2 THE CIRCLE I PO BOX 417
GEORGETOWN, DE 19947
(302) 855-7878 T
(302) 854-5079 F
sussexcountyde.gov

Sussex County
Planning & Zoning Commission

AGENDA

July 25, 2019

6:00 P.M

Call to Order

Approval of Agenda

Approval of Minutes - None.

Old Business

None

Public Hearings

2019-10 – Lands of Timmons – Ralph A. Timmons, Jr. HW
A standard subdivision to divide 161.68 acres +/- into 7 single-family lots to be located on certain parcels of land lying and being in Dagsboro Hundred, Sussex County. The property is lying on the north and south side of Nine Foot Rd. (Rt. 26), approximately 1073 ft. east of Hickory Hill Rd. Tax Parcels: 233-14.00-10.00 & 10.02. Zoning District. AR-1 (Agricultural Residential District).

C/Z 1885 - 36191 DWB, LLC HW
An Ordinance to amend the Comprehensive Zoning Map of Sussex County from an AR-1 Agricultural Residential District to a C-3 Heavy Commercial District for a certain parcel of land lying and being in Baltimore Hundred, Sussex county, containing 1.015 acres, more or less. The property is lying on the north side of Lighthouse Rd. (Rt. 54), approximately 850 ft. west of Zion Church Rd. 911 Address: 36191 Lighthouse Rd., Selbyville. Tax Parcel: 533-19.00-15.00.

2018-34 – Keastone Bay – Baywood, LLC and Sussex Realty Company BM
A Coastal Area/cluster subdivision to divide 310.97 acres +/- into 675 single-family lots to be located on certain parcels of land lying and being in Indian River Hundred, Sussex County. The property is located on the northwest and southeast sides of Green Rd., approximately 360 ft. northeast of Banks Rd. Tax Parcels: 234-17.00-170.00, 172.00, 173.00, 174.00, 234-18.00-68.00, 234-24.00-1.00 & 234-24.00-2.00. Zoning District. AR-1 (Agricultural Residential District).

Other Business

Sea Colony West BM
Revised Amenities Plan

Angola Beach & Estates BM
Revised Site Plan

****
Planning and Zoning Commission meetings can be monitored on the internet at www.sussexcountyde.gov.
****

In accordance with 29 Del. C. §10004(e)(2), this Agenda was posted on July 18, 2019, at 3:30 p.m., and at least seven (7) days in advance of the meeting.

This Agenda is subject to change to include the addition or deletion of items, including Executive Sessions, which arise at the time of the Meeting.

Agenda items listed may be considered out of sequence.

####

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sussexcountyde.gov

Sussex County
Planning & Zoning Commission

PLANNING AND ZONING AND COUNTY COUNCIL INFORMATION SHEET
Planning Commission Public Hearing Date: July 25, 2019

Application:	2018-34 Keastone Bay
Applicant:	Baywood, LLC. (Attention: Robert Tunnell) 34026 Annas Way, Suite 1 Long Neck, DE 19966
Owner:	Baywood, LLC. And Sussex Realty Company (Attention: Robert Tunnell) 34206 Annas Way, Suite 1 Long Neck, DE 19966
Site Location:	On the northwest and southeast sides of Green Road approximately 360 ft. northeast of Banks Road.
Zoning:	AR-1 (Agricultural Residential Cluster Zoning District)
Current Use:	Agricultural/Dwelling
Proposed Use:	675 Single-Family Dwellings/Lots
Comprehensive Land Use Plan Reference:	Environmentally Sensitive Development District Overlay Zone (ESDDOZ)
Councilmatic District:	Mr. Cole (District 4)
School District:	Indian River School District
Fire District:	Indian River Fire District (District 80)
Sewer:	Sussex County -Inland Bays Preservation Company, LLC
Water:	Long Neck Water Company
Site Area:	310.97 acres +/-
Tax Map ID:	234-17.00-170.00, 234-17.00-172.00, 234-17.00-173.00, 234-17.00-174.00, 234-18.00-68.00, 234-24.00-1.00 & 234-24.00-2.00

Sussex County

February 12, 2019

1:9,028

polygonLayer
Override 1

polygonLayer
Override 1

Tax Parcels

Streets

County Boundaries

Major Rivers

Streams

Streams

Lakes, Ponds, Bays

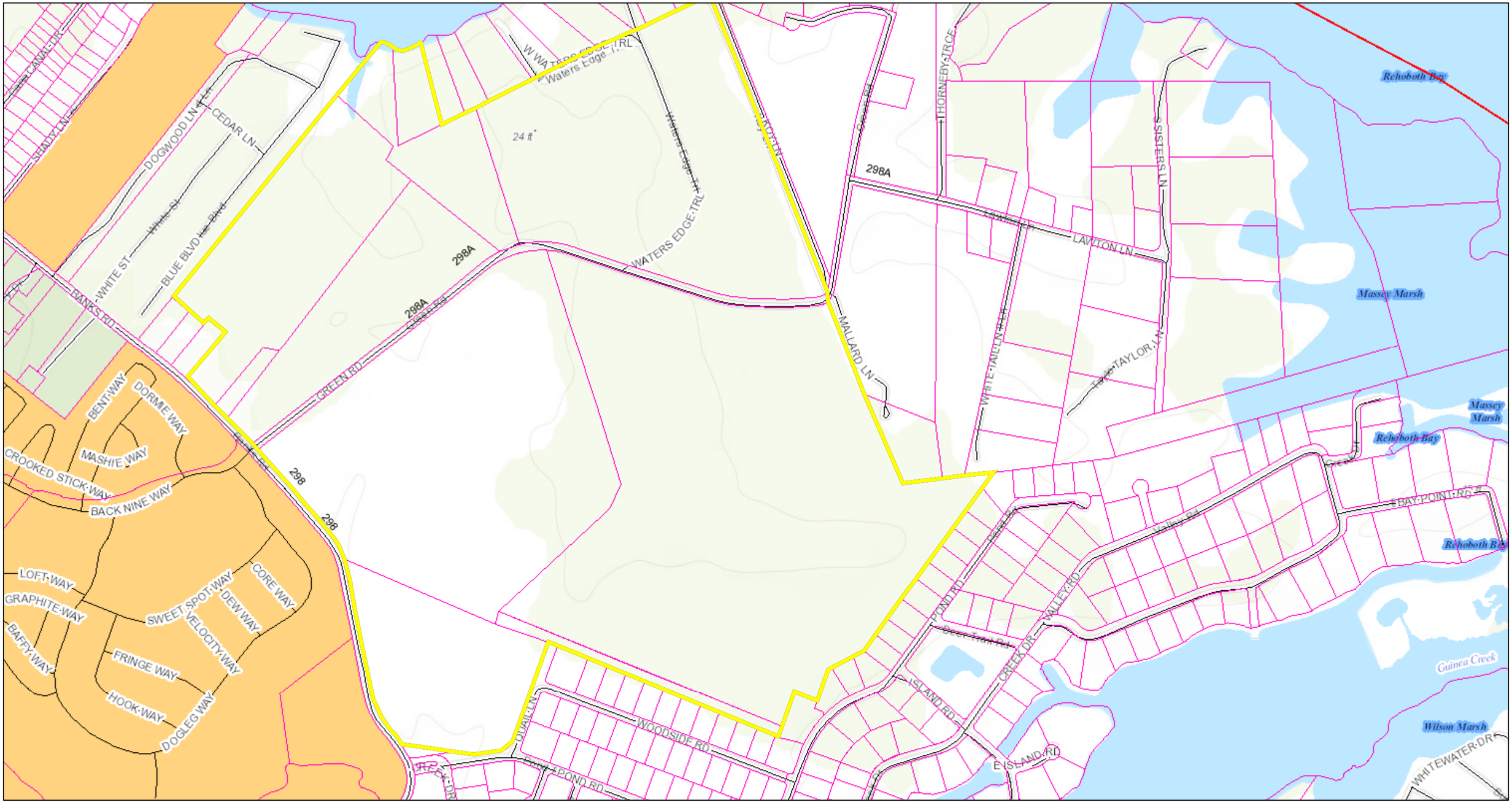
Geographic Names

0 0.1 0.2 0.4 mi

0 0.175 0.35 0.7 km

Sussex County
Sussex County Government
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User

Sussex County



February 12, 2019

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polygonLayer
- Override 1

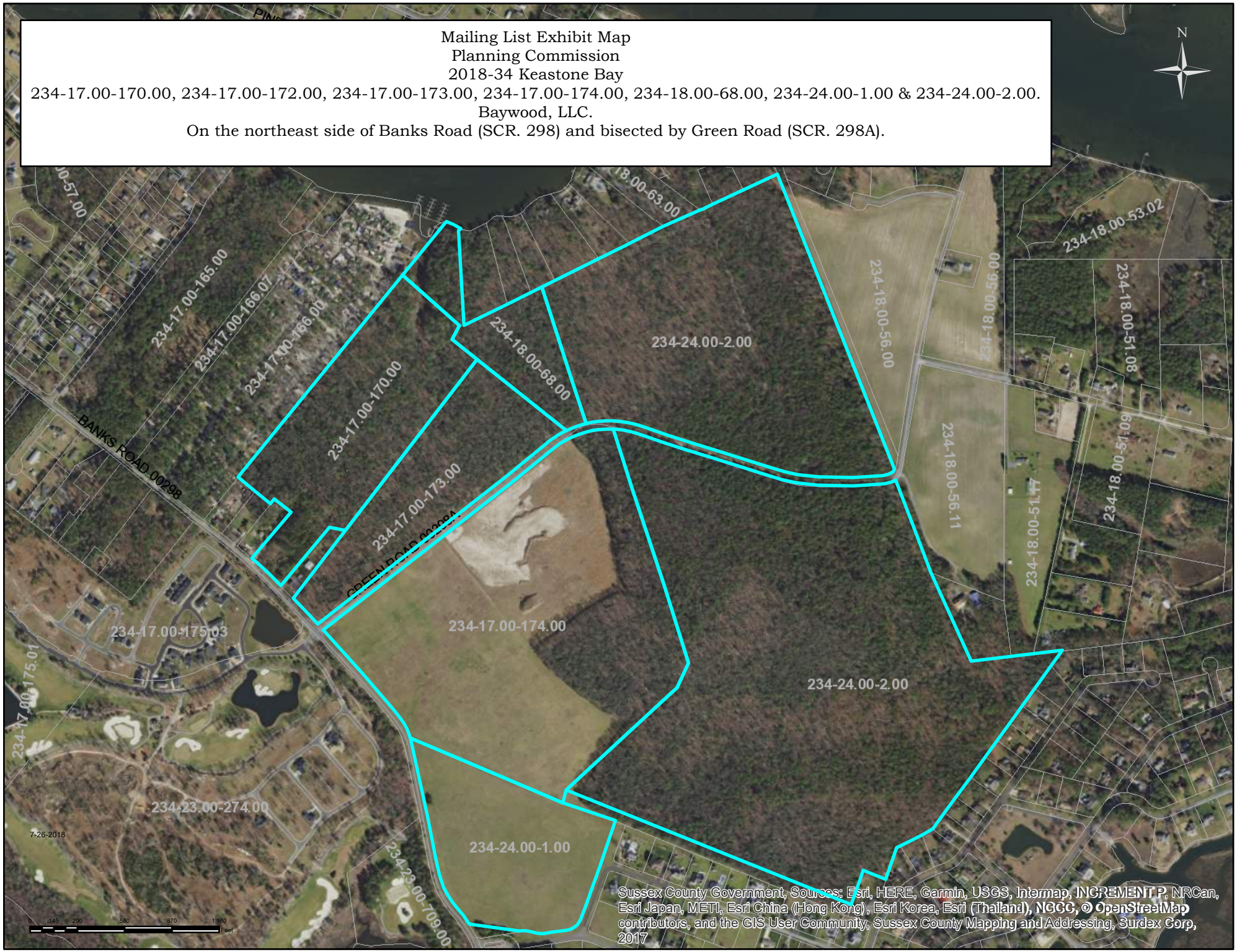
polygonLayer
- Override 1
- Tax Parcels
- Streets

Zoning
- Agricultural Residential - AR-1
- Agricultural Residential - AR-2
- Medium Residential - MR
- General Residential - GR
- High Density Residential - HR-1
- High Density Residential - HR-2
- Vacation, Retire, Resident - VRP
- Neighborhood Business - B-1
- General Commercial - C-1
- Commercial Residential - CR-1
- Marine - M
- Limited Industrial - LI-1
- Limited Industrial - LI-2
- Heavy Industrial - HI-1
- Fire Districts
- County Boundaries
- Young Farmers Loan

Forest Land Preservation
- Forestland Preservation Area
- Forestland Preservation Easement

Ag Preservation Districts
- Agricultural Easement
- Agricultural District
- Agricultural Expansion
- Major Rivers

Streams
- Streams
- Lakes, Ponds, Bays
- Geographic Names


Mailing List Exhibit Map
Planning Commission
2018-34 Keastone Bay
234-17.00-170.00, 234-17.00-172.00, 234-17.00-173.00, 234-17.00-174.00, 234-18.00-68.00, 234-24.00-1.00 & 234-24.00-2.00.
Baywood, LLC.
On the northeast side of Banks Road (SCR. 298) and bisected by Green Road (SCR. 298A).
N
234-17.00-165.00
234-17.00-166.07
234-17.00-166.00
234-17.00-170.00
234-18.00-68.00
234-24.00-2.00
234-18.00-56.00
234-18.00-53.02
234-18.00-51.08
234-18.00-56.11
234-18.00-51.17
234-18.00-60.15
BANKS ROAD 00298
234-17.00-173.00
234-17.00-174.00
234-17.00-175.03
234-17.00-175.01
234-23.00-274.00
234-24.00-1.00
234-23.00-709.00
7-26-2018
Sussex County Government, Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community, Sussex County Mapping and Addressing, Surdex Corp, 2017

FUQUA, WILLARD, STEVENS & SCHAB, P.A.

PAYNTER HOUSE ☒
26 THE CIRCLE OR P.O. BOX 250
GEORGETOWN, DELAWARE 19947
PHONE 302-856-7777
FAX 302-856-2128
onthecircle@fwsslaw.com

REHOBOTH OFFICE ☐
20245 BAY VISTA ROAD, UNIT 203
REHOBOTH BEACH, DE 19971
PHONE 302-227-7727
FAX 302-227-2226

JAMES A. FUQUA, JR.
WILLIAM SCHAB
TIMOTHY G. WILLARD
TASHA MARIE STEVENS
MELISSA S. LOFLAND
NORMAN C. BARNETT
www.fwsslaw.com

HART HOUSE ☐
9 CHESTNUT STREET
GEORGETOWN, DELAWARE 19947
PHONE 302-856-9024
FAX 302-856-6360
realestate@fwsslaw.com

LEWES REAL ESTATE OFFICE ☐
16698 KINGS HIGHWAY, SUITE B
LEWES, DELAWARE 19958
PHONE 302-645-6626
FAX 302-645-6620
realestate@fwsslaw.com

July 9, 2019

Janelle Cornwell, Director
Sussex County Planning & Zoning Dept.
2 The Circle
Georgetown, DE 19947

RECEIVED
JUL 12 2019
SUSSEX COUNTY
PLANNING & ZONING

Re: Subdivision # 2018-34
"Keastone Bay"

Dear Janelle:

Please include the attached minutes of the Planning and Zoning Commission's meeting of January 18, 2007 on Subdivision # 2005-72 as part of the record on Subdivision # 2018-34. That application involved the same Applicant and parcels of land.

Very truly yours,

FUQUA, WILLARD,
STEVENS & SCHAB, P.A.

By: James A. Fuqua, Jr.
James A. Fuqua, Jr.

JAF/jel

RECEIVED
JUL 11 2019
SUSSEX COUNTY
PLANNING & ZONING

** Please reply to the above referenced location*

Sussex County
Planning & Zoning Commission
P.O. Box 417
Georgetown, DE 19947
302-855-7878
302-854-5079 (Fax)

January 23, 2007

Robert W. Tunnell, Jr.
Baywood, L.L.C.
34026 Anna's Way, Suite 1
Long Neck, DE 19966

RE: Subdivision #2005 – 72
Bridlewood at Baywood
Tax Map 2-34-17.00-170.00, 173.00, 174.00
2-34-18.00-68.00 and 2-34-24.00-1.00 & 2.00

Dear Mr. Tunnell,

Please be advised that on January 18, 2005 the Sussex County Planning and Zoning Commission granted preliminary record plan approval, with conditions, for the above referenced cluster subdivision application. **Preliminary approval is valid for one year. Should a time extension be needed, please contact this office in writing prior to the expiration date.** The conditions of this preliminary approval are:

1. There shall be no more than 597 lots within the subdivision. This shall be phased with no more than 120 residential building permits issued within any calendar year.
2. The Applicant shall be responsible for the maintenance of streets, roads, buffers, storm water management facilities, open space, and other common areas.
3. The storm water management system shall meet or exceed the requirements of the State and County. Best Management Practices shall be used in the maintenance of the system.
4. All entrances and roadway improvements shall comply with all of DelDOT's requirements.
5. Street lighting shall be provided and the location of the streetlights shall be shown on the final site plan.
6. Sidewalks shall be installed on both sides of all streets within the subdivision.
7. A school bus shelter shall be provided on the final site plan. The character and location of the shelter shall be coordinated with the local school district and shown on the final site plan.
8. No wetlands shall be included within any lot lines. The trees surrounding the wetland areas shall be preserved. There shall be a 100- foot buffer from all wetlands.

9. There shall be a 50-foot wooded buffer from all neighboring and adjacent properties.
10. The project must be served by central water and sewer.
11. Road naming and addressing shall be subject to the review and approval of the Sussex County Mapping and Addressing Department.
12. Recreational amenities including a pool and clubhouse, tennis courts and community center shall be completed within 2 years of the issuance of the first residential building permit.
13. Agricultural buffers shall be provided as required by State and County requirements.
14. As noted in the PLUS comments, the Applicant is encouraged to relocate the storm water management pond currently located on the north side of Green Road to another location. This will help preserve additional trees and natural forest in this area.
15. The Agricultural Use Notice shall be included in the leases for lots.
16. The final site plan shall be subject to the review and approval of the Planning and Zoning Commission.

Final record plan approval shall be subject to the review and approval of the Planning and Zoning Commission upon receipt of all agency approvals. The following approvals are required for this project: DelDOT, DNREC, Department of Agriculture, Indian River School District, Office of the State Fire Marshal, Sussex Conservation District, Sussex County Engineering, Sussex County Mapping and Addressing and U.S. Army Corps of Engineers.

Should you have any questions, please do not hesitate to contact this office.

Sincerely,

Shane Abbott

Shane Abbott
Assistant Director

cc: Dennis Schrader, Esquire, Wilson, Halbrook & Bayard
Jason Palkewicz, P.E., McCrone, Inc.
Tom Baker, Division of Public Works

6. The proposed subdivision meets the purpose and standards of the Subdivision Ordinance.
7. Amenities will be provided, including a clubhouse, pool, playground area, tennis and basketball courts, trails and an equestrian facility.
8. This preliminary approval is subject to the following conditions:

- There shall be no more than 105 lots within the Subdivision.
- The Applicant shall form a homeowners' association to be responsible for the maintenance of streets, roads, buffers, storm water management facilities, and other common areas.

- The storm water management system shall meet or exceed the requirements of the State and County. Best Management Practices shall be used in the maintenance of the system.
- All entrances shall comply with all of DelDOT's requirements.
- Street lighting shall be provided, and the location of the streetlights shall be shown on the final site plan.
- Sidewalks shall be installed on both sides of all streets.
- The site shall be served by central water and sewer systems.
- No wetlands shall be included within any lot lines.
- Amenities, including a clubhouse, swimming pool, playground area and equipment, basketball and tennis courts, trails and equestrian facility shall be constructed and open to use by residents of the development within 2 years of the issuance of the first residential building permit.
- Road naming and addressing shall be subject to the review and approval of the Sussex County Mapping and Addressing Department.
- A school bus shelter shall be established on the site. The location shall be coordinated with the local school district and shown on the final site plan.
- The Final Site Plan shall be subject to the review and approval of the Planning and Zoning Commission.

Motion by Mr. Johnson, seconded by Mr. Burton and carried unanimously to approve this application as a preliminary for the reasons, and with the conditions stated. Motion carried 5 – 0.

Subdivision #2005 – 72 - - application of **BAYWOOD, L.L.C.**, to consider the Subdivision of land in an AR-1 Agricultural Residential District in Indian River Hundred, Sussex County, by dividing 311.93 acres into 679 lots (Environmentally Sensitive Development District Overlay Zone), located northeast of Road 298, 3,950 feet southeast of Route 24.

Mr. Abbott advised the Commission that this application has been deferred since October 12, 2006; that the record was left open for 15 days after receipt of comments from DelDOT in reference to the traffic impact study; that the record was closed on December 1, 2006; and that the Commission received copies of the comments from DelDOT and from the opposition.

Mr. Johnson stated that he would move that the Commission grant preliminary approval of Subdivision #2005 – 72 for Bridlewood at Baywood, based upon the record and for the following reasons:

1. The project is an AR-1 Development in the Environmentally Sensitive Developing District Overlay Zone.

2. Clustering has been used to preserve wooded areas and the natural buffer next to the wetlands, and there are greenways and small park areas throughout the site. There are also sidewalks and walking, jogging and bike trails promoting interconnectivity within the project.
3. The items listed in Section 99-9C of the Subdivision Ordinance have been favorably addressed.
4. The applicant has proposed 621 lots within the project. In response to questioning during the public hearing, the Developer has applied for a Conditional Use for the equestrian center on the site. Because this has reduced the total acreage of the subdivision, the total number of lots will be reduced to 597. This is a permissible density within an AR-1 subdivision on the land.
5. As part of the project, tree, vegetation and soil removal will be minimal and enhanced through landscaping features.
6. Objectionable features, including homes next to neighboring properties or public roads, will be avoided or screened through the use of landscaped berms.
7. The lots will be served by central water and sewer.
8. The site's design has a minimal impact on wetlands and no wetlands are included within any lots.
9. The proposed subdivision meets the purposes and standards of the Subdivision Ordinance, and it complies with the County's Land Use Plan.
10. Subject to DelDOT's approval, the project will provide safe vehicular and pedestrian movement within the site and on to connecting roadways. All required upgrades to area roadways will be at the Applicant's expense.
11. This preliminary approval is subject to the following conditions:

    - There shall be no more than 597 lots within the Subdivision. This shall be phased with no more than 120 residential building permits issued within any calendar year.

- The Applicant shall be responsible for the maintenance of streets, roads, buffers, storm water management facilities, open space, and other common areas.
- The storm water management system shall meet or exceed the requirements of the State and County. Best Management Practices shall be used in the maintenance of the system.
- All entrances and roadways improvements shall comply with all of DelDOt's requirements.
- Street lighting shall be provided and the location of the streetlights shall be shown on the final site plan.
- Sidewalks shall be installed on both sides of all streets within the subdivision.

- A school bus shelter shall be provided on the Final Site Plan. The character and location of the shelter shall be coordinated with the local school district and shown on the final site plan.
- No wetlands shall be included within any lot lines. The trees surrounding the wetland areas shall be preserved. There shall be a 100-foot buffer from all wetlands.
- There shall be a 50 foot wooded buffer from all neighboring and adjacent properties.
- The project must be served by central water and sewer.
- Road naming and addressing shall be subject to the review and approval of the Sussex County Mapping and Addressing Department.
- Recreational amenities including a pool and clubhouse, tennis courts and community center shall be completed within 2 years of the issuance of the first building permit.
- Agricultural buffers shall be provided as required by State and County requirements.
- As noted in the PLUS comments, the applicant is encouraged to relocate the storm water management pond currently located on the north side of Green Road to another location. This will help preserve additional trees and natural forest in this area.
- The Agricultural Use Notice shall be included in the leases for lots.
- The Final Site Plan shall be subject to the review and approval of the Planning and Zoning Commission.

Motion by Mr. Johnson, seconded by Mr. Gordy and carried unanimously to approve this application as a preliminary for the reasons, and with the conditions stated. Motion carried 5 – 0.

Keastone Bay

Environmental Assessment and Public Facilities Evaluation Report

The proposed development, Keastone Bay, is in conformity with the Sussex County Zoning requirements for the ES-1 zone.

Delineation of the zoning district: Keastone Bay is located within the ES-1 zone.

Application process: All developments containing 50 or more dwelling units are subject to the ES-1 performance requirements. An environmental assessment and public facility evaluation report and sketch plan (report) are required to be submitted to the Director of Planning and Zoning. Below is the report which finds:

(a) The proposed drainage design will include the use of both a closed system storm drain and open system drainage network. Storm water management will be in conformity with the current storm water management regulations including managing both water quantity and quality. Stormwater management devices could include constructed wetlands, bio-swales, infiltration basins, filter strips, ponds, etc. The outfall for a majority of the site is Hopkins Prong, which is tidally influenced.

(b) Potable water and fire protection will be provided for Keastone Bay. The site lies within the Long Neck Water Company service area. Potable water demands are anticipated to be approximately 152,000 gallons per day. Irrigation, if provided, will be by either potable water supply, non-potable well or drawn from storm water management facilities.

(c) Wastewater collection and treatment will be provided for the site by Inland Bays Preservation Company. The proposed collection and treatment of the wastewater generated from the site will not have an adverse effect on the quality of groundwater and surface waters.

(d) The proposed development will be designed to provide safe and efficient vehicular travel patterns on site. Site access to Banks Road and Green Road will be in accordance with DelDOT's *Development Coordination Manual*. Although final improvements will be determined via the TIS process, the anticipated improvements include:
- Widening and realigning Green Road with 11' travel lanes and 5' shoulder.
- Providing turn lanes or traffic circle on Green Road to provide access to the community.
- Widening Banks Road with 11' travel lanes and 5' shoulder.
- Providing turn lanes at the intersection of Banks Road and Green Road.

(e) No proposed or federally listed endangered or threatened species are known to exist on the site.

(f) The site contains non-tidal wetlands as delineated by Environmental Resources, Inc. A jurisdictional determination is in process with the U.S. Army Corp of Engineers. No wetland disturbance is proposed, other than a community pier and storm water outfall.

(g) The site has been planned to maintain areas of open space throughout the site. The plan provides a total of 132 +/- acres (42%) of interconnected open space. Open space amenities will include preserved woodlands & wetlands and a recreation amenity/gathering space.

(h) The internal access roadway will be privately owned and maintained by the HOA within private rights-of-way. Road width and pavement thicknesses shall be in conformity with Sussex County Standards. Potable water mains and sanitary sewer mains will be publicly owned and maintained within rights-of-way and/or utility easements. Storm water drainage and management facilities will be privately owned and maintained by the HOA.

(i) The project is approximately 1.5 miles away from the commercial and tourist area of Long Neck. As such it will offer not only an economic boost from tax revenue and tourism but will also provide jobs associated with land development construction and home building.

(j) In the PLUS comment letter, The State Historic Preservation Office stated there "*is potential for both historic and pre-historic archaeological sites*" within the project. The developer will comply with all state and federal law should sites be discovered.

(k) The proposed application is in conformity with the current Sussex County Comprehensive Plan. Specifically, the site is located in the Environmentally Sensitive Developing Area. The site is within the existing Inland Bays Preservation sewer service area. Also, the site is within a Long Neck Water Company franchise area.

(l) The design of the Keastone Bay development alleviates the detrimental impacts identified above (a-k) in a manner which is consistent with the Comprehensive Plan.

SUSSEX COUNTY ENGINEERING DEPARTMENT
UTILITY PLANNING DIVISION
C/U & C/Z COMMENTS

TO: **Janelle Cornwell**

REVIEWER: **Chris Calio**

DATE: **6/20/2019**

APPLICATION: **2018-34 Keastone Bay**

APPLICANT: **Baywood, LLC (Attention: Robert Tunnell)**

FILE NO: **HC-1.08**

TAX MAP & PARCEL(S): **234-17.00-170.00, 172.00, 173.00, 174.00 & 234-18.00-68.00 & 234-24.00-1.00, 2.00**

LOCATION: **On the northwest and southeast sides of Green Road, approximately 360 feet northeast of Banks Road**

NO. OF UNITS: **675**

GROSS ACREAGE: **310.97**

SYSTEM DESIGN ASSUMPTION, MAXIMUM NO. OF UNITS/ACRE: **2**

SEWER:

(1). Is the project in a County operated and maintained sanitary sewer and/or water district?

Yes ☒ No ☐

a. If yes, see question (2).
b. If no, see question (7).

(2). Which County Tier Area is project in? **Tier 1**

(3). Is wastewater capacity available for the project? **N/A** If not, what capacity is available? **N/A**.

(4). Is a Construction Agreement required? **No** If yes, contact Utility Engineering at (302) 855-7717.

(5). Are there any System Connection Charge (SCC) credits for the project? **No** If yes, how many? **N/A**. Is it likely that additional SCCs will be required? **No** If yes, the current System Connection Charge Rate is **Click or tap to enter a fee** per EDU. Please contact **Choose an item.** at **302-855-7719** for additional information on charges.

(6). Is the project capable of being annexed into a Sussex County sanitary sewer district? **N/A**

☐ Attached is a copy of the Policy for Extending District Boundaries in a Sussex County Water and/or Sanitary Sewer District.

(7). Is project adjacent to the Unified Sewer District? **N/A**

(8). Comments: **The propsed subdivision is within the boundaries of the Sussex County Unified Sanitary Sewer District but will be served through the Inland Bays Preservation Company, LLC. No connections to the SCUSSD will be made.**

(9). Is a Sewer System Concept Evaluation required? **No**

(10). Is a Use of Existing Infrastructure Agreement Required? **No**

UTILITY PLANNING APPROVAL:

John J. Ashman
Director of Utility Planning

Xc: Hans M. Medlarz, P.E.
Jayne Dickerson
No Permit Tech Assigned

Christin Headley

From: Rambo, Douglas E. (DNREC) <Douglas.Rambo@state.de.us>
Sent: Thursday, January 3, 2019 2:43 PM
To: Christin Headley
Cc: Tholstrup, Michael S. (DNREC)
Subject: Source Water Protection Reviews for Keastone Bay and Lakelynns (Sussex TAC)

Good Afternoon Christin,

I have reviewed the projects Keastone Bay and Lakelynns and saw that there are no Source Water Protection Areas located within either of the project areas.
Therefore my program has no comments related to either.

Have a great afternoon.

-Doug

Douglas E. Rambo, P.G.
Hydrologist IV
Delaware Dept. of Natural Resources and Environmental Control
Division of Water
Source Water Assessment and Protection Program
89 Kings Hwy
Dover, DE 19901

Phone: (302) 739-9945 Fax: (302) 739-2296
Douglas.Rambo@state.de.us

"We learn geology the morning after the earthquake." Ralph Waldo Emerson

TO: **Christin Headley**
Sussex County Planning and Zoning
Sussex County Courthouse
P. O. Box 417
Georgetown, DE 19947

FROM: **John Martin**

DATE: **January 3, 2019**

SUBJECT: **TAC Review Comments**

Watershed: Inland Bays (Low Reduction zone)
Subdivision/Applicant: Keastone Bay (2018-34)
Tax Map#(s): 234-17.00-170.00 et al.
Proposed waste disposal type: Central Sewer

Regulatory Requirements

- The project is located in the *low nutrient reduction* zone of the greater Inland Bays watershed. In this watershed, Total Maximum Daily Load (TMDL) pollutant reduction targets have been developed by the State of Delaware (under the auspices of Section 303(d) of the 1972 Federal Clean Water Act) for nutrients (e.g., nitrogen, phosphorus), and bacteria. A TMDL is the maximum level of pollution allowed for a given pollutant below which a "water quality limited waterbody" can assimilate and still meet State water quality standards (e.g., dissolved oxygen, nutrients, and bacteria; *State of Delaware Surface Water Quality Standards, as amended July 11, 2004*) to the extent necessary to support use goals such as, swimming, fishing, drinking water and shell fish harvesting. The TMDL for the *low reduction* zone of the Inland Bays watershed calls for 40 percent reduction in nitrogen and phosphorus from baseline conditions. The TMDL also calls for a 40 percent reduction (17 percent for marine waters) in bacteria from baseline conditions. Please view the following web link for further information on the regulatory requirements and technical analysis involved in the development of the specific TMDLs: **http://www.dnrec.delaware.gov/swc/wa/Pages/WatershedAssessmentTMDLs.aspx**

- The Inland Bays Pollution Control Strategy (PCS) and the accompanying regulations were finalized by order of the DNREC Secretary on October 2008. Following adoption of the PCS regulations, a legal challenge and appeal was mounted against DNREC on February 25, 2011 by Sussex County through the Delaware Superior Court; this appeal resulted in a court order declaring buffer components in the PCS as void and unenforceable (Section 4 and portions of Section 5). A subsequent appeal to the Delaware Supreme Court on December 2011 affirmed the Superior Court decision; however, the court decision did not invalidate or negate the remaining regulatory components, or the numerous voluntary components which still remain in effect. The PCS regulations can be reviewed at http://regulations.delaware.gov/documents/November2008c.pdf. Background information about the PCS with guidance documents and mapping tools can be retrieved from http://www.dnrec.state.de.us/water2000/Sections/Watershed/ws/ib_pcs.htm

- A nutrient management plan is required under the *Delaware Nutrient Management law (3 Del. Chapter 22)* for all persons or entities who apply nutrients to lands or areas of open space in excess of 10 acres. This project's open space may exceed this 10-acre threshold. Please contact the Delaware Nutrient Management Program at 739-4811 for further information concerning compliance requirements – or, view the following web link for additional information: http://dda.delaware.gov/nutrients/index.shtml

Recommendations

Soils

- Based on soils survey mapping update (Figure 1), the primary soil mapping units mapped in subject parcel are Fort Mott-Henlopen complex (FhA & FhB) and Downer (DnA). These soil mapping units are well-drained and typically have few to moderate limitations for development.

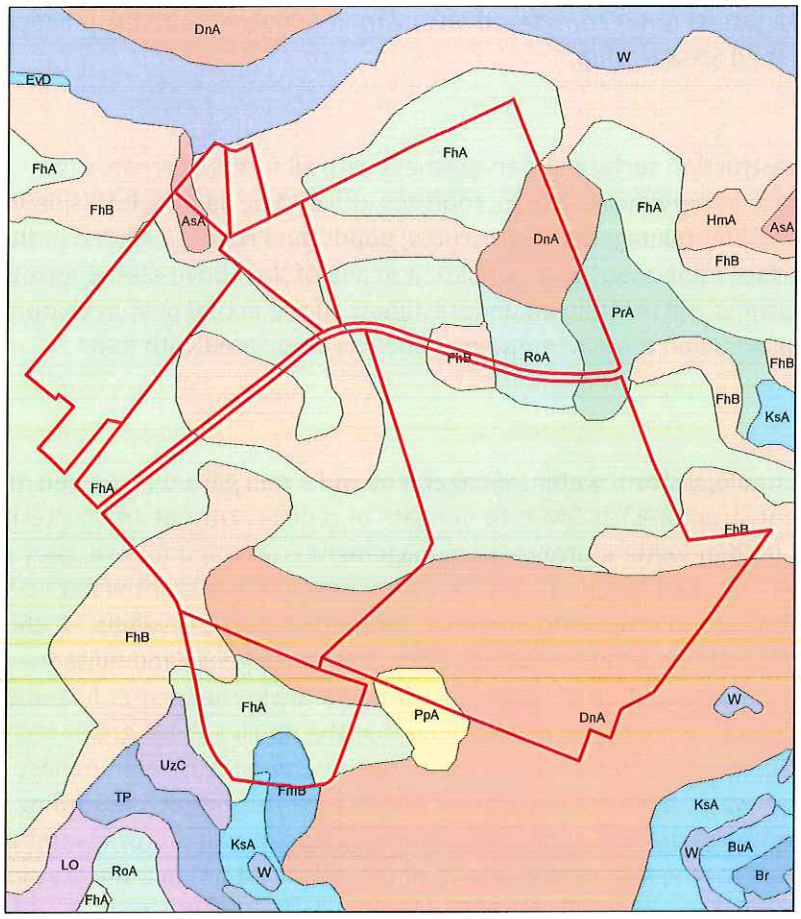


Figure 1: NRCS soil survey mapping update

Compliance with TMDLs through the Pollution Control Strategy (PCS)

Compliance with the TMDL nutrient and bacterial reduction requirements specified for the Inland Bays watershed can be facilitated by adherence to the strategies and requirements described in the Inland Bays PCS, and the implementation of the following recommended BMPs, which would:

- Preserve and/or maintain as much of the existing forested area as possible. Given the environmental sensitivity (e.g., water quality and wildlife habitat) of the greater Inland Bays watershed, the Division of Watershed Stewardship strongly opposes the applicant's apparent plan to remove most (if not all) of the existing forestland to accommodate this development. We believe that that most of the existing forest land in this parcel should

remain intact or undeveloped. We further suggest additional native tree, shrub and/or native herbaceous vegetation plantings in remaining areas of open space, wherever possible. Moreover, removing forest cover to accommodate an open-water stormwater management-structure(s) is not considered an environmentally acceptable practice by the Division of Watershed Stewardship.

- Calculate post-construction surface imperviousness with all forms of created (or constructed) surface imperviousness (e.g., rooftops, driveways, parking lots, sidewalks, open-water storm water management structures, ponds, and roads) included in the calculation for surface imperviousness. Omission of any of the above-stated forms of surface imperviousness will result in an underestimate of the actual post-development surface imperviousness and the environmental impacts associated with that imperviousness.

- Employ green-technology storm water management and a rain garden(s) (in lieu of open-water management structures) as BMPs to mitigate or reduce nutrient and bacterial pollutant runoff. If open-water stormwater management is selected for use, they should be employed for their intended function - that is, the management of stormwater - not for the creation of additional pond acreage to enhance property/aesthetic values. It should also be noted that open-water stormwater ponds attract nuisance geese and nuisance algae that can contribute to the degradation of water quality of waters in the greater Inland Bays watershed. In the end, we strongly recommend that the applicant use green-technology stormwater management and refrain from use of open-water stormwater management ponds and/or open-water ponds of any kind or purpose for this project. According to information presented in the TAC application, at least 25 open-water stormwater ponds have been proposed for the immediate vicinity of the proposed project; the Division of Watershed Assessment considers the number of ponds proposed as excessive and/or unnecessary, and as mentioned previously, we much prefer green-technology stormwater management be made use of instead.

- Make use of pervious paving materials (when compatible with concerns for the protection of excellent recharge areas and/or well-head protection areas via assessment by a DNREC hydrogeologist(s)) instead of conventional paving materials (e.g., asphalt or concrete) to help reduce the amount of water and pollutant runoff draining to adjoining streams and wetlands. Pervious pavers are especially recommended for areas designated for parking.

- Assess nutrient and bacterial pollutant loading at the preliminary project design phase. To this end, the Watershed Assessment Section has developed a methodology known as the "Nutrient Load Assessment protocol." The protocol is a tool used to assess changes in nutrient loading (e.g., nitrogen and phosphorus) resulting from the conversion of individual or combined land parcels to a changed land use(s); thus providing applicants and governmental entities with quantitative information about the project's impact(s) on baseline water quality. We strongly encourage the applicant/developer use this protocol to help them design and implement the most effective BMPs. Please contact John Martin at (Division of Watershed Stewardship) 302-739-9939 for more information on the protocol.

Agency Name: DNREC Project Name: 2018-35 Lakelynns

Date: 1/4/2019

Division: Waste and Hazardous Substances/ SIRS Contact Person: Meghan Crystall
Meghan.Crystall@state.de.us (302)-395-2600

Regulations/Code Requirements

DNREC's Site Investigation and Restoration Section (SIRS) has reviewed the proposed project.

- If it is determined by the Department that there was a release of a hazardous substance on the property in question and the Department requires remediation pursuant to the Hazardous Substance Cleanup Act, the provisions of 7 Del.C. Chapter 91, Delaware Hazardous Substance Cleanup Act and the Delaware Regulations Governing Hazardous Substance Cleanup shall be followed."

- Only **one** Site Investigation & Restoration Section (SIRS) site was found within a half mile radius of the proposed development. The proposed property, Keystone Bay, is located **within a ½ mile radius of** a SIRS Site known as the Longneck Mercury Study (DE-1388). Mercury contamination (below the MCL) was found in a public supply well. DNREC and the USGS performed an extensive investigation but could not find the source. The well was turned off temporarily. The DHHS reviews the water company's monitoring reports. The Site has been closed.

Suggestions

- SIRS strongly recommends that the land owner performs appropriate environmental due diligence as necessary of the property.

- Additional remediation may be required if the project property or site is re-zoned by the county or state.

- Should a release or imminent threat of a release of hazardous substances be discovered during the course of development (e.g., contaminated water or soil), construction activities should be discontinued immediately and DNREC should be notified at the 24-hour emergency number (800-662-8802). SIRS should also be contacted as soon as possible at 302-395-2600 for further instructions.

Sussex County, Delaware
Technical Advisory Committee

Comment Sheet

****

DATE OF REVIEW: December 21, 2018

REVIEWING AGENCY: **Delaware State Fire Marshal's Office, Sussex Office**

INDIVIDUAL REVIEWERS: **Duane T. Fox, CFPS, CFPE, CFI, Asst. Chief Technical Services**
Dennett E. Pridgeon, CFPS, CFPE, CFI, Sr. Fire Protection Specialist
Jefferson L. Cerri, CFI, Sr. Fire Protection Specialist
Joseph Moran, CFI, Sr. Fire Protection Specialist
Desiree B. McCall, CFI, Fire Protection Specialist

AGENCY PHONE NUMBERS: **302-856-5298, Fax: 302-856-5800**

RE: KEASTONE BAY (2018-34)

The reasons and conditions applied to this project and their sources are itemized below:

****

At the time of formal submittal, the applicant shall provide; completed application, fee, and three sets of plans depicting the following in accordance with the Delaware State Fire Prevention Regulation (DSFPR):

a. **Fire Protection Water Requirements**:
- Water distribution system capable of delivering at least 1000 gpm for 1-hour duration, at 20-psi residual pressure is required. Fire hydrants with 800 feet spacing on centers. (Assembly)
- Where a water distribution system is proposed for single-family dwellings it shall be capable of delivering at least 500 gpm for 1-hour duration, at 20-psi residual pressure. Fire hydrants with 1000 feet spacing on centers are required. (One & Two- Family Dwelling)
- Where a water distribution system is proposed for the site, the infrastructure for fire protection water shall be provided, including the size of water mains for fire hydrants and sprinkler systems.

b. **Fire Protection Features:**
- All structures over 10,000 sqft aggregate will require automatic sprinkler protection installed.
- Buildings greater than 10,000 sqft, 3-stories or more, over 35 feet, or classified as High Hazard, are required to meet fire lane marking requirements.
- Show Fire Department Connection location (Must be within 300 feet of fire hydrant), and detail as shown in the DSFPR.
- Show Fire Lanes and Sign Detail as shown in DSFPR

c. **Accessibility**

- All premises, which the fire department may be called upon to protect in case of fire, and which are not readily accessible from public roads, shall be provided with suitable gates and access roads, and fire lanes so that all buildings on the premises are accessible to fire apparatus. This means that the access road to the subdivision from Banks Road must be constructed so fire department apparatus may negotiate it.
- Fire department access shall be provided in such a manner so that fire apparatus will be able to locate within 100 ft. of the front door.
- Any dead end road more than 300 feet in length shall be provided with a turn-around or cul-de-sac arranged such that fire apparatus will be able to turn around by making not more than one backing maneuver. The minimum paved radius of the cul-de-sac shall be 38 feet. The dimensions of the cul-de-sac or turn-around shall be shown on the final plans. Also, please be advised that parking is prohibited in the cul-de-sac or turn around.
- The use of speed bumps or other methods of traffic speed reduction must be in accordance with Department of Transportation requirements.
- The local Fire Chief, prior to any submission to our Agency, shall approve in writing the use of gates that limit fire department access into and out of the development or property.
- The community pier will require fire department access and standpipe system to adequately conduct fire ground operations. Please contact office to discuss.

d. **Gas Piping and System Information:**

- Provide type of fuel proposed, and show locations of bulk containers on plan.

e. **Required Notes**:

- Provide a note on the final plans submitted for review to read " All fire lanes, fire hydrants, and fire department connections shall be marked in accordance with the Delaware State Fire Prevention Regulations"
- Proposed Use
- Alpha or Numerical Labels for each building/unit for sites with multiple buildings/units
- Square footage of each structure (Total of all Floors)
- National Fire Protection Association (NFPA) Construction Type
- Maximum Height of Buildings (including number of stories)
- Note indicating if building is to be sprinklered
- Name of Water Provider
- Letter from Water Provider approving the system layout
- Provide Lock Box Note (as detailed in DSFPR) if Building is to be sprinklered
- Provide Road Names, even for County Roads

Preliminary meetings with fire protection specialists are encouraged prior to formal submittal. Please call for appointment. Applications and brochures can be downloaded from our website: www.statefiremarshal.delaware.gov, technical services link, plan review, applications or brochures.

THIS DOCUMENT IS INFORMATIONAL ONLY, AND DOES NOT CONSTITUTE ANY TYPE OF APPROVAL FROM THE DELAWARE STATE FIRE MARSHAL'S OFFICE

Christin Headley

From: Hayes, John G. (DNREC) <John.Hayes@state.de.us>
Sent: Wednesday, December 12, 2018 12:19 PM
To: Christin Headley
Subject: RE: TAC Review for 2018-34 Keastone Bay

Christin,

The Groundwater Discharges Section has no comment on Keastone Bay (2018-34) since it is proposed to utilize public sewer. Thank you.

Jack

John G. "Jack" Hayes, Jr.
Environmental Program Manager
Delaware Department of Natural Resources and Environmental Control
Groundwater Discharges Section
89 Kings Highway
Dover, DE 19901
John.hayes@state.de.us
(302) 739-9327
(302) 739-7764 Fax

From: Christin Headley [mailto:christin.headley@sussexcountyde.gov]
Sent: Wednesday, December 12, 2018 10:49 AM
To: Brad Hawkes <bhawkes@sussexcountyde.gov>; C. Daniel Parsons <dparsons@sussexcountyde.gov>; Dean Holden - Chesapeake Electric <dholden@chpk.com>; Fox, Duane T. (FireMarshal) <Duane.Fox@state.de.us>; Butler, Eileen M. (DNREC) <Eileen.Butler@state.de.us>; Watson, Jessica (DNREC) <Jessica.Watson@state.de.us>; John J. Ashman <jashman@sussexcountyde.gov>; Hayes, John G. (DNREC) <John.Hayes@state.de.us>; Kennel, John M. (DNREC) <John.Kennel@state.de.us>; Martin, John (DNREC) <John.Martin@state.de.us>; Fleming, Kate M. (DNREC) <Kate.Fleming@state.de.us>; Kelley Gabbard <kgabbard@chpk.com>; DeVore, Lauren (DNREC) <Lauren.Devore@state.de.us>; Crystall, Meghan (DNREC) <Meghan.Crystall@state.de.us>; Tholstrup, Michael S. (DNREC) <Michael.Tholstrup@state.de.us>; Mike Brady <MBRADY@sussexcountyde.gov>; Melendez, Milton (DDA) <milton.melendez@state.de.us>; Rob Davis <rdavis@sussexcountyde.gov>; Sisson, Steven (DelDOT) <Steven.Sisson@state.de.us>; Subdivision (MailBox Resources) <Subdivision@state.de.us>; Susan Isaacs <sisaacs@sussexcountyde.gov>; Terri Dukes <tdukes@sussexcountyde.gov>; Troy Dickerson <TDickerson@decoop.com>; Vince Robertson <vrobertson@pgslegal.com>
Subject: TAC Review for 2018-34 Keastone Bay

Good Afternoon,

Sussex County Planning Office has received three (3) applications that require TAC review. Attached is a memo regarding the applications and PDF's of the plans submitted for 2018-33 Overbrook Meadows West, 2018-34 Keastone Bay, & 2018-35 Lakelynns. There will be THREE separate emails!

Please provide comments on or before Wednesday, January 16, 2019.

Please feel free to contact me with any questions.

Thanks,

Christin Headley

Christin Headley, Planning Technician
Planning & Zoning Department
2 The Circle
PO Box 417
Georgetown, DE 19947
302-855-7878
christin.headley@sussexcountyde.gov

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To: Brad Hawkes <bhawkes@sussexcountyde.gov>; C. Daniel Parsons <dparsons@sussexcountyde.gov>; Dean Holden - Chesapeake Electric <dholden@chpk.com>; Fox, Duane T. (FireMarshal) <Duane.Fox@state.de.us>; Butler, Eileen M. (DNREC) <Eileen.Butler@state.de.us>; Watson, Jessica (DNREC) <Jessica.Watson@state.de.us>; John J. Ashman <jashman@sussexcountyde.gov>; Hayes, John G. (DNREC) <John.Hayes@state.de.us>; Kennel, John M. (DNREC) <John.Kennel@state.de.us>; Martin, John (DNREC) <John.Martin@state.de.us>; Fleming, Kate M. (DNREC) <Kate.Fleming@state.de.us>; Kelley Gabbard <kgabbard@chpk.com>; DeVore, Lauren (DNREC) <Lauren.Devore@state.de.us>; Crystall, Meghan (DNREC) <Meghan.Crystall@state.de.us>; Tholstrup, Michael S. (DNREC) <Michael.Tholstrup@state.de.us>; Mike Brady <MBRADY@sussexcountyde.gov>; Melendez, Milton (DDA) <milton.melendez@state.de.us>; Rob Davis <rdavis@sussexcountyde.gov>; Sisson, Steven (DelDOT) <Steven.Sisson@state.de.us>; Subdivision (MailBox Resources) <Subdivision@state.de.us>; Susan Isaacs <sisaacs@sussexcountyde.gov>; Terri Dukes <tdukes@sussexcountyde.gov>; Troy Dickerson <TDickerson@decoop.com>; Vince Robertson <vrobertson@pgslegal.com>
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Please provide comments on or before Wednesday, January 16, 2019.

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Christin Headley

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Planning & Zoning Department
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christin.headley@sussexcountyde.gov

STATE OF DELAWARE

DEPARTMENT OF TRANSPORTATION
800 BAY ROAD
P.O. BOX 778
DOVER, DELAWARE 19903

JENNIFER COHAN
SECRETARY

January 16, 2019

Ms. Jennifer Norwood
Planning Technician, Sussex County Planning & Zoning Department
Sussex County Administration Building
P.O. Box 417
Georgetown, DE 19947

SUBJECT: January T.A.C. MEETING

Dear Ms. Norwood:

The Department has reviewed the information for the above referenced meeting and offers these comments on the following sites:

1. Subd. #2018-34, Keystone Bay
   Tax Map # 234-17.00-170.00, 172.00, 173.00, 174.00, 234-18.00-68.00, 234-24.00-2.00 Review Mgr.: Steve Sisson, See attachment
2. Subd. #2018-35, Lakelynns Subdivision
   Tax Map # 134-18.00-38.00 & 134-19.3.03 Review Mgr.: Steve Sisson, See attachment

As always, should you have any questions, please feel free to give me a call.

