AND/OR AQUATIC RESOURCES AT DIFFERENT SITES)

State: VA County/parish/borough: Isle of Wight County City: Smithfield
Center coordinates of site (lat/long in degree decimal format):
Lat.: 36.902331° Long.: -76.581173°
Universal Transverse Mercator: 18
Name of nearest waterbody: Cypress Creek

E. **REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):**
☐ Office (Desk) Determination. Date: 2-9-2022
☐ Field Determination. Date(s): 4-29-2021

TABLE OF AQUATIC RESOURCES IN REVIEW AREA WHICH "MAY BE" SUBJECT TO REGULATORY JURISDICTION.

Site Number	Latitude (decimal degrees)	Longitude (decimal degrees)	Estimated amount of aquatic resource in review area (acreage and linear feet, if applicable)	Type of aquatic resource (i.e., wetland vs. non-wetland waters)	Geographic authority to which the aquatic resource "may be" subject (i.e., Section 404 or Section 10/404)
PFO wetlands	36.903208	-76.587527	2.28 acres	Wetland	Section 404
SS wetlands	36.901283	-76.585131	0.56 acres	Wetland	Section 404
stormwater pond	36.905059	-76.586715	0.66 acres	Non-wetland waters	Section 404
streams	36.905062	-76.587435	822 feet	Non-wetland waters	Section 404

1) The Corps of Engineers believes that there may be jurisdictional aquatic resources in the review area, and the requestor of this PJD is hereby advised of his or her option to request and obtain an approved JD (AJD) for that review area based on an informed decision after having discussed

[1] Districts may establish timeframes for requester to return signed PJD forms. If the requester does not respond within the established time frame, the district may presume concurrence and no additional follow up is necessary prior to finalizing an action.

the various types of JDs and their characteristics and circumstances when they may be appropriate.

2) In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an AJD for the activity, the permit applicant is hereby made aware that: (1) the permit applicant has elected to seek a permit authorization based on a PJD, which does not make an official determination of jurisdictional aquatic resources; (2) the applicant has the option to request an AJD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an AJD could possibly result in less compensatory mitigation being required or different special conditions; (3) the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) undertaking any activity in reliance upon the subject permit authorization without requesting an AJD constitutes the applicant's acceptance of the use of the PJD; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a PJD constitutes agreement that all aquatic resources in the review area affected in any way by that activity will be treated as jurisdictional, and waives any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an AJD or a PJD, the JD will be processed as soon as practicable. Further, an AJD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331. If, during an administrative appeal, it becomes appropriate to make an official determination whether geographic jurisdiction exists over aquatic resources in the review area, or to provide an official delineation of jurisdictional aquatic resources in the review area, the Corps will provide an AJD to accomplish that result, as soon as is practicable. This PJD finds that there "may be" waters of the U.S. and/or that there "may be" navigable waters of the U.S. on the subject review area, and identifies all aquatic features in the review area that could be affected by the proposed activity, based on the following information:

SUPPORTING DATA. Data reviewed for PJD (check all that apply)

Checked items should be included in subject file. Appropriately reference sources below where indicated for all checked items:

_X__ Maps, plans, plots or plat submitted by or on behalf of the PJD requestor:
Map: "Figure 2: Site Conditions Wetland Delineation 17226 Commerce Lane Isle of Wight, Virginia" dated 05/03/2021 and revised on February 9, 2022, by Bay Environmental.

_X__ Data sheets prepared/submitted by or on behalf of the PJD requestor.
- _X__ Office concurs with data sheets/delineation report.
- ___ Office does not concur with data sheets/delineation report. Rationale: _____.

___ Data sheets prepared by the Corps: _____.

___ Corps navigable waters' study: _____.

___ U.S. Geological Survey Hydrologic Atlas: _____.
- ___ USGS NHD data.

[1] Districts may establish timeframes for requester to return signed PJD forms. If the requester does not respond within the established time frame, the district may presume concurrence and no additional follow up is necessary prior to finalizing an action.

___ USGS 8 and 12 digit HUC maps.
_X__ U.S. Geological Survey map(s). Cite scale & quad name: _ Benns Church USGS Quad _.
_X__ Natural Resources Conservation Service Soil Survey. Citation: __Online Soil Survey Isle of Wight County___.
_X__ National wetlands inventory map(s). Cite name: __USFWS Online map__.
___ State/local wetland inventory map(s): _____.
___ FEMA/FIRM maps: _____
___ 100-year Floodplain Elevation is: _____. (National Geodetic Vertical Datum of 1929)
_X__ Photographs: _X__ Aerial (Name & Date): Google Earth and Regulatory Reporting Tool__
___ or _X__ Other (Name & Date): _Onsite photos provided by applicant__.
___ Previous determination(s). File no. and date of response letter: _____.
___ Other information (please specify): _____.

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

Melissa A Nash 2-10-2022

Signature and date of Regulatory staff member completing PJD

Signature and date of person requesting PJD (REQUIRED, unless obtaining the signature is impracticable)[1]

[1] Districts may establish timeframes for requester to return signed PJD forms. If the requester does not respond within the established time frame, the district may presume concurrence and no additional follow up is necessary prior to finalizing an action.

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: Locust Grove Partners, LP	File Number: NAO-2021-00628	Date: 2-10-2022
Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
	APPROVED JURISDICTIONAL DETERMINATION	D
X	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits/appeals.aspx or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:	If you only have questions regarding the appeal process you may also contact: Ms. Naomi J. Handell Regulatory Program Manager (CENAD-PD-OR) U.S. Army Corps of Engineers Fort Hamilton Military Community 301 General Lee Avenue Brooklyn, New York 11252-6700 Telephone number: (917) 789-4841 Naomi.J.Handell@usace.army.mil

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

	Date:	Telephone number:
_____ Signature of appellant or agent.		

DEPARTMENT OF THE ARMY
US ARMY CORPS OF ENGINEERS
NORFOLK DISTRICT
FORT NORFOLK
803 FRONT STREET
NORFOLK VA 23510-1011

February 10, 2022

Supplemental Preapplication Information

Project Number: **NAO-2021-00628**
Applicant: **Locust Grove Partners, LP**
Project Location: **80.23 acres located west of Benns Church Boulevard and at 17226 Commerce Lane in Isle of Wight County, Virginia.**

1. A search of the Virginia Department of Historic Resources data revealed the following:

   ☐ No known historic properties are located on the property.

   ☒ Tribal consultation may be required.

   ☐ The following known architectural resources are located on or near the property:

   ☒ The following known archaeological resources are located on the property: 44IW0319 and 44IW0318

   ☐ The following known historic resources are located in the vicinity of the property (potential for effects to these resources from future development):

   NOTE:
   1) *The information above is for planning purposes only. In most cases, the property has not been surveyed for historic resources. Undiscovered historic resources may be located on the subject property or adjacent properties and this supplemental information is not intended to satisfy the Corps' requirements under Section 106 of the National Historic Preservation Act (NHPA).*
   2) *Prospective permittees should be aware that Section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant.*

2. A search of the data supplied by the U.S. Fish & Wildlife Service, the Virginia Department of Conservation and Recreation and the Virginia Department of Game and Inland Fisheries revealed the following:

   ☐ No known populations of threatened or endangered species are located on or within the vicinity of the subject property.

   ☒ The following federally-listed species may occur within the vicinity of the subject property: **Northern Long-eared Bat (*Myotis septentrionalis*)**

   ☐ The following state-listed (or other) species may occur within the vicinity of the subject property:

Please note this information is being provided to you based on the preliminary data you submitted to the Corps relative to project boundaries and project plans. Consequently, these findings and recommendations are subject to change if the project scope changes or new information becomes available and the accuracy of the data.

I HEREBY CERTIFY THAT THE PROPERTY SHOWN HEREON IS LOCATED IN ZONE " X " ON THE FLOOD INSURANCE RATE MAP, COMMUNITY PANEL No. 510303 0065 B, DATED AUGUST 19, 1991.

STAFFORD C. CAMP

THIS SURVEY WAS PERFORMED WITHOUT BENEFIT OF A CURRENT TITLE REPORT, AND AS SUCH, THIS SURVEY IS SUBJECT TO ANY EASEMENT OF RECORD AND OTHER PERTINENT FACTS WHICH A TITLE SEARCH MIGHT DISCLOSE.

I, STAFFORD C. CAMP, C.L.S. HEREBY CERTIFY THAT THIS SUBDIVISION WAS MADE BY ME AT THE DIRECTION OF THE OWNER, AND THAT THIS SUBDIVISION IS ENTIRELY WITHIN THE BOUNDARIES OF LAND OWNED BY THE UNDERSIGNED OWNER, AND THAT IRON RODS, AS SHOWN ON THIS PLAT AS SMALL SOLID CIRCLES, HAVE ACTUALLY BEEN PLACED, AND THEIR LOCATIONS CORRECTLY SHOWN.

MAY 14, 2002

THIS SUBDIVISION OF PROPERTY, AS IT APPEARS ON THIS PLAT, IS WITH THE FREE CONSENT, AND IS IN ACCORDANCE WITH THE DESIRES OF THE UNDERSIGNED OWNERS.

05-14-02, 2002

ARTHUR P. RAWLINGS (TRUSTEE)

STATE OF VIRGINIA, COUNTY OF Southampton, TO-WIT :

I, Alexis Knight, A NOTARY PUBLIC IN AND FOR THE CITY AND STATE AFORESAID, DO HEREBY CERTIFY THAT ARTHUR P. RAWLINGS SIGNED THE FOREGOING IN MY JURISDICTION AFORESAID.

GIVEN UNTO MY HAND THIS 14th DAY OF May, 2002

MY COMMISSION EXPIRES May 31, 2005

NOTARY PUBLIC

WHERE SEPTIC TANKS ARE TO BE INSTALLED ON INDIVIDUAL LOTS, THERE SHALL BE AN APPROVAL OF THE DRAINFIELD BY THE HEALTH DEPARTMENT AT THE TIME APPLICATION IS MADE FOR A SEPTIC TANK PERMIT. BOTH THE DRAINFIELDS SHALL BE LOCATED ENTIRELY OUTSIDE OF THE RESOURCE PROTECTION AREA. APPROVAL OF THIS PLAT BY THE PLATTING AUTHORITY DOES NOT INDICATE THAT THE INDIVIDUAL LOT IS SUITABLE FOR APPROVAL OF A PRIMARY AND 100% RESERVE DRAINFIELD.

THIS SUBDIVISION IS APPROVED BY THE UNDERSIGNED IN ACCORDANCE WITH EXISTING SUBDIVISION REQUIREMENTS AND MAY BE COMMITTED TO RECORD.

VDOT

COUNTY SUBDIVISION AGENT

CURVE	DELTA ANGLE	RADIUS	ARC LENGTH	CHORD BEARING	CHORD LEN	TANGENT
C1	15°25'55"	625.00'	168.34'	S 66°40'53" W	167.83'	84.68'

2-96-5

P.C. 1 SLIDE 388 PG. (9,11)

LOCATION MAP SCALE 1" = 2 MILES

LEGEND:
- ○ COMPUTED POINT
- ● IRON ROD SET
- ◐ IRON ROD FOUND
- E.P. = EDGE OF PAVEMENT

T.P. 42 - 01 - 006
NOW OR FORMERLY
ROBERT P. TAYLOR, JR.
D.B. 228 - PG. 521

10' SETBACK TYPICAL ADJACENT TAYLOR PROPERTY

N 57°30'02" E 272.15'

N 70°46'10" E 211.72'

S 20°04'34" E 57.25'

100' WETLANDS BUFFER

N 71°05'57" E 253.75'

DELINEATED WETLANDS

WOODED

LOT 12
T.P. 42 - 06 - 012
NOW OR FORMERLY
J.B.M. LIMITED PARTNERSHIP
INST# 980003835
P.C. 1 SLIDE 388 PG. (9,11)

PROPERTY LINE & C/L 50' COLONIAL PIPELINE EASEMENT

S 58°22'43" E 572.08'

WOODED
LOT 15
5.067 ACRES

WOODED
PORTION OF
T.P. 42 - 1 - 007D

N 15°36'10" W 531.08'(D.&.)

20' DRAINAGE EASEMENT TO HEREBY DEDICATED TO THE COUNTY OF ISLE OF WIGHT.

C/L OF 20' DRAINAGE EASEMENT

FUTURE SECTION
T.P. 42 - 1 - 007D
NOW OR FORMERLY
ISLE OF WIGHT CO.
INDUST. PARK LAND TRUST
D.B. 344 - PG. 379

15' UTILITY EASEMENT

S 7°23'50" W 415.00'

TO FUTURE DEAD END C/L FUTURE ROAD (50' R/W)

END OF PAVEMENT FOR PROPOSED ROAD EXTENDATION AND T STYLE TURN AROUND

C/L FUTURE STREET (50' R/W)

T.P. 42 - 1 - 007D
NOW OR FORMERLY
ISLE OF WIGHT CO.
INDUST. PARK LAND TRUST
D.B. 344 - PG. 379

IWIP ROAD TO ROUTE 10 (OPEN)

PROPOSED E.P. (50' R/W)

L = 77.10'

TEMP. CUL-DE-SAC TO BE REMOVED

END OF PAVEMENT

LOT 14

C/L PROPOSED ROAD EXTENDATION (NOT OPEN)

T.P. 42 - 1 - 007D
NOW OR FORMERLY
ISLE OF WIGHT CO.
INDUST. PARK LAND TRUST
D.B. 344 - PG. 379

20' ACCESS EASEMENT TO ISLE OF WIGHT INDUSTRIAL PARK ROAD (TO FOLLOW PROPOSED R.O.W. FOR FUTURE ROAD

PORTION OF
T.P. 42 - 1 - 007D
REFERENCE FOR SURVEY
D.B. 344 - PG. 379

100' 0 50' 100' 200'
SCALE IN FEET
1" = 100'

COMMONWEALTH OF VIRGINIA
STAFFORD C. CAMP
No. 1861
5-14-02
LAND SURVEYOR

Instrument # 2-96-5
Recorded in the Clerk's Office of Isle of Wight County on July 26, 2002 at 2:35 PM
William E. Laine, Jr., Clerk
By: DC
To: Board + Road Ice

FOR DEED SEE INST # 02-4520

S.V. CAMP, III & ASSOCIATES, INC.
22730 MAIN ST. COURTLAND, VIRGINIA
PHONE: (757)653-9278
FAX: (757)653-9600
SINCE 1958

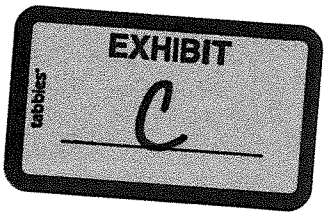
ACC. #	DWN BY:	FIELD BOOK NO.:	SHEET:
	S.L. III	FB - IWIP	1 OF 1

CROSS REF.:

PLAT SHOWING SURVEY OF PROPERTY
(LOT 15)
FOR ISLE OF WIGHT CO.
INDUSTRIAL PARK LAND TRUST
NEWPORT MAGISTERIAL DISTRICT
ISLE OF WIGHT COUNTY, VIRGINIA
SCALE : 1" = 100' APRIL 30, 2001
TOTAL AREA = 5.067 ACRES
REVISED MAY 14, 2002

C:\R14PROJECTS\SUBDIVISIONS\IWIP-INDUSTRIAL-PARK-LOT-15.dwg Tue May 14 14:26:28 2002

TETRA TECH



September 23, 2021

Ania Domagala-Pierga
Senior Real Estate Counsel
Insurance Auto Auctions, Inc.
Two Westbrook Corporate Center
Westchester, Illinois, 60154

Subject: Fluid Handling Best Management Practices

Dear Ms. Domagala-Pierga:

Tetra Tech, Inc. (Tetra Tech) provides Insurance Auto Auctions, Inc. (IAA) with environmental consulting services in New Jersey and nationwide. Per IAA's request, Tetra Tech prepared this letter describing IAA operations and environmental best management practices as they relate to fluid handling.

IAA OPERATIONS

IAA holds weekly auctions of usable and damaged vehicles. Generally, IAA obtains vehicles after they have been towed to a repair shop and evaluated by an insurance adjuster. Typically, these vehicles are towed to IAA branches 2 to 3 weeks after they first arrive at a repair shop. IAA's experience is that vehicle leakage, if any, generally occurs before the vehicles arrive at IAA's branches. Vehicles are catalogued for sale and placed in the vehicle inventory area via a loader once they arrive. IAA's branches are not intended for long-term storage of vehicles because IAA's aim is to sell the vehicles as quickly as possible.

ENVIRONMENTAL PROTECTIONS

Companywide, IAA implements a rigorous set of Best Management Practices to ensure that any fluid leaks from vehicles are promptly cleaned and storage yards are kept clean. Using materials prepared by Tetra Tech, IAA employees are trained to properly respond to spills in the event any occur. IAA employees are also trained on proper housekeeping and material management. Implementation of the Best Management Practices minimizes any potential environmental impacts to soil and groundwater at storage locations.

FLUID HANDLING

IAA does not dismantle vehicles, drain fluids, or sell vehicle parts. Based on IAA's long history of environmentally benign operations, demonstrated operating history, adherence to environmental Best Management Practices, and the fact that IAA's operations are designed to minimize direct contact with vehicle fluids, it is Tetra Tech's opinion that IAA's current fluid management practices and adherence to environmental Best Management Practices does not result in a material risk to the environment

Sincerely,

Bob Farnes
Manager

Tetra Tech
1100 S. McCaslin Boulevard, Suite 150, Superior, Colorado 80027
Tel 303.441.7900 tetratech.com

Insurance Auto Auctions, Inc.

Environmental Best Management Practices



Insurance Auto Auctions, Inc.
Westchester, IL

Prepared by:



Tetra Tech, Inc.
1100 S. McCaslin Boulevard, Suite 150
Superior, Colorado 80027

February 2017

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1.0 INTRODUCTION

This document presents Best Management Practices (BMP) for Insurance Auto Auctions, Inc. (IAA) branches. It is the environmental policy of IAA to comply with all applicable laws, regulations, permits, and orders. IAA has developed this document to proactively conduct operations at their branches in an environmentally responsible manner. There are various activities that take place during IAA operations that can potentially release pollutants to the environment if the activities are not performed properly. These environmental issues are limited to possible storm water impacts and storage and management of materials and wastes. This document identifies potential sources of environmental impacts from IAA branches and includes BMPs to minimize these adverse environmental impacts. This document provides general BMPs for IAA branches that address federal requirements. Each IAA branch will also comply with additional regulatory requirements that address state and local regulations.

2.0 REVIEWS AND CHANGES

IAA will review the BMPs described in this document on an annual basis and make changes as necessary. Reviews will also take place whenever there is a (1) significant change in a branch's design, construction, operation, or maintenance that has an effect on the potential for environmental impacts; or (2) when there is a change in applicable laws, regulations, permits, and orders that affects operations at IAA branches.

3.0 IAA OPERATIONS

IAA is primarily engaged in securing and storing vehicles from insurance total losses, bank repossessions, lease, and charity donations for subsequent auction to IAA authorized buyers. Vehicles are typically transported from primary holding facilities, such as towing companies, body shops, garages, car dealers, and residences, and then brought to IAA branches. IAA inspects and evaluates all vehicles prior to arrival and storage. Vehicles remain in the same condition as they arrive in and are not dismantled or repaired. Most vehicles have been stored for approximately 15 to 20 days at a primary holding location prior to arriving at an IAA branch. Once relocated to an IAA

branch, vehicle storage periods average approximately 30 to 55 days while awaiting proper paperwork for resale prior to auction.

The location of all loading, unloading, storage, sale, and access rows associated with stored materials and vehicles varies from branch to branch. The outdoors will be primarily used for vehicle storage and wholesale auction. Auctioning of vehicles is primarily done outdoors one to two days per week. Access to the yard is strictly managed through the main gate of the branch and is monitored by IAA personnel. Buyers are issued ID badges. Loading, unloading, and movement of stored vehicles are controlled by IAA personnel. In some cases, vehicles are loaded and unloaded from tow trucks using a forklift. IAA activities with the potential to result in environmental impacts are addressed in the following sections.

4.0 HAZARDOUS WASTE STORAGE AND DISPOSAL

The Resource Conservation and Recovery Act (RCRA) establishes a federal program to manage and track hazardous wastes from cradle to grave – from the waste's initial generation point to time of final disposal or recycling. The objective of the program is to ensure that hazardous waste is handled in a manner that protects human health and the environment. Under RCRA, hazardous waste is a waste that poses substantial or potential threats to public health or the environment and generally exhibits these characteristics - ignitable (i.e. flammable), oxidizing, corrosive, and/or toxic. For additional details on RCRA regulations, the U.S. Environmental Protection Agency (EPA) provides the RCRA Online Database -- http://www.epa.gov/rcraonline. State or local regulatory agencies may also have applicable regulations regarding hazardous waste and used oil.

Under RCRA, there are regulations for the generation, transportation, and treatment, storage, recycling or disposal of hazardous wastes. The regulatory requirements that apply to a branch depend upon the amount of hazardous waste that is generated by the branch each month. There are two types of waste generation levels that apply to IAA

branches – conditionally exempt small quantity generator (CESQG) and small quantity generator (SQG).

4.1 Conditionally Exempt Small Quantity Generator

If a branch generates less than 220 pounds (100 kilograms) of hazardous waste or less than 220 pounds of spill residue per month, a branch is considered a CESQG.

4.1.1 Disposal: Hazardous waste must be delivered to an offsite treatment, storage and disposal facility (TSDF) located in the U.S. that is "permitted, licensed, or registered by a State to manage municipal or industrial solid waste." This means the waste can go to a local industrial or municipal solid waste landfill. However, most permitted municipal and industrial landfills have created their own regulations that do not allow certain wastes to be disposed, especially hazardous wastes. For this reason, make sure that the TSDF you have selected has the necessary permits to handle hazardous waste.

4.1.2 Documentation and Reporting: There are no specific federal requirements for keeping records of the amount of hazardous waste generated by a CESQG. However, it is highly recommended that records be created and retained.

This documentation provides a basis for determining your generator status each calendar month and is proof to any regulatory agency that may question your monthly generation rates. Hazardous waste that is sent to a TSDF is generally listed on a Uniform Hazardous Waste Manifest. The manifest provides the proper documentation for monthly generation of hazardous waste. If at any time, the monthly generation for the facility exceeds 220 pounds, EPA must be notified of your change of generator status.

4.1.3 Storage: There are no specific federal requirements for storage and labeling of accumulated hazardous waste, however, there are some basic practices that help ensure safe management of hazardous waste. Storage containers should not be leaking, bulging, rusted, or incompatible with the waste stored in them. While there are no labeling requirements for CESQGs under RCRA, the Occupational Safety and

Health Act (OSHA) requires that you have labels on all containers. As a CESQG, you cannot accumulate onsite more than 2200 pounds of hazardous waste at any one time prior to disposal. If this happens, you must then follow all the requirements of a small quantity generator.

4.2 Small Quantity Generator

If a branch generates less than 2200 pounds (1000 kilograms) but more than 220 pounds (100 kilograms) of hazardous waste per calendar month, it is considered a small quantity generator (SQG) for that month.

4.2.1 Generation and Disposal: As a SQG, you are allowed to generate less than 2200 pounds of hazardous waste in any calendar month. All hazardous waste generated by the SQG that is not treated onsite must be manifested to an offsite TSDF permitted to handle hazardous waste or to an approved designated facility (e.g., recycling facility).

4.2.2 Documentation and Reporting: SQGs are required to track, report, and maintain documentation regarding their hazardous waste generation.

Manifests: Hazardous waste that is sent to a TSDF or an approved designated facility must be listed on a Uniform Hazardous Waste Manifest. A manifest provides a description of the hazards of the waste and the waste handlers. You must sign and date the manifest and obtain the signature of the transporter on the manifest. You must also keep a copy of the form until you receive a copy signed by the TSDF. Manifests must be kept for at least three years from the date of shipment. If your generator status changes, you must notify EPA or the State.

Exception Report: Once a hazardous waste manifest has been signed and dated by you (the generator), EPA gives the disposal contractor 60 days to transport the waste to the TSDF and return a signed copy of the manifest to you. If, after 60 days, you do not receive the "Return to Generator" copy of the manifest signed by the TSDF, you must send a legible photocopy of the manifest to the EPA Regional Administrator and a brief

written statement about not receiving the signed copy. This report must be maintained for at least three years.

Miscellaneous: Generators are also required to keep records of test results, waste analyses, or other waste determinations for at least three years from the date of shipment of that waste.

4.2.3 Storage: Hazardous waste must be stored in sealed tanks or containers, provided they are not leaking, bulging, rusted, or incompatible with the waste stored in them. Storage areas should have a means of secondary containment, an alarm, a fire extinguisher, a "No Smoking" sign, and a means of communication (e.g., walkie-talkie, cellular phone, or air horn) in the event of a spill or other emergency.

4.2.4 Labeling: Hazardous waste tanks and containers must be labeled with the words "Hazardous Waste", the contents of the container, the accumulation start date, the waste codes of the contents, and the name, address, and EPA ID number of the generator.

4.2.5 Time Limitations: SQGs are required to dispose their hazardous waste within 180 days of placing the waste into the container.

5.0 POTENTIAL IMPACTS TO STORM WATER

Potential pollutant sources exist at IAA branches that may adversely impact storm water runoff. Storm water may carry pollutants to storm ditches, drains, and eventually, bodies of water, such as streams, rivers, lakes, or oceans. Potential pollutant sources include:

- Aboveground storage tanks (AST) that contain various materials such as fuel, oil, and waste fluids
- Drums and containers that contain fuel, oil, waste fluids, and cleaning and maintenance chemicals
- Burned vehicles and vehicles that contain fluids within their mechanical systems
- Hydraulic equipment that contain fluids within their mechanical systems

- Oil water separators

5.1 Potential Storm Water Discharge Pollutants

Based upon review of activities conducted at IAA branches, it is possible that significant materials could contact storm water runoff. Potential pollutants in storm water may include oil and grease; common gasoline compounds such as benzene, toluene, ethylbenzene and xylenes (BTEX); diesel fuel, methyl-tertiary-butyl ether (MTBE); metals, and suspended (non-filterable) solids. At IAA branches, potential sources of materials that can come in contact with storm water runoff include the following:

- **Vehicle-related fluid** from de minimis releases (a release that is too small to be a regulatory concern) may be present in storm water discharge. The presence of these materials may originate from drips and leaks from vehicles traveling the road, de minimis releases from stored vehicles and vehicle transport equipment, and precipitation contact with exposed surfaces containing vehicle related fluids. Vehicles brought to IAA branches may contain residual amounts of fluids in the mechanical systems that are part of the vehicles. These fluids may include windshield-washer fluid, radiator fluid, motor oil, transmission fluid, brake fluid, grease, hydraulic oil, battery acid, and gasoline or diesel fuel.
- **Material and waste storage** tanks and containers can leak or spill during fluid transfer. If these leaks and spills are not prevented or contained, they can come in contact with storm water runoff. Materials stored and used for operations at IAA branches include facility maintenance chemicals (such as small quantities of cleaning supplies, paints, and fertilizers), diesel and gasoline fuel, propane, transmission fluid, grease, heating or motor oil, and antifreeze. Some of the used or waste materials stored at IAA branches include contaminated, used or expired materials such as used oil, fuel contaminated with water or other vehicle fluids, expired hydraulic oil, and contaminated soil containing spilled materials.
- **Runoff** from adjacent properties containing soil, organic materials, and petroleum-based products may also contribute to storm water contamination.
- **Erosion** of inorganic solids could result when disturbance of soil surfaces during transport equipment operation in access aisles is combined with precipitation events.

6.0 BEST MANAGEMENT PRACTICES

The following BMPs for IAA branches provide guidance on how to minimize adverse environmental impacts from operations. The BMPs include general practices such as good housekeeping, preventative maintenance and inspections to prevent

environmental issues. Guidance is also provided for BMPs that control storm water impacts and response to spills. Finally, operation-specific BMPs cover vehicle washing, flood vehicle preparation and equipment service and maintenance.

6.1 Good Housekeeping

Employees at IAA branches follow good housekeeping procedures to reduce the possibility of accidental releases and to reduce safety hazards to facility personnel. Key elements of IAA's good housekeeping program include the following items:

- Visual inspections of vehicles brought to the branch to assess integrity of vehicle fluid systems and identify the need for repair or remedy of vehicle hydraulic/mechanical systems that could leak significant materials on the property.
- Visual inspections of travel aisles in the storage yard for evidence of releases of significant materials and identifying the cause of the release when possible. Removal of the miscellaneous debris (i.e., loose vehicle parts that may have inadvertently fallen off of the host vehicle), as necessary, to prevent possible damage to site vehicles.
- Regular maintenance of site vehicles and equipment to prevent de minimis releases.
- Careful handling of vehicles, to minimize the potential for damage to vehicle systems, which may in turn cause a release.
- Proper handling, storage and inventory of significant materials, when necessary in the storage yard and within the branch garage or warehouse.
- Orderly storage and inventory of stored vehicles.
- Prompt, routine removal of de minimis releases.
- Continued training of IAA personnel regarding good housekeeping practices.

6.2 Preventive Maintenance

IAA personnel are responsible for the continued inspections and preventative maintenance. Preventive maintenance includes visual operational inspection of facility equipment, trucks, loaders, and storm water management features to detect conditions which may cause breakdowns or failures resulting in the potential discharge of significant materials into storm water.

Preventive maintenance applies to the following branch features that are considered an integral part of facility BMPs for storm water and pollution prevention systems:

- Catch basins and culvert systems
- Drainage swales
- Vegetated areas
- Site grading
- Pavement
- Trucks and forklifts
- Fuel storage tanks; above ground and underground

6.3 Inspections

To prevent the release of materials, IAA personnel conduct routine inspections. Inspections include fuel storage and material storage areas as well as the storage yards. Daily routine visual inspections are conducted in the vehicle storage yard and building areas. Inspections of vehicles are conducted prior to their arrival at an IAA branch by the drivers before the vehicles are loaded on transports. The indoor and outdoor vehicles are inspected daily during normal yard operations. Inspections of vehicles, equipment, fueling equipment, and building maintenance material are done routinely in the course of normal business operations.

Each system and major item of branch equipment is inspected at least monthly. Inspection procedures vary depending upon the equipment or system; however, the major elements of the inspection program include observation of equipment and environmental conditions of the branch.

Regulations require that ASTs containing petroleum products are visually inspected once every thirty days. If an issue is identified that requires action, the issue is documented and subsequent remedy is recorded upon timely completion. Visual inspections include addressing the following questions:

- Are there any visible leaks on tanks, tank seams, connections, fittings, valves?
- Are there any visible leaks on aboveground piping, pipe seams, connections, fittings, flanges, threaded connections, pumps or valves?
- If utilized, is overfill prevention or leak detection equipment in good operating condition?
- If a double-walled tank is utilized, is the interstice free of liquid and is the interstitial monitoring equipment operating properly?
- Is the secondary containment system free of tank product and other liquids or debris, such as rainwater, snowmelt, dirt, leaves, trash, etc.?
- Are concrete surfaces and ground free of any evidence of new leaks or spills?
- Are tank supports, berms, bollards or bumpers surrounding the tank in good condition?
- Is the tank labeled with appropriate signs identifying the material within and with appropriate warnings?
- Do you have the appropriate supplies for cleaning up a spill and overfill? Are these supplies appropriately marked and conveniently located?

6.4 Storm Water Control Measures

Storm water BMPs described in this section focus on controlling and reducing possible contaminants that may discharge to storm water. Storm water devices used to reduce contaminants that may enter storm water could include vegetative swales, hay bales, and absorbent booms. Branches may incorporate vegetative and structural control measures to reduce pollutants to storm water. Storm water BMPs and devices used to control and reduce the impacts of pollutants discharged into storm water are described in the following sections.

6.4.1 Vegetative Storm Water Controls

Vegetative controls refer to landscaping practices that provide pollutant removal primarily by limiting sediment movement and preventing erosion. Vegetative control may include vegetated filter strips, grassed swales, and habitat creation/preservation, and landscaping. IAA branches may use the following vegetative storm water controls.

Vegetative Strips: Vegetative strips may be placed perpendicular to the direction of surface water flow across the branch.

Vegetative Swales: Vegetated drainage swales may be used to provide pollutant removal, velocity reduction, and erosion protection.

6.4.2 Structural Control Measures

Engineered controls consist of non-natural features constructed or placed with the intent of reducing impacts of pollutants to surface water discharge from IAA branches. The following engineered controls may be used:

Release Containment: Release containment (metal dikes or something similar) may be used around ASTs. Double-walled ASTs may be used where feasible.

Wood Chips: Natural, untreated wood chips may be distributed along the ground surface to provide filtration of surface runoff flow and to provide dust suppression through retention of moisture at ground surface.

Crushed Stone and Gravel: Stone and gravel placement in high traffic areas helps minimize erosion and sediment additions to storm water drainage areas.

Berms: Earthen or concrete berms may be used to control and contain flow.

Oil Absorbent Boom: Oil absorbent booms may be used based on observation of surface water conditions. An oil absorbent boom acts as a barrier against the transport of oil and grease by removing them from surface water flow.

Plastic Covering: Vehicles received at branches with their outer body coverings intact provide inherent covering of vehicle mechanical system surfaces. Select vehicles and components may be shrink-wrapped with polyethylene plastic to prevent contact with precipitation and protect valuable components.

6.5 Release Response

The following sections discuss release response procedures and the response team that may take care of a release at an IAA branch.

6.5.1 Procedures

IAA personnel are trained to recognize potential release situations and how to respond appropriately in the event of a release. Emergency response kits are located at the IAA branches adjacent to areas with spill potential.

Release response procedures are similar for each material that may be stored at an IAA branch. If releases absorbed on the ground surface are observed during operations or routine inspections, the affected solids on the ground surface are removed by hand or mechanical equipment as soon as practical and disposed of properly. Materials and equipment used in the cleanup of this material may include absorbents, rags, shovels, backhoes, loaders, DOT-approved storage drums, etc.

Specific material handling procedures to reduce contaminated material from entering a storm water conveyance or drainage point include covering impacted solids with sheathing, use of absorbent material, and deployment of an absorbent boom at drainage outfall locations. A release to the ground surface may or may not require emergency response procedures, depending on the nature of the release. Release response and cleanup equipment are available at all IAA branches. Employees responding to a release have been instructed to implement containment by using collection equipment at the location of the release and, if possible, to prevent migration of the release off of the branch property by executing response measures.

Free product and/or impacted surface water shall be recovered to the extent practicable, as soon as possible after a detected release. This will increase the efficiency of the response actions and serve to minimize emulsified or dissolved phase material which could pass through the facility storm water system and off branch property.

If releases to surface water are observed during operations or routine inspections, the materials (liquids or solids) are recovered by hand or with mechanical equipment. Equipment used in the cleanup of releases to surface water may include skimmers, pumps, adsorbents, bailers, etc., as deemed necessary.

Pumping of liquids recovered from a release should include transfer into a secure temporary holding tank or drum as soon as possible. Absorbent material should be placed on the release locations and below identified sources of the release. The waste absorbent material should be disposed of properly. Impacted soil should be excavated and stored in appropriate containers or covered with polyethylene sheets.