Sincerely,

Brian K. Yates, Jr.
Sussex County Reviewer
302-760-2151

Attachment
Cc: Hans Medlarz, Sussex County Engineer
Joe Wright, Assistant Sussex County Engineer
Gemez W. Norwood, South District Public Works Manager
William C. Kirsch, South District Entrance Permit Supervisor
James Argo, South District Subdivision Manager
Stephen M. Sisson, Sussex County Review Coordinator

DelDOT

DEPARTMENT OF TRANSPORTATION
COMMENTS FOR T.A.C.

Lands of Baywood LLC & Sussex Realty Company
Tax Map # 234-17.00-170.00, 172.00, 173.00, 174.00, 234-18.00-68.00, 234-24.00-2.00
SCR 298A (Green Road) & SCR 298 (Banks Road)
Sussex County

#2018-34, Keastone Bay Subdivision

1. Please refer to the "*Development Coordination Manual*" manual for the design of the subdivision streets and/or entrance. The website for the manual is the following;

   http://www.deldot.gov/Business/subdivisions/index.shtml?dc=changes

2. Referring to Section P.3 of the *"Development Coordination Manual"*, a Pre-Submittal meeting is required before plans are submitted for review. The September 6, 2018, Traffic Impact Study (TIS) Scoping Meeting is not sufficient is this regard.

3. The Pavement Core/Design Request form has been posted to the DelDOT website. Use this document to request pavement cores and pavement section design from the DelDOT Laboratory. The Pavement Core/Design Request form can be found at the following website under the *Forms* tab;

   http://www.deldot.gov/Business/subdivisions/index.shtml

4. For all projects, any sub-station and/or wastewater facilities will be required to have access from the internal subdivision street with no direct access to the State maintained highway.

5. For all projects, a 20-foot wide buffer will be required from the edge of the stormwater management pond to the ultimate right-of-way of the County road. The ultimate right-of-way is based on the functional classification of the road.

6. Referring to the *"Development Coordination Manual"*, Chapter 3 – Record Plan Design, Section 3.2.5.1.2: Frontage Easements, a 15-foot wide permanent easement will need to be established across the property frontage. The location of the easement shall be outside the limits of the ultimate right-of-way for this road. The following note is required, "**A 15-foot wide permanent easement is hereby established for the State of Delaware, as per this plat.**"

7. Referring to the *"Development Coordination Manual"*, Chapter 3 – Record Plan Design, Section 3.2.5: Dedication of Right-Of-Way and Easements, Figure 3.2.5-a Minimum Standards for Total Roadway Right-Of-Way, the project shall be subject to

dedicate right-of-way in accordance to the minimum standards. According to their functional classification, Green Road and Banks Road are both Local Roads and require 30 of Right-Of-Way to be dedicated from the physical centerline of road. The following right-of-way dedication note is required, **"An X-foot wide right-of-way is hereby dedicated to the State of Delaware, as per this plat."**

8. Referring to the "*Development Coordination Manuals*", Chapter 3 – Record Plan Design, Section 3.2.4.1: Subdivision Street Right-Of-Way Monuments, right-of-way monuments are recommended to be furnished and placed along the private subdivision street.

9. Referring to the "*Development Coordination Manual*", Chapter 3 – Record Plan Design, Section 3.2.4.2; Frontage Road Right-of-Way Monumentation, concerning the right-of-way markers being placed to provide a permanent reference for re-establishing the right-of-way and property corners along frontage roads. Due to the right-of-way dedication, show and note the property corners markers that will need to be installed.

10. Referring to the "*Development Coordination Manual",* Chapter 3 – Record Plan Design, Section 3.5.5: Transit Facilities, transit facilities requirements shall be followed as required by DTC or DelDOT.

11. Referring to the "*Development Coordination Manual*", under Chapter 3; Record Plan Design, Section 3.2.5.1.1 – Easements, if this development is proposing a neighborhood sign/structure, then a permanent easement shall be established at the entrance. The easement shall be located outside of any existing and/or proposed right-of-way. It will also need to be verified that the sign/structure does not pose a sight distance and/or safety hazard.

12. Metes and bounds and total areas need to be shown for any drainage easements. A minimum 20-foot wide drainage easement must be provided for storm drainage systems, open or closed, that fall outside the existing right-of-way or the drainage/utility easement. These easements shall be shown and noted on record plan.

13. Referring to the "*Development Coordination Manual*", Chapter 3 – Record Plan Design, Section 3.5: Connectivity, connectivity requirements shall be followed for all development projects having access to state roads or proposing DelDOT maintained public road for subdivisions. Private or municipal streets should follow the local land use agency's requirements for connectivity.

14. Referring to the "*Development Coordination Manual*", Chapter 3 – Record Plan Design, Section 3.4.2.1: Record Plan Content, the traffic generation diagram is required. See Figure 3-4-2-a: Traffic Generation Diagram for what is required.

15. Referring to the "*Development Coordination Manual*", Chapter 3 – Record Plan Design, Section 3.4.2: Record Plan Submittal Requirements, adjacent existing

features are required to be shown in accordance with Figure 3.4.2-b.

16. It will need to be noted on the Record Plan the type of off-site improvements and when the off-site improvements are warranted for this project.

17. Per Section 2.2.2.1 of the Development Coordination Manual, Traffic Impact Studies (TIS) are warranted for developments generating more than 500 vehicle trip ends per day or 50 vehicle trip ends per hour in any hour of the day. The PLUS application states that the proposed development would generate 6,566 vehicle trip ends per day. DelDOT calculates that the development would generate 6,041 vehicle trip ends per day on weekdays and 637 vehicle trip ends per hour during the evening peak hour on Green Road. Therefore a TIS is warranted.

    a. A TIS was done for a previous, almost identically sized, development on this site in 2005. A copy of an October 2006 letter from one of DelDOT's consultants, reviewing that TIS, is provided as information. Off-site improvements identified in that letter, or similar ones, are still likely to be required. However enough has changed since 2005, both in DelDOT's regulations and in the area surrounding the project, which DelDOT intends to require a new TIS.

    b. DelDOT met with the applicant on September 6, 2018 to establish a scope of work for the TIS. A memorandum detailing that scope is attached.

    c. The purpose of a TIS is to identify needed off-site improvements. One such improvement that DelDOT can identify without a TIS is improvement of Green Road and Banks Road to meet DelDOT local road standards, including 11-foot lanes and 5-foot shoulders in both directions, for the length of the site frontage.

    d. DelDOT has received and signed off on the TIS traffic counts as of January 9, 2019 and is anticipating a PTIS letter to be submitted.

18. Section 3.5.4.2 of the Development Coordination Manual addresses requirements for shared-use paths and sidewalks. Referring to Section 3.5.4.2.A of the Manual, developments installation of a sidewalk or Shared Use Path along the development's road frontage is required for developments generating more than 2,000 vehicle trip ends per day. DelDOT will require a Shared Use Path along the development frontage on both Green Road and Banks Road.

19. Section 3.5.4.4 of the Manual addresses access-ways, which are similar to Shared Use Paths (SUP) but are used to connect from an SUP or sidewalk along a road to an interior trail or subdivision street when the spacing between streets is inadequate to accommodate convenient pedestrian and bicycle travel. DelDOT anticipates requiring at least two access-ways. One would be from a cul de sac, proposed near the intersection of Green Road and Banks Road, out to that intersection. The other would

be from a subdivision street, proposed to run southwest from the intersection of Green Road and West Waters Edge Trail, out to Banks Road near the south limit of the site frontage.

20. Referring to the "*Development Coordination Manual*" under Chapter 5; Design Elements, Section 5.2.5 – Subdivision and Commercial Entrance Design Guidelines – Intersection Corner Radii, a separate turning template plan shall be provided to verify vehicles can safely enter/exit the entrance. The entrance shall be designed for the largest vehicle using the entrance.

21. Please check to determine if any utilities will need to be relocated as part of this project.

22. Standard General Notes have been updated and posted to the DelDOT Website. Please begin using the new versions and look for the revision date of December 8, 2017. The notes can be found at the following website under the *Guidance* tab;

    http://www.deldot.gov/Business/subdivisions/index.shtml

23. All PLUS/TAC comments shall be addressed prior to submitting the plans for review.

24. Referring to the "*Development Coordination Manual*", Chapter 6 – Construction Administration, Section 6.4.3: Commercial Entrances – Inspection and Acceptance, Figure 6.4.3-a: Construction Inspection Responsibilities, determine if the project is a Level 1 or Level 2 project and if an inspection agreement will be required.

25. The Auxiliary Lane Spreadsheet has been posted to the DelDOT website. Use this spreadsheet to determine if auxiliary lanes are warranted. The Auxiliary Lane Spreadsheet can be found at the following website under the *Forms* tab;

    http://www.deldot.gov/Business/subdivisions/index.shtml

26. Referring to the "*Development Coordination Manual*" under Chapter 5; Design Elements, Section 5.4 – Sight Distance, a sight distance triangle is required. A spreadsheet has been developed to assist with this task and can be found on the following website under the *Forms* tab;

    http://www.deldot.gov/Business/subdivisions/index.shtml

27. Please refer to the "*Development Coordination Manual*" Chapter 3; Record Plan Design, Section 3.4.1 Commercial or Major Residential Subdivisions – Record Plan Application Process, concerning if a pre-submittal meeting is required.

28. Effective August 1, 2015, all new and resubmittals shall be uploaded via the PDCA with any fees paid online via credit card or electronic check (ACH). The design firm making the submittal must create the project in the PDCA and upload all the required items to allow DelDOT to start the review process. Our website offers more detailed

information, including links to guidance about creating PDCA submittals. This information can be found at the following website under the PDCA section;

http://www.deldot.gov/Business/subdivisions/index.shtml

29. Referring to the "*Development Coordination Manual*", Chapter 3 – Record Plan Design, Section 3.4.2: Record Plan Submittal Requirements, an Initial Stage review fee shall be assessed to this project.

30. Referring to the "*Development Coordination Manual*", Chapter 3 – Record Plan Design, Section 3.4: Commercial or Major Residential Subdivisions, a record plan shall be prepared prior to issuing "Letter of No Objection". The Record plan submittal shall include the items listed on the Critical Items for Acceptance: Record Plan document that can be found at the following website under the *Guidance* tab;

https://www.deldot.gov/Business/subdivisions/index.shtml

31. Referring to the "*Development Coordination Manual*", Chapter 4 – Construction Plans, Section 4.3: Subdivision Construction Plan Submittal Requirements, the Construction Stage review fee shall be assessed to this project.

32. Referring to the "*Development Coordination Manual*", Chapter 4 – Construction Plans, a subdivision/entrance plan shall be prepared prior to issuing subdivision/entrance approval. The Entrance/Construction/Subdivision plan submittal shall include the items listed on the Critical Items for Acceptance: Entrance/Construction/Subdivision Set Plans document that can be found at the following website under the *Guidance* tab;

https://www.deldot.gov/Business/subdivisions/index.shtml

DEPARTMENT OF TRANSPORTATION
COMMENTS FOR T.A.C.

Lands of Norman Stephen Price Revocable Trust
Tax Map # 134-18.00-38.00 & 134-19.00-13.03
SCR 365 (Lizard Hill Road) & SCR 367A (Peppers Corner Road)
Sussex County

#2018-35, Lakelynns Subdivision

33. Please refer to the "*Development Coordination Manual*" manual for the design of the subdivision streets and/or entrance. The website for the manual is the following;

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34. Referring to Section P.3 of the *"Development Coordination Manual"*, a Pre-Submittal meeting is required before plans are submitted for review. The July 24, 2018, Traffic Impact Study (TIS) Scoping Meeting is not sufficient is this regard.

35. The Pavement Core/Design Request form has been posted to the DelDOT website. Use this document to request pavement cores and pavement section design from the DelDOT Laboratory. The Pavement Core/Design Request form can be found at the following website under the *Forms* tab;

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36. For all projects, any sub-station and/or wastewater facilities will be required to have access from the internal subdivision street with no direct access to the State maintained highway.

37. For all projects, a 20-foot wide buffer will be required from the edge of the stormwater management pond to the ultimate right-of-way of the County road. The ultimate right-of-way is based on the functional classification of the road.

38. Referring to the *"Development Coordination Manual"*, Chapter 3 – Record Plan Design, Section 3.2.5.1.2: Frontage Easements, a 15-foot wide permanent easement will need to be established across the property frontage. The location of the easement shall be outside the limits of the ultimate right-of-way for this road. The following note is required, "**A 15-foot wide permanent easement is hereby established for the State of Delaware, as per this plat.**"

39. Referring to the *"Development Coordination Manual"*, Chapter 3 – Record Plan Design, Section 3.2.5: Dedication of Right-Of-Way and Easements, Figure 3.2.5-a Minimum Standards for Total Roadway Right-Of-Way, the project shall be subject to dedicate right-of-way in accordance to the minimum standards. According to their

functional classification, Peppers Corner Road and Lizzard Hill Road are both Local Roads and require 30 of Right-Of-Way to be dedicated from the physical centerline of road. The following right-of-way dedication note is required, **"An X-foot wide right-of-way is hereby dedicated to the State of Delaware, as per this plat."**

40. Referring to the "*Development Coordination Manuals*", Chapter 3 – Record Plan Design, Section 3.2.4.1: Subdivision Street Right-Of-Way Monuments, right-of-way monuments are recommended to be furnished and placed along the private subdivision street.

41. Referring to the "*Development Coordination Manual*", Chapter 3 – Record Plan Design, Section 3.2.4.2; Frontage Road Right-of-Way Monumentation, concerning the right-of-way markers being placed to provide a permanent reference for re-establishing the right-of-way and property corners along frontage roads. Due to the right-of-way dedication, show and note the property corners markers that will need to be installed.

42. Referring to the "*Development Coordination Manual",* Chapter 3 – Record Plan Design, Section 3.5.5: Transit Facilities, transit facilities requirements shall be followed as required by DTC or DelDOT.

43. Referring to the "*Development Coordination Manual*", under Chapter 3; Record Plan Design, Section 3.2.5.1.1 – Easements, if this development is proposing a neighborhood sign/structure, then a permanent easement shall be established at the entrance. The easement shall be located outside of any existing and/or proposed right-of-way. It will also need to be verified that the sign/structure does not pose a sight distance and/or safety hazard.

44. Metes and bounds and total areas need to be shown for any drainage easements. A minimum 20-foot wide drainage easement must be provided for storm drainage systems, open or closed, that fall outside the existing right-of-way or the drainage/utility easement. These easements shall be shown and noted on record plan.

45. Referring to the "*Development Coordination Manual*", Chapter 3 – Record Plan Design, Section 3.5: Connectivity, connectivity requirements shall be followed for all development projects having access to state roads or proposing DelDOT maintained public road for subdivisions. Private or municipal streets should follow the local land use agency's requirements for connectivity.

46. Referring to the "*Development Coordination Manual*", Chapter 3 – Record Plan Design, Section 3.4.2.1: Record Plan Content, the traffic generation diagram is required. See Figure 3-4-2-a: Traffic Generation Diagram for what is required.

47. Referring to the "*Development Coordination Manual*", Chapter 3 – Record Plan Design, Section 3.4.2: Record Plan Submittal Requirements, adjacent existing

features are required to be shown in accordance with Figure 3.4.2-b.

48. It will need to be noted on the Record Plan the type of off-site improvements and when the off-site improvements are warranted for this project.

49. Per Section 2.2.2.1 of the Development Coordination Manual, Traffic Impact Studies (TIS) are warranted for developments generating more than 500 vehicle trip ends per day or 50 vehicle trip ends per hour in any hour of the day. The PLUS application states that the proposed development would generate 1,436 vehicle trip ends per day and 138 vehicle trip ends per hour during the evening peak hour of Lizzard Hill Road. Therefore a TIS is warranted.

    a. DelDOT met with the applicant on July 24, 2018 to establish a scope of work for the TIS.

    b. The purpose of a TIS is to identify needed off-site improvements. Required improvements that DelDOT can identify without a TIS include the following:

        i. Improvement of Lizzard Hill Road to meet DelDOT local road standards, include 11-foot lanes and 5-foot shoulders in both directions within the limits of the site frontage;

        ii. A minor realignment of Lizzard Hill Road at Peppers Corner Road (SCR 365) to improve the intersection's geometry; and

        iii. An overlay and minor widening of Lizard Hill Road from the east limits of the site frontage to Central Avenue (SCR 84) to provide 11-foot lanes and preserve the road's structural integrity.

    c. DelDOT has received the final TIS Recommendations letter on October 26, 2018 and is expecting to have a draft review letter complete this month.

50. As per the Delaware State Strategies for Policy and Spending Map, this project is located within Investment Level III or IV. Referring to the Departments Shared-Use Path/Sidewalk Policy a project an all Level III and Level IV areas are required to install a path/sidewalk along the property frontage if the project abuts to an existing facility. If the project does not abut an existing facility, it will be at the Subdivision Engineer's discretion. Because of the rapidly developing nature of the area, DelDOT find that installation of a sidewalk or Shared Use Path would be appropriate, but the proximity of wetlands to Lizzard Hill Road and Peppers Corner Road may make such facilities impractical. This matter will need to be discussed further at the Pre-Submittal Meeting.

51. Referring to the "*Development Coordination Manual*" under Chapter 5; Design Elements, Section 5.2.5 – Subdivision and Commercial Entrance Design Guidelines – Intersection Corner Radii, a separate turning template plan shall be provided to verify

vehicles can safely enter/exit the entrance. The entrance shall be designed for the largest vehicle using the entrance.

52. Please check to determine if any utilities will need to be relocated as part of this project.

53. Standard General Notes have been updated and posted to the DelDOT Website. Please begin using the new versions and look for the revision date of December 8, 2017. The notes can be found at the following website under the *Guidance* tab;

    http://www.deldot.gov/Business/subdivisions/index.shtml

54. All PLUS/TAC comments shall be addressed prior to submitting the plans for review.

55. Referring to the "*Development Coordination Manual*", Chapter 6 – Construction Administration, Section 6.4.3: Commercial Entrances – Inspection and Acceptance, Figure 6.4.3-a: Construction Inspection Responsibilities, determine if the project is a Level 1 or Level 2 project and if an inspection agreement will be required.

56. The Auxiliary Lane Spreadsheet has been posted to the DelDOT website. Use this spreadsheet to determine if auxiliary lanes are warranted. The Auxiliary Lane Spreadsheet can be found at the following website under the *Forms* tab;

    http://www.deldot.gov/Business/subdivisions/index.shtml

57. Referring to the "*Development Coordination Manual*" under Chapter 5; Design Elements, Section 5.4 – Sight Distance, a sight distance triangle is required. A spreadsheet has been developed to assist with this task and can be found on the following website under the *Forms* tab;

    http://www.deldot.gov/Business/subdivisions/index.shtml

58. Please refer to the "*Development Coordination Manual*" Chapter 3; Record Plan Design, Section 3.4.1 Commercial or Major Residential Subdivisions – Record Plan Application Process, concerning if a pre-submittal meeting is required.

59. Effective August 1, 2015, all new and resubmittals shall be uploaded via the PDCA with any fees paid online via credit card or electronic check (ACH). The design firm making the submittal must create the project in the PDCA and upload all the required items to allow DelDOT to start the review process. Our website offers more detailed information, including links to guidance about creating PDCA submittals. This information can be found at the following website under the PDCA section;

    http://www.deldot.gov/Business/subdivisions/index.shtml

60. Referring to the "*Development Coordination Manual*", Chapter 3 – Record Plan Design, Section 3.4.2: Record Plan Submittal Requirements, an Initial Stage review

fee shall be assessed to this project.

61. Referring to the "*Development Coordination Manual*", Chapter 3 – Record Plan Design, Section 3.4: Commercial or Major Residential Subdivisions, a record plan shall be prepared prior to issuing "Letter of No Objection". The Record plan submittal shall include the items listed on the Critical Items for Acceptance: Record Plan document that can be found at the following website under the *Guidance* tab;

    https://www.deldot.gov/Business/subdivisions/index.shtml

62. Referring to the "*Development Coordination Manual*", Chapter 4 – Construction Plans, Section 4.3: Subdivision Construction Plan Submittal Requirements, the Construction Stage review fee shall be assessed to this project.

63. Referring to the "*Development Coordination Manual*", Chapter 4 – Construction Plans, a subdivision/entrance plan shall be prepared prior to issuing subdivision/entrance approval. The Entrance/Construction/Subdivision plan submittal shall include the items listed on the Critical Items for Acceptance: Entrance/Construction/Subdivision Set Plans document that can be found at the following website under the *Guidance* tab;

    https://www.deldot.gov/Business/subdivisions/index.shtml

Christin Headley

From: Anthony, Mindy (DNREC) <Mindy.Anthony@state.de.us>
Sent: Friday, January 11, 2019 12:57 PM
To: Christin Headley
Cc: Tholstrup, Michael S. (DNREC)
Subject: Sussex County TAC Review- Request for comments
Attachments: TAC Review for 2018-34 Keastone Bay; TAC Review for 2018-33 Overbrook Meadows West; TAC Review for 2018-35 Lakelynns

Good afternoon,

DNREC's Division of Waste and Hazardous Substances has reviewed the attached project proposals and has no site-specific concerns.

Thank you,

Mindy Anthony
Planner IV
DNREC-Div. of Waste & Hazardous Substances
89 Kings Hwy
Dover, DE 19901
Phone: 302-739-9466
Fax: 302-739-5060
Mindy.Anthony@state.de.us

DELAWARE RECYCLES
It's second nature.

www.recycling.delaware.gov
www.facebook.com/delawarerecycles

From: Tholstrup, Michael S. (DNREC) <Michael.Tholstrup@state.de.us>
Sent: Thursday, December 20, 2018 11:34 AM
To: DNREC_Planners_Technica_ Advisory_Committee_Grp <Advisory_Committee_Grp@state.de.us>
Subject: Sussex County TAC Review- Request for comments

Good Morning PTAC,

Sussex County Planning has requested comments on three project proposals. If you have comments submit each project individually (via attached emails) to Christin Headley and a copy to me.

Comments are due on or before **January 16, 2019**, to:

Christin Headley, Planning Technician
christin.headley@sussexcountyde.gov

Thank You and Happy Holidays!!!
Mike

Michael Tholstrup
Climate Adaptation & Sustainable Communities Planner
DNREC Division of Climate, Coastal, & Energy
100 West Water Street, Suite 5A
Dover, DE 19904
Phone (302) 735-3352
www.De.gov/climatecoastalenergy
Michael.Tholstrup@state.de.us
~Clean Energy, Sustainable Communities, Livable Climate~

ENGINEERING DEPARTMENT

ADMINISTRATION	(302) 855-7718
AIRPORT & INDUSTRIAL PARK	(302) 855-7774
ENVIRONMENTAL SERVICES	(302) 855-7730
PUBLIC WORKS	(302) 855-7703
RECORDS MANAGEMENT	(302) 854-5033
UTILITY ENGINEERING	(302) 855-7717
UTILITY PERMITS	(302) 855-7719
UTILITY PLANNING	(302) 855-1299
FAX	(302) 855-7799

Sussex County
DELAWARE
sussexcountyde.gov

HANS M. MEDLARZ, P.E.
COUNTY ENGINEER

JOHN J. ASHMAN
DIRECTOR OF UTILITY PLANNING

MEMORANDUM

TO: Jennifer Norwood
Planning Technician for Planning and Zoning

FROM: John J. Ashman
Director of Utility Planning

REF: T.A.C. COMMENTS FOR
January 2019

DATE: January 16, 2019

RECEIVED
JAN 16 2019
SUSSEX COUNTY
PLANNING & ZONING

Attached, please find the Engineering Department's comments for the Technical Advisory Committee for the TAC requests for the month. Any questions please feel free to call me at 856-6258.

Attachments

cc: Jayne Ellen Dickerson with attachments
Reviewer with attachments
Planning Tech with attachments
Applicant with attachments
File with attachments

ENGINEERING DEPARTMENT

ADMINISTRATION	(302) 855-7718
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Sussex County
DELAWARE
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HANS M. MEDLARZ, P.E.
COUNTY ENGINEER

MICHAEL E. BRADY
DIRECTOR OF PUBLIC WORKS

January 16, 2019

REF: **T. A. C. COMMENTS**
KEASTONE BAY
TIER 1
SUSSEX COUNTY ENGINEERING DEPARTMENT
SUSSEX COUNTY TAX MAP NUMBERS
234-17.00 PARCEL 170.00,172.00,173.00,174.00 &
234-18.00-PARCEL 68.00 &
234-24.00-PARCEL 2.00
PROJECT CLASS-2
AGREEMENT NO. 1119

RECEIVED
JAN 16 2019
SUSSEX COUNTY
PLANNING & ZONING

The following comments are the result of the Sussex County Engineering Department's review of the preliminary site plan for the above referenced project:

PUBLIC WORKS DIVISION COMMENTS

1. Proposed developments with private roads or projects required by the County to conform to or exceed the County street design requirements shall be regulated by and conform to Sussex County Code and the comments here listed.

2. Utility placement may be difficult given the proposed 7-foot wide utility easement also includes a 5-foot wide side sidewalk. Please provide a typical utility plan section depicting the design.

3. The road curve fronting lot #543 does not provide for safe traffic flow or possible on-street parking. This street should be re-designed to eliminate the concerns and/or provide for delineated travel lanes.

4. This project is not located within the limits of a Ground Water Management Zone GMZ. Projects located within a GMZ must be forwarded to the County Engineer for review and comment.

5. Project Construction Drawings shall show, in detail, the proposed improvements. The work required includes preparation and delivery of an AutoCAD 2012 digitized plan showing existing and proposed lines, grades, topography and features in a given area, which was utilized in preparing plans for construction. The individual sheet types will be in a separate design to show plan views on sheets separate from profile views. In addition, each sheet of the plans shall be submitted in a PDF format.

6. All work shall be geo-referenced to the Delaware State Grid System NAD-83 (HARN) and provided in an AutoCAD 2012 format. North will always be shown in an up direction

on all plans.

7. Topographic contours at one-foot intervals shall be shown and referenced to United States Geological Survey Mean Sea Level Datum NAVD 1988 Datum.

8. The plans shall be provided on 24" x 36" drawing sheets at a scale of 1" = 50'.

The plans shall show and address the following items at minimum:

9. The project requires professional land surveying services to accurately delineate, and show the following items but is not limited to the following: all property and right-of-way lines, established at a minimum, two (2) horizontal and vertical control concrete project benchmarks, survey monuments, easements, existing and proposed topographic contours at 1-foot vertical intervals and spot elevations as necessary to establish grades, the locations of all existing structures, highway and roadway pavements, shoulders, curbs, driveways, sidewalks, lighting structures, traffic control signs, and all public and private utilities, including, but not limited to, electric power and telephone lines, poles and boxes, underground electric, telephone, and communication lines, potable water lines, fire hydrants and valve boxes, gas lines, wells, sanitary sewers including septic systems, rim and invert elevations of manholes and cleanouts, and the rims and invert elevations and type of storm water structures, drainage ditches, ponds, streams and waterways, flood zones and flood zone boundaries and elevations, and State and Federal wetlands, trees, cemeteries and historic features, and the finished floor elevations of buildings.

10. Plans shall show the seal and signature of a registered Delaware land surveyor or registered Delaware professional engineer.

11. The plan requires a Certification Signature and/or a Certification Block for the Delaware Professional Engineer or Delaware Land Surveyor.

12. The plan requires a Certification Signature and/or a Certification Block for the Owner or Representative of the Owner.

13. The plan requires a Certification Signature and/or a Certification Block for the Professional Wetlands Delineator.

14. The name, address, phone number and contact person's name of the Owner of Record, the Developer and the Engineer or Surveyor preparing the plan.

15. Indicate the location of all wetlands both State and Federal, to facilitate compliance with County, State and Federal requirements.

16. Define the courses and distances of the property perimeter and the approximate acreage contained therein. Establish and set in the field two (2) CONCRETE MONUMENT project bench marks, preferably at property perimeter corners, geo-referenced to the Delaware State Plane Coordinate system NAD 83 and show the location including the North and East coordinates of the marks on the plans.

17. Indicate the development construction phases proposed showing the boundaries of each phase. Phasing boundaries shall include buildings, residential units, amenities,

roads, storm water management facilities, wastewater systems and all other improvements and utilities required to service each phase.

18. Show the layout, width and names of all streets, alleys, crosswalks and easements proposed to be dedicated for private or public use. Street names shall not duplicate nor closely resemble existing street names in the same hundred or postal district, except for extensions of existing streets.

19. Provide the limits and elevations of the one-hundred (100) year flood. This may require the design engineer to complete an analysis and provide a report including the depiction of the subject watershed(s), calculations and other technical data necessary to determine the limits and elevations base flood. The design engineer must resolve discrepancies, if any, between surveyed topography and the FEMA Flood Insurance Rate Maps.

20. For parking lots and drives, provide spot elevations at the edge of pavement, right-of-way or travel way centerline, at changes in grade, and high points and low points, to the nearest drainage facilities. Show the limits of the various surface materials and provide construction sections.

21. Provide and show the locations and details of all ADA compliant accessible walks and ramp features.

22. If the site has a cemetery located on it the Developer shall contact the Delaware State Historic Preservation Office and satisfy the requirements of that Office prior to beginning any construction activity. This area shall not be disturbed by this project. Adequate access to the site and buffers to protect the site, shall be provided.

23. Private rights-of-way adjacent to and abutting parcels not part of the project shall be located and designed to provide adequate buffer so that construction activities do not encroach onto adjacent properties.

24. Provide statements explaining how and when the developer proposes to provide and install the required water supply, sewers or other means of sewage disposal, street pavement, drainage structures and any other required improvements.

25. Provide statements concerning any proposed deed restrictions to be imposed by the owner.

26. Where special physical conditions exist, which may act as constraints on normal development or may preclude development, the developer may be required to submit special technical data, studies or investigations. This information must be prepared by individuals technically qualified to perform such work. Additional information may include but is not limited to the following: on-site sanitary sewage disposal feasibility, water supply surveys, such as test well drilling, storm water runoff computations and identification of areas subject to periodic flooding.

27. If special conditions are found to exist, the Engineering Department may elect to withhold approval of a construction plan until it is determined that it is technically feasible to overcome such conditions. The Engineering Department may then require the developer to incorporate specific improvement design criteria into the plat as a condition to its approval.

28. When special studies or investigations pertain to a regulatory program of another public agency, the developer shall submit the results of these studies or investigations to said public agencies for technical review and approval. Approvals and/or written comments from these agencies shall be supplied to Sussex County by the developer.

UTILITY PLANNING DIVISION COMMENTS

REVIEWER:	**Rob Davis**
APPLICATION:	**2018 – 34 Keastone Bay**
APPLICANT:	**Baywood, LLC, and Sussex Realty Company**
FILE NO:	HC-1.06
TAX MAP & PARCEL(S):	**234-18.00 Parcel 68, 234-17.00 Parcels 170, 172, 173, 174 and 234- 24.00 Parcels 1 and 2.**
LOCATION:	**West of Banks Road.**
NO. OF UNITS:	**675**
GROSS ACREAGE:	**310.27**

SYSTEM DESIGN ASSUMPTION, MAXIMUM NO. OF UNITS/ACRE: Choose an item.

SEWER:

(1). Is the project in a County operated and maintained sanitary sewer and/or water district?

Yes ☒ No ☐

a. If yes, see question (2).
b. If no, see question (7).

(2). Which County Tier Area is project in? Tier 1

(3). Is wastewater capacity available for the project? No If not, what capacity is available? Sussex County did not allocate sewer capacity for the parcels.

(4). Is a Construction Agreement required? No If yes, contact Utility Engineering at (302) 855-7717.

(5). Are there any System Connection Charge (SCC) credits for the project? No If yes, how many? **N/A**. Is it likely that additional SCCs will be required? **No** If yes, the current System Connection Charge Rate is **$6,360.00** per EDU. Please contact Choose an item. at **302-855-7719** for additional information on charges.

(6). Is the project capable of being annexed into a Sussex County sanitary sewer district? **N/A**

☐ Attached is a copy of the Policy for Extending District Boundaries in a Sussex County Water and/or Sanitary Sewer District.

(7). Is project adjacent to the Unified Sewer District? **N/A**

(8). Comments: **The proposed project is not located in an area where Sussex County expects to provide sewer service, and we recommend that wastewater service be provided by Sussex County - Inland Bays Preservation Company, LLC as proposed. Sussex County does require design and construction of the collection system to meet Sussex County sewer standards and specifications. A review and approval of the collection system plans is required by Sussex County and plan review fees may apply. For questions regarding these comments, contact the Sussex County Engineering Department, Utility Planning Division at (302) 855-1299.**

(9). Is a Sewer System Concept Evaluation required? No

(10). Is a Use of Existing Infrastructure Agreement Required? No

If the above items, as applicable, are incorporated into the development plans, then preliminary approval is recommended. However, final plan approval should be withheld pending the approval of the construction plans by the Sussex County Engineering Department.

MICHAEL T. SCUSE
SECRETARY
E. AUSTIN SHORT
DEPUTY SECRETARY
KENNETH M. BOUNDS
DEPUTY SECRETARY

STATE OF DELAWARE
DEPARTMENT OF AGRICULTURE
2320 SOUTH DUPONT HIGHWAY
DOVER, DELAWARE 19901
DDA.DELAWARE.GOV

TELEPHONE (302) 698-4500
TOLL FREE (800) 282-8685
FAX (302) 697-6287

January 02, 2019

Christin Headley
Planning and Zoning Manager
Planning and Zoning Commission
2 The Circle PO Box 417
Georgetown, Delaware 19947

Subject: **2018-34-Keastone Bay**

Dear Mr. Headley,

Thank you for submitting the site plan for Keastone subdivision submitted by Solutions Integrated Planning a, Engineering and Management LLC The Sussex County Planning and Zoning Forested Buffer Ordinance Number 1984 Section 99-5 requires a forested buffer of 20 feet, Overbrook Meadows West has met the buffer requirements .

Sussex County Planning and Zoning Forested Buffer Ordinance Number 1984 Section 99-5 also requires a planting list which is to follow 70% deciduous and 30% evergreens to be planted in the buffer strip which was not provided in the plans. A comprehensive display of plantings in the buffers should be included with species being used for review. We recommend a planting list and planting specifications be submitted once the project has advance to that stage.

If you have any more questions please feel free to contact me 302.659.6704 or email me at Michael.Martini@state.de.us

Sincerely,

Michael Martini
Urban Forestry Program
Delaware Forest Service

MAPPING & ADDRESSING

MEGAN NEHRBAS
MANAGER OF GEOGRAPHIC
INFORMATION SYSTEMS (GIS)
(302) 855-1176 T
(302) 853-5889 F

Sussex County
DELAWARE
sussexcountyde.gov

November 28, 2018

SOLUTIONS
Attn: *Jason Palkewicz*
303 N Bedford Street
Georgetown, De. 19947

RE: Proposed Subdivision Name(s)

I have reviewed the name(s) submitted for your proposed subdivision Keastone Bay, which is located in Millsboro (234-17.00-170.00,172.00,173.00,174.00,234-18.00-68.00,234-24.00-2.00). In reviewing the proposed name(s) the following has been approved for this subdivision:

KEASTONE BAY

Should you have any questions please contact the Sussex County Addressing Department at 302-853-5888 or 302-855-1176.

Sincerely,

Terri L Dukes

Terri L. Dukes
Addressing Technician II

CC: Christin Headley
Planning & Zoning

ENGINEERING DEPARTMENT

ADMINISTRATION	(302) 855-7718
AIRPORT & INDUSTRIAL PARK	(302) 855-7774
ENVIRONMENTAL SERVICES	(302) 855-7730
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Sussex County
DELAWARE
sussexcountyde.gov

HANS M. MEDLARZ, P.E.
COUNTY ENGINEER

JOHN J. ASHMAN
DIRECTOR OF UTILITY PLANNING

MEMORANDUM

TO: Jennifer Norwood
Planning Technician for Planning and Zoning

FROM: John J. Ashman
Director of Utility Planning

REF: T.A.C. COMMENTS FOR
January 2019

DATE: January 16, 2019

RECEIVED
JAN 16 2019
SUSSEX COUNTY
PLANNING & ZONING

Attached, please find the Engineering Department's comments for the Technical Advisory Committee for the TAC requests for the month. Any questions please feel free to call me at 856-6258.

Attachments

cc: Jayne Ellen Dickerson with attachments
Reviewer with attachments
Planning Tech with attachments
Applicant with attachments
File with attachments

ENGINEERING DEPARTMENT

ADMINISTRATION	(302) 855-7718
AIRPORT & INDUSTRIAL PARK	(302) 855-7774
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Sussex County
DELAWARE
sussexcountyde.gov
HANS M. MEDLARZ, P.E.
COUNTY ENGINEER
MICHAEL E. BRADY
DIRECTOR OF PUBLIC WORKS

January 16, 2019

REF: **T. A. C. COMMENTS**
KEASTONE BAY
TIER 1
SUSSEX COUNTY ENGINEERING DEPARTMENT
SUSSEX COUNTY TAX MAP NUMBERS
234-17.00 PARCEL 170.00,172.00,173.00,174.00 &
234-18.00-PARCEL 68.00 &
234-24.00-PARCEL 2.00
PROJECT CLASS-2
AGREEMENT NO. 1119

The following comments are the result of the Sussex County Engineering Department's review of the preliminary site plan for the above referenced project:

PUBLIC WORKS DIVISION COMMENTS

1. Proposed developments with private roads or projects required by the County to conform to or exceed the County street design requirements shall be regulated by and conform to Sussex County Code and the comments here listed.

2. Utility placement may be difficult given the proposed 7-foot wide utility easement also includes a 5-foot wide side sidewalk. Please provide a typical utility plan section depicting the design.

3. The road curve fronting lot #543 does not provide for safe traffic flow or possible on-street parking. This street should be re-designed to eliminate the concerns and/or provide for delineated travel lanes.

4. This project is not located within the limits of a Ground Water Management Zone GMZ. Projects located within a GMZ must be forwarded to the County Engineer for review and comment.

5. Project Construction Drawings shall show, in detail, the proposed improvements. The work required includes preparation and delivery of an AutoCAD 2012 digitized plan showing existing and proposed lines, grades, topography and features in a given area, which was utilized in preparing plans for construction. The individual sheet types will be in a separate design to show plan views on sheets separate from profile views. In addition, each sheet of the plans shall be submitted in a PDF format.

6. All work shall be geo-referenced to the Delaware State Grid System NAD-83 (HARN) and provided in an AutoCAD 2012 format. North will always be shown in an up direction

on all plans.

7. Topographic contours at one-foot intervals shall be shown and referenced to United States Geological Survey Mean Sea Level Datum NAVD 1988 Datum.

8. The plans shall be provided on 24" x 36" drawing sheets at a scale of 1" = 50'.

The plans shall show and address the following items at minimum:

9. The project requires professional land surveying services to accurately delineate, and show the following items but is not limited to the following: all property and right-of-way lines, established at a minimum, two (2) horizontal and vertical control concrete project benchmarks, survey monuments, easements, existing and proposed topographic contours at 1-foot vertical intervals and spot elevations as necessary to establish grades, the locations of all existing structures, highway and roadway pavements, shoulders, curbs, driveways, sidewalks, lighting structures, traffic control signs, and all public and private utilities, including, but not limited to, electric power and telephone lines, poles and boxes, underground electric, telephone, and communication lines, potable water lines, fire hydrants and valve boxes, gas lines, wells, sanitary sewers including septic systems, rim and invert elevations of manholes and cleanouts, and the rims and invert elevations and type of storm water structures, drainage ditches, ponds, streams and waterways, flood zones and flood zone boundaries and elevations, and State and Federal wetlands, trees, cemeteries and historic features, and the finished floor elevations of buildings.

10. Plans shall show the seal and signature of a registered Delaware land surveyor or registered Delaware professional engineer.

11. The plan requires a Certification Signature and/or a Certification Block for the Delaware Professional Engineer or Delaware Land Surveyor.

12. The plan requires a Certification Signature and/or a Certification Block for the Owner or Representative of the Owner.

13. The plan requires a Certification Signature and/or a Certification Block for the Professional Wetlands Delineator.

14. The name, address, phone number and contact person's name of the Owner of Record, the Developer and the Engineer or Surveyor preparing the plan.

15. Indicate the location of all wetlands both State and Federal, to facilitate compliance with County, State and Federal requirements.

16. Define the courses and distances of the property perimeter and the approximate acreage contained therein. Establish and set in the field two (2) CONCRETE MONUMENT project bench marks, preferably at property perimeter corners, geo-referenced to the Delaware State Plane Coordinate system NAD 83 and show the location including the North and East coordinates of the marks on the plans.

17. Indicate the development construction phases proposed showing the boundaries of each phase. Phasing boundaries shall include buildings, residential units, amenities,

roads, storm water management facilities, wastewater systems and all other improvements and utilities required to service each phase.

18. Show the layout, width and names of all streets, alleys, crosswalks and easements proposed to be dedicated for private or public use. Street names shall not duplicate nor closely resemble existing street names in the same hundred or postal district, except for extensions of existing streets.

19. Provide the limits and elevations of the one-hundred (100) year flood. This may require the design engineer to complete an analysis and provide a report including the depiction of the subject watershed(s), calculations and other technical data necessary to determine the limits and elevations base flood. The design engineer must resolve discrepancies, if any, between surveyed topography and the FEMA Flood Insurance Rate Maps.

20. For parking lots and drives, provide spot elevations at the edge of pavement, right-of-way or travel way centerline, at changes in grade, and high points and low points, to the nearest drainage facilities. Show the limits of the various surface materials and provide construction sections.

21. Provide and show the locations and details of all ADA compliant accessible walks and ramp features.

22. If the site has a cemetery located on it the Developer shall contact the Delaware State Historic Preservation Office and satisfy the requirements of that Office prior to beginning any construction activity. This area shall not be disturbed by this project. Adequate access to the site and buffers to protect the site, shall be provided.

23. Private rights-of-way adjacent to and abutting parcels not part of the project shall be located and designed to provide adequate buffer so that construction activities do not encroach onto adjacent properties.

24. Provide statements explaining how and when the developer proposes to provide and install the required water supply, sewers or other means of sewage disposal, street pavement, drainage structures and any other required improvements.

25. Provide statements concerning any proposed deed restrictions to be imposed by the owner.

26. Where special physical conditions exist, which may act as constraints on normal development or may preclude development, the developer may be required to submit special technical data, studies or investigations. This information must be prepared by individuals technically qualified to perform such work. Additional information may include but is not limited to the following: on-site sanitary sewage disposal feasibility, water supply surveys, such as test well drilling, storm water runoff computations and identification of areas subject to periodic flooding.

27. If special conditions are found to exist, the Engineering Department may elect to withhold approval of a construction plan until it is determined that it is technically feasible to overcome such conditions. The Engineering Department may then require the developer to incorporate specific improvement design criteria into the plat as a condition to its approval.

28. When special studies or investigations pertain to a regulatory program of another public agency, the developer shall submit the results of these studies or investigations to said public agencies for technical review and approval. Approvals and/or written comments from these agencies shall be supplied to Sussex County by the developer.

UTILITY PLANNING DIVISION COMMENTS

REVIEWER: **Rob Davis**

APPLICATION: **2018 – 34 Keastone Bay**

APPLICANT: **Baywood, LLC, and Sussex Realty Company**

FILE NO: HC-1.06

TAX MAP & PARCEL(S): **234-18.00 Parcel 68, 234-17.00 Parcels 170, 172, 173, 174 and 234- 24.00 Parcels 1 and 2.**

LOCATION: **West of Banks Road.**

NO. OF UNITS: **675**

GROSS ACREAGE: **310.27**

SYSTEM DESIGN ASSUMPTION, MAXIMUM NO. OF UNITS/ACRE: Choose an item.

SEWER:

(1). Is the project in a County operated and maintained sanitary sewer and/or water district?

Yes ☒ No ☐

a. If yes, see question (2).
b. If no, see question (7).

(2). Which County Tier Area is project in? Tier 1

(3). Is wastewater capacity available for the project? No If not, what capacity is available? Sussex County did not allocate sewer capacity for the parcels.

(4). Is a Construction Agreement required? No If yes, contact Utility Engineering at (302) 855-7717.

(5). Are there any System Connection Charge (SCC) credits for the project? No If yes, how many? **N/A**. Is it likely that additional SCCs will be required? **No** If yes, the current System Connection Charge Rate is **$6,360.00** per EDU. Please contact Choose an item. at **302-855-7719** for additional information on charges.

(6). Is the project capable of being annexed into a Sussex County sanitary sewer district? **N/A**

☐ Attached is a copy of the Policy for Extending District Boundaries in a Sussex County Water and/or Sanitary Sewer District.

(7). Is project adjacent to the Unified Sewer District? **N/A**

(8). Comments: **The proposed project is not located in an area where Sussex County expects to provide sewer service, and we recommend that wastewater service be provided by Sussex County - Inland Bays Preservation Company, LLC as proposed. Sussex County does require design and construction of the collection system to meet Sussex County sewer standards and specifications. A review and approval of the collection system plans is required by Sussex County and plan review fees may apply. For questions regarding these comments, contact the Sussex County Engineering Department, Utility Planning Division at (302) 855-1299.**

(9). Is a Sewer System Concept Evaluation required? No

(10). Is a Use of Existing Infrastructure Agreement Required? No

If the above items, as applicable, are incorporated into the development plans, then preliminary approval is recommended. However, final plan approval should be withheld pending the approval of the construction plans by the Sussex County Engineering Department.

PLANNING & ZONING
JANELLE M. CORNWELL, AICP
DIRECTOR
(302) 855-7878 T
(302) 854-5079 F

Sussex County
DELAWARE
sussexcountyde.gov

Memorandum

To: Sussex County Technical Advisory Committee
From: Christin Headley, Planning Technician
Date: December 12, 2018
RE: Major Subdivision

The Sussex County Planning and Zoning Office has received three (3) applications for a major subdivision that require review by the Sussex County Technical Advisory Committee. Please review the applications and provide comments back to the Planning and Zoning Office on or before **Wednesday, January 16, 2019.**

1.) **2018-33 – Overbrook Meadows West**- This is a Cluster/ESDDOZ subdivision. The Cluster/ESDDOZ subdivision is for the creation of eighty-two (82) single family lots. The property is located on the east side of Rt. 1 on Cave Neck Rd. Tax Parcel: 235-23.00-1.00. Zoning: AR-1 (Agricultural Residential District). Owner: Overbrook Acres, LLC.

2.) **2018-34 – Keastone Bay**- This is a Cluster/ESDDOZ subdivision. The Cluster/ESDDOZ subdivision is for the creation of six hundred seventy-five (675) single family lots. The property is located west of Banks Rd. Tax Parcels: 234-17.00-170.00, 234-17.00-172.00, 234-17.00-173.00, 234-17.00-174.00, 234-18.00-68.00, & 234-24.00-2.00. Zoning: AR-1 (Agricultural Residential District). Owner: Baywood, LLC & Sussex Realty Company.

3.) **2018-35 – Lakelynns**- This is a Cluster/ESDDOZ subdivision. The Cluster/ESDDOZ subdivision is for the creation of forty-one (41) single family lots and one hundred thirty-eight (138) multi-family units. The property is located on the northeast corner of the intersection of Peppers Corner Rd. and Lizard Hill Rd. Tax Parcels: 134-18.00-38.00 & 134-19.00-13.03. Zoning: GR (General Residential District). Owner: Norman Stephen Price Revocable Trust.

Please feel free to send your comments via e-mail. Please feel free to contact me with any questions at (302) 855-7878 during normal business hours 8:30am-4:30pm Monday through Friday or e-mail me at christin.headley@sussexcountyde.gov.

USDA
United States Department of Agriculture

Natural Resources
Conservation Service

Georgetown
Service Center

21315 Berlin Road
Unit 3
Georgetown, DE 19947

Voice 302.856.3990
Fax 855.306.8272

January 7, 2019

Janelle M. Cornwell, Director
Sussex County Planning & Zoning
Sussex County Courthouse
Georgetown, DE 19947

RE: Keastone Bay
Indian River Hundred
675 single family lots

Dear Ms. Cornwell:

Soils within the delineated area on the enclosed map are:

AsA	Askecksy loamy sand, 0 to 2 percent slopes
DnA	Downer loamy sand, 0 to 2 percent slopes
FhA	Fort Mott-Henlopen complex, 0 to 2 percent slopes
FhB	Fort Mott-Henlopen complex, 2 to 5 percent slopes
PpA	Pepperbox loamy sand, 0 to 2 percent slopes
PrA	Pepperbox-Rockawalkin complex, 0 to 2 percent slopes
RoA	Rosedale loamy sand, 0 to 2 percent slopes

Soil Interpretation Guide

Soil Limitation Class

Buildings

Map Symbol	Urbanizing Subclass	With Basement	Without Basement	Septic Filter Fields
AsA	R2	Very limited	Very limited	Very limited
DnA	G1	Not limited	Not limited	Not limited
FhA	G1	Not limited	Not limited	Somewhat limited/not limited
FhB	G1	Not limited	Not limited	Somewhat limited/not limited
PpA	Y2	Very limited	Somewhat limited	Very limited
PrA	Y2	Very limited	Somewhat limited	Very limited
RoA	Y2	Somewhat limited	Not limited	Very limited

Definition of soil limitation ratings classes:

Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development.

"Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected.

"Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected.

"Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

G1:
These soils are on nearly level to strongly sloping (0-10% slopes), well drained, mostly permeable soils. As sites for large commercial, industrial, institutional, and residential developments, these soils have fewer limitations than any other soils in the state. Slopes are favorable, and grading can be done without difficulty. Foundation conditions are generally good. Grasses, trees, and do well. Principal soil limitations: No apparent soil limitations for conventional uses.

R2:
The soils in this classification are nearly or gently sloping, very poorly, poorly, and somewhat poorly drained. Seasonal high water tables, local ponding, and high potential frost action severely limit these soils for residential developments. The principal soil limitations are: 1) soil is highly susceptible to frost action, 2) excavations are likely to fill with water in late winter or early spring, 3) wet foundations or basements probable, and 4) hazard of temporary ponding of water in areas lacking outlets. Loose running sand commonly encountered in deep excavations.

Y2:
The soils in this classification are nearly level or gently sloping, moderately well drained or well drained with ground water between four to six feet from the surface, and are subject to seasonal high water tables. Seasonal wetness and seepage around foundations moderately limits these soils for residential use. The principal soil limitations are: 1) lateral seepage in subsoil causes concentration of water around foundations, 2) soil is highly susceptible to frost action, 3) excavations are likely to fill with water in late winter or early spring, and 4) wet basements or foundations are probable.

The soil interpretations above do not eliminate the need for detailed investigations at each proposed construction site. However, the interpretations can serve as a guide to planning more detailed investigations. No consideration was given in these interpretations regarding the size and shape of the soil area; nor to the pattern they form with other soils in the landscape. Also, because of the scale of the maps used, small areas of other kinds of soils may be included within some delineations of the soil map. Thus, an individual lot or building site could occupy a small area that would not fit the interpretations given for the soils symbol representing the entire delineation of the map. Interpretations apply to the soils in their natural state and not for areas that may have been altered through grading, compacting, and the like.

Sincerely,

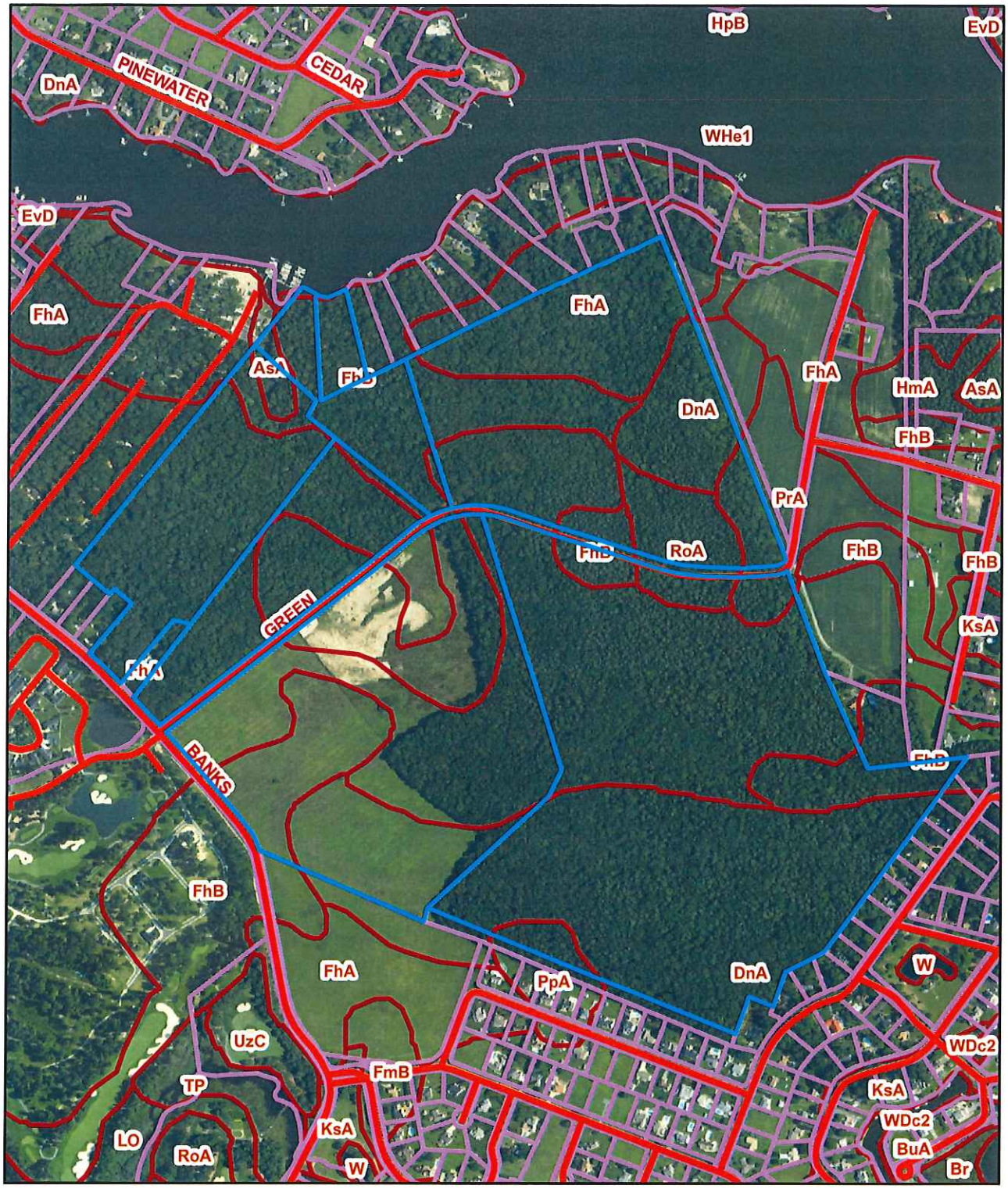
Thelton D. Savage
District Conservationist
USDA, Natural Resources Conservation Service

TDS/bh

2018-34

TM #234-17.00-170.00, 172.00, 173.00, 174.00, 234-18.00-68.00, 234-24.00-2.00

Keastone Bay



RECEIVED
JAN 7 2019
SUSSEX COUNTY
PLANNING & ZONING

2018-34

TM #234-17.00-170.00, 172.00, 173.00, 174.00, 234-18.00-68.00, 234-24.00-2.00

Keastone Bay

Sussex conservation district
PREPARE. PROTECT. PRESERVE.

RECEIVED
JUL 17 2019
SUSSEX COUNTY
PLANNING & ZONING

MEMORANDUM

TO: Janelle M. Cornwell

FROM: Debbie Absher, Director of Ag Programs

SUBJECT: LUPA

DATE: July 17, 2019

Attached you will find the comments for the following proposed zoning changes:

- 2018-34 – Keastone Bay
- 2019-10 – Lands of Timmons
- CZ 1885 – 36191 DWB, LLC

If you have any questions, I can be reached at 856-3990, ext. 3.

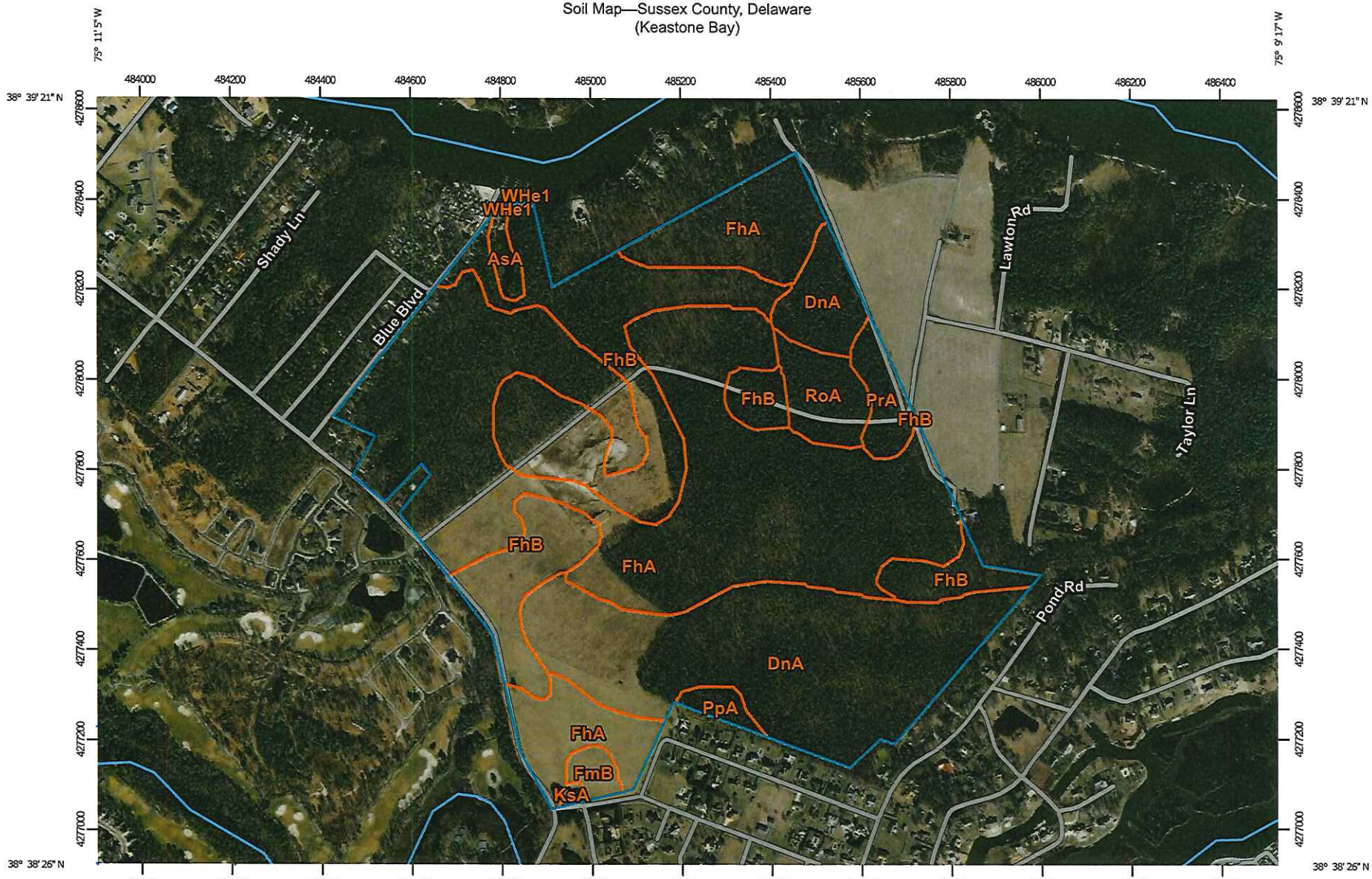
BJH
Enclosures

2018-34

TM #234-17.00-170.00, 172.00, 173.00, 174.00, 234-18.00-68.00, 234-24.00-1.00, 2.00

Keastone Bay

Soil Map—Sussex County, Delaware
(Keastone Bay)



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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

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

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

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

Soil Survey Area: Sussex County, Delaware
Survey Area Data: Version 19, Sep 14, 2018

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

Date(s) aerial images were photographed: Nov 21, 2018—Mar 12, 2019

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AsA	Askecksy loamy sand, 0 to 2 percent slopes	2.3	0.7%
DnA	Downer loamy sand, 0 to 2 percent slopes	75.8	23.3%
FhA	Fort Mott-Henlopen complex, 0 to 2 percent slopes	158.0	48.6%
FhB	Fort Mott-Henlopen complex, 2 to 5 percent slopes	67.9	20.9%
FmB	Fort Mott loamy sand, 2 to 5 percent slopes	2.8	0.8%
KsA	Klej loamy sand, 0 to 2 percent slopes	0.4	0.1%
PpA	Pepperbox loamy sand, 0 to 2 percent slopes	2.5	0.8%
PrA	Pepperbox-Rockawalkin complex, 0 to 2 percent slopes	6.1	1.9%
RoA	Rosedale loamy sand, 0 to 2 percent slopes	9.0	2.8%
WHe1	Herring Creek mucky silt loam, 0 to 1 meter water depth	0.2	0.1%
Totals for Area of Interest		**325.0**	**100.0%**

Selected Soil Interpretations

This report allows the customer to produce a report showing the results of the soil interpretation(s) of his or her choice. It is useful when a standard report that displays the results of the selected interpretation(s) is not available.

When customers select this report, they are presented with a list of interpretations with results for the selected map units. The customer may select up to three interpretations to be presented in table format.

For a description of the particular interpretations and their criteria, use the "Selected Survey Area Interpretation Descriptions" report.

Report—Selected Soil Interpretations

Selected Soil Interpretations–Sussex County, Delaware							
Map symbol and soil name	Pct. of map unit	ENG - Dwellings W/O Basements		ENG - Dwellings With Basements		ENG - Septic Tank Absorption Fields (DE)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AsA—Askecksy loamy sand, 0 to 2 percent slopes							
Askecksy, undrained	45	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Filtering capacity	1.00
						Ponding	1.00
Askecksy, drained	30	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
						Filtering capacity	1.00
DnA—Downer loamy sand, 0 to 2 percent slopes							
Downer	80	Not limited		Not limited		Very limited	
						Restricted permeability	0.99
FhA—Fort Mott-Henlopen complex, 0 to 2 percent slopes							
Fort mott	45	Not limited		Not limited		Somewhat limited	
						Restricted permeability	0.50
Henlopen	35	Not limited		Not limited		Not limited	

Selected Soil Interpretations–Sussex County, Delaware							
Map symbol and soil name	Pct. of map unit	ENG - Dwellings W/O Basements		ENG - Dwellings With Basements		ENG - Septic Tank Absorption Fields (DE)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
FhB—Fort Mott-Henlopen complex, 2 to 5 percent slopes							
Fort mott	45	Not limited		Not limited		Somewhat limited	
						Restricted permeability	0.50
Henlopen	35	Not limited		Not limited		Not limited	
FmB—Fort Mott loamy sand, 2 to 5 percent slopes							
Fort mott	80	Not limited		Not limited		Somewhat limited	
						Restricted permeability	0.50
KsA—Klej loamy sand, 0 to 2 percent slopes							
Klej	70	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
						Filtering capacity	1.00
PpA—Pepperbox loamy sand, 0 to 2 percent slopes							
Pepperbox	80	Somewhat limited		Very limited		Very limited	
		Depth to saturated zone	0.39	Depth to saturated zone	1.00	Depth to saturated zone	1.00
PrA—Pepperbox-Rockawalkin complex, 0 to 2 percent slopes							
Pepperbox	50	Somewhat limited		Very limited		Very limited	
		Depth to saturated zone	0.39	Depth to saturated zone	1.00	Depth to saturated zone	1.00
Rockawalkin	30	Somewhat limited		Very limited		Very limited	
		Depth to saturated zone	0.39	Depth to saturated zone	1.00	Depth to saturated zone	1.00
						Restricted permeability	1.00
RoA—Rosedale loamy sand, 0 to 2 percent slopes							
Rosedale	75	Not limited		Somewhat limited		Very limited	
				Depth to saturated zone	0.73	Depth to saturated zone	1.00
						Restricted permeability	1.00

Selected Soil Interpretations–Sussex County, Delaware							
Map symbol and soil name	Pct. of map unit	ENG - Dwellings W/O Basements		ENG - Dwellings With Basements		ENG - Septic Tank Absorption Fields (DE)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
WHe1—Herring Creek mucky silt loam, 0 to 1 meter water depth							
Herring creek, 0 to 1 meter water depth	85	Not rated		Not rated		Very limited	
						Depth to saturated zone	1.00
						Flooding	1.00
						Subsidence	1.00

Data Source Information

Soil Survey Area: Sussex County, Delaware
Survey Area Data: Version 19, Sep 14, 2018

SOILS

ADD ANY ADDITIONAL INFORMATION THAT MAY BE CONSIDERED PERTINENT:

SOILS:

AsA	Askecksy loamy sand, 0 to 2 percent slopes
DnA	Downer loamy sand, 0 to 2 percent slopes
FhA	Fort Mott-Henlopen complex, 0 to 2 percent slopes
FhB	Fort Mott-Henlopen complex, 2 to 5 percent slopes
FmB	Fort Mott loamy sand, 2 to 5 percent slopes
KsA	Klej loamy sand, 0 to 2 percent slopes
PpA	Pepperbox loamy sand, 0 to 2 percent slopes
PrA	Pepperbox-Rockawalkin complex, 0 to 2 percent slopes
RoA	Rosedale loamy sand, 0 to 2 percent slopes

A. SUITABILITY OF SOILS INTENDED USE:
See attached table for suitability.

B. EVALUATE THE SOILS INCLUDED IN THIS PROJECT WITH RESPECT TO EROSION AND SEDIMENTATION CONTROL:

1. DURING CONSTRUCTION:

   Follow recommended erosion and sediment control practices.

2. AFTER CONSTRUCTION:

   Maintain vegetation.

C. FARMLAND RATING (PRIME, UNIQUE, STATEWIDE IMPORTANCE, ETC.):
See attached table(s) for ratings.

D. ADDITIONAL COMMENTS (IF APPLICABLE):

DRAINAGE AND FLOODING

Add any additional information that may be considered pertinent:

DRAINAGE:

A. Any Storm flood hazard area affected? ☑ Yes ☐ No

Not Likely.

B. Would the proposed project necessitate any off-site drainage improvements?

Not Likely

C. Would the proposed project necessitate any on-site drainage improvements?

Yes

D. Any Tax Ditch affected? ☐ Yes ☑ No

Additional Comments (if applicable)

All landowners, developers, and site designers are strongly encouraged to thoroughly investigate the presence of easements or right-of-ways along tax ditches. These documents are located in the Prothonotary's Office and/or with the Recorder of Deeds. If a stormwater management facility is proposed along a stream or ditch, the Sussex Conservation District will require verification of any easements. Before you start any project design, please look into this matter by calling the Division of Soil and Water Conservation-Drainage Program at (302) 855-1930 or the Sussex Conservation District Sediment and Stormwater Program at (302) 856-7219 for more information.

solutions
Integrated Planning
Engineering & Management, LLC

August 6, 2018

Mrs. Constance C. Holland, AICP, State Planning Director
Haslet Armory
122 Martin Luther King Jr. Blvd. South
Dover, DE 19901

RE: PLUS review 2018-06-03; Bridlewood

Dear Mrs. Holland:

Please allow this letter to serve as our response to the PLUS review of the Bridlewood community. Answers to comments have been provided following each comment taken directly from your comment letter for ease of use. Our responses are in red and a different font for ease in review.

Thank you for meeting with State agency planers on June 27, 2018 to discuss the proposed plans for the Bridlewood project. According to the information received you are seeking review of a 677 unit subdivision on 310 acres along Green Road in Sussex County.

Please note that changes to the plan, other than those suggested in this letter, could result in additional comments from the State. Additionally, these comments reflect only issues that are the responsibility of the agencies represented at the meeting. **The developers will also need to comply with any Federal, State, and local regulations regarding this property. We also note that as Sussex County is the governing authority over this land, the developers will need to comply with any and all regulations/restrictions set forth by the County.**

Response – The developer will comply with all Federal, State and Local regulations regarding the development of this property. The developer will comply with any and all regulations / restrictions set forth by Sussex County.

Strategies for State Policies and Spending

This project is located in Investment Level 3 according to the *Strategies for State Policies and Spending*. Investment Level 3 reflects areas where growth is anticipated by local, county, and state plans in the longer term future, or areas that may have environmental or other constraints to development. State investments may support future growth in these areas, but please be advised that the State has other priorities for the near future. We encourage you to design the site with respect for the environmental features which are present.

Response – Noted.

T: 302.297.9215
T: 410.572.8833
E: ideas@solutionsipem.com
303 North Bedford Street • Georgetown, DE 19947
3003 Merritt Mill Road • Salisbury, MD 21804

Code Requirements/Agency Permitting Requirements

Department of Transportation – Contact Bill Brockenbrough 760-2109

- The site access on Green Road (Sussex Road 298A) must be designed in accordance with DelDOT's Development Coordination Manual, which is available at http://www.deldot.gov/Business/subdivisions/index.shtml?dc=changes.

- Pursuant to Section P.3 of the Manual, a Pre-Submittal Meeting is required before plans are submitted for review.

- Section P.5 of the Manual addresses fees that are assessed for the review of development proposals. DelDOT anticipates collecting the Initial Stage Fee when the record plan is submitted for review and the Construction Stage Fee when construction plans are submitted for review.

- Per Section 2.2.2.1 of the Development Coordination Manual, Traffic Impact Studies (TIS) are warranted for developments generating more than 500 vehicle trip ends per day or 50 vehicle trip ends per hour in any hour of the day. The PLUS application states that the proposed development would generate 6,566 vehicle trip ends per day. DelDOT calculates that the development would generate 6,041 vehicle trip ends per day on weekdays and 637 vehicle trip ends per hour during the evening peak hour on Green Road. Therefore a TIS is warranted.

  A TIS was done for a previous, almost identically sized, development on this site in 2005. A copy of an October 2006 letter from one of DelDOT's consultants, reviewing that TIS, is provided as information. Off-site improvements identified in that letter, or similar ones, are still likely to be required. However enough has changed since 2005, both in DelDOT's regulations and in the area surrounding the project, that DelDOT intends to require a new TIS.

  The purpose of a TIS is to identify needed off-site improvements. One such improvement that DelDOT can identify without a TIS is improvement of Green Road and Banks Road to meet DelDOT local road standards, including 11-foot lanes and 5-foot shoulders in both directions, for the length of the site frontage.

- Section 3.2.4.2 of the Manual addresses the placement of right-of-way monuments (markers) along the roads on which a property fronts, in this case Green Road and Banks Road (Sussex Road 298). Monuments sufficient to re-establish the permanent rights-of-way after the dedication discussed below should be shown on the plan and provided in the field in accordance with this section.

- As necessary, in accordance with Section 3.2.5 and Figure 3.2.5-a of the Manual, DelDOT will require dedication of right-of-way along the site's frontage on Green Road and Banks Road to meet DelDOT's standards for local roads. By this regulation, this dedication is to provide a minimum of 30 feet of right-of-way from the physical centerline along both roads. The following right-of-way dedication note is required, **"An X-foot wide right-of-way is hereby dedicated to the State of Delaware, as per this plat."**

- In accordance with Section 3.2.5.1.1 of the Manual, if this development is proposing a neighborhood sign/structure, then a permanent easement shall be established at the site entrance. The easement shall be located outside of any existing and/or proposed right-of-way. It will also need to be verified that the sign/structure does not pose a sight distance and/or safety hazard.

- In accordance with Section 3.2.5.1.2 of the Manual, DelDOT will require the establishment of a 15-foot wide permanent easement across the property frontage on both Green Road and Banks Road. The location of the easement shall be outside the limits of the ultimate right-of-way. The easement area can be used as part of the open space calculation for the site. The following note is required, **"A 15-foot wide permanent easement is hereby established for the State of Delaware, as per this plat."**

- In accordance with Section 3.4 of the Manual, a record plan shall be prepared prior to issuing "Letter of No Objection". The record plan submittal shall include the items listed on the Critical Items for Acceptance: Record Plan document available on the DelDOT website at https://www.deldot.gov/Business/subdivisions/pdfs/Critical-Items-Record-Subdivision.pdf?09222017.

- Referring to Section 3.4.2.1 of the Manual, the following items, among other things, are required on the Record Plan:

  - A Traffic Generation Diagram. See Figure 3.4.2-a for the required format and content.

  - Depiction of all existing entrances within 450 feet of the proposed entrance.

  - Notes identifying the type of any off-site improvements, agreements (signal, letter) contributions and when the off-site improvements are warranted.

- Section 3.5 of the Manual provides DelDOT's requirements with regard to connectivity. The requirements in Sections 3.5.1 through 3.5.3 shall be followed for all development projects having access to state roads or proposing DelDOT-maintained public streets for subdivisions. Private or municipal streets should follow the County's requirements for connectivity.

- Section 3.5.4.2 of the Development Coordination Manual addresses requirements for shared-use paths and sidewalks. Referring to Section 3.5.4.2.A of the Manual, developments installation of a sidewalk or Shared Use Path along the development's road frontage is required for developments generating more than 2,000 vehicle trip ends per day. DelDOT will require a Shared Use Path along the development frontage on both Green Road and Banks Road.

- Referring to Section 3.5.5 of the Manual, existing and proposed transit stops and associated facilities as required by the Delaware Transit Corporation (DTC) or DelDOT shall be shown on the Record Plan.

- Section 3.5.4.4 of the Manual addresses access-ways, which are similar to Shared Use Paths (SUP) but are used to connect from an SUP or sidewalk along a road to an interior trail or subdivision street when the spacing between streets is inadequate to accommodate convenient pedestrian and bicycle travel. DelDOT anticipates requiring at least two access-ways. One would be from a cul de sac, proposed near the intersection of Green Road and Banks Road, out to that intersection. The other would be from a subdivision street, proposed to run southwest from the intersection of Green Road and West Waters Edge Trail, out to Banks Road near the south limit of the site frontage.

- In accordance with Section 3.8 of the Manual, storm water facilities, excluding filter strips and bioswales, shall be located a minimum of 20 feet from the ultimate State right-of-way along both Green Road and Banks Road.

- Referring to Section 4.3 of the Manual, an entrance plan shall be prepared prior to issuing entrance approval. The entrance plan submittal shall include the items listed on the Critical Items for Acceptance: Entrance/Construction/Subdivision Set Plan document available on the DelDOT website at https://www.deldot.gov/Business/subdivisions/pdfs/Critical-Items_Entrance_Construction_Subdivision.pdf?09222017.

- In accordance with Section 5.2.5.6 of the Manual, a separate turning template plan shall be provided to verify vehicles can safely enter and exit the site entrance. As per Section 5.2.3 of the Manual, the entrance shall be designed for the largest vehicle using the entrance.

- In accordance with Section 5.2.9 of the Manual, the Auxiliary Lane Worksheet should be used to determine whether auxiliary lanes are warranted at the site entrances and how long those lanes should be. The worksheet can be found at http://www.deldot.gov/Business/subdivisions/index.shtml.

- In accordance with Section 5.4 of the Manual, sight distance triangles are required and shall be established in accordance with American Association of State Highway and Transportation Officials (AASHTO) standards. A spreadsheet has been developed to assist with this task. It can be found at http://www.deldot.gov/Business/subdivisions/index.shtml.

- In accordance with Section 5.14 of the Manual, all existing utilities must be shown on the plan and a utility relocation plan will be required for any utilities that need to be relocated.

- Because the proposed development would not have State-maintained streets, Section 6.4.3 of the Manual, which pertains to the inspection and acceptance of commercial entrances, applies. Construction inspection responsibilities shall be in accordance with Figure 6.4.3-a. DelDOT's preliminary reading of this figure is that the project requires Level I inspection and that a construction inspection agreement will not be needed.

- Section 7.7.2 of the Manual addresses the need to provide 20-foot wide drainage easements for all storm drainage systems, open or closed, that fall outside the existing right-of-way or the drainage/utility easement. In accordance with this section, metes and bounds and total areas need to be shown for any drainage easements. The easements should be shown and noted on the record plan.

Response – The developer will coordinate with DelDOT regarding the necessary improvements and agreements. Construction plans will be per DelDOT requirements.

Department of Natural Resources and Environmental Control – Contact Michael Tholstrup 735-3352

- The Department of Natural Resources and Environmental Control did not submit comments regarding this application. If the development of this property requires permits from a DNREC section, please contact the DNREC regulatory agency directly.

Response – Noted.

State Historic Preservation Office – Contact Carlton Hall 736-7404

- The SHPO has concerns about this proposed development. There is a known dwelling complex (S02939) located off Banks Road on the northwestern part of the parcel. There was an Agricultural Complex on the parcel (S03041) known as the Lawson Agricultural Complex, north of Green Road on the northern part of the project area.

  There is potential for both historic and pre-historic archaeological sites based on our review of historic maps and additional information in our office. The Delaware SHPO strongly recommends an archaeological survey of the area by a qualified archaeologist.

- Burials both marked and unmarked, are protected by Delaware law. Please refer to the following sections of the Delaware State Code: (1) Title 11 Sub-Chapter 1340, titled "Desecration of Burial Places"; and (2) Title 7 Chapter 54, known as the "Delaware Unmarked Human Remains Act".

  Abandoned or unmarked family cemeteries are very common in the State of Delaware. They are usually in rural or open space areas, within or near the boundary, of a historic farm site. Even a marked cemetery can frequently have unmarked graves or burials outside of the known boundary line or limit. Disturbing unmarked graves or burials triggers the Delaware's Unmarked Human Burials and Human Skeletal Remains Law (Del. C. Title 7, Ch. 54), and such remains or discoveries can result in substantial delays while the procedures required under this law are carried out. If there is a discovery of any unmarked graves, burials or a cemetery, it is very costly to have them archaeologically excavated and the burials moved. In the event of such a discovery, the Division of Historical & Cultural Affairs also recommends that the plans be re-drawn to leave the full extent of the cemeteries or any burials on its own parcel or in the open space area of the development, with the responsibility for its maintenance lying with the landowner association or development. If you would like to see more information,please review the following websites:

  www.history.delaware.gov/preservation/umhr.shtml and
  www.history.delaware.gov/preservation/cemeteries.shtml

- If there is federal involvement, in the form of licenses, permits, or funds, the federal agency, often through its client, is responsible for complying with Section 106 of the National Historic Preservation Act (36 CFR 800) and must consider their project's effects on any known or potential cultural or historic resources. Owners and developers who may plan to apply for an Army Corps of Engineers permit or for federal funding, such as HUD or USDA grants, should be aware of the National Historic Preservation Act of 1966 (as amended). If you need further information or additional details pertaining to the Section 106 process and the Advisory Council's role; please review the Advisory Council's website at the following: **www.achp.gov**

Response – The developer has been made aware of the potential for both historic and pre-historic archeological sites and will comply with state and federal code.

Delaware State Fire Marshall's Office – Contact John Rudd 323-5365
At the time of formal submittal, the applicant shall provide; completed application, fee, and three sets of plans depicting the following in accordance with the Delaware State Fire Prevention Regulation:

Fire Protection Water Requirements:

- Where a water distribution system is proposed for single-family dwellings it shall be capable of delivering at least 500 gpm for 1-hour duration, at 20-psi residual pressure. Fire hydrants with 1000 feet spacing on centers are required.

- The infrastructure for fire protection water shall be provided, including the size of water mains.

Accessibility:

- All premises, which the fire department may be called upon to protect in case of fire, and which are not readily accessible from public roads, shall be provided with suitable gates and access roads, and fire lanes so that all buildings on the premises are accessible to fire apparatus. This means that the access road to the subdivision from the main thoroughfare must be constructed so fire department apparatus may negotiate it. If a "center island" is placed at an entrance into the subdivision, it shall be arranged in such a manner that it will not adversely affect quick and unimpeded travel of fire apparatus into the subdivision. Where traffic circles (round-abouts) are located in the subdivision, they too are to be arranged in such a manner that they will not adversely affect quick and unimpeded travel of fire apparatus throughout the subdivision. Additionally, where trees are to be situated adjacent to travel roads in the subdivision, some forethought should be exercised regarding how future growth of the trees may affect fire department travel throughout the subdivision

- Fire department access shall be provided in such a manner so that fire apparatus will be able to locate within 100 ft. of the front door.

- Any dead end road more than 300 feet in length shall be provided with a turn-around or cul-de-sac arranged such that fire apparatus will be able to turn around by making not more than one backing maneuver. The minimum paved radius of the cul-de-sac shall be 38 feet. The dimensions of the cul-de-sac or turn-around shall be shown on the final plans. Also, please be advised that parking is prohibited in the cul-de-sac or turn around.

- The use of speed bumps or other methods of traffic speed reduction must be in accordance with Department of Transportation requirements.

- The local Fire Chief, prior to any submission to our Agency, shall approve in writing the use of gates that limit fire department access into and out of the development or property.

Gas Piping and System Information:

- Provide type of fuel proposed, and show locations of bulk containers on plan.

Required Notes:

- Provide a note on the final plans submitted for review to read " All fire lanes, fire hydrants, and fire department connections shall be marked in accordance with the Delaware State Fire Prevention Regulations"
- Name of Water Supplier
- Proposed Use
- National Fire Protection Association (NFPA) Construction Type
- Maximum Height of Buildings (including number of stories)
- Provide Road Names, even for County Roads

Response – Noted.

Recommendations/Additional Information

This section includes a list of site specific suggestions that are intended to enhance the project. These suggestions have been generated by the State Agencies based on their expertise and subject area knowledge. **These suggestions do not represent State code requirements.** They are offered here in order to provide proactive ideas to help the applicant enhance the site design, and it is hoped **(but in no way required)** that the applicant will open a dialogue with the relevant agencies to discuss how the suggestions can benefit the project.

Department of Transportation – Contact Bill Brockenbrough 760-2109

- Section 3.2.4.1 of the Manual addresses the placement of right-of-way monuments (markers) along subdivision streets. DelDOT recommends that monuments be furnished and placed along the proposed streets in accordance with this section.

- The concept plan presented appears to show a realignment of Green Road. While they do not have regulatory status, DelDOT anticipates requiring that their design standards, including but not limited to the DelDOT Road Design Manual, be followed in designing the realignment.

- The applicant should expect a requirement that any substation and/or wastewater facilities will be required to have access from an internal street or driveway with no direct access to Green Road or Banks Road.

- The applicant should expect a requirement that all PLUS and Technical Advisory Committee (TAC) comments be addressed prior to submitting plans for review.

- Please be advised that as of August 1, 2015, all new plan submittals and re-submittals, including major, minor and commercial plans, shall now be uploaded via the PDCA (Planning Development Coordination Application) with any review fee paid online via

credit card or electronic check. Guidance on how to do this is available on our website at http://www.deldot.gov/Business/subdivisions/index.shtml.

- Please be advised that the Standard General Notes have been updated and posted to the DelDOT website. Please begin using the new versions and look for the revision date of December 8, 2017. The notes can be found at http://www.deldot.gov/Business/subdivisions/index.shtml.

Delaware State Fire Marshall's Office – Contact John Rudd 323-5365

- Although not a requirement of the State Fire Prevention Regulations, the Office of the State Fire Marshal encourages home builders to consider the benefits of home sprinkler protection in dwellings. The Office of the State Fire Marshal also reminds home builders that they are obligated to comply with requirements of Subchapter III of Chapter 36 of Title 6 of the Delaware Code which can be found at the following website: http://delcode.delaware.gov/title6/c036/sc03/index.shtml

- Preliminary meetings with fire protection specialists are encouraged prior to formal submittal. Please call for appointment. Applications and brochures can be downloaded from our website: www.statefiremarshal.delaware.gov, technical services link, plan review, applications or brochures.

Sussex County – Contact Rob Davis 302-855-7820

- The proposed project is not located in an area where Sussex County expects to provide sewer service, and Sussex County recommends that wastewater service be provided by Inland Bays Preservation as proposed. Sussex County does require design and construction of the collection and transmission system to meet Sussex County sewer standards and specifications. The Sussex County Engineering Department shall be provided with an engineering design report from a qualified engineer indicating that treatment and disposal capacity for the entire project can be provided by the existing or proposed wastewater infrastructure. A review and approval of the plans for collection, transmission, treatment and disposal system by the Sussex County Engineering Department is required and plan review fees may apply. Submission and approval of a sewer concept plan is not required.

Response – The developer acknowledges the non-required additional information from the various agencies.

Following receipt of this letter and upon filing of an application with the local jurisdiction, the applicant shall provide to the local jurisdiction and the Office of State Planning

Coordination a written response to comments received as a result of the pre-application process, noting whether comments were incorporated into the project design or not and the reason therefore.

This concludes our response. If you have any questions, please contact us at your convenience.

Sincerely,

Solutions, IPEM

Jason Palkewicz, PE

PRELIMINARY SUBDIVISION PLAT
FOR
KEASTONE BAY
FOR
BAYWOOD, LLC

SITE DATA:

OWNER/DEVELOPER
TAX MAP 234-24.00-1.00
BAYWOOD, LLC
34026 ANNA'S WAY, SUITE 1
LONG NECK, DE 19966

TAX MAP 234-17.00-170.00
TAX MAP 234-17.00-172.00
TAX MAP 234-17.00-173.00
TAX MAP 234-17.00-174.00
TAX MAP 234-18.68.00
TAX MAP 234-24.00-2.00

SUSSEX REALTY COMAPNY
34026 ANNA'S WAY, SUITE 1
MILLSBORO, DE 19966

ENGINEER/
LAND PLANNER: SOLUTIONS IPEM, LLC
303 NORTH BEDFORD STREET
GEORGETOWN, DE 19947
PHONE: 302.297.9215
CONTACT: JASON PALKEWICZ, PE

- EXISTING ZONING:
  AR-1 (ES-1)
- PROPOSED USE: ES-1 CLUSTER

  SINGLE FAMILY LOTS = 675 LOTS
  MIN. LOT AREA = 7,500 S.F.
  MIN. LOT WIDTH = 60'

  MAXIMUM BUILDING HEIGHT: 42'

  FRONT YARD = 25' (15' ON CORNER)
  SIDE YARD = 10'
  REAR YARD = 10'
- FLOOD ZONE:
  PROPERTIES ARE LOCATED WITHIN FLOOD ZONE A (NO BASE FLOOD ELEVATIONS DETERMINED), ZONE X (SHADED)[AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREA PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD, AND ZONE X (AREAS DETERMINED TO OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN, PER FIRM MAP NUMBER 10005C0345K, MAP REVISED MARCH 16, 2015
- WATER SUPPLY:
  LONG NECK WATER COMPANY
- SANITARY SEWER:
  SUSSEX COUNTY - INLAND BAYS PRESERVATION COMPANY, LLC
- GROSS AREA = 310.907 AC.±
  ALLOWABLE UNITS = 43,560 SF / 20,000 SF * 310.907 AC = 677.15
  PROPOSED UNITS = 651
  (2.09 UNITS/ACRE GROSS)
- AREAS:
  LOT AREA = 138.678 AC ± (6,040,814 SF ±)
  RIGHT-OF-WAY AREA = 31.676 AC ± (1,379,763 SF ±)
  OPEN SPACE AREA = 137.171 AC ± (6,122,488 SF ± ~ 44% ±)

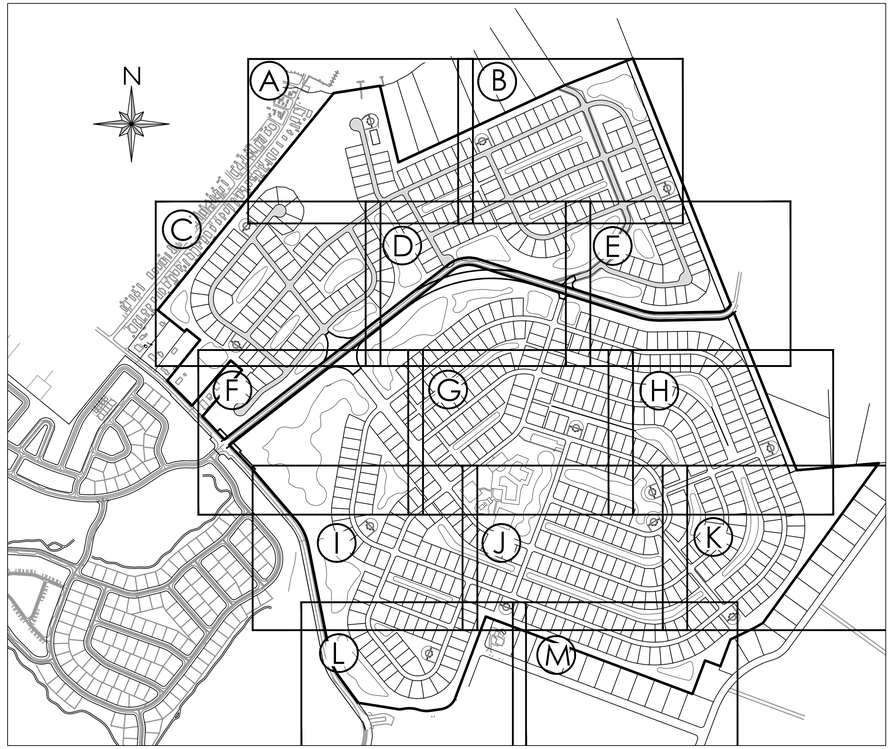
  EXISTING WOODED AREA = 237.036 AC ± (10,325,288 SF ±)
  WOODED AREA TO REMAIN = 26.762 AC ± (1,165,753 SF ±)
  -SUBJECT TO STORMWATER REQUIREMENTS

  DELDOT RIGHT OF WAY
  EXISTING = 4.63 AC±
  PROPOSED = 6.804 AC±
- SOIL TYPES:
  AsA - ASKECSKY LOAMY SAND - HYDROLOGIC SOIL A/D
  DnA - DOWNER LOAMY SAND - HYDROLOGIC SOIL A
  FhA & FhB - FORT MOTT-HENLOPEN COMPLEX - HYDROLOGIC SOIL A
  FmB - FORT MOTT-LOAMY SAND - HYDROLOGIC SOIL A
  KsA - KLEJ LOAMY SAND - HYDROLOGIC SOIL A/D
  PpA - PEPPERBOX LOAMY SAND - HYDROLOGIC SOIL A
  PrA - PEPPERBOX-ROCKAWALKIN COMPLEX - HYDROLOGIC SOIL A
  RoA - ROSEDALE LOAMY SAND - HYDROLOGIC SOIL A

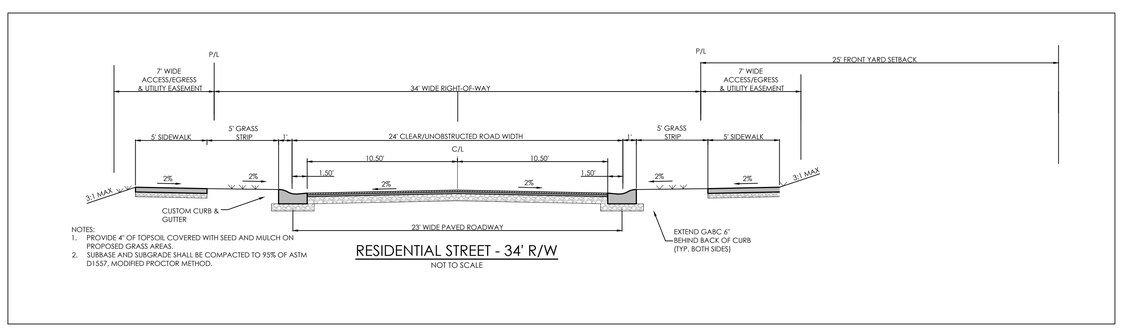
GENERAL NOTES:

1. DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. ALL WORK MUST BE PERFORMED IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970, AS AMENDED AND ALL RULES AND REGULATIONS THERETO APPURTENANT.
2. EXISTING CONTOURS SHOWN WERE TAKEN FROM AERIAL TOPOGRAPHIC MAPPING PROVIDED BY DNREC PUBLIC RECORDS AND WILL BE FIELD VERIFIED DURING THE DESIGN STAGE OF THE PROJECT.
3. FORESTED AND/OR LANDSCAPED BUFFER STRIP - A STRIP OF LAND, NOT LESS THAN 20 FEET IN WIDTH, EXCLUSIVE OF ANY RESIDENTIAL LOTS, STORMWATER MANAGEMENT AREAS OR FACILITIES, OPEN SPACE (EXCEPT THAT THE LAND AREA WITHIN THE BUFFER STRIP MAY BE INCLUDED IN THE OVERALL CALCULATION OF OPEN SPACE), RECREATIONAL AMENITIES, WASTEWATER TREATMENT AND/OR DISPOSAL FACILITIES, WATER TREATMENT FACILITIES, STREETS, BUILDINGS OR OTHER SURFACE IMPROVEMENTS AND LOCATED ALONG THE ENTIRE OUTER PERIMETER OF ANY PORTION OF A MAJOR SUBDIVISION OF LANDS INTO FOUR OR MORE LOTS ADJACENT TO LAND OF OTHER OWNERSHIP
4. STORMWATER WILL BE HANDLED ONSITE AND WILL MEET THE CURRENT STATE OF DELAWARE REGULATIONS. ALL STORMWATER FACILITIES WILL BE PRIVATE AND MAINTAINED BY THE DEVELOPER UNTIL A HOMEOWNERS ASSOCIATION CAN ASSUME OWNERSHIP AND RESPONSIBILITY FOR THE STORMWATER FACILITIES.
5. ALL INTERNAL ROADWAYS AND SIDEWALKS ARE "PRIVATE" AND WILL BE MAINTAINED BY THE DEVELOPER UNTIL A HOMEOWNERS OR CONDOMINIUM ASSOCIATION CAN ASSUME OWNERSHIP AND RESPONSIBILITY FOR THE ROADWAYS AND SIDEWALKS.
6. ALL WALKING PATHS SHOWN THROUGHOUT THE OPEN SPACE ARE SHOWN ILLUSTRATIVELY AND ARE SUBJECT TO CHANGE BY THE DEVELOPER OR HOME OWNERS ASSOCIATION.
7. ALL OPEN SPACE AREAS ONSITE ARE INTENDED FOR LANDSCAPE, RECREATION AND STORMWATER MANAGEMENT PRACTICES AND ARE THE RESPONSIBILITY OF THE DEVELOPER UNTIL A HOMEOWNERS ASSOCIATION CAN ASSUME OWNERSHIP AND RESPONSIBILITY FOR THE OPEN SPACE.
8. ROAD 298 AND 298A IMPROVEMENTS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH DELAWARE DEPARTMENT OF TRANSPORTATION STANDARDS, THE IMPROVEMENTS ARE SUBJECT TO APPROVAL BY DELAWARE DEPARTMENT OF TRANSPORTATION.
9. FOR ANY NEW DEVELOPMENT LOCATED IN WHOLE OR IN PART WITH 50 FEET OF THE BOUNDARY OF LAND USED PRIMARILY FOR AGRICULTURAL PURPOSES, NO IMPROVEMENT REQUIRING AN OCCUPANCY APPROVAL FOR A RESIDENTIAL TYPE USE SHALL BE CONSTRUCTED WITHIN 50 FEET OF THE BOUNDARY OF THE LANDS USED PRIMARILY FOR AGRICULTURAL PURPOSES.

DRAWING INDEX

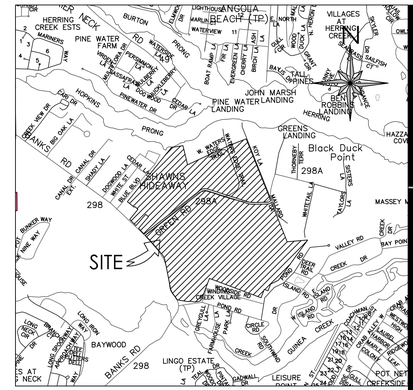


SITE
1" =500'



RESIDENTIAL STREET - 34' R/W
NOT TO SCALE

NOTES:
1. PROVIDE 4" OF TOPSOIL COVERED WITH SEED AND MULCH ON PROPOSED GRASS AREAS.
2. SUBBASE AND SUBGRADE SHALL BE COMPACTED TO 95% OF ASTM D1557, MODIFIED PROCTOR METHOD.



VICINITY MAP
SCALE: 1" = 2,000'

LEGEND

	EXISTING	PROPOSED
PROPERTY LINE		
EASEMENT LINE		
SETBACK LINE	N/A	
R.O.W. LINE		
CONCRETE MONUMENT FOUND	CMF □	N/A
IRON PIPE FOUND	IPF ●	N/A
BENCH MARK	ELEV: 100.00	N/A
SPOT ELEV. LABEL	x 12.14	12x14
MAJOR CONTOUR	25	25
MINOR CONTOUR	24	24
ROAD CENTERLINE		
EDGE OF PAVEMENT		
EDGE OF GRAVEL		N/A
CURB		
EDGE OF DIRT ROAD		N/A
PAVEMENT HATCH		
BUILDING OUTLINE		
SIDEWALK		
SIDEWALK HATCH		
FENCE LINE	X	N/A
SIGN		
MAIL BOX	MB	N/A
EDGE OF POND/LAKE		
EDGE OF MARSH/WETLAND		N/A
WETLAND HATCH		N/A
FLOOD PLAIN		N/A
STORM MANHOLE		Ⓓ
CURB INLET		
STORM PIPE	SD	SD
CENTERLINE OF DITCH		
SANITARY MANHOLE	Ⓢ	Ⓢ
SANITARY CLEANOUT	C/O	C/O
SANITARY PIPE	SS	SS
FORCE MAIN	FM	FM
WATER VALVE		WV
WATER METER		WM
WATER PIPE	W	W
FIRE HYDRANT		
WELL	W	WELL
OVERHEAD ELECTRIC	E	N/A
UTILITY POLE		N/A
GUY WIRE		N/A
LIGHT POLE		
CABLE TV PEDESTAL	CATV	N/A
OVERHEAD TELEPHONE	T	N/A
TREES		N/A
WATER PIPE		

solutions
303 North Bedford Street
Georgetown, DE 19947
T. 302.297.9215
3003 Merritt Mill Road
Salisbury, MD 21804
T. 410.572.8833
www.solutionsipem.com

JASON PALKEWICZ LICENSE No. 12083 DELAWARE PROFESSIONAL ENGINEER
Seal
Date

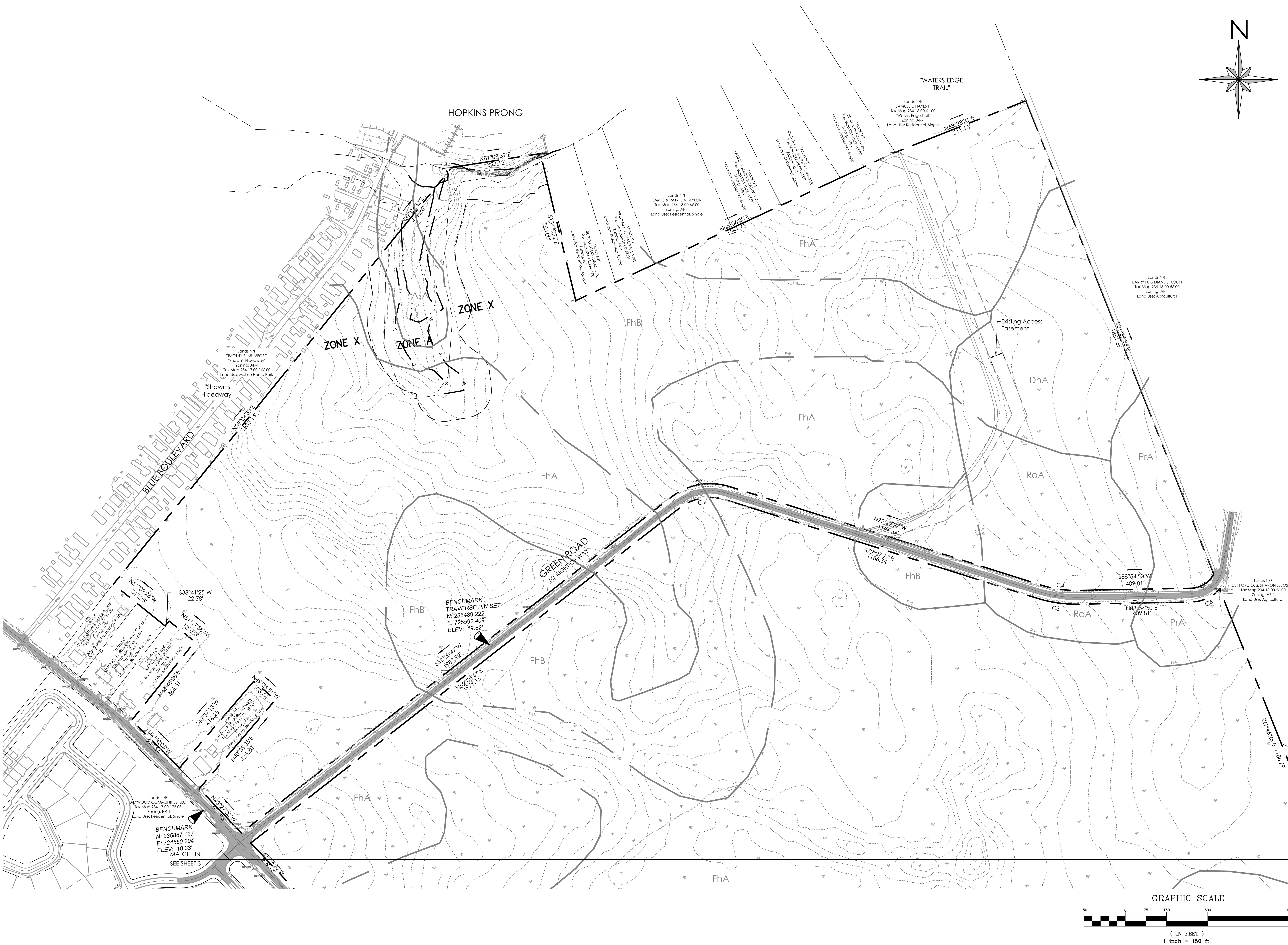
REVISIONS
NO. | DESCRIPTION | DATE

COVER SHEET
for
KEASTONE BAY
INDIAN RIVER HUNDRED
SUSSEX COUNTY, DELAWARE

Date:	11/28/18
Job Number:	10006
Scale:	AS NOTED
Drawn By:	ML
Designed By:	JP
Approved By:	JP

Sheet No.: 1

File Name: 10006-prelim-covr



solutions
Integrated Planning
Engineering & Management, LLC

303 North Bedford Street
Georgetown, DE 19947
T. 302.297.9215

3003 Merritt Mill Road
Salisbury, MD 21804
T. 410.572.8833

www.solutionsipem.com

JASON PALKEWICZ LICENSE No. 12083 DELAWARE PROFESSIONAL ENGINEER

Seal
Date

REVISIONS

NO.	DATE	DESCRIPTION

EXISTING CONDITIONS
for
KEASTONE BAY
INDIAN RIVER HUNDRED
SUSSEX COUNTY, DELAWARE

Date:	11/28/18
Job Number:	10006
Scale:	1"=150'
Drawn By:	ML
Designed By:	JP
Approved By:	JP

Sheet No.: 2

File Name: 10006-prelim-existing

solutions
Integrated Planning
Engineering & Management, LLC

303 North Bedford Street
Georgetown, DE 19947
T. 302.297.9215

3003 Merritt Mill Road
Salisbury, MD 21804
T. 410.572.8833

www.solutionsipem.com

JASON PALKEWICZ
LICENSE
No. 12083
DELAWARE
PROFESSIONAL ENGINEER

Seal

Date

REVISIONS

NO.	DATE	DESCRIPTION

EXISTING CONDITIONS

for

KEASTONE BAY

INDIAN RIVER HUNDRED
SUSSEX COUNTY, DELAWARE

Date:	11/28/18
Job Number:	10006
Scale:	1"=150'
Drawn By:	ML
Designed By:	JP
Approved By:	JP

Sheet No.: 3

File Name: 10006-prelim-existing

GRAPHIC SCALE

(IN FEET)
1 inch = 50 ft.