Impacted material collected during the response must be removed promptly and disposed of in accordance with Federal, State and local requirements. A licensed emergency response contractor may be required to assist in cleanup of releases depending on the size and location of the release, weather and ground conditions, and the effectiveness of response actions implemented by IAA personnel. Appropriate regulatory agencies will be notified in the event of a reportable release.

Immediately following emergency response actions, the affected drainage path and associated possible collection points should be closely monitored to allow recovery of as much of the release material as possible. This includes identification and collection of released material that might be caught in stagnant zones and continues to present potential for migration after initial removal of accumulated material.

IAA maintains records at its corporate office of all significant material releases and response actions taken. These records are kept and periodically reviewed to reduce the chances of release reoccurrence, to assess potential improvements that could be made to response procedures, and to comply with applicable federal, state and local regulations.

6.5.2 Response Team

IAA response teams are trained in release identification and response procedures, release reporting procedures, and communications systems. The release response team for IAA branches includes the Branch Manager and those individuals identified by the Branch Manager to respond properly.

6.6 Vehicle Washing

Vehicle washing does not occur at all IAA branches. However, for some branches it is a part of normal operations. Vehicle washing has the potential to adversely affect the quality of storm water runoff. As wash water flows over vehicles and the ground, chemicals can be picked up including oil and grease, pesticides, metals, and other contaminants and can discharge to storm sewers. To minimize adverse impacts, the following practices are used:

- Catch basins are maintained and kept free of debris. If no catch basin exists, vehicles are washed over pervious surfaces such as lawns and gravel areas. Washing activities do not occur adjacent to or on storm drains or within the boundaries of storm water ditches, retention ponds, or other storm water conveyances.
- If possible, washing occurs without detergents. If a detergent is used, "non-toxic", "phosphate free", or "biodegradable" detergent will be chosen.
- Vehicle washing is kept to the exterior of the car.

6.7 Flood Vehicle Preparation

Flood vehicle servicing does not occur at all IAA branches. However, for some branches it is a part of normal operations. There are four levels of flood vehicle servicing, as described below:

1. Vacuum Water from Interior: Vacuumed water is containerized and properly disposed of.

2. Wash Vehicle Exterior and Engine: Vehicles are washed over pervious surfaces such as lawns and gravel areas. Wash water is prevented from entering the storm drain or any nearby streets. The amount of detergents and other cleaners is either eliminated (i.e. only water is used) or only those that are "non-toxic", "phosphate free", or "biodegradable" are chosen. Engines are washed in a contained area with no access to the sewer or storm drains. Waste water from engine washing is collected for future treatment and disposal.

3. Change Vehicle Fluids: Vehicle fluids are changed indoors and only over impervious surfaces where possible. If changing, adding, or draining vehicle fluids outside, all work is conducted within areas where spills can be contained and cleaned up immediately. Drip pans are utilized when changing fluids, when possible. Any releases are immediately cleaned up in accordance with the established spill response plan. Drained fluids are immediately transferred to a

designated waste storage area, making sure not to mix different types of waste materials together (e.g., combining used oil with used antifreeze.)

4. Shampoo and Full Detail Cleaning: Shampoo water that is collected in the wet/dry vacuum is containerized and disposed of properly.

6.8 Specialized Equipment Service and Maintenance

Specialized equipment is used to handle and move vehicles in a proper and orderly manner. The most commonly used specialized equipment at IAA branches is the forklift. Routine forklift maintenance is necessary to ensure long performance life of the machines, reduce expensive repair costs, and maintain a safe work environment. Typical maintenance of a forklift involves fluid checks and changes (such as engine oil or transmission fluid), tire changes, radiator flushing, battery replacement, and general inspection of hoses, belts, gauges, and other components. The following good housekeeping practices are implemented to ensure minimal environmental impacts occur at IAA branches resulting from servicing and maintaining forklifts or loaders:

- Indoor floor drains that are connected to the storm drain system are plugged prior to equipment maintenance.
- Drip pans and adequate spill prevention and cleanup materials are kept on-site and easily available for use.
- Drip pans containing oil or other automotive fluids are not left unattended, and the contents are disposed of properly in accordance with all applicable local, state, and federal regulations.
- Fluids are changed indoors and only over impervious surfaces where possible. If changing, adding, or draining vehicle fluids outside, all work is conducted within areas where spills can be contained and cleaned up immediately.
- Batteries are stored indoors on non-reactive, curbed, and impervious surfaces where no floor drain is present. If floor drains are present, batteries are stored upright in a plastic tub or other appropriate container to contain any leaked battery acid.
- Each used battery is labeled and dated.
- Used batteries are recycled by either returning them to the manufacturer for a trade-in with the purchase of new batteries, or by arranging for a registered waste transporter to pick them up for recycling. Used batteries are recycled prior to accumulating 40 batteries.

- Wastewater from parts cleaning, engine cleaning, undercarriage cleaning, radiator flushing, etc. is containerized and disposed of in accordance with all applicable local, state, and federal regulations.
- Specific areas are designated with in the facility for engine, part, or radiator cleaning. Washing or rinsing parts outdoors only occurs when absolutely necessary. If washing or rinsing parts outside, work is conducted within areas where spills can be contained and cleaned up immediately.

7.0 Employee Training

Employee training is conducted to inform branch personnel of the BMPs used at IAA branches. The training covers practices for hazardous waste management and preventing releases and the procedures for responding properly and rapidly to releases. Local branch personnel are trained initially, prior to work assignments, and annually thereafter to ensure they are familiar with the elements and goals of the practices and procedures. Training records are updated and maintained on a regular basis.

ADDENDUM TO PHASE I CULTURAL RESOURCES SURVEY OF SMITHFIELD IAAI PROPERTY

ISLE OF WIGHT COUNTY, VIRGINIA






Circa~ Cultural Resource Management

MAY 2022

ADDENDUM TO
PHASE I CULTURAL RESOURCES SURVEY OF SMITHFIELD IAAI PROPERTY
ISLE OF WIGHT COUNTY, VIRGINIA

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May 2022

ABSTRACT

In May 2022, Blakeway Corporation contracted Circa~ Cultural Resource Management, LLC (Circa~) to conduct an addendum survey to the Phase I cultural resources survey of Smithfield Insurance Auto Auctions, Incorporated (IAAI) Property in Isle of Wight County, Virginia. This addendum survey aimed to identify and record additional cultural resources within one additional 5.07-acre parcel included in the project area before the site's development. This survey identified no isolated finds, one new archaeological site, and no new architectural resources.

The project area consists of a hardwood and softwood forest partially cleared in 2003 to develop the tract as a laydown yard for the railroad. The majority of the project area currently consists of an expansive concrete pad with steel connections in the western portion of the tract and thick gravel in the eastern portion of the tract. The pad site is roughly two feet higher than the surrounding elevations to the north and west. A Columbia Gas pipeline runs along the eastern boundary. The utility marker for the gas company requested no excavations within 50 feet of their utilities' western edge. The historical maps illustrate that the project area has been forested since 1919. No structures are shown within the project area on the historical maps. A tire dump and a target practice shooting area were noticed along the western portion of the project area.

Site 44IW0351 is a moderate artifact scatter that dates from circa post-1950 and represents the remains of a dump. All the artifacts recovered were restricted to the ground surface, with no artifacts recovered from shovel tests. Given these facts, Circa ~'s professional opinion is that the site lacks the potential to contribute significant new information or answer research questions about historical sites in the region. Therefore, due to the lack of a quantity and diversity of artifacts, and lack of intact features, combined with the presence of all artifacts recovered from the ground surface, the site is recommended as not eligible for the National Register of Historic Places under Criteria A, B, C, or D. Accordingly, no further archaeological investigation appears warranted.

In sum, the proposed construction will not have an adverse effect on any archaeological or architectural resources potentially eligible or eligible for listing on the National Register of Historic Places. No further work is recommended.

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INTRODUCTION

In May 2022, Circa~ Cultural Resource Management, LLC (Circa~) conducted an addendum survey to the 2021 Phase I cultural resources survey of Smithfield Insurance Auto Auctions, Incorporated (IAAI) Property, Isle of Wight County, Virginia (Figures 1 and 2). The project area, which encompasses approximately 5.07 acres, is bordered by Isle of Wight Industrial Park Road and industrial development to the south, a Columbia Gas pipeline to the east, a forested area to the west, and an agricultural field to the north. The project consists of an access road to the overall project area to the north and a stormwater management pond in the northwestern section. The Area of Potential Effect (APE) for archaeological and architectural resources is the approximately 5.07-acre project area.

In June of 2021, Blakeway Corporation contracted Circa~ to conduct a Phase I cultural resources survey of the Smithfield IAAI property in Isle of Wight County, Virginia. The original project area, encompassing approximately 73 acres, is bordered by rural agricultural lands to the north, south, east, and west, and a commerce park to the south. This Phase I cultural resources survey aimed to identify and record all historic resources within the project area before the project's development. This survey identified 30 isolated finds, no previously-identified archaeological resources, two new archaeological resources, one previously-identified architectural resource, and no new architectural resources.

IAAI is filing for a Conditional Rezoning to operate a business that auctions automobiles via the internet. The process is as follows:

1. Vehicles involved in collisions, floods, or recovered from thefts and repossessions are made available for sale by insurance companies, dealerships, rental companies, and fleet leasing companies;

2. IAAI contracts with such companies to receive and re-market the vehicles, which are then delivered to the site on flatbeds or some other commercial vehicle carrier;

3. Upon arrival, the vehicles are inspected to prevent contaminant leaks;

4. The vehicles are photographed and put into temporary storage while awaiting sale;

5. All vehicles are sold via internet auction;

6. Each vehicle is sold as an intact unit (meaning not dismantled nor sold in parts), and they leave the site in the same condition in which they arrived, whether operable or not (no work or maintenance is done on the vehicles); and

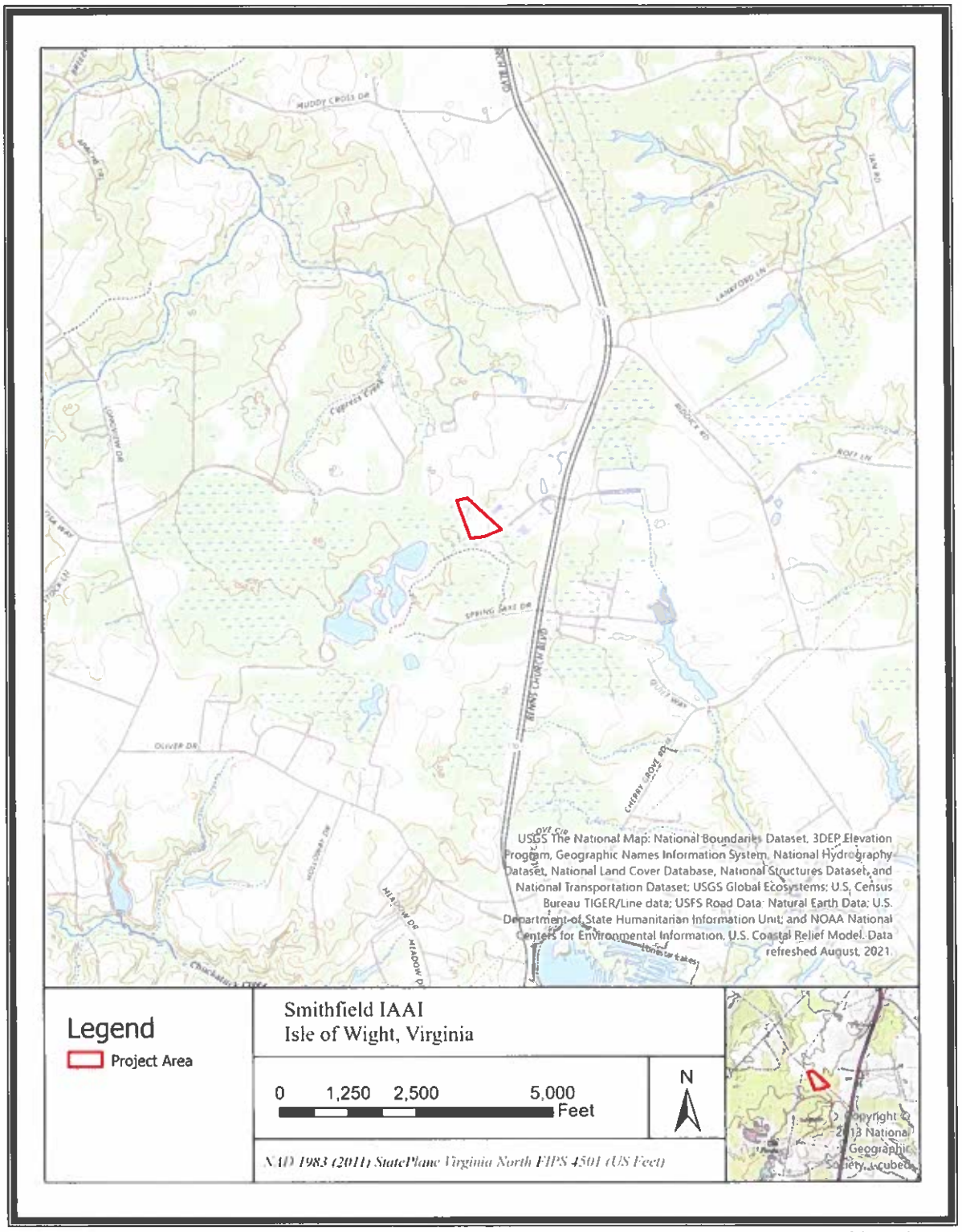


Figure 1. Approximate location of the additional project area on USGS Benns Church quadrangle.

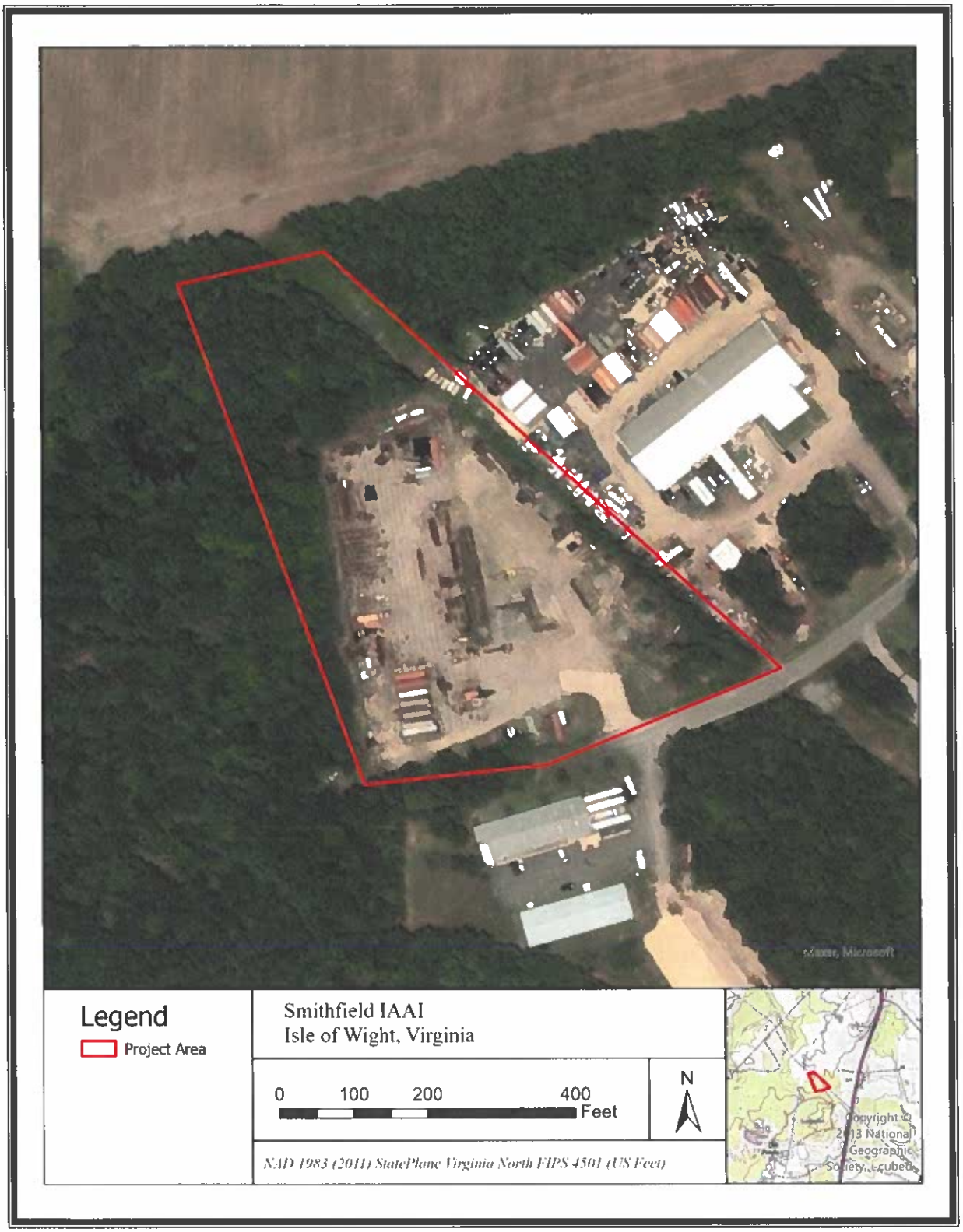


Figure 2. Current (2022) aerial view of the additional project area, from Google Earth.

7. Then, they are delivered to the buyers on flatbed trucks or some other commercial vehicle carrier.

Since the initial Phase I survey was completed, IAAI has added one parcel to the project area (#42-06-015) for site access. This parcel was not included in the original survey, and Isle of Wight County requested the study to be updated to address any cultural resources within this new parcel.

The investigation was conducted in compliance with Section 106 of the National Historic Preservation Act of 1966 (as amended) and conducted per the Secretary of the Interior's *Standards and Guidelines for Archaeological Documentation* and the *Guidelines for Preparing Archaeological Resource Management Reports* of VDHR. The report describes fieldwork results and makes recommendations for further work.

This report describes the project area's physical and environmental setting, the survey results are defined, the findings reviewed, and recommendations explained. Field notes, artifacts, and other project records are presently being curated in Circa ~'s office in Williamsburg, Virginia. It is anticipated that all these materials will eventually be transferred to VDHR in Richmond, Virginia, following the project's conclusion.

At Circa~, Carol D. Tyrer, Registered Professional Archaeologist (RPA), served as Project Manager and Principal Investigator for the project and completed the archaeology section of the report. Dawn M. Muir, RPA, served as the Historian and Architectural Historian for the project and conducted the background research and architectural survey. Skye Hughes, RPA, assisted with the graphics for the report and background research. Jessie Bordeaux, Archaeological Lab Technician, assisted in the processing of artifacts. The successful completion of the Phase I survey for the proposed development was made possible by the contribution of many individuals. In particular, Elmer F. Tolle III, CFM, Vice-President with Development Services Group, Inc., ensured that project information and maps were always available for the study.

ENVIRONMENTAL BACKGROUND

The primary reasons for incorporating environmental studies into archaeological projects are: to learn of possible environmental constraints or lack of constraints; to determine the presence or absence of critical resources that might have influenced site distribution, etc.; and to discover environmental factors -- erosion, deposition, subsidence, and historical land-use patterns -- that might influence the integrity of archaeological sites once they have formed. A brief environmental summary of the project area is provided below.

The tract is situated in the Coastal Plain physiographic province, and the majority is within an area previously disturbed for an equipment laydown area. A fringe of hardwood and softwood trees is evident along the laydown area's northern and western edge. The tract is relatively level and ranges in elevation from approximately 48 feet above mean sea level (AMSL) to 53 feet AMSL. The site can be accessed via Isle of Wight Industrial Park Road.

A review of aerial photos from 1994 through the present shows the development of the tract in 2003 as a storage laydown area for the railroad supplies and equipment (Figure 3 and 4). In addition, a review of historic maps of the area from 1608 to the present showed no development within the project area.

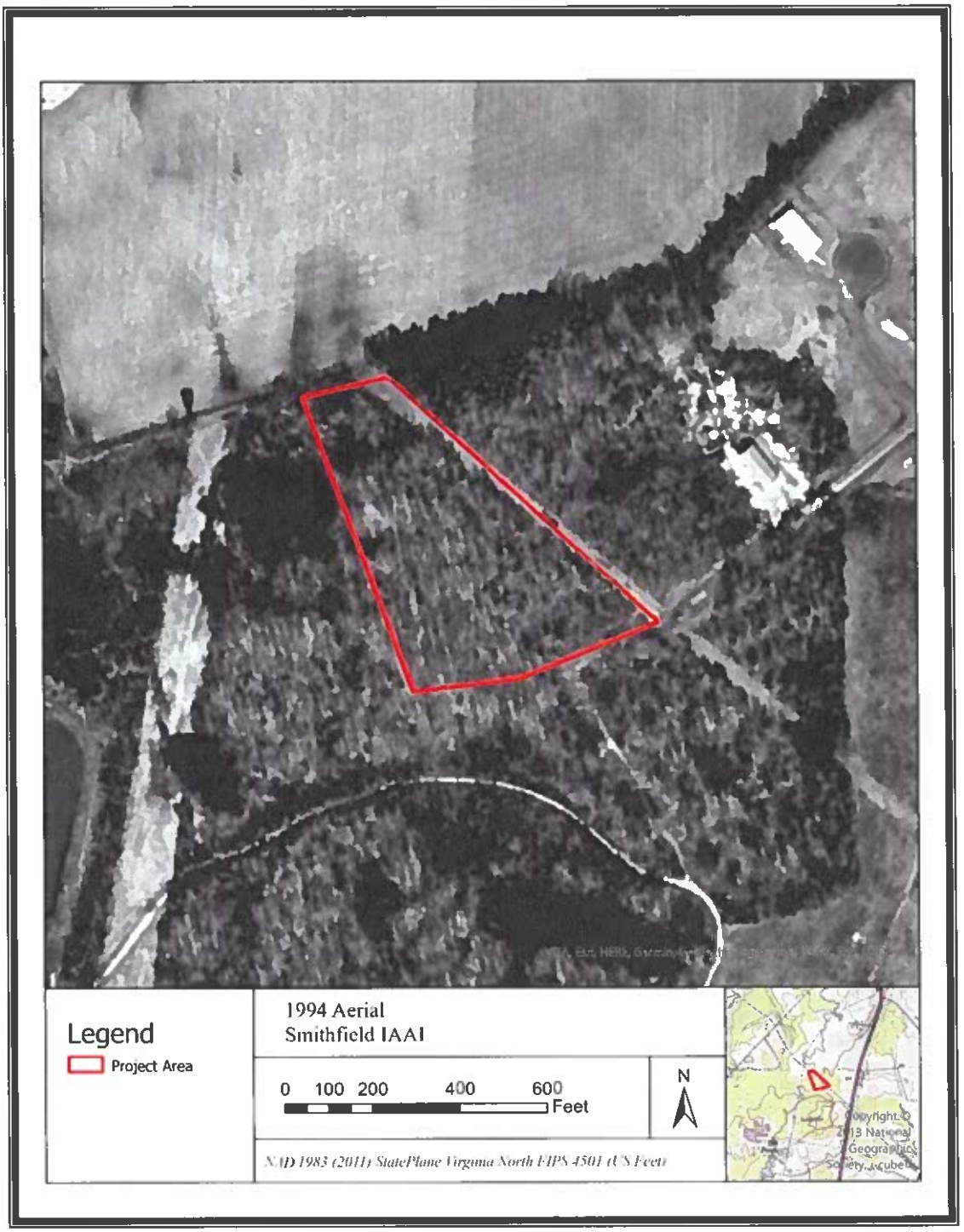


Figure 3. 1994 aerial view of Project Area.

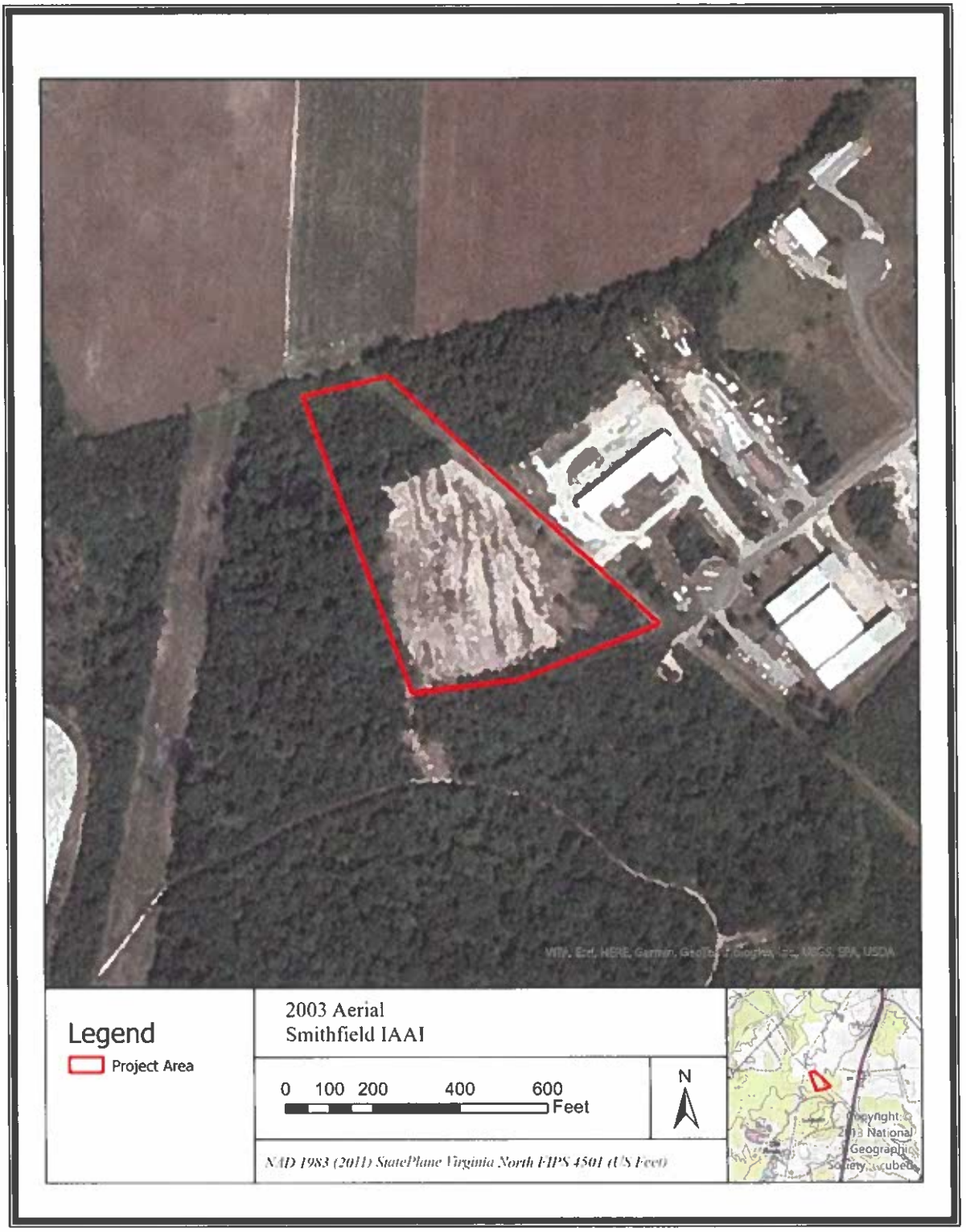


Figure 4. 2003 aerial view of Project Area.

Soils

Two different soil types and variants exist within the project area (Natural Resources Conservation Service [NRCS] 2022). These soil and soil types include Kinston loam and Uchee loamy sand, with 0% to 2% slopes (Figure 5 and Table 1). These types and variants are described below, including references to drainage, hunting, and gathering potential, and horticultural and agricultural productivity potential. Further, conclusions regarding the suitability of each for historical and Native American occupation and archaeological site probability are also explained.

Soil maps and associated data analyze soil types within a geographic area. Despite comprehensive and detailed coverage of most areas by soil surveyors, researchers often miss microenvironments due to their small footprints. Unfortunately, resource-rich microenvironments were often common sites of cultural activity. This analysis of archaeological potential is a "best-guess" using the best available data.

Well-drained, agriculturally- and horticulturally productive soils proximal to transportation corridors were the best choices for historic period occupation. Secondary areas, such as those containing wet soils and acid soils, after improvement such as drainage and liming, may have also been suitable choices for historic occupation. No navigable waterways exist within the project area; thus, water travel is not a factor in the site probability analysis of this tract.

Areas of wet soils may have been attractive to Native American cultures. In these areas, edible herbaceous plant species may have been gathered, and faunal species browsing these areas may have been hunted with success. Well-drained soils proximal to these resource-rich areas may have made adequate hunting and gathering campsites where the hunted and gathered resources were processed. These sites would have left a visible archaeological footprint. Little archaeological evidence would be located within the wet areas, the immediate locale of resource procurement.

Areas containing gravelly soils may have been especially attractive to stone tool-manufacturing Native American cultures, but the level of attraction may have depended on the type and quality of the gravels available in these locations. Well-drained soils proximal to quarry-able, gravel-rich areas would have made adequate lithic material procurement campsites.

Table 1. Soils Identified Within the Project Area Boundaries.

Soil Symbol	Soil Name	Acres Within the Project Area	Location Within Project Area	Percentage Within the Project Area
7	Kinston loam	3.07	Southern, northern, western, eastern, central	53.80%
19A	Uchee loamy sand, 0% to 2% slopes	2.00	Central, northern, eastern	46.20%

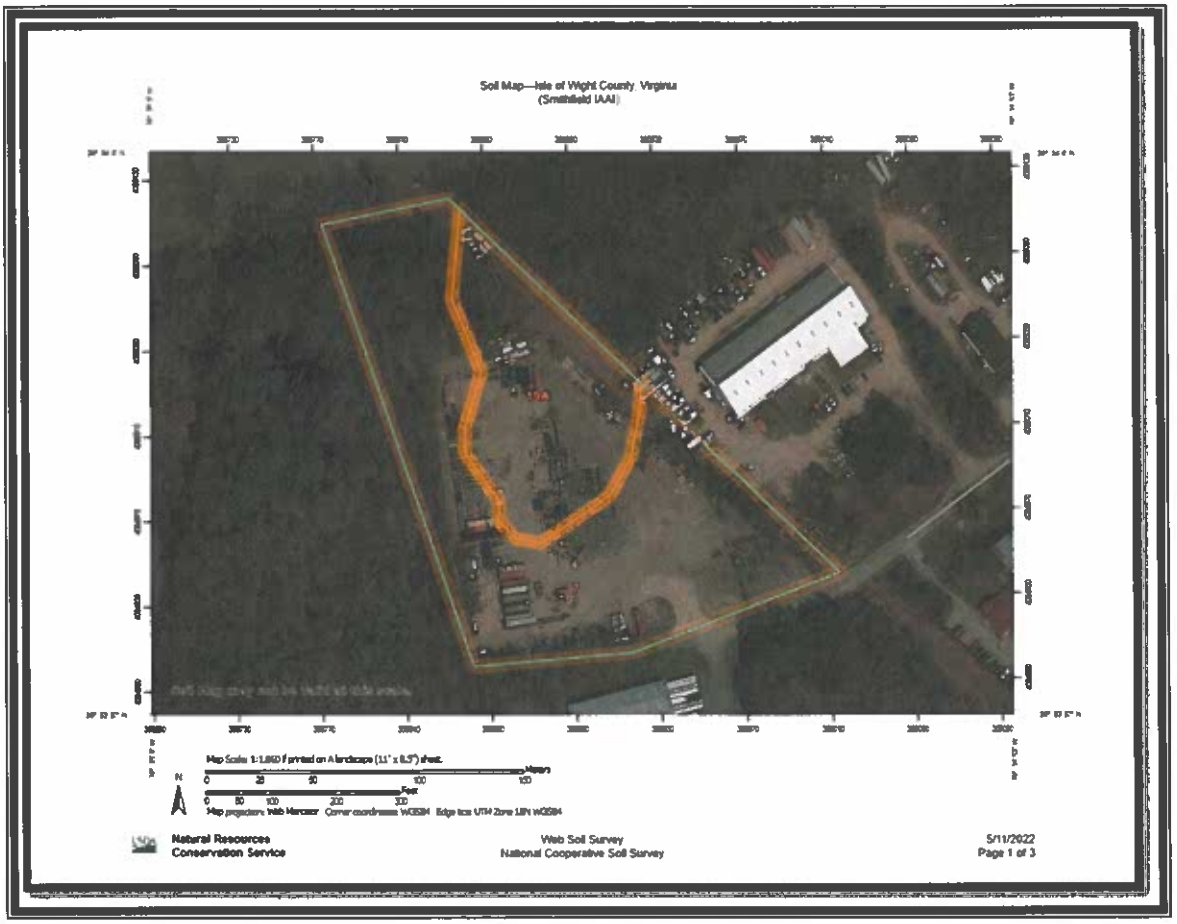


Figure 5. Project area soil map, from NRCS website.

Soils Identified Within the Project Area

Kinston Soil (7)
Kinston soil is a very-deep, poorly-drained, moderately-permeable soil formed in marine sediments found on floodplains of the Coastal Plain (NRCS 2022). Solum thickness ranges from 40 inches to 72 inches, and depth to bedrock is over 72 inches in this strongly acid to very strongly acid soil. The content of rock fragments is 0% to 3% throughout the solum. This soil features negligible surface runoff. Most of this soil is forested with limited pasture and crop growth. Where cleared, this soil can support growing pasture, corn, soybeans, and general farm crops. Where wooded, this soil can support water-tolerant hardwoods such as sweet gum, black gum, water oak, poplar, hickory, beech, elm, and ironwood. Loblolly pines are also found in some drained areas.

Uchee Complex (19A)
Uchee soil is a very-deep, well-drained, slowly-permeable soil formed in sandy and loamy marine sediments on smooth ridge tops and dissected side slopes of the Atlantic Coastal Plain (NRCS 2022). Solum thickness ranges from 40 inches to 60 inches in this very-strongly-acid to strongly-acid soil. Much of this soil is cleared and used for cultivated crops, including cotton, corn, and pasture. Wooded areas can support loblolly pine, longleaf pine, shortleaf pine, southern red oak, blue jack oak, and hickory.

PREVIOUSLY-RECORDED CULTURAL RESOURCES

Circa~ performed an archival search for the original Smithfield IAAI project area using the VDHR online V-CRIS system on June 24, 2021. This research was completed to determine if historic resources exist within the project area boundaries. The search identified 15 archaeological and 13 architectural resources within a one-mile radius of the project area boundaries. Of these resources, no archaeological or architectural resources were previously identified within the project area. Circa~ reviewed the VDHR online V-CRIS system on May 11, 2022, to update the archival search. The search did not identify any new resources within one mile of the project area, and no previously-identified sites were found within the new project area (Figure 6).