N

HOPKINS PRONG

PROPOSED COMMUNITY PIER

N81°08'39"E
327.12'

IPF

OPEN SPACE A
1,014,537 S.F. ±
23.291 AC. ±

N39°04'32"E
419.86'

S13°50'22"E
550.00'

PARKING

PAVILLION

Lands N/F
JAMES & PATRICIA TAYLOR
Tax Map 234-18.00-66.00
Zoning: AR-1
Land Use: Residential, Single

Lands N/F
JENNIFER L. & JAMES R. SAYRE
Tax Map 234-18.00-67.01
Zoning: AR-1
Land Use: Residential, Single

Lands N/F
ROBERT TODD LUBACJ, JR.
Tax Map 234-18.00-67.00
Zoning: AR-1
Land Use: Residential, Vacant

SEE SHEET 5

BLUE BOULEVARD

20' LANDSCAPE BUFFER (TYP.)

100' WIDE WETLAND BUFFER

ZONE X

ZONE A

OPEN SPACE A
1,014,537 S.F. ±
23.291 AC. ±

34' PRIVATE R/W

5' SIDEWALK

20' LANDSCAPE BUFFER (TYP.)

CORAL WAY

SPUR WAY

COIL WAY

FILLYWAY

20' WIDE DRAINAGE EASEMENT (TYP.)

LOT 455 8750 S.F. ± 0.201 AC. ±
LOT 456 8750 S.F. ± 0.201 AC. ±
LOT 457 12230 S.F. ± 0.281 AC. ±
LOT 458 13410 S.F. ± 0.308 AC. ±
LOT 459 13146 S.F. ± 0.302 AC. ±
LOT 460 9903 S.F. ± 0.227 AC. ±
LOT 470 11353 S.F. ± 0.261 AC. ±
LOT 471 9139 S.F. ± 0.210 AC. ±
LOT 472 8750 S.F. ± 0.201 AC. ±
LOT 473 8750 S.F. ± 0.201 AC. ±
LOT 474 8750 S.F. ± 0.201 AC. ±
LOT 475 8750 S.F. ± 0.201 AC. ±
LOT 476 8750 S.F. ± 0.201 AC. ±
LOT 477 8750 S.F. ± 0.201 AC. ±
LOT 478 8750 S.F. ± 0.201 AC. ±
LOT 479 11728 S.F. ± 0.269 AC. ±
LOT 480 8750 S.F. ± 0.201 AC. ±
LOT 481 8750 S.F. ± 0.201 AC. ±
LOT 482 8750 S.F. ± 0.201 AC. ±
LOT 483 8750 S.F. ± 0.201 AC. ±
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LOT 485 8750 S.F. ± 0.201 AC. ±
LOT 486 8750 S.F. ± 0.201 AC. ±
LOT 487 8750 S.F. ± 0.201 AC. ±
LOT 582 8750 S.F. ± 0.201 AC. ±
LOT 583 8750 S.F. ± 0.201 AC. ±
LOT 584 8750 S.F. ± 0.201 AC. ±
LOT 585 8750 S.F. ± 0.201 AC. ±
LOT 586 8750 S.F. ± 0.201 AC. ±
LOT 587 10384 S.F. ± 0.238 AC. ±
LOT 588 10311 S.F. ± 0.237 AC. ±
LOT 589 8750 S.F. ± 0.201 AC. ±
LOT 590 8750 S.F. ± 0.201 AC. ±
LOT 591 8750 S.F. ± 0.201 AC. ±
LOT 592 8750 S.F. ± 0.201 AC. ±
LOT 605 8750 S.F. ± 0.201 AC. ±
LOT 606 8750 S.F. ± 0.201 AC. ±
LOT 607 9792 S.F. ± 0.225 AC. ±

SWM POND

OPEN SPACE F
48,006 S.F. ±
1.102 AC. ±

SWM POND

SEE SHEET 6

SEE SHEET 7

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JASON PALKEWICZ LICENSE No. 12083 DELAWARE PROFESSIONAL ENGINEER

Seal

Date 12/20/19

REVISIONS

NO.	DATE	DESCRIPTION

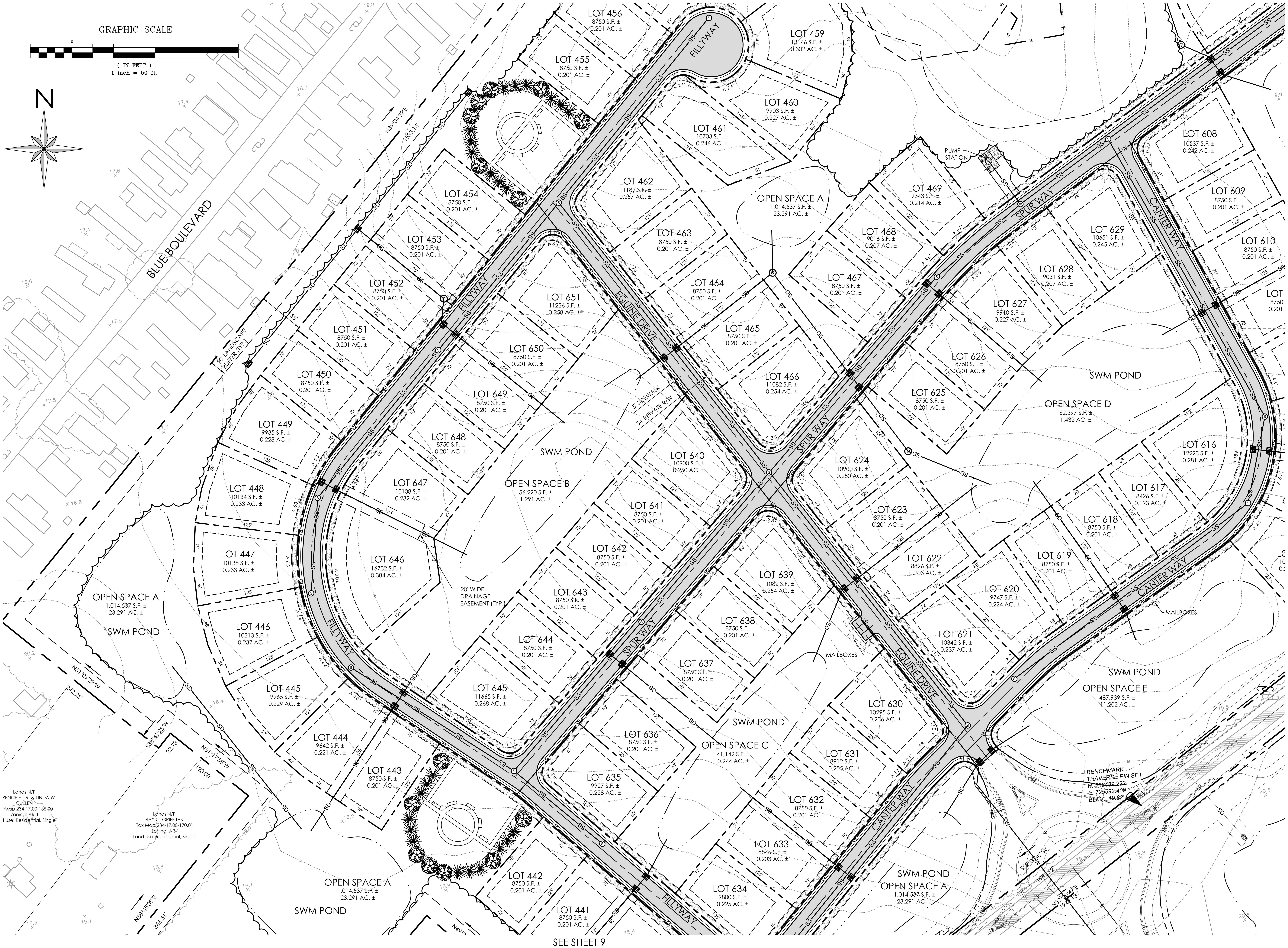
PRELIMINARY PLAT A
for
KEASTONE BAY
INDIAN RIVER HUNDRED
SUSSEX COUNTY, DELAWARE

Date:	11/28/18
Job Number:	10006
Scale:	1"=50'
Drawn By:	ML
Designed By:	JP
Approved By:	JP

Sheet No.: 4

File Name: 10006-prelim-plat

SEE SHEET 4


GRAPHIC SCALE
(IN FEET)
1 inch = 50 ft.
N
BLUE BOULEVARD
20' LANDSCAPE BUFFER (TYP.)
LOT 456
8750 S.F. ±
0.201 AC. ±
LOT 455
8750 S.F. ±
0.201 AC. ±
LOT 454
8750 S.F. ±
0.201 AC. ±
LOT 453
8750 S.F. ±
0.201 AC. ±
LOT 452
8750 S.F. ±
0.201 AC. ±
LOT 451
8750 S.F. ±
0.201 AC. ±
LOT 450
8750 S.F. ±
0.201 AC. ±
LOT 449
9935 S.F. ±
0.228 AC. ±
LOT 448
10134 S.F. ±
0.233 AC. ±
LOT 447
10138 S.F. ±
0.233 AC. ±
LOT 446
10313 S.F. ±
0.237 AC. ±
LOT 445
9965 S.F. ±
0.229 AC. ±
LOT 444
9642 S.F. ±
0.221 AC. ±
LOT 443
8750 S.F. ±
0.201 AC. ±
LOT 442
8750 S.F. ±
0.201 AC. ±
LOT 441
8750 S.F. ±
0.201 AC. ±
LOT 459
13146 S.F. ±
0.302 AC. ±
LOT 460
9903 S.F. ±
0.227 AC. ±
LOT 461
10703 S.F. ±
0.246 AC. ±
LOT 462
11189 S.F. ±
0.257 AC. ±
LOT 463
8750 S.F. ±
0.201 AC. ±
LOT 464
8750 S.F. ±
0.201 AC. ±
LOT 465
8750 S.F. ±
0.201 AC. ±
LOT 466
11082 S.F. ±
0.254 AC. ±
LOT 467
8750 S.F. ±
0.201 AC. ±
LOT 468
9016 S.F. ±
0.207 AC. ±
LOT 469
9343 S.F. ±
0.214 AC. ±
OPEN SPACE A
1,014,537 S.F. ±
23.291 AC. ±
PUMP STATION
LOT 651
11236 S.F. ±
0.258 AC. ±
LOT 650
8750 S.F. ±
0.201 AC. ±
LOT 649
8750 S.F. ±
0.201 AC. ±
LOT 648
8750 S.F. ±
0.201 AC. ±
LOT 647
10108 S.F. ±
0.232 AC. ±
LOT 646
16732 S.F. ±
0.384 AC. ±
20' WIDE DRAINAGE EASEMENT (TYP.)
SWM POND
OPEN SPACE B
56,220 S.F. ±
1.291 AC. ±
5' SIDEWALK
34' PRIVATE R/W
LOT 640
10900 S.F. ±
0.250 AC. ±
LOT 641
8750 S.F. ±
0.201 AC. ±
LOT 642
8750 S.F. ±
0.201 AC. ±
LOT 643
8750 S.F. ±
0.201 AC. ±
LOT 644
8750 S.F. ±
0.201 AC. ±
LOT 645
11665 S.F. ±
0.268 AC. ±
LOT 639
11082 S.F. ±
0.254 AC. ±
LOT 638
8750 S.F. ±
0.201 AC. ±
LOT 637
8750 S.F. ±
0.201 AC. ±
LOT 636
8750 S.F. ±
0.201 AC. ±
LOT 635
9927 S.F. ±
0.228 AC. ±
LOT 634
9800 S.F. ±
0.225 AC. ±
LOT 633
8846 S.F. ±
0.203 AC. ±
LOT 632
8750 S.F. ±
0.201 AC. ±
LOT 631
8912 S.F. ±
0.205 AC. ±
LOT 630
10295 S.F. ±
0.236 AC. ±
SWM POND
OPEN SPACE C
41,142 S.F. ±
0.944 AC. ±
MAILBOXES
LOT 624
10900 S.F. ±
0.250 AC. ±
LOT 623
8750 S.F. ±
0.201 AC. ±
LOT 622
8826 S.F. ±
0.203 AC. ±
LOT 621
10342 S.F. ±
0.237 AC. ±
LOT 620
9747 S.F. ±
0.224 AC. ±
LOT 619
8750 S.F. ±
0.201 AC. ±
LOT 618
8750 S.F. ±
0.201 AC. ±
LOT 617
8426 S.F. ±
0.193 AC. ±
LOT 616
12223 S.F. ±
0.281 AC. ±
LOT 625
8750 S.F. ±
0.201 AC. ±
LOT 626
8750 S.F. ±
0.201 AC. ±
LOT 627
9910 S.F. ±
0.227 AC. ±
LOT 628
9031 S.F. ±
0.207 AC. ±
LOT 629
10651 S.F. ±
0.245 AC. ±
LOT 608
10537 S.F. ±
0.242 AC. ±
LOT 609
8750 S.F. ±
0.201 AC. ±
LOT 610
8750 S.F. ±
0.201 AC. ±
SWM POND
OPEN SPACE D
62,397 S.F. ±
1.432 AC. ±
SWM POND
OPEN SPACE E
487,939 S.F. ±
11.202 AC. ±
MAILBOXES
BENCHMARK
TRAVERSE PIN SET
ELEV: 19.82'
SWM POND
OPEN SPACE A
1,014,537 S.F. ±
23.291 AC. ±
OPEN SPACE A
1,014,537 S.F. ±
23.291 AC. ±
SWM POND
FILLYWAY
EQUINE DRIVE
SPUR WAY
CANTER WAY
Lands N/F
RAY C. GRIFFITHS
Tax Map 234-17.00-170.01
Zoning: AR-1
Land Use: Residential, Single
N51°09'28"W
S38°41'25"W
N51°17'58"W
N38°48'08"E
N39°04'32"E

SEE SHEET 7

SEE SHEET 9

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DELAWARE
PROFESSIONAL ENGINEER

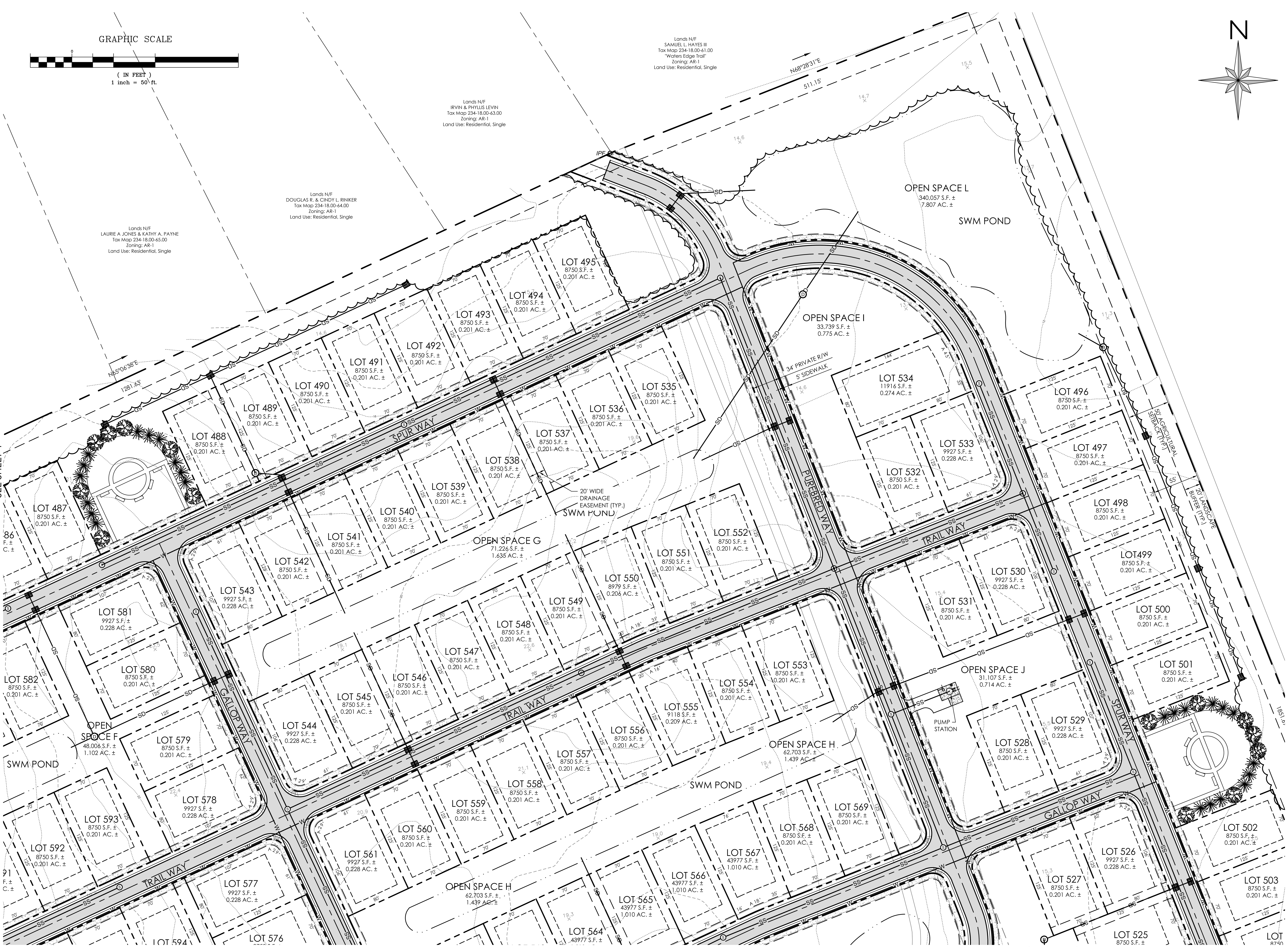
REVISIONS		
NO.	DATE	DESCRIPTION

PRELIMINARY PLAT C
for
KEASTONE BAY
INDIAN RIVER HUNDRED
SUSSEX COUNTY, DELAWARE

Date:	11/28/18
Job Number:	10006
Scale:	1"=50'
Drawn By:	ML
Designed By:	JP
Approved By:	JP

Sheet No.: 6

File Name: 10006-prelim-plat


GRAPHIC SCALE
(IN FEET)
1 inch = 50 ft.
N
Lands N/F
SAMUEL L. HAYES III
Tax Map 234-18.00-61.00
"Waters Edge Trail"
Zoning: AR-1
Land Use: Residential, Single
Lands N/F
IRVIN & PHYLLIS LEVIN
Tax Map 234-18.00-63.00
Zoning: AR-1
Land Use: Residential, Single
Lands N/F
DOUGLAS R. & CINDY L. RINIKER
Tax Map 234-18.00-64.00
Zoning: AR-1
Land Use: Residential, Single
Lands N/F
LAURIE A JONES & KATHY A. PAYNE
Tax Map 234-18.00-65.00
Zoning: AR-1
Land Use: Residential, Single
N68°28'31"E
511.15'
N55°06'38"E
1281.43'
OPEN SPACE L
340,057 S.F. ±
7.807 AC. ±
SWM POND
OPEN SPACE I
33,739 S.F. ±
0.775 AC. ±
34' PRIVATE R/W
5' SIDEWALK
SPUR WAY
PUREBRED WAY
TRAIL WAY
GALLOP WAY
20' WIDE
DRAINAGE
EASEMENT (TYP.)
SWM POND
OPEN SPACE G
71,226 S.F. ±
1.635 AC. ±
OPEN SPACE J
31,107 S.F. ±
0.714 AC. ±
PUMP
STATION
OPEN SPACE H
62,703 S.F. ±
1.439 AC. ±
SWM POND
OPEN
SPACE F
48,006 S.F. ±
1.102 AC. ±
SWM POND
50' AGRICULTURAL SETBACK (TYP.)
20' LANDSCAPE BUFFER (TYP.)
LOT 495
8750 S.F. ±
0.201 AC. ±
LOT 494
8750 S.F. ±
0.201 AC. ±
LOT 493
8750 S.F. ±
0.201 AC. ±
LOT 492
8750 S.F. ±
0.201 AC. ±
LOT 491
8750 S.F. ±
0.201 AC. ±
LOT 490
8750 S.F. ±
0.201 AC. ±
LOT 489
8750 S.F. ±
0.201 AC. ±
LOT 488
8750 S.F. ±
0.201 AC. ±
LOT 487
8750 S.F. ±
0.201 AC. ±
LOT 535
8750 S.F. ±
0.201 AC. ±
LOT 536
8750 S.F. ±
0.201 AC. ±
LOT 537
8750 S.F. ±
0.201 AC. ±
LOT 538
8750 S.F. ±
0.201 AC. ±
LOT 539
8750 S.F. ±
0.201 AC. ±
LOT 540
8750 S.F. ±
0.201 AC. ±
LOT 541
8750 S.F. ±
0.201 AC. ±
LOT 542
8750 S.F. ±
0.201 AC. ±
LOT 543
9927 S.F. ±
0.228 AC. ±
LOT 534
11916 S.F. ±
0.274 AC. ±
LOT 533
9927 S.F. ±
0.228 AC. ±
LOT 532
8750 S.F. ±
0.201 AC. ±
LOT 496
8750 S.F. ±
0.201 AC. ±
LOT 497
8750 S.F. ±
0.201 AC. ±
LOT 498
8750 S.F. ±
0.201 AC. ±
LOT499
8750 S.F. ±
0.201 AC. ±
LOT 500
8750 S.F. ±
0.201 AC. ±
LOT 501
8750 S.F. ±
0.201 AC. ±
LOT 502
8750 S.F. ±
0.201 AC. ±
LOT 503
8750 S.F. ±
0.201 AC. ±
LOT 552
8750 S.F. ±
0.201 AC. ±
LOT 551
8750 S.F. ±
0.201 AC. ±
LOT 550
8979 S.F. ±
0.206 AC. ±
LOT 549
8750 S.F. ±
0.201 AC. ±
LOT 548
8750 S.F. ±
0.201 AC. ±
LOT 547
8750 S.F. ±
0.201 AC. ±
LOT 546
8750 S.F. ±
0.201 AC. ±
LOT 545
8750 S.F. ±
0.201 AC. ±
LOT 544
9927 S.F. ±
0.228 AC. ±
LOT 531
8750 S.F. ±
0.201 AC. ±
LOT 530
9927 S.F. ±
0.228 AC. ±
LOT 529
9927 S.F. ±
0.228 AC. ±
LOT 528
8750 S.F. ±
0.201 AC. ±
LOT 527
8750 S.F. ±
0.201 AC. ±
LOT 526
9927 S.F. ±
0.228 AC. ±
LOT 525
8750 S.F. ±
LOT 553
8750 S.F. ±
0.201 AC. ±
LOT 554
8750 S.F. ±
0.201 AC. ±
LOT 555
9118 S.F. ±
0.209 AC. ±
LOT 556
8750 S.F. ±
0.201 AC. ±
LOT 557
8750 S.F. ±
0.201 AC. ±
LOT 558
8750 S.F. ±
0.201 AC. ±
LOT 559
8750 S.F. ±
0.201 AC. ±
LOT 560
8750 S.F. ±
0.201 AC. ±
LOT 561
9927 S.F. ±
0.228 AC. ±
LOT 569
8750 S.F. ±
0.201 AC. ±
LOT 568
8750 S.F. ±
0.201 AC. ±
LOT 567
43977 S.F. ±
1.010 AC. ±
LOT 566
43977 S.F. ±
1.010 AC. ±
LOT 565
43977 S.F. ±
1.010 AC. ±
LOT 564
43977 S.F. ±
LOT 581
9927 S.F. ±
0.228 AC. ±
LOT 580
8750 S.F. ±
0.201 AC. ±
LOT 582
8750 S.F. ±
0.201 AC. ±
LOT 579
8750 S.F. ±
0.201 AC. ±
LOT 578
9927 S.F. ±
0.228 AC. ±
LOT 577
9927 S.F. ±
0.228 AC. ±
LOT 576
LOT 593
8750 S.F. ±
0.201 AC. ±
LOT 592
8750 S.F. ±
0.201 AC. ±
LOT 594
SEE SHEET 4
SEE SHEET 7
SEE SHEET 8

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JASON PALKEWICZ
LICENSE
No. 12083
DELAWARE
PROFESSIONAL ENGINEER

Seal
Date

REVISIONS

NO.	DATE	DESCRIPTION

PRELIMINARY PLAT B
for
KEASTONE BAY
INDIAN RIVER HUNDRED
SUSSEX COUNTY, DELAWARE

Date:	11/28/18
Job Number:	10006
Scale:	1"=50'
Drawn By:	ML
Designed By:	JP
Approved By:	JP

Sheet No.:
5

File Name:
10006-prelim-plat

SEE SHEET 4

SEE SHEET 5

SEE SHEET 6

SEE SHEET 8

SEE SHEET 10

SWM POND

OPEN SPACE E
487,939 S.F. ±
11.202 AC. ±

OPEN SPACE H
62,703 S.F. ±
1.439 AC. ±

OPEN SPACE R
392,243 S.F. ±
9.005 AC. ±

OPEN SPACE M
1,613,345 S.F. ±
37.037 AC. ±

OPEN SPACE S
99,102 S.F. ±
2.275 AC. ±

TO BE ABANDONED

RELOCATED GREEN ROAD

GREEN ROAD
50' RIGHT-OF-WAY

TRAIL WAY

COLT WAY

GALLOP WAY

MUSTANG WAY

PALOMINO WAY

BUS STOP

20' WIDE DRAINAGE EASEMENT (TYP.)

5' SIDEWALK

5' PRIVATE R/W

LOT 561 9927 S.F. ± 0.228 AC. ±
LOT 562 12666 S.F. ± 0.291 AC. ±
LOT 563 43977 S.F. ± 1.010 AC. ±
LOT 564 43977 S.F. ± 1.010 AC. ±
LOT 565 43977 S.F. ± 1.010 AC. ±
LOT 566 43977 S.F. ± 1.010 AC.
LOT 567 43977 S.F. ± 1.010 A
LOT 570 8942 S.F. ± 0.205 AC. ±
LOT 571 10244 S.F. ± 0.235 AC. ±
LOT 572 10235 S.F. ± 0.235 AC. ±
LOT 573 10235 S.F. ± 0.235 AC. ±
LOT 574 10235 S.F. ± 0.235 AC. ±
LOT 575 9858 S.F. ± 0.226 AC. ±
LOT 576 8750 S.F. ± 0.201 AC. ±
LOT 577 9927 S.F. ± 0.228 AC. ±
LOT 588 10311 S.F. ± 0.237 AC. ±
LOT 589 8750 S.F. ± 0.201 AC. ±
LOT 590 8750 S.F. ± 0.201 AC. ±
LOT 591 8750 S.F. ± 0.201 AC. ±
LOT 592 8750 S.F. ± 0.201 AC. ±
LOT 594 8750 S.F. ± 0.201 AC. ±
LOT 595 8750 S.F. ± 0.201 AC. ±
LOT 596 8750 S.F. ± 0.201 AC. ±
LOT 597 8750 S.F. ± 0.201 AC. ±
LOT 598 8750 S.F. ± 0.201 AC. ±
LOT 599 10384 S.F. ± 0.238 AC. ±
LOT 600 8750 S.F. ± 0.201 AC. ±
LOT 601 8750 S.F. ± 0.201 AC. ±
LOT 602 8750 S.F. ± 0.201 AC. ±
LOT 603 8750 S.F. ± 0.201 AC. ±
LOT 604 8750 S.F. ± 0.201 AC. ±
LOT 605 8750 S.F. ± 0.201 AC. ±
LOT 606 8750 S.F. ± 0.201 AC. ±
9792 S.F. ± 0.225 AC. ±
T 609 0 S.F. ± 1 AC. ±
LOT 610 8750 S.F. ± 0.201 AC. ±
LOT 611 8750 S.F. ± 0.201 AC. ±
LOT 612 9914 S.F. ± 0.228 AC. ±
LOT 613 10429 S.F. ± 0.239 AC. ±
LOT 614 10427 S.F. ± 0.239 AC. ±
LOT 615 10430 S.F. ± 0.239 AC. ±
LOT 414 8750 S.F. ± 0.201 AC. ±
LOT 415 8750 S.F. ± 0.201 AC. ±
LOT 416 8750 S.F. ± 0.201 AC. ±
LOT 417 9052 S.F. ± 0.208 AC. ±
LOT 418 9807 S.F. ± 0.225 AC. ±
LOT 419 9807 S.F. ± 0.225 AC. ±
LOT 420 9807 S.F. ± 0.225 AC. ±
LOT 421 9807 S.F. ± 0.225 AC. ±
LOT 422 9293 S.F. ± 0.213 AC. ±
LOT 423 9293 S.F. ± 0.213 AC. ±
LOT 424 9293 S.F. ± 0.213 AC. ±
LOT 425 9293 S.F. ± 0.213 AC. ±
LOT 426 9293 S.F. ± 0.213 AC. ±
LOT 427 9103 S.F. ± 0.209 AC. ±
LOT 428 8750 S.F. ± 0.201 AC. ±
LOT 429 8750 S.F. ± 0.201 AC. ±
LOT 430 8750 S.F. ± 0.201 AC. ±
LOT 431 8750 S.F. ± 0.201 AC. ±
LOT 432 8750 S.F. ± 0.201 AC. ±
LOT 433 8750 S.F. ± 0.201 AC. ±
LOT 395 9853 S.F. ± 0.226 AC. ±
LOT 373 10983 S.F. ±
LOT 372 8750 S.F. ± 0.201 AC. ±
LOT 371 8750 S.F. ± 0.201 AC. ±
LOT 370 10738 S.F. ± 0.246 AC. ±
LOT 369 10913 S.F. ± 0.251 AC. ±
LOT 368 8750 S.F. ± 0.201 AC. ±
LOT 367 8750 S.F. ± 0.201 AC. ±
LOT 131 8748 S.F. ± 0.201 AC. ±
LOT 132 8744 S.F. ± 0.201 AC. ±
LOT 130 8750 S.F. ± 0.201 AC. ±

GRAPHIC SCALE
(IN FEET)
1 inch = .50 ft.

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JASON PALKEWICZ
LICENSE #
No. 12083
DELAWARE
PROFESSIONAL ENGINEER
Seal
Date 1/28/19

REVISIONS

NO.	DESCRIPTION	DATE

PRELIMINARY PLAT D
for
KEASTONE BAY
INDIAN RIVER HUNDRED
SUSSEX COUNTY, DELAWARE

Date:	1/28/18
Job Number:	10006
Scale:	1"=50'
Drawn By:	ML
Designed By:	JP
Approved By:	JP

Sheet No.: 7

File Name: 10006-prelim-plat

SEE SHEET 5

SEE SHEET 7

LOT 526
9927 S.F. ±
0.228 AC. ±

LOT 527
8750 S.F. ±
0.201 AC. ±

LOT 503
8750 S.F. ±
0.201 AC. ±

LOT 525
8750 S.F. ±
0.201 AC. ±

LOT 504
8750 S.F. ±
0.201 AC. ±

LOT 524
8750 S.F. ±
0.201 AC. ±

LOT 505
8750 S.F. ±
0.201 AC. ±

LOT 523
8750 S.F. ±
0.201 AC. ±

LOT 506
8750 S.F. ±
0.201 AC. ±

LOT 522
8750 S.F. ±
0.201 AC. ±

LOT 507
8750 S.F. ±
0.201 AC. ±

LOT 521
8750 S.F. ±
0.201 AC. ±

LOT 508
8750 S.F. ±
0.201 AC. ±

LOT 509
8750 S.F. ±
0.201 AC. ±

LOT 516
8750 S.F. ±
0.201 AC. ±

LOT 517
8750 S.F. ±
0.201 AC. ±

LOT 518
8750 S.F. ±
0.201 AC. ±

LOT 519
10819 S.F. ±
0.248 AC. ±

LOT 520
18720 S.F. ±
0.430 AC. ±

LOT 510
13083 S.F. ±
0.300 AC. ±

LOT 511
12658 S.F. ±
0.291 AC. ±

LOT 515
9490 S.F. ±
0.218 AC. ±

LOT 514
9691 S.F. ±
0.222 AC. ±

LOT 513
9040 S.F. ±
0.208 AC. ±

LOT 512
8750 S.F. ±
0.201 AC. ±

OPEN SPACE E
487,939 S.F. ±
11.202 AC. ±

OPEN SPACE K
73,651 S.F. ±
1.691 AC. ±

SWM POND

OPEN SPACE L
340,057 S.F. ±
7.807 AC. ±

SWM POND

OPEN SPACE L
340,057 S.F. ±
7.807 AC. ±

OPEN SPACE M
1,613,345 S.F. ±
37.037 AC. ±

PUREBRED WAY

SPUR WAY

SPUR WAY

MUSTANG WAY

34' PRIVATE R/W

5' SIDEWALK

20' WIDE DRAINAGE EASEMENT (TYP.)

50' AGRICULTURAL SETBACK (TYP.)

20' LANDSCAPE BUFFER (TYP.)

GREEN ROAD
50' RIGHT OF WAY

S88°54'50"W
409.81'

N88°54'50"E
409.81'

CMF

Lands N/F
BARRY N. & DIANE J. KOCH
Tax Map 234-18.00-56.00
Zoning: AR-1
Land Use: Agricultural

Lands N/F
CLIFFORD O. & SHARON S. JOSEPH
Tax Map 234-18.00-56.00
Zoning: AR-1
Land Use: Agricultural

LOT 129
LOT 128
8750 S.F. ±
0.201 AC. ±
LOT 127
8750 S.F. ±
0.201 AC. ±
LOT 126
8750 S.F. ±
0.201 AC. ±
LOT 125
8750 S.F. ±
0.201 AC. ±
LOT 124
10453 S.F. ±
0.240 AC. ±
LOT 123
9122 S.F. ±
0.209 AC. ±
LOT 122
8750 S.F. ±
0.201 AC. ±
LOT 121
8750 S.F. ±
0.201 AC. ±
LOT 120
8750 S.F. ±
0.201 AC. ±
LOT 119
9566 S.F. ±
0.220 AC. ±
LOT 118
9691 S.F. ±
0.222 AC. ±
LOT 117
9691 S.F. ±
0.222 AC. ±
LOT 116
9691 S.F. ±
0.222 AC. ±
LOT 115
9690 S.F. ±
0.222 AC. ±
LOT 133
8740 S.F. ±
0.201 AC. ±
LOT 134
8736 S.F. ±
0.201 AC. ±
LOT 135
8732 S.F. ±
0.200 AC. ±
LOT 136
8728 S.F. ±
0.200 AC. ±
LOT 137
9362 S.F. ±
LOT 143

SEE SHEET 11

N

GRAPHIC SCALE
0
(IN FEET)
1 inch = 50 ft.

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JASON PALEWICZ
LICENSE #
No. 12083
DELAWARE
PROFESSIONAL ENGINEER
Seal
Date 10/26/18

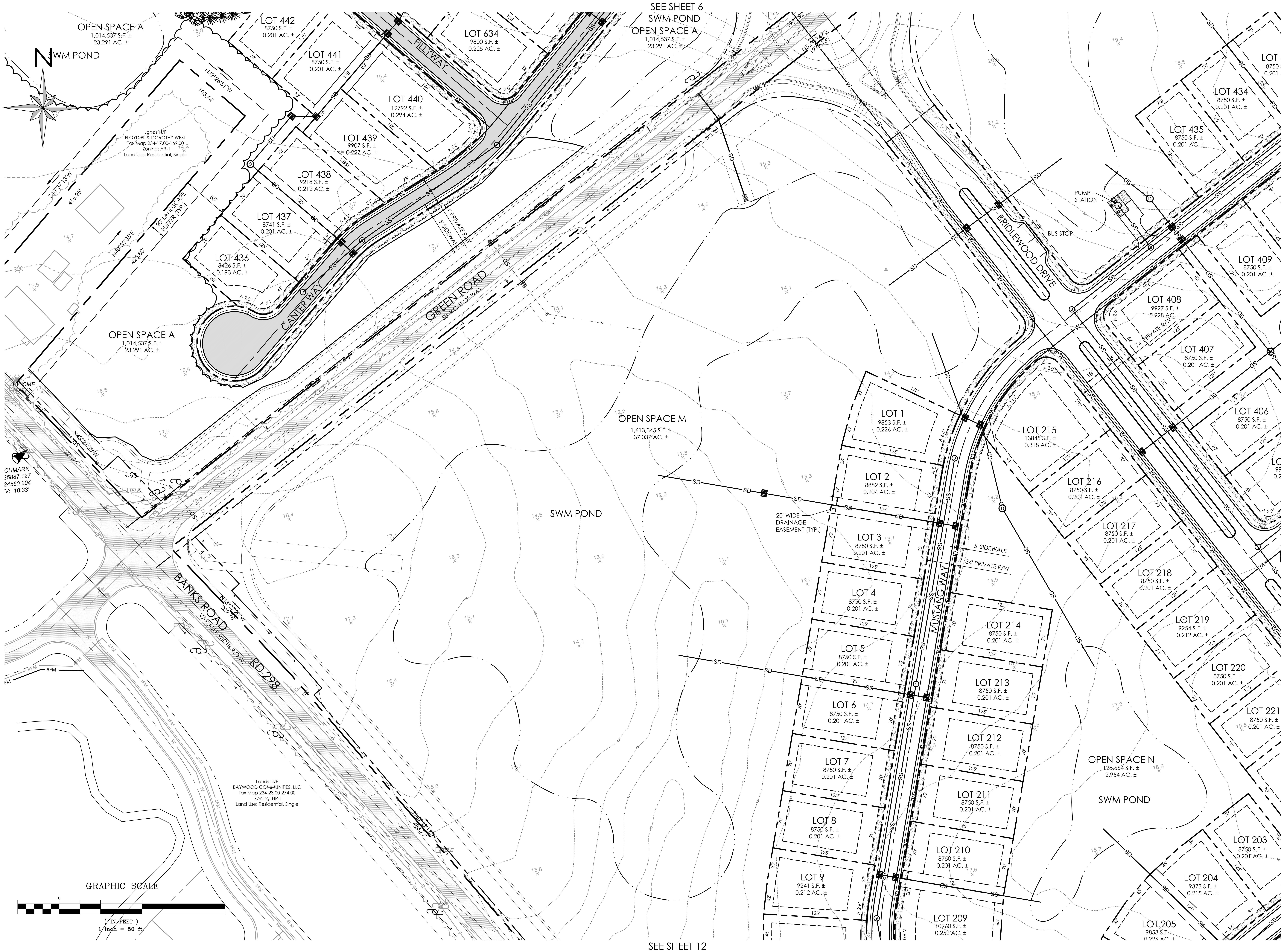
REVISIONS
NO. | DESCRIPTION | DATE

PRELIMINARY PLAT E
for
KEASTONE BAY
INDIAN RIVER HUNDRED
SUSSEX COUNTY, DELAWARE

Date: 11/28/18
Job Number: 10006
Scale: 1"=50'
Drawn By: ML
Designed By: JP
Approved By: JP

Sheet No.: 8

File Name: 10006-prelim-plat



SEE SHEET 6
SWM POND
OPEN SPACE A
1,014,537 S.F. ±
23.291 AC. ±
SWM POND
LOT 442
8750 S.F. ±
0.201 AC. ±
LOT 441
8750 S.F. ±
0.201 AC. ±
LOT 634
9800 S.F. ±
0.225 AC. ±
LOT 440
12792 S.F. ±
0.294 AC. ±
LOT 439
9907 S.F. ±
0.227 AC. ±
LOT 438
9218 S.F. ±
0.212 AC. ±
LOT 437
8741 S.F. ±
0.201 AC. ±
LOT 436
8426 S.F. ±
0.193 AC. ±
FILLY WAY
CANTER WAY
Lands N/F
FLOYD H. & DOROTHY WEST
Tax Map 234-17.00-169.00
Zoning: AR-1
Land Use: Residential, Single
20' LANDSCAPE BUFFER (TYP.)
OPEN SPACE A
1,014,537 S.F. ±
23.291 AC. ±
GREEN ROAD
50' RIGHT OF WAY
5' SIDEWALK
34' PRIVATE R/W
OPEN SPACE M
1,613,345 S.F. ±
37.037 AC. ±
SWM POND
20' WIDE DRAINAGE EASEMENT (TYP.)
BANKS ROAD
RD 298
VARIABLE WIDTH R.O.W.
Lands N/F
BAYWOOD COMMUNITIES, LLC
Tax Map 234-23.00-274.00
Zoning: HR-1
Land Use: Residential, Single
GRAPHIC SCALE
(IN FEET)
1 inch = 50 ft.
LOT 1
9853 S.F. ±
0.226 AC. ±
LOT 2
8882 S.F. ±
0.204 AC. ±
LOT 3
8750 S.F. ±
0.201 AC. ±
LOT 4
8750 S.F. ±
0.201 AC. ±
LOT 5
8750 S.F. ±
0.201 AC. ±
LOT 6
8750 S.F. ±
0.201 AC. ±
LOT 7
8750 S.F. ±
0.201 AC. ±
LOT 8
8750 S.F. ±
0.201 AC. ±
LOT 9
9241 S.F. ±
0.212 AC. ±
MUSTANG WAY
5' SIDEWALK
34' PRIVATE R/W
LOT 214
8750 S.F. ±
0.201 AC. ±
LOT 213
8750 S.F. ±
0.201 AC. ±
LOT 212
8750 S.F. ±
0.201 AC. ±
LOT 211
8750 S.F. ±
0.201 AC. ±
LOT 210
8750 S.F. ±
0.201 AC. ±
LOT 209
10960 S.F. ±
0.252 AC. ±
BRIDLEWOOD DRIVE
PUMP STATION
BUS STOP
LOT 215
13845 S.F. ±
0.318 AC. ±
LOT 216
8750 S.F. ±
0.201 AC. ±
LOT 217
8750 S.F. ±
0.201 AC. ±
LOT 218
8750 S.F. ±
0.201 AC. ±
LOT 219
9254 S.F. ±
0.212 AC. ±
LOT 220
8750 S.F. ±
0.201 AC. ±
LOT 221
8750 S.F. ±
0.201 AC. ±
OPEN SPACE N
128,664 S.F. ±
2.954 AC. ±
SWM POND
LOT 203
8750 S.F. ±
0.201 AC. ±
LOT 204
9373 S.F. ±
0.215 AC. ±
LOT 205
9853 S.F. ±
LOT 434
8750 S.F. ±
0.201 AC. ±
LOT 435
8750 S.F. ±
0.201 AC. ±
LOT 409
8750 S.F. ±
0.201 AC. ±
LOT 408
9927 S.F. ±
0.228 AC. ±
LOT 407
8750 S.F. ±
0.201 AC. ±
LOT 406
8750 S.F. ±
0.201 AC. ±
74' PRIVATE R/W
SEE SHEET 10
SEE SHEET 12

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LICENSE
No. 12083
DELAWARE
PROFESSIONAL ENGINEER

Seal:
Date:

REVISIONS

NO.	DATE	DESCRIPTION

PRELIMINARY PLAT F
for
KEASTONE BAY
INDIAN RIVER HUNDRED
SUSSEX COUNTY, DELAWARE

Date:	11/28/18
Job Number:	10006
Scale:	1"=50'
Drawn By:	ML
Designed By:	JP
Approved By:	JP

Sheet No.: 9

File Name: 10006-prelim-plat

SEE SHEET 7

SEE SHEET 9

SEE SHEET 11

SEE SHEET 13

LOT 432 8750 S.F. ± 0.201 AC. ±
LOT 433 8750 S.F. ± 0.201 AC. ±
LOT 434 8750 S.F. ± 0.201 AC. ±
LOT 415 8750 S.F. ± 0.201 AC. ±
LOT 414 8750 S.F. ± 0.201 AC. ±
LOT 413 8750 S.F. ± 0.201 AC. ±
LOT 412 8750 S.F. ± 0.201 AC. ±
LOT 411 8750 S.F. ± 0.201 AC. ±
LOT 410 8750 S.F. ± 0.201 AC. ±
LOT 409 8750 S.F. ± 0.201 AC. ±
LOT 408 8750 S.F. ± 0.201 AC. ±
LOT 407 8750 S.F. ± 0.201 AC. ±
LOT 406 8750 S.F. ± 0.201 AC. ±
LOT 405 9927 S.F. ± 0.228 AC. ±
LOT 404 8750 S.F. ± 0.201 AC. ±
LOT 403 8750 S.F. ± 0.201 AC. ±
LOT 402 8750 S.F. ± 0.201 AC. ±
LOT 401 8750 S.F. ± 0.201 AC. ±
LOT 400 8750 S.F. ± 0.201 AC. ±
LOT 399 8750 S.F. ± 0.201 AC. ±
LOT 398 8750 S.F. ± 0.201 AC. ±
LOT 397 8750 S.F. ± 0.201 AC. ±
LOT 396 9607 S.F. ± 0.221 AC. ±
LOT 395 9853 S.F. ± 0.226 AC. ±
LOT 394 8750 S.F. ± 0.201 AC. ±
LOT 393 8750 S.F. ± 0.201 AC. ±
LOT 392 8750 S.F. ± 0.201 AC. ±
LOT 391 8750 S.F. ± 0.201 AC. ±
LOT 390 8750 S.F. ± 0.201 AC. ±
LOT 389 8750 S.F. ± 0.201 AC. ±
LOT 388 8750 S.F. ± 0.201 AC. ±
LOT 387 9927 S.F. ± 0.228 AC. ±
LOT 386 8750 S.F. ± 0.201 AC. ±
LOT 385 8750 S.F. ± 0.201 AC. ±
LOT 384 9927 S.F. ± 0.228 AC. ±
LOT 383 8750 S.F. ± 0.201 AC. ±
LOT 382 8750 S.F. ± 0.201 AC. ±
LOT 381 8750 S.F. ± 0.201 AC. ±
LOT 380 8750 S.F. ± 0.201 AC. ±
LOT 379 9325 S.F. ± 0.214 AC. ±
LOT 378 12061 S.F. ± 0.277 AC. ±
LOT 377 8750 S.F. ± 0.201 AC. ±
LOT 376 8750 S.F. ± 0.201 AC. ±
LOT 375 8750 S.F. ± 0.201 AC. ±
LOT 374 11714 S.F. ± 0.269 AC. ±
LOT 373 10983 S.F. ± 0.252 AC. ±
LOT 372 8750 S.F. ± 0.201 AC. ±
LOT 371 8750 S.F. ± 0.201 AC. ±
LOT 370 8750 S.F. ± 0.201 AC. ±
LOT 369 8750 S.F. ± 0.201 AC. ±
LOT 368 8750 S.F. ± 0.201 AC. ±
LOT 367 8750 S.F. ± 0.201 AC. ±
LOT 366 9919 S.F. ± 0.228 AC. ±
LOT 365 10880 S.F. ± 0.250 AC. ±
LOT 364 8724 S.F. ± 0.200 AC. ±
LOT 363 8724 S.F. ± 0.200 AC. ±
LOT 362 9889 S.F. ± 0.227 AC. ±
LOT 361 9947 S.F. ± 0.228 AC. ±
LOT 360 8750 S.F. ± 0.201 AC. ±
LOT 359 8750 S.F. ± 0.201 AC. ±
LOT 358 8750 S.F. ± 0.201 AC. ±
LOT 357 8750 S.F. ± 0.201 AC. ±
LOT 356 8750 S.F. ± 0.201 AC. ±
LOT 355
LOT 354
LOT 353
LOT 352 8750 S.F. ± 0.201 AC. ±
LOT 351 8750 S.F. ± 0.201 AC. ±
LOT 350 8750 S.F. ± 0.201 AC. ±
LOT 349 8750 S.F. ± 0.201 AC. ±
LOT 348 8750 S.F. ± 0.201 AC. ±
LOT 347 9927 S.F. ± 0.228 AC. ±
LOT 346 8752 S.F. ± 0.201 AC. ±
LOT 345 8757 S.F. ± 0.201 AC. ±
LOT 344 8770 S.F. ± 0.201 AC. ±
LOT 343 8774 S.F. ± 0.201 AC. ±
LOT 342 8778 S.F. ± 0.202 AC. ±
LOT 341 8783 S.F. ± 0.202 AC. ±
LOT 340 8787 S.F. ± 0.202 AC. ±
LOT 339
LOT 338
LOT 337
LOT 336
LOT 335
LOT 334
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LOT 299
LOT 298
LOT 297
LOT 296
LOT 295
LOT 294
LOT 293
LOT 292
LOT 291
LOT 290
LOT 289
LOT 288 9488 S.F. ± 0.218 AC. ±
LOT 287 8769 S.F. ± 0.201 AC. ±
LOT 286 8727 S.F. ± 0.200 AC. ±
LOT 285 8731 S.F. ± 0.200 AC. ±
LOT 284 8735 S.F. ± 0.201 AC. ±
LOT 283 8740 S.F. ± 0.201 AC. ±
LOT 282 8744 S.F. ± 0.201 AC. ±
LOT 281 8748 S.F. ± 0.201 AC. ±
LOT 280 8752 S.F. ± 0.201 AC. ±
LOT 279 8757 S.F. ± 0.201 AC. ±
LOT 278 8762 S.F. ± 0.201 AC. ±
LOT 277 8767 S.F. ± 0.201 AC. ±
LOT 276 8772 S.F. ± 0.201 AC. ±
LOT 275 8777 S.F. ± 0.202 AC. ±
LOT 274 8831 S.F. ± 0.203 AC. ±
LOT 273
LOT 272
LOT 271
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LOT 236
LOT 235
LOT 234
LOT 233
LOT 232
LOT 231
LOT 230
LOT 229
LOT 228
LOT 227
LOT 226
LOT 225 8750 S.F. ± 0.201 AC. ±
LOT 224 9927 S.F. ± 0.228 AC. ±
LOT 223 9927 S.F. ± 0.228 AC. ±
LOT 222 8750 S.F. ± 0.201 AC. ±
LOT 221 8750 S.F. ± 0.201 AC. ±
LOT 220 8750 S.F. ± 0.201 AC. ±
LOT 203 8750 S.F. ± 0.201 AC. ±

OPEN SPACE S 99,102 S.F. ± 2.275 AC. ±
OPEN SPACE T 68,715 S.F. ± 1.577 AC. ±
OPEN SPACE U 366,473 S.F. ± 8.413 AC. ±
OPEN SPACE X 173,627 S.F. ± 3.986 AC. ±

SWM POND
SWM POND
SWM POND
SWM POND

20' WIDE DRAINAGE EASEMENT (TYP.)

BRIDLEWOOD DRIVE
PALOMINO WAY
FOAL WAY
PONY WAY

CLUBHOUSE
POOL AREA
BOCCE
SPLASH PAD
PARKING
MAILBOXES

34' PRIVATE R/W
5' SIDEWALK
74' PRIVATE R/W

PROPOSED LIGHTING WITH CUT-OFF LENSES (TYP.)

GRAPHIC SCALE
(IN FEET)
1 inch = 50 ft.

N

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JASON PALEWICZ LICENSE No. 12083 DELAWARE PROFESSIONAL ENGINEER
Seal
Date 12/20/17

REVISIONS

NO.	DATE	DESCRIPTION

PRELIMINARY PLAT G
for
KEASTONE BAY
INDIAN RIVER HUNDRED
SUSSEX COUNTY, DELAWARE

Date:	11/28/18
Job Number:	10006
Scale:	1"=50'
Drawn By:	ML
Designed By:	JP
Approved By:	JP

Sheet No.: 10

File Name: 10006-prelim-plat

SEE SHEET 8

SEE SHEET 10

SEE SHEET 14

LOT 135
8732 S.F. ±
0.200 AC. ±

LOT 136
8728 S.F. ±
0.200 AC. ±

LOT 137
9362 S.F. ±
0.215 AC. ±

LOT 138
9617 S.F. ±
0.221 AC. ±

LOT 139
8750 S.F. ±
0.201 AC. ±

LOT 140
8750 S.F. ±
0.201 AC. ±

LOT 141
8750 S.F. ±
0.201 AC. ±

LOT 142
8984 S.F. ±
0.206 AC. ±

LOT 143
11370 S.F. ±
0.261 AC. ±

LOT 144
11370 S.F. ±
0.261 AC. ±

LOT 145
11052 S.F. ±
0.254 AC. ±

LOT 146
8750 S.F. ±
0.201 AC. ±

LOT 147
8750 S.F. ±
0.201 AC. ±

LOT 148
8750 S.F. ±
0.201 AC. ±

LOT 149
8750 S.F. ±
0.201 AC. ±

LOT 150
8750 S.F. ±
0.201 AC. ±

LOT 151
8750 S.F. ±
0.201 AC. ±

LOT 152
8750 S.F. ±
0.201 AC. ±

LOT 115
9690 S.F. ±
0.222 AC. ±

LOT 114
9691 S.F. ±
0.222 AC. ±

LOT 113
8779 S.F. ±
0.202 AC. ±

LOT 112
8750 S.F. ±
0.201 AC. ±

LOT 111
8750 S.F. ±
0.201 AC. ±

LOT 110
8750 S.F. ±
0.201 AC. ±

LOT 109
8750 S.F. ±
0.201 AC. ±

LOT 108
8750 S.F. ±
0.201 AC. ±

LOT 107
8750 S.F. ±
0.201 AC. ±

LOT 106
8750 S.F. ±
0.201 AC. ±

LOT 105
8750 S.F. ±
0.201 AC. ±

LOT 104
8750 S.F. ±
0.201 AC. ±

LOT 103
8750 S.F. ±
0.201 AC. ±

LOT 102
9000 S.F. ±
0.207 AC. ±

LOT 101
9477 S.F. ±
0.218 AC. ±

LOT 275
8777 S.F. ±
0.202 AC. ±

LOT 274
8831 S.F. ±
0.203 AC. ±

LOT 273
10395 S.F. ±
0.239 AC. ±

LOT 272
8504 S.F. ±
0.195 AC. ±

LOT 271
9420 S.F. ±
0.216 AC. ±

LOT 270
9691 S.F. ±
0.222 AC. ±

LOT 269
9691 S.F. ±
0.222 AC. ±

LOT 268
9691 S.F. ±
0.222 AC. ±

LOT 267
9691 S.F. ±
0.222 AC. ±

LOT 266
9691 S.F. ±
0.222 AC. ±

LOT 265
8925 S.F. ±
0.205 AC. ±

LOT 264
8750 S.F. ±
0.201 AC. ±

LOT 263
8750 S.F. ±
0.201 AC. ±

LOT 262
8750 S.F. ±
0.201 AC. ±

LOT 261
8750 S.F. ±
0.201 AC. ±

LOT 260
8750 S.F. ±
0.201 AC. ±

LOT 259
9133 S.F. ±
0.210 AC. ±

LOT 258
9691 S.F. ±
0.222 AC. ±

LOT 287
8769 S.F. ±
0.201 AC. ±

LOT 288
9488 S.F. ±
0.218 AC. ±

LOT 289
9428 S.F. ±
0.216 AC. ±

LOT 290
8829 S.F. ±
0.203 AC. ±

LOT 291
11370 S.F. ±
0.261 AC. ±

LOT 292
11370 S.F. ±
0.261 AC. ±

LOT 293
11290 S.F. ±
0.259 AC. ±

LOT 294
8750 S.F. ±
0.201 AC. ±

LOT 295
8750 S.F. ±
0.201 AC. ±

LOT 296
8750 S.F. ±
0.201 AC. ±

LOT 297
8749 S.F. ±
0.201 AC. ±

LOT 298
8750 S.F. ±
0.201 AC. ±

LOT 299
8750 S.F. ±
0.201 AC. ±

LOT 300
9450 S.F. ±
0.217 AC. ±

LOT 341
8783 S.F. ±
0.202 AC. ±

LOT 340
8787 S.F. ±
0.202 AC. ±

LOT 339
9411 S.F. ±
0.216 AC. ±

LOT 338
9691 S.F. ±
0.222 AC. ±

LOT 337
9691 S.F. ±
0.222 AC. ±

LOT 336
9691 S.F. ±
0.222 AC. ±

LOT 335
300133 S.F. ±
6.890 AC. ±

LOT 334
8962 S.F. ±
0.206 AC. ±

LOT 333
10423 S.F. ±
0.239 AC. ±

LOT 351
8750 S.F. ±
0.201 AC. ±

LOT 352
8750 S.F. ±
0.201 AC. ±

LOT 353
10764 S.F. ±
0.247 AC. ±

LOT 355

OPEN SPACE Z
158,913 S.F. ±
3.648 AC. ±

OPEN SPACE Y
139,871 S.F. ±
3.211 AC. ±

OPEN SPACE X
173,627 S.F. ±
3.986 AC. ±

OPEN SPACE BB
102,912 S.F. ±
2.363 AC. ±

OPEN SPACE M
141,345 S.F. ±
37.037 ACRES ±

SWM POND

SWM POND

SWM POND

SWM POND

20' WIDE DRAINAGE EASEMENT (TYP.)

BRIDLEWOOD DRIVE

MUSTANG WAY

HARNESS WAY

FOALWAY

34' PRIVATE R/W
5' SIDEWALK

PUMP STATION

50' LANDSCAPE BUFFER (TYP.)

50' AGRICULTURAL SETBACK (TYP.)

Lands N/F
MICHAEL & DAWN EVICK
Tax Map 234-18.00-56.03
Zoning: AR-1
Land Use: Residential, Single

N

GRAPHIC SCALE

0

(IN FEET)
1 inch = 50 ft.

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Salisbury, MD 21804
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JASON PALKEWICZ
LICENSE #
No. 12083
DELAWARE
PROFESSIONAL ENGINEER
Seal
Date

REVISIONS

NO.	DATE	DESCRIPTION

PRELIMINARY PLAT H

for

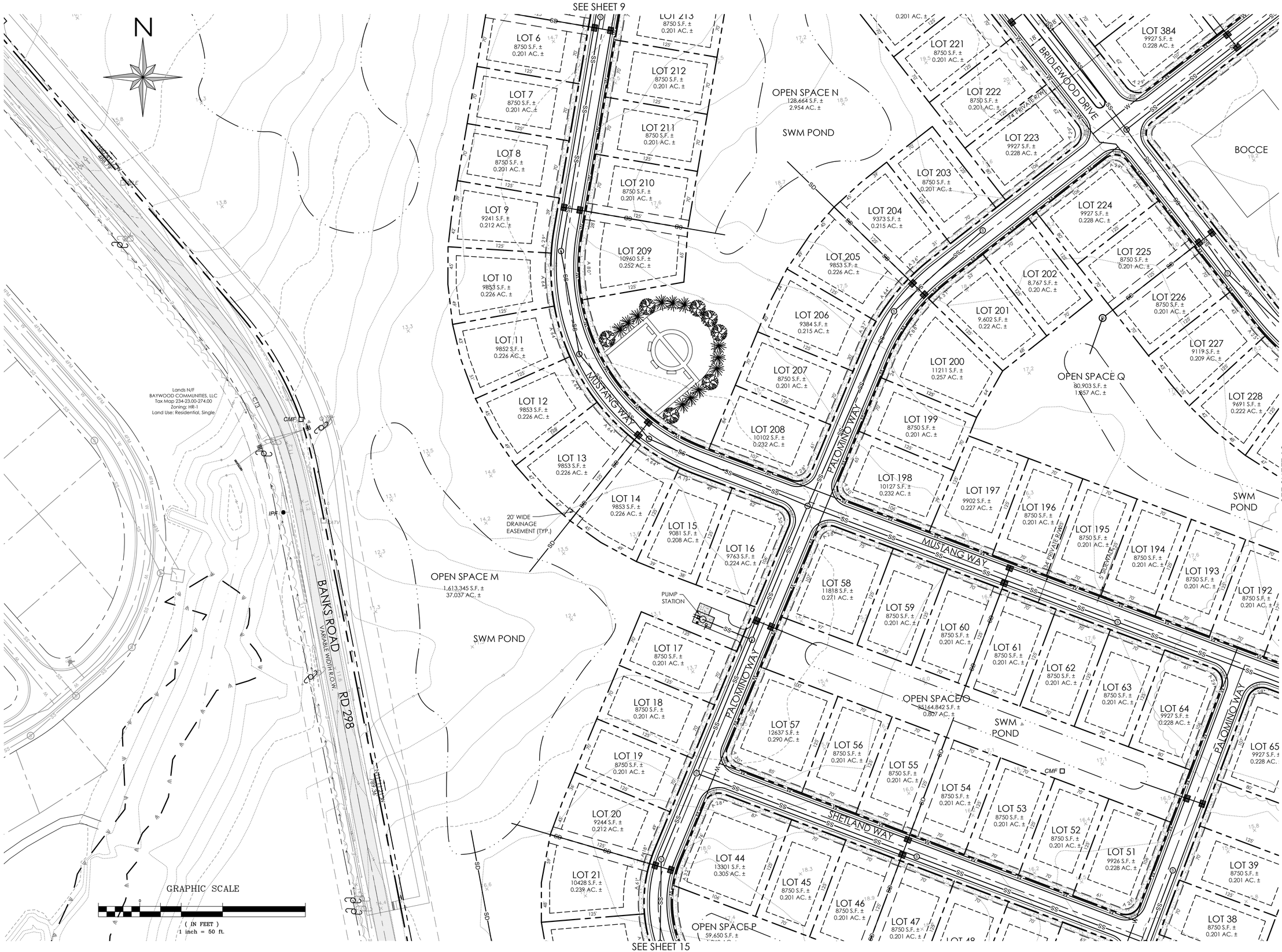
KEASTONE BAY

INDIAN RIVER HUNDRED
SUSSEX COUNTY, DELAWARE

Date:	11/28/18
Job Number:	10006
Scale:	1"=50'
Drawn By:	ML
Designed By:	JP
Approved By:	JP

Sheet No.: 11

File Name: 10006-prelim-plat



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Salisbury, MD 21804
T. 410.572.8833

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JASON PALKEWICZ
LICENSE
No. 12083
DELAWARE
PROFESSIONAL ENGINEER
Seal
Date 1/28/19

REVISIONS

NO.	DATE	DESCRIPTION

PRELIMINARY PLAT I

for

KEASTONE BAY

INDIAN RIVER HUNDRED
SUSSEX COUNTY, DELAWARE

Date:	11/28/18
Job Number:	10006
Scale:	1"=50'
Drawn By:	MIL
Designed By:	JP
Approved By:	JP

Sheet No.: 12

File Name: 10006-prelim-plat

SEE SHEET 10

SEE SHEET 11

SEE SHEET 12

SEE SHEET 14

SEE SHEET 15

SEE SHEET 16

N

POOL AREA

BOCCE

SPLASH PAD

PICKLEBALL / TENNIS COURTS

PROPOSED LIGHTING WITH CUT-OFF LENSES (TYP.)

OPEN SPACE U
366,473 S.F. ±
8.413 AC. ±

OPEN SPACE X
173,627 S.F. ±
3.986 AC. ±

SWM POND

OPEN SPACE X
173,627 S.F. ±
3.986 AC. ±

OPEN SPACE W
92,563 S.F. ±
2.125 AC. ±

OPEN SPACE Q
80,903 S.F. ±
1.857 AC. ±

OPEN SPACE M
1,615,345 S.F. ±
37.037 AC. ±

OPEN SPACE V
122,118 S.F. ±
2.803 AC. ±

SWM POND

SWM POND

20' WIDE DRAINAGE EASEMENT (TYP.)

34' PRIVATE R/W
5' SIDEWALK

PONY WAY

FOAL WAY

BRIDLEWOOD DRIVE

MUSTANG WAY

PALOMINO WAY

LOT 228
9691 S.F. ±
0.222 AC. ±

LOT 229
9691 S.F. ±
0.222 AC. ±

LOT 230
9021 S.F. ±
0.207 AC. ±

LOT 231
10127 S.F. ±
0.232 AC. ±

LOT 232
8750 S.F. ±
0.201 AC. ±

LOT 233
9927 S.F. ±
0.228 AC. ±

LOT 234
9927 S.F. ±
0.228 AC. ±

LOT 235
8750 S.F. ±
0.201 AC. ±

LOT 236
8750 S.F. ±
0.201 AC. ±

LOT 237
8750 S.F. ±
0.201 AC. ±

LOT 238
8750 S.F. ±
0.201 AC. ±

LOT 239
8750 S.F. ±
0.201 AC. ±

LOT 240
8750 S.F. ±
0.201 AC. ±

LOT 241
8750 S.F. ±
0.201 AC. ±

LOT 242
8750 S.F. ±
0.201 AC. ±

LOT 243
8750 S.F. ±
0.201 AC. ±

LOT 244
9058 S.F. ±
0.208 AC. ±

LOT 245
9691 S.F. ±
0.222 AC. ±

LOT 246
9688 S.F. ±
0.222 AC. ±

LOT 247
9691 S.F. ±
0.222 AC. ±

LOT 248
9691 S.F. ±
0.222 AC. ±

LOT 249
9469 S.F. ±
0.217 AC. ±

LOT 192
8750 S.F. ±
0.201 AC. ±

LOT 191
8750 S.F. ±
0.201 AC. ±

LOT 190
8750 S.F. ±
0.201 AC. ±

LOT 189
8750 S.F. ±
0.201 AC. ±

LOT 188
9927 S.F. ±
0.228 AC. ±

LOT 187
9927 S.F. ±
0.228 AC. ±

LOT 186
8750 S.F. ±
0.201 AC. ±

LOT 185
8750 S.F. ±
0.201 AC. ±

LOT 184
8750 S.F. ±
0.201 AC. ±

LOT 183
8750 S.F. ±
0.201 AC. ±

LOT 182
8750 S.F. ±
0.201 AC. ±

LOT 181
8750 S.F. ±
0.201 AC. ±

LOT 180
8750 S.F. ±
0.201 AC. ±

LOT 179
8750 S.F. ±
0.201 AC. ±

LOT 178
8750 S.F. ±
0.201 AC. ±

LOT 177
8750 S.F. ±
0.201 AC. ±

LOT 176

LOT 65
9927 S.F. ±
0.228 AC. ±

LOT 66
8750 S.F. ±
0.201 AC. ±

LOT 67
8750 S.F. ±
0.201 AC. ±

LOT 68
8750 S.F. ±
0.201 AC. ±

LOT 69
8750 S.F. ±
0.201 AC. ±

LOT 70
8750 S.F. ±
0.201 AC. ±

LOT 71
8750 S.F. ±
0.201 AC. ±

LOT 72
8750 S.F. ±

LOT 39
8750 S.F. ±
0.201 AC. ±

LOT 38
0.201 AC. ±

LOT 319
9927 S.F. ±
0.228 AC. ±

LOT 318
8750 S.F. ±
0.201 AC. ±

LOT 317
8750 S.F. ±
0.201 AC. ±

LOT 316
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0.201 AC. ±

LOT 315
8750 S.F. ±
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LOT 314
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LOT 313
8750 S.F. ±
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LOT 312
8750 S.F. ±
0.201 AC. ±

LOT 311
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0.201 AC. ±

LOT 310
8750 S.F. ±
0.201 AC. ±

LOT 309
9648 S.F. ±
0.221 AC. ±

LOT 308
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0.261 AC. ±

LOT 307
11370 S.F. ±
0.261 AC. ±

LOT 306
9313 S.F. ±
0.214 AC. ±

LOT 320
9927 S.F. ±
0.228 AC. ±

LOT 321
8750 S.F. ±
0.201 AC. ±

LOT 322
8750 S.F. ±
0.201 AC. ±

LOT 323
8750 S.F. ±
0.201 AC. ±

LOT 324
8750 S.F. ±
0.201 AC. ±

LOT 325
8750 S.F. ±
0.201 AC. ±

LOT 326
8750 S.F. ±
0.201 AC. ±

LOT 327
8750 S.F. ±
0.201 AC. ±

LOT 328
8750 S.F. ±
0.201 AC. ±

LOT 329
9851 S.F. ±
0.226 AC. ±

LOT 330
10430 S.F. ±
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LOT 331
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0.239 AC. ±

LOT 332
10430 S.F. ±
0.239 AC. ±

LOT 333
10423 S.F. ±
0.239 AC. ±

LOT 334
8962 S.F. ±
0.206 AC. ±

LOT 335
300133 S.F. ±
6.890 AC. ±

LOT 352
8750 S.F. ±
0.201 AC. ±

LOT 353
10764 S.F. ±
0.247 AC. ±

9691 S.F. ±
0.222 AC. ±

GRAPHIC SCALE
(IN FEET)
1 inch = 50 ft.

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303 North Bedford Street
Georgetown, DE 19947
T. 302.297.9215
3003 Merritt Mill Road
Salisbury, MD 21804
T. 410.572.8833
www.solutionsipem.com

JASON PALEWICZ
LICENSE
No. 12083
DELAWARE
PROFESSIONAL ENGINEER
Seal
Date 12/20/19

REVISIONS

NO.	DATE	DESCRIPTION

PRELIMINARY PLAT J
for
KEASTONE BAY
INDIAN RIVER HUNDRED
SUSSEX COUNTY, DELAWARE

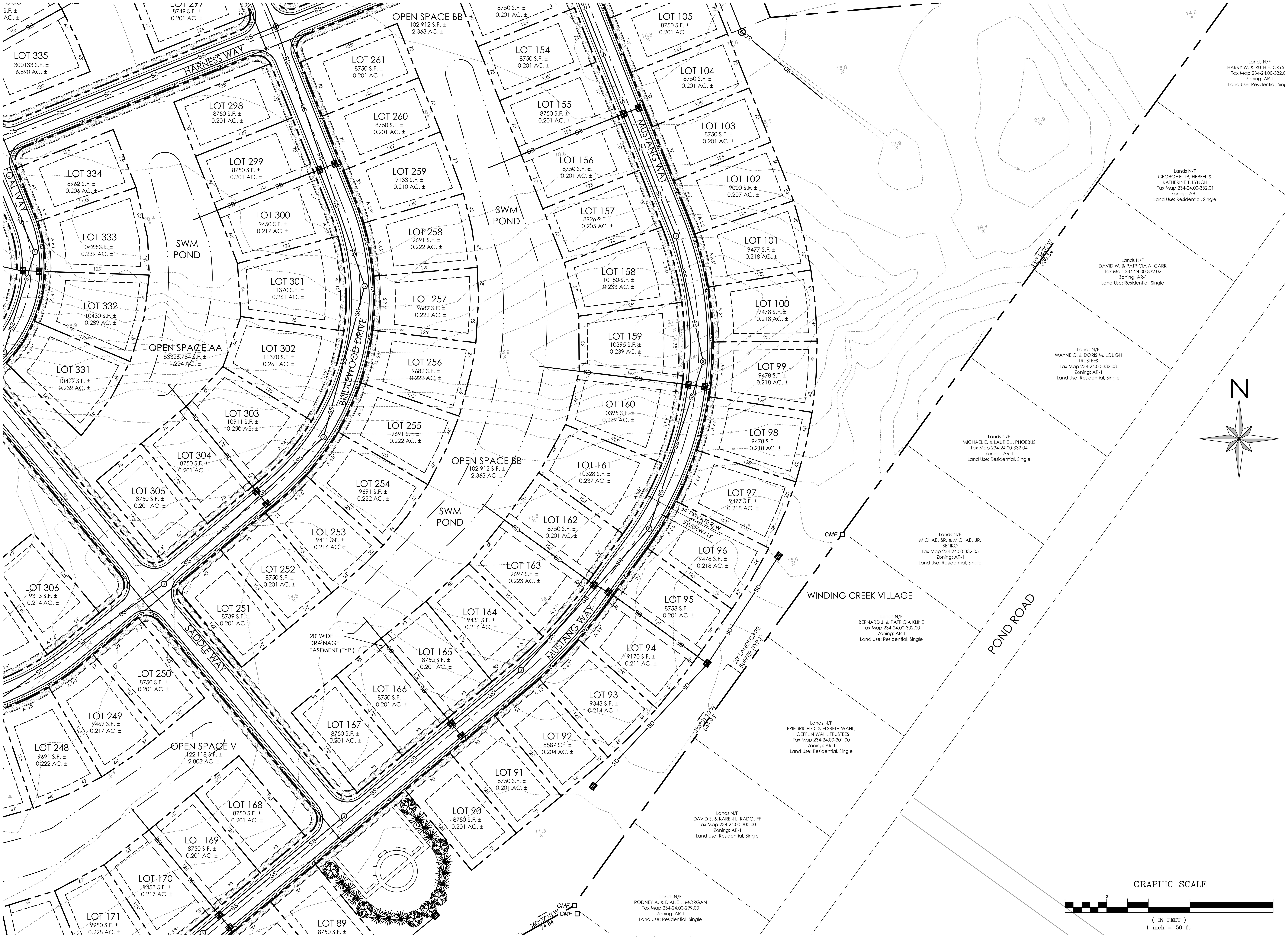
Date:	11/28/18
Job Number:	10006
Scale:	1"=50'
Drawn By:	MIL
Designed By:	JP
Approved By:	JP

Sheet No.: 13

File Name: 10006-prelim-plat

SEE SHEET 11

SEE SHEET 13



SEE SHEET 16

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Engineering & Management, LLC

303 North Bedford Street
Georgetown, DE 19947
T. 302.297.9215

3003 Merritt Mill Road
Salisbury, MD 21804
T. 410.572.8833

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JASON PALKEWICZ LICENSE No. 12083 DELAWARE PROFESSIONAL ENGINEER
Seal
Date

REVISIONS

NO.	DATE	DESCRIPTION

PRELIMINARY PLAT K
for
KEASTONE BAY
INDIAN RIVER HUNDRED
SUSSEX COUNTY, DELAWARE

Date:	11/28/18
Job Number:	10006
Scale:	1"=50'
Drawn By:	ML
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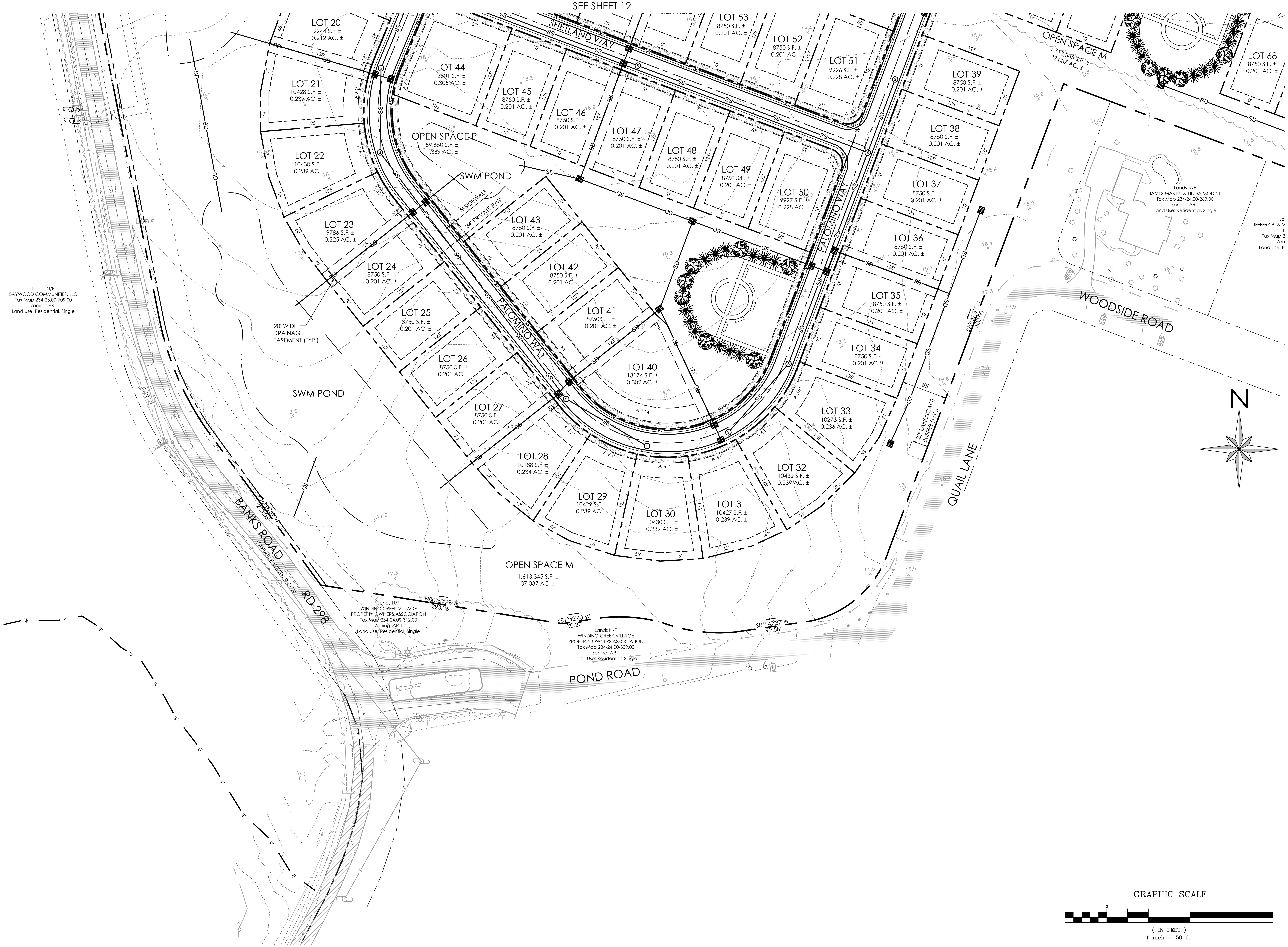
SEE SHEET 12
SEE SHEET 16
LOT 20 9244 S.F. ± 0.212 AC. ±
LOT 21 10428 S.F. ± 0.239 AC. ±
LOT 22 10430 S.F. ± 0.239 AC. ±
LOT 23 9786 S.F. ± 0.225 AC. ±
LOT 24 8750 S.F. ± 0.201 AC. ±
LOT 25 8750 S.F. ± 0.201 AC. ±
LOT 26 8750 S.F. ± 0.201 AC. ±
LOT 27 8750 S.F. ± 0.201 AC. ±
LOT 28 10188 S.F. ± 0.234 AC. ±
LOT 29 10429 S.F. ± 0.239 AC. ±
LOT 30 10430 S.F. ± 0.239 AC. ±
LOT 31 10427 S.F. ± 0.239 AC. ±
LOT 32 10430 S.F. ± 0.239 AC. ±
LOT 33 10273 S.F. ± 0.236 AC. ±
LOT 34 8750 S.F. ± 0.201 AC. ±
LOT 35 8750 S.F. ± 0.201 AC. ±
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LOT 40 13174 S.F. ± 0.302 AC. ±
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LOT 50 9927 S.F. ± 0.228 AC. ±
LOT 51 9926 S.F. ± 0.228 AC. ±
LOT 52 8750 S.F. ± 0.201 AC. ±
LOT 53 8750 S.F. ± 0.201 AC. ±
LOT 68 8750 S.F. ± 0.201 AC. ±
OPEN SPACE P 59,650 S.F. ± 1.369 AC. ±
OPEN SPACE M 1,613,345 S.F. ± 37.037 AC. ±
SWM POND
SWM POND
5' SIDEWALK
34' PRIVATE R/W
20' WIDE DRAINAGE EASEMENT (TYP.)
20' LANDSCAPE BUFFER (TYP.)
PALOMINO WAY
PALOMINO WAY
SHEILAND WAY
WOODSIDE ROAD
QUAIL LANE
POND ROAD
BANKS ROAD RD 298
VARIABLE WIDTH R.O.W.
Lands N/F BAYWOOD COMMUNITIES, LLC Tax Map 234-23.00-709.00 Zoning: HR-1 Land Use: Residential, Single
Lands N/F JAMES MARTIN & LINDA MODINE Tax Map 234-24.00-269.00 Zoning: AR-1 Land Use: Residential, Single
Lands N/F WINDING CREEK VILLAGE PROPERTY OWNERS ASSOCIATION Tax Map 234-24.00-312.00 Zoning: AR-1 Land Use: Residential, Single
Lands N/F WINDING CREEK VILLAGE PROPERTY OWNERS ASSOCIATION Tax Map 234-24.00-309.00 Zoning: AR-1 Land Use: Residential, Single
N80°53'29"W 293.36'
S81°42'40"W 30.27'
S81°42'37"W 92.58'
N
GRAPHIC SCALE
(IN FEET)
1 inch = 50 ft.

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Georgetown, DE 19947
T. 302.297.9215

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Seal
Date

REVISIONS

NO.	DATE	DESCRIPTION

PRELIMINARY PLAT L
for
KEASTONE BAY
INDIAN RIVER HUNDRED
SUSSEX COUNTY, DELAWARE

Date:	11/28/18
Job Number:	10006
Scale:	1"=50'
Drawn By:	ML
Designed By:	JP
Approved By:	JP

Sheet No.: 15

File Name: 10006-prelim-plat

SEE SHEET 13

SEE SHEET 15

LOT 68 8750 S.F. ± 0.201 AC. ±
LOT 69 8750 S.F. ± 0.201 AC. ±
LOT 70 8750 S.F. ± 0.201 AC. ±
LOT 71 8750 S.F. ± 0.201 AC. ±
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LOT 80 9343 S.F. ± 0.214 AC. ±
LOT 81 9343 S.F. ± 0.214 AC. ±
LOT 82 9328 S.F. ± 0.214 AC. ±
LOT 83 9344 S.F. ± 0.215 AC. ±
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LOT 85 9343 S.F. ± 0.214 AC. ±
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LOT 87 9182 S.F. ± 0.211 AC. ±
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LOT 177 8750 S.F. ± 0.201 AC. ±
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LOT 180 8750 S.F. ± 0.201 AC. ±
LOT 181 8750 S.F. ± 0.201 AC. ±
LOT 182 8750 S.F. ± 0.201 AC. ±
0.201 AC. ±

SWM POND

OPEN SPACE V
122,118 S.F. ±
2.803 AC. ±

MUSTANG WAY

24' PRIVATE R/W

5' SIDEWALK (TYP.)

20' WIDE DRAINAGE EASEMENT (TYP.)

OPEN SPACE M
1,613,345 S.F. ±
37.037 AC. ±

SWM POND

20' LANDSCAPE BUFFER (TYP.)

WINDING CREEK VILLAGE SECTION 3

WOODSIDE ROAD

N69°27'23"W 341.91'

S20°32'11"W 200.00'

N69°27'49"W 114.97'

Lands N/F
JEFFERY P. & MARCIA S. HILOVSKY TRUSTEES
Tax Map 234-24.00-268.00
Zoning: AR-1
Land Use: Residential, Single

Lands N/F
GREGORY S. BIENER & THERESE A. ROBERTS-BIENER
Tax Map 234-24.00-267.00
Zoning: AR-1
Land Use: Residential, Single

Lands N/F
WILLIAM E. & MARGARET KRASHOC
Tax Map 234-24.00-266.00
Zoning: AR-1
Land Use: Residential, Single

Lands N/F
WALTER J. & LISA A RICHARDS
Tax Map 234-24.00-265.00
Zoning: AR-1
Land Use: Residential, Single

Lands N/F
DONALD C. SR. & SHARON R. FAULKNER
Tax Map 234-24.00-264.00
Zoning: AR-1
Land Use: Residential, Single

Lands N/F
GEORGE H. & MELISSA L. BIXBY
Tax Map 234-24.00-263.00
Zoning: AR-1
Land Use: Residential, Single

Lands N/F
RICHARD A. & SHIRLEY B. VALERIA
Tax Map 234-24.00-262.00
Zoning: AR-1
Land Use: Residential, Single

Lands N/F
GARY F. SEBASTIAN
Tax Map 234-24.00-261.00
Zoning: AR-1
Land Use: Residential, Single

Lands N/F
MICHELE TODD
Tax Map 234-24.00-260.00
Zoning: AR-1
Land Use: Residential, Single

Lands N/F
MARIA ROBLES
Tax Map 234-24.00-259.00
Zoning: AR-1
Land Use: Residential, Single

Lands N/F
ROBERT J. & JEANNETTE COSGROVE
Tax Map 234-24.00-258.00
Zoning: AR-1
Land Use: Residential, Single

Lands N/F
CHARLES G. & MARY A. KEEFER
Tax Map 234-24.00-295.00
Zoning: AR-1
Land Use: Residential, Single

Lands N/F
PETER J. & MARIANNE F
Tax Map 234-24.00-2
Zoning: AR-1
Land Use: Residential

N

GRAPHIC SCALE
0 9
(IN FEET)
1 inch = 50 ft.

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Georgetown, DE 19947
T. 302.297.9215

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Salisbury, MD 21804
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Seal
Date

REVISIONS

NO.	DESCRIPTION	DATE

PRELIMINARY PLAT M
for
KEASTONE BAY
INDIAN RIVER HUNDRED
SUSSEX COUNTY, DELAWARE

Date:	11/28/18
Job Number:	10006
Scale:	1"=50'
Drawn By:	ML
Designed By:	JP
Approved By:	JP

Sheet No.: 16

File Name: 10006-prelim-plat

Keastone Bay

Project Reference Material
AR-1/ES-1 Cluster

July 2019

Prepared for: Baywood, LLC

solutions
Integrated Planning
Engineering & Management, LLC

Project Team

APPLICANT/DEVELOPER:	**Baywood, LLC**	
	Contact:	Mr. Robert Tunnell, Jr 34026 Annas Way, Suite 1 Long Neck, DE 19966
	Telephone:	302.945.9300
	Email:	rtunnell@potnets.com
CIVIL ENGINEER/ LAND PLANNER	**Solutions IPEM, LLC**	
	Contact:	Mr. Jason Palkewicz, PE 303 North Bedford Street Georgetown, DE 19947
	Telephone:	302.297.9215
	Email:	jpalkewicz@solutionsipem.com
ENVIRONMENTAL	**Watershed Eco, LLC**	
	Contact:	Mr. James C McCulley IV, PWS PO Box 1225 Middletown, DE 19790
	Telephone:	302.464.0831
	Email:	jim@watershedeco.com
ATTORNEY:	**Fuqua, Willard, Stevens & Schab, PA**	
	Contact:	Mr. James A. Fuqua Jr, Esq. 26 The Circle Georgetown, DE 19947
	Telephone:	302.856.7777
	FAX:	302.856.2128
	Email:	jimf@fywlaw.com

Table of Contents

Appendix

List of Figures:

Resumes:

Keastone Bay

I. Executive Summary

Keastone Bay is a proposed 310.9 acre ES-1 Cluster Subdivision composed of 651single-family detached homes on individual lots. The site is located on the east side of Banks Road at Green Road. The land is currently zoned AR-1/ES-1.

An Application for Major Subdivision has been submitted to allow for the proposed homes. The site has been planned to provide efficient and safe pedestrian and vehicular patterns. Site Planning carefully maintains the existing wetland areas and integrates current storm water management regulations. The roadway improvements and entrance to Keastone Bay will be designed in accordance with DelDOT standards and regulations.

Keastone Bay is located within Investment Level 3 of the State Strategies for Policies and Spending Map.

The proposed community provides 651 homes on roads within private rights-of-way with curb and gutter and sidewalks, street lights and preserved wooded and wetland areas. A total of 136.6 +/- acres (44%) of interconnected open space of which 26.7 +/- acres are maintained as forest; 1.8 +/- acres of wetlands (forest and wetlands overlap). The vast majority of homes back up to natural open space, buffers or storm water management features.

A centrally located recreation facility is provided with pool, clubhouse, tot lot, bocce, and tennis/pickleball courts. A pavilion and community pier is located opposite Green Road. In addition to the main two recreation facilities, there are 13 pocket parks distributed throughout the community. Many of which are placed at the end/intersection of roadways.

In conclusion, the proposed community plan represents a higher level of design that will produce a superior living environment for future residents. This plan provides affordable but appealing amenities that will result in sustainable property values with neutral to positive impacts on property values in nearby neighborhoods while promoting the health, safety and welfare of the citizens of Sussex County.

Proposed Density and Calculations:

Gross Site Area = 310.907 +/- acres

Allowable Homes Calculation (AR-1/ES-1Cluster):
2.178 homes/acre
310.907 x 2.178 = 677 homes

Proposed Homes:
651 Homes

Actual Density:
651 / 310.907 = 2.09 homes/acre

II. Project Overview

A. Boundary Plat, Topographic & Non-Tidal Wetlands Survey

A boundary survey for the property was prepared by Solutions IPEM, LLC. The total area of the properties is 310.907 +/- acres. This survey provides the location and extent of existing woodlands and wetlands located on the site. Wetlands were field located by Watershed Eco, LLC.

B. Overview of Current Site Conditions

The property for the proposed Keastone Bay community is located along Banks Road at Green Road. The proposed development is surrounded by the existing communities of Baywood Greens, Shawns Hideaway and Winding Creek Village. The site is mostly woodland with some non-tidal wetlands.

The property is located within flood zone X, (areas determined to be outside the 2.0% annual chance floodplain), flood zone A (no base blood elevation determined) zone X shaded (areas of 0.2% annual change flood; areas of 1% annual chance flood with average depth of less that 1 foot or with drainage areas less than 1 square mile; and area protected by levees from 1% annual chance flood) and zone AE, (special flood area subject to inundation by the 1% annual flood chance – base flood elevations determined), per map number 10005C0 Panel 0345K, map revised March 16, 2015. The site is located within areas of fair/poor groundwater recharge potential.

A soils report was prepared by Hillis-Carnes Engineering Associates, Inc. to determine depth to ground water and storm water feasibility. The depth to seasonal high ground water is approximately 3 - 6 feet below grade. Some portions of the site may be suitable for infiltration.

C. Land Plan and Amenities

The land plan takes into account:

- Existing site conditions
- Stormwater outfalls
- Adjacent communities
- Existing roadways
- Current housing trends
- Recreational needs

The resultant plan has:

- 50’ perimeter setback to property lines along with a planted buffer.
- 70’ x 125’ lots to allow for 50’ wide homes and a livable backyard.
- A majority of the lots back up to open space, buffers, ponds, recreational facilities.

- Pocket parks strategically located throughout the site. Many of which are at intersections.
- Sidewalks along the roadways that connect to the multi-modal path along the property frontage.
- Main recreation facility including:
    - Pool
    - Clubhouse
    - Pickleball courts
    - Bocce ball
    - Gathering areas
- Pavilion with kayak pier.
- Street lights.
- Community mail box cluster.
- School bus stop.
- An efficient stormwater management system that acts as an amenity.

D. DelDOT Improvements

A series of meetings was held with DelDOT officials concerning area roadway improvements related to Keastone Bay specifically with regard to off-site transportation improvements and frontage improvements. The improvements requirements are:

- Widening of both Banks Road and Green Road including shoulders.
- Installation of multi-modal paths along property frontage.
- Entrances from Green Road will be via a round-a-bout and a traditional entrance utilizing turn lanes.

E. Preliminary Land Use Service (PLUS)

A concept plan for Keastone Bay (formally known as Bridlewood) was presented to PLUS in June of 2018. A response letter was provided to PLUS which addressed their comments point by point.

The plan presented to PLUS had 677 homes. Since the PLUS submittal the plan was updated to expand the central recreational amenity and provide pocket parks throughout the community. The resultant plan eliminated 26 homes resulting in the 651 home plan currently proposed.

F. Sanitary Sewer Planning Area

The Keastone Bay community is located within Inland Bays Preservation Company's sewer service area.

III. Compliance with Applicable Regulations

A. Compliance with AR-1 (Agricultural Residential District) / ES-1 (Environmentally Sensitive Development District Overlay Zone)

The proposed land use is in conformity with the Zoning Ordinance which allows 2.178 dwelling units per acre based on the gross site area.

Purpose: Keastone Bay conforms with the purpose of the AR-1 code in as much as it is a low density residential community that protects water resources, watersheds, forest area and scenic views. Specific design elements include:

- The existing trees around the wetlands are maintained.
- The majority of the homes back up to open space (woodlands, storm water facilities and other natural areas).
- Tot-lots and parks are provided for the home owner use.
- Recreation facilities, such as community building, pool, bocce courts are provided.
- Sidewalks and a connection to the multi modal path are provided.
- No wetlands are impacted, other than community pier.
- There are no wellhead protection areas on the property.
- The site is within the fair/poor groundwater recharge areas.

Permitted Uses: The AR-1 / ES-1 allows the proposed single-family cluster development.

Permitted Accessory Uses: The zoning allows outdoor amenities for use of occupants and their guests.

Conditional Uses: Keastone Bay is not applying for any conditional uses.

Special Use Exceptions: Keastone Bay is not applying for any special use exceptions.

Permitted Signs: All proposed development signage will conform to the regulations provided in 115-159.2.

Height, Area and Bulk Requirements: The height, area and bulk requirements are established by the requirements set forth in the AR-1 / ES-1 zoning article. The following is a summary of the lot dimensions and setbacks for Keastone Bay, all of which are in conformity with County requirements:

Single Family Lots -

Minimum Lot Area = 7,500 S.F.
Minimum Lot Width = 60'
Front Yard = 25’ (15’ Corner Lot)
Side Yard = 10’
Rear Yard = 10’
Maximum Building Height = 42’

B. Statement of Compliance with Chapter 99, Sussex County Subdivision of Land

Chapter 99-9 (C)
The proposed development plan has taken into consideration all items listed within the Subdivision of Land – Chapter 99, Section C within the Sussex County Code and complies with it in the following manner:

1. "Integration of the proposed subdivision into existing terrain and surrounding landscape."

a. The Developer has taken great effort to work with the existing terrain and surrounding landscape in the planning of the community specifically by respecting existing topography with the location of homes, roadway, and utilities. The proposed location of storm water management facilities was also based on extensive soils borings and a soil report.

b. Forested tidal and non-tidal wetlands have been preserved.

c. A minimum 20' landscaped buffer with additional space for storm water management, forest and/or wetland preservation has been provided adjacent to all surrounding property lines.

d. The proposed lots within the community are a minimum of 50' from the outbounds of the property.

2. "Minimal use of wetlands and floodplains."

a. Property lines are a minimum of 100' from the existing wetlands.

b. A permit is anticipated for the community pier.

c. All of the proposed lots are located within flood Zone X (unshaded), areas determined to be outside the 0.2% annual chance floodplain.

3. "Preservation of natural and historic features."

a. The forested wetlands will be preserved.

b. There are two sites referenced in the PLUS comments from the state:
    i. S02939 is an existing home site along Banks Road on TM 234-17, P 170. The location of this home is not within the limits of disturbance for this project. The developer is willing to have Delaware State Historic Preservation Office review and catalog the structure before it is razed.
    ii. S03041 is a home site that is mapped incorrectly and is not located within the project limits.

c. The roadway system, stormwater features and lots were designed in such a way to minimize impacts/disturbance of steep slopes.

4. ***"Preservation of open space and scenic views."***

    a. The design for the community allows views from homes and street of the wooded wetlands as well as the landscaped storm water management / open space areas.

    b. The existing forested wetlands are being preserved as an open space amenity and surround the majority of the site.

5. ***"Minimization of tree, vegetation, and soil removal and grade changes."***

    a. Disturbance to the site will be limited to only those areas required for homes, roads, storm water management and utility installation. All undisturbed vegetation that is compatible with native vegetation shall remain.

    b. Grade changes to the site shall be limited to those necessary to provide positive drainage and proper cover over utilities.

6. ***"Screening of objectionable features from neighboring properties and roadways."***

    a. Screening of objectionable features on the site from adjacent properties and roadways shall be provided utilizing the required 20' landscaped buffer around the perimeter of the site or existing forested areas and storm water management facilities where those exist.

    b. The proposed lots within the community are a minimum of 50' from the outbounds of the property.

7. ***"Provision for water supply."***

    a. Long Neck Water Company will provide potable water and fire protection for the development.

8. ***"Provision for sewage disposal."***

    a. The Keastone Bay community is located within Inland Bays Preservation Company's service location

9. ***"Provision for solid waste disposal."***

    a. Arrangements will be made with a commercial trash hauler to provide trash collection for Keastone Bay.

10. ***"Prevention of surface and groundwater pollution."***

    a. All runoff from the Keastone Bay site will be directed via the closed road section and storm drain network into a storm water management system consisting of Best Management Practices (BMP) for treatment and discharge. The storm water management facilities will be designed in accordance with Delaware / Sussex County standards.

b. Ultimately, through post-development design, runoff will receive better treatment than during pre-development conditions. The project will meet the current storm water management regulations as required by DNREC.

c. A soils report was prepared to determine locations where infiltration BMP's could be utilized.

11. "Minimization of erosion and sedimentation, minimization of changes in groundwater levels, minimization of increased rates of runoff, minimization of potential for flooding and design of drainage so that groundwater recharge is maximized."

a. As stated above, stormwater management quality and quantity will be provided by a storm water management system consisting of Best Management Practices (BMP) for treatment and discharge. The BMP's will be designed per Delaware / Sussex County standards. The stormwater collection/treatment system will be adequately sized to prevent flooding.

b. Erosion and sediment control will be provided by methods approved by the Sussex Conservation District. An erosion and sediment control plan will be prepared and submitted for review.

12. "Provision for safe vehicular and pedestrian Movement within the site and to adjacent ways"

a. Entrance to the site shall be designed per current DelDOT standards.

b. To promote pedestrian traffic within the development, 5' sidewalks are provided along both sides of the road.

c. All roads will be designed in accordance with Sussex County standards.

13. "Effect on area property values."

a. It is expected that the proposed Keastone Bay community will cause current property values to remain the same if not increase the value of the properties in the area. Great attention has been paid to the detail and aesthetic qualities of the plan, the livability of the community and amenities provided.

14. "Preservation and conservation of farmland."

a. The proposed subdivision will not adversely affect adjacent farmland due to landscaped buffers and other natural wooded areas and wetland that separate the community from farmland.

15. "Effect on schools, public buildings, and community facilities."

a. Keastone Bay will have no adverse effect on schools, public buildings and community facilities as demonstrated by the PLUS comments.

b. Community amenities will include a gathering area, tot lot, and outdoor activities. In addition, Keastone Bay includes several open space areas for other active and passive uses.

16. "Effect on area roadways and public transportation"

a. A series of meetings was held with DelDOT officials concerning area roadway improvements related to Keastone Bay specifically with regard to off-site transportation improvements and frontage improvements. The improvements requirements are:

- Widening of both Banks Road and Green Road including shoulders.
- Installation of multi-modal paths along property frontage.
- Entrances from Green Road will be via a round-a-bout and a traditional entrance utilizing turn lanes.

17. "Compatibility with Other Land Uses."

a. The project is relatively adjacent to other residential development communities of Shawns Hideaway, Baywood Greens, and Winding Creek Village, thus being compatible in density, home style and land use.

18. "Effect on Area Waterways."

a. The community is adjacent to Hopkins Prong.

b. A community pier is proposed to allow access to the prong as well as fishing.

c. The closest lot is over 100' from wetlands and over 300' from the prong.

C. Statement of Conformity with Sussex County, Delaware, Comprehensive Plan Update, March 2019

Chapter 4 Future Land Use:

The site is located within the Coastal Areas Growth Area and complies as follows:

- The proposed land plan addresses environmental concerns.
    - 100' setback to wetlands
    - 50' perimeter setback
    - Perimeter landscape buffer
- Single-family homes are permitted.
- The proposed density of 2.09 du/ac is incompliance with the 4-12 du/ac as appropriate in this location.
- Central water and sewer will be available to the site.

Chapter 5 Conservation:

The proposed community complies with the Conservation section as follows:

- The site complies with surface water runoff requirements.
- There are no well head protection areas nor excellent ground recharge areas within the proposed site.
- A 100' wetland setback is proposed.
- Flood zones exist on-site, however no homes are proposed within the flood prone areas.
- Central water and sewer will be available to the site.