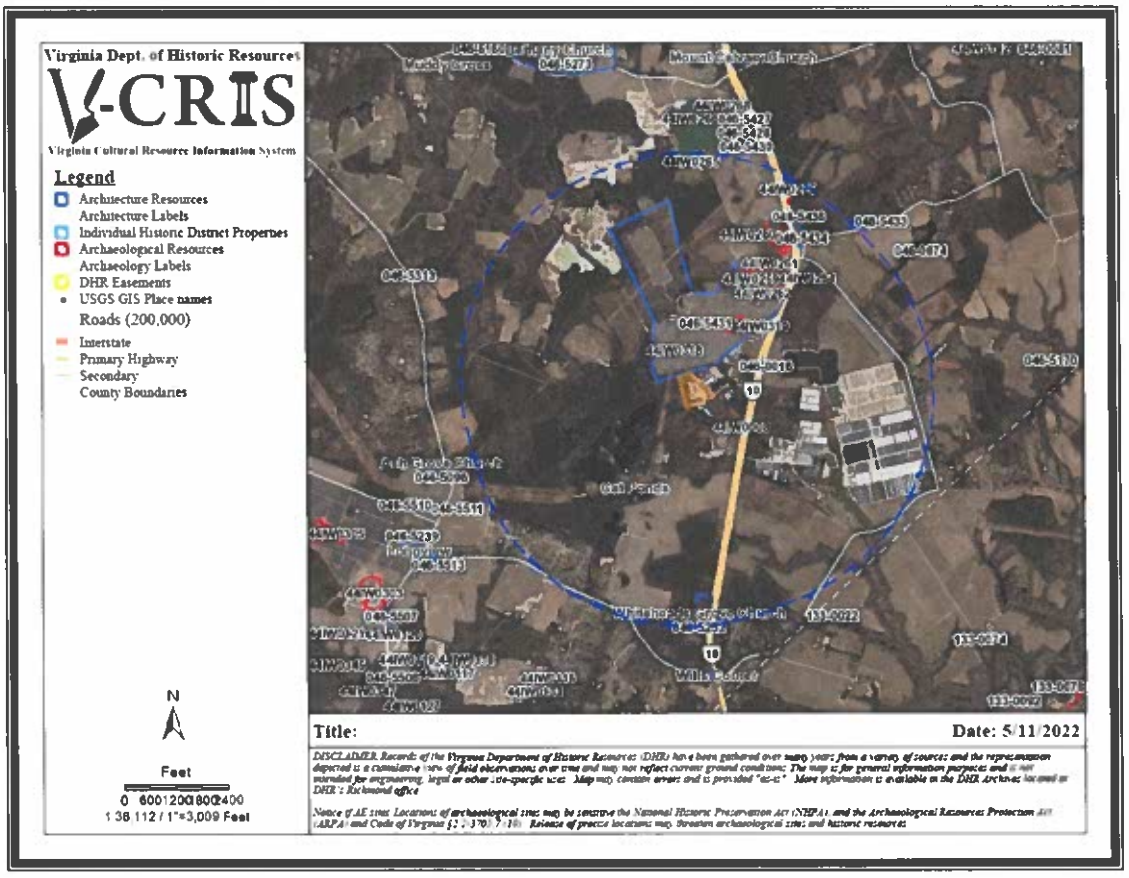


Figure 6. VDHR V-CRIS map showing project area outlined in orange and previously-identified resources within one mile.

RESULTS

The field survey provides specific information concerning the location, nature, and distribution of archaeological resources within the project area. Based on VDHR guidelines, Circa~ uses two types of designations to group archaeological resources: isolated finds and sites. An archaeological site is defined as a grouping of artifacts that date to specific periods and reveal the location of human activity and land use. An isolated find is determined when a limited number of artifacts are recovered from the

ground surface or shovel testing. This event may be either a casual or single-episode discard, such as a projectile point or a bottle break, or a small collection of artifacts related to various periods, such as a projectile point from the Woodland period and a bottle fragment from the 20th century. Appendix A contains VDHR V-CRIS forms.

Architectural Resources

Circa~ identified no architectural resources within the project area boundaries during the Phase I survey.

Archaeological Resources

The project area originally consisted of a hardwood and softwood forest partially cleared in 2003 to develop the tract as a laydown yard for the railroad. The project area currently consists of an expansive concrete pad with steel connections in the western portion of the tract and thick gravel in the eastern portion of the tract. The pad site is roughly two feet higher than the surrounding elevations to the north and west. A Columbia Gas pipeline runs along the east boundary. The utility marker for the gas company requested no excavations within 50 feet of their utilities' western edge. The historical maps illustrate that the project area has been forested since 1919. No structures are shown within the project area on the historical maps. A tire dump and a target practice shooting area were noticed along the western portion of the project area. Plates 1 - 12 illustrate the current conditions of the project area.



Plate 1. View of the project area, looking west.



Plate 2. View of the project area, looking northwest.



Plate 3. View of the concrete pad within the project area, looking south.

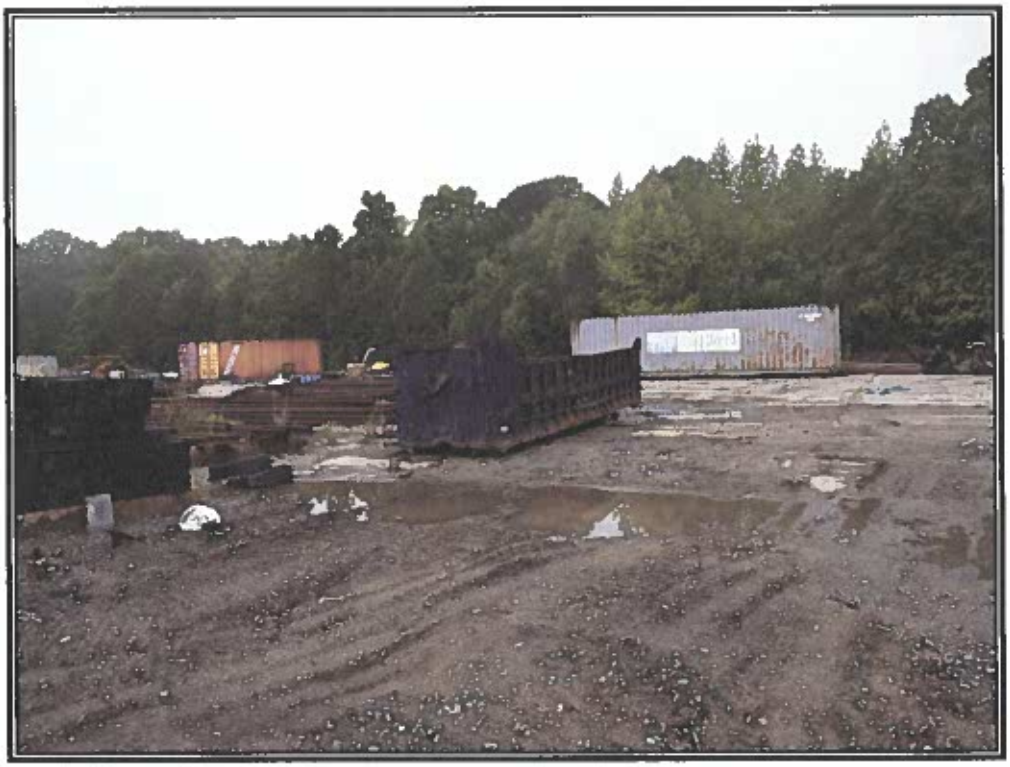


Plate 4. View of the gravel and concrete pad within the project area, looking west.



Plate 5. View of the gravel portion of the project area, looking south.



Plate 6. View of the northern end of the project area, looking northwest.

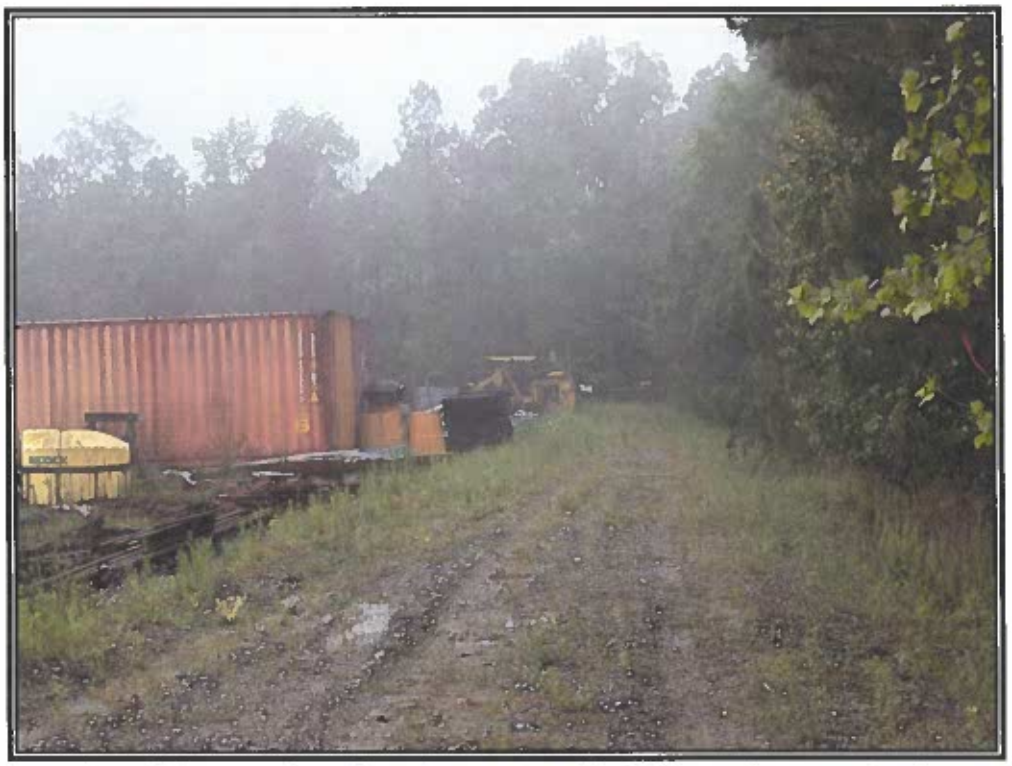


Plate 7. View of the gravel road on the western side of the project area, looking south.



Plate 8. View of the forested area in the northern portion of the project area at Shovel Test 2-7, looking north.



Plate 9. View of a tire pile within the northwestern portion of the project area at Shovel Test 4-1, looking southwest.



Plate 10. View of the target practice area within the western section of the project area at Shovel Test 3-1, looking southwest.



Plate 11. View of the low area within the project area, looking southwest.



Plate 12. View of the western portion of the project area at Shovel Test 2-1, looking south.

Circa~ laid out a grid on 50-foot intervals in the northern and western forested portion of the site. In addition, Circa~ excavated three shovel tests in the southeastern portion of the project area in a grassy area (Figure 7). Within the forest area, 19 shovel tests were excavated. Two soil strata were excavated before reaching sterile subsoil (Figure 8). Stratum A, approximately 0.35 to 0.65 feet thick, consisted of a grayish-brown (10YR 6/4) sandy loam under a thick humic layer. Approximately 0.32 to 0.60 feet thick, Stratum B consisted of yellowish-brown (2.5Y 6/6) sandy clay. Stratum C excavated approximately 0.20 feet thick and consisted of a sterile yellowish-brown (2.5Y 5/6) sandy clay subsoil or C-horizon. Shovel tests excavated closer to the developed area illustrated disturbance within the shovel test profiles. Shovel Tests 20 through 22 revealed one disturbed soil profile before reaching sterile subsoil (see Figure 8). Stratum A, approximately 0.55 to 0.75 feet thick, consisted of a grayish-brown (10YR 6/4) sand mixed with yellowish-brown (2.5Y 6/6) sandy clay with large gravel inclusions. Stratum B excavated approximately 0.20 feet thick and consisted of a sterile yellowish-brown (2.5Y 5/6) sandy clay subsoil or C-horizon. No artifacts were recovered from the shovel testing efforts. One surface dump site was noted by the survey efforts.

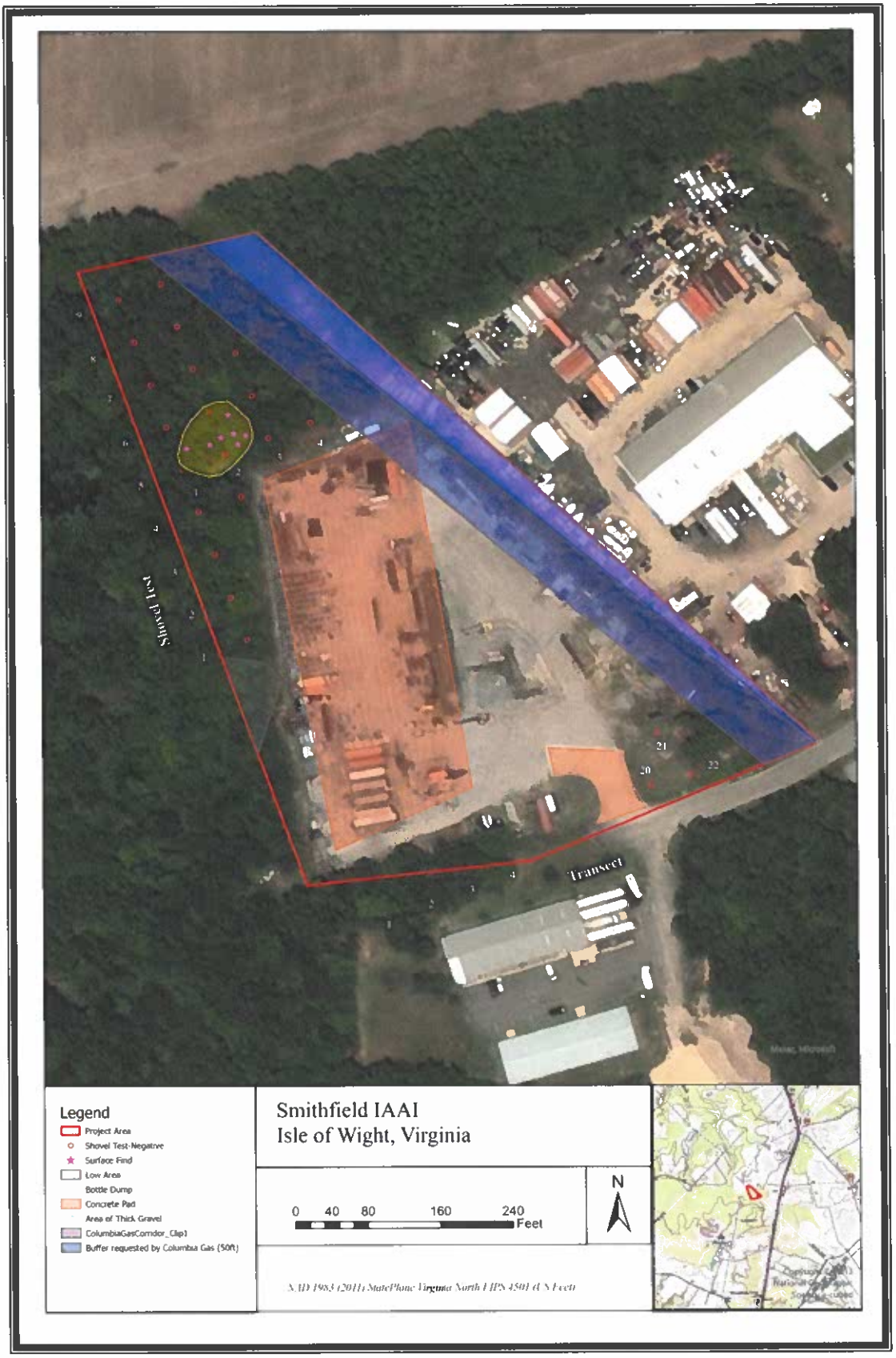


Figure 7. Shovel test map.

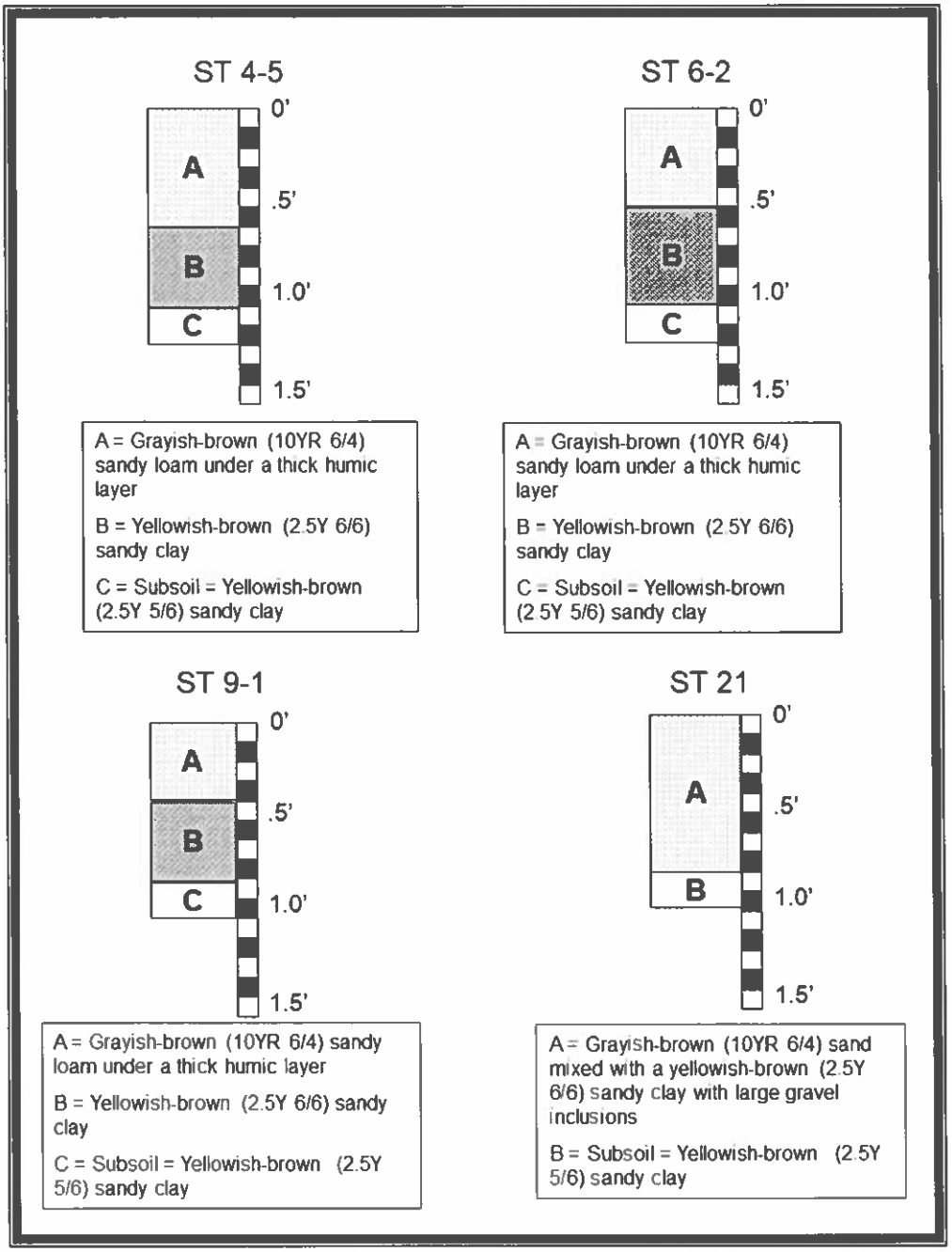


Figure 8. Representative shovel test profiles.

Site 44IW0351

This site is located on the northwestern portion of the project area, north of the concrete pad on a slightly sloping east to west upland slope (see Figure 7 and Plate 13). The elevation is 48 feet AMSL, and the landform drains to the west towards a low, wet area off-site. The site consists of an open mix of mature hardwoods and softwoods.



Plate 13. View of the bottle scatter within the project area, looking north.

The site was recorded by a moderate surface scatter of artifacts recovered from the forest floor concentrated within an area measuring approximately 120 feet north to south by 130 feet east to west. Circa~ excavated six shovel tests in this area; all were negative. Negative shovel tests and the surface scatter defined the northern, southern, western, and eastern boundaries. Two soil strata were excavated before reaching sterile subsoil (see Figure 8). Stratum A, approximately 0.45 to 0.65 feet thick, consisted of a grayish-brown (10YR 6/4) sandy loam under a thick humic layer. Approximately 0.38 to 0.60 feet thick, Stratum B consisted of yellowish-brown (2.5Y 6/6) sandy clay. Stratum C excavated approximately 0.20 feet thick and consisted of a sterile yellowish-brown (2.5Y 5/6) sandy clay subsoil or C-horizon.

This site was recorded by the light scatter of clear glass bottles, whiteware sherds, metal buckets, and concrete step fragments noted on the ground surface. The clear bottle glass fragments were identified as alcoholic or container types that date circa post-1950. The whiteware sherd exhibited a green glaze and molded ribbing typical of Fiestaware; however, the base of the plate was impressed "MADE IN USA," but not with the Fiestaware trademark (Plate 14). In addition to these artifacts, Circa~ staff noted a metal bucket and smoothed concrete step fragments within the site borders (Plates 15 and 16).

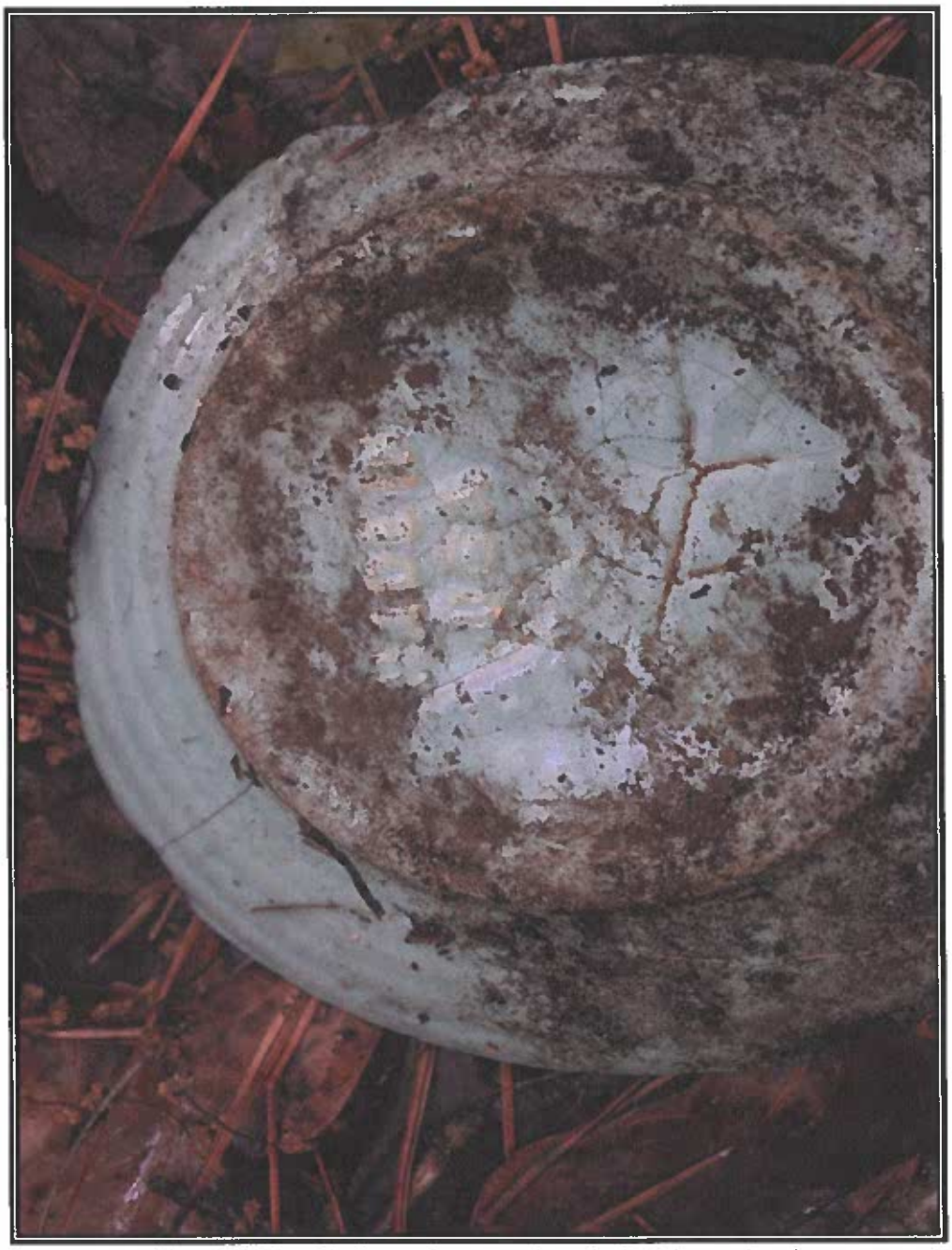


Plate 14. Detail view of green-glazed plate base sherd.



Plate 15. View of the concrete steps within the project area, looking southwest.



Plate 16. Detail view of the bucket within the project area.

This moderate artifact scatter dates from circa post-1950 and represents the remains of a dump. All the artifacts recovered were restricted to the ground surface, with no artifacts recovered from shovel tests. Given these facts, Circa ~'s professional opinion is that the site lacks the potential to contribute significant new information or answer research questions about historical sites in the region. Therefore, due to the lack of a quantity and diversity of artifacts, and lack of intact features, combined with the presence of all artifacts recovered from the ground surface, the site is recommended as not eligible for the National Register of Historic Places under Criteria A, B, C, or D. Accordingly, no further archaeological investigation appears warranted.

CONCLUSIONS AND RECOMMENDATIONS

The project area originally consisted of a hardwood and softwood forest partially cleared in 2003 to develop the tract as a laydown yard for the railroad. The project area currently consists of an expansive concrete pad with steel connections in the western portion of the tract and thick gravel in the eastern portion of the tract. The pad site is roughly two feet higher than the surrounding elevations to the north and west. A Columbia Gas pipeline runs along the eastern boundary. The utility marker for the gas company requested no excavations within 50 feet of their utilities' western edge. The historical maps illustrate that the project area has been forested since 1919. No structures are shown within the project area on the historical maps. A tire dump and a target practice shooting area were noticed along the western portion of the project area. One archaeological site was located in the northwestern section of the project area.

Architectural Resources

No architectural resources were identified within the APE during the Phase I survey.

Archaeological Sites

Site 44IW0351 is a moderate artifact scatter that dates from circa post-1950 and represents the remains of a dump. All the artifacts recovered were restricted to the ground surface, with no artifacts recovered from shovel tests. Given these facts, Circa ~'s professional opinion is that the site lacks the potential to contribute significant new information or answer research questions about historical sites in the region. Therefore, due to the lack of a quantity and diversity of artifacts, and lack of intact features, combined with the presence of all artifacts recovered from the ground surface, the site is recommended as not eligible for the National Register of Historic Places under Criteria A, B, C, or D. Accordingly, no further archaeological investigation appears warranted.

In sum, the proposed construction will not have an adverse effect on any archaeological or architectural resources potentially eligible or eligible for listing on the National Register of Historic Places. No further work is recommended.

Table 2. Summary of identified resources and recommendations

Site	Type	National Register Eligibility	Recommendation	Effect Determination
44IW0351	Dump, mid-20th century	No	No further work	No effect

APPENDIX A
VDHR V-CRIS FORMS

Snapshot

Date Generated: May 19, 2022

Site Name: No Data
Site Classification: Terrestrial, open air
Year(s): 1950 - 2022
Site Type(s): Artifact scatter
Other DHR ID: No Data
Temporary Designation: Site 1

Site Evaluation Status

Not Evaluated

Locational Information

USGS Quad: BENNS CHURCH
County/Independent City: Isle Of Wight (County)
Physiographic Province: Coastal Plain
Elevation: 48
Aspect: No Data
Drainage: James
Slope: No Data
Acreage: 0.020
Landform: Other
Ownership Status: Private
Government Entity Name: No Data

Site Components

Component 1

Category: Domestic
Site Type: Artifact scatter
Cultural Affiliation: Indeterminate
Cultural Affiliation Details: No Data
DHR Time Period: Post Cold War, The New Dominion
Start Year: 1950
End Year: 2022
Comments: May 2022: This site represents a circa 1950s dump. The site was recorded by a moderate surface scatter of artifacts recovered from the forest floor concentrated within an area measuring approximately 120 feet north to south by 130 feet east to west. Circa~ excavated six shovel tests in this area; all were negative.

Bibliographic Information

Bibliography:

No Data

Informant Data:

No Data

Archaeological site data is protected under the Archaeological Resource Protection Act (ARPA 1979).

Events

Event Type: Survey:Phase I

Project Staff/Notes:

May 2022: In the spring of 2022, Circa~ Cultural Resource Management, LLC (Circa~) conducted an addendum survey to the 2021 Phase I cultural resources survey of Smithfield Insurance Auto Auctions, Incorporated (IAAI) Property, Isle of Wight County, Virginia. The project area, which encompasses approximately 5.07 acres, is bordered by the Isle of Wight Industrial Park Road and industrial development to the south, a Columbia Gas pipeline to the east, a forested area to the west, and an agricultural field to the north. The project consists of an access road to the overall project area to the north and a stormwater management pond in the northwestern section. The Area of Potential Effect (APE) is the approximately 5.07-acre project area for archaeological and architectural resources.

At Circa~, Carol D. Tyrer, Registered Professional Archaeologist (RPA), served as Project Manager and Principal Investigator for the project She also completed the archaeology section of the report. Dawn M. Muir, RPA, served as the Historian and Architectural Historian for the project and completed the background research and architectural survey. Skye Hughes, RPA, assisted with the graphics for the report and background research.

Project Review File Number: No Data

Sponsoring Organization: No Data

Organization/Company: Circa~ Cultural Resource Management, LLC

Investigator: Carol D. Tyrer

Survey Date: 5/13/2022

Survey Description:

May 2022: Archival research commenced with the examination of cartographic and historic works that are on file online with the Library of Congress, the Colonial Williamsburg Rockefeller Library, VDHR, the Library of Virginia, and Isle of Wight County. Efforts were made to determine whether historic road rights-of-way passed close to the project area and whether subsurface cultural deposits were likely to be present. Data accumulated during previous archival research on historic sites throughout the region also were examined.

Prior to subsurface testing, the entire project area was visually inspected via pedestrian survey and all aboveground evidence of cultural activity noted and recorded. Shovel tests, approximately 1.50-foot in diameter, were excavated at 50-foot intervals. Shovel tests were excavated at 25-foot radius around selected positive shovel tests to aid in the determination of isolated finds. Waterlogged areas, or portions of the project area with slopes in excess of 15%, were carefully examined for cultural material, but were not subjected to subsurface testing. All shovel tests were excavated according to natural levels to sterile subsoil, and all soils screened through ¼-inch wire mesh. Profiles were recorded for representative shovel tests and soil color recorded in accordance with the Munsell classification system. All shovel tests were recorded on standard field forms and all cultural material retained.

Once removed from the field, all archaeological data and specimens were transported to Circa~ 's laboratory for processing and analysis. Prior to washing, artifacts from a given provenience were first emptied into a screened basket and sorted. Items determined to be unstable will be either dry brushed or in some cases not washed and re-bagged with the appropriate provenience information. These items may include unstable organic objects, such as wood or other plant material, leather, bone, fabric, metal requiring immediate conservation, and overglaze painted delftware, and other soft-bodied ceramics such as some local wares. Stable objects will be washed with a soft brush and edges of ceramics and glass will be thoroughly cleaned to aid in the identification of body type and mending. Items will be then placed by provenience on a drying rack.

In a given provenience, artifacts were sorted first by material and checked for mends. Stylistic attributes were described with current terminology and recorded by count into a database for analysis. Non-diagnostic artifacts with like attributes will be grouped together - i.e., clear, amber, etc. bottle body glass fragments, unrecognizable nail fragments, corroded metal fragments, and aqua window glass. Diagnostic artifacts were sorted and grouped together based on type or ware and/or vessel or function.

Current Land Use	Date of Use	Comments
Forest	5/13/2022 12:00:00 AM	May 2022: This site is located on the northwestern portion of the project area, north of the concrete pad on a slightly sloping east to west upland slope. The elevation is 48 feet AMSL, and the landform drains to the west towards a low, wet area off-site. The site consists of an open mix of mature hardwoods and softwoods.

Threats to Resource: Development

Site Conditions: Surface Deposits Present But With No Subsurface Integrity

Survey Strategies: Observation, Subsurface Testing, Surface Testing

Specimens Collected: Yes

Specimens Observed, Not Collected: No

Artifacts Summary and Diagnostics:

May 2022: This site was recorded by the light scatter of clear glass bottles, whiteware sherds, metal buckets, and concrete step fragments noted on the ground surface. The clear bottle glass fragments were identified as alcoholic or container types that date circa post-1950. The whiteware sherd exhibited a green glaze and molded ribbing typical of Fiestaware; however, the base of the plate was impressed "MADE IN USA," but not with the Fiestaware trademark. In addition to these artifacts, Circa~ staff noted a metal bucket and smoothed concrete step fragments within the site borders.

Summary of Specimens Observed, Not Collected:

No Data

Current Curation Repository: Circa~

Permanent Curation Repository: Land owner

Field Notes:	Yes
Field Notes Repository:	Circa~
Photographic Media:	Digital
Survey Reports:	Yes
Survey Report Information:	Circa~ 2022 Addendum to Phase I Cultural Resources Survey of Smithfield IAAI Property, Isle of Wight County, Virginia
Survey Report Repository:	VDHR
DHR Library Reference Number:	No Data
Significance Statement:	May 2022: This moderate artifact scatter dates from circa post-1950 and represents the remains of a dump. All the artifacts recovered were restricted to the ground surface, with no artifacts recovered from shovel tests. Given these facts, Circa ~'s professional opinion is that the site lacks the potential to contribute significant new information or answer research questions about historical sites in the region. Therefore, due to the lack of a quantity and diversity of artifacts, and lack of intact features, combined with the presence of all artifacts recovered from the ground surface, the site is recommended as not eligible for the National Register of Historic Places under Criteria A, B, C, or D. Accordingly, no further archaeological investigation appears warranted.
Surveyor's Eligibility Recommendations:	Recommended Not Eligible
Surveyor's NR Criteria Recommendations, :	No Data
Surveyor's NR Criteria Considerations:	No Data

Archaeological site data is protected under the Archaeological Resource Protection Act (ARPA 1979).