Chapter 6 Recreation and Open Space:

The proposed community complies with the Recreation and Open Space section as follows:

- The site is located within Region 5 of the Delaware Statewide Comprehensive Outdoor Recreation Plan and provides the following:
    - High Priorities:
        - Swimming pools
        - Fishing access
        - Picnic Areas
        - Walking/jogging paths (multi-modal)
        - Bike paths (multi-modal)
    - Moderate Priorities:
        - Canoe/kayak launches
        - Tennis (pickleball) courts
- In addition, the community provides:
    - Gathering areas
    - Sidewalks
    - Tot lots
    - Pocket parks
- A 100' wetland setback is proposed.

Chapter 7 Utilities:

The proposed community complies with the Utilities section as follows:

- There are no well head protection areas nor excellent ground recharge areas within the proposed site.
- Water will be provided by Long Neck Water Company who has the CPCN for the project.
- The community is located within the sewer CPCN area of Inland Bays Preservation Company, LLC.
- The project is located within the Chesapeake Utilities Existing and Planned Natural Gas Service area.
- Adequate areas are provided for stormwater management and stormwater drainage.
- It is anticipated that solid waste collection will be by Blue Hen Disposal or another licensed commercial hauler.

Chapter 8 Housing:

The proposed community complies with the Housing section as follows:

- The site is located in the Eastern portion of Sussex County which include beach communities as well as communities that capture much of the retiree market.

Chapter 9 Economic Development:

The proposed community complies with the Economic Development section as follows:

- This development project will directly provide employment/opportunities in:
    - Construction
    - Professional, Business and IT Services
    - Finance, Insurance and Real Estate
    - Utilities
- The development will also indirectly provide job opportunities in:
    - Leisure and Hospitality
    - Education and Healthcare

Chapter 10 Historic Preservation:

The proposed community complies with the Historic Preservation section as follows:

- There are two sites referenced in the PLUS comments from the state:
    - S02939 is an existing home site along Banks Road on TM 234-17, P 170. The location of this home is not within the limits of disturbance for this project. The developer is willing to have Delaware State Historic Preservation Office review and catalog the structure before it is razed.
    - S03041 is a home site that is mapped incorrectly and is not located within the project limits.

Chapter 12 Community Design:

The proposed community complies with the Community Design section as follows:

- The proposed community is a cluster subdivision, which is widely used in AR-1 zoning.
- Both buffer and internal street trees are proposed.
- Street lighting will be provided.
- Sidewalks are proposed on both side of the roadways.
- The lot sizes within the cluster do not allow for side or rear garages.
- The narrower right-of-way allows for homes to be placed closer to the road.
- The proposed homes will be limited to 42’ in height.

- No variances to the required setbacks are proposed.
- Although no direct connection of walking trails or bicycle paths to the existing adjacent communities is possible, the community will connect to multi-modal paths within DelDOT's right-of-way.
- The entrance to the community will be landscaped.
- Cross walks will be provided.
- Landscape/forested buffers will be provided along the perimeter.
- A kayak/canoe pier is proposed. There is also a 100' buffer to the nearest lot.
- Utilities are proposed to be underground.
- Street signage will be provided throughout the community.

Chapter 13 Mobility Element:

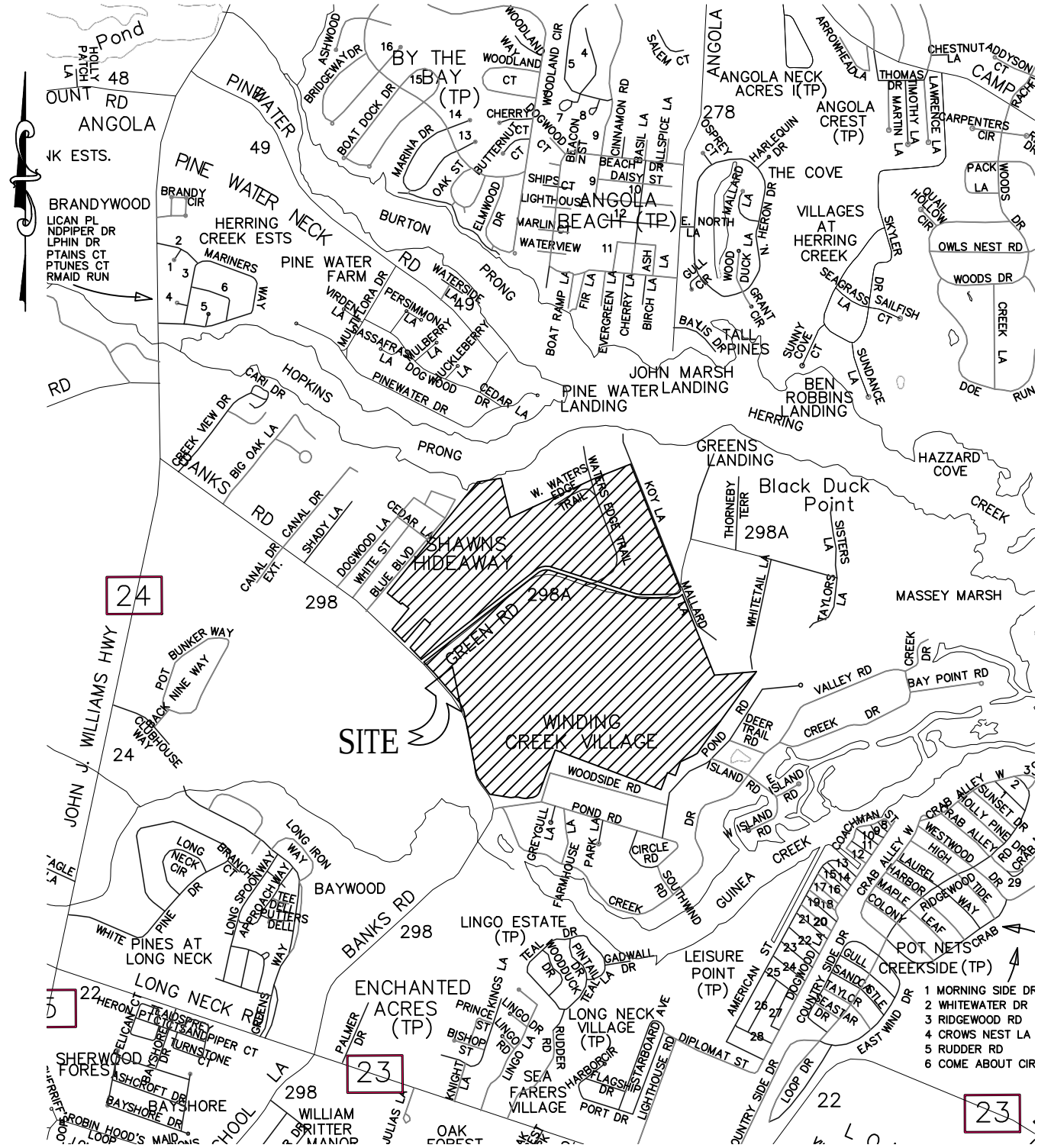
The proposed community complies with the Mobility Element section as follows:

- A Traffic Impact Study (TIS) was prepared for the proposed development which included intersections beyond the property.
- Entrance, roadway and off-site improvements necessitated by DelDOT will be designed and constructed per DelDOT standards.
- Improvements are anticipated to include
    - Road widening
    - Shoulder construction
    - Installation of turn lanes
    - Multi-modal paths
    - Drainage improvements

IV. Conclusion

The proposed community of Keastone Bay will enhance the area with a well-planned design, upscale homes, amenities, and no negative impact on the land. The design preserves large amounts of open space while preserving attractive views within and into the community. The homes will have a neutral to positive impact on the value of the surrounding neighborhoods and will provide the County with additional tax revenue. Passive amenities include existing woodlands and wetlands on-site. Active amenities include a tot lot and dedicated open spaces for other activities. The design also preserves and enhance existing views through non-disturbance and accentuating certain features of the existing terrain.

The proposed Community of Keastone Bay meets the standards set forth by the County and State and will provide a superior living environment for future residents without placing a burden on the County, State or tax payers to serve this community.



303 North Bedford Street
Georgetown, DE 19947
T. 302.297.9215
www.solutionsipem.com

VICINITY MAP

KEASTONE

SUSSEX COUNTY, DELAWARE

Drawn:	ML
Scale:	N.T.S.
Date:	2/28/19
Job No:	G10006

solutions
Integrated Planning
Engineering & Management, LLC

August 6, 2018

Mrs. Constance C. Holland, AICP, State Planning Director
Haslet Armory
122 Martin Luther King Jr. Blvd. South
Dover, DE 19901

RE: PLUS review 2018-06-03; Bridlewood

Dear Mrs. Holland:

Please allow this letter to serve as our response to the PLUS review of the Bridlewood community. Answers to comments have been provided following each comment taken directly from your comment letter for ease of use. Our responses are in red and a different font for ease in review.

Thank you for meeting with State agency planers on June 27, 2018 to discuss the proposed plans for the Bridlewood project. According to the information received you are seeking review of a 677 unit subdivision on 310 acres along Green Road in Sussex County.

Please note that changes to the plan, other than those suggested in this letter, could result in additional comments from the State. Additionally, these comments reflect only issues that are the responsibility of the agencies represented at the meeting. **The developers will also need to comply with any Federal, State, and local regulations regarding this property. We also note that as Sussex County is the governing authority over this land, the developers will need to comply with any and all regulations/restrictions set forth by the County.**

Response – The developer will comply with all Federal, State and Local regulations regarding the development of this property. The developer will comply with any and all regulations / restrictions set forth by Sussex County.

Strategies for State Policies and Spending

This project is located in Investment Level 3 according to the *Strategies for State Policies and Spending*. Investment Level 3 reflects areas where growth is anticipated by local, county, and state plans in the longer term future, or areas that may have environmental or other constraints to development. State investments may support future growth in these areas, but please be advised that the State has other priorities for the near future. We encourage you to design the site with respect for the environmental features which are present.

Response – Noted.

T: 302.297.9215
T: 410.572.8833
E: ideas@solutionsipem.com

303 North Bedford Street • Georgetown, DE 19947
3003 Merritt Mill Road • Salisbury, MD 21804

Code Requirements/Agency Permitting Requirements

Department of Transportation – Contact Bill Brockenbrough 760-2109

- The site access on Green Road (Sussex Road 298A) must be designed in accordance with DelDOT's Development Coordination Manual, which is available at http://www.deldot.gov/Business/subdivisions/index.shtml?dc=changes.

- Pursuant to Section P.3 of the Manual, a Pre-Submittal Meeting is required before plans are submitted for review.

- Section P.5 of the Manual addresses fees that are assessed for the review of development proposals. DelDOT anticipates collecting the Initial Stage Fee when the record plan is submitted for review and the Construction Stage Fee when construction plans are submitted for review.

- Per Section 2.2.2.1 of the Development Coordination Manual, Traffic Impact Studies (TIS) are warranted for developments generating more than 500 vehicle trip ends per day or 50 vehicle trip ends per hour in any hour of the day. The PLUS application states that the proposed development would generate 6,566 vehicle trip ends per day. DelDOT calculates that the development would generate 6,041 vehicle trip ends per day on weekdays and 637 vehicle trip ends per hour during the evening peak hour on Green Road. Therefore a TIS is warranted.

  A TIS was done for a previous, almost identically sized, development on this site in 2005. A copy of an October 2006 letter from one of DelDOT's consultants, reviewing that TIS, is provided as information. Off-site improvements identified in that letter, or similar ones, are still likely to be required. However enough has changed since 2005, both in DelDOT's regulations and in the area surrounding the project, that DelDOT intends to require a new TIS.

  The purpose of a TIS is to identify needed off-site improvements. One such improvement that DelDOT can identify without a TIS is improvement of Green Road and Banks Road to meet DelDOT local road standards, including 11-foot lanes and 5-foot shoulders in both directions, for the length of the site frontage.

- Section 3.2.4.2 of the Manual addresses the placement of right-of-way monuments (markers) along the roads on which a property fronts, in this case Green Road and Banks Road (Sussex Road 298). Monuments sufficient to re-establish the permanent rights-of-way after the dedication discussed below should be shown on the plan and provided in the field in accordance with this section.

- As necessary, in accordance with Section 3.2.5 and Figure 3.2.5-a of the Manual, DelDOT will require dedication of right-of-way along the site's frontage on Green Road and Banks Road to meet DelDOT's standards for local roads. By this regulation, this dedication is to provide a minimum of 30 feet of right-of-way from the physical centerline along both roads. The following right-of-way dedication note is required, "**An X-foot wide right-of-way is hereby dedicated to the State of Delaware, as per this plat.**"

- In accordance with Section 3.2.5.1.1 of the Manual, if this development is proposing a neighborhood sign/structure, then a permanent easement shall be established at the site entrance. The easement shall be located outside of any existing and/or proposed right-of-way. It will also need to be verified that the sign/structure does not pose a sight distance and/or safety hazard.

- In accordance with Section 3.2.5.1.2 of the Manual, DelDOT will require the establishment of a 15-foot wide permanent easement across the property frontage on both Green Road and Banks Road. The location of the easement shall be outside the limits of the ultimate right-of-way. The easement area can be used as part of the open space calculation for the site. The following note is required, "**A 15-foot wide permanent easement is hereby established for the State of Delaware, as per this plat.**"

- In accordance with Section 3.4 of the Manual, a record plan shall be prepared prior to issuing "Letter of No Objection". The record plan submittal shall include the items listed on the Critical Items for Acceptance: Record Plan document available on the DelDOT website at https://www.deldot.gov/Business/subdivisions/pdfs/Critical-Items-Record-Subdivision.pdf?09222017.

- Referring to Section 3.4.2.1 of the Manual, the following items, among other things, are required on the Record Plan:

  - A Traffic Generation Diagram. See Figure 3.4.2-a for the required format and content.

  - Depiction of all existing entrances within 450 feet of the proposed entrance.

  - Notes identifying the type of any off-site improvements, agreements (signal, letter) contributions and when the off-site improvements are warranted.

- Section 3.5 of the Manual provides DelDOT's requirements with regard to connectivity. The requirements in Sections 3.5.1 through 3.5.3 shall be followed for all development projects having access to state roads or proposing DelDOT-maintained public streets for subdivisions. Private or municipal streets should follow the County's requirements for connectivity.

- Section 3.5.4.2 of the Development Coordination Manual addresses requirements for shared-use paths and sidewalks. Referring to Section 3.5.4.2.A of the Manual, developments installation of a sidewalk or Shared Use Path along the development's road frontage is required for developments generating more than 2,000 vehicle trip ends per day. DelDOT will require a Shared Use Path along the development frontage on both Green Road and Banks Road.

- Referring to Section 3.5.5 of the Manual, existing and proposed transit stops and associated facilities as required by the Delaware Transit Corporation (DTC) or DelDOT shall be shown on the Record Plan.

- Section 3.5.4.4 of the Manual addresses access-ways, which are similar to Shared Use Paths (SUP) but are used to connect from an SUP or sidewalk along a road to an interior trail or subdivision street when the spacing between streets is inadequate to accommodate convenient pedestrian and bicycle travel. DelDOT anticipates requiring at least two access-ways. One would be from a cul de sac, proposed near the intersection of Green Road and Banks Road, out to that intersection. The other would be from a subdivision street, proposed to run southwest from the intersection of Green Road and West Waters Edge Trail, out to Banks Road near the south limit of the site frontage.

- In accordance with Section 3.8 of the Manual, storm water facilities, excluding filter strips and bioswales, shall be located a minimum of 20 feet from the ultimate State right-of-way along both Green Road and Banks Road.

- Referring to Section 4.3 of the Manual, an entrance plan shall be prepared prior to issuing entrance approval. The entrance plan submittal shall include the items listed on the Critical Items for Acceptance: Entrance/Construction/Subdivision Set Plan document available on the DelDOT website at https://www.deldot.gov/Business/subdivisions/pdfs/Critical-Items_Entrance_Construction_Subdivision.pdf?09222017.

- In accordance with Section 5.2.5.6 of the Manual, a separate turning template plan shall be provided to verify vehicles can safely enter and exit the site entrance. As per Section 5.2.3 of the Manual, the entrance shall be designed for the largest vehicle using the entrance.

- In accordance with Section 5.2.9 of the Manual, the Auxiliary Lane Worksheet should be used to determine whether auxiliary lanes are warranted at the site entrances and how long those lanes should be. The worksheet can be found at http://www.deldot.gov/Business/subdivisions/index.shtml.

- In accordance with Section 5.4 of the Manual, sight distance triangles are required and shall be established in accordance with American Association of State Highway and Transportation Officials (AASHTO) standards. A spreadsheet has been developed to assist with this task. It can be found at http://www.deldot.gov/Business/subdivisions/index.shtml.

- In accordance with Section 5.14 of the Manual, all existing utilities must be shown on the plan and a utility relocation plan will be required for any utilities that need to be relocated.

- Because the proposed development would not have State-maintained streets, Section 6.4.3 of the Manual, which pertains to the inspection and acceptance of commercial entrances, applies. Construction inspection responsibilities shall be in accordance with Figure 6.4.3-a. DelDOT's preliminary reading of this figure is that the project requires Level I inspection and that a construction inspection agreement will not be needed.

- Section 7.7.2 of the Manual addresses the need to provide 20-foot wide drainage easements for all storm drainage systems, open or closed, that fall outside the existing right-of-way or the drainage/utility easement. In accordance with this section, metes and bounds and total areas need to be shown for any drainage easements. The easements should be shown and noted on the record plan.

Response – The developer will coordinate with DelDOT regarding the necessary improvements and agreements. Construction plans will be per DelDOT requirements.

Department of Natural Resources and Environmental Control – Contact Michael Tholstrup 735-3352

- The Department of Natural Resources and Environmental Control did not submit comments regarding this application. If the development of this property requires permits from a DNREC section, please contact the DNREC regulatory agency directly.

Response – Noted.

State Historic Preservation Office – Contact Carlton Hall 736-7404

- The SHPO has concerns about this proposed development. There is a known dwelling complex (S02939) located off Banks Road on the northwestern part of the parcel. There was an Agricultural Complex on the parcel (S03041) known as the Lawson Agricultural Complex, north of Green Road on the northern part of the project area.

  There is potential for both historic and pre-historic archaeological sites based on our review of historic maps and additional information in our office. The Delaware SHPO strongly recommends an archaeological survey of the area by a qualified archaeologist.

- Burials both marked and unmarked, are protected by Delaware law. Please refer to the following sections of the Delaware State Code: (1) Title 11 Sub-Chapter 1340, titled "Desecration of Burial Places"; and (2) Title 7 Chapter 54, known as the "Delaware Unmarked Human Remains Act".

  Abandoned or unmarked family cemeteries are very common in the State of Delaware. They are usually in rural or open space areas, within or near the boundary, of a historic farm site. Even a marked cemetery can frequently have unmarked graves or burials outside of the known boundary line or limit. Disturbing unmarked graves or burials triggers the Delaware's Unmarked Human Burials and Human Skeletal Remains Law (Del. C. Title 7, Ch. 54), and such remains or discoveries can result in substantial delays while the procedures required under this law are carried out. If there is a discovery of any unmarked graves, burials or a cemetery, it is very costly to have them archaeologically excavated and the burials moved. In the event of such a discovery, the Division of Historical & Cultural Affairs also recommends that the plans be re-drawn to leave the full extent of the cemeteries or any burials on its own parcel or in the open space area of the development, with the responsibility for its maintenance lying with the landowner association or development. If you would like to see more information,please review the following websites:

  www.history.delaware.gov/preservation/umhr.shtml and
  www.history.delaware.gov/preservation/cemeteries.shtml

- If there is federal involvement, in the form of licenses, permits, or funds, the federal agency, often through its client, is responsible for complying with Section 106 of the National Historic Preservation Act (36 CFR 800) and must consider their project's effects on any known or potential cultural or historic resources. Owners and developers who may plan to apply for an Army Corps of Engineers permit or for federal funding, such as HUD or USDA grants, should be aware of the National Historic Preservation Act of 1966 (as amended). If you need further information or additional details pertaining to the Section 106 process and the Advisory Council's role; please review the Advisory Council's website at the following: **www.achp.gov**

Response – The developer has been made aware of the potential for both historic and pre-historic archeological sites and will comply with state and federal code.

Delaware State Fire Marshall's Office – Contact John Rudd 323-5365
At the time of formal submittal, the applicant shall provide; completed application, fee, and three sets of plans depicting the following in accordance with the Delaware State Fire Prevention Regulation:

Fire Protection Water Requirements:

- Where a water distribution system is proposed for single-family dwellings it shall be capable of delivering at least 500 gpm for 1-hour duration, at 20-psi residual pressure. Fire hydrants with 1000 feet spacing on centers are required.

- The infrastructure for fire protection water shall be provided, including the size of water mains.

Accessibility:

- All premises, which the fire department may be called upon to protect in case of fire, and which are not readily accessible from public roads, shall be provided with suitable gates and access roads, and fire lanes so that all buildings on the premises are accessible to fire apparatus. This means that the access road to the subdivision from the main thoroughfare must be constructed so fire department apparatus may negotiate it. If a "center island" is placed at an entrance into the subdivision, it shall be arranged in such a manner that it will not adversely affect quick and unimpeded travel of fire apparatus into the subdivision. Where traffic circles (round-abouts) are located in the subdivision, they too are to be arranged in such a manner that they will not adversely affect quick and unimpeded travel of fire apparatus throughout the subdivision. Additionally, where trees are to be situated adjacent to travel roads in the subdivision, some forethought should be exercised regarding how future growth of the trees may affect fire department travel throughout the subdivision

- Fire department access shall be provided in such a manner so that fire apparatus will be able to locate within 100 ft. of the front door.

- Any dead end road more than 300 feet in length shall be provided with a turn-around or cul-de-sac arranged such that fire apparatus will be able to turn around by making not more than one backing maneuver. The minimum paved radius of the cul-de-sac shall be 38 feet. The dimensions of the cul-de-sac or turn-around shall be shown on the final plans. Also, please be advised that parking is prohibited in the cul-de-sac or turn around.

- The use of speed bumps or other methods of traffic speed reduction must be in accordance with Department of Transportation requirements.

- The local Fire Chief, prior to any submission to our Agency, shall approve in writing the use of gates that limit fire department access into and out of the development or property.

Gas Piping and System Information:

- Provide type of fuel proposed, and show locations of bulk containers on plan.

Required Notes:

- Provide a note on the final plans submitted for review to read " All fire lanes, fire hydrants, and fire department connections shall be marked in accordance with the Delaware State Fire Prevention Regulations"
- Name of Water Supplier
- Proposed Use
- National Fire Protection Association (NFPA) Construction Type
- Maximum Height of Buildings (including number of stories)
- Provide Road Names, even for County Roads

Response – Noted.

Recommendations/Additional Information

This section includes a list of site specific suggestions that are intended to enhance the project. These suggestions have been generated by the State Agencies based on their expertise and subject area knowledge. **These suggestions do not represent State code requirements.** They are offered here in order to provide proactive ideas to help the applicant enhance the site design, and it is hoped **(but in no way required)** that the applicant will open a dialogue with the relevant agencies to discuss how the suggestions can benefit the project.

Department of Transportation – Contact Bill Brockenbrough 760-2109

- Section 3.2.4.1 of the Manual addresses the placement of right-of-way monuments (markers) along subdivision streets. DelDOT recommends that monuments be furnished and placed along the proposed streets in accordance with this section.

- The concept plan presented appears to show a realignment of Green Road. While they do not have regulatory status, DelDOT anticipates requiring that their design standards, including but not limited to the DelDOT Road Design Manual, be followed in designing the realignment.

- The applicant should expect a requirement that any substation and/or wastewater facilities will be required to have access from an internal street or driveway with no direct access to Green Road or Banks Road.

- The applicant should expect a requirement that all PLUS and Technical Advisory Committee (TAC) comments be addressed prior to submitting plans for review.

- Please be advised that as of August 1, 2015, all new plan submittals and re-submittals, including major, minor and commercial plans, shall now be uploaded via the PDCA (Planning Development Coordination Application) with any review fee paid online via

credit card or electronic check. Guidance on how to do this is available on our website at http://www.deldot.gov/Business/subdivisions/index.shtml.

- Please be advised that the Standard General Notes have been updated and posted to the DelDOT website. Please begin using the new versions and look for the revision date of December 8, 2017. The notes can be found at http://www.deldot.gov/Business/subdivisions/index.shtml.

Delaware State Fire Marshall's Office – Contact John Rudd 323-5365

- Although not a requirement of the State Fire Prevention Regulations, the Office of the State Fire Marshal encourages home builders to consider the benefits of home sprinkler protection in dwellings. The Office of the State Fire Marshal also reminds home builders that they are obligated to comply with requirements of Subchapter III of Chapter 36 of Title 6 of the Delaware Code which can be found at the following website: http://delcode.delaware.gov/title6/c036/sc03/index.shtml

- Preliminary meetings with fire protection specialists are encouraged prior to formal submittal. Please call for appointment. Applications and brochures can be downloaded from our website: www.statefiremarshal.delaware.gov, technical services link, plan review, applications or brochures.

Sussex County – Contact Rob Davis 302-855-7820

- The proposed project is not located in an area where Sussex County expects to provide sewer service, and Sussex County recommends that wastewater service be provided by Inland Bays Preservation as proposed. Sussex County does require design and construction of the collection and transmission system to meet Sussex County sewer standards and specifications. The Sussex County Engineering Department shall be provided with an engineering design report from a qualified engineer indicating that treatment and disposal capacity for the entire project can be provided by the existing or proposed wastewater infrastructure. A review and approval of the plans for collection, transmission, treatment and disposal system by the Sussex County Engineering Department is required and plan review fees may apply. Submission and approval of a sewer concept plan is not required.

Response – The developer acknowledges the non-required additional information from the various agencies.

Following receipt of this letter and upon filing of an application with the local jurisdiction, the applicant shall provide to the local jurisdiction and the Office of State Planning

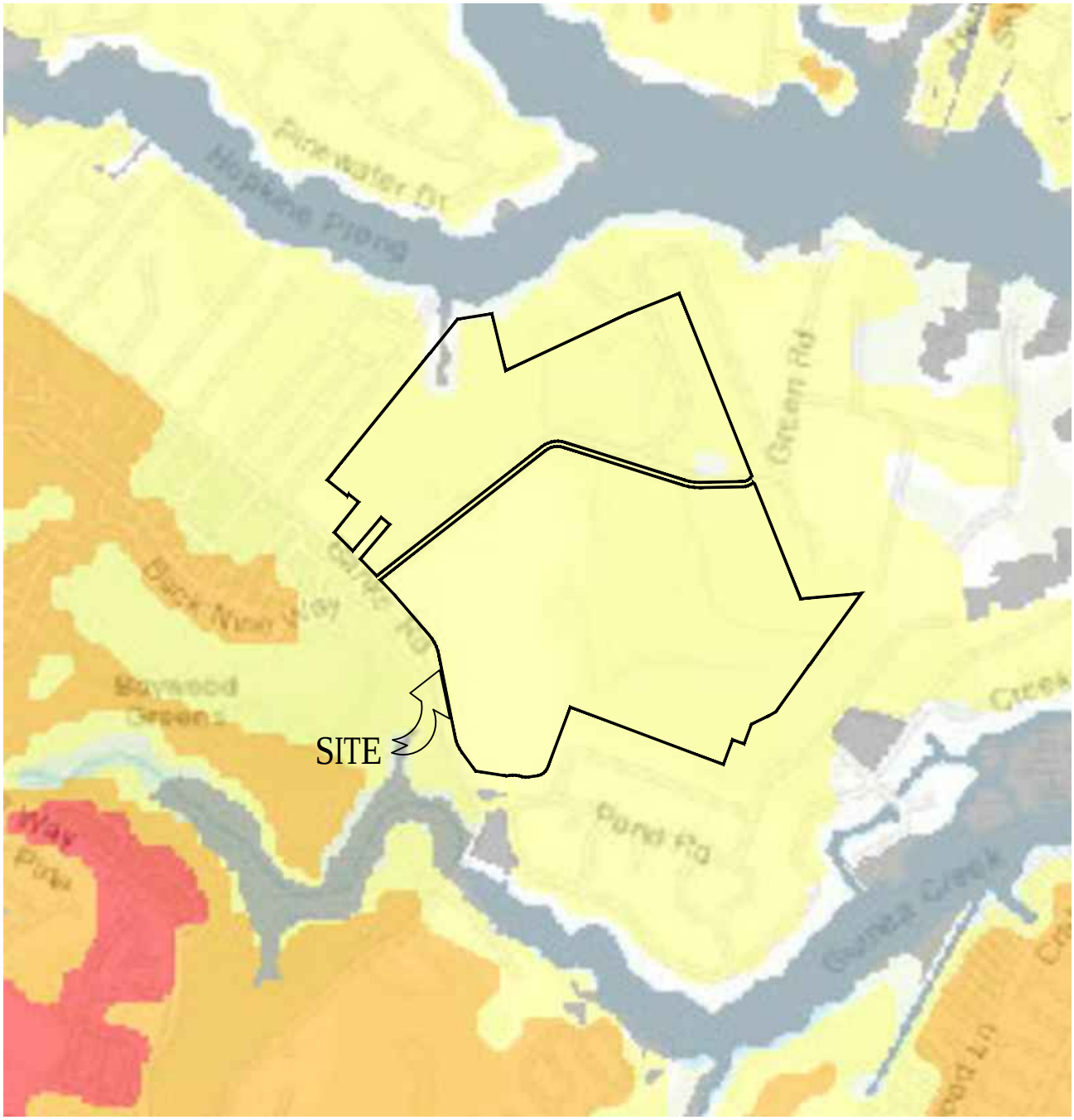
Coordination a written response to comments received as a result of the pre-application process, noting whether comments were incorporated into the project design or not and the reason therefore.

This concludes our response. If you have any questions, please contact us at your convenience.

Sincerely,

Solutions, IPEM

Jason Palkewicz, PE



INVESTMENT LEVEL 1

INVESTMENT LEVEL 2

INVESTMENT LEVEL 3

INVESTMENT LEVEL 4

NOTE:
IMAGE TAKEN FROM
DELAWARE STATE STRATEGIES
2015 INTERACTIVE MAP.

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Georgetown, DE 19947
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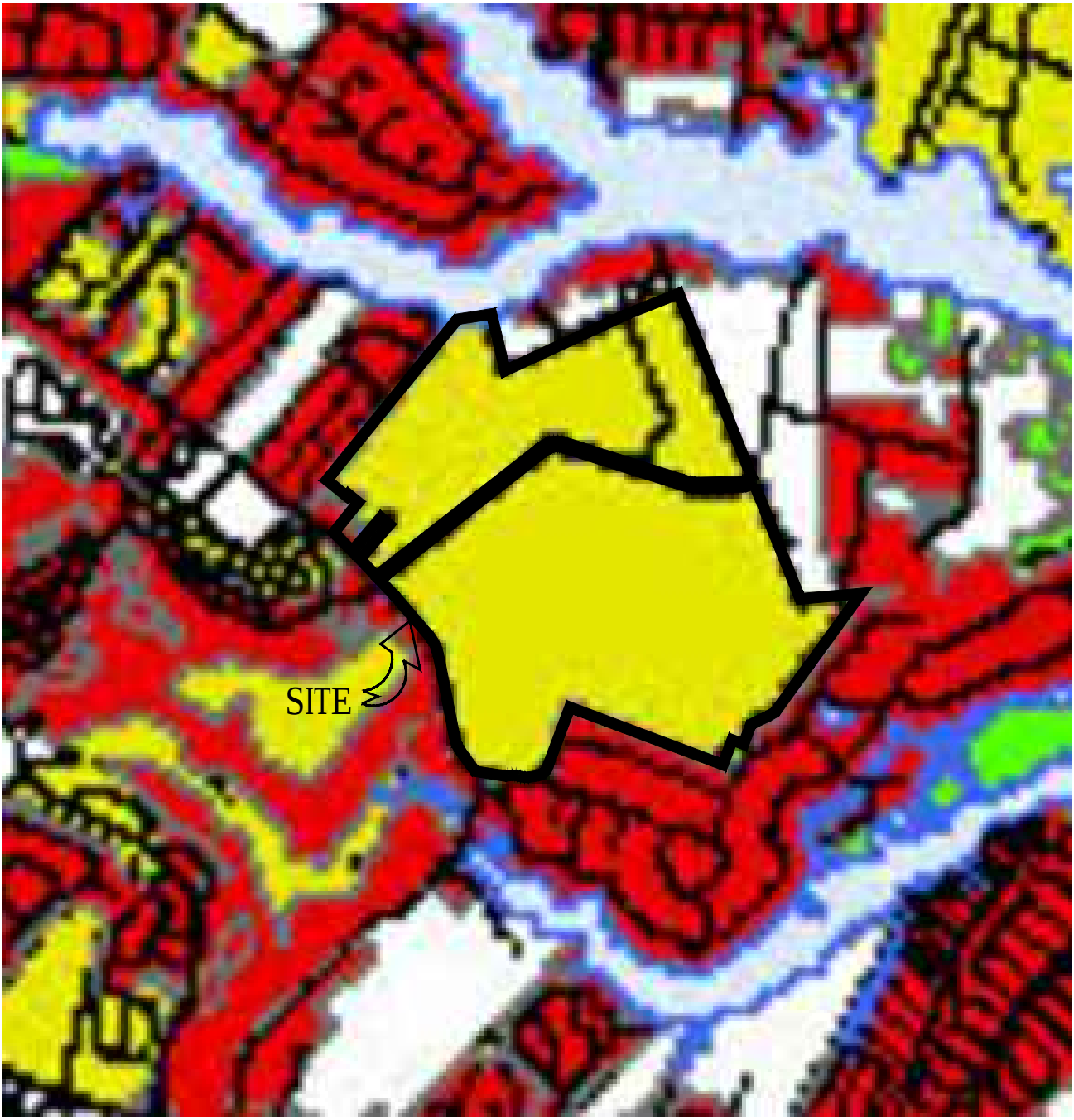
STATE SPENDING STRATEGIES

KEASTONE

SUSSEX COUNTY, DELAWARE

Drawn:	ML
Scale:	N.T.S.
Date:	2/28/19
Job No:	G10006



DEVELOPED LANDS

PROTECTED LANDS

MAJOR PROPOSED DEVELOPMENTS

NOTE:
IMAGE TAKEN FROM THE SUSSEX COUNTY COMPREHENSIVE PLAN, DATED JUNE 2008.

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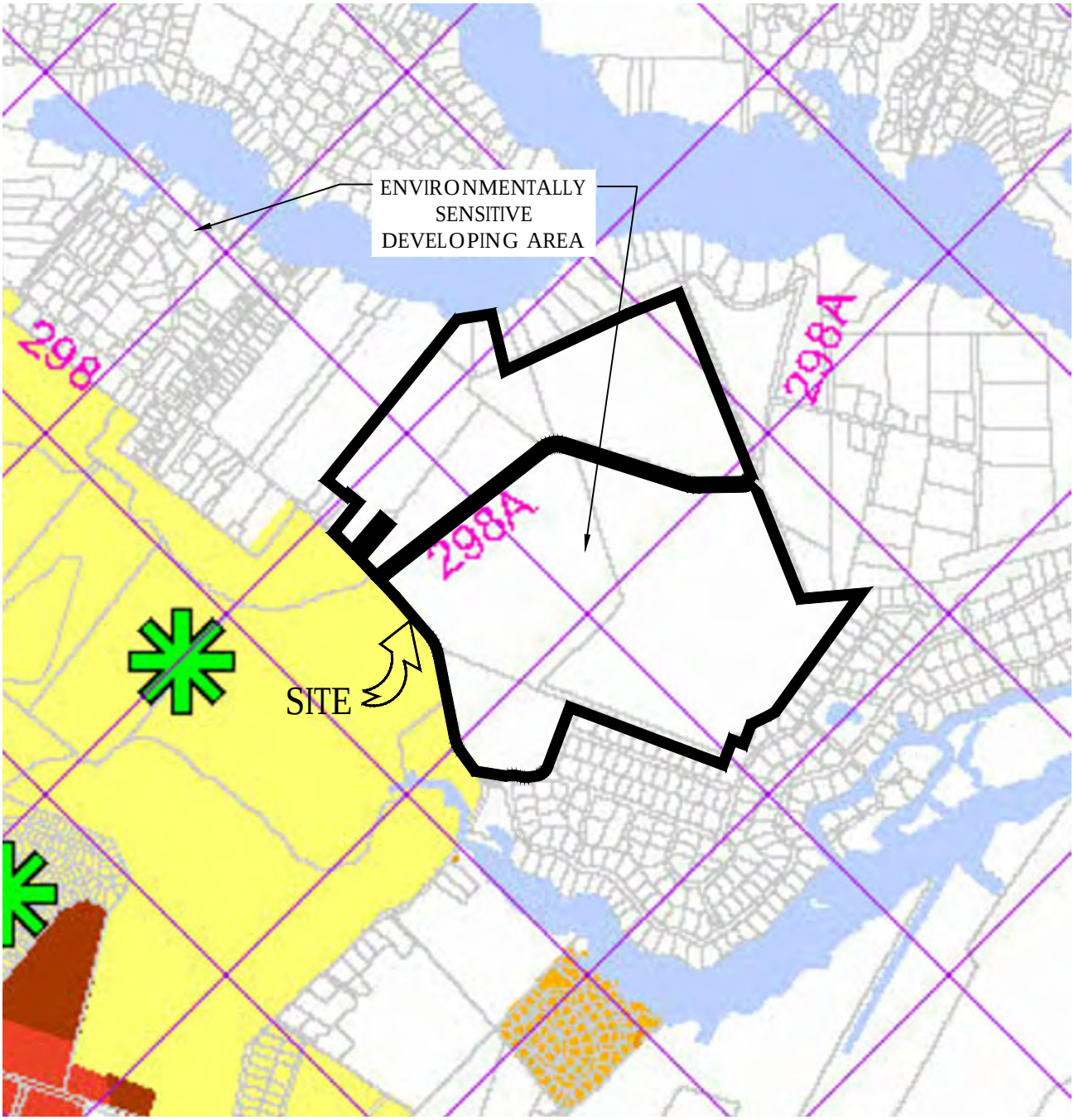
DEVELOPED & PROTECTED LANDS

KEASTONE

SUSSEX COUNTY, DELAWARE

Drawn:	ML
Scale:	N.T.S.
Date:	2/28/19
Job No:	G10006



AGRICULTURAL - AR-1

GENERAL RESIDENTIAL - GR

MEDIUM RESIDENTIAL - MR

NEIGHBORHOOD BUSINESS - B-1

NOTE:
IMAGE TAKEN FROM THE SUSSEX COUNTY, DELAWARE ZONING MAP.

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ZONING MAP

KEASTONE

SUSSEX COUNTY, DELAWARE

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Date:	2/28/19
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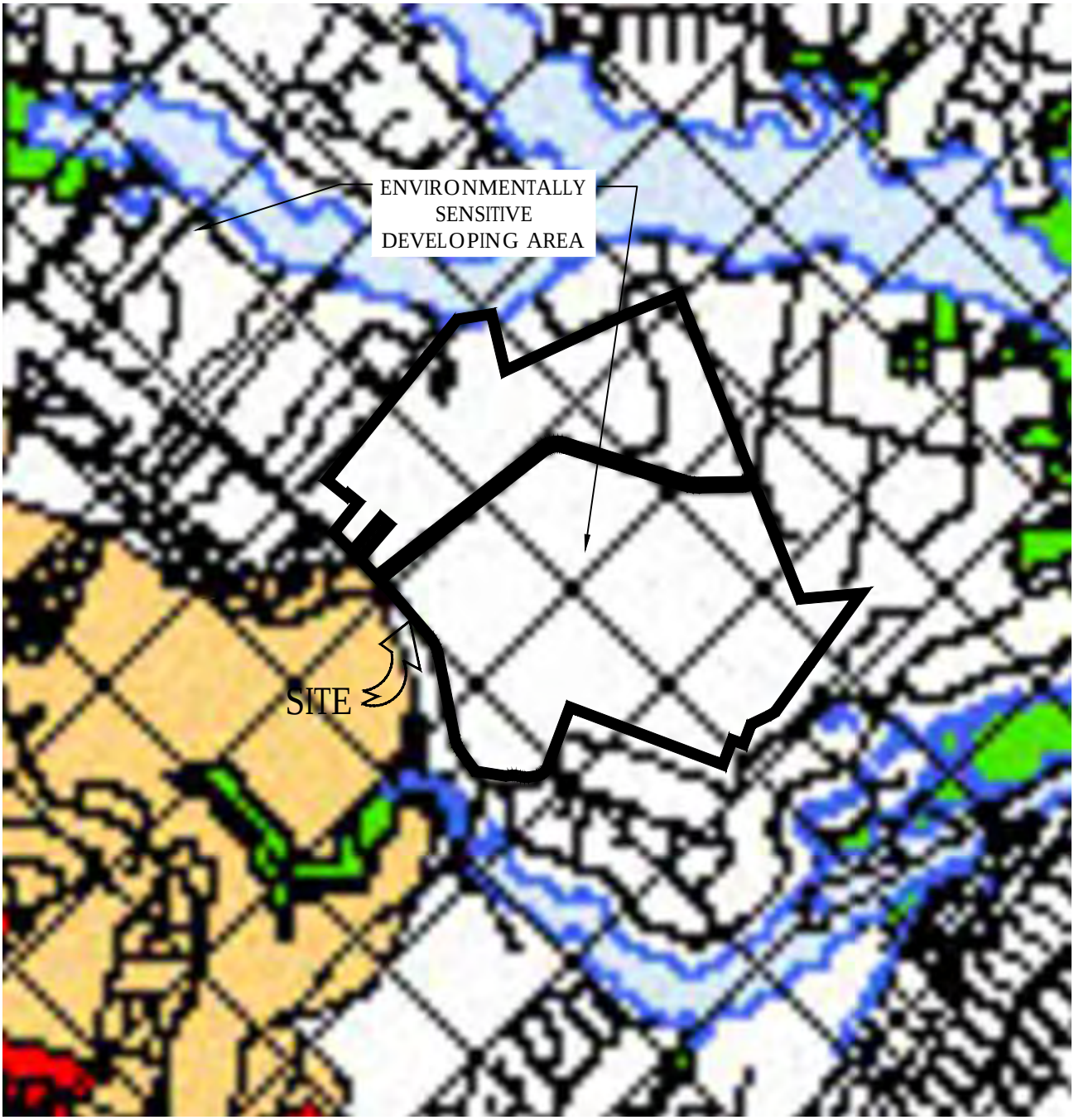

MIXED RESIDENTIAL AREAS

LOW DENSITY AREA

HIGHWAY COMMERCIAL AREAS

PROTECTED LANDS

NOTE:
IMAGE TAKEN FROM THE SUSSEX COUNTY COMPREHENSIVE PLAN, DATED JUNE 2008.

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FUTURE LAND USE

KEASTONE

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NOTE:
IMAGE TAKEN FROM GOOGLE EARTH (IMAGE DATE JUNE 2018).

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AERIAL

KEASTONE

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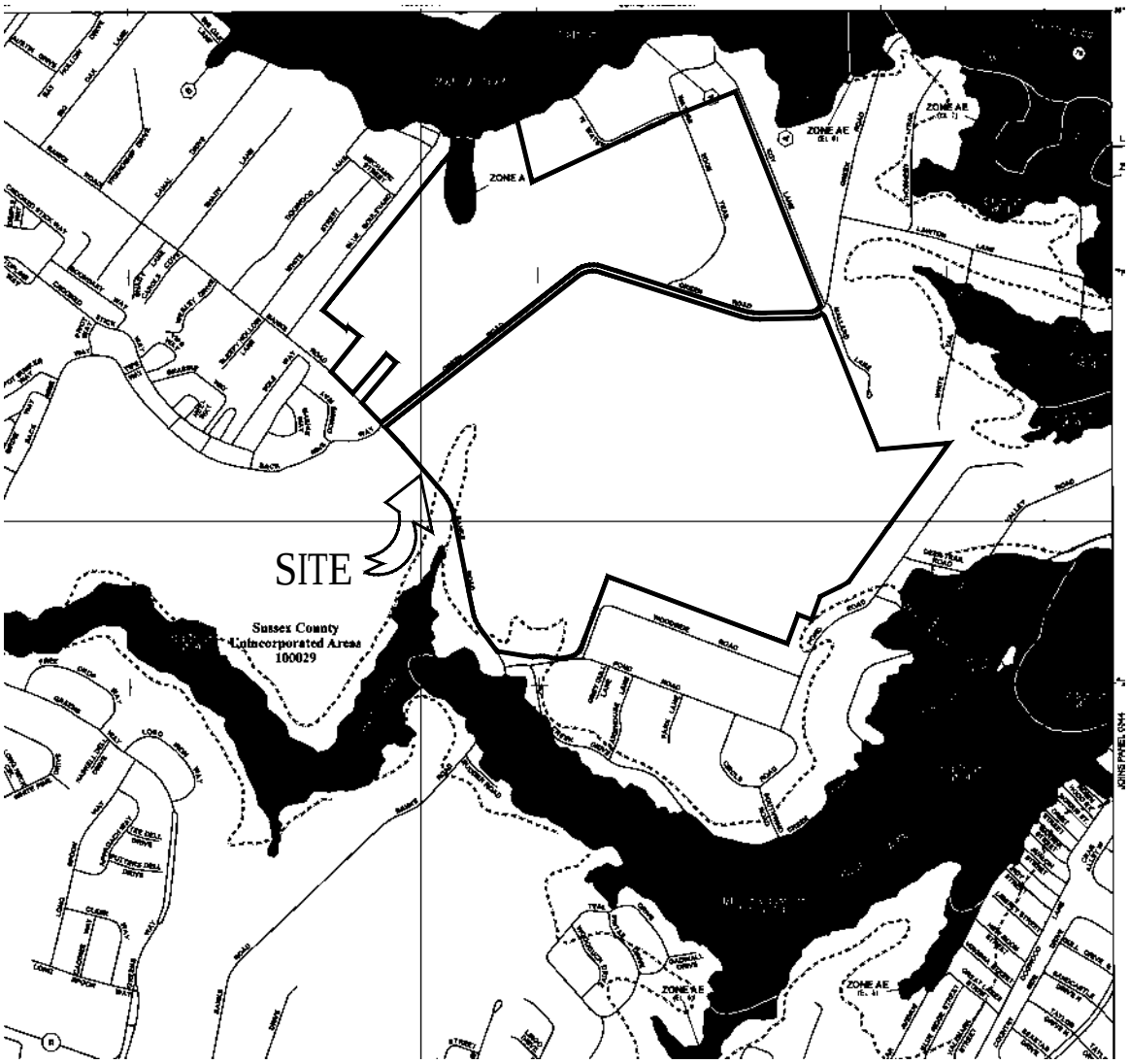
Job No:	G10006



PROPERTIES ARE LOCATED WITHIN FLOOD ZONE A (NO BASE FLOOD ELEVATIONS DETERMINED), ZONE X (SHADED)(AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREA PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD, AND ZONE X (AREAS DETERMINED TO OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN, PER FIRM MAP NUMBER 10005C0345K, MAP REVISED MARCH 16, 2015.

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FLOOD MAP

KEASTONE

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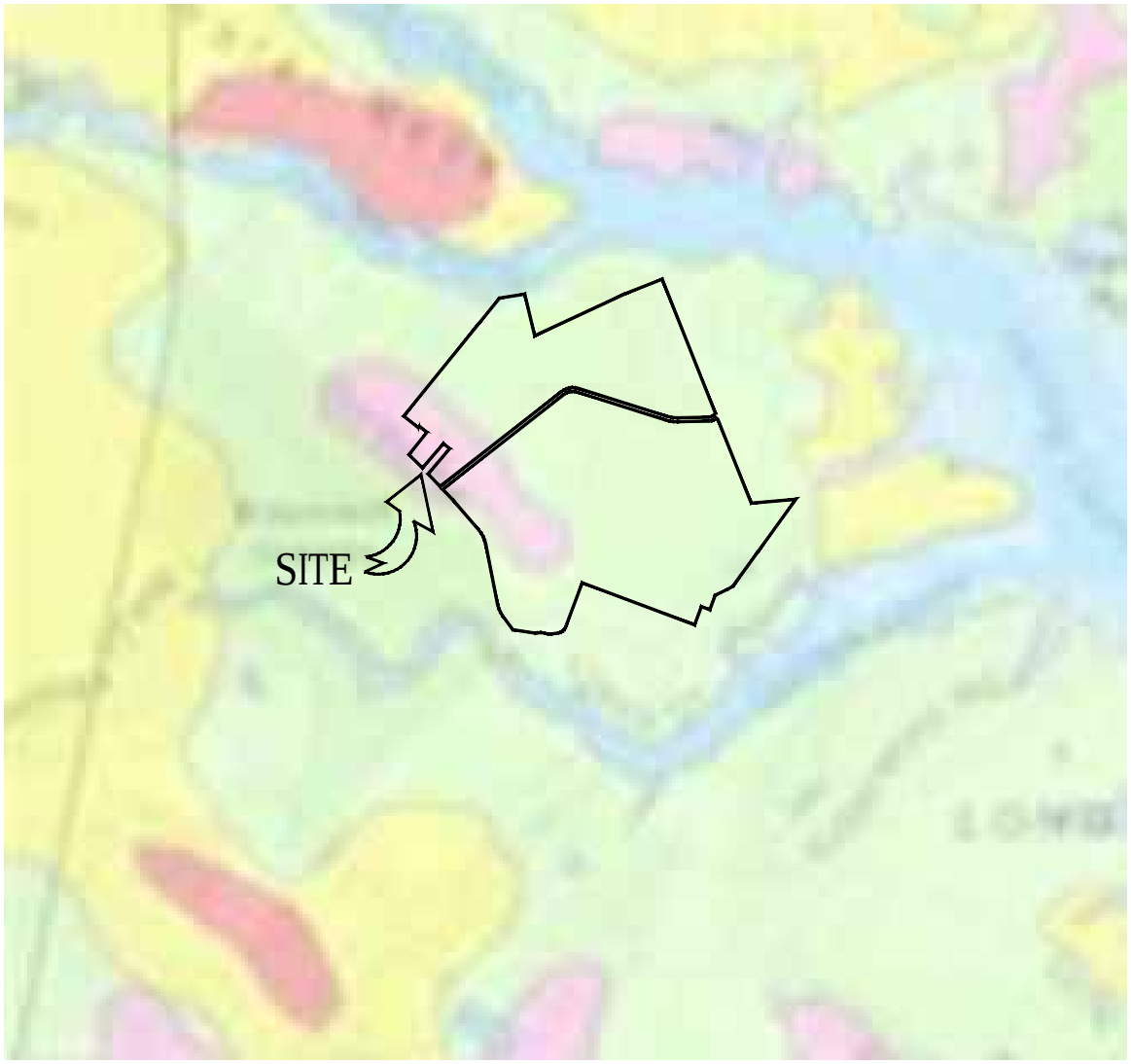
Job No:	G10006



EXCELLENT GROUNDWATER RECHARGE

GOOD GROUNDWATER RECHARGE

FAIR GROUNDWATER RECHARGE

POOR GROUNDWATER RECHARGE

NOTE:
IMAGE TAKEN FROM THE
FIRSTMAP.GIS.DELAWARE.GOV.