APPENDIX B:
STAFF RESUMES

CAROL D. TYRER, RPA
PRESIDENT/PROJECT MANAGER/PRINCIPAL INVESTIGATOR/LABORATORY DIRECTOR
CIRCA~ CULTURAL RESOURCE MANAGEMENT, LLC
Williamsburg, Virginia Office

Education:

University of Tennessee, Chattanooga, 1984, BA, Sociology and Anthropology: Anthropology
University of Tennessee, Chattanooga, 1984, BA English and American Language and Literature: Technical Writing
University of Tennessee, Chattanooga, 1987, English: Technical Writing Graduate classes
University of Denver, 2012, MLS. Global Affairs: World History and Culture
Liberty University: Ph.D., American History, (ongoing) est. 2023

October 2019 to present: Register of Professional Archaeologists (RPA) #18078

Professional Experience:

2012-present: President/Project Manager/Principal Investigator/Laboratory Director, Circa~ Cultural Resource Management, Inc., Williamsburg, Virginia.
2005-2012: President/Project Manager/Laboratory Director, Circa~ Cultural Resource Management, Inc., Williamsburg, Virginia.
2002-2005: Partner/Chief Financial Officer/Operations Manager/Project Manager/Marketing Director/Laboratory Director, James River Institute for Archaeology, Inc. (JRIA), Williamsburg, Virginia.
1995-2002: Operations Manager/Project Manager/ Marketing Director/Archaeological Laboratory Director, Cultural Resources, Inc. (CRI), Williamsburg, Virginia.
1991-1995: Project Manager/Marketing Director/ Archaeological Laboratory Director, Espey, Huston & Associates, Inc. (EH&A), Williamsburg, Virginia.
1990-1991: Consultant, Colonial Williamsburg Foundation.
1988-1991: Project Manager/Archaeological Laboratory Director, Mid-Atlantic Archaeological Research & Associates (MAAR), Williamsburg, Virginia.
1990 Field Crew, College of William and Mary Archaeological Project Center, Williamsburg, Virginia.
1985-1986: Assistant Curator, Riley County Historical Museum, Manhattan, Kansas.
1985: Assistant Field Supervisor, Environmental Systems, Inc., Kansas City, Kansas.
1985: Field Supervisor/Field Crew, Fort Riley, Kansas, University of Wichita, Kansas.
1983-1984: Field Crew, St. Simon's Island, Georgia, University of Tennessee
1982-1984: Lab Technician, University of Tennessee
1977-1982: Field and Lab Technician (summers), TVA, Chattanooga, Tennessee

Non-Profit Experience:

1996 to present: Co-president, Friends of the National Park Service Historic Green Spring Park, Williamsburg, Virginia
2010 to present: Vice-president Watermen's Museum, Yorktown, Virginia

Fields of Experience:

Ms. Tyrer has over 42 years of professional experience in the field of archaeology and the management of archaeological and museum collections. Her current responsibilities at Circa~ include managerial and technical tasks associated with archaeological assessments and Phase I, II, and III excavations, consultation with and representation of clients before state and national review agencies, writing and editing technical reports, preparing and managing project budgets, and developing and implementing archaeological research designs, site predictability models, and sensitivity areas. She has been the principal author of over 400 technical reports and historical studies (all accepted by the regulatory agencies), and worked closely with the Virginia Department of Historic Resources (VDHR) and other official agencies to fulfill the requirements of local, state, and federal regulations related to both archaeological and architectural resources.

As Laboratory Director, Ms. Tyrer has identified, catalogued, and analyzed artifacts from sites in Tennessee, North Carolina, South Carolina, Kentucky, West Virginia, Maryland, Florida, Pennsylvania, Georgia, Kansas, and Virginia. She has performed these analyses on Native American sites of all periods and on 17th, 18th, 19th, and 20th century historic sites. She is familiar with the state and federal artifact curation standards and uses these guidelines daily. She has prepared field soil samples for flotation of faunal remains and for carbon-14 dating and has experience in metal conservation. She also identifies and analyzes artifacts recovered from excavations and prepares distribution maps, vessel counts, and detailed discussions on artifact types for reports.

Ms. Tyrer's specialty is the identification and analysis of ceramics. She completed specialized computer cataloguing of the extensive ceramic study collection at The Colonial Williamsburg Foundation in Williamsburg, Virginia. Ms. Tyrer has also worked in a county historical museum identifying, labeling, curating, and appraising artifacts and museum specimens, and preparing exhibits. In addition, Ms. Tyrer has re-cataloged and analyzed the approximately 100,000-artifact collection from George Washington's Boyhood Home using the Automated National Catalog System (ANCS) developed by the National Park Service.

Ms. Tyrer has considerable experience in historic and prehistoric archaeological resources. She has personally designed and completed investigations for dozens of projects ranging from a large-scale study archaeological and historical resources to detailed investigations of numerous individual historic and prehistoric sites throughout the east coast. Ms. Tyrer's technical capabilities include detailed archival and literary research at the local, state, and national levels; site documentation and analysis; evaluation of properties for National Register and State Landmark significance; and technical report writing. As with other

senior staff, she will also be responsible for the formulation of research designs, preparation of project budgets, selection and guidance of field crews, and the preparation of technical reports.

Ms. Tyrer also has extensive experience with assessment, survey, evaluation, and mitigation of historic and prehistoric resources. She has developed sampling designs for site locations models and settlement patterns for prehistoric and historic sites for tracts of land ranging from a few acres to thousands of acres. These sampling designs are based on previous and present land use, environmental characteristics, and topographic features. Other responsibilities include the dissemination of archaeological information to the public through various media and exhibits, educational site brochures, and site visits.

DAWN M. MUIR, R.P.A.
HISTORIAN
ARCHITECTURAL HISTORIAN
PRINCIPAL INVESTIGATOR
CIRCA~ CULTURAL RESOURCE MANAGEMENT, LLC

Education:

Radford University, 1996, B.A. Interior Merchandising

Middle Tennessee State University, M.A., 2000, Public History: Historic Preservation tract

2010-present: Registered Professional Archaeologist (RPA) #203780

Professional Experience:

2007-present: Architectural Historian, Historian, Principal Investigator, Circa~ Cultural Resource Management, LLC, Williamsburg, Virginia.

2004-2007: Cultural Resources Manager, Preservation Planner, Vanasse Hangen Brustlin, Inc. (VHB), Williamsburg, Virginia.

2000-2004: Cultural Resource Specialist, Architectural Historian, General Scientific Corporation under contract to Naval Air Station Patuxent River, Patuxent River, Maryland.

1998-2000: Assistant, Main Street Murfreesboro, Murfreesboro, Tennessee.

Fields of Experience:

Ms. Muir has over 20 years of professional experience in the fields of archaeology, architectural history, and cultural resources. Her current responsibilities at Circa~ include managerial and technical tasks associated with cultural resources assessments including both archaeology and architectural resources and Phase I, II, and III surveys and excavations, consultation with state and national review agencies, developing and implementing archaeological and architectural research designs, and writing and editing technical reports. She has authored or co-authored over 200 technical reports and historical studies (all accepted by the regulatory agencies), and worked closely with the Virginia Department of Historic Resources (VDHR), the Maryland Historical Trust (MHT), the National Park Service (NPS), the U.S. Army Corps of Engineers, and other official agencies to fulfill the requirements of local, state, and federal regulations related to archaeological and architectural resources.

As a principal investigator and architectural historian, Ms. Muir has identified archaeological and architectural resources in Tennessee, Maryland, Pennsylvania, New York, North Carolina, Massachusetts, Maine, and Virginia. She has performed surveys and analyses on all periods including Paleoindian to Woodland Native American sites and 17th, 18th, 19th, and 20th century historic sites and burials. She has completed investigations for numerous projects that range from large-scale studies of archaeological and historic resources to detailed investigations of individual Native American and historic sites. Ms. Muir is familiar with the management and preparation of environmental documents that comply with the National Historic Preservation Act of 1966, as amended and the National Environmental Policy Act of 1969. She has a solid understanding of federal and state environmental and cultural resources including the *Secretary of the Interior Standards and Guidelines for Archaeology and Historic Preservation*. She is familiar with both the Maryland and Virginia standards, and she uses these guidelines when drafting reports.

Ms. Muir's technical capabilities include detailed archival and literary research at the local, state, and national levels; site documentation and analysis; evaluation of properties for National Register of Historic Places and State Landmark significance; preparation of project budgets; selection and guidance of field crew; and technical report writing. Ms. Muir also has extensive experience with assessment, survey, evaluation, and mitigation of both Native American and historic resources. In addition, Ms. Muir has a thorough understanding of the Section 106 process and has written over 100 Section 106 compliance packages. As part of the Section 106 process, Ms. Muir has drafted over 30 Memorandums of Agreement (MOA) as mitigation for various projects and has developed a draft Programmatic Agreement (PA) for Disaster Preparedness related to cultural resources.

In addition, Ms. Muir has also attended various training sessions including How to Manage the National Environmental Policy Act and Write Effective National Environmental Policy Act documents, How to Write Creative Mitigation, an Introductory and Advanced Section 106 Seminar, and How to Write Programmatic Agreements. Ms. Muir was also instrumental in arranging a Historic Preservation Workshop for Naval Air Station (NAS) Patuxent River.

Prior to joining Circa~, Ms. Muir worked as a cultural resource specialist contractor for NAS Patuxent River in Patuxent River, Maryland, where she oversaw the historic preservation requirements of the NAS. Ms. Muir also maintained the historic building database for the NAS, which contained over 50 historic structures at both the NAS and two outlying properties. In addition, Ms. Muir assisted in a station-wide survey of buildings over 50 years of age. This effort resulted in a comprehensive report of the station's history and significance, the identification of and preparation of nominations for four National Register of Historic Places eligible districts, and the eventual completion of an Integrated Cultural Resources Management Plan (ICRMP) for the NAS. Ms. Muir also assisted in archaeological

requirements for NAS Patuxent River including monitoring for underground utilities at an 18th century house site, assisting in survey of a Jesuit Mission site on an outlying base of NAS Patuxent River, and finalizing the artifact collection for the Officers Club archaeological survey.

Ms. Muir has also worked on several other notable projects. While at NAS Patuxent River, Ms. Muir conducted an architectural and landscape survey and National Register nomination of the Mattapany-Sewell Historic District, which included a 18th century house and outbuildings; drafted a Preservation Plan and National Register nomination for the Point Lookout Light Station Complex, owned and operated at the time by NAS Patuxent River; and drafted a Preservation Plan and repair scope of work for the St. Nicholas Chapel on the NAS in response to water and roof damage sustained during several hurricanes. In addition, Ms. Muir assisted in a project to relocate the St. Nicholas Chapel cemetery and restore the existing gravestones that had been buried by the U. S. Navy in the 1940s. More recently, Ms. Muir assisted in a Phase I Architectural Reconnaissance Survey of the East and West Area of NASA Langley Air Field, in Hampton, Virginia.

SKYE W. HUGHES, R.P.A.
HISTORIAN/PRINCIPAL INVESTIGATOR/GIS ANALYIST
CIRCA~ CULTURAL RESOURCE MANAGEMENT, LLC

Education:

New Mexico State University, 1996, B.A. Anthropology and French

Florida Atlantic University, M.A., 2003, Anthropology

Register of Professional Archaeologists (RPA) #12804

Professional Experience:

2017-present: Historian, GIS Analyst, Principal Investigator, Circa~ Cultural Resource Management, LLC, Williamsburg, Virginia.

2003-2008: Principal Investigator, Panamerican Consultants, Inc. (PCI), Tampa, Florida.

2002-2003: Archaeologist, Southeastern Archaeological Company, Inc. (SEARCH), Riverview, Florida.

1999-2002: Archaeologist, Technical Writer, Illustrator, Janus Research, St. Petersburg, Florida

1998-2000: Museum attendant, Morikami Museum and Japanese Gardens, Delray Beach, Florida

1997-1998: Assistant instructor Introduction to Anthropology, Florida Atlantic University, Boca Raton, Florida

1997: Laboratory Director, Florida Atlantic University, Boca Raton, Florida

1997-1998: Consulting archaeologist, Historic Preservation Services, Plantation, Florida

1996-1998: Archaeologist, Archaeological and Historical Conservancy, Inc., Miami, Florida

Fields of Experience:

Ms. Hughes has over 25 years of professional experience in the fields of archaeology, architectural history, and cultural resources. From 2003 to 2008, Ms. Hughes worked as a Principal Investigator for Panamerican Consultants, supervising for five years archaeological and architectural fieldwork and studies. Her current responsibilities at Circa~ include technical tasks associated with cultural resources assessments including both archaeology and architectural resources and Phase I, II, and III surveys and excavations, consultation with state and national review agencies, developing and implementing archaeological and architectural research designs, and writing and editing technical reports. She has authored or co-authored over 200 technical reports and historical studies (all accepted by the regulatory agencies) and worked closely with the U. S. Fish and Wildlife Service (USFWS), the U. S. Army Corps of Engineers (USACE), and other official agencies to fulfill the requirements of local, state, and federal regulations related to archaeological and architectural resources.

As an archaeologist and principal investigator, Ms. Hughes has identified archaeological and architectural resources in Florida, Louisiana, Texas, Alabama, and Virginia. She has performed surveys and analyses on all periods including Paleoindian to Woodland Native American sites and 17th, 18th, 19th, and 20th century historic sites and burials. She has completed investigations for numerous projects that range from large-scale studies of archaeological and historic resources to detailed investigations of individual Native American and historic sites. Ms. Hughes is familiar with the management and preparation of environmental documents that comply with the National Historic Preservation Act of 1966, as amended and the National Environmental Policy Act (NEPA) of 1969. She has a solid understanding of federal and state environmental and cultural resources including the *Secretary of the Interior Standards and Guidelines for Archaeology and Historic Preservation*. She is familiar with Virginia standards, and she uses these guidelines when drafting reports.

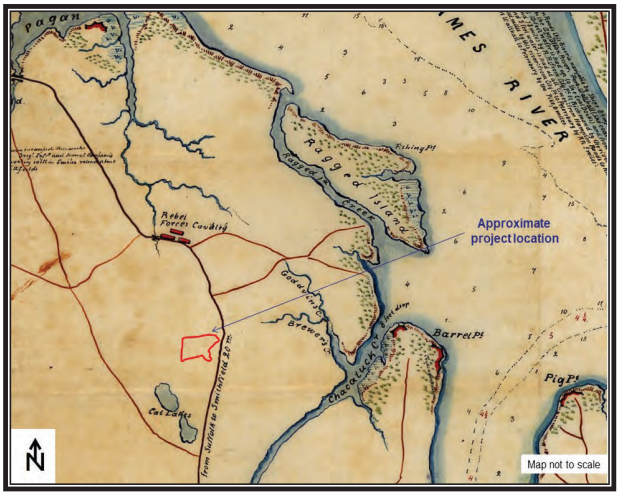
Ms. Hughes's technical capabilities include detailed archival and literary research at the local, state, and national levels; site documentation and analysis; evaluation of properties for National Register of Historic Places and State Landmark significance; preparation of project budgets; selection and guidance of field crew; and technical report writing. Ms. Hughes also has extensive experience with assessment, survey, evaluation, and mitigation of both Native American and historic resources. In addition, Ms. Hughes has a thorough understanding of the Section 106 process.

In addition, Ms. Hughes gained teaching experience while working towards her graduate degree in Anthropology working as an assistant instructor and teaching assistant while at Florida Atlantic University. She has also given guest lectures on zooarchaeology and presented professional papers at various conferences.

Prior to joining Circa~, Ms. Hughes worked as a staff archaeologist for PCI in Tampa Florida, where she served as a Principal Investigator for archaeological projects under contract to many different firms. Ms. Hughes has also worked on several notable projects. These include a 3,000+-acre survey for the Southwest Florida Water Management District and Sarasota County, a Phase I survey at Naval Station Mayport, and Phase I and II excavations at Naval Air Station (NAS) Jacksonville.

PHASE I CULTURAL RESOURCES SURVEY OF SMITHFIELD IAAI PROPERTY

ISLE OF WIGHT COUNTY, VIRGINIA









Circa~ Cultural Resource Management

JULY 2021

PHASE I CULTURAL RESOURCES SURVEY OF SMITHFIELD IAAI PROPERTY ISLE OF WIGHT COUNTY, VIRGINIA

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July 2021

ABSTRACT

In June of 2021, Blakeway Corporation contracted Circa~ Cultural Resource Management, LLC (Circa~) to conduct a Phase I cultural resources survey of the Smithfield Insurance Auto Auctions, Incorporated (IAAI) property in Isle of Wight County, Virginia. This Phase I cultural resources survey aimed to identify and record all historic resources within the project area prior to the project's development. This survey resulted in the identification of 30 isolated finds, no previously-identified archaeological resources, two new archaeological resources, one previously-identified architectural resource, and no new architectural resources.

No further work is recommended for the 30 isolated finds, as they are not eligible for listing on the National Register of Historic Places.

Site 44IW0318, a light artifact scatter that dates from circa post-1900, may represent the remains of a small structure. All the artifacts recovered were restricted to the surface of Stratum A plowzone. In addition, the site appears to have been disturbed by the installation of the power line tower. Given these facts, Circa~'s opinion is that the site lacks the potential to contribute significant new information or answer research questions about historical sites in the region. Therefore, due to the lack of a quantity and diversity of artifacts, and lack of intact features, combined with the presence of all artifacts recovered from the plowzone, the site is recommended as not eligible for the National Register of Historic Places under Criteria A, B, C, or D. Accordingly, no further archaeological investigation appears warranted.

Site 44IW0319, a light artifact scatter dates from circa post-1880, may represent the remains of a small structure that burned. All the artifacts recovered were restricted to the surface of Stratum A plowzone. Given these facts, Circa~'s opinion is that the site lacks the potential to contribute significant new information or answer research questions about historical sites in the region. Due to the lack of a quantity and diversity of artifacts, and lack of intact features, combined with the presence of all artifacts recovered from the plowzone, the site is recommended as not eligible for the National Register of Historic Places under Criteria A, B, C, or D. Accordingly, no further archaeological investigation appears warranted.

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INTRODUCTION

In June of 2019, Circa~ Cultural Resource Management, LLC (Circa~) conducted a Phase I cultural resources survey of the Smithfield Insurance Auto Auctions, Incorporated (IAAI) property in Isle of Wight County, Virginia (Figure 1). The project area, which encompasses approximately 73 acres, is bordered by rural agricultural lands to the north, south, east, and west and by a commerce park to the south. The Area of Potential Effect (APE) for archaeological and architectural resources is the 72.81-acre project area.



Figure 1. Approximate location of the project area depicted in red upon USGS Benns Church quad.

Insurance Auto Auctions, Incorporated (IAAI) is filing for a Conditional Rezoning to operate a business that auctions automobiles via the internet. The process is as follows:

1. Vehicles involved in collisions, floods, or recovered from thefts and repossessions are made available for sale by insurance companies, dealerships, rental companies, and fleet leasing companies;

2. IAAI contracts with such companies to receive and re-market the vehicles, which are then delivered to the site on flatbeds or some other commercial vehicle carrier;

3. Upon arrival, the vehicles are inspected to prevent contaminant leaks;

4. The vehicles are photographed and put into temporary storage while awaiting sale;

5. All vehicles are sold via internet auction;

6. Each vehicle is sold as an intact unit (meaning not dismantled nor sold in parts), and they leave the site in the same condition in which they arrived, whether operable or not (no work or maintenance is done on the vehicles); and

7. Then, they are delivered to the buyers on flatbed trucks or some other commercial vehicle carrier.

IAAI runs world-class operations and has expanded its business, adding over 100 facilities in the last 10 years. Currently, IAAI employs nearly 4,200 people and has over 200 facilities throughout the United States, Canada, and the United Kingdom. IAAI follows strict regulatory compliance at federal, state, and local levels, including regular environmental audits. In addition, the company has developed its own Environmental Best Management Practices Manual containing the standards IAAI applies to its operations and carries a pollution liability policy, which covers all its locations throughout the U.S. and Canada.

The investigation was carried out in compliance with a County rezoning request and conducted per the Secretary of the Interior's *Standards and Guidelines for Archaeological Documentation* and the *Guidelines for Preparing Archaeological Resource Management Reports* of the Virginia Department of Historic Resources (VDHR). The report describes fieldwork results and makes recommendations for further work.

This report contains a description of the project area's physical and environmental setting, an outline of meaningful historical contexts for the APE, a general research design that summarizes field methods, previous research in the area, and expected results, and finally, the survey results are described, the findings reviewed, and recommendations explained. Field notes, artifacts, and other project records are presently being curated in Circa ~'s office in Williamsburg, Virginia. It is anticipated that all these materials will eventually be transferred either to the landowner or VDHR in Richmond, Virginia, following the project's conclusion.

At Circa~, Carol D. Tyrer, Registered Professional Archaeologist (RPA), served as Project Manager for the project. Skye Hughes, RPA, served as the Principal Investigator for the project and Dawn M. Muir. RPA, served as the Architectural Historian for the project. Ms. Hughes was assisted in the field by Carol D. Tyrer. Skye Hughes, Carol D. Tyrer, and Dawn M. Muir prepared the report. The successful completion of the Phase I survey for the proposed development was made possible by the contribution of many individuals. In particular, Elmer F. Tolle III, CFM with Blakeway Corporation, ensured that project information and maps were always available for the study.

ENVIRONMENTAL BACKGROUND

The primary reasons for incorporating environmental studies into archaeological projects are: to learn of possible environmental constraints or lack of constraints; to determine the presence or absence of critical resources that might have influenced site distribution, etc.; and to discover environmental factors -- erosion, deposition, subsidence, and historical

land-use patterns -- that might influence the integrity of archaeological sites once they have formed. A brief environmental summary of the project area is provided below.

The tract is situated in the Coastal Plain physiographic province, and the majority is within a planted agricultural field with a fringe of mature trees along the western and southwestern edge of the tract. The tract is fairly level and ranges in elevation from approximately 52 feet above mean sea level (AMSL) in the eastern section of the tract to 18 feet AMSL in the southwestern section of the tract. The landform consists of a rolling upland. The site can be accessed via Commerce Lane.

A review of aerial photos from 1994 through 2018 shows little change in the project area over the last 24 years. However, timbering and development have occurred within the project area's northwestern corner and to the south and north during this period (Figures 2 - 6).



Figure 2. 1994 aerial view of the project area from Google Earth.



Figure 3. 2003 aerial view of the project area from Google Earth.



Figure 4. 2008 aerial view of the project area from Google Earth.



Figure 5. 2014 aerial view of the project area, from Google Earth.



Figure 6. Current (2018) aerial view of the project area, from Google Earth.

Soils

Six different soil types and soil type variants exist within the project area (Natural Resources Conservation Service [NRCS] 2021). These soil and soil types include Uchee loamy sand, 0% to 2% slopes; Kinston loam; Slagle sandy loam, 0% to 2%; Peawick-Slagle complex, 2% to 6% slopes; Rumford loamy sand; and Nawney loam (Figure 7 and Table 1). These types and variants are described below, including references to drainage, hunting and gathering potential, and horticultural and agricultural productivity potential. Further, conclusions regarding the suitability of each for historical and Native American occupation and archaeological site probability are also explained.

Soil maps and associated data provide an analysis of soil types within a geographic area. Despite comprehensive and detailed coverage of most areas by soil surveyors, researchers often miss microenvironments due to their small footprints. Unfortunately, resource-rich microenvironments were often common sites of cultural activity. As such, this analysis of archaeological potential is a "best-guess" using the best available data.

Well-drained, agriculturally- and horticulturally productive soils proximal to transportation corridors were the best choices for historic period occupation. Secondary areas, such as those containing wet soils and acid soils, after improvement such as drainage and liming, may have also been suitable choices for historic occupation. No navigable waterways exist within the project area; thus, water travel is not a factor in the site probability analysis of this tract.

Areas of wet soils may have been attractive to Native American cultures. In these areas, edible herbaceous plant species may have been gathered, and faunal species browsing these areas may have been hunted with success. Well-drained soils proximal to these resource-rich areas may have made adequate hunting and gathering campsites where the hunted and gathered resources were processed. These sites would have left an observable archaeological footprint. Little archaeological evidence would be located within the wet areas, the immediate locale of resource procurement.

Areas containing gravelly soils may have been especially attractive to stone tool-manufacturing Native American cultures, but the level of attraction may have depended on the type and quality of the gravels available in these locations. Well-drained soils proximal to quarry-able, gravel-rich areas would have made adequate lithic material procurement campsites, but in this case, archaeological materials may be located at both the campsites and the quarry sites.

Table 1. Soils Identified Within the Project Area Boundaries.

Soil Symbol	Soil Name	Acres Within the Project Area	Location Within Project Area	Percentage Within the Project Area
19A	Uchee loamy sand, 0% to 2% slopes	51.20	Northern, western, central, eastern	58.60%
7	Kinston loam	17.90	Central, northern, western, southern	20.50%
18A	Slagle fine sandy loam, 0% to 2% slopes	7.20	Eastern, southern	8.20%
14B	Peawick-Slagle complex, 2% to 6% slopes	6.70	Northern	7.70%

Soil Symbol	Soil Name	Acres Within the Project Area	Location Within Project Area	Percentage Within the Project Area
16	Rumford loamy sand	4.10	Northern	4.70%
10	Nawney loam	0.20	Western	0.30%

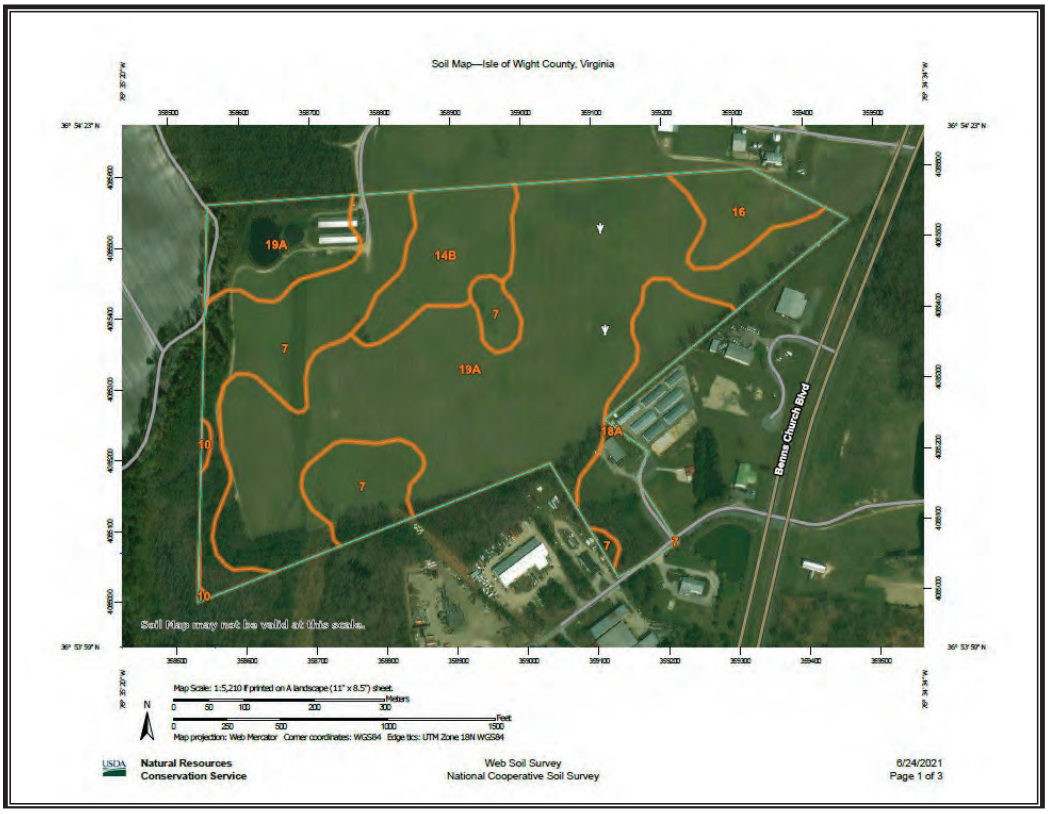


Figure 7. Project area soil map, from NRCS website.

Soils Identified Within the Project Area

Uchee Complex (19A)
Uchee soil is a very-deep, well-drained, slowly-permeable soil formed in sandy and loamy marine sediments on smooth ridge tops and dissected side slopes of the Atlantic Coastal Plain (NRCS 2021). Solum thickness ranges from 40 inches to 60 inches in this very strongly acid to strongly acid soil. Much of this soil is cleared and used for cultivated crops, including cotton, corn, and pasture. Wooded areas can support loblolly pine, longleaf pine, shortleaf pine, southern red oak, blue jack oak, and hickory.

Kinston Soil (7)
Kinston soil is a very-deep, poorly-drained, moderately-permeable soil formed in marine sediments found on floodplains of the Coastal Plain (NRCS 2021). Solum thickness ranges from 40 inches to 72 inches, and depth to bedrock is over 72 inches in this strongly acid to very strongly acid soil. Content of rock fragments is 0% to 3% throughout the solum. This soil features a negligible surface runoff. Most of this soil is forested with limited pasture and crop growth. Where cleared, this soil can support growing pasture, corn, soybeans,

and general farm crops. Where wooded, this soil can support water-tolerant hardwoods such as sweet gum, black gum, water oak, poplar, hickory, beech, elm, and ironwood. Loblolly pines are also found in some drained areas.

Slagle Soil (18A, 14B)
Slagle soil is a very-deep, moderately-well-drained, moderately-slowly- to slowly-permeable soil found within marine terraces and uplands of the Atlantic Coastal Plain (NRCS 2021). Bedrock is located over 75 inches below the ground surface in this extremely acid to strongly acid soil. This soil is mainly used for crops and forestry. Where cultivated, this soil can support corn, soybeans, peanuts, and tobacco. Where wooded, the soil can support loblolly pine, Virginia pine, sweet gum, red maple, southern red oak, water oak, yellow poplar, and hickory.

Peawick Soil (14B)
Peawick soil is a very-deep, moderately-well-drained, very-slowly-permeable soil formed in clayey fluvial sediments or fluviomarine sediments high in silt found on stream terraces of the Coastal Plain and Piedmont (NRCS 2021). Solum thickness is over 60 inches, and depth to bedrock is over 72 inches in this extremely acid to strongly acid soil. Quartz gravel makes up 0% to 15% of the solum with particle size over 30% silt or over 40% silt with very fine sand. This soil features a slow to rapid surface runoff and slow internal drainage. Most of this soil is in cropland or wooded. Where cultivated, this soil can support corn, soybeans, small grains, and pasture grasses. Where wooded, this soil can support loblolly pines, yellow poplar, sweet gum, and white oak.

Rumford Soil
Rumford soil is a very-deep, moderately-well- to somewhat-excessively-drained, moderately-rapidly-permeable soil formed in marine sediments found on the marine terrace of the Coastal Plain (NRCS 2021). Depth to bedrock is over 72 inches in this extremely acid to strongly acid soil. Quartz gravel makes up 0% to 15% of the solum and 0% to 50% of the C-horizon. Most of this soil is in cropland or wooded. Where cultivated, this soil can support corn, soybeans, small grains, and hay. Where wooded, this soil can support loblolly pines, Virginia pines, and various hardwoods.

Nawney Soil (10)
Nawney soil is very-deep, poorly-drained, moderately-permeable soil formed in the loamy marine and fluvial sediments located in floodplains of the Coastal Plain (NRCS 2021). The loamy horizons extend from a depth of 40 inches to over 60 inches below the surface. The soil acidity ranges from extremely acid through strongly acid to about 40 inches and extremely acid through slightly acid below 40 inches. This soil features a slow surface runoff. These soils are mainly forested. Where wooded, these soils can support water-tolerant trees such as cypress, water tupelo, sweet gum, red maple, water oak, and black gum.

RESEARCH STRATEGY AND METHODOLOGY

Research Strategy

The survey was designed to identify all cultural resources present in the project area and obtain sufficient information to make recommendations about the further research potential of each resource based on potential eligibility to the National Register of Historic Places. Both documentary research and archaeological field survey were performed at a level in compliance with the *Secretary of the Interior's Standards* (Department of the Interior 1983, 48 FR 44720-44723) and VDHR guidelines for Phase I archaeological surveys. Moreover, the field survey was conducted in compliance with statutes regarding the impact of undertakings on historic properties as summarized by the Advisory Council on Historic Preservation (36 CFR 800 [1986 and amended]). To meet Advisory Council on Historic Preservation standards, a Phase I archaeological survey must be conducted in "a reasonable and good faith effort to identify historic properties that may be affected by the undertaking" (36 CFR 800.4). The Phase I survey was performed and documented at a level that meets or exceeds these standards.

A cultural resource is gauged to be significant if at least one of four National Register of Historic Places criteria can be applied to it:

A. Associated with significant events in the broad patterns of national history;
B. Associated with the lives of persons significant in our past;
C. Representative of a type, period, or method of construction, or the work of master; and
D. Capable of yielding important information about the past.

Typically, Criterion D applies to archaeological sites. To be capable of yielding important information about the past, generally, a site must possess artifacts, soil strata, structural remains, or other cultural features that make it possible to test historical hypotheses, corroborate and amplify currently available information, or reconstruct the sequence of the local archaeological record.

Methods

Archival Research

Archival research commenced examining cartographic and historical works on file online with the Library of Congress, the Colonial Williamsburg Rockefeller Library, VDHR, the Library of Virginia, and Isle of Wight County. Efforts were made to determine whether historic road rights-of-way passed close to the project area and whether subsurface cultural deposits were likely to be present. Data accumulated during previous archival research on historical sites throughout the region also were examined.

Architectural Field Methods

A field survey of all historic structures was conducted according to VDHR's survey procedures. A VDHR site form was completed for each structure or complex 45 years of age or older, and at least one photograph taken, usually more. In addition, all structures

within the sites were photographed and described, even if they fell outside of the project area boundaries.

Archaeological Field Methods

Prior to subsurface testing, the entire project area was visually inspected via pedestrian survey, and all above-ground evidence of cultural activity was noted and recorded. The project area was located within an agricultural field, and the survey was completed right after the plowing and disking phase and planting a new soybean crop. As a result, surface visibility was 70% or better, and a pedestrian survey of the cultivated areas was completed at 35-foot intervals. In addition, limited shovel testing was completed in areas where artifacts were recorded on the ground surface to sample the soil stratigraphy or the presence of subsurface cultural layers.

Shovel tests were excavated on a 50- or 25-foot grid in areas where surface artifacts were located to determine the depth of the plowzone, any intact soil stratum under the plowzone, artifact densities within the soil profiles, and site boundaries. All shovel tests were excavated according to natural levels to the sterile subsoil, and all soils screened through a ¼-inch wire mesh. Profiles were recorded for representative shovel tests, and soil color was recorded per the Munsell classification system. All shovel tests were recorded on standard field forms, and all cultural material was retained unless the material was modern.

Laboratory Methods

Once removed from the field, all archaeological data and specimens were transported to Circa~ 's laboratory for processing and analysis. Before washing, artifacts from a given provenience were first emptied into a screened basket and sorted. Items determined to be unstable were either dry brushed or, in some cases, not washed and re-bagged with the appropriate provenience information. These items may include unstable organic objects, such as wood or other plant material, leather, bone, fabric, metal requiring immediate conservation, and overglaze-painted delftware, and other soft-bodied ceramics such as some local wares. Stable objects were washed with a soft brush, and the edges of ceramics and glass will be thoroughly cleaned to identify body type and mending. Items were then placed by provenience on a drying rack.

Diagnostic artifacts were sorted and grouped based on type or ware or vessel, or function. In a given provenience, artifacts were sorted first by material and checked for mends. Stylistic attributes were described with current terminology and recorded by count into a database for analysis. Non-diagnostic artifacts with like attributes will be grouped - i.e., clear, amber, etc., bottle body glass fragments, unrecognizable nail fragments, corroded metal fragments, and aqua window glass.

CULTURAL BACKGROUND

The following section provides the Native American and historical background information necessary to assess the archaeological potential of the proposed project area. Previous investigations in the general vicinity of the project area are outlined, while specific documents and resources employed in this survey are discussed.

Historic Context

Native American Context

Virginia's Native American cultural chronology, like that of the rest of the Middle Atlantic region, is divided into three major periods, Paleoindian, Archaic, and Woodland, with the differences mainly defined on changes in subsistence practices, settlement patterns, and types of material remains found. The three main periods reflect major changes, while "Early," "Middle," and "Late" subperiods reflect less dramatic, though still significant, changes.

Paleoindian Period (Prior to 10,000 B.C.)

Paleoindian occupation in Virginia, the first human occupation of the region, began sometime before 10,000 B.C. The earliest diagnostic artifacts where there is any consensus are Clovis projectile points, typically fashioned of high-quality cryptocrystalline materials such as chert, chalcedony, and jasper. Later Paleoindian points include smaller Clovis-like and Cumberland variants and small "Mid-Paleo" points. Dalton, Hardaway-Dalton, and Hardaway side-notched points make up the later end of the Paleoindian period in the southeastern part of Virginia. Also, diagnostic, though to a lesser extent, are certain types of well-made endscrapers, sidescrapers, and other formalized tools. Most current views now hold that eastern Paleoindians were generalized foragers with an emphasis on hunting. The social organization consisted of relatively small bands that exploited a broad but defined territory.

Isolated projectile point finds and what appear to be small temporary camps represent the majority of Paleoindian remains in Virginia. Although some larger and very notable base camps are present in Virginia, they are relatively rare and usually associated with sources of preferred high-quality lithic materials. Two of the most important Paleoindian sites in Virginia and the eastern United States are the Thunderbird Site in the Shenandoah Valley (Gardner 1974, 1977) and the Williamson Site in south-central Virginia (McCary 1951, 1975). Both are large base camps associated with nearby sources of high-grade cryptocrystalline lithic materials. Researchers have formulated a site typology at the Thunderbird site area and its surrounding environs, including lithic quarries, quarry-related base camps, quarry reduction stations, base camp maintenance stations, remote hunting sites, and isolated point sites (Gardner 1981, 1989).

One of the earliest dating sites in North America, Cactus Hill, lies in the Coastal Plain along the Nottoway River in nearby Sussex County, Virginia (McAvoy and McAvoy 1997). Although still controversial, Cactus Hill appears to have the potential to become one of the most well-accepted pre-Clovis sites in the western hemisphere.

There are concentrations of Paleoindian materials in Virginia, and, conversely, there are areas where sites and isolated finds of this early period are mostly absent. The largest concentrations are in Dinwiddie and Mecklenburg counties, with a second one around the Dismal Swamp. In the Virginia Coastal Plain, counties lying south of the James River account for the largest number of Paleoindian finds (McCary 1983, Turner 1989). Isle of Wight County is one of those counties with a relatively high concentration of such finds.

This situation likely represents the northern edge of the greater cluster that extends to the Dismal Swamp.

Despite this location, Paleoindian finds are rare, and Paleoindian sites are far less common than all other periods of Native American history. However, a fluted point crafted from petrified wood was recovered to the east of the project tract. Thus, given this find, the chance of finding remains from this early period within the project area is considered higher than average. In addition, any well-drained location along the James River, and, mainly, where tributaries converge, is a high-potential location for Native American camps and settlements in general. Therefore, considering that several Paleoindian finds have been discovered near the project tract and in Isle of Wight County and the nearby City of Suffolk, the presence of these types of sites or isolated finds being present in the project area cannot be ruled out.

Archaic Period (8,000 B.C. - 1200 B.C.)

The beginning of the Archaic period generally coincides with the end of the Pleistocene epoch, marked in this region by a climatic shift from a moist, cool period to a warmer, dryer climate. Vegetation also changed at this time from a largely boreal forest setting to a mixed conifer-deciduous forest. In eastern Virginia, a temperate climate was established, and the formation of the Chesapeake estuary began (Dent 1995). Researchers believe that increasing differences in the seasonal availability of resources brought on by post-Pleistocene changes coincide with increasing emphasis on strategies of seasonally geared mobility.

A band-level social organization involving seasonal movements corresponding to the seasonal availability of resources and, in some instances, shorter-interval movements is thought to characterize Archaic populations primarily. Settlement during the Archaic period probably involved the occupation of relatively large regions by single band-sized groups, living in base camps during part of the year and dispersing as necessary on an as-needed or seasonal basis, creating smaller microband camps, possibly consisting of no more than single families.

The development of more specialized resource procurement activities and the technology to accomplish these activities also characterize the Archaic period. These differences in the material culture are believed to reflect larger, more localized populations and changes in food procurement and processing methods.

Corner and side notching became a common characteristic of projectile points at the beginning of the Archaic period (Early Archaic subperiod), indicating changes in hafting technology and possibly the invention of the spear-thrower (atlatl). Notched forms include Palmer and Kirk corner-notched and, in localized areas, various side-notched forms. A series of bifurcate base forms marked the later end of the Early Archaic subperiod and the beginning of the Middle Archaic subperiod.

The Middle Archaic subperiod, circa 6,500 B.C. - 3,000 B.C., sees the rise of various stemmed projectile point forms. In eastern Virginia, the most common Middle Archaic

forms would be Stanly, Morrow Mountain, and Guilford types, followed by the side-notched Halifax type at the end of the subperiod transition into the Late Archaic subperiod between circa 3,500 B.C. and 3,000 B.C. Stemmed and notched forms, including various large, broad-bladed stemmed knives and projectile points (e.g., Savannah River and variants), dominated the Late Archaic subperiod. These forms generally diminish in size by the succeeding Early Woodland subperiod. Also found, though more rarely along the margins of the Dismal Swamp, are stemmed and notched-stem forms like those generally associated more prominently with areas of Pennsylvania and adjoining parts of the northeast (Perkiomen).

The Archaic period also marks the beginning of ground-stone technology, with the occurrence of ground-stone atlatl weights and celts. New tool categories developed during the Archaic period include chipped- and ground-stone celts, ground-stone net sinkers, pestles, pecked stones, mullers, and axes. Vessels carved from steatite have been found on sites dating to the end of the Late Archaic subperiod.

Marked increases in population density and decreased mobility characterize the Late Archaic subperiod in eastern North America (4,000 B.C. - 1,200 B.C.). Because population growth necessitated a larger and more predictable food supply, agriculture probably has its origins in the Middle Atlantic region during this subperiod. Yarnell (1976), for example, writes that sunflower, sump weed, and possibly goosefoot may have been cultivated as early as 2,000 B.C. In the lower Little Tennessee River Valley, remains of squash were recorded in the Late Archaic Savannah River contexts (circa 2,400 B.C.), with both squash and gourd in slightly later period contexts (Chapman and Shea 1988).

Of most relevance to the project area environs is a settlement model presented by Gardner (1982) for the nearby Portsmouth locality. In this model, the Late Archaic settlement pattern shows continuity with the earlier Middle Archaic subperiod. The settlement system involves a fusion-fission cycle of alternating group dispersal and aggregation in a series of seasonal shifts (Gardner 1982). Locally, these shifts would occur between the fringe of the Great Dismal Swamp to the south and the estuarine zone and its associated streams. Briefly stated, foray camps would be located directly on the estuaries and up the freshwater tributaries, with seasonally occupied small group base camps in the tributary headwaters. By contrast, the Dismal Swamp is the suggested location of seasonally occupied large group aggregations with associated satellite camps around them.

The most common types of Archaic sites that would most likely be found in and around the project area would be those dating to the Middle and Late Archaic subperiods. Middle and Late Archaic campsites are common in the James River-drained Coastal Plain. The project area was viewed as having moderate potential for Middle to Late Archaic components representing small group, transient campsites. In most cases, such sites would not likely have the National Register of Historic Places significance unless preserved features or unplowed subsurface deposits were present.

Woodland Period (1,200 B.C. - circa A.D. 1600)
Ceramic technology, a gradually developing dependence on horticulture, and increased sedentism characterized the Woodland period. Researchers have designated three subperiods (Early, Middle, and Late Woodland) based primarily on stylistic and technological changes in ceramic and projectile point types and settlement patterns.

Not all researchers agree on the temporal brackets for the Early and Middle Woodland subperiods in Virginia. Some use the southeastern chronology where the Early Woodland subperiod begins circa 1,000 B.C. and lasts to circa A.D. 200/300. This chronology may apply to southwestern Virginia, though not to the Piedmont, Coastal Plain, or Potomac-drained Ridge and Valley. Gardner (1982) initially formulated the most widely used temporal scheme in the Middle Atlantic, Early Woodland, circa 1,200 B.C. - 500 B.C.; Middle Woodland, circa 500 B.C. - A.D. 900, and the one that is probably most applicable to the project area environs. Others elaborated on the scheme based on both artifact styles and, perhaps more significance, perceived settlement shifts.

The appearance of ceramics in the archaeological record generally defined the Early Woodland subperiod, bracketed herein at circa 1,200 B.C. - 500 B.C. The earliest Woodland ceramic wares, Marcey Creek plain, and variants are rectangular or oval and resemble the preceding Late Archaic soapstone vessels. In the Tidewater James River area, these ceramics are rare and appear to be, in part, contemporaneous with similar flat-bottom vessels tempered with grog, sand, and, in some cases, shell. Variously tempered beaker-shaped vessels, as well as those having more conventional sub-conical shapes, follow these forms.

The complexity of and emphasis on ceremonial aspects, especially those concerned with the burial of the dead, are also characteristic of the Early Woodland subperiod across a broad region of the east. In Virginia, this emphasis is not seen until the end of the Early Woodland subperiod about 500 B.C., when stone and earth burial cairns and cairn clusters occur in the western part of Virginia; however, despite the mention of such mounds in both oral tradition and older publications, most researchers generally accept that this phenomenon did not extend into the Coastal Plain.

Gardner's model indicates that, in the general project area vicinity, large and intensively occupied sites interpreted as sedentary (as opposed to seasonal) large group base camps are in the estuarine zone/shoreline with smaller, short-term support camps located in the estuarine zone and throughout the freshwater tributary network. During this time, shell middens appear, indicating shellfish were an important part of the subsistence focus (Gardner 1982). The succeeding Middle Woodland subperiod sees the most intensive use of these resources, and middens of this subperiod are generally both larger and more abundant.

The appearance of net-marked and corded pottery that is either sand-tempered, sand- and crushed-rock-tempered, or gravel-tempered marked the Middle Woodland subperiod in this area, defined herein between circa 500 B.C. and A.D. 900. These types generally span the subperiod circa 500 B.C. to A.D. 300 and are slightly overlapped in time by, and

replaced with, the shell-tempered Mockley ware from slightly before circa A.D. 200 to about A.D. 900 throughout outer Tidewater Virginia.

By the Late Woodland subperiod (circa A.D. 900 - 1600), agriculture had assumed major importance in the Native American subsistence system. The adoption of agriculture represents a major change in the Native American subsistence economy and settlement patterns. Expanses of arable land became a dominant settlement factor, and sites were located on fertile floodplain soils or, in many cases, on higher terraces or ridges adjacent to them. During this subperiod, shell middens were still used, but the larger habitation sites were not necessarily correlated. The location of Early to Middle Woodland shell middens are often re-used but mainly as short-term foray sites (Gardner 1982).

By the time of initial European exploration, most of the Native American groups in the Coastal Plain from the James drainage to the Northern Neck shared a common culture and were subsumed within an emerging paramount chiefdom under the domain of one paramount chief, Powhatan. Some groups were direct components of the chiefdom, while others, usually those most distant, were at least allied in some manner with the paramount group (Rountree 1989).

Diagnostic artifacts of the Late Woodland subperiod include several triangular projectile point styles originating during the latter part of the Middle Woodland subperiod. These styles decreased in size through time and eventually culminated in the very small and often serrated triangles typically found on the most recent Late Woodland and early contact period villages. Late Woodland subperiod ceramics in the Isle of Wight County area include shell-tempered Townsend and Roanoke simple stamped types, along with plain-surfaced, shell-tempered variants. The most common pottery type in the vicinity appears to have been Roanoke simple stamped and plain variants by European contact.

Settlements dating to this time consist of both villages and small hamlets. Some villages were highly nucleated, while others were internally dispersed over a wide area. Some were entirely fortified by circular or oval palisades, while others contained a fortified core area and outlying houses, indicating a rise in intergroup conflict. The more dispersed villages and hamlets were scattered over a wide area, indicating internally fluid settlement within a loosely defined town or village territory.

Drawings and journals of early European explorers describing Indian villages indicate that houses were constructed of an oval, rectangular, or circular framework of flexible green sapling poles set in the ground, lashed together, and covered with thatch or bark mats. Burial sites of the period were situated in individual pits or ossuaries. Such historical accounts are consistent with data obtained from archaeological excavations of Late Woodland to early historic village sites (Hodges and Hodges 1994).

With the development of a more sedentary settlement-subsistence system culminating in the Late Woodland subperiod, permanent habitation sites gradually replaced base camp habitation sites more characteristic of those of the previous foragers and hunter-gatherers. Various supporting camps and activity areas were established in the day-to-day

procurement of food and other resources (i.e., short-term hunting and foraging camps, quarries, butchering locations, and re-tooling locations). Locations used partially or mainly for ceremonial purposes were also present, usually in association with habitation sites.

The large base camps, hamlets, and villages are typically located on bluffs, terraces, or high floodplains adjacent to rivers or significant tributaries. Small seasonal camps and non-seasonally based satellite camps supporting nearby sedentary villages and hamlets are located along smaller streams in the interior. Limited concentrations and sparse scatters of lithics and ceramics typically characterize these campsites. As indicated earlier, shellfish-gathering sites and shell middens suggest ephemeral re-use of the earlier middens.

Historic Context

Settlement to Society (1607-1750)
In 1619, 100 English colonists settled near the mouth of a creek on the south side of the James River. This settlement was the beginning of Isle of Wight County. However, Captain John Smith visited the present-day Isle of Wight County as early as 1608. While hoping to find food for the starving settlers at Jamestown, Smith contacted the Worrosquoyacke Indians who occupied a village in the present-day Isle of Wight County. Smith revisited the tribe in 1611, and he noted the presence of the Indians on his 1610 map of Virginia (Figure 8).

The first English settlers in what is now Isle of Wight County included Captain Christopher Lawne, Sir Richard Worsley, Nathaniel Basse, and John Hobson, who helped establish a settlement on the south shore of the James River at Lawne's Creek, near the current boundary between Isle of Wight and Surry counties. Lawne's plantation was known as Warrosquoyacke, after the local Indian group. Edward Bennett followed Lawne's settlement when he was granted a patent along the Pagan River in 1621. Nathaniel Basse also followed settling at "Basse's Choice." The following year, in 1622, the Powhatan uprising destroyed these Southside settlements resulting in the loss of 53 colonists. Sir George Yeardley led a punitive expedition later in the year against the Warrosquoyackes and Nansemonds, which opened the south shore of the James River to increasing European settlement.

The lands near the mouth of Chuckatuck Creek and the Nansemond River were first patented in the 1630s and 1640s. Between 1639 and 1645, Tristram Norsworthy (Nosworthy) patented nearly 1,000 acres of land around and including Ragged Island (Nugent 1992). A native of Devon, England, Norsworthy was a prominent local figure in Isle of Wight's early years, serving as burgess for Nansemond County in 1641. His eldest son, Colonel George Norsworthy, served as the local captain of militia and sheriff. Among the first English arrivals to this area, the Norsworthys remained a prominent Isle of Wight family into the 20th century (Boddie 1973).



Figure 8. Detail of *Virginia discovered and discribed* by Captayn John Smith, 1610.

When Virginia's first counties were created in 1634, the current project area was encompassed by Warrosquoyacke County. Warrosquoyacke was divided in 1647 between Isle of Wight to the west and Upper and Lower Norfolk counties to the east. By this time, the project area was considered part of Upper Norfolk County. Residents of Ragged Island and Terrascoe Neck, which included those lands between Chuckatuck Creek and the James River, won their petition to be included in Isle of Wight County in 1656 and 1674, the House of Burgesses formally established the boundary (King 1993).

A 1673 map of Virginia drafted by Augustine Herrmann clearly shows the extent of English expansion. The map shows settlements clustered along many of the County's interior creeks and streams, including the lands along Chuckatuck Creek and around Ragged Island (Figure 9).

Colony to Nation (1750-1789)

During the 18th century, small towns began to develop in Isle of Wight County. The town of Smithfield was incorporated in 1752, just one year after Joshua Fry and Peter Jefferson created their map of Virginia (Figure 10). Fry and Jefferson noted development occurring but no development within the project area.



Figure 9. Detail of *Virginia and Maryland as it is planted and inhabited this present year 1670* surveyed and exactly drawne by the only labour & endeavour of Augustin Herrman bohemiensis.

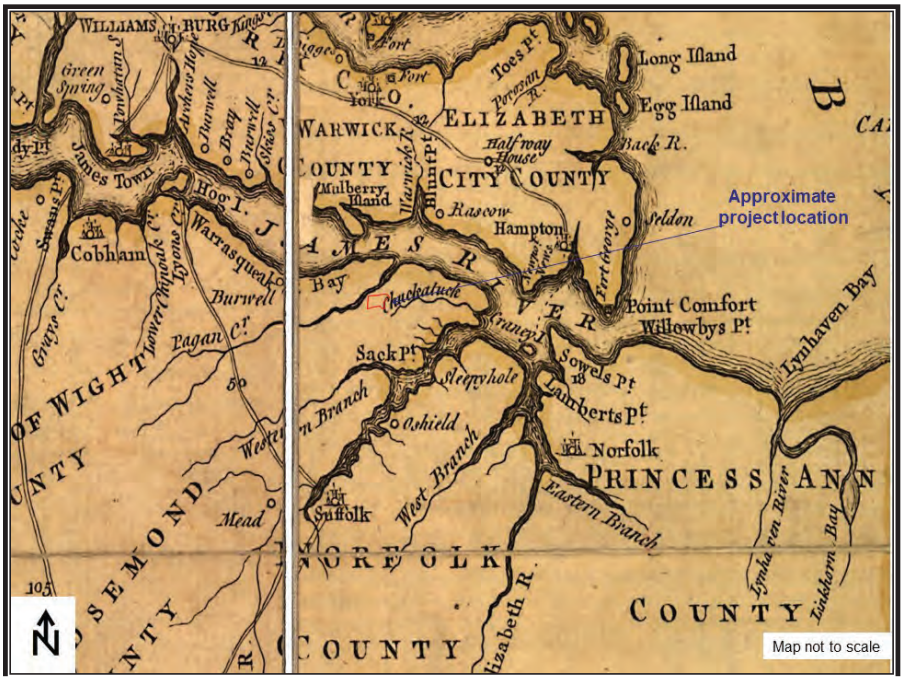


Figure 10. Detail of *A map of the most inhabited part of Virginia containing the whole province of Maryland with part of Pensilvania, New Jersey and North Carolina*. Drawn by Joshua Fry & Peter Jefferson in 1751.

Isle of Wight's economy in the second half of the 18th century centered around tobacco cultivation, even though the Southside's sandy soils were never particularly conducive to growing the crop. By the latter years of the 18th century, however, Isle of Wight's farmers began diversifying their crops and exploring alternative products. Touring the Smithfield area in 1783, German visitor Johann David Schoeff commented that:

> *...the coast is nearer here, one has passed the tobacco country proper, the plant not thriving on the poorer sandy soil of the region, but tobacco is brought hither from more distant parts; on the other hand, the extensive pine forests supply a different sort of produce, namely tar, pitch and turpentine, which with salted hog meat are the most important articles for export of this place* (King 1993).

As with most other parts of Virginia, Isle of Wight's citizens were divided in their loyalties as the revolution grew imminent in the 1770s. A considerable number of English and Scots immigrants resided in Isle of Wight. When they left the County, their property reverted to the Government, who typically sold the land to their more "patriotic" neighbors. Several local men joined the Princess Anne District Battalion in 1775 and fought at Kempsville and Portsmouth. Later in the war, Isle of Wight men served in the 7th, 8th, and 9th companies of the 4th Virginia Regiment of Foot. No major battles were fought in Isle of Wight during the Revolutionary War, though British Lt. Col. Banastre Tarleton led a raid against the Isle of Wight courthouse in Smithfield in 1781. Tarleton succeeded in damaging the building, though the court records had recently been removed and hidden (King 1993).

Early National Period (1789-1830) and Antebellum Period (1830-1860)

During the end of the 18th century and the beginning of the 19th century, Isle of Wight transitioned from a predominantly tobacco economy to one characterized by diversified farming and the exploitation of the County's timber resources. The most important local products now included wheat, corn, oats, Irish potatoes, sweet potatoes, peas, beans, hogs, and forest products. By the 1830s, the Isle of Wight farmers were also growing enough cotton to support two local factories (King 1993). Development in Isle of Wight County is evident on an 1825 map of Virginia created by Herman Boye (Figure 11). His map shows the beginning of a road network, although no development is shown within the project area.

From 1830 to 1860, the population of Isle of Wight County remained virtually constant at around 5,000 inhabitants. Slavery was not as important to the County's social and economic makeup as in other Tidewater counties in the antebellum period, and Isle of Wight County was home to a significant number of free slaves before Emancipation. By 1860, 1,370 free blacks were residing in the County; together, they held 2,965 acres of land, a modest average of 44.25 acres per adult male (King 1993). A map of the area created in 1855 shows that the County was developing around a complex road network and railroad lines, although no development is evident in the project area (Figure 12).

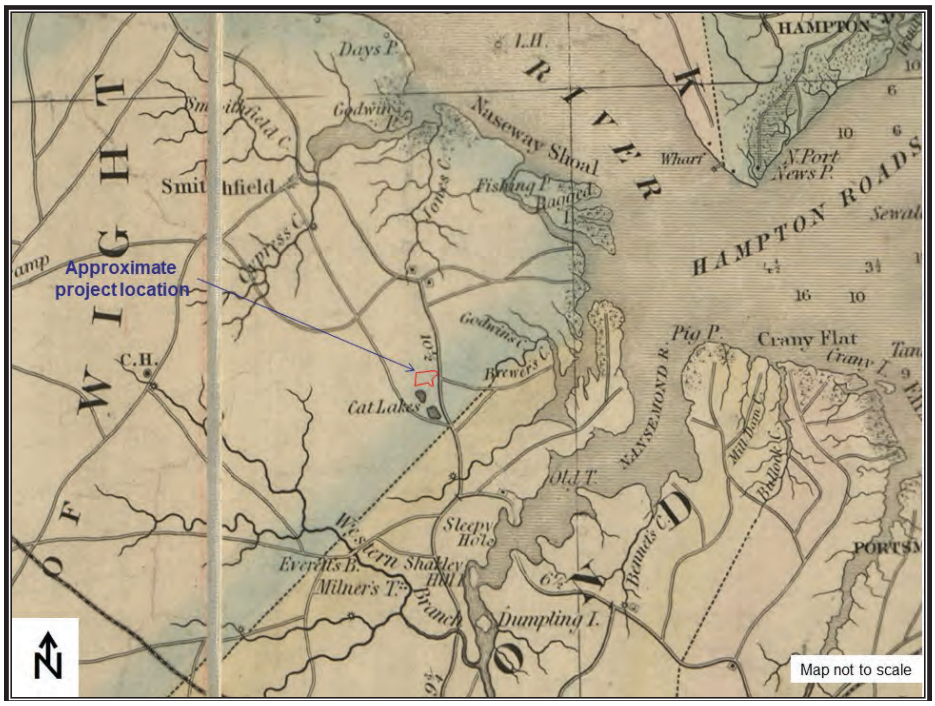


Figure 11. Detail of *A map of the state of Virginia, constructed in conformity to law from the late surveys authorized by the legislature and other original and authentic documents* by Herman Böÿe, 1825.

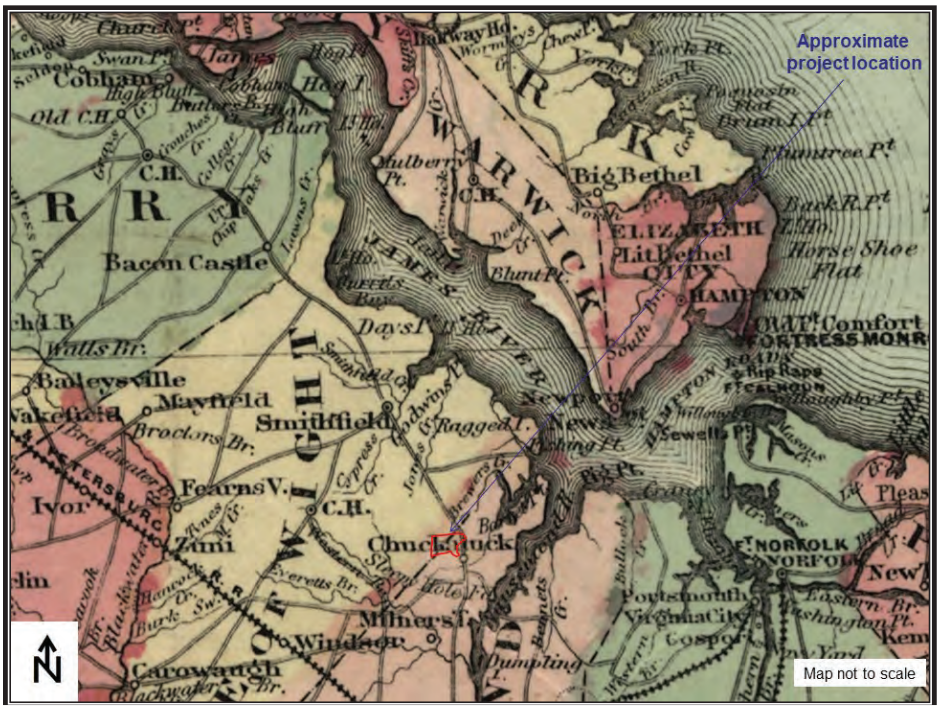


Figure 12. Detail of *J.H. Colton's topographical map of seat of war in Virginia, Maryland*, J.H. Colton's Geographical Establishment, New York. 1855.

Isle of Wight County's economy had never been heavily oriented toward slave labor, and many of its citizens questioned the wisdom of fighting a sectional conflict to protect what they perceived to be the interests of large slave owners. However, when war was finally declared, many Isle of Wight men willingly took up arms to defend the Confederacy, some joining the Surry Light Artillery Company, and others the Isle of Wight Grays, which became Company D of the 16th Virginia Infantry Regiment (King 1993).

Civil War (1861-1865)

When Federal Major General Benjamin Butler seized Newport News in May 1861, Confederate General Robert E. Lee quickly realized the threat posed to Suffolk, an essential junction of the Southside railroad lines connecting the port of Norfolk with Petersburg and Richmond. Immediately Lee ordered local commander Brigadier General Benjamin Huger to strengthen the region's defenses and erect or expand several fortifications along the Nansemond River and the south side of the James River in Isle of Wight County. On May 14, 1862, several Federal gunboats came up the James and fired on Fort Boykin, an important Southside fortification located on Burwell's Bay, several miles west of Smithfield. Overwhelmed by the longer range of the Union guns, the Confederate defenders of Fort Boykin abandoned the defenses, destroying their guns and the fort's buildings in the process. After this engagement, Huger withdrew his forces from the Southside forts, and the battery near Ragged Island was likely abandoned by late May 1862 (King 1993). Maps of the area drawn during this time show development around the project area with no development directly within the project area (Figure 13 – 17).

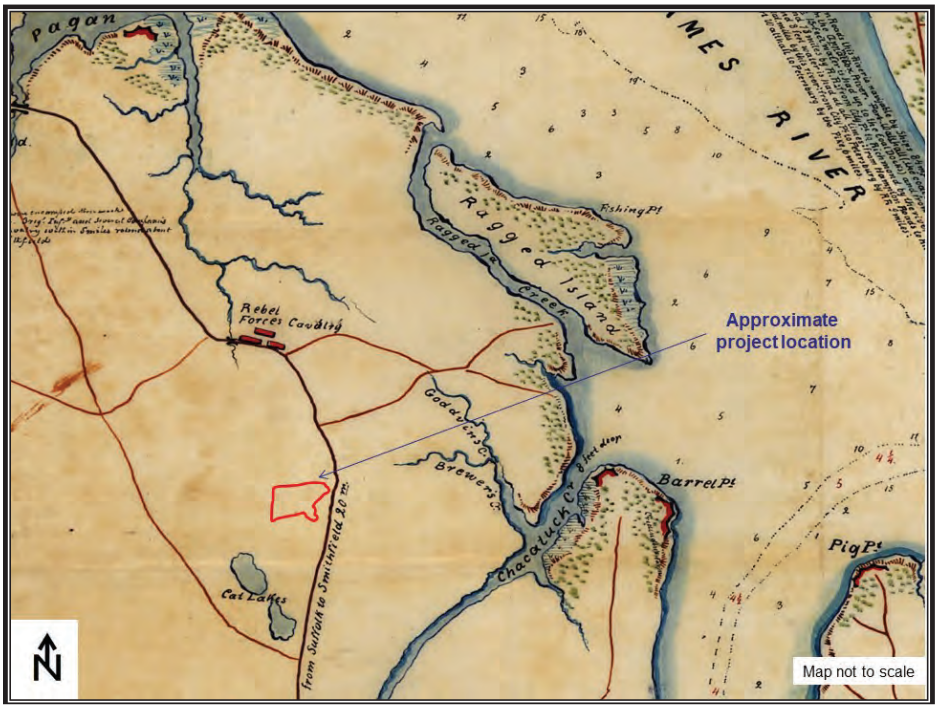


Figure 13. Detail of *Copy of a map military reconnaissance Dep't Va.: [Hampton Roads and Norfolk regions, Va.]* drawn and compiled under the direction of Col. T.J. Cram, Chief Top'l Enge'r Dep. Va.; by Sergt. Ch. Worret. 1862.

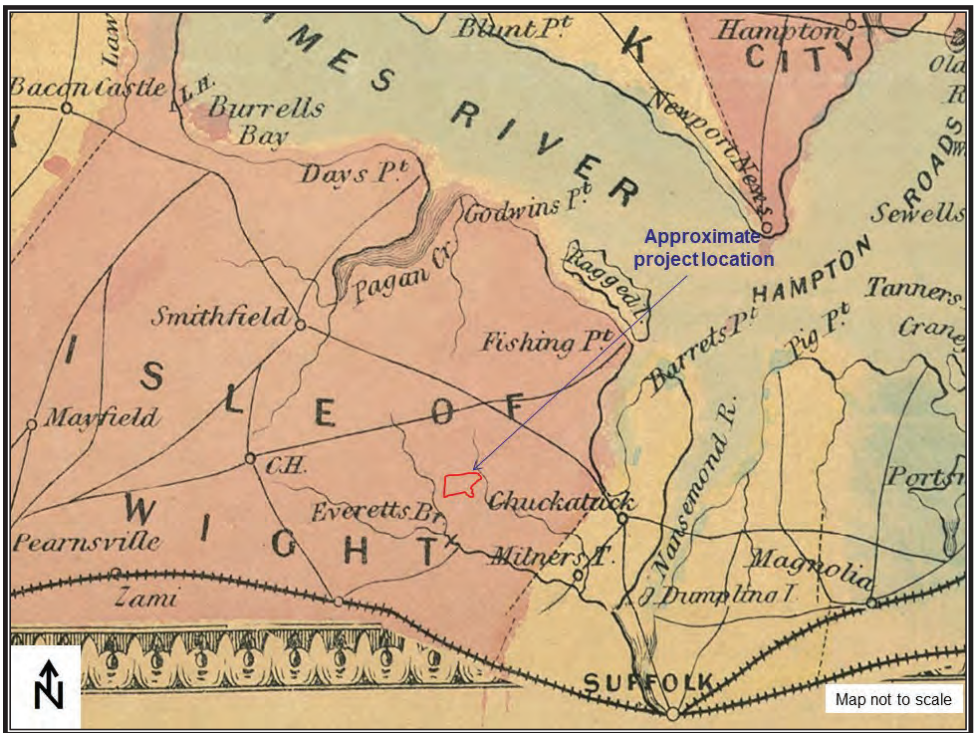


Figure 14. Detail of *The battle fields and military positions in the Virginian peninsula: from surveys supplied by officers of the army*. 1862.

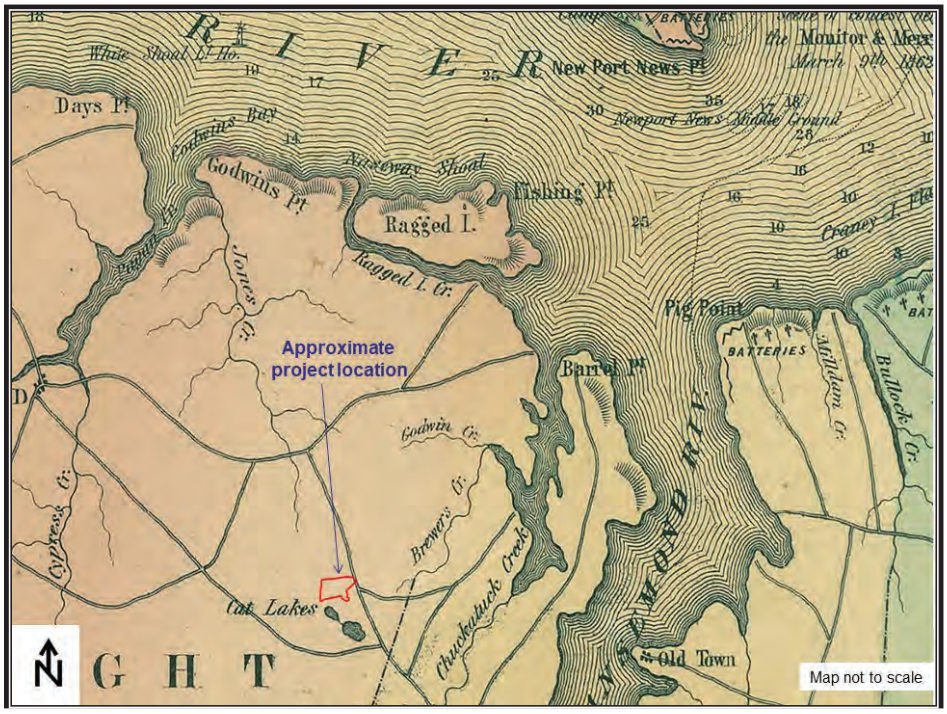


Figure 15. Detail of *Johnson's map of the vicinity of Richmond and Peninsular Campaign in Virginia: showing also the interesting localities along the James, Chickahominy, and York Rivers* compiled from the official maps of the War Dept. by Johnson and Ward. 1862.



Figure 16. Detail of *S.E. portion of Virginia and N.E. portion of N'th Carolina* drawn b. Serg't Ch. Worret; & compiled under the direction of Col. T.J. Cram, Chief Top'l Eng'r Dep't Va 1860s.