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GROUNDWATER RECHARGE MAP

KEASTONE

SUSSEX COUNTY, DELAWARE

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Job No:	G10006

JCM ENVIRONMENTAL
Experience matters

Corporate Office
Pencader Corporate Center
100 Lake Drive, Suite 3
Newark, Delaware 19702
P: 302.737.9335
F: 302.737.9546

Bridlewood at Baywood
Wetland Investigation Report

Bridlewood at Baywood

Wetland Investigation Report

Prepared at the Request of:

McCrone, Inc.
119 Naylor Mill Road, Suite 6
Salisbury, Maryland 21801

Tunnell Companies, L.P.
34026 Anna's Way, Suite 1
Long Neck, Delaware 19966

Prepared for Review by:

United States Army Corps of Engineers
Philadelphia District
Wanamaker Building
Penn Square East
Philadelphia, Pennsylvania 19107

Sussex County
Planning and Zoning Department
2 The Circle, P.O. Box 589
Georgetown, Delaware 19947

State of Delaware
Division of Water Resources
Wetlands Section
89 Kings Highway
Dover, Delaware 19901

Prepared:
September 2009

TABLE OF CONTENTS

Summary

This document presents the findings from the wetland field investigation completed for the proposed development known as Bridlewood at Baywood Tax Parcel Numbers # 2-34-17.00- 170.00, 172.00, 173.00 & 174.00, 2-34-18.00-68.00 and 2-34-24.00-1.00 & 2.00, and 2-34-23.00-23.00) located in the Harbeson area of Sussex County, Delaware. This report, which summarized the field observations and data analysis, is suitable for a submittal to local agencies. The wetland delineation must be verified by the U.S. Army Corps of Engineers (USACE) through a jurisdictional determination (JD) before it can be deemed official. All information contained within this report has been field collected and summarized by James C. McCulley IV, Environmental Consultants, Inc. (JCM Environmental). Formal surveyed field delineations were performed within the property boundaries of the subject parcel as identified by McCrone, Inc. both in the field and on provided site drawings "Wetland Delineation Plan for Bridlewood at Baywood" dated September 21, 2009.

The field delineation was performed within the approximate boundaries of the subject property as shown on Figures 1 and 2. The 311± acre property is divided by Green Road and consisted mainly of mixed forest cover in the north and southeast with a mowed field in the southwest.

The investigation concluded that non-tidal forested wetlands, tidal emergent wetlands and tidal waters of the U.S. were situated in the north-central portion of the property associated with Hopkins Prong. Hopkins Prong, a traditional navigable waterway drains easterly into Herring Creek, a tributary to Rehoboth Bay. The U.S. Army Corps of Engineers regulates TNW's and wetlands that abut them. The State of Delaware regulates tidal wetlands and waters indicated on Delaware Tidal Maps.

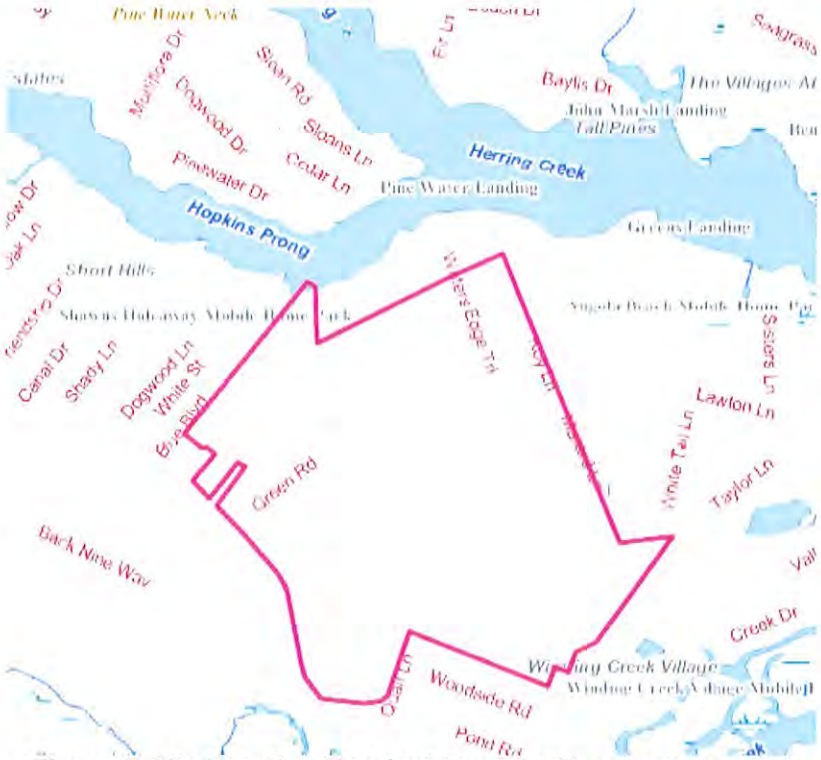

Figure 1. Site Location Map (not to scale, for reference only)

Figure 2. 2007 Aerial Photograph (not to scale, for reference only)

Wetland Delineation History

The wetland field delineation and data collection was performed along Hopkins Prong by this firm in February 2008 to accurately define the limits of wetlands for jurisdictional and permitting purposes within the parcel. The remaining wetlands within the property were previously delineated by others and field verified by JCM Environmental in September 2009. The field delineations have been completed, and the wetland lines have been surveyed and plotted for final verification.

Methods

This investigation used the techniques for Routine Determinations described in the 1987 USACE Wetland Delineation Manual (Y-87-1) and Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region. The field interpretations follow the definitions listed in the Public Notices from the Army Corp of Engineers, dates September 26, 1990, October 4, 1990, September 4, 1991, and December 2, 2008.

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Delineation Criteria

The following criteria were used to delineate the natural resources described in this report. For the purpose of Section 404 of the Clean Water Act regulation, the term "waters of the United States" includes open water and wetlands (see Glossary for complete definitions). For the purpose of this report

and common usage, "waters of the U.S." refers to regulated open water areas and wetlands refers to vegetated areas that meet the wetland criteria as defined below.

Waters of the United States

In order for an area to be classified as waters of the U.S., the feature must be consistent with the definitions as listed in 33 CFR (Code of Federal Regulations) Section 328.3 and the current guidance (see Glossary). In non-tidal, freshwater systems, in absence of adjacent vegetated wetlands, the limits of Federal jurisdiction extend to the ordinary high water mark (OHWM). In the absence of physical evidence depicting the location and elevation of the OHWM, a routing of the 2.3 year storm event through the channel will be accepted as the mean high water elevation.

Non-tidal and Tidal Vegetated Wetlands

In order for an area to be classified as wetlands under USACE methods, it must display: 1. Hydric Soils, 2. Hydrophytic Vegetation and 3. Indicators of Wetland Hydrology. The methodology for determining the dominant vegetation on the site was a hybridization of the methods described in the 1987 Manual and the 1989 Federal Manual for the Identification and Delineation of Jurisdictional Wetlands, as described below.

The diagnostic environmental characteristics of wetlands in accordance Part II, Number 26 b.(1), (2) and (3); and Number 26 c. are listed below:

1. Vegetation: The prevalent vegetation consists of macrophytes that are typically adapted to areas having hydrologic and soil conditions (as described below). Hydrophytic species, due to morphological, physiological and/or reproductive adaptation(s), have the ability to grow, effectively compete, reproduce and/or persist in anaerobic soil conditions.

Vegetation has been classified by the U.S. Fish and Wildlife Service according to the following categories:

Obligate Wetland Plants (OBL): Plants that occur almost always (estimated probability >99%) in wetlands under natural conditions.

Facultative Wetland Plants (FACW): Plants that occur usually (estimated probability >67% to 99%) in wetlands.

Facultative Plants (FAC): Plants with a similar likelihood (estimated probability 33% to 67%) of occurring in both wetlands and uplands (non wetlands).

Facultative Upland Plants (FACU): Plants that occur sometimes (estimated probability 1% to <33%) in wetlands.

Not Listed (NL or UPL): Plants that occur rarely (estimated probability <1%) in wetlands.

2. Soil: Soils are present and have been classified as hydric, or they possess characteristics that are associated with reducing soil conditions. Common hydric soil indicators include:

Organic Soil: A soil that is more than 50% organic material (peats and mucks).

Sulfidic Material: A soil that emits the odor of rotten eggs produced by sulfides formed in a reducing environment of saturated soils.

Aquic or Peraquic Moisture Regime: A soil that is permanently flooded and/or saturated close to the surface and is devoid of oxygen.

Soil Colors: Gleyed (Gray) soils and/or soils with low matrix chroma and bright mottles in the top 10-12 inches. A chroma of #2 in mottled soils or #1 in unmottled soils is considered hydric. (Colors are as defined in Munsell Color Book 1975).

Soil on Hydric Soils List: A soil that matches the profile description for a soil type defined as hydric by the National Technical Committee on Hydric Soils (NTCHS).

Iron and/or Manganese Concretions: Segregated oxides of iron or manganese are found close to the surface (within 7.5 cm).

3. Hydrology: The area is inundated either permanently or periodically at mean water depths of less than or equal to 6.6 feet, or the soil is saturated to the surface at some time during the growing season of the prevalent vegetation.

Wetland hydrology may be indicated by drift lines, sediment deposition, watermarks, recorded well or stream gage data, visual observations, blackened leaves, or oxidized root channels with living roots.

The general guidance utilized at this time is that water must be within one foot of the surface consecutively greater than 5% of the growing season or more than 12 consecutive days during the growing season.

Except in certain situations..., evidence of a minimum of one positive wetland indicator from each parameter (vegetation, soils and hydrology) must be found in order to make a positive wetland determination.

Data Collection

Waters and/or wetland parameters or lack of waters and/or wetland parameters observed throughout the site were recorded in standard field note books. Representative wetland and upland borings were recorded at or near the wetland boundary as well as any representative areas of disagreement between this delineation and the United States Fish and Wildlife Service, National Wetlands Inventory (NWI) map or where deemed appropriate.

The soils exposed at each sample station were observed using a 2.5" Dutch auger. Borings were made to a depth of 18 inches. Soil texture information follows the United States Department of Agriculture (USDA) classification system and specific soil nomenclature follows the Sussex County Soil Survey (1974).

The plants recorded at each sample station follow the nomenclature of Fernald (1950) and Kartesz and Kartesz (1981). Hydrological indicators follow the descriptions of the 1987 Wetland Delineation Manual. Wetland hydrology indicator nomenclature uses the system developed by Cowardin, et al. (1981) and the U.S. Fish and Wildlife Service National Wetland Inventory mapping program.

Data Sheets

The wetland analysis provided ample opportunity to express the typical conditions found in the field which determined where to place the wetland flags as well as to document any conditions found in areas of disagreement between the delineation and the NWI or SWMP designations. Conditions along the lines were characterized by representative wetland and upland samples which recorded the vegetation, apparent hydrology and existing soil conditions. These samples were documented on the Wetland Determination Data Forms which are attached in the Appendix. Sample locations were estimated on the plans based on their relative location to physical features and surveyed wetland flags.

Boring locations were estimated on the plans based on their relative location to physical features and surveyed wetland flags.

Jurisdiction

USACE and EPA

Section 10 Waters (Navigable Waters) and Tidal Wetlands

Section 10 of the Rivers and Harbors Act (RHA) of 1899 gives the Environmental Protection Agency (EPA) and USACE (the agencies) jurisdiction over traditional navigable waters (TNW). These waterways include tidal and certain non-tidal waters and are typically defined by the high tide line or the ordinary high water mark (OHWM). Mudflats and marshes below these water lines are regulated under this section (see Glossary). The USACE maintains a list of TNW's. These waterways include tidal and certain non-tidal waters.

Waters of the U.S. including Non-Tidal Vegetated Wetlands

Waters of the United States including non-tidal vegetated wetlands are regulated by the USACE under Section 404 of the Clean Water Act. In order to be jurisdictional, non-wetland waters of the United States (typically referred to as just waters of the U.S.) must be consistent with the definitions listed in 33 CFR (Code of Federal Regulations) Section 328.3 and the current guidance. Non-tidal wetlands must display the three criteria (hydric soils, hydrophytic vegetation, and wetland hydrology) in order to be jurisdictional (see Glossary).

The agencies will assert jurisdiction over the following waters and wetlands:

- Wetlands adjacent to TNWs
- Non-navigable tributaries of TNWs that are relatively permanent (relative permanent waters - RPW) where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g. typically three months.)
- Wetlands that directly abut such tributaries

The agencies will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus (see Glossary) with a TNW:

- Non-navigable tributaries that are not relatively permanent
- Wetlands adjacent to non-navigable tributaries that are not relatively permanent
- Wetlands adjacent to but that do not directly abut a relatively permanent non-navigable tributary
- In addition, an USACE policy decision has been made to collect information relevant to a significant nexus evaluation for all "intermittent" non-navigable tributaries and their adjacent wetlands (i.e., even if the tributary's flow may be relatively permanent, but is not perennial).

The agencies generally will not assert jurisdiction over the following features:

- Swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow)
- Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water

The agencies will apply the significant nexus standard as follows:

- A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of downstream TNWs.
- Significant nexus includes consideration of hydrologic and ecologic factors (see Glossary)

Geographically isolated wetlands which do not have a significant nexus connection to interstate commerce are not jurisdictional. The USACE District office evaluates if these wetlands are isolated under the CWA. USACE headquarters must concur with an isolated wetlands evaluation for a non-jurisdictional determination.

Tidal Wetlands

Tidal wetlands regulated by the USACE under Section 10 of the Rivers and Harbors Act of 1899 are limited to the areas below the high tide line. All other wetlands are regulated under Section 404 of the Clean Water Act. Tidal wetland areas consist of hydrophytic vegetation on hydric soils that are subjected to regular or periodic tidal action and include most marshes and coastal lowland areas.

State of Delaware

State Subaqueous Lands

The State of Delaware regulates all perennial and intermittent watercourses as State Subaqueous Lands. Subaqueous Lands are water conveyances with defined banks and channels permanently or seasonally supported by groundwater, spring seeps, or surface waters in addition to precipitation and surface water runoff from storm events. Ephemeral streams are not typically considered Subaqueous Lands as they rely only on surface water runoff from storm events and are otherwise dry. A determination of the limits of regulated Subaqueous Lands is usually done on a case-by-case basis by the Delaware Department of Natural Resources and Environmental Control (DNREC). If Subaqueous Lands are determined to be present on the property, they will most likely be found to coincide with waters of the United States.

Tidal Wetlands

The State of Delaware regulates those tidal wetlands indicated on the Delaware Tidal Wetland maps in accordance with the Delaware Wetlands Title 7, Part VII, Chapter 66. These areas include tidal waters and adjacent areas "whose surface is at or below an elevation of 2 feet above local mean high water, and upon which may grow or is capable of growing" typical tidal water hydrophytes.

Sussex County

Perennial and Intermittent Streams

The Code of Sussex County, Delaware requires a 50-foot buffer zone from the ordinary high water line of perennial non-tidal rivers and non-tidal streams. Excluded from buffer zone designation are farm ponds, tax ditches and other man-made bodies of water where these waters are not located on or within perennial streams. A buffer zone shall not be required for agricultural drainage ditches if the adjacent agricultural land is the subject of a conservation farm plan established with the Sussex Conservation District.

Non-Tidal Wetlands

Sussex County, Delaware does not apply any additional regulations on non-tidal vegetated wetlands.

Tidal Wetlands

The Code of Sussex County, Delaware requires a 50-foot buffer for structures from the mean high water line on all tidal waters, tidal tributary streams and tidal wetlands.

Results

General Site Description

A background review was performed in the office prior to any site work. The results of this background review are described below.

Location

The field delineation was performed within the boundaries of the property located at Latitude 38°-39'-01" North and Longitude 75°-10'-37" West as detailed on Figures 1 and 2. The property is located east of Banks Road in the Harbeson area of Sussex County, Delaware. The property consisted mainly of mixed forest cover in the north and southeast with agricultural land in the southwest. The property is bordered by Hopkins Prong and private residential properties to the north, private agricultural property to the east, Banks Road and private residential property to the west, and private residential property to the south. Green Road transects the northern portion of the property.

Soils

The USDA Web Soil Survey for Sussex County, Delaware (Figure 3) indicates the site is underlain with Askecksy loamy sand (AsA), Downer loamy sand (DnA), Fort Mott-Henlopen loamy sand (FhA and FhB), Pepperbox loamy sand (PpA), Pepperbox-Rockawalkin complex (PrA), and Rosedale loamy sand (RoA). The Askecsky series consists of poorly drained soils on uplands. The Downer, Fort Mott-Henlopen, and Rosedale series consist of well-drained soils on uplands. The Pepperbox series consists of moderately well-drained sandy soils. Of these soil types, the Askecksy series is known to contain hydric inclusions in depressional areas according to the USDA Natural Resources Conservation Service.

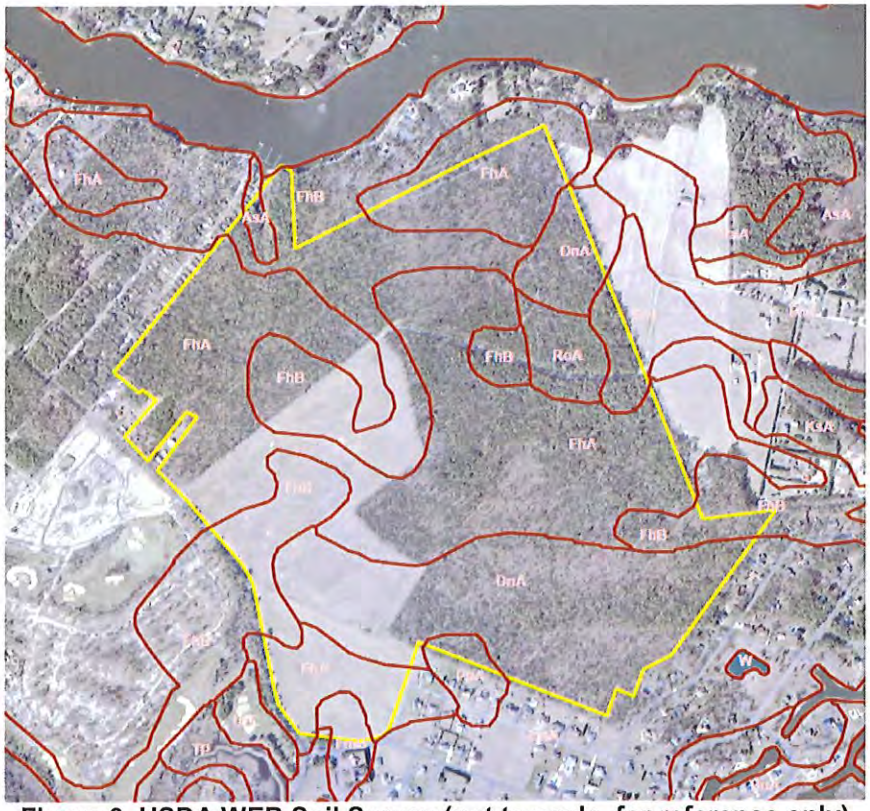


Figure 3. USDA WEB Soil Survey (not to scale, for reference only)

Mapped Hydrology and Topography

The northern portion of the property generally drains north into Hopkins Prong, a tributary to Herring Creek. Herring Creek, a traditional navigable waterway drains easterly into Rehoboth Bay. The southern portion of the property drains southwesterly off-site into Guinea Creek, also a tributary to Hopkins Prong. Site hydrology appears to be influenced mainly by sheet-flow runoff within the property. The elevations within the property ranges from 25 feet above sea level (asl) in the southeast to 5 feet asl in the north-central portion of the property according to the Fairmount 7.5 Minute USGS Quadrangle (Figure 4).

Hopkins Prong is depicted as a "blue line" feature indicating permanency.

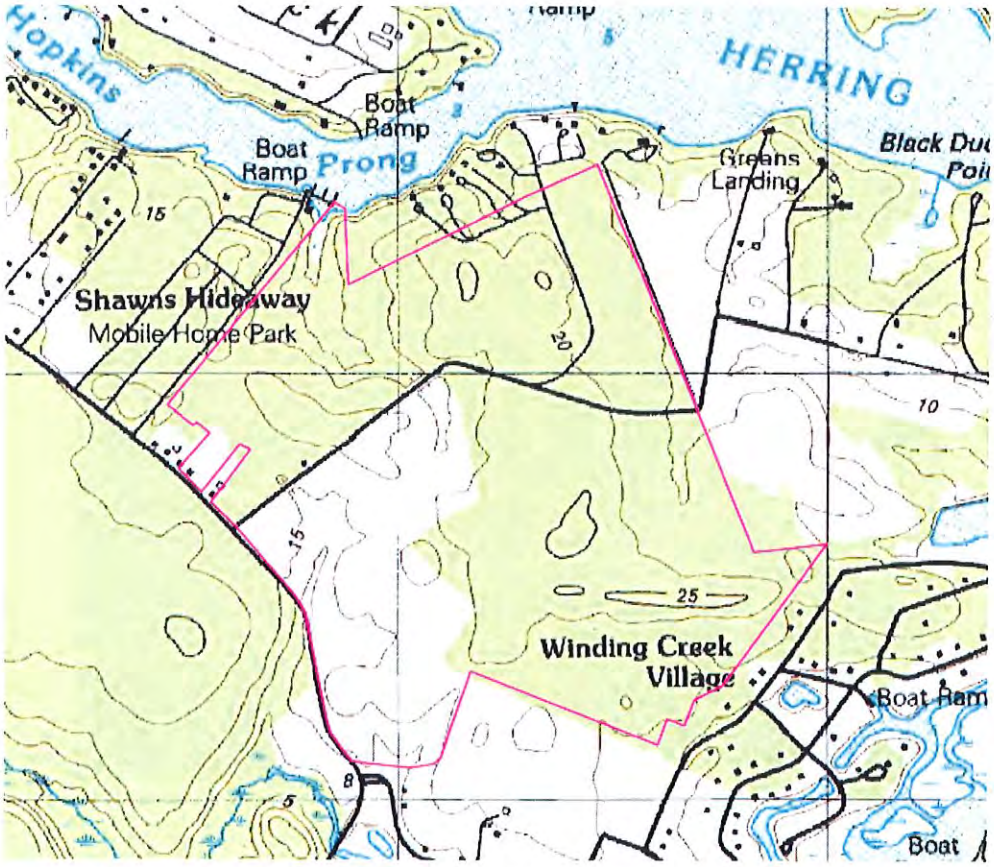


Figure 4. Fairmount USGS Topographic Map (not to scale, for reference only)

Mapped Wetlands

National Wetland Inventory Mapping

The U.S. Fish and Wildlife Service National Wetland Inventory (NWI) map (Figure 5) classifies Hopkins Prong in the north-central portion as an eustuarine intertidal wetland (E2EM5PD) with an abutting palustrine forested wetland (PF01A).

Figure 5. National Wetlands Inventory Map (not to scale, for reference only)

Statewide Wetland Mapping Program

Similar to the NWI map, the Statewide Wetland Mapping Program (SWMP) map (Figure 6) depicts Hopkins Prong as an eustuarine system (E2EM1P) with an abutting palustrine forested wetland (PF01R) in the north-central portion of the property. In addition, the SWMP map depicts two isolated palustrine forested wetlands (PFO4A and PFO1/4A) in the northeastern portion of the property.

Figure 6. Statewide Wetland Map (not to scale, for reference only)

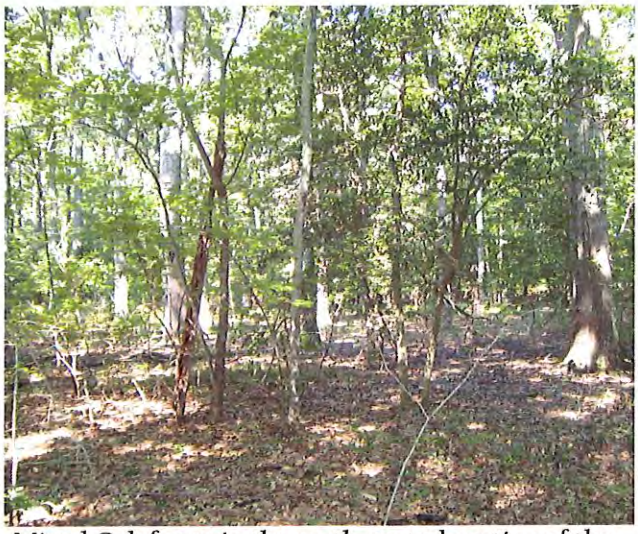
Field Delineation Specifics

Upland Land Use and Land Cover Types

- Forest – The majority of the property was a young mixed forest. Common tree species observed included Loblolly Pine, Virginia Pine, Northern Red Oak, Southern Red Oak White Oak, Chestnut Oak, Hickories, Black Gum, Red Maple, and Tulip Poplar. Understory species observed included American Holly, Highbush Blueberry, Lowbush Blueberry, Sassafras, Flowering Dogwood, and Common Greenbrier.


Forest cover in the east-central portion of the property.


Forest cover in the central portion of the property.



Mixed Oak forest in the north-central portion of the property.

Mixed forest cover in the north-central portion of the property.

Upland forest cover in the northwestern portion of the property.

Forest cover in the northeastern portion of the property.

- Field – The southwestern portion of the property consisted of a large mowed field. This area was dominated by herbaceous cover including White Clover, Narrow-leaf Plantain, and various grass species.

View looking north across grass field from the southwestern property boundary.

Looking south across grass field from Green Road.

Wetland Line Specifications

The wetland lines were placed within the property boundaries as estimated during fieldwork based on physical features. All wetland features found within this area were flagged with vinyl, pink ribbon with black "WETLAND DELINEATION" letters. One line was marked with alpha numeric designators with letters representing the lines and numbers representing the positions along each line. This line was subsequently surveyed and plotted by McCrone, Inc. Common vegetation observed within the wetlands is described below within the appropriate wetland classification section.

Line A delineated the tidal limits of Hopkins Prong along the north-central property boundary. The line began at the northwest property corner traveling easterly to the eastern property boundary. Line A consisted of 28 flags.

Looking west along tidal waters of Hopkins Prong.

Looking east along tidal waters of Hopkins Prong.

Tidal emergent wetlands and non-tidal forested wetlands abutting Hopkins Prong were observed in the north-central portion of the property. These wetland areas were previously delineated by others and were field verified by JCM Environmental in February 2008 and again in September 2009.

View looking north across tidal wetland area in the north-central portion of the property.

Tidal wetland fringe located in the north-central portion of the property.

Standing water within non-tidal forested wetland.

Looking north across non-tidal forested wetland in the north-central portion of the property.

Buttressed tree roots and water marks within non-tidal forested wetland.

View looking south at water-stained leaves within non-tidal forested wetland.

Waters of the United States (open water)

Tidal waters of the U.S. under USACE jurisdiction were observed along the north-central property boundary.

State Subaqueous Lands

No State Subaqueous Lands were observed within the subject property boundaries. The State decides jurisdictional determinations at their own discretion.

Non-tidal Vegetated Wetlands

Non-tidal forested wetlands were observed in the north-central portion of the property. This forested wetlands drains northerly into Hopkins Prong. Common vegetation observed in this area included Red Maple, Willow Oak, Sweet Bay Magnolia, and American Holly.

Section 10 Waters

Navigable waters of Hopkins Prong, applicable to Section 10 regulation were located along the north-central property boundary.

Tidal Wetlands

Tidal wetlands were encountered in the north-central portion of the property abutting Hopkins Prong. Common vegetation observed included Black Gum, Sweet Bay Magnolia, and Common Reed.

Comparison to Mapped Wetlands

The tidal waters of Hopkins Prong delineated by Line A correspond closely to the waters depicted by USGS, NWI, and the SWMP maps. In addition, NWI and SWMP maps accurately depicted tidal wetlands and palustrine forested wetlands adjacent to Hopkins Prong. Two isolated forested wetland areas mapped by the SWMP map were not observed during the site investigation.

Conclusions

The waters of Hopkins Prong, bordering the north-central property boundary were delineated in February 2008. One line was used to demarcate the delineated wetland/waters boundary for review by the USACE and eight data samples were collected to support the delineation. At the time of the delineation, a tidal wetland and non-tidal forested wetland boundary flagged by others was also verified. The property was re-evaluated again in September 2009 to update any potential changes to site.

Field investigations and data collections conducted during this delineation concluded that jurisdictional non-tidal forested wetlands were situated in the north-central portion of the property. These wetlands abut tidal wetlands and waters of Hopkins Prong, a traditional navigable waterway and tributary to Herring Creek. Herring Creek drains easterly into Rehoboth Bay. The USACE asserts jurisdiction over TNWs and wetlands and or waterways that abut them.

No Subaqueous Lands regulated by the State of Delaware were observed within the boundaries of the subject property.

Hopkins Prong would be classified as Navigable Waters of the U.S. regulated by USACE and the State of Delaware.

The sole purpose of this delineation is to identify the limits of waters of the United States including wetlands, Tidal Waters, Navigable Waters, and Subaqueous Lands and to document the site conditions. This report contains the information necessary to accompany the JD information sheets when submitting to the USACE with a jurisdictional determination request.

Notes

The USACE regulates the placement of structures in Section 10 Waters and the placement of fill and/or dredge material into Waters of the United States including wetlands. No work of this nature should be performed without a permit from the USACE.

The State of Delaware regulates activities in Subaqueous Lands as well as State mapped tidal wetlands. No work in those areas should be performed without a permit from the State.

Sussex County requires buffers on county regulated waters and tidal wetlands. No work should be performed in these areas without approval from the County.

This study has been performed utilizing best professional judgment based on the conditions at the time of the investigation. The investigator is not responsible for changed conditions, either man made or natural, which change the wetland boundaries.

Wetland delineations must be verified by the USACE and Subaqueous Lands must be verified by DNREC in order to be considered "jurisdictional".

References

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Glossary

Waters of the U.S. *As defined by 33 CFR Part 328, Section 328.3.*

a. Waters of the United States

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. All interstate waters including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use degradation or destruction of which could affect interstate or foreign commerce including any such waters;
    a. Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
    b. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
    c. Which are used or could be used for industrial purposes by industries in interstate commerce;
4. All impoundments of waters otherwise defined as waters of the United States under the definition;
5. Tributaries of waters identified in paragraphs (a) (1)-(4) of this section;
6. The territorial seas;
7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) (1)-(6) of this section.
   Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 123.11(m) which also meet the criteria of this definition) are not waters of the United States.
8. Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with the EPA.

b. The term "wetlands" means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

c. The term "adjacent" means bordering, contiguous, or neighboring. Wetlands separated from other waters of the United States by man-made dikes or barriers, natural river berms, beach dunes and the like are "adjacent wetlands."

d. The term "high tide line" means the line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm.

e. The term "ordinary high water mark" means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

f. The term "tidal waters" means those waters that rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by hydrologic, wind, or other effects.

Navigable Waters of the U.S. *As defined by 33 CFR Part 328, Section 329.4*

Navigable waters of the United States are those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. A determination of navigability, once made, applies laterally over the entire surface of the waterbody, and is not extinguished by later actions or events which impede or destroy navigable capacity.

Tabulated lists of final determinations of navigability are to be maintained in each district office, and be updated as necessitated by court decisions, jurisdictional inquiries, or other changed conditions.

Traditional Navigable Water (TNW) *Per US Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook, dated May 30, 2007*

Traditional navigable water currently used or that have been used in the past, or may be susceptible to use, in interstate or foreign commerce, including but not limited to tidal waters. Such waters are those referred to in as "navigable-in-fact".

Non-navigable Tributaries of TNWs with Relatively Permanent Flow (RPF) *Per US Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook, dated May 30, 2007*

The guidance describes the second category – non-navigable tributaries with relatively permanent flow as waters, e.g. streams, that typically flow year-round or that have continuous flow at least seasonally (typically three months) excluding ephemeral tributaries and intermittent streams.

Significant Nexus Determination *Per US Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook, dated May 30, 2007*

The significant nexus evaluation will combine, for analytical purposes, the tributary, and all of its adjacent wetlands, whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. A significant nexus analysis will assess the flow characteristics and functions of the relevant reach of the tributary, in combination with functions collectively performed by all wetlands (if present) adjacent to the tributary, to determine if they have more than an insubstantial or speculative effect on the chemical, physical, and biological integrity of TNWs.

Consideration will be given to the distance between the tributary and the TNW. The tributary will not be so remote as to make the effect on the TNW speculative or insubstantial. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of a significant nexus.

Hydrologic factors will be considered, such as:

- volume, duration, and frequency of flow, including consideration of certain physical characteristics of the tributary
- proximity to the traditional navigable water
- size of the watershed
- average annual rainfall
- average annual winter snow pack

Ecologic factors will be considered, such as:

- the ability of the tributary and its adjacent wetlands (if any) to carry pollutants and flood waters to traditional navigable waters
- the ability of the tributary and its adjacent wetlands (if any) to provide aquatic habitat that supports biota of a traditional navigable water
- the ability for adjacent wetlands to trap and filter pollutants or store flood waters
- the ability to maintain water quality

Certain geographical features (e.g., ditches, canals) that transport relatively permanent (continuous at least seasonally) flow directly or indirectly into TNWs or between two (or more) waters of the U.S., including wetlands, are jurisdictional waters regulated under the CWA.

Certain geographic features (e.g., swales, ditches, pipes) may contribute to a surface hydrologic connection where the features:

- replace or relocate a water of the U.S., or
- connect a water of the U.S. to another water of the U.S., or
- provide relatively permanent flow to a water of the U.S.

Certain geographic features generally are not jurisdictional waters:

- swales, erosional features (e.g. gullies) and small washes characterized by low volume, infrequent, and short duration flow
- ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water
- uplands transporting over land flow generated from precipitation (i.e., rain events and snowmelt)

Appendices

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Bridlewood @ Baywood City/County: Sussex Sampling Date: 9/14/09

Applicant/Owner: Tunnell Companies L.P. State: DE Sampling Point: 1

Investigator(s): William Twupack Section, Township, Range:

Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):

Subregion (LRR or MLRA): Lat: 38°-39'-01" Long: 75°-10'-37" Datum:

Soil Map Unit Name: Fort Mott-Henlopen loamy sand (FhB) NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	Is the Sampled Area within a Wetland? Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

Upland forest adjacent to tidal waters of Hopkins Prong in North-central portion of the property.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) (LRR U)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No evidence of hydrology observed.

VEGETATION – Use scientific names of plants.

Sampling Point: 1

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus taeda	30	✓	FAC
2. Quercus alba	15	✓	FACU
3. Quercus falcata	15	✓	FACU
4.			
5.			
6.			
7.			
	60	= Total Cover	
Sapling Stratum (Plot size: 20')			
1. Ilex opaca	20	✓	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	
Shrub Stratum (Plot size: 30')			
1. Vaccinium corymbosum	10	✓	FACW
2. Sassafras albidum	5		FACU
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	
Herb Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12			
	0	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 2/1						loamy/SAND	Organics
3-6	10YR 5/3						loamy/SAND	
6-18	10YR 5/6						SAND	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) (LRR P, T, U)
- ___ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ___ Muck Presence (A8) (LRR U)
- ___ 1 cm Muck (A9) (LRR P, T)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (MLRA 150A)
- ___ Sandy Mucky Mineral (S1) (LRR O, S)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (LRR P, S, T, U)
- ___ Polyvalue Below Surface (S8) (LRR S, T, U)
- ___ Thin Dark Surface (S9) (LRR S, T, U)
- ___ Loamy Mucky Mineral (F1) (LRR O)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (LRR U)
- ___ Depleted Ochric (F11) (MLRA 151)
- ___ Iron-Manganese Masses (F12) (LRR O, P, T)
- ___ Umbric Surface (F13) (LRR P, T, U)
- ___ Delta Ochric (F17) (MLRA 151)
- ___ Reduced Vertic (F18) (MLRA 150A, 150B)
- ___ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ___ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR O)
- ___ 2 cm Muck (A10) (LRR S)
- ___ Reduced Vertic (F18) (outside MLRA 150A,B)
- ___ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ___ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12) (LRR T, U)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Briarlewood @ Bayswood City/County: Sussex Sampling Date: 9/14/09

Applicant/Owner: Tunnell Companies, L.P. State: DE Sampling Point: 2

Investigator(s): William Twaddle Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR or MLRA): _____ Lat: 38°-39'-01" Long: 75°-10'-37" Datum: _____

Soil Map Unit Name: Askecksy loamy sand (ASA) NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No _____	Is the Sampled Area within a Wetland? Yes X No _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:

Non-tidal wetland in north-central portion of property.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) (LRR U)
- X Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- X Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No _____	Depth (inches): 2"
Water Table Present?	Yes _____	No _____	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes X	No _____	Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Buttressed roots on trees

VEGETATION – Use scientific names of plants.

Sampling Point: 2

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus phellos	15	✓	FAC
2. Acer rubrum	30	✓	FAC
3. Ilex opaca			FACU
4.			
5.			
6.			
7.			
	45	= Total Cover	

Sapling Stratum (Plot size: 30')			
1. Ilex opaca	20	✓	FACU
2. Acer rubrum	25	✓	FAC
3. Magnolia virginiana	5		FACW
4.			
5.			
6.			
7.			
	50	= Total Cover	

Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	

Herb Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0	= Total Cover	

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 4/2						mucky SAND	
8-18	10YR 6/2						SAND	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- X Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) (LRR P, T, U)
- ___ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ___ Muck Presence (A8) (LRR U)
- ___ 1 cm Muck (A9) (LRR P, T)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (MLRA 150A)
- ___ Sandy Mucky Mineral (S1) (LRR O, S)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (LRR P, S, T, U)
- ___ Polyvalue Below Surface (S8) (LRR S, T, U)
- ___ Thin Dark Surface (S9) (LRR S, T, U)
- ___ Loamy Mucky Mineral (F1) (LRR O)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (LRR U)
- ___ Depleted Ochric (F11) (MLRA 151)
- ___ Iron-Manganese Masses (F12) (LRR O, P, T)
- ___ Umbric Surface (F13) (LRR P, T, U)
- ___ Delta Ochric (F17) (MLRA 151)
- ___ Reduced Vertic (F18) (MLRA 150A, 150B)
- ___ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ___ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR O)
- ___ 2 cm Muck (A10) (LRR S)
- ___ Reduced Vertic (F18) (outside MLRA 150A,B)
- ___ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ___ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12) (LRR T, U)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ____

Remarks:

Soil saturated throughout.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Bridlewood @ Baywood City/County: Sussex Sampling Date: 9/14/09

Applicant/Owner: Tunnell Companies L.P. State: DE Sampling Point: 3

Investigator(s): William Twupack Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR or MLRA): _____ Lat: 38°-39'-01 Long: 75°-10'-37" Datum: _____

Soil Map Unit Name: Fort Mott-Henlopen loamy sand (FhB) NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	Is the Sampled Area within a Wetland? Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks:

Forested upland adjacent to non-tidal wetland Area in the north-central portion of the property.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) (LRR U)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No evidence of hydrology.

VEGETATION – Use scientific names of plants.

Sampling Point: 3

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus taeda	30	✓	FAC
2. Quercus falcata	15	✓	FACU
3. Liriodendron tulipifera	20	✓	FACU
4.			
5.			
6.			
7.			
	65	= Total Cover	

Sapling Stratum (Plot size: 30')			
1. Ilex opaca	25	✓	FACU
2. Quercus falcata	10	✓	FACU
3. Sassafras albidum	5		FACU
4. Quercus alba	5		FACU
5.			
6.			
7.			
	40	= Total Cover	

Shrub Stratum (Plot size: 30')			
1. Vaccinium corymbosum	15	✓	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	

Herb Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0	= Total Cover	

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: (If observed, list morphological adaptations below).

Area dominated by upland vegetation.

SOIL

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/1						Loamy Sand	Organics
4-9	10YR 4/3						Loamy Sand	
9-18	10YR 5/4						Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) (LRR P, T, U)
- ___ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ___ Muck Presence (A8) (LRR U)
- ___ 1 cm Muck (A9) (LRR P, T)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (MLRA 150A)
- ___ Sandy Mucky Mineral (S1) (LRR O, S)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (LRR P, S, T, U)
- ___ Polyvalue Below Surface (S8) (LRR S, T, U)
- ___ Thin Dark Surface (S9) (LRR S, T, U)
- ___ Loamy Mucky Mineral (F1) (LRR O)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (LRR U)
- ___ Depleted Ochric (F11) (MLRA 151)
- ___ Iron-Manganese Masses (F12) (LRR O, P, T)
- ___ Umbric Surface (F13) (LRR P, T, U)
- ___ Delta Ochric (F17) (MLRA 151)
- ___ Reduced Vertic (F18) (MLRA 150A, 150B)
- ___ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ___ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR O)
- ___ 2 cm Muck (A10) (LRR S)
- ___ Reduced Vertic (F18) (outside MLRA 150A,B)
- ___ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ___ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12) (LRR T, U)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Bridlewood at Baywood City/County: Sussex Sampling Date: 9/14/09

Applicant/Owner: Tunnell Companies L.P. State: DE Sampling Point: 4

Investigator(s): William Twopack Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR or MLRA): _____ Lat: 38° 39' 01" Long: 75° 10' 37" Datum: _____

Soil Map Unit Name: Fort Mott-Henlopen loamy SAND (FhA) NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	Is the Sampled Area within a Wetland? Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks:

Forested upland in the northeastern portion of the property

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) (LRR U)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes _____	No X	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No evidence of hydrology observed.

VEGETATION – Use scientific names of plants.

Sampling Point: 4

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Liriodendron tulipifera	20	✓	FACU
2. Pinus taeda	35	✓	FAC
3. Pinus Virginiana	25	✓	NL
4.			
5.			
6.			
7.			
	80	= Total Cover	
Sapling Stratum (Plot size: 30')			
1. Ilex opaca	20	✓	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	
Shrub Stratum (Plot size: 30')			
1. Prunus serotina	15	✓	FACU
2. Quercus falcata	10	✓	FACU
3. Myrica cerifera	5		FAC
4.			
5.			
6.			
7.			
	30	= Total Cover	
Herb Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		= Total Cover	
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 16 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: (If observed, list morphological adaptations below).

Area dominated by upland vegetation.

SOIL

Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 4/3						Loamy Sand	
10-18	10YR 5/6						Loamy Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) (LRR P, T, U)
- ___ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ___ Muck Presence (A8) (LRR U)
- ___ 1 cm Muck (A9) (LRR P, T)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (MLRA 150A)
- ___ Sandy Mucky Mineral (S1) (LRR O, S)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (LRR P, S, T, U)
- ___ Polyvalue Below Surface (S8) (LRR S, T, U)
- ___ Thin Dark Surface (S9) (LRR S, T, U)
- ___ Loamy Mucky Mineral (F1) (LRR O)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (LRR U)
- ___ Depleted Ochric (F11) (MLRA 151)
- ___ Iron-Manganese Masses (F12) (LRR O, P, T)
- ___ Umbric Surface (F13) (LRR P, T, U)
- ___ Delta Ochric (F17) (MLRA 151)
- ___ Reduced Vertic (F18) (MLRA 150A, 150B)
- ___ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ___ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR O)
- ___ 2 cm Muck (A10) (LRR S)
- ___ Reduced Vertic (F18) (outside MLRA 150A,B)
- ___ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ___ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12) (LRR T, U)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Bridlewood at Bayswood City/County: Sussex Sampling Date: 9/14/09

Applicant/Owner: Tunnell Companies L.P. State: DE Sampling Point: 5

Investigator(s): William Twupack Section, Township, Range:

Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%):

Subregion (LRR or MLRA): Lat: 38°-39'-01" Long: 75°-10'-37" Datum:

Soil Map Unit Name: Rosedale loamy sand (RoA) NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	Is the Sampled Area within a Wetland? Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

Forested upland in east-central portion of the property.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) (LRR U)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____

Water Table Present? Yes ____ No X Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No X Depth (inches): ____

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No evidence of hydrology.

VEGETATION – Use scientific names of plants.

Sampling Point: 5

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus taeda	35	✓	FAC
2. Pinus virginiana	20	✓	NL
3.			
4.			
5.			
6.			
7.			
	55	= Total Cover	

Sapling Stratum (Plot size: 30')			
1. Carya glabra	10	✓	FACU
2. Quercus falcata	10	✓	FACU
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	

Shrub Stratum (Plot size: 30')			
1. Ilex opaca	20	✓	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	

Herb Stratum (Plot size: 30')			
1. Vaccinium angustifolium	25	✓	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	= Total Cover	

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 16 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 4/3						Loamy Sand	Organic
2-18	10YR 5/4						Loamy Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) (LRR P, T, U)
- ___ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ___ Muck Presence (A8) (LRR U)
- ___ 1 cm Muck (A9) (LRR P, T)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (MLRA 150A)
- ___ Sandy Mucky Mineral (S1) (LRR O, S)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (LRR P, S, T, U)
- ___ Polyvalue Below Surface (S8) (LRR S, T, U)
- ___ Thin Dark Surface (S9) (LRR S, T, U)
- ___ Loamy Mucky Mineral (F1) (LRR O)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (LRR U)
- ___ Depleted Ochric (F11) (MLRA 151)
- ___ Iron-Manganese Masses (F12) (LRR O, P, T)
- ___ Umbric Surface (F13) (LRR P, T, U)
- ___ Delta Ochric (F17) (MLRA 151)
- ___ Reduced Vertic (F18) (MLRA 150A, 150B)
- ___ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ___ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR O)
- ___ 2 cm Muck (A10) (LRR S)
- ___ Reduced Vertic (F18) (outside MLRA 150A,B)
- ___ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ___ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12) (LRR T, U)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Bridlewood at Baywood City/County: Sussex Sampling Date: 9/14/09

Applicant/Owner: Tunnell Companies L.P. State: DE Sampling Point: 6

Investigator(s): William Twupack Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR or MLRA): _____ Lat: 38°-39'-01" Long: 75°-10'-32" Datum: _____

Soil Map Unit Name: Fort Mott - Henlopen / Sassafras Sand (FkA) NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	Is the Sampled Area within a Wetland? Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks:
Upland Forest Area in central portion of property South of Green Road

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) (LRR U)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes _____	No X	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No evidence of hydrology.

VEGETATION – Use scientific names of plants.

Sampling Point: 6

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	20	✓	FAC
2. Carya glabra	10		FACU
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Sapling Stratum (Plot size: 30')			
1. Quercus falcata	15	✓	FACU
2. Quercus velutina	15	✓	FACU
3. Ilex opaca	20	✓	FACU
4.			
5.			
6.			
7.			
	50 = Total Cover		
Shrub Stratum (Plot size: 30')			
1. Vaccinium corymbosum	10		FACW
2. Ilex opaca	10		FACU
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Herb Stratum (Plot size: 30')			
1. Chimaphila maculata	5		NL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	5 = Total Cover		
Woody Vine Stratum (Plot size: 30')			
1. Vitis sp	2		NL
2.			
3.			
4.			
5.			
	2 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: 6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 4/3						Loamy Sand	
3-18	10YR 5/4						Loamy Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) (LRR P, T, U)
- ___ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ___ Muck Presence (A8) (LRR U)
- ___ 1 cm Muck (A9) (LRR P, T)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (MLRA 150A)
- ___ Sandy Mucky Mineral (S1) (LRR O, S)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (LRR P, S, T, U)
- ___ Polyvalue Below Surface (S8) (LRR S, T, U)
- ___ Thin Dark Surface (S9) (LRR S, T, U)
- ___ Loamy Mucky Mineral (F1) (LRR O)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (LRR U)
- ___ Depleted Ochric (F11) (MLRA 151)
- ___ Iron-Manganese Masses (F12) (LRR O, P, T)
- ___ Umbric Surface (F13) (LRR P, T, U)
- ___ Delta Ochric (F17) (MLRA 151)
- ___ Reduced Vertic (F18) (MLRA 150A, 150B)
- ___ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ___ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR O)
- ___ 2 cm Muck (A10) (LRR S)
- ___ Reduced Vertic (F18) (outside MLRA 150A,B)
- ___ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ___ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12) (LRR T, U)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Bridlewood at Baywood City/County: Sussex Sampling Date: 9/14/09

Applicant/Owner: Tunnell Companies L.P. State: DE Sampling Point: 7

Investigator(s): William Twyford Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR or MLRA): _____ Lat: 38°-39-01 Long: 75°-10'-37" Datum: _____

Soil Map Unit Name: Downer loamy sand (DnA) NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	Is the Sampled Area within a Wetland? Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks:
Wooded upland in the southern portion of the property

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- __ Surface Water (A1)
- __ High Water Table (A2)
- __ Saturation (A3)
- __ Water Marks (B1)
- __ Sediment Deposits (B2)
- __ Drift Deposits (B3)
- __ Algal Mat or Crust (B4)
- __ Iron Deposits (B5)
- __ Inundation Visible on Aerial Imagery (B7)
- __ Water-Stained Leaves (B9)
- __ Aquatic Fauna (B13)
- __ Marl Deposits (B15) (LRR U)
- __ Hydrogen Sulfide Odor (C1)
- __ Oxidized Rhizospheres on Living Roots (C3)
- __ Presence of Reduced Iron (C4)
- __ Recent Iron Reduction in Tilled Soils (C6)
- __ Thin Muck Surface (C7)
- __ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- __ Surface Soil Cracks (B6)
- __ Sparsely Vegetated Concave Surface (B8)
- __ Drainage Patterns (B10)
- __ Moss Trim Lines (B16)
- __ Dry-Season Water Table (C2)
- __ Crayfish Burrows (C8)
- __ Saturation Visible on Aerial Imagery (C9)
- __ Geomorphic Position (D2)
- __ Shallow Aquitard (D3)
- __ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes _____	No X	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No evidence of hydrology.

VEGETATION – Use scientific names of plants.

Sampling Point: 7

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus taeda	10	✓	FAC
2. Quercus alba	15	✓	FACU
3. Quercus rubra	15	✓	FACU
4. Quercus falcata	15	✓	FACU
5.			
6.			
7.			
	= Total Cover		
Sapling Stratum (Plot size: 30')			
1. Ilex opaca	5		FACU
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Shrub Stratum (Plot size: 30')			
1. Ilex opaca	20	✓	FACU
2. Vaccinium corymbosum	5		FACW
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Herb Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	= Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: (If observed, list morphological adaptations below).

Does not meet hydrophytic vegetation.