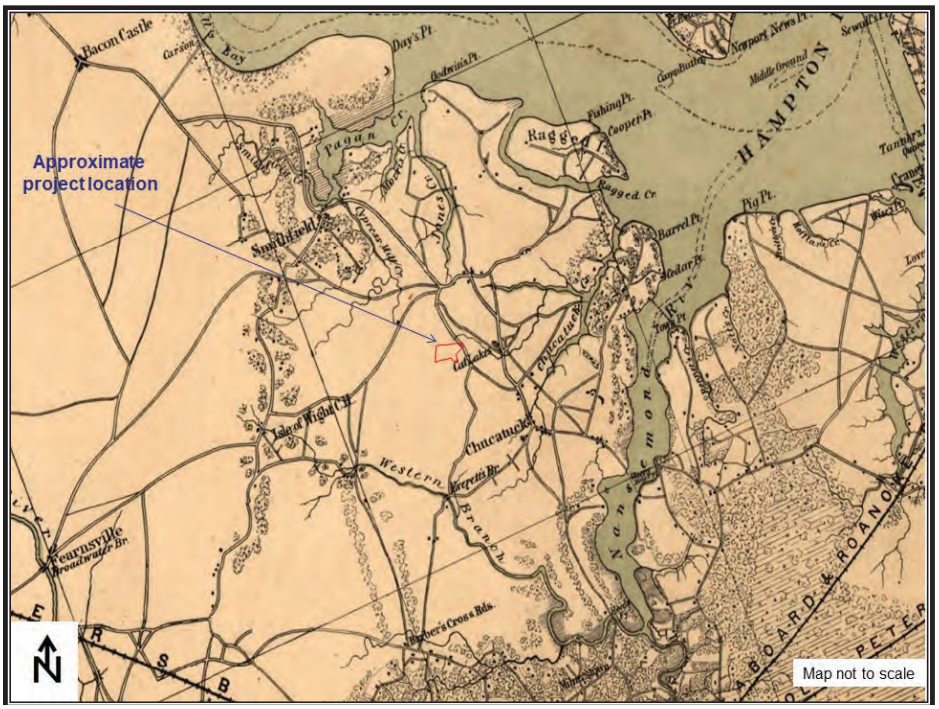


Figure 17. Detail of *Military map of south-eastern Virginia* compiled at the U.S. Coast Survey Office; drawn by A. Lindenkohl. 1865.

Isle of Wight County saw few direct military engagements during the war, the most significant being the Battle of Smithfield of January 31 - February 1, 1864. Confederate defenders repulsed a minor Union assault against the Town of Smithfield. However, living in a sort of no-man's-land, Isle of Wight's citizens were harried by Federal cavalry raids, which frequently resulted in the appropriation of supplies and the destruction of property. An 1864 resolution of the County's justices succinctly outlined the hardships faced by Isle of Wight citizens during the war years:

> *Whereas on account of the exposed condition of the county, being beyond the lines of the Confederate Army and subject to frequent and destructive raids of the enemy and the difficult and embarrassed communication with other sections of the state, our people, in a great measure, are dependent upon their own resources for an adequate supply of the necessities of life. And whereas, on account of the loss of almost our entire slave population, and the loss of a number of our free labor, and the conscription of white men between the ages of eighteen and forty-five to recruit the ranks of our armies, there is a great scarcity of productive labor, and whereas any further extension of conscription within the limits of this county will but result in the paralyzing of production and great suffering and hardships upon those who will be left at home . . . all other business is suspended in the county and, our people with scarcely an exception, are engaged in the cultivation of the soil* (King 1993).

Reconstruction and Growth (1865-1917)

Four years of civil war had a devastating effect on the land and people of Virginia, and Isle of Wight County was no exception, though it certainly suffered less than other parts of the Commonwealth. The wake of the conflict left the County more impoverished due to the lack of draft animals, the poor condition of long-neglected fields hampered agricultural life, and it was difficult for most former slave owners to come to terms, both emotionally and financially, with emancipation. The County's population also dropped considerably in the immediate postwar years. In 1860, Isle of Wight's residents numbered nearly 10,000; by 1870, the population had dropped by almost 20%, to 8,320. After the war, both black and white residents left Isle of Wight in large numbers, seeking work in nearby cities. Physically, economically, socially, and politically, the county's landscape had been irrevocably altered in a short period (King 1993).

Agricultural changes in Isle of Wight County, including the remarkable growth of peanut and soybean production, spurred population growth toward the end of the 19th century. By 1890, the County's population had well exceeded its pre-war levels. In the early 20th century, Isle of Wight farmers profited from an expanding truck-farming market, supplying the growing cities of Newport News and Norfolk with a variety of fresh fruits and vegetables. During this period, the meat-packing industry also grew considerably, introducing the famed "Smithfield ham" to a national market.

World War I to World War II (1917-1945)

The beginning of the 20th century saw frequent and rapid change in Isle of Wight County. For example, electric power became available to most rural residents after 1939, when the Community Electric Cooperative first began raising power lines. However, perhaps the most significant local development witnessed during this period was the construction of the James River Bridge, officially opened by President Calvin Coolidge on November 17, 1928. Virtually overnight, the bridge ended Isle of Wight's relative isolation from Hampton Roads' growing urban centers. County businessman and booster Albert Sidney Johnson was instrumental in getting the main north-south U. S. highway, Route 17, routed through Isle of Wight via the James River Bridge and across the new Crittenden and Nansemond River bridges to Portsmouth and Norfolk. Initially, the bridge tolls were high enough to discourage daily commuting to the Peninsula, but ready access to the region's cities still proved a significant stimulus to the local economy, despite the onset of the Depression (King 1993). Maps of the area drawn during this period show this growth, with development noted within the project area for the first time (Figure 18). The northern structure shown on the historic map appears to be in the vicinity of the hog pens. Several roads are noted within the project area. One road is located along the southern edge of the project area, and another road is noted branching off and running northwest across the southwestern portion of the project area. Circa~ noticed that this road is still intact and used by the landowner west of the project area. Within the project area, the traces of the roads have been erased by cultivation activities in the past. The third road runs north to south across the western edge of the project area and crosses where the tank and pigpens are now located. Site 44IW0318 is located in the vicinity of the southern structure shown on the map.

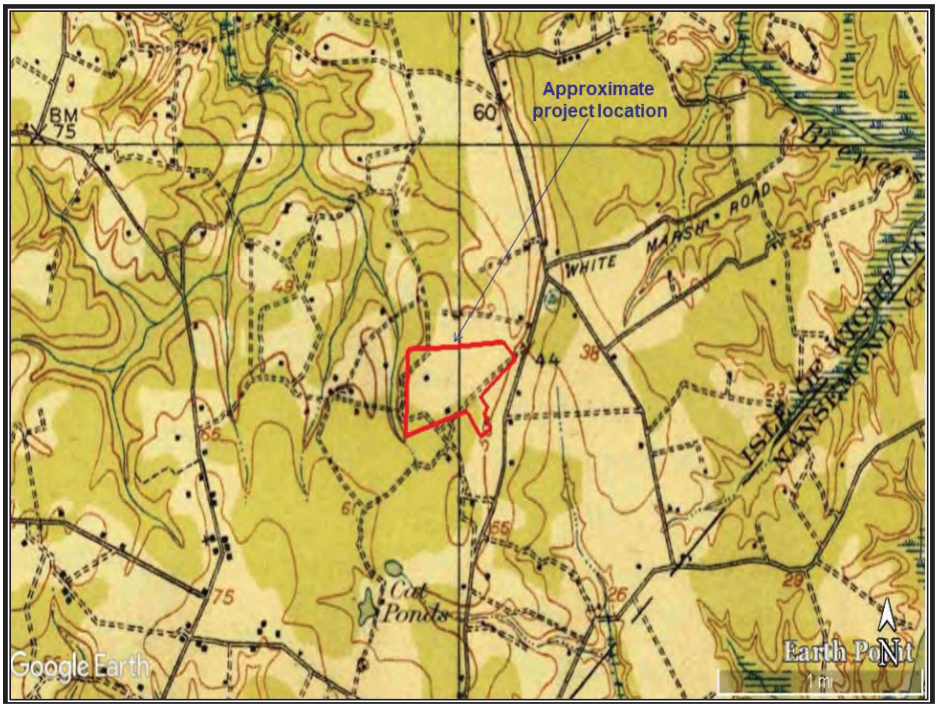


Figure 18. Detail of 1919 Smithfield quad.

The New Dominion (1945 to present)

Isle of Wight grew at an unprecedented rate after World War II, and today the County has over 28,500 residents, more than double the population at the turn of the 20th century. In 1975, Virginia took over the James River Bridge and removed the tolls; as a result, Isle of Wight County quickly developed into a bedroom community of Newport News, with residential developments springing up along the Route 17 corridor. Despite this increasing residential growth, most Isle of Wight County remains predominantly rural (King 1993). Maps of the area drawn during this period show this continued rural nature, with the project area now shown as an agricultural field with development noted previously no longer appearing (Figures 19 and 20). However, a transmission line was running through the center of the project area by 1965.

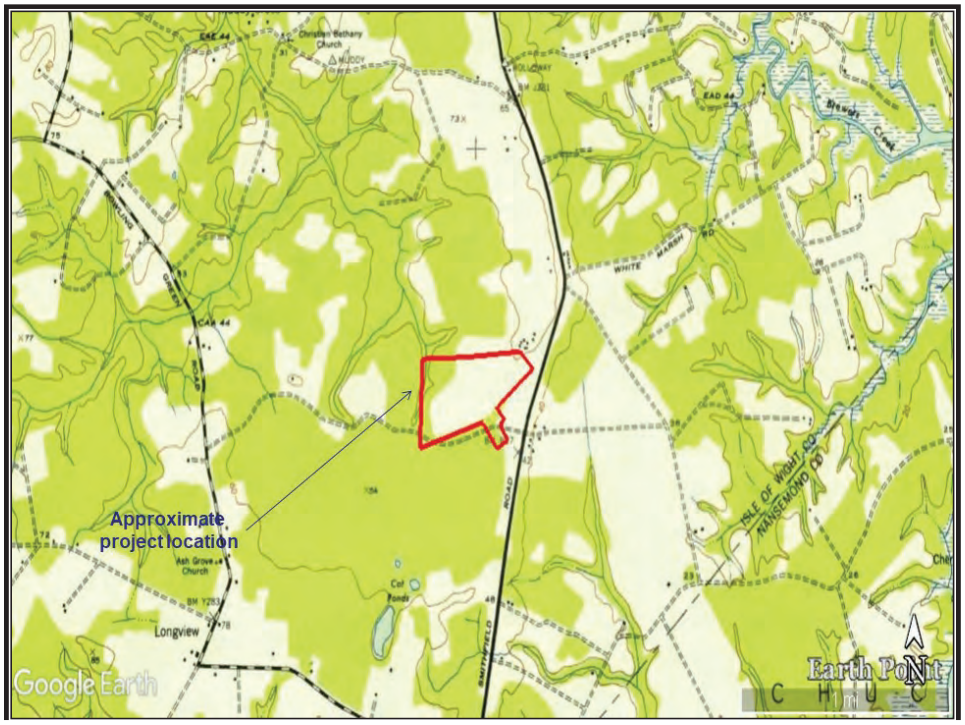


Figure 19. Detail of 1952 Benns Church quad.

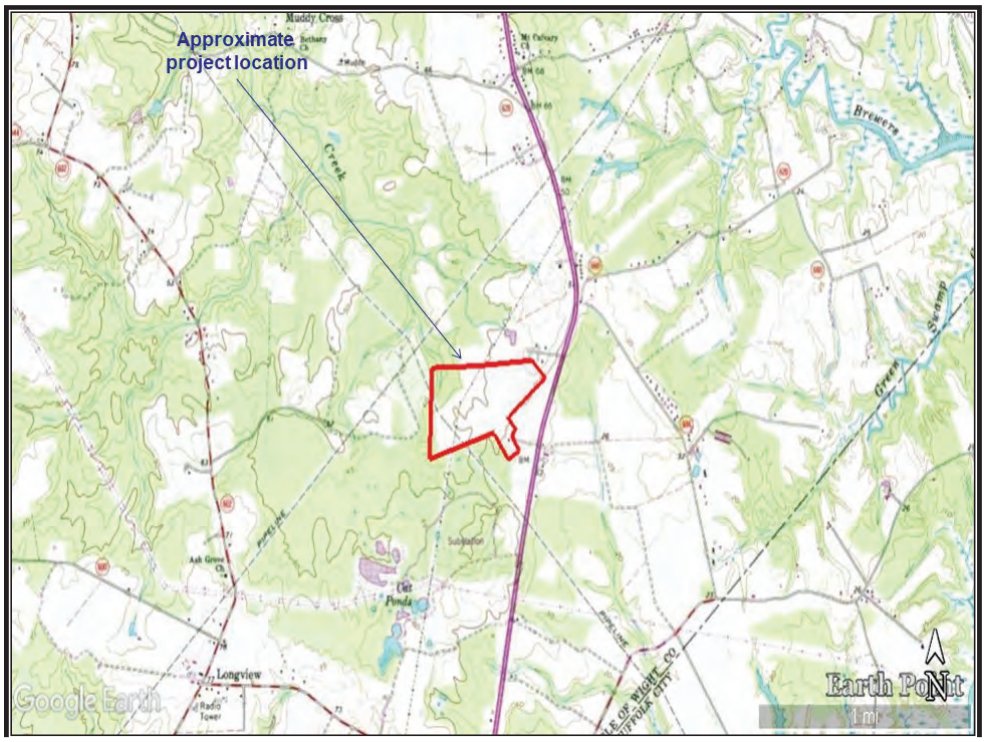


Figure 20. Detail of 1965 Benns Church quad.

PREVIOUSLY-RECORDED CULTURAL RESOURCES

Circa~ performed an archival search for the Smithfield IAAI project area using the VDHR online V-CRIS system on June 24, 2021. This research was completed to determine if historic resources exist within the project area boundaries. The search identified 15 archaeological resources and 13 architectural resources within a one-mile radius of the project area boundaries. Table 2 lists all the resources within one mile of the project area boundaries. Figures 21 and 22 show the approximate project area boundaries (yellow-shaded area) and resources within proximity. Of these resources, no archaeological or architectural resources were previously identified within the project area.

According to the VDHR V-CRIS search, at least three Phase I surveys have been completed within one mile of the project area (Figure 23). First, the Virginia State Library conducted an *Archaeological Reconnaissance of Routes 258/32 and 10/32, Isle of Wight County,* in 1976. Second, the Mid-Atlantic Archaeological Research (MAAR) Associates, Inc. completed a *Phase I Cultural Resources Survey for the Proposed Smithfield Interceptor in Isle of Wight County, Virginia and the City of Suffolk* in 1993. Both surveys were conducted to the east of the project area along the road corridor for Route 258. Finally, in 1981, the Archaeological Society of Virginia conducted *An Archaeological Reconnaissance Survey of the 500KV Septa to Yadkin Line in the County of Isle of Wight and the Cities of Suffolk and Chesapeake, Virginia,* the south and west of the project area. In addition, VDHR holds no easement within one mile of the project area.

Table 2. Resources Within a One-Mile Radius of Project Area Boundaries.

VDHR Survey Number	Date of resource	Description of resource	Survey Information	Recommendation
Archaeological Sites				
44IW0008	No date	Artifact scatter	Phase I survey 2/75 and 4/17/19	Recommended not eligible 4/17/19
44IW0022	18th century 19th century	Single dwelling	Phase I survey 1/58 and 10/58	None made
44IW0259	Woodland 19th century 20th century	Temporary camp	Phase I survey 8/09	Recommended not eligible 8/09
44IW0260	Native American 19th century 20th century	Lithic scatter, single dwelling	Phase I survey 8/09	Recommended not eligible 8/09
44IW0261	19th century	Trash scatter	Phase I survey 8/09	Recommended not eligible 8/09
44IW0262	No date	Trash scatter	Phase I survey 8/09	Recommended not eligible 8/09
44IW0263	No date	Trash scatter	Phase I survey 8/09	Recommended not eligible 8/09
44IW0264	Native American 19th century	Lithic scatter and cemetery	Phase I survey 8/09	Recommended not eligible, but did recommend a cemetery delineation 8/09
44IW0265	No date	Trash scatter	Phase I survey 8/09	Recommended not eligible 8/09
44IW0266	No date	Trash scatter	Phase I survey 8/09	Recommended not eligible 8/09
44IW0267	19th century	Trash scatter	Phase I survey 8/09	Recommended not eligible 8/09
44IW0268	19th century	Trash scatter	Phase I survey 8/09	Recommended not eligible 8/09
44IW0269	No date	Trash scatter	Phase I survey 8/09	Recommended not eligible 8/09
44IW0274	20th century	Trash scatter	Phase I survey 8/09	Recommended not eligible 8/09
44IW0275	No date	Temporary camp, artifact scatter	Phase I survey 9/6/13 Phase II survey 9/19/13	VDHR determined not eligible 4/17/14
Architectural Resources				
046-0016	ca. 1770	Green Riddick House, 15362 Mount Holly Creek Lane, the site was moved from its original location and included one house and one silo	Historic American Building Survey (HABS) 10/58	None made
046-0074	ca. 1775	Chapman Place, located on Route 604, the site includes one house	Phase II survey 10/73	None made

VDHR Survey Number	Date of resource	Description of resource	Survey Information	Recommendation
046-5252	ca. 1877	Whitehead's Grove Baptist Church, 18366 Benns Church Boulevard, site includes one church and one cemetery	Phase I survey 3/05	None made
046-5427	ca. 1961	House, 16168 Benns Church Boulevard	Phase I survey 9/13	VDHR determined not eligible 5/14
046-5428	ca. 1884	House, 16184 Benns Church Boulevard, the site includes one house, one garage, two sheds, and two barns	Phase I survey 9/13	VDHR determined not eligible 5/14
046-5429	ca. 1963	House, 16210 Benns Church Boulevard, the site includes one house and one garage	Phase I survey 9/13	VDHR determined not eligible 5/14
046-5430	ca. 1900	House, 16202 Benns Church Boulevard, the site includes one house, one vehicle shed, one shed, two silos, and one barn	Phase I survey 9/13	VDHR determined not eligible 5/14
046-5431	ca. 1857	House, 17076 Benns Church Boulevard, site includes two houses, one foundation, two vehicle sheds, four silos, two barns, one smokehouse, and one shed	Phase I survey 9/13	VDHR determined not eligible 5/14
046-5432	ca. 1955	House, 20449 Lankford Lane, the site includes one house and two sheds	Phase I survey 9/13	VDHR determined not eligible 5/14
046-5433	ca. 1937	House, 20505 Lankford Lane, site includes one church, one pump house, and one house	Phase I survey 9/13	VDHR determined not eligible 5/14
046-5434	ca. 1950	House, located on Benns Church Boulevard	Phase I survey 9/13	VDHR determined not eligible 5/14
046-5435	ca. 1958	Commercial building, 16441 Benns Church Boulevard, the site includes one commercial building and one garage	Phase I survey 9/13	VDHR determined not eligible 5/14
046-5436	ca. 1920	House, 16419 Benns Church Boulevard, the site includes one house, one garage, and one workshop	Phase I survey 9/13	VDHR determined not eligible 5/14

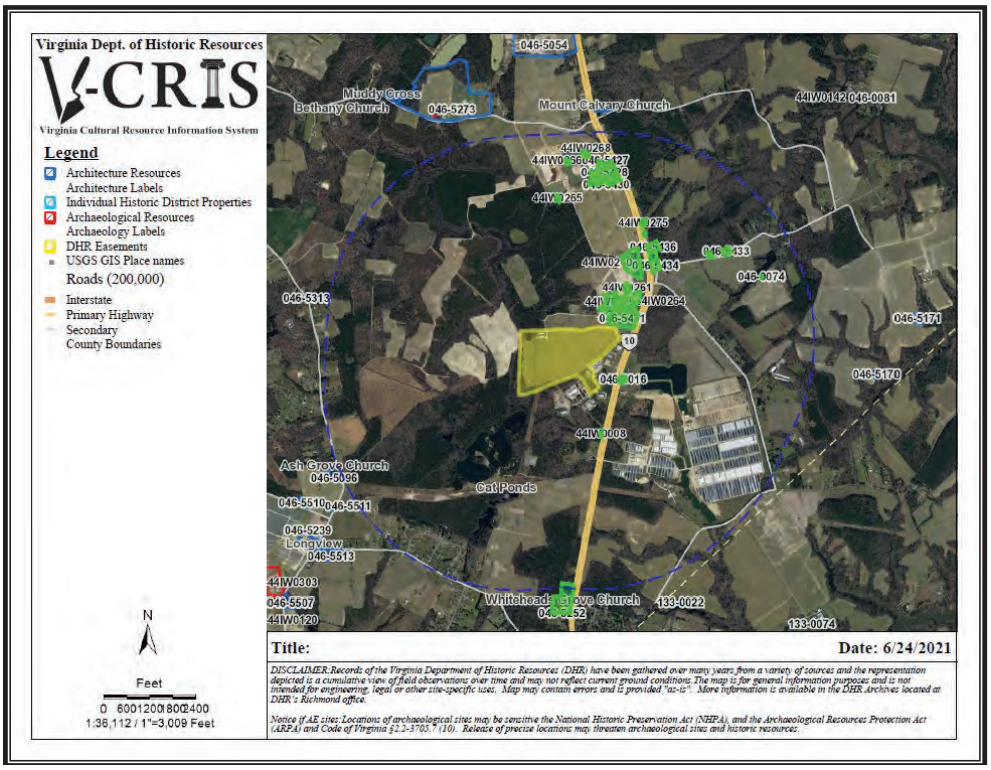


Figure 21. V-CRIS map showing previously-identified resources within a one-mile radius of project area boundaries.

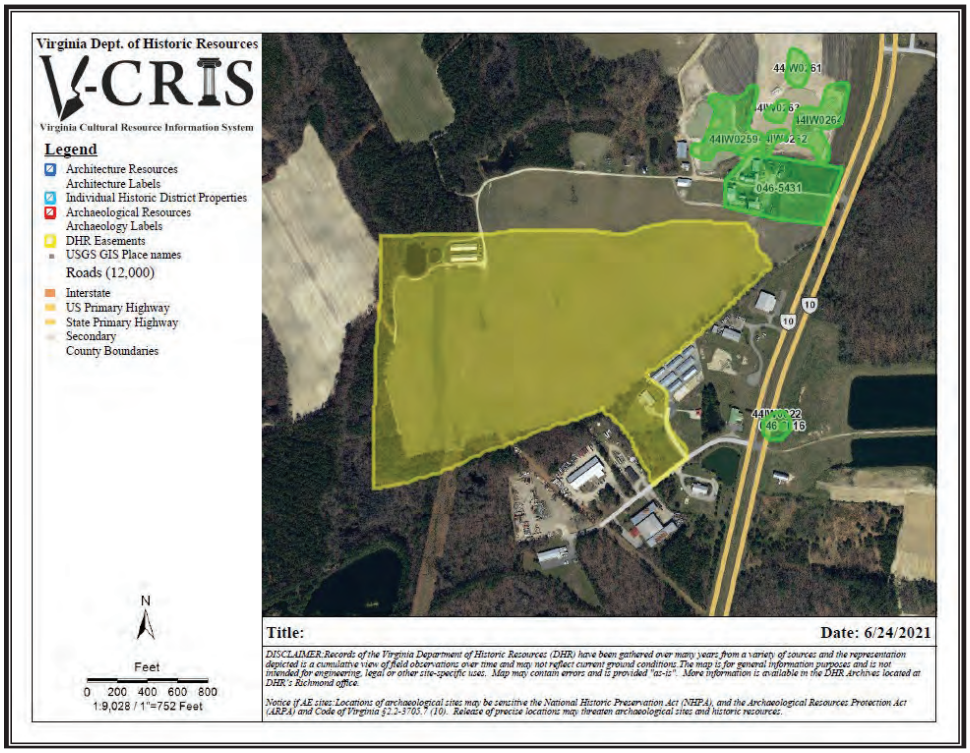


Figure 22. Detailed V-CRIS map showing previously-identified resources within proximity to the project area boundaries.

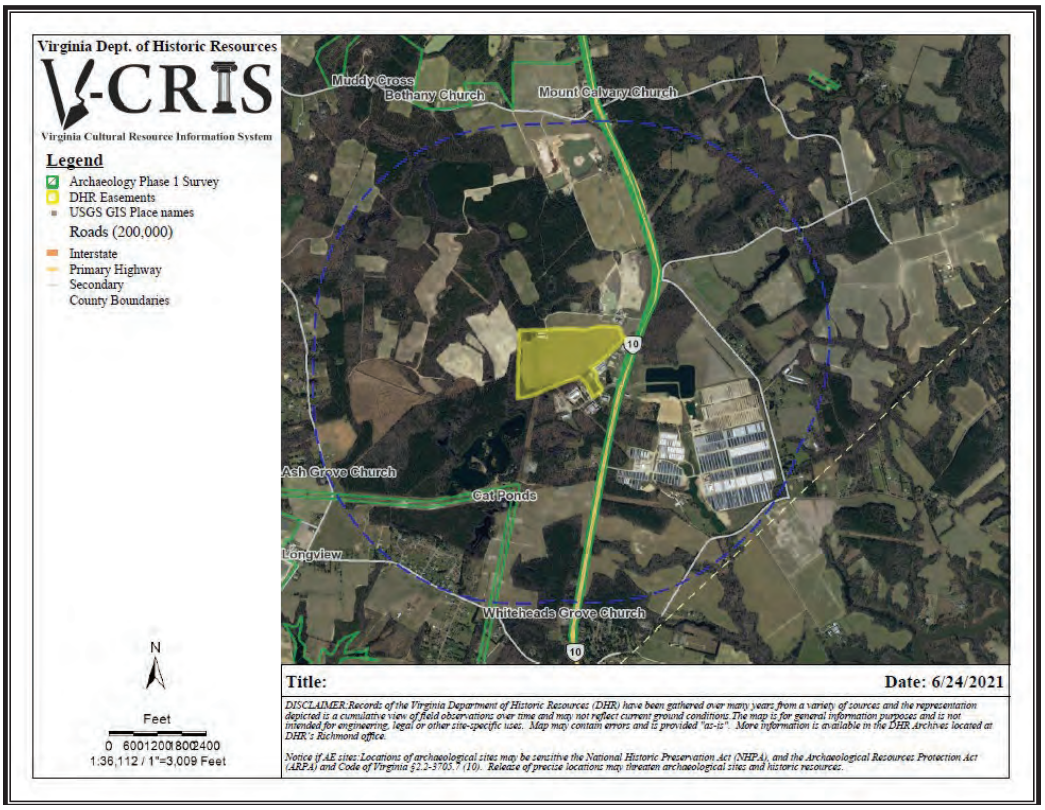


Figure 23. VDHR V-CRIS map showing project area in yellow and previous survey areas outlined in light blue.

ARCHAEOLOGICAL SITE POTENTIAL

Native American Site Potential

Five previously-identified Native American archaeological sites are located within one mile of the project area (Table 3 and Figure 24). Of these sites, one site dates to the Woodland period and the 19th and 20th century; one site dates to the Native American period and the 19th century; one site dates to the Native American period and the 19th and 20th century; and two sites have no associated dates but contain a Native American and historical component.

Given the project area's upland nature remote from the Brewer's Creek, Greens Swamp, and Chuckatuck Creek, and the Nansemond River, the possibility of finding additional Native American resources is considered low to moderate. However, all previously-identified sites were situated in a similar environment to the project area but closer to a water source. Given this information, it is possible that a Native American site, most likely a temporary camp, could be found within the project area boundaries. Given the previously-identified sites, this site would most likely date to the Woodland period and contain a historical component and range in size from under one acre to less than three acres. Judging from the previously-identified sites, if a site were found within the project area, it would probably contain a light mix of lithic artifacts and Native American pottery.

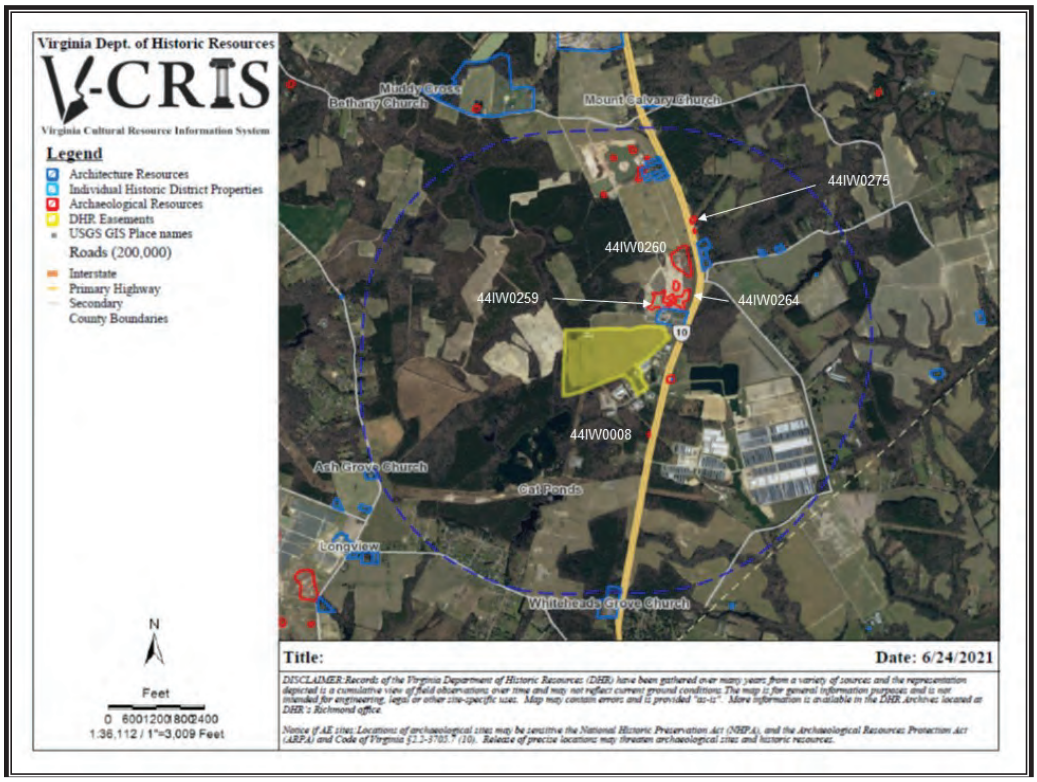


Figure 24. VDHR V-CRIS map showing previously-identified Native American archaeological resources within one mile of the project area (yellow-shaded area).

Historic Site Potential

Fifteen previously-identified historic archaeological sites are located within one mile of the project area (Table 4 and Figure 25). Of these sites, one site dates to the Woodland period and the 19th and 20th century; one site dates to the Native American period and the 19th century; one site dates to the Native American period and the 19th and 20th century; one site dates to the 18th and 19th century; three sites dates to the 19th century; one site dates to the 20th century; two sites have no associated dates but contain a Native American and historic component; and five sites have no associated dates but contain a historical component.

Table 3. Previously-Identified Native American Archaeological Sites Within One Mile of The Project Area.

Site Number	Site Chronology	Site Type	Native American Lithic Artifacts	Native American Ceramic Artifacts	Site Size	Soil Type	Additional Site Information
44IW0008	No date (Native American and Historic)	Artifact scatter	One Savannah River blade fragment	None listed	0.08 acres	None listed	The site is situated approximately 50 feet AMSL on a terrace in a recently cleared stand of young pines
44IW0259	Woodland 19th century 20th century	Temporary camp	Quartzite shatter, quartzite fire-cracked rock, one quartzite secondary flake	One cord-marked sherd	3.20 acres	None listed	The site is situated approximately 60 feet AMSL on a knoll in a soybean field
44IW0260	Native American 19th century 20th century	Lithic scatter, single dwelling	Chert shatter, quartzite flakes, quartzite shatter, quartz fire-cracked rock	None listed	6.30 acres	None listed	The site is situated approximately 65 feet AMSL on a knoll in a soybean field
44IW0264	Native American 19th century	Lithic scatter, cemetery	One quartzite fragment, one quartzite fire-cracked rock, one shatter, one ground stone, four tertiary flakes, quartz shatter, quartzite shatter, fire-cracked rock, one chert tertiary flake	None listed	2.40 acres	None listed	The site is situated approximately 60 feet AMSL on a knoll in a soybean field
44IW0275	No date (Native American and Historic)	Temporary camp, artifact scatter	Quartz flakes, quartzite flakes, chert flakes, shatter, cores, fire-cracked rock, projectile points, one woodland stemmed projectile point, one Piscataway projectile point	23 Mockley ware sherds, one Stony Creek sherd	0.40 acres	None listed	The site is situated approximately 50 feet AMSL on a floodplain in an open grassy area

Given the project area's distance from Brewer's Creek, Green Swamp, and Chuckatuck Creek, and the Nansemond River, and the presence of historic structures on or near the project area on the historical USGS maps, the possibility of finding historic archaeological resources is considered moderate to high. In addition, most of the previously-identified sites are clustered to the north of the project area along Route 10. Given this information, it is possible that a historical site, most likely a domestic site, could be found within the project area boundaries. Given the previously-identified sites, this site would most likely date to the 18th, 19th, or 20th century and possibly contain a small Native American component. The site would probably range in size from under one acre to less than three acres. Judging from the previously-identified sites, if a site were found within the project area, it would probably contain a light mix of ceramic artifacts and domestic artifacts, including glass fragments and building materials such as brick and nails.

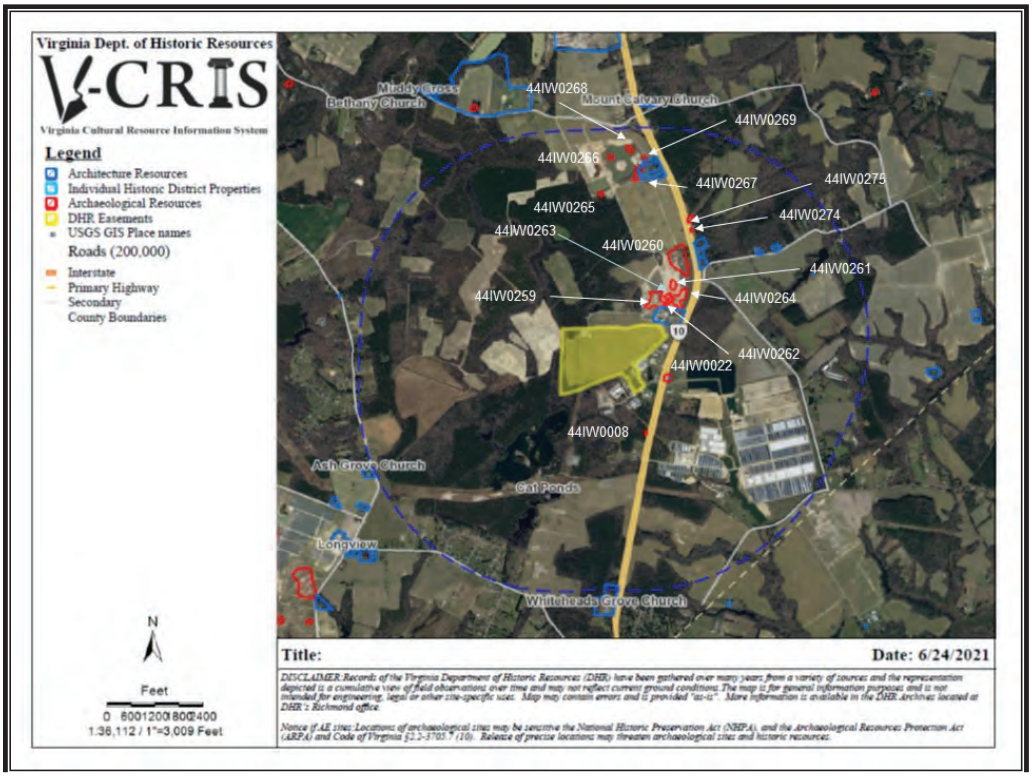


Figure 25. VDHR V-CRIS map showing previously-identified historic archaeological resources within one mile of the project area (yellow-shaded area).

Table 4. Previously-Identified Historical Archaeological Sites Within One Mile of The Project Area.

Site Number	Site Chronology	Site Type	Historic Ceramic Artifacts	Other Historic Artifacts	Site Size	Soil Type	Additional Site Information
44IW0008	No date (Native American and Historic)	Artifact scatter	One pearlware sherd	One cut nail fragment, one brick fragment, one colorless window glass fragment	0.08 acres	None listed	The site is situated approximately 50 feet AMSL on a terrace in a recently cleared stand of young pines
44IW0022	18th century 19th century	Single dwelling	None listed	None listed	None listed	None listed	None listed
44IW0259	Woodland 19th century 20th century	Temporary camp	Coarse redware sherds, American stoneware sherds, ironstone sherds, whiteware sherds, two pearlware sherds	Amber bottle glass fragments, two solarized bottle glass fragments, oyster shell fragments, clamshell fragments, sheet metal fragments, two machine parts, brick fragments, mortar fragments, nails, aqua window glass fragments, colorless glass fragments	3.20 acres	None listed	The site is situated approximately 60 feet AMSL on a knoll in a soybean field
44IW0260	Native American 19th century 20th century	Lithic scatter, single dwelling	Redware sherds, porcelain sherds, ironstone sherds, whiteware sherds, stoneware sherds, two pearlware sherds, one creamware sherd	Bright green bottle glass fragments, colorless bottle glass fragments, solarized colorless bottle glass fragments, aqua bottle glass fragments, cobalt bottle glass fragments, amber bottle glass fragments, glass plate fragments, milk glass fragments, colorless tableware glass fragments, one brass rivet, tin can fragments, one iron knife, clamshell fragments, oyster shell	6.30 acres	None listed	The site is situated approximately 65 feet AMSL on a knoll in a soybean field

Site Number	Site Chronology	Site Type	Historic Ceramic Artifacts	Other Historic Artifacts	Site Size	Soil Type	Additional Site Information
				fragments, aluminum sheeting fragments, one costume jewelry fragment, brick fragments, mortar fragments, aqua window glass fragments, colorless window glass fragments, nails, one cut nail, one wire nail, nail fragments			
44IW0261	19th century	Trash scatter	One creamware shred, one pearlware sherd, one whiteware sherd	One iron barbed wire fragment, three brick fragments, one aqua window glass fragment, one bottle glass fragment, three oyster shells	0.70 acres	None listed	The site is situated approximately 65 feet AMSL on a knoll in a soybean field
44IW0262	No date (Historic)	Trash scatter	One creamware sherd, two pearlware sherds, one stoneware sherd	Three brick fragments, three iron nail fragments, one aqua window glass fragment, one bottle glass fragment, one clamshell, one bone fragment, three oyster shell fragments, two coal fragments, one copper allow sheet metal fragment	0.40 acres	None listed	The site is situated approximately 65 feet AMSL on a knoll in a soybean field
44IW0263	No date (Historic)	Trash scatter	Two pearlware sherds, one whiteware sherd	Five brick fragments, one iron cut nail fragment, two colorless window glass fragments, three bottle glass fragments, one coal fragment	0.40 acres	None listed	The site is situated approximately 65 feet AMSL on a knoll in a soybean field

Site Number	Site Chronology	Site Type	Historic Ceramic Artifacts	Other Historic Artifacts	Site Size	Soil Type	Additional Site Information
44IW0264	Native American 19th century	Lithic scatter, cemetery	One pearlware sherd, one porcelain sherd	Eight brick fragments, mortar fragments, one wrought nail fragment, one charcoal fragment, bottle glass fragments, cut nails, wire nails, window glass fragments	2.40 acres	None listed	The site is situated approximately 60 feet AMSL on a knoll in a soybean field
44IW0265	No date (Historic)	Trash scatter	None listed	Two nail fragments, two lime soda bottle glass fragments, one iron fragment	0.30 acres	None listed	The site is situated approximately 65 feet AMSL on a knoll in a cotton field
44IW0266	No date (Historic)	Trash scatter	None listed	Three brick fragments, one nail fragment, three bottle glass fragments	0.30 acres	None listed	The site is situated approximately 70 feet AMSL on a knoll in a cotton field
44IW0267	19th century	Trash scatter	Creamware sherds, pearlware sherds, whiteware sherds	Aqua bottle glass fragments, colorless bottle glass fragments, solarized bottle glass fragments, tin can fragments, one kaolin tobacco pipe stem, one bolt, one washer, one aluminum sheet metal fragment, one lead fragment, one iron fragment, one rubber fragment	1.40 acres	None listed	The site is situated approximately 65 feet AMSL on a knoll in a cotton field
44IW0268	19th century	Trash scatter	None listed	Two brick fragments, two bottle glass fragments, one lime soda glass fragment, seven solarized glass fragments, one granite fragment	0.50 acres	None listed	The site is situated approximately 65 feet AMSL on a knoll in a cotton field

Site Number	Site Chronology	Site Type	Historic Ceramic Artifacts	Other Historic Artifacts	Site Size	Soil Type	Additional Site Information
44IW0269	No date (Historic)	Trash scatter	One whiteware sherd	Three brick fragments, one nail fragment	0.30 acres	None listed	The site is situated approximately 65 feet AMSL on a knoll in a cotton field
44IW0274	20th century	Trash scatter	None listed	One brick fragment, one iron nail, one iron can, one amber bottle glass fragment, two colorless bottle glass fragments	0.10 acres	None listed	The site is situated approximately 51 feet AMSL on a floodplain
44IW0275	No date (Native American and Historic)	Temporary camp, artifact scatter	Whiteware sherds, porcelain sherds	Brick fragments, iron wire nails, bottle glass fragments, pavement fragments, oyster shell fragments, charcoal fragments, seed/nutshell fragments	0.40 acres	None listed	The site is situated approximately 50 feet AMSL on a floodplain in an open grassy area

RESULTS

The field survey aims to provide specific information concerning the location, nature, and distribution of archaeological resources within the project area. Based on VDHR guidelines, Circa~ uses two types of designations for the grouping of archaeological resources: isolated finds and sites. An isolated find is defined as when a limited number of artifacts are recovered from the ground surface or shovel testing. This event may be either a casual or a single-episode discard such as a projectile point or a bottle break or maybe a small collection of artifacts related to various periods, such as a projectile point from the Woodland period and a bottle fragment from the 20th century. An archaeological site is defined as a grouping of artifacts that date to specific periods and reveal the location of human activity and land use. Appendix A contains VDHR site forms. Appendix B contains the inventory of artifacts recovered. Appendix C contains the shovel test map.

Architectural Resources

During the Phase I survey, Circa~ identified two architectural resources within the project area. One of the resources was a previously-identified resource and one was a modern resource.

The archival search did not locate any previously-identified architectural resources within the project area boundaries. The Phase I survey identified 11 buildings within the project area boundaries. Further research indicated that these resources were associated with Site 046-5431, a previously-identified architectural resource located north of the project area.

Site 046-5431

Site 046-5431 is a circa 1857 house located at 17076 Benns Church Boulevard to the north of the project area boundaries. Cultural Resources, Inc. (CRI) identified the site in September 2013 during a Phase I cultural resources survey of approximately 3.324 acres for the proposed Dominion Virginia Power Benns Church substation rebuild. They recorded a circa 1857 house, a circa 1950 secondary dwelling, a circa 1847 foundation, a circa 1900 vehicle shed, a circa 1980 vehicle shed, a circa 1950 silo, a circa 1980 silo, a circa 1900 barn, a circa 1980 barn, a circa 1857 smokehouse, a circa 1980 shed, and two additional silos without a date. CRI stated that the resource was typical of a mid-19th century house, and the resource had no known association with broad patterns in history or important people or events. They further noted that the design and workmanship were undistinguished, and the materials were stock. They also noted that the main house had been altered with modern materials. As a result, they recommended that the site was not eligible for listing on the National Register of Historic Places. In May 2014, VDHR concurred with this recommendation.

Because 11 of the buildings associated with this site were situated within the project area boundaries and did not seem to have been included in the original survey, Circa~ re-surveyed the site during the Phase I survey and noted the original identified circa 1857 house, the secondary dwelling, the foundation, two vehicle sheds, four silos, two barns, the smokehouse, and one shed. In addition, Circa~ identified one animal shelter, five sheds,

two wells, three vehicle sheds, one well house, one garage, 18 silos, two pig pens, and one storage tank.

This site is situated on the west side of Benns Church Boulevard on an approximately 275-acre parcel away from Benns Church Boulevard, surrounded by a mowed lawn with scattered mature trees and plantings (Figure 26). The main house, facing east, is set on a fairly-level grade with a long, single-lane, gravel driveway that leads from Benns Church Boulevard to the house. Two Flemish-bond brick pillars with corbelled caps flank the entrance to the driveway. A gravel parking area is situated along the rear elevation of the main house, and a slate walkway parallels the eastern side of the parking area, separating it from the house. A decorative metal bell attached to a wooden pole is situated near the rear entrance of the house. Numerous gravel and dirt lanes run throughout the parcel providing access to the interior of the parcel and the various outbuildings. Various wooden utility poles and wooden poles with mercury vapor lights attached to the top are situated throughout the property as well as several above-ground storage tanks. A wooden utility pole is located at the driveway entrance, and overhead utility lines run parallel to Benns Church Road. Several wooden utility poles run along the southern edge of the driveway, and overhead utility lines run parallel to the driveway to the south. Overhead utility lines also run throughout the parcel. Agricultural fields are visible to the south and west, and ponds created from a sand-mining operation are visible to the north. CRI stated that the main house was built circa 1857, and a discussion with the current landowner confirms that construction date. However, the current house was built on the foundation of the original house on the property, which according to the current landowner, burned.

House

This circa 1857, two-story, three-bay, shallow-pitched hipped roof, Colonial Revival-style, wood-frame house is clad in painted-white vinyl siding and rests on a five-course American-bond brick foundation with an English basement with two exterior-end painted-white five-course American-bond brick chimneys with corbelled caps (Plates 1 -6). The roof is covered in asphalt shingles with overhanging eaves and metal gutters and downspouts. There is a one-story, one-bay wood porch under a hipped roof with a painted-white scroll-sawn balustrade supported by square, painted-white wood columns with decorative, painted-white scroll sawn brackets. Five wood steps flanked by painted-white wood railings lead from the porch to the front yard. Sash, double-hung, 6/6, wood-frame windows flanked by painted-black wood shutters are typical on the façade. The entrance on the façade is a single-leaf, wood-panel door with lights covered by a metal-screen door.

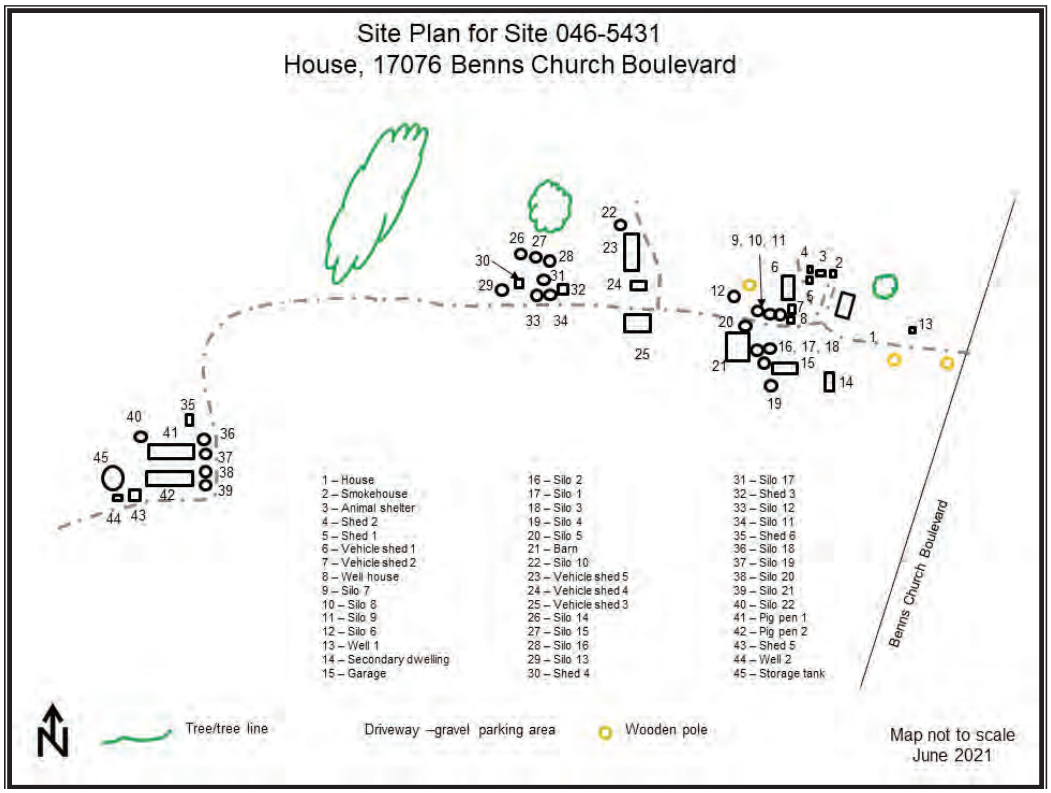


Figure 26. Site plan for Site 046-5431.



Plate 1. View of Site 046-5431, House, façade and addition, looking west.



Plate 2. View of Site 046-5431, House, façade and addition, Vehicle shed 2, Well house, and Garage, looking west.



Plate 3. View of Site 046-5431, House, façade, side elevation, and addition, Garage, and Silo 1, looking southwest.



Plate 4. View of Site 046-5431, House, façade, side elevation, and addition, and Vehicle shed 1, looking north.



Plate 5. View of Site 046-5431, House, side elevation and addition, looking north.



Plate 6. View of Site 046-5431, House, side and rear elevation and additions, looking northeast.

There is a one-story, two-bay, hipped roof, wood-frame addition attached to the side (north) elevation clad in painted-white vinyl siding and resting on a raised Flemish-bond brick foundation (Plates 7, 8, and 9). The roof is covered in asphalt shingles with metal gutters and downspouts. There is a wood deck on the north elevation. Paired, nine-light and 27-light, wood-frame windows are typical on the addition. There is also a bow window on the addition consisting of four nine-light, wood-frame windows. The entrance on the addition is a pair of double-leaf, wood-frame French doors with lights. There is a roll-up cloth awning over the doors.

There is a one-story, one-bay, hipped roof, wood-frame addition attached to the west elevation of the addition clad in painted-white vinyl siding and resting on a raised Flemish-bond brick foundation (Plate 10). The roof is covered in asphalt shingles with metal gutters and downspouts. There is a wood deck with a wood balustrade attached to the addition that connects to the wood deck on the addition. Five wood steps flanked by wood railings lead from the deck to the side yard. Sash, double-hung, 6/6, wood-frame windows are typical on the addition. The entrance on the addition is a recessed, single-leaf, wood-panel door with lights.

There is a two-story, two-bay, shed roof, wood-frame addition attached to the rear (west) elevation clad in painted-white vinyl siding and resting on a Flemish-bond brick foundation (Plate 11). The southernmost bay is recessed on the first story. The roof is covered in asphalt shingles with metal gutters and downspouts. There is a one-story, one-bay, wood porch under a hipped roof with a wood balustrade supported by wood posts. Four wood steps flanked by wood railings lead from the porch to the walkway. Sash, double-hung, 4/4 and 6/6, wood-frame windows are typical on the addition. The entrance on the addition is a single-leaf, wood-panel door with lights.



Plate 7. View of Site 046-5431, House, façade, side elevation, and addition, Garage, and Silo 1, looking west.



Plate 8. View of Site 046-5431, House, façade, side elevation, and addition, looking west.



Plate 9. View of Site 046-5431, House, side and rear elevation and additions, looking southeast.



Plate 10. View of Site 046-5431, House, rear elevation and additions, looking east.



Plate 11. View of Site 046-5431, House, side and rear elevation and additions, looking northeast.

Secondary Dwelling

To the south of the house, there is a circa 1950, one-story, three-bay, side-gable, ranch style, wood-frame house clad in painted-yellow vinyl siding and resting on a raised concrete-block foundation with one central-interior Flemish-bond brick chimney (Plate 12). The roof is covered in asphalt shingles. There is a one-story, one-bay, wood porch under a front gable supported by wood posts. Four wood steps flanked by wood railings lead from the porch to the front yard. Single and paired, sash, double-hung, 6/6, wood-frame windows flanked by painted-green wood shutters are typical on the façade and elevations. The entrance on the façade is a single-leaf, wood-panel door with lights.

There is a one-story, one-bay, side-gable, wood-frame addition attached to the side (south) elevation clad in painted-white vinyl siding and resting on a raised concrete-block foundation (Plate 13). The roof is covered in asphalt shingles. Sash, double-hung, 6/6, wood-frame windows are typical on the addition. No entrance is visible on the addition.

There is a one-story, two-bay, shed roof, wood-frame addition attached to the rear (west) elevation clad in painted-yellow vinyl siding and resting on a raised concrete-block foundation (Plate 14). The roof is covered in asphalt shingles. There is a full-width wood deck with one wood step flanked by a wood railing leading from the entrance to the deck. Sash, double-hung, 6/6, wood-frame windows are typical on the addition. The entrance on the addition is a single-leaf, wood-panel door with lights.



Plate 12. View of Site 046-5431, Secondary dwelling, looking west.



Plate 13. View of Site 046-5431, Secondary dwelling, looking northeast.



Plate 14. View of Site 046-5431, Secondary dwelling, looking east.

Well 1

To the east of the house, there is a circa 1857 well. CRI initially identified this as a foundation. However, further inspection of the structure revealed a round, brick-lined well within a five-course American-bond brick rectangular pit (Plates 15, 16, and 17). There are four courses above grade, and the well is entirely below grade. The well is dry, and debris was noted at the bottom.

Well 2 (Within the Project Area Boundaries)

To the southwest of the house, there is a circa 1980 square, concrete-block well within a concrete-block square pit (Plates 18 and 19). There are three courses of the block above grade, and the well rests entirely below grade. Metal pipes are visible leading from metal support braces across the top of the pit into the well shaft.

Vehicle Shed 1

To the west of the house, there is a circa 1980, one-story, three-bay, side-gable, wood-frame Butler building used as a vehicle shed clad in metal siding and resting on a concrete-block foundation (Plates 20 and 21). The roof is covered in corrugated metal. No windows are visible on the vehicle shed. The façade and rear (west) elevation are open.



Plate 15. View of Site 046-5431, Well 1, looking west.



Plate 16. View of Site 046-5431, Well 1, looking northwest.



Plate 17. Detail view of Site 046-5431, Well 1, interior.



Plate 18. View of Site 046-5431, Well 2, looking north.



Plate 19. Detail view of Site 046-5431, Well 2, interior.



Plate 20. View of Site 046-5431, Vehicle shed 1 and 2, Well house, and Silo 9, looking north.



Plate 21. View of Site 046-5431, Vehicle shed 1, looking northwest.

Vehicle Shed 2

To the west of the house, there is a circa 1900, one-story, four-bay, side-gable, wood-frame vehicle shed clad in painted-white wood siding and resting on a raised concrete-block foundation (Plates 22 – 25). The roof is covered in standing-seam metal with exposed rafter tails. No windows are visible on the façade; sash, double-hung, 1/1, wood-frame windows are typical on the side (south) elevation. The entrance on the façade is a double-leaf, sliding, vertical wood plank door. There are also three double-leaf openings. The northernmost opening has a single-leaf, wood-frame screen door.

A one-story, one-bay, metal-frame animal shelter is attached to the side (north) elevation resting on a poured-concrete slab-on-grade foundation (see Plate 23). The shelter is enclosed in metal chain-link, and the top is open. The entrance on the addition is a single-leaf, metal-frame chain link door.

Vehicle Shed 3

To the west of the house, there is a circa 1950, one-story, five-bay, side-gable, wood-frame vehicle shed clad in metal siding and resting on a concrete-block foundation (Plates 26, 27, and 28). The roof is covered in standing-seam metal. No windows are visible on the vehicle shed. The façade and rear (south) elevation are open.



Plate 22. View of Site 046-5431, Vehicle shed 1 and 2, Well house, and Barn, looking west.



Plate 23. View of Site 046-5431, Vehicle shed 1 and 2, Garage, and Silo 1, 2, 8, and 9, looking southwest.



Plate 24. View of Site 046-5431, Vehicle shed 1 and 2, Well house, and Silo 8 and 9, looking northwest.



Plate 25. View of Site 046-5431, Vehicle shed 2, Well house, and Silo 9, looking east.



Plate 26. View of Site 046-5431, Vehicle shed 3, looking south.



Plate 27. View of Site 046-5431, Vehicle shed 3, looking southeast.



Plate 28. View of Site 046-5431, Vehicle shed 3, looking north.

There is a one-story, one-bay, shed roof, wood-frame addition attached to the side (east) elevation clad in corrugated metal siding and resting on a concrete-block pier foundation (Plate 29). The roof is covered in standing-seam metal. No windows are visible on the addition. The north and south elevations are open.



Plate 29. View of Site 046-5431, Vehicle shed 3, looking south.

There is a one-story, one-bay, shed roof, wood-frame addition attached to the side (west) elevation clad in corrugated metal siding and resting on a wood pier foundation (Plate 30). The addition is starting to collapse. The roof is covered in corrugated metal. No windows are visible on the addition. The entrance on the addition is a single-leaf opening.



Plate 30. View of Site 046-5431, Vehicle shed 3 and Silo 7, 8, and 9, looking east.

Vehicle Shed 4

To the west of the house, there is a circa 1950, one-story, one-bay, shallow-pitched front-gable, wood-frame vehicle shed clad in corrugated metal siding and resting on a concrete-block foundation (Plates 31, 32, and 33). The roof is covered in standing-seam metal. No windows are visible on the vehicle shed. The entrance on the façade is a double-leaf, sliding, corrugated metal door. A double-leaf, sliding, corrugated metal door is on the side (south) elevation.

Vehicle Shed 5

To the west of the house, there is a circa 1950, one-story, six-bay, side-gable, wood-frame vehicle shed clad in corrugated metal siding and resting on a concrete-block foundation (Plates 34 and 35). The roof is covered in corrugated metal. No windows are visible on the vehicle shed. The façade is open.



Plate 31. View of Site 046-5431, Vehicle shed 4 and 5, looking west.



Plate 32. View of Site 046-5431, Vehicle shed 4, looking south.



Plate 33. View of Site 046-5431, Vehicle shed 4, looking northeast.



Plate 34. View of Site 046-5431, Vehicle shed 5, looking west.



Plate 35. View of Site 046-5431, Vehicle shed 5, looking northwest.

There is a one-story, one-bay, shed roof, wood-frame addition attached to the rear (west) elevation clad in corrugated metal siding and resting on a concrete-block pier foundation (Plates 36 and 37). The siding does not extend to the roofline, leaving an opening around the top of the addition. The roof is covered in corrugated metal with overhanging eves and exposed rafter tails. No windows are visible on the addition. The north and south elevations are open.



Plate 36. View of Site 046-5431, Vehicle shed 4 and 5, looking north.



Plate 37. View of Site 046-5431, Vehicle shed 5, looking south.

Silo 1

To the southwest of the house, there is a circa 1950, one-story, round, concrete-block silo resting on a concrete-block foundation (Plates 38, 39, and 40). The top of the silo is open. No windows are visible on the silo. No entrance is visible on the silo. There is a metal ladder attached to the west side.



Plate 38. View of Site 046-5431, Silo 1, 2, 3, 4, and 5, looking southeast.

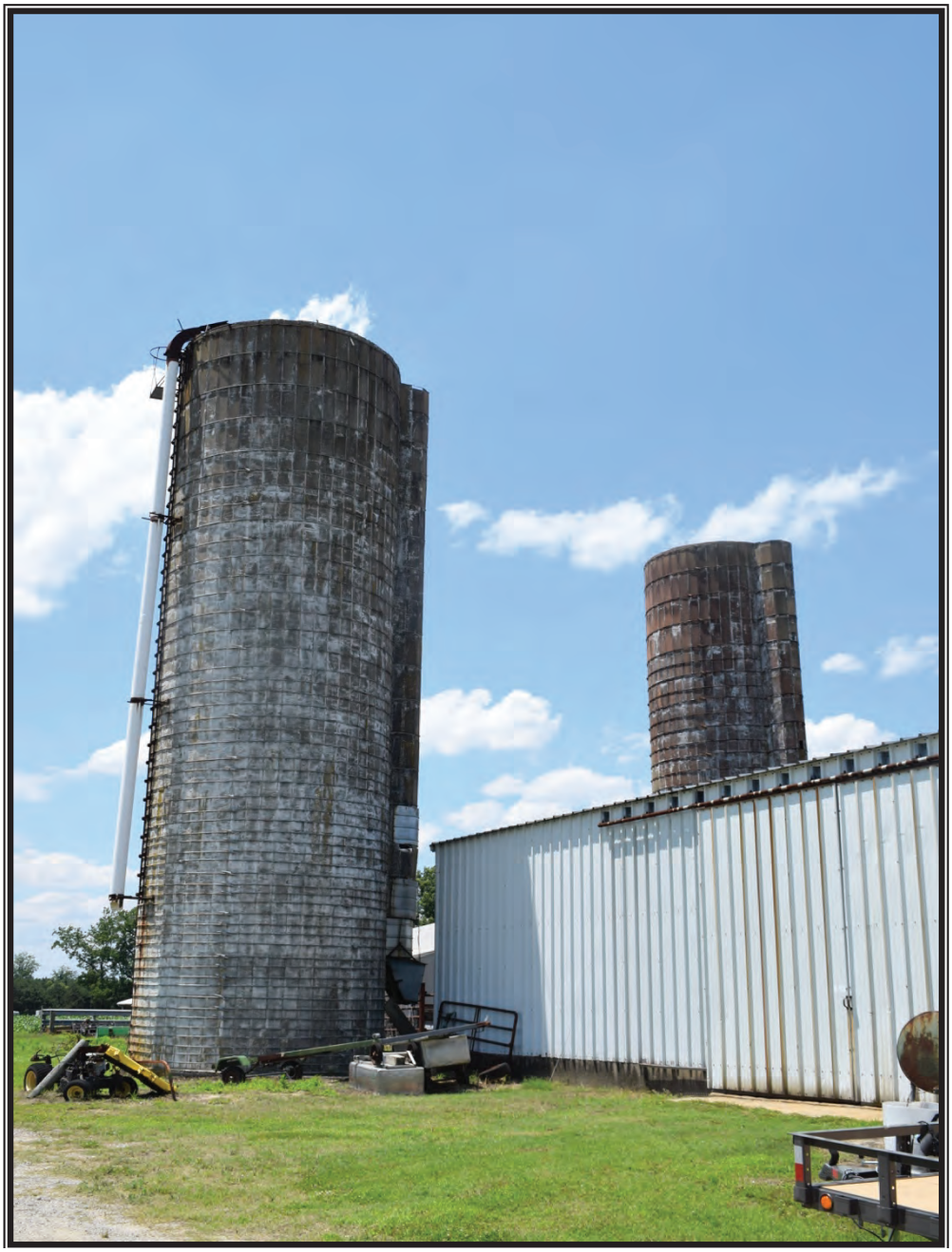


Plate 39. View of Site 046-5431, Silo 1 and 2 and Garage, looking west.



Plate 40. View of Site 046-5431, Silo 1 and 2 Garage, looking east.

Silo 2

To the southwest of the house, there is a circa 1950, one-story, round, concrete-block silo resting on a concrete-block foundation (see Plates 38, 39, and 40). Various metal patches are visible on the silo. The top of the silo is open. No windows are visible on the silo. No entrance is visible on the silo. There is a metal chute attached to the south side.

Silo 3

To the southwest of the house, there is a circa 1950, one-story, round, pyramidal roof, wood-frame silo clad in corrugated metal siding and resting on a poured-concrete slab-on-grade foundation (Plates 41, 42, and 43). The roof is covered in standing-seam metal. No windows are visible on the silo. The entrance on the silo is a single-leaf, wood door, and there is a metal ladder on the south side.

Silo 4

To the southwest of the house, there is a circa 1950, one-story, round, pyramidal roof, wood-frame silo clad in corrugated metal siding and resting on a poured-concrete slab-on-grade foundation (see Plates 41, 42, and 43). The roof is covered in standing-seam metal. No windows are visible on the silo. The entrance on the silo is a single-leaf, wood door, and there is a metal ladder attached to the south side.



Plate 41. View of Site 046-5431, Silo 3, 4, and 5 and Barn, looking west.


Plate 42. View of Site 046-5431, Silo 3 and 4 and Barn, looking northeast.



Plate 43. View of Site 046-5431, Silo 3, 4, and 5, looking north.

Silo 5

To the southwest of the house, there is a circa 1950, one-story, round, pyramidal roof, wood-frame silo clad in corrugated metal siding and resting on a poured-concrete slab-on-grade foundation (Plate 44). The roof is covered in standing-seam metal. No windows are visible on the silo. The entrance to the silo is a single-leaf, wood door. Metal electrical boxes under a wood hood are visible on the east side.



Plate 44. View of Site 046-5431, Silo 5, Vehicle shed 4, and Barn, looking west.

Silo 6

To the west of the house, there is a circa 1950, one-story, round, pyramidal roof, wood-frame silo clad in corrugated metal siding and resting on a poured-concrete slab-on-grade foundation (Plate 45). The roof is covered in standing-seam metal. No windows are visible on the silo. No entrance is visible on the silo. A metal ladder is attached to the north side, and metal electrical boxes are visible on the north side with a metal vent below.



Plate 45. View of Site 046-5431, Silo 6 and Barn, looking north.

There is a one-story, one-bay, shed roof, wood-frame lean-to attached to the west side (see Plate 45). The roof is covered in corrugated metal supported by wood posts. The lean-to is open on three sides. There is a large metal fan and metal boxes resting on a poured-concrete pad in the lean-to. The boxes are attached to the silo by a metal vent.

Silo 7

To the west of the house, there is a circa 1950, one-story, round, pyramidal roof, wood-frame silo clad in corrugated metal siding and resting on a poured-concrete slab-on-grade foundation (Plate 46). The roof is covered in standing-seam metal. No windows are visible on the silo. No entrance is visible on the silo. There is a metal ladder attached to the south side.



Plate 46. View of Site 046-5431, Silo 4, 7, and 8, looking north.

There is a one-story, one-bay, flat roof, wood-frame lean-to attached to the northwest side (Plate 47). The roof is covered in corrugated metal supported by wood posts. The lean-to is open on three sides. There is a large metal fan resting on a poured-concrete pad in the lean-to. The boxes are attached to the silo by a metal vent.



Plate 47. View of Site 046-5431, Silo 7 and 8, looking east.

Silo 8
To the west of the house, there is a circa 1950, one-story, round, pyramidal roof, wood-frame silo clad in corrugated metal siding and resting on a poured-concrete slab-on-grade foundation (see Plates 46 and 47). The roof is covered in standing-seam metal. No windows are visible on the silo. No entrance is visible on the silo.

Silo 9
To the west of the house, there is a circa 1950, one-story, round, pyramidal roof, wood-frame silo clad in corrugated metal siding and resting on a poured-concrete slab-on-grade foundation (see Plates 24 and 25). The roof is covered in standing-seam metal. No windows are visible on the silo. No entrance is visible on the silo. There is a metal ladder attached to the south side.

Silo 10
To the west of the houses, there is a circa 1980, one-story, round, flat roof, metal-frame silo clad in metal sheeting and resting on a poured-concrete slab-on-grade foundation (Plates 48). The roof is covered in metal sheets. No windows are visible on the silo. The entrance to the silo is a single-leaf, metal door. There is a metal ladder attached to the south side.



Plate 48. View of Site 046-5431, Silo 10, looking northwest.

Silo 11
To the west of the house, there is a circa 1980, one-story, round, pyramidal roof, metal-frame silo clad in metal siding with a conical base resting on metal supports (Plates 49 - 52). The roof is covered in standing-seam metal. No windows are visible on the silo. No entrance is visible on the silo. There is a metal ladder attached to the north side.



Plate 49. View of Site 046-5431, Silo 11 and 12, and Shed 3, looking northwest.



Plate 50. View of Site 046-5431, Silo 11, 12, and 17, and Shed 3, looking northwest.



Plate 51. View of Site 046-5431, Silo 11, 12, and 17, looking southwest.



Plate 52. View of Site 046-5431, Silo 12 and 17, looking west.

Silo 12

To the west of the house, there is a circa 1980, one-story, round, pyramidal roof, metal-frame silo clad in metal siding with a conical base resting on metal supports (see Plates 49, 50, and 51). The roof is covered in standing-seam metal. No windows are visible on the silo. No entrance is visible on the silo. There is a metal ladder attached to the south side.

Silo 13

To the west of the house, there is a circa 1980, one-story, round, shallow-pitched pyramidal roof, metal-frame silo clad in metal sheeting and resting on a poured-concrete slab-on-grade foundation (Plates 53 and 54). The roof is covered in metal sheeting. No windows are visible on the silo. No entrance is visible on the silo. There is an open, round vent hole at the base on the north side.



Plate 53. View of Site 046-5431, Silo 13, looking east.



Plate 54. View of Site 046-5431, Silo 13, looking northeast.

Silo 14

To the west of the house, there is a circa 1980, one-story, round, pyramidal roof, metal-frame silo clad in metal siding with a conical base resting on metal supports on a raised, poured-concrete slab-on-grade foundation (Plates 55 and 56). The roof is covered in standing-seam metal. No windows are visible on the silo. No entrance is visible on the silo. There is a metal ladder attached to the west side.



Plate 55. View of Site 046-5431, Silo 14, 15, and 16, looking north.



Plate 56. View of Site 046-5431, Silo 14, 15, and 16, looking northeast.

Silo 15
To the west of the house, there is a circa 1980, one-story, round, pyramidal roof, metal-frame silo clad in metal siding with a conical base resting on metal supports on a raised, poured-concrete slab-on-grade foundation (see Plates 55 and 56). The roof is covered in standing-seam metal. No windows are visible on the silo. No entrance is visible on the silo. There is a metal ladder attached to the west side.

Silo 16
To the west of the house, there is a circa 1980, one-story, round, pyramidal roof, metal-frame silo clad in metal siding with a conical base resting on metal supports on a raised, poured-concrete slab-on-grade foundation (see Plates 55 and 56). The roof is covered in standing-seam metal. No windows are visible on the silo. No entrance is visible on the silo. There is a metal ladder attached to the west side.

Silo 17
To the west of the houses, there is a circa 1980, one-story, round, flat roof, metal-frame silo clad in metal sheeting and resting on a poured-concrete slab-on-grade foundation (Plate 57). The roof is covered in metal sheets. No windows are visible on the silo. The entrance to the silo is a single-leaf, metal door. There is a metal ladder attached to the south side.



Plate 57. View of Site 046-5431, Silo 17, looking southwest.

Silo 18 (Within the Project Area Boundaries)
To the southwest of the house, there is a circa 1980, one-story, round, shallow-pitched pyramidal roof, metal-frame silo clad in corrugated metal siding with a conical base resting on metal supports on a poured-concrete slab-on-grade foundation (Plates 58, 59, and 60). The roof is covered in corrugated metal. No windows are visible on the silo. No entrance is visible on the silo. There is a metal ladder attached to the north side.



Plate 58. View of Site 046-5431, Silo 18, 19, 20, and 21 and Pig pen 1 and 2, looking northeast.



Plate 59. View of Site 046-5431, Silo 18, 19, 20, and 21, and Pig pen 1 and 2, looking north.



Plate 60. View of Site 046-5431, Silo 18 and Pig pen 1, looking west.

Silo 19 (Within the Project Area Boundaries)
To the southwest of the house, there is a circa 1980, one-story, round, shallow-pitched pyramidal roof, metal-frame silo clad in corrugated metal siding with a conical base resting on metal supports on a poured-concrete slab-on-grade foundation (see Plates 58 and 59). The roof is covered in corrugated metal. No windows are visible on the silo. No entrance is visible on the silo. There is a metal ladder attached to the north side.

Silo 20 (Within the Project Area Boundaries)
To the southwest of the house, there is a circa 1980, one-story, round, shallow-pitched pyramidal roof, metal-frame silo clad in corrugated metal siding with a conical base resting on metal supports on a poured-concrete slab-on-grade foundation (Plate 61). The roof is covered in corrugated metal. No windows are visible on the silo. No entrance is visible on the silo. There is a metal ladder attached to the north side.



Plate 61. View of Site 046-5431, Silo 20 and Pig pen 1, looking northwest.

Silo 21 (Within the Project Area Boundaries)
To the southwest of the house, there is a circa 1980, one-story, round, shallow-pitched pyramidal roof, metal-frame silo clad in corrugated metal siding with a conical base resting on metal supports on a poured-concrete slab-on-grade foundation (Plate 62). The roof is covered in corrugated metal. No windows are visible on the silo. No entrance is visible on the silo. There is a metal ladder attached to the north side.



Plate 62. View of Site 046-5431, Silo 21 and Pig pen 1 and 2 looking northwest.

Silo 22 (Within the Project Area Boundaries)
To the west of the house, there is a circa 1980, one-story, round, pyramidal roof, metal-frame silo clad in metal siding with a conical base resting on metal supports (Plates 63 and 64). The silo is lying on its side at the edge of a wood line. The roof is covered in standing-seam metal. No windows are visible on the silo. No entrance is visible on the silo.



Plate 63. View of Site 046-5431, Silo 22, looking north.



Plate 64. View of Site 046-5431, Silo 22, looking southwest.

Barn

To the southwest of the house, there is a circa 1950, one-story, two-bay, front-gable, wood-frame barn clad in metal siding and resting on a concrete-block foundation (Plates 65, 66, and 67). The roof is covered in corrugated metal. No windows are visible on the barn. The entrance on the façade is a double-leaf, sliding, corrugated metal door. There is also a smaller, double-leaf, sliding, corrugated metal door and a double-leaf, sliding, corrugated metal door on the rear (west) elevation. The side (north) elevation is open.



Plate 65. View of Site 046-5431, Barn and Silo 2, 3, 4, and 5, looking northeast.



Plate 66. View of Site 046-5431, Barn, Garage, and Silo 1, 2, 3, and 4, looking east.



Plate 67. View of Site 046-5431, Barn and Silo 3 and 4, looking south.

Smokehouse

To the north of the house, there is a circa 1857, one-story, one-bay, steeply-pitched side-gable, wood-frame smokehouse clad in painted-white wood siding and resting on a brick pier foundation (Plates 68, 69, and 70). The siding is deteriorating and has been replaced with painted-white plywood on the side (west) elevation. The roof is covered in wood shakes with exposed rafter tails. No windows are visible on the smokehouse. The entrance on the façade is a single-leaf, vertical wood plank door.

Shed 1

To the west of the house, there is a circa 1980, one-story, one-bay, front-gable, wood-frame shed clad in plywood siding and screening and resting on a concrete-block pier foundation (Plate 71). A portion of the shed is covered with a plastic tarp. The roof is covered in asphalt shingles. No windows are visible on the shed. The entrance on the façade is a single-leaf, wood-panel door.

Shed 2

To the west of the house, there is a circa 1980, one-story, one-bay, shed roof, wood-frame shed clad in plywood siding and screening and resting on a concrete-block pier foundation (see Plate 71). The lower half of the shed is covered with a plastic tarp. The roof is covered in corrugated metal. No windows are visible on the shed. The entrance on the façade is a double-leaf, wood-panel door.



Plate 68. View of Site 046-5431, Smokehouse, looking southwest.



Plate 69. View of Site 046-5431, Smokehouse, looking south.



Plate 70. View of Smokehouse, looking southeast.



Plate 71. View of Site 046-5431, Shed 1 and 2, Animal shelter, and Smokehouse, looking north.

Shed 3

To the west of the house, there is a circa 1950, one-story, one-bay, front-gable, wood-frame shed clad in corrugated metal siding and resting on a concrete-block foundation (Plates 72 and 73). The roof is covered in corrugated metal with exposed rafter tails. No windows are visible on the shed. The entrance on the façade is a double-leaf opening. There is a single-leaf opening on the rear (west) elevation.



Plate 72. View of Site 046-5431, Shed 3 and Silo 17, looking south.



Plate 73. View of Site 046-5431, Shed 3 and Silo 17, looking southwest.

Shed 4

To the west of the house, there is a circa 1950, one-story, three-bay shed ruin (Plate 74). Only the concrete-block walls remain intact. There are portions of the poured-concrete slab-on-grade foundation visible through the grass.



Plate 74. View of Site 046-5431, Shed 4, looking north.

Shed 5 (Within the Project Area Boundaries)
To the southwest of the house, there is a circa 1950, one-story, two-bay, shed roof, wood-frame shed clad in corrugated metal siding and resting on a poured-concrete slab-on-grade foundation (Plate 75). The roof is covered in corrugated metal and is starting to deteriorate. A portion of the roof is missing. No windows are visible on the shed. The façade is open.



Plate 75. View of Site 046-5431, Shed 5 and Storage tank, looking north.

Shed 6 (Within the Project Area Boundaries)
To the southwest of the house, there is a circa 1950, one-story, one-bay, front-gable, painted-white concrete-block shed resting on a concrete-block foundation (Plates 76 and 77). The roof is covered in asphalt shingles with a boxed cornice. No windows are visible on the shed. The entrance on the façade is a single-leaf, wood-panel door with lights.

Animal Shelter
To the north of the house, there is a circa 1980, one-story, six-bay, flat roof, wood-frame animal shelter clad in screening material and resting on the ground (Plate 78). The roof is screened with fencing material. The entrance on the façade is a double-leaf, wood-frame screen door.



Plate 76. View of Site 046-5431, Shed 6, looking northeast.



Plate 77. View of Site 046-5431, Shed 6, looking northeast.



Plate 78. View of Site 046-5431, Animal shelter, Smokehouse, and Shed 1 and 2, looking south.

Well House

To the west of the house, there is a circa 1900, one-story, one-bay, pyramidal roof, painted-white concrete-block well house resting on a concrete-block foundation (Plate 79). The well house is deteriorating, and there are chips in the concrete blocks where a vehicle hit the wall. The roof is covered in asphalt shingles. No windows are visible on the well house. The entrance on the façade is a single-leaf, plywood door.



Plate 79. View of Site 046-5431, Well house, Vehicle shed 2, and Silo 17 and 18, looking northwest.

Garage

To the southwest of the house, there is a circa 1950, one-story, two-bay, shallow-pitched front-gable, wood-frame garage clad in metal siding and resting on a raised concrete-block foundation (Plates 80, 81, and 82). The roof is covered in corrugated metal. No windows are visible in the garage. The entrance on the façade is a roll-up metal garage door. There is also a single-leaf, wood door. There is a double-leaf, corrugated metal sliding door on the side (south) elevation.

There is a one-story, three-bay, side-gable, concrete-block addition attached to the side (north) elevation resting on a concrete-block foundation (Plate 83). The roof is covered in standing-seam metal with overhanging eaves and a round metal vent in the center of the roof peak. Fixed, six-light, metal-frame windows are typical on the addition. Some of the windows have been boarded over with plywood. The entrance on the addition is a double-leaf opening.



Plate 80. View of Site 046-5431, Garage and Silo 1 and 2, looking west.



Plate 81. View of Site 046-5431, Garage and Silo 1 and 2, looking west.



Plate 82. View of Site 046-5431, Garage and Silo 1 and 2, looking northwest.



Plate 83. View of Site 046-5431, Garage, looking southeast.

Pig Pen 1 (Within the Project Area Boundaries)
To the southwest of the house, there is a circa 1950, one-story, three-bay, front-gable, wood-frame pig pen clad in painted-white plywood and resting on a concrete-block foundation (Plates 84, 85, and 86). This building may have been initially used as a chicken house but has since been converted into a pig pen. The roof is covered in corrugated metal with overhanging eaves. The window openings have been covered with canvas that is starting to deteriorate. The entrance on the facade is a recessed, single-leaf, wood-panel door. There is a single-leaf, wood-panel door and a double-leaf, wood-panel door on the rear (west) elevation. There are also large metal fans on the rear (west) elevation.

Pig Pen 2 (Within the Project Area Boundaries)
To the southwest of the house, there is a circa 1950, one-story, three-bay, front-gable, wood-frame pig pen clad in painted-white plywood and resting on a raised concrete-block foundation (Plates 87 - 92). This building may have been initially used as a chicken house but has since been converted into a pig pen. The roof is covered in corrugated metal. The window openings have been covered with canvas that is starting to deteriorate. The entrance on the facade is a single-leaf, wood-panel door. There is a single-leaf, wood-panel door and a double-leaf, wood-panel door on the rear (west) elevation. There are also large metal fans on the rear (west) elevation.



Plate 84. View of Site 046-5431, Pig pen 1 and 2, looking south.



Plate 85. View of Site 046-5431, Pig pen 1, looking northeast.



Plate 86. View of Site 046-5431, Pig pen 1, looking east.



Plate 87. View of Site 046-5431, Pig pen 1 and 2, and Silo 18 and 19, looking north.



Plate 88. View of Site 046-5431, Pig pen 2, looking northwest.



Plate 89. View of Site 046-5431, Pig pen 2 and Storage tank, looking northwest.



Plate 90. View of Site 046-5431, Pig pen 1 and 2, looking southeast.



Plate 91. View of Site 046-5431, Pig pen 1 and 2 and Storage tank, looking east.



Plate 92. View of Site 046-5431, Pig pen 2, looking east.

There is a one-story, one-bay, shed roof, wood-frame lean-to attached to the side (north) elevation clad in canvas that is starting to deteriorate and resting on a concrete-block foundation (see Plate 90). The roof is covered in corrugated metal. No windows are visible on the addition. There is a double-leaf door on the west elevation.

Storage Tank (Within the Project Area Boundaries)
To the southwest of the house, there is a circa 1980, one-story, round storage tank clad in metal panels and resting on a poured-concrete slab-on-grade foundation (Plate 93). The tank is open at the top. There is a metal ladder with a small square metal platform attached to the west side.

East Coast Emergency Vehicles Office Building (No VDHR number received)
On the west side of Benns Church Boulevard, there is a circa 1988 office building situated in the southeastern portion of the project area (Plate 94). Because this building was constructed circa 1988 and is less than 45 years old, Circa~ did not complete a formal survey of the building.



Plate 93. View of Site 046-5431, Storage tank, looking northwest.



Plate 94. View of East Coast Emergency Vehicles office building, 17226 Commerce Lane, looking northwest.

Archaeological Survey

The 1919 USGS historical map illustrates two structures and portions of three roads within the project area (see Figure 18). The northern structure shown on the historic map appears to be in the vicinity of the hog pens. Site 44IW0318 is located in the vicinity of the southern structure shown on the map. Several roads are noted within the project area. One road is located along the southern edge of the project area, and another road is noted branching off and running northwest across the southwestern portion of the project area. Circa~ noticed that this road is still intact and used by the landowner west of the project area. Within the project area, traces of the roads have been erased by cultivation activities in the past. The third road runs north to south across the western edge of the project area and crosses west of the tank and pig pen locations. By 1952, the USGS map shows that the structures and the roads are gone, with only a small portion of one road running across the southwestern corner of the tract. By 1965, the initial development is no longer illustrated. However, the 1965 historical map shows two power lines running across the western portion of the project area. The historical maps illustrate that the project area was used as a plowed field since 1919.

An interview with the landowner discussed his willingness to give relic and metal-detecting hunters permission to search his land. His only request was that the hunters share the location and types of finds with him. The finds belong to the hunters, but he was curious where items were located. The project area field was pretty barren, with the metal-detector searches yielding a button and a few other uninteresting iron artifacts. The landowner indicated no structures on the property for as long as he lived there, roughly 73 years. In addition, he noted that he never saw any historical or Native American relics in that field but had noticed items in other fields closer to the water and spring located off and west of the project area. This patterning is also reflective of the areas frequented by the relic and metal detector hunters, who concentrated their search and collecting efforts on other portions of the farm that proved productive for Native American and historical artifacts. Circa~'s survey noted fragments of shotguns shells around the utility towers and skeet fragments located west of the towers. The landowner indicated that he held dove hunts and various target shoots on the property, where the shooters clustered around the towers and shot to the west, away from the structures and road. This account was reflected in the patterning of modern "artifacts" noted on the ground surface.

The project area is located on a landform that consists of a relatively-level broad rolling upland. The highest elevations on the site are located just to the south of the northeastern property line, and the landforms slope slightly to the south and west. The majority of the project tract is currently used for crops, with a fringe of trees along the western and southern property lines. In addition, several power line easements run roughly northwest to southeast and northeast to southwest across the project area. Figure 27 illustrates the area where the pedestrian survey was completed. Plates 95 - 99 illustrate the current conditions of the project area.



Figure 27. Map depicting the area where the pedestrian survey was completed. The yellow shading illustrates fields with 75% to 100% surface visibility, the blue illustrates portions of the project area where timbering and development occurred in the past, and the green shading illustrates wet areas.



Plate 95. View of Project Area, looking southwest.



Plate 96. View of Project Area, looking south.



Plate 97. View of the wet area within the Project Area's southwestern corner, looking southwest.



Plate 98. View of Project Area, looking east.



Plate 99. View of the power lines within the Project Area, looking north.

Isolated Finds

IF-SF1

One isolated find was recovered from the surface of the plowzone of an active agricultural field on the northwestern edge of the project area just to the south of a dirt road and hog pens. This find consisted of one oyster shell fragment. One shovel test was excavated in the find's location. The test was negative. One soil stratum was excavated before reaching sterile subsoil (Figure 28). Stratum A, 1.00 feet thick, consisted of a grayish-brown (10YR 6/4) sandy plowzone. Stratum B excavated 0.20 feet thick, consisted of a sterile yellowish-brown (2.5Y 5/6) sandy clay subsoil or C-horizon. No further work is recommended for this isolated find.

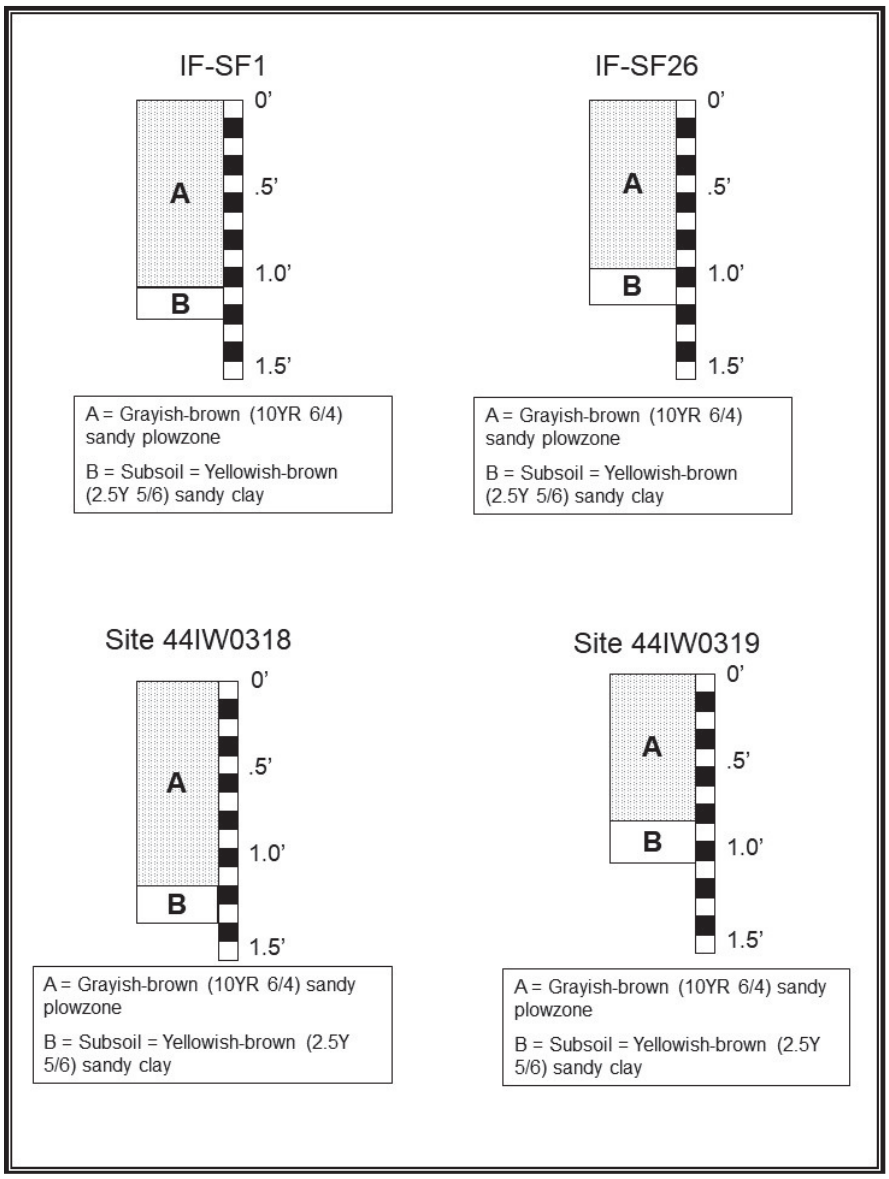


Figure 28. Representative shovel test profiles.

IF-SF3

One isolated find was recovered from the surface of the plowzone of an active agricultural field on the northwestern edge of the project area south of a dirt road and hog pens. This find consisted of three modern white plastic fragments. No further work is recommended for this isolated find.

IF-SF4

One isolated find was recovered from the surface of the plowzone of an active agricultural field on the western edge of the project area south and east of a dirt road. This find consisted of one brass and plastic shotgun shell fragment. No further work is recommended for this isolated find.

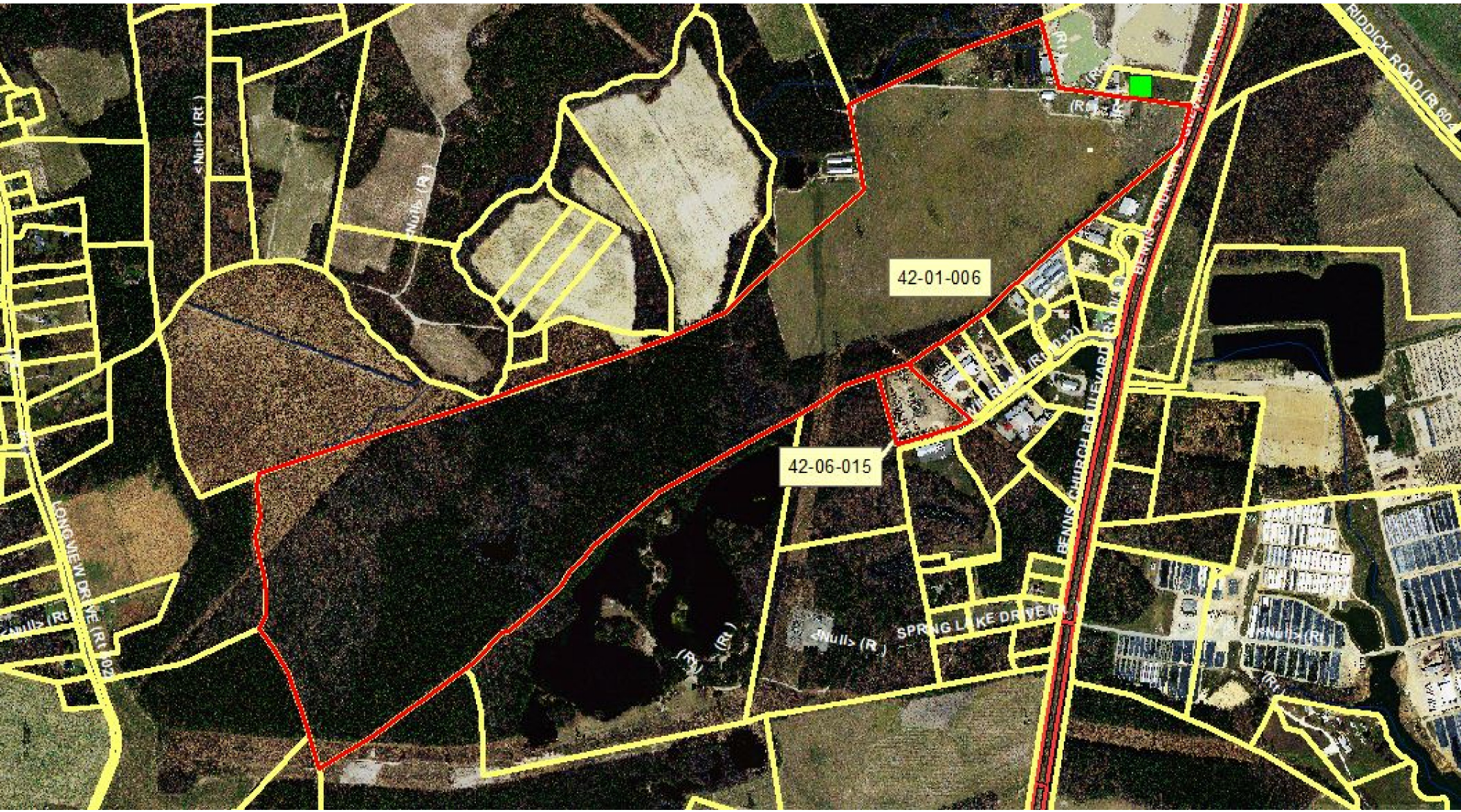
IF-SF5
One isolated find was recovered from the surface of the plowzone of an active agricultural field on the southwestern edge of the project east of a dirt road. This find consisted of two modern white plastic pipe fragments. No further work is recommended for this isolated find.

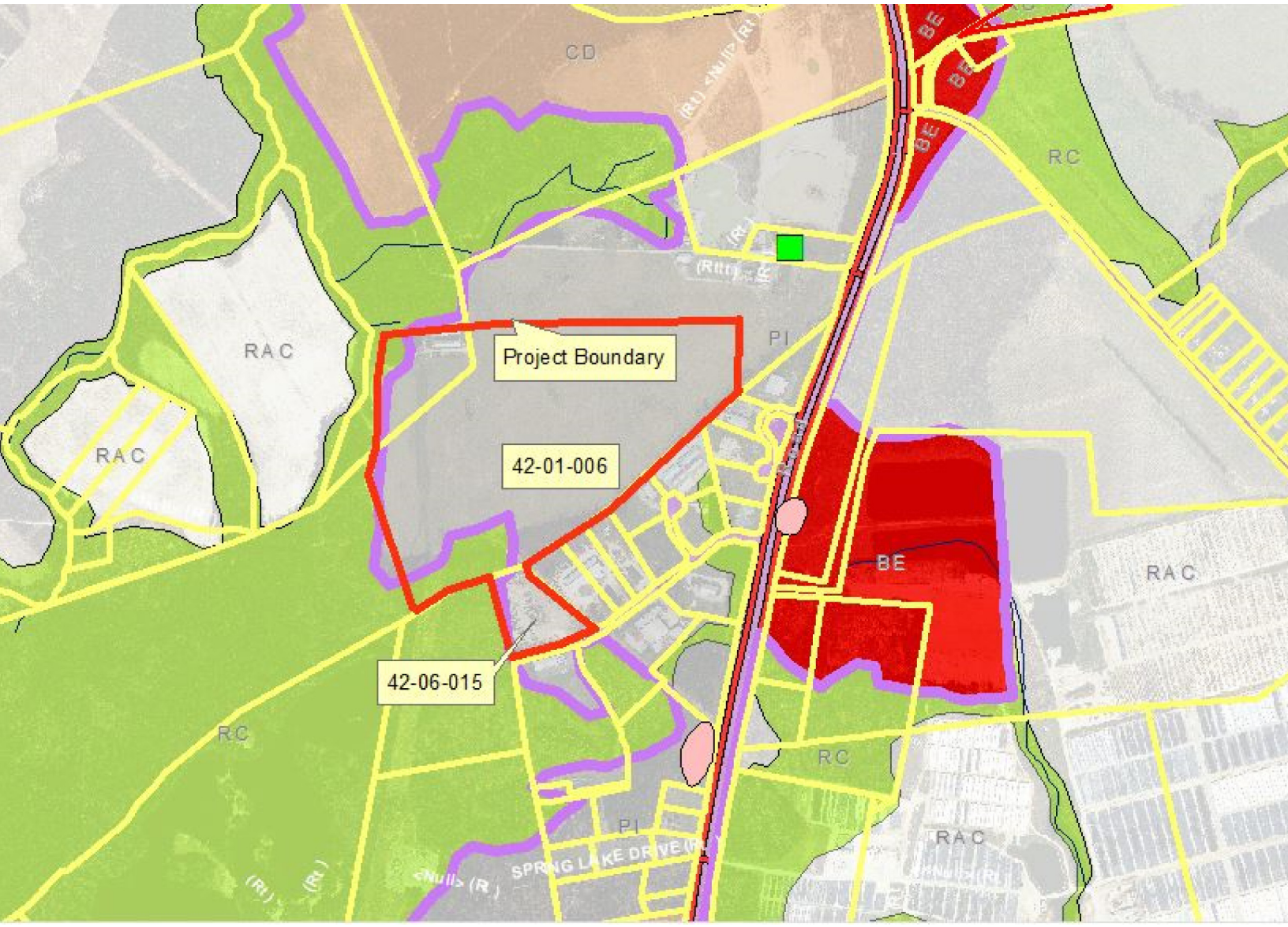
IF-SF6
One isolated find was recovered from the surface of the plowzone of an active agricultural field on the southwestern edge of the project area east of a dirt road. This find consisted of one oyster shell fragment. One shovel test was excavated in the find's location. The test was negative. One soil stratum was excavated before reaching sterile subsoil (see Figure 28). Stratum A, 1.10 feet thick, consisted of a grayish-brown (10YR 6/4) sandy plowzone. Stratum B excavated 0.20 feet thick, consisted of a sterile yellowish-brown (2.5Y 5/6) sandy clay subsoil or C-horizon. No further work is recommended for this isolated find.

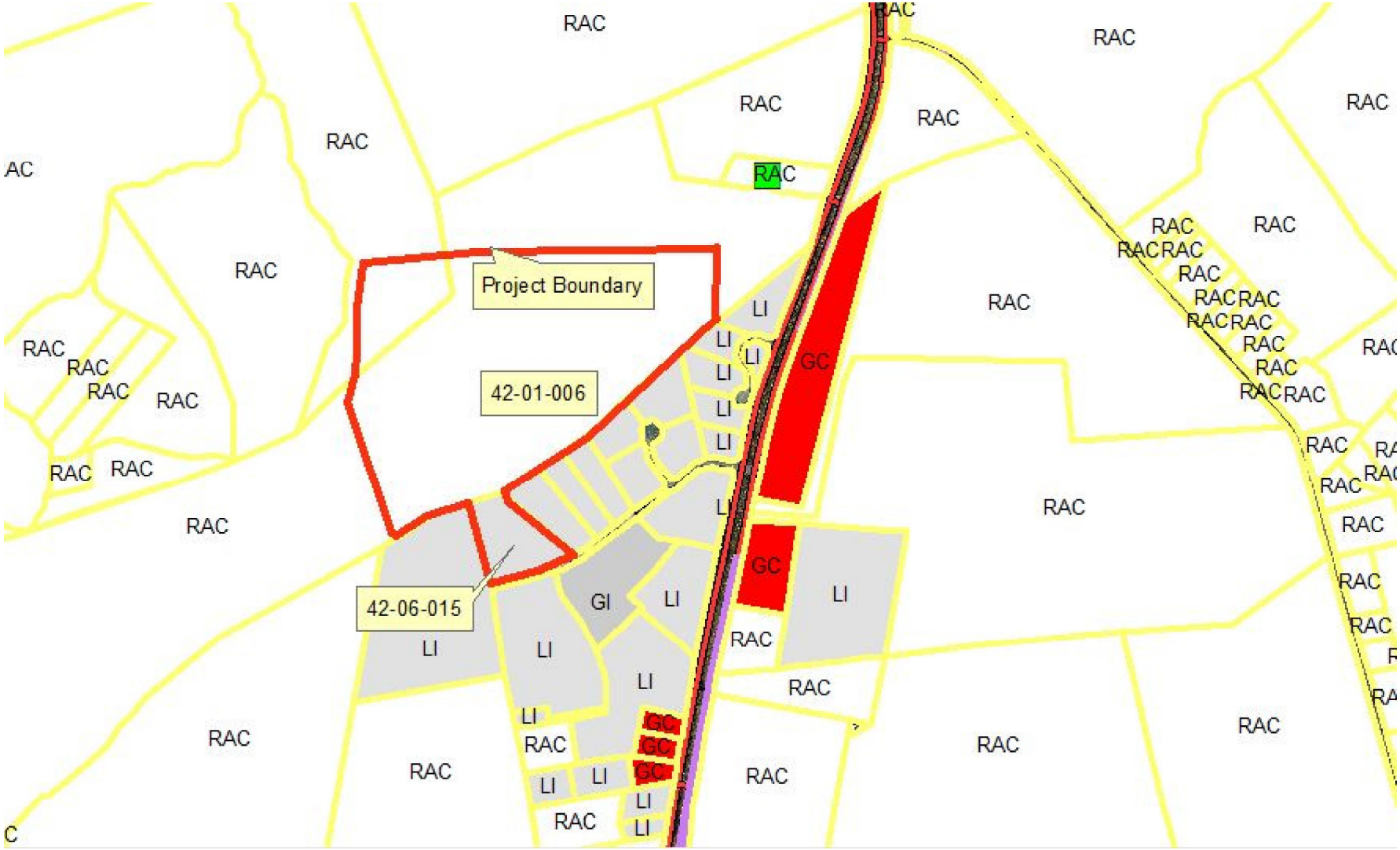
IF-SF7
One isolated find was recovered from the surface of the plowzone of an active agricultural field on the southwestern edge of the project area east of a dirt road. This find consisted of one quartzite fire-cracked rock. One shovel test was excavated in the find's location. The test was negative. One soil stratum was excavated before reaching sterile subsoil (see Figure 28). Stratum A, 1.20 feet thick, consisted of a grayish-brown (10YR 6/4) sandy plowzone. Stratum B excavated 0.20 feet thick, consisted of a sterile yellowish-brown (2.5Y 5/6) sandy clay subsoil or C-horizon. No further work is recommended for this isolated find.

IF-SF8
One isolated find was recovered from the surface of the plowzone of an active agricultural field on the southwestern edge of the project area east and west of two utility easements. This find consisted of one quartzite fire-cracked rock and one quartzite primary flake. Nine shovel tests were excavated in the find's location. The tests were negative. One soil stratum was excavated before reaching sterile subsoil (see Figure 28). Stratum A, approximately 0.90 to 1.20 feet thick, consisted of a grayish-brown (10YR 6/4) sandy plowzone. Stratum B excavated 0.20 feet thick, consisted of a sterile yellowish-brown (2.5Y 5/6) sandy clay subsoil or C-horizon. No further work is recommended for this isolated find.

IF-SF9
One isolated find was recovered from the surface of the plowzone of an active agricultural field on the southern edge of the project area east of a power line easement. This find consisted of one reddish-brown brick fragment. One shovel test was excavated in the find's location. The test was negative. One soil stratum was excavated before reaching sterile subsoil (see Figure 28). Stratum A, 1.10 feet thick, consisted of a grayish-brown (10YR 6/4) sandy plowzone. Stratum B excavated 0.20 feet thick, consisted of a sterile yellowish-brown (2.5Y 5/6) sandy clay subsoil or C-horizon. No further work is recommended for this isolated find.


42-01-006
42-06-015
RIDDICK ROAD (R 60
BENNS CHURCH BOULEVARD
SPRING LAKE DRIVE
LONG MEW DRIVE


CD
RC
RAC
RAC
PI
Project Boundary
42-01-006
42-06-015
BE
RAC
RC
RC
PI
RAC
SPRING LAKE DRIVE


Project Boundary
42-01-006
42-06-015
RAC
LI
GC
GI

RESOLUTION NUMBER PC-22-14

ISLE OF WIGHT COUNTY PLANNING COMMISSION
A RESOLUTION TO PRESENT A REPORT AND RECOMMENDATION TO THE BOARD OF SUPERVISORS RELATING TO REZONING REQUEST ZA-04-21 TO CHANGE THE ZONING DISTRICT OF 5.07 ACRES ON PROPERTY WITH TAX MAP NUMBER 42-06-015 AND 69.73 ACRES ON PROPERTY WITH TAX MAP NUMBER 42-01-006 TO THE CONDITIONAL-LIMITED INDUSTRIAL ZONING DISTRICT

WHEREAS, Advanced Construction Development, LLC, applicant, and Locust Grove Partners, LP and H&B Railroad Company, Inc. property owners, have requested a conditional zoning for property with tax map number 42-06-015 and 42-01-006 to specifically allow the uses of auction establishment and scrap and salvage service only as set forth in the attached proffered conditions; and,

WHEREAS, the procedural requirements for the consideration of this request by the Planning Commission have been met.

NOW, THEREFORE, BE IT RESOLVED by the Planning Commission of Isle of Wight County, that:

Section 1. Findings.

A. The Isle of Wight County Planning Commission finds that the proposed rezoning is reasonable, and warranted due to a change in circumstances affecting the property, and has considered the following factors and finds that the proposed rezoning does not conflict with:

1. the existing use and character of property within the County;

2. the Comprehensive Plan;

3. the suitability of the property for various uses;

4. the trends of growth or change;

5. the current or future requirements of the community as to land for various purposes as determined by population and economic studies and other studies;

6. the transportation requirements of the community;

7. the requirements for airports, housing, schools, parks, playgrounds, recreation areas and other public services;

8. the conservation of natural resources;

9. the preservation of flood plains;

10. the preservation of agricultural and forestal land;

11. the conservation of properties and their values;

12. the encouragement of the most appropriate use of land throughout the County;

Section 2. Recommendation to Board of Supervisors.

The Planning Commission recommends to the Board of Supervisors that the request, ZA-4-21, be:

___ a. Granted as submitted, and that the Board of Supervisors adopt the proposed Ordinance without modification.

___b. Denied, and that Board of Supervisors do not adopt the proposed Ordinance.

___c. Granted with the modifications set forth on the attached listing of specific conditions, and that the Board of Supervisors adopt the proposed Ordinance with such modifications.

READ AND PASSED: _____

TESTE:

_____

Approved as to Form:

_____

Bobby Jones, County Attorney