SOIL

Sampling Point: 7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 4/3						Loamy Sand	
5-18	10YR 5/3						Loamy Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) (LRR P, T, U)
- ___ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ___ Muck Presence (A8) (LRR U)
- ___ 1 cm Muck (A9) (LRR P, T)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (MLRA 150A)
- ___ Sandy Mucky Mineral (S1) (LRR O, S)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (LRR P, S, T, U)
- ___ Polyvalue Below Surface (S8) (LRR S, T, U)
- ___ Thin Dark Surface (S9) (LRR S, T, U)
- ___ Loamy Mucky Mineral (F1) (LRR O)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (LRR U)
- ___ Depleted Ochric (F11) (MLRA 151)
- ___ Iron-Manganese Masses (F12) (LRR O, P, T)
- ___ Umbric Surface (F13) (LRR P, T, U)
- ___ Delta Ochric (F17) (MLRA 151)
- ___ Reduced Vertic (F18) (MLRA 150A, 150B)
- ___ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ___ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR O)
- ___ 2 cm Muck (A10) (LRR S)
- ___ Reduced Vertic (F18) (outside MLRA 150A,B)
- ___ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ___ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12) (LRR T, U)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: 8

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus alba	60	✓	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	60 = Total Cover		
Sapling Stratum (Plot size:)			
1. Ilex opaca	10	✓	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	10 = Total Cover		
Shrub Stratum (Plot size:)			
1. Smilax rotundifolia	5		FAC
2.			
3.			
4.			
5.			
6.			
7.			
	5 = Total Cover		
Herb Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ___ No X

Remarks: (If observed, list morphological adaptations below).

Area dominated by upland vegetation

SOIL

Sampling Point: 8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 4/3						Loamy SAND	
6-18	10YR 5/3						Loamy SAND	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) (LRR P, T, U)
- ___ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ___ Muck Presence (A8) (LRR U)
- ___ 1 cm Muck (A9) (LRR P, T)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (MLRA 150A)
- ___ Sandy Mucky Mineral (S1) (LRR O, S)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (LRR P, S, T, U)
- ___ Polyvalue Below Surface (S8) (LRR S, T, U)
- ___ Thin Dark Surface (S9) (LRR S, T, U)
- ___ Loamy Mucky Mineral (F1) (LRR O)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (LRR U)
- ___ Depleted Ochric (F11) (MLRA 151)
- ___ Iron-Manganese Masses (F12) (LRR O, P, T)
- ___ Umbric Surface (F13) (LRR P, T, U)
- ___ Delta Ochric (F17) (MLRA 151)
- ___ Reduced Vertic (F18) (MLRA 150A, 150B)
- ___ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ___ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR O)
- ___ 2 cm Muck (A10) (LRR S)
- ___ Reduced Vertic (F18) (outside MLRA 150A,B)
- ___ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ___ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12) (LRR T, U)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

Bridlewood at Baywood
Long Neck, Delaware
Project No. S07253

Prepared For:
Mr. Jason Palkewicz, P.E.
McCrone, Inc.
119 Naylor Mill Road
Building One, Suite 6
Salisbury, Maryland 21801

Prepared By:
Hillis-Carnes Engineering Associates, Inc.
421 Snow Hill Road
Salisbury, Maryland 21804

September 14, 2007

HILLIS-CARNES

ENGINEERING ASSOCIATES, INC.

421 Snow Hill Road
Salisbury, MD 21804
Local 410-749-0940
Fax 410-749-2815
Toll Free 888-867-3134
www.hcea.com

September 14, 2007

Mr. Jason Palkewicz, P.E.
McCrone, Inc.
119 Naylor Mill Road
Building One, Suite 6
Salisbury, Maryland 21801

Reference: Bridlewood at Baywood
Long Neck, Delaware
HCEA Project No. S07253

Dear Mr. Palkewicz:

Hillis-Carnes Engineering Associates, Inc. (HCEA) is pleased to submit this geotechnical report concerning the subsurface exploration and subsequent evaluation for the proposed Bridlewood at Baywood located in Long Neck, Delaware.

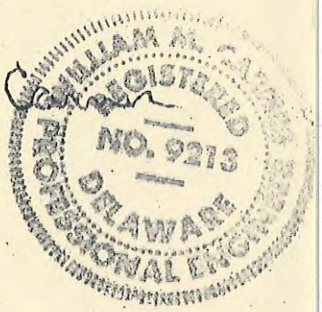
We wish to advise you that the boring samples will be stored at our Salisbury, Maryland office for a period of 30 days from the date of this letter. Should you wish the samples to be stored for a longer period of time or to be delivered to you or another party, please advise us in writing prior to the end of the 30-day period. The samples will be discarded at the end of the 30-day storage period.

HCEA appreciates having had the opportunity to provide geotechnical services and will remain available for further consultation during the various design stages. Should there be any questions concerning the contents of the report, the requirement of additional consultation, design, inspection or testing services, please contact the Salisbury HCEA office.

Very truly yours,
HILLIS-CARNES ENGINEERING ASSOCIATES, INC.

Fernando García, P.E.
Chief Engineer

William M. Carnes, P.E.
Vice President



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GEOTECHNICAL ENGINEERING STUDY
BRIDLEWOOD AT BAYWOOD
LONG NECK, DELAWARE
HCEA JOB NO. S07253

1.0 PURPOSE AND SCOPE

The purpose of this study was to determine the general subsurface conditions at the boring locations and to evaluate those conditions with respect to concept and design of the proposed storm water management ponds.

The evaluations and recommendations presented in this report were developed from an analysis of project characteristics and an interpretation of the general subsurface conditions at the site based on the boring information. The stratification lines indicated on the boring logs represent the approximate boundaries between soil types. In-situ the transitions may be gradual. Such variations can best be evaluated during construction and any minor design changes can be made at that time.

An evaluation of the site with respect to potential construction problems and recommendations dealing with the earthwork and inspection during construction are also included. Such an inspection is considered necessary to verify the subsurface conditions and to verify that the soils-related construction phases are performed properly.

The *Appendix* contains a summary of the field work on which this report is based.

2.0 PROJECT CHARACTERISTICS

The project site is located on the southeast corner of the intersection at Green Road and Banks Road in Long Neck, Delaware. Refer to the Project Location Map (Figure 1) in the *Appendix* for the approximate projects vicinity.

The proposed construction includes a residential subdivision with eleven (11) storm water management ponds. The current phase of consideration for the project is the storm water management system as associated seasonal groundwater levels. Boring elevations are indicated on the log for each individual boring location.

Should any of the project characteristics differ from those outlined above the Salisbury HCEA office should be contacted for a re-evaluation of the site.

3.0 FIELD EXPLORATION

In order to determine the general soil types and to develop preliminary design parameters Standard Penetration Test (SPT) borings were drilled in the appropriate areas. A total of twenty (20) SPT borings were drilled to a depth of fifteen feet in locations to be considered for storm water management.

The borings were advanced with hollow-stem augers and the subsurface soils were sampled at 2.5 ft and 5.0 ft intervals. Samples were taken by driving a 1-3/8 inch I.D. (2-inch O.D.) split-spoon sampler in accordance with ASTM D-1586 specifications. The sampler was first seated 6 inches to penetrate any loose cuttings and then was driven an additional foot with blows of a 140 pound hammer falling 30 inches. The number of hammer blows required to drive the sampler the final foot is designated as the "Penetration Resistance" or "N" value. The penetration resistance, when properly evaluated, is an index to the soil strength and compression characteristics.

Representative portions of each soil sample were placed in glass jars and transported to HCEA's laboratory. In the laboratory the samples were visually examined by the Geotechnical Engineer to verify the driller's field classifications. The samples were classified in accordance with the Unified Soil Classification System (USCS) and United States Department of Agriculture (USDA) soil types. Any field classifications were revised where necessary. The Unified Soil Classification Symbols appear on the Boring Logs and the system nomenclature is briefly described in the *Appendix*.

4.0 SUBSURFACE CONDITIONS

Details of the subsurface conditions encountered at the site are shown on the *Records of Soil Exploration* boring logs. A brief description of the subsurface conditions and pertinent engineering characteristics of the soils are given in the following. Strata divisions shown on the *Records of Soil Exploration* have been estimated based on visual examinations of the recovered boring samples. In the field strata changes could occur gradually and/or at slightly different levels than indicated. Groundwater conditions indicated on the *Records of Soil Exploration* are those observed during the period of the subsurface exploration. Fluctuations in groundwater levels could occur seasonally and may also be influenced by changes in grading, runoff, infiltration rates and other environmental factors.

Generalized subsurface conditions based on the results of the borings are discussed in the following:

4.1 Site Geology

The Delaware Geological Survey Geologic Map of Southern Delaware Open File Report Number 32 shows the project site located in a Quaternary Deposit. The Omar Formation (Qomu) contains white to tan to bluish gray silty fine sand, clayey silt, silty clay and fine to coarse sand. Heterogeneous; lithologic changes occur over short distances laterally and vertically. Lower part of formation short (Qoml) very fine sand to clayey silt and silty clay restricted to paleovalley cut into Beaverdam Formation. Un-conformably overlain by upper Omar sand, silt, clay and scattered shell beds (Qomu). Upper Omar is the major surficical unit in southeastern Sussex County.

4.2 Surficial Materials

Organic bearing soil was encountered in varying depths across the site. The surficial layer of the organic soil was found to measure between 2.0 and 12.0 inches. The

present depth of surficial materials and any fill materials may be expected to vary across the site.

4.3 Natural Materials

The native soils encountered at the borings reflect the description of the materials presented in the geology section of this report. Subsoils generally consisted of materials classified as clean SAND (SP), silty SAND (SM), clayey SAND (SC), lean CLAY (CL) and combinations thereof. The USDA soil types included Sand, Loamy Sand, Sandy Loam, Sandy Clay Loam, Sandy Clay and Clay.

"N" values from the Standard Penetration Test (SPT) borings generally indicated densities of very loose to dense for granular soils and medium stiff for fine grained soils. "N" values in natural soils ranged between 2 and 87 blows per foot (bpf).

4.4 Groundwater

Groundwater levels were monitored in the open boreholes. The groundwater was encountered in the borings at depths ranging from 8.0 to 14.0 feet below existing grades. Borings were observed to cave-in at depths ranging from 1.0 to 6.0 feet during the time of our subsurface exploration.

A more accurate determination of the hydrostatic water table would require the installation of perforated pipes or piezometers which could be monitored over an extended period of time. The actual level of the hydrostatic water table and the amount and level of perched water should be anticipated to fluctuate throughout the year depending on variations in precipitation, surface run-off, infiltration, site topography and drainage.

5.0 EVALUATIONS AND RECOMMENDATIONS

Our findings suggest that the site can be developed for the proposed storm water management ponds. It is particularly important to verify that topsoil and other deleterious surface materials are properly stripped in the grading process and soil quality is continuously monitored during excavation and grading procedures.

The following recommendations have been developed on the basis of the previously described project characteristics and subsurface conditions. If there are any changes to the project characteristics or if different subsurface conditions are encountered during construction, HCEA should be consulted so that the recommendations of this report can be reviewed and revised where necessary.

5.1 General Site Preparation

All existing structures (including all above and below ground construction) within the areas to be developed should be removed prior to the initiation of new construction. We suggest that all available information regarding the existing utilities at the site be reviewed prior to construction.

Removal should include all underground pipes, utilities and underground structures that might interfere with the new construction. If abandoned underground utilities are to be removed prior to the initiation of construction, provisions should be made in the construction specifications and budget to restore the subgrade to stable condition. Restoration should include backfilling and compaction of the excavation areas.

Removal should also include the surficial materials, unsuitable existing fill and deleterious materials from the areas to be developed. Stripping operations should be performed in a manner consistent with good erosion and sediment control practices.

5.2 Fill Selection, Placement and Compaction

All material to be used as fill or backfill should be inspected, tested and approved by the Geotechnical Engineer. The on-site soils which are free from organic and other deleterious components can be re-used as site fill. Materials suitable for various construction purposes can be identified by an experienced Soils Inspector during grading operations.

Soil excavated from the proposed storm water management pond locations can be a potential source of borrow material for fill in structural locations. According to the *Records of Soil Exploration* boring logs the soil located in the subgrade (beneath the surficial layers) of the ponds appears to be of classifications silty SAND (SM) and clayey SAND (SC) which may make it suitable for use as structural fill on the proposed building lots. If the SC materials are to be re-used as structural fill material it should be noted these materials have higher sensitivity to moisture. Great care should be practiced in placement of the soils containing higher clay contents. Moisture conditioning and quality control measures should be necessary to ensure adequate compaction levels are being reached during soil placement. If off-site borrow is required the imported materials should meet or exceed the requirements for structural fill set forth in the Delaware State Highway Administration Standard Specifications for Construction and Materials, latest edition. It is recommended all fill materials be tested in the HCEA laboratory prior to placement in order to determine its compliance with all material requirements.

Moisture conditioning (that is, wetting or drying) of the soils should be anticipated to achieve proper compaction. The moisture contents of the soils should be controlled properly to avoid extensive construction delays. If imported fill material is required those materials should have Unified Soil Classifications of SM or better (better meaning fewer quantities of fine grained materials such as silts and clays).

Care should be exercised during the grading operations at the site. The excessive traffic of heavy construction equipment could create pumping and a general deterioration of site soil conditions if in the presence of water. If it is at all possible the grading should therefore be carried out during a dry season. Working during dry periods should minimize potential problems associated with excessive wet conditions- although they may not be eliminated. If such problems arise the Geotechnical Engineer should be consulted for an evaluation of the conditions.

All newly required fill should be placed in relatively horizontal 8-inch (maximum) loose lifts and should be compacted to a minimum of 95 percent of the Modified Proctor (ASTM D-1557) maximum dry density. Fill materials in landscape and other non-structural areas should be compacted to at least 90 percent of the Modified Proctor maximum dry density with a maximum particle size of ¾ of an inch. Significant subsidence of the fill under its own weight is to be avoided. Field moisture contents should be maintained within +/-2 percentage points of the optimum moisture content in order to provide adequate compaction.

Structural fill should extend a minimum of ten feet beyond building lines where floor slabs are to be constructed on the fill. Fill slopes no steeper or flatter than 2(H):1(V) should be used. In-place density tests should be performed for all areas requiring compaction in intervals of every 500 square feet. Testing should be performed by an experienced Engineering Technician on a full-time basis to verify that the proper degree of compaction is being obtained.

5.3 Groundwater and Drainage

The shallowest groundwater encountered during drilling operations was located at a depth of 8.0 feet in several boring locations. Groundwater-related problems should not be anticipated during excavation and construction procedures. In the case of infiltrating groundwater the necessary precautions should be taken to ensure delays and excessive problems do not occur.

Any water infiltration resulting from a shallow interception of the groundwater table, precipitation, surface run-off or perched water should be able to be controlled by means of sump pits with pumps or by gravity ditching procedures. Such procedures are only to be used if it is necessary to lower the water by 1± feet to 2± feet. If it is necessary to lower the water by more than 2 feet a more extensive water evacuation system may be required.

Adequate drainage should be provided at the site to minimize any increases in the moisture contents of the foundation soils. All pavement areas should be sloped away from the structure to prevent ponding of water around the building.

5.4 Stormwater Management by Infiltration

The borings B-1 through B-20 were drilled in areas to be considered for a storm water management (SWM) ponds. The results of the borings show the presence of materials identified primarily as silty SAND (SM) and clayey SAND (SC) with some areas having lean CLAY (CL). Ground water was encountered in the SWM borings at a depth of 8.0 to 14.0 feet below existing site grade. Due to the presence of coarse-grained soils and the shallow groundwater conditions, infiltration methods of storm water management are recommended.

Native soil types found in the locations proposed for storm water management may be considered suitable for backfill in structural locations on the proposed building lots. It will be necessary to have soils tested and checked by an engineer in terms of meeting

project requirements for suitability as backfill prior to placement and compaction. The materials from the pond excavations proposed to be used as fill should be transported to the HCEA laboratory for testing grading requirements and moisture density relationship for unit weight. As noted there are materials present in the subgrade having higher clay content. If these SC materials are to be re-used as structural fill material it should be noted these materials have higher water sensitivity and more precautions should be taken in terms of moisture conditioning and quality control. Any of the soils will require field testing to assure proper compaction levels as structural fill materials. These native soils must be free from organic and other deleterious components in order to re-used as site fill.

6.0 RECOMMENDED ADDITIONAL SERVICES

Additional soil and foundation engineering, testing and consulting services recommended for this project are summarized below:

Site Preparation: A Geotechnical Engineer or experienced Soils Inspector should inspect the site prior to the start of final grading. The inspector should determine if any undercutting or in-place densification is necessary to prepare a subgrade for fill placement or for slab support.

Fill Placement and Compaction: A Geotechnical Engineer or experienced Soils Inspector should witness any required filling operations and should take sufficient in-place density tests to verify that the specified degree of fill compaction is achieved. He should observe and approve borrow materials used and should determine if their existing moisture contents are suitable.

7.0 REMARKS

This report has been prepared to aid in the evaluation of the site for the proposed construction. It is considered that adequate recommendations have been provided to serve as a basis for design of plans and specifications. Additional recommendations can be provided as needed.

These analyses and recommendations are based on the information made available at the time of writing the report as relevant to on-site conditions including surface and subsurface existing at the time the exploratory borings were drilled. Further assumption has been made that the limited exploratory borings in relation both to the area of the site and to depth are representative of conditions across the site. The recommendations contained herein have been based on a series of widely spaced soil borings. Actual subsurface conditions encountered could vary from those outlined in this report.

If subsurface conditions are encountered which differ from those reported herein, this office should be notified immediately so that the analyses and recommendations can be reviewed and/or revised as necessary. It is also recommended that:

1. We are given the opportunity to review any existing man-placed fill certifications, plans and specifications prepared subsequent to the final geotechnical study in

order to comment on the interaction of the soil conditions as described herein and the design requirements.

2. A Geotechnical Engineer or experienced Soils Inspector is present at the site during the construction phase to verify installation according to the approved plans and specifications. Such a presence on of an inspector is particularly important during excavation, placement, and compaction of fill materials.

Please note that successful completion of the project is dependent on the compliance with all of the recommendations provided in this report. While represented separately, the recommendations represent work that is intertwined. The successful completion of the project is specifically conditioned on your complying with all recommendations.

Our professional services have been performed, our findings obtained and our recommendations prepared in accordance with generally accepted engineering principles and practices. This warranty is in lieu of all other warranties either implied or expressed. Hillis-Carnes Engineering Associates, Inc. assumes no responsibility for interpretations made by others based on work or recommendations made by HCEA.

ATTACHMENTS

Figure 1: Site Location Map

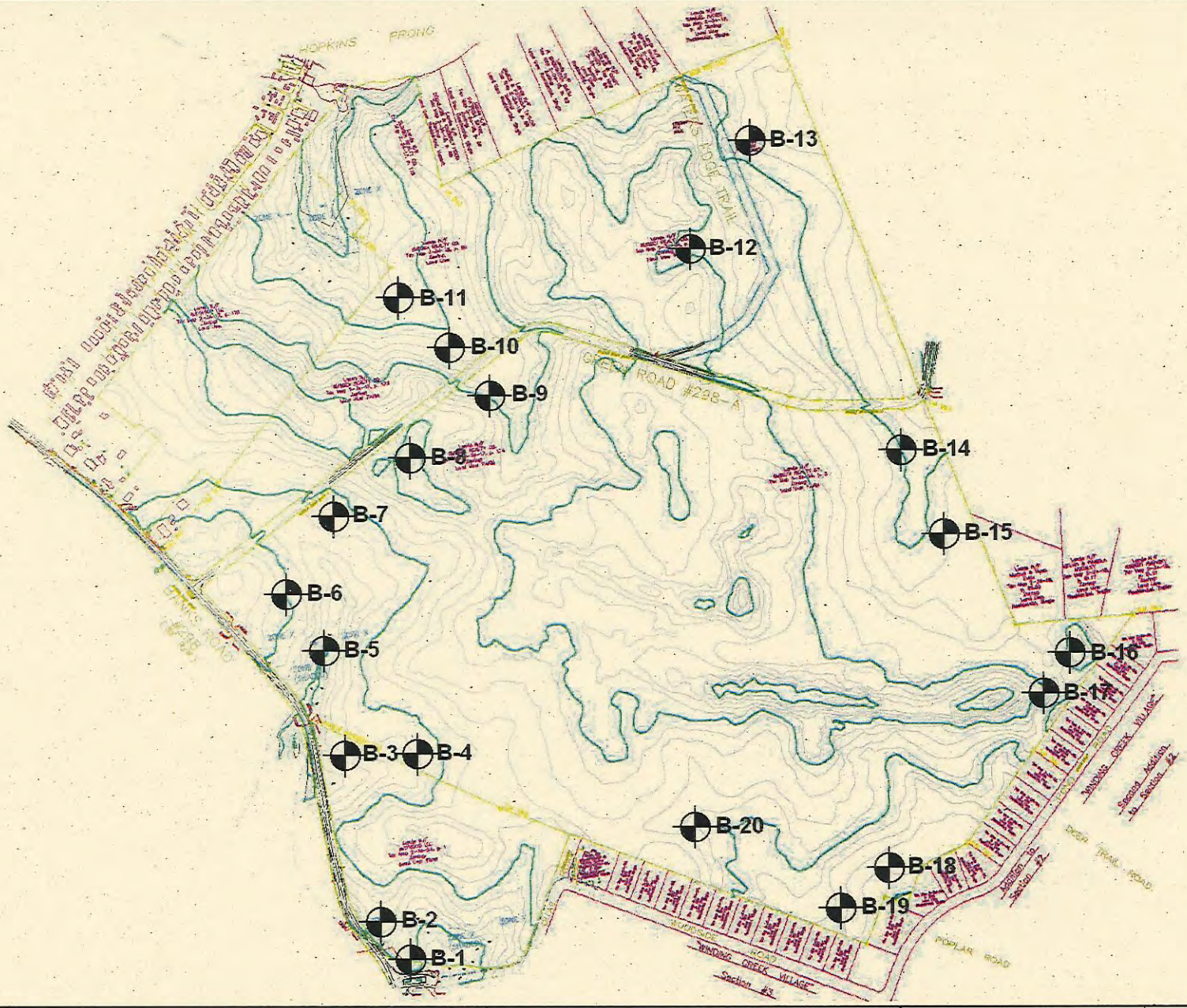
Figure 2: Boring Location Plan

Appendix A: Records of Soil Exploration

Field Classification Sheet

HILLIS-CARNES		**Project Location Map**	**JOB No.:**	S07253	**DESIGN BY:** Google
ENGINEERING ASSOCIATES, INC.		**FIGURE 1**	**DATE:**	9/14/07	**DRAWN BY:** Google
421 SNOW HILL ROAD	SALISBURY, MD 21804	**Bridlewood at Baywood**	**SCALE:**	NTS	
PHONE: (410) 749-0940	FAX: (410) 749-2815	Long Neck, Delaware	**PAGE:**	1	**CHECKED BY:** HCEA

HILLIS-CARNES ENGINEERING ASSOCIATES, INC.



HILLIS - CARNES	**Boring Location Plan**	**JOB No.:** S07253	**DESIGN BY:** McCrone
ENGINEERING ASSOCIATES, INC.	**FIGURE 2**	**DATE:** 9/14/07	**DRAWN BY:** McCrone
421 SNOW HILL ROAD SALISBURY, MD 21804	**Bridlewood at Baywood**	**SCALE:** NTS	
PHONE: (410) 749-0940 FAX: (410) 749-2815	Long Neck, Delaware	**PAGE:** 1	**CHECKED BY:** HCEA

HILLIS-CARNES ENGINEERING ASSOCIATES, INC.

Environmental Assessment and Public Facilities Evaluation Report

The proposed development, Keastone Bay, is in conformity with the Sussex County Zoning requirements for the ES-1 zone.

Delineation of the zoning district: Keastone Bay is located within the ES-1 zone.

Application process: All developments containing 50 or more dwelling units are subject to the ES-1 performance requirements. An environmental assessment and public facility evaluation report and sketch plan (report) are required to be submitted to the Director of Planning and Zoning. Below is the report which finds:

(a) The proposed drainage design will include the use of both a closed system storm drain and open system drainage network. Storm water management will be in conformity with the current storm water management regulations including managing both water quantity and quality. Stormwater management devices could include constructed wetlands, bio-swales, infiltration basins, filter strips, ponds, etc. The outfall for a majority of the site is Hopkins Prong, which is tidally influenced.

(b) Potable water and fire protection will be provided for Keastone Bay. The site lies within the Long Neck Water Company service area. Potable water demands are anticipated to be approximately 152,000 gallons per day. Irrigation, if provided, will be by either potable water supply, non-potable well or drawn from storm water management facilities.

(c) Wastewater collection and treatment will be provided for the site by Inland Bays Preservation Company. The proposed collection and treatment of the wastewater generated from the site will not have an adverse effect on the quality of groundwater and surface waters.

(d) The proposed development will be designed to provide safe and efficient vehicular travel patterns on site. Site access to Banks Road and Green Road will be in accordance with DelDOT's *Development Coordination Manual*. Although final improvements will be determined via the TIS process, the anticipated improvements include:
    - Widening and realigning Green Road with 11' travel lanes and 5' shoulder.
    - Providing turn lanes or traffic circle on Green Road to provide access to the community.
    - Widening Banks Road with 11' travel lanes and 5' shoulder.
    - Providing turn lanes at the intersection of Banks Road and Green Road.

(e) No proposed or federally listed endangered or threatened species are known to exist on the site.

(f) The site contains non-tidal wetlands as delineated by Environmental Resources, Inc. A jurisdictional determination is in process with the U.S. Army Corp of Engineers. No wetland disturbance is proposed, other than a community pier and storm water outfall.

(g) The site has been planned to maintain areas of open space throughout the site. The plan provides a total of 136.6 +/- acres (44%) of interconnected open space. Open space amenities will include preserved woodlands & wetlands and a recreation amenity/gathering space.

(h) The internal access roadway will be privately owned and maintained by the HOA within private rights-of-way. Road width and pavement thicknesses shall be in conformity with Sussex County Standards. Potable water mains and sanitary sewer mains will be publicly owned and maintained within rights-of-way and/or utility easements. Storm water drainage and management facilities will be privately owned and maintained by the HOA.

(i) The project near the commercial and tourist area of Long Neck. As such it will offer not only an economic boost from tax revenue and tourism but will also provide jobs associated with land development construction and home building.

(j) In the PLUS comment letter, The State Historic Preservation Office stated there "*is potential for both historic and pre-historic archaeological sites*" within the project. The developer will comply with all state and federal law should sites be discovered. Specifically, there are two sites referenced in the PLUS comments from the state:

i. S02939 is an existing home site along Banks Road on TM 234-17, P 170. The location of this home is not within the limits of disturbance for this project. The developer is willing to have Delaware State Historic Preservation Office review and catalog the structure before it is razed.
ii. S03041 is a home site that is mapped incorrectly and is not located within the project limits.

The developer will comply with all state and federal law should sites be discovered.

(k) The proposed application is in conformity with the current Sussex County Comprehensive Plan. Specifically, the site is located in the Environmentally Sensitive Developing Area. The site is within the existing Inland Bays Preservation sewer service area. Also, the site is within a Long Neck Water Company franchise area.

(l) The design of the Keastone Bay development alleviates the detrimental impacts identified above (a-k) in a manner which is consistent with the Comprehensive Plan.

Jason Palkewicz, Professional Engineer
Vice President

EDUCATION

BE, Environmental Eng., 1995
Hofstra University

MS, Civil Eng., 1999
University of Toledo

REGISTRATIONS

- Professional Engineer
  MD # 25088
- Professional Engineer
  DE # 12083
- Professional Engineer
  VA # 035417

MEMBERSHIPS

- LEED, AP

PROFESSIONAL SUMMARY

Mr. Palkewicz is a Professional Engineer and Project Manager with licenses in Maryland, Virginia and Delaware, with over 20 years of experience successfully overseeing all phases of planning, engineering and survey projects for government and private-sector clients. He is a highly skilled team leader, detail oriented with the ability to solve problems with limited resources while never losing sight of the big picture.

SPECIAL PROJECT EXPERIENCE

- **Pot-Nets Bayside, Sussex County, DE** – Provided design and permitting drawings for the rehabilitation and replacement of approximately 10,000 lf of vinyl marina bulkhead including dozens of piers, hundreds of piles and two boat launching facilities.
- **Pelican Point, Sussex County, DE** – Prepared construction drawings and plats for a 379 unit residential along Rte 5 outside of Long Neck. Plans included roadway, grading, sediment and erosion control, potable water, gravity sanitary sewer and sanitary pump station
- **Seagull Square, University of Salisbury, MD –** The civil engineer project manager for this mixed use public/private development consisting of approximately 600 student beds and 23,000 s.f. of Main Street style retail. Worked with the developer, State and City to acquire City sewer and water services to the site. Negotiated with MDSHA to gain access from Business Route 13, including easement abandonment, right-of-way plats and intersection improvements. LEED responsibilities included the Sustainable Site portion of the accreditation.
- **East Fields, Fruitland, MD –** Prepared construction drawings and plats for a 120 unit residential subdivision on Main Street in Fruitland. Plans included roadway, grading, sediment and erosion control, potable water, gravity sanitary sewer and sanitary pump station.

2 THE CIRCLE I PO BOX 417
GEORGETOWN, DE 19947
(302) 855-7878 T
(302) 854-5079 F

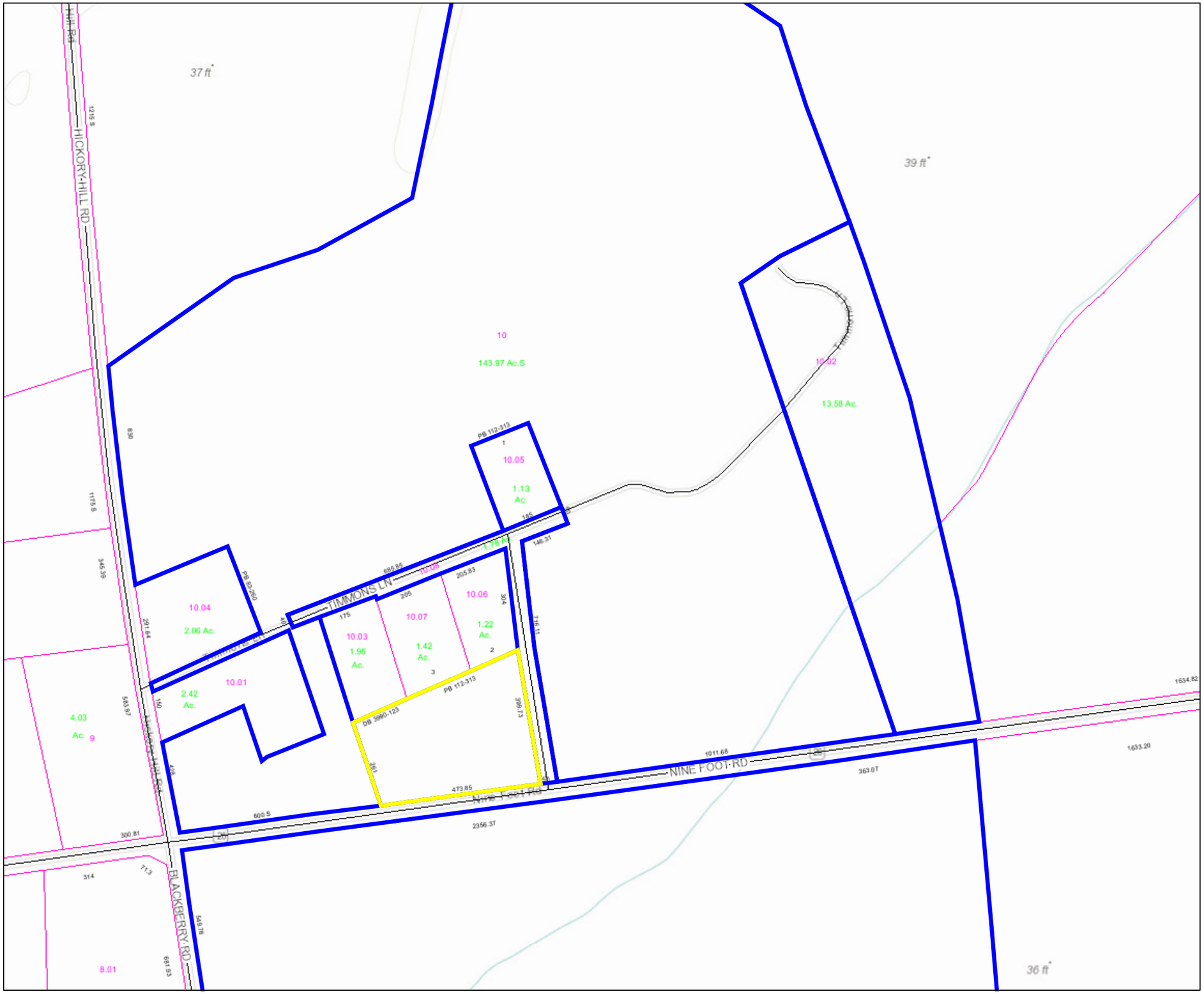
sussexcountyde.gov

Sussex County
Planning & Zoning Commission

PLANNING AND ZONING AND COUNTY COUNCIL INFORMATION SHEET
Planning Commission Public Hearing Date July 25, 2019.

Application:	2019-10 Lands of Timmons
Applicant/Owner:	Ralph A. Timmons Jr. 25813 Timmons Lane Dagsboro, DE 19939
Site Location:	On northeast corner of Nine Foot Road (SCR. 26) and Hickory Hill Road (SCR. 26) and on the southeast corner of Nine Foot Road (SCR. 26) and Blackberry Road (SCR. 82).
Zoning:	AR-1 (Agricultural Residential Zoning District)
Current Use:	Agricultural Land
Proposed Use:	7 Single-Family Lots
Comprehensive Land Use Plan Reference:	Low Density Areas
Councilmatic District:	Mr. Rieley
School District:	Indian River School District
Fire District:	Gumboro Fire District
Sewer:	Private
Water:	Private
Site Area:	161.68 acres
Tax Map ID.:	234-14.00-10.00 & 234-14.00-10.02

Sussex County



PIN:	233-14.00-10.00
Owner Name	TIMMONS JOHN IRVIN TTEE
Book	4950
Mailing Address	25771 TIMMONS LN
City	DAGSBORO
State	DE
Description	BOTH SIDES OF RT36
Description 2	TIMMONS LANE
Description 3	FX RESIDUAL LANDS
Land Code	

polygonLayer

Override 1

polygonLayer

Override 1

Tax Parcels

Streets

County Boundaries

June 19, 2019

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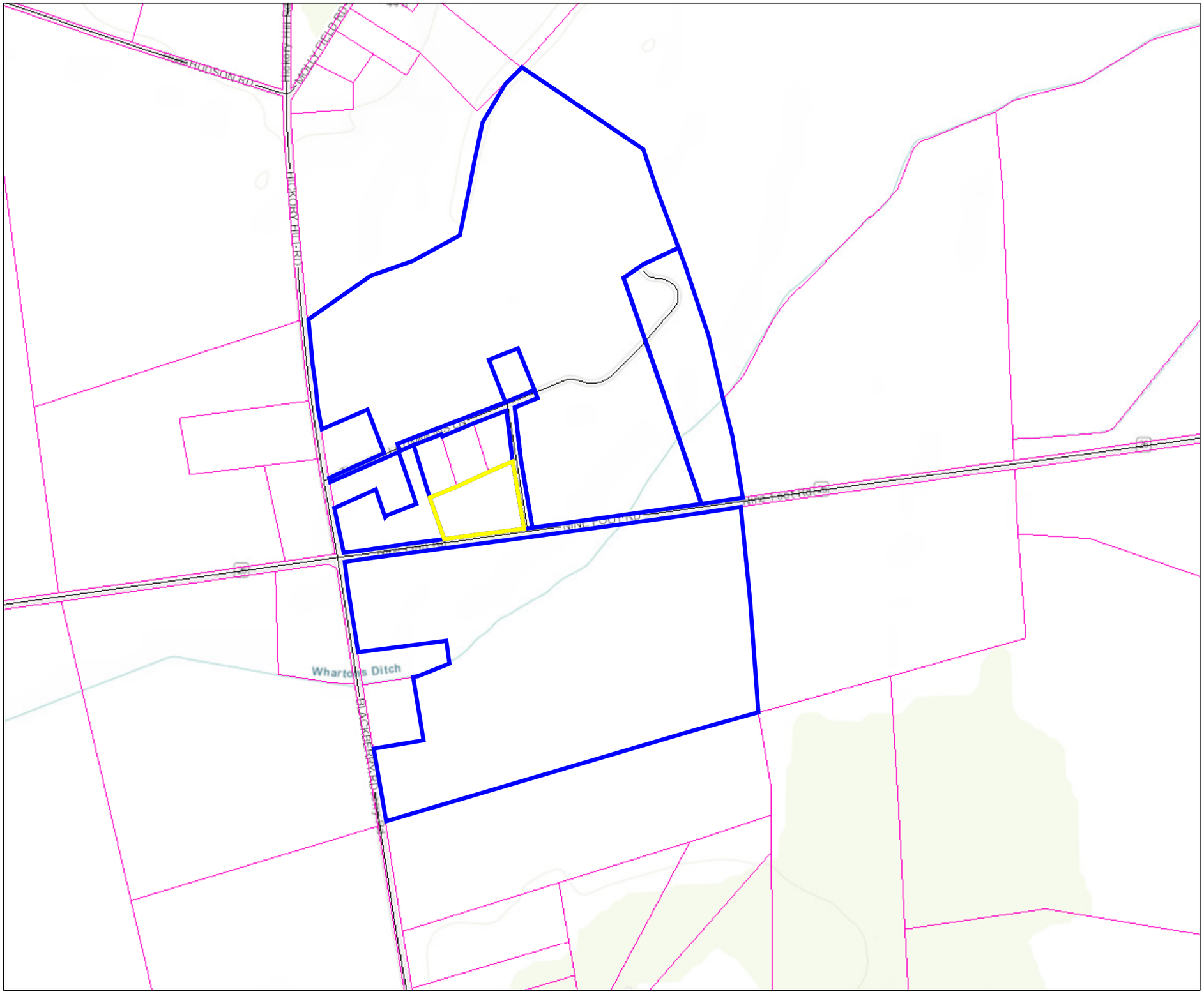
0 0.075 0.15 0.3 km

Sussex County



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Land Code	

polygonLayer
Override 1
polygonLayer
Override 1
Tax Parcels
Streets
Zoning
Agricultural Residential - AR-1
Agricultural Residential - AR-2
Medium Residential - MR
General Residential - GR
High Density Residential - HR-1
High Density Residential - HR-2
Vacation, Retire, Resident - VRP
Neighborhood Business - B-1
General Commercial - C-1
Commercial Residential - CR-1
Marine - M
Limited Industrial - LI-1
Limited Industrial - LI-2
Heavy Industrial - HI-1

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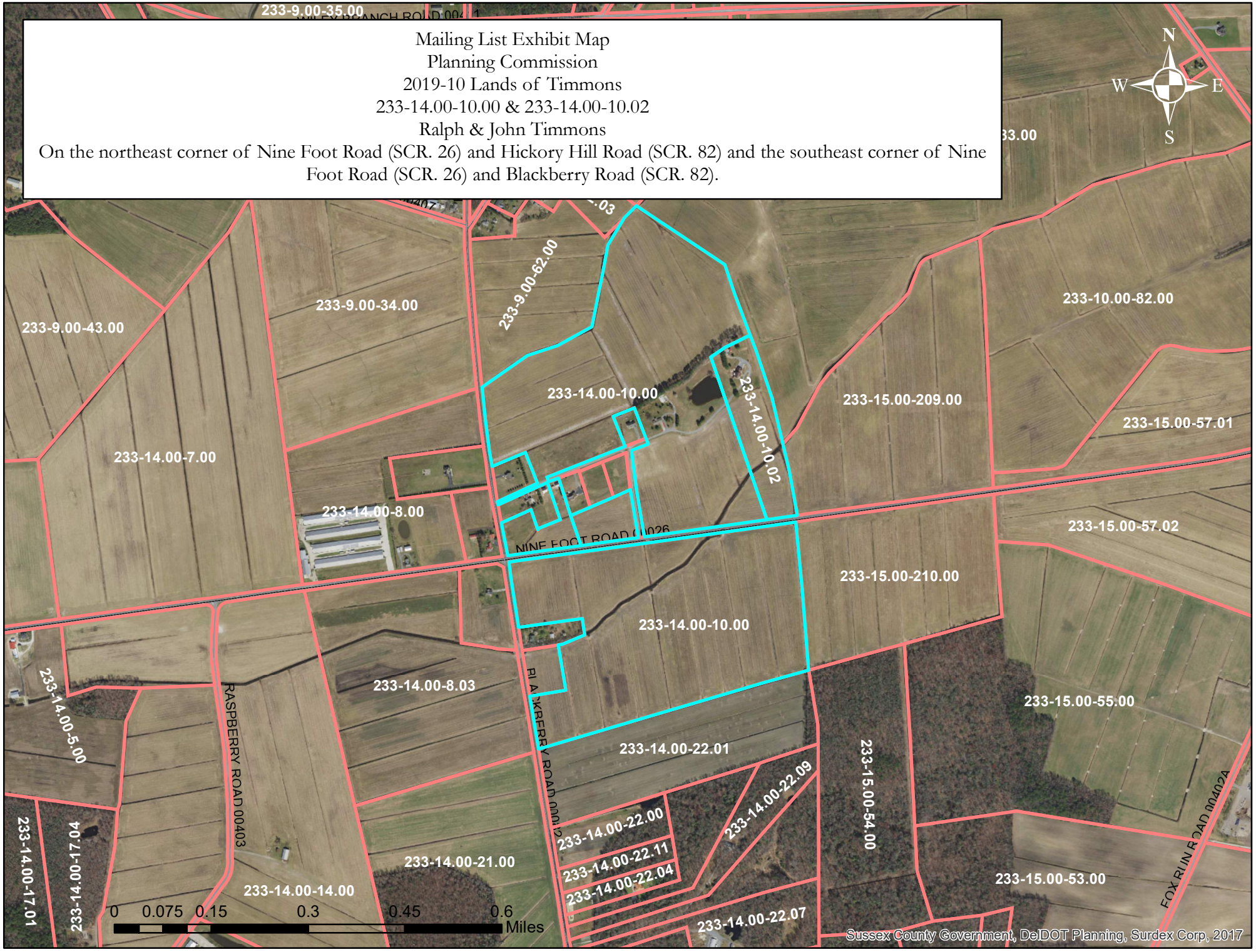
June 19, 2019


Mailing List Exhibit Map
Planning Commission
2019-10 Lands of Timmons
233-14.00-10.00 & 233-14.00-10.02
Ralph & John Timmons
On the northeast corner of Nine Foot Road (SCR. 26) and Hickory Hill Road (SCR. 82) and the southeast corner of Nine Foot Road (SCR. 26) and Blackberry Road (SCR. 82).
N
W
E
S
233-9.00-35.00
233-9.00-43.00
233-9.00-34.00
233-9.00-62.00
233-14.00-10.00
233-14.00-10.02
233-10.00-82.00
233-15.00-209.00
233-15.00-57.01
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233-15.00-53.00
233-14.00-22.07
FOX RUN ROAD 00403A
0 0.075 0.15 0.3 0.45 0.6
Miles
Sussex County Government, DelDOT Planning, Surdex Corp, 2017

SUSSEX COUNTY ENGINEERING DEPARTMENT
UTILITY PLANNING DIVISION
C/U & C/Z COMMENTS

TO: **Janelle Cornwell**

REVIEWER: **Chris Calio**

DATE: **6/20/2019**

APPLICATION: **2019-10 Lands of Timmons**

APPLICANT: **Ralph A. Timmons, Jr.**

FILE NO: **WSPA-5.02**

TAX MAP & PARCEL(S): **233-14.00-10.00 & 10.02**

LOCATION: **On the northeast corner of Nine Foot Road (SCR 26) and Hickory Hill Road, and on the southeast corner of Nine Foot Road and Blackberry Road (SCR 84)**

NO. OF UNITS: **7 single-family lots**

GROSS ACREAGE: **161.68**

SYSTEM DESIGN ASSUMPTION, MAXIMUM NO. OF UNITS/ACRE: **2**

SEWER:

(1). Is the project in a County operated and maintained sanitary sewer and/or water district?

Yes ☐ No ☒

a. If yes, see question (2).
b. If no, see question (7).

(2). Which County Tier Area is project in? **Tier 4**

(3). Is wastewater capacity available for the project? **N/A** If not, what capacity is available? **N/A**.

(4). Is a Construction Agreement required? **No** If yes, contact Utility Engineering at (302) 855-7717.

(5). Are there any System Connection Charge (SCC) credits for the project? **N/A** If yes, how many? **N/A**. Is it likely that additional SCCs will be required? **N/A** If yes, the current System Connection Charge Rate is **Click or tap to enter a fee** per EDU. Please contact **Choose an item.** at **302-855-7719** for additional information on charges.

(6). Is the project capable of being annexed into a Sussex County sanitary sewer district? **N/A**

☐ Attached is a copy of the Policy for Extending District Boundaries in a Sussex County Water and/or Sanitary Sewer District.

(7). Is project adjacent to the Unified Sewer District? **N/A**

(8). Comments: **The proposed subdivision of land is not in an area where the Sussex County Engineering Department has a plan/schedule to provide sanitary sewer service.**

(9). Is a Sewer System Concept Evaluation required? **No**

(10). Is a Use of Existing Infrastructure Agreement Required? **No**

UTILITY PLANNING APPROVAL:

John J. Ashman
Director of Utility Planning

Xc: Hans M. Medlarz, P.E.
Jayne Dickerson
No Permit Tech Assigned

Sussex conservation district
PREPARE. PROTECT. PRESERVE.

RECEIVED
JUL 17 2019
SUSSEX COUNTY
PLANNING & ZONING

MEMORANDUM

TO: Janelle M. Cornwell

FROM: Debbie Absher, Director of Ag Programs

SUBJECT: LUPA

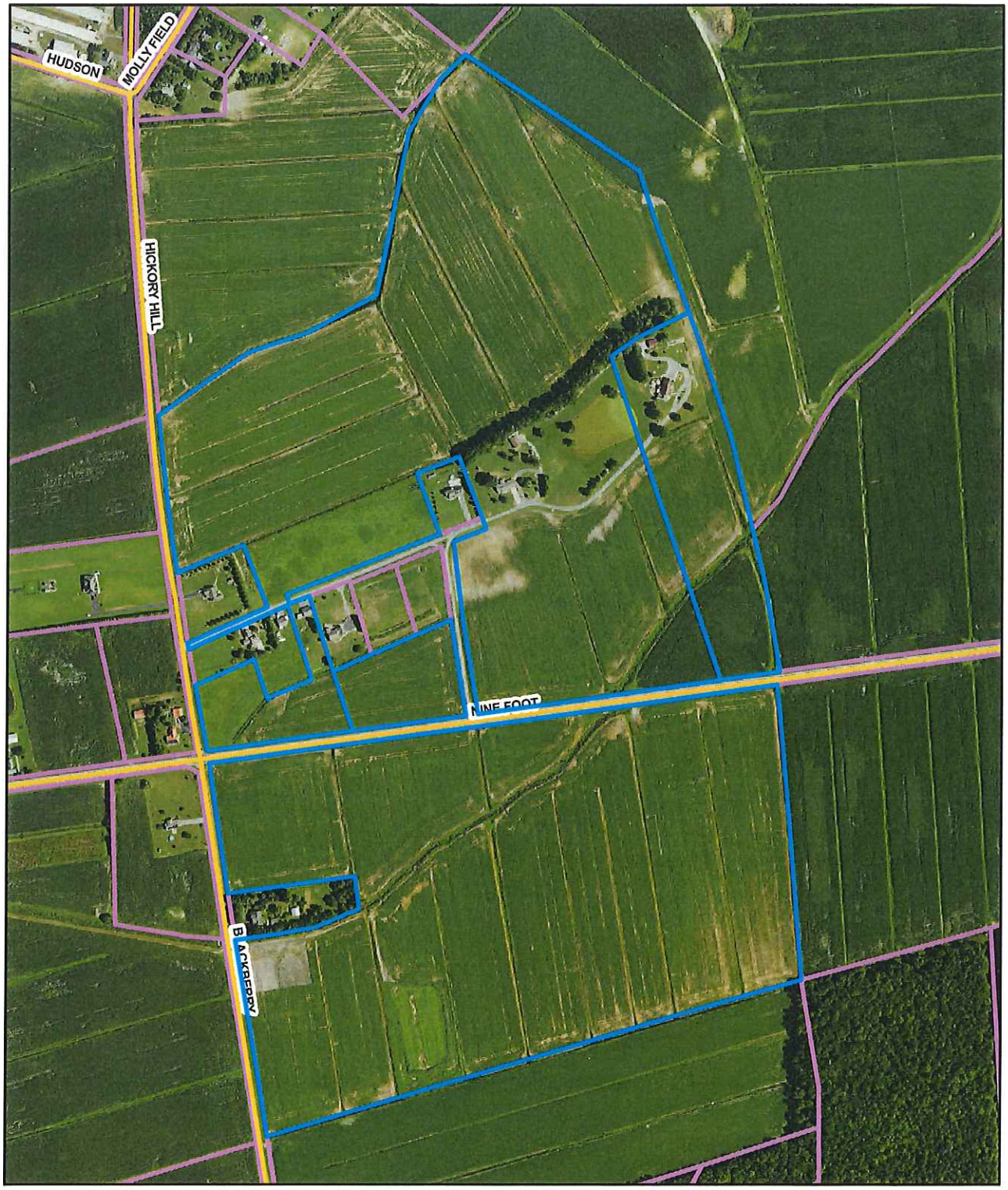
DATE: July 17, 2019

Attached you will find the comments for the following proposed zoning changes:

- 2018-34 – Keastone Bay
- 2019-10 – Lands of Timmons
- CZ 1885 – 36191 DWB, LLC

If you have any questions, I can be reached at 856-3990, ext. 3.

BJH
Enclosures



2019-10
TM #233-14.00-10.00, 10.02
Lands of Timmons

Soil Map—Sussex County, Delaware
(Lands of Timmons)

Map Scale: 1:12,000 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 150 300 600 900

Feet
0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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

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

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

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

Soil Survey Area: Sussex County, Delaware
Survey Area Data: Version 19, Sep 14, 2018

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

Date(s) aerial images were photographed: Nov 21, 2018—Mar 12, 2019

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AsA	Askecksy loamy sand, 0 to 2 percent slopes	34.5	19.3%
KsA	Klej loamy sand, 0 to 2 percent slopes	32.2	18.0%
MuA	Mullica-Berryland complex, 0 to 2 percent slopes	112.1	62.7%
Totals for Area of Interest		**178.8**	**100.0%**

Selected Soil Interpretations

This report allows the customer to produce a report showing the results of the soil interpretation(s) of his or her choice. It is useful when a standard report that displays the results of the selected interpretation(s) is not available.

When customers select this report, they are presented with a list of interpretations with results for the selected map units. The customer may select up to three interpretations to be presented in table format.

For a description of the particular interpretations and their criteria, use the "Selected Survey Area Interpretation Descriptions" report.

Report—Selected Soil Interpretations

Selected Soil Interpretations–Sussex County, Delaware							
Map symbol and soil name	Pct. of map unit	ENG - Dwellings W/O Basements		ENG - Dwellings With Basements		ENG - Septic Tank Absorption Fields (DE)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AsA—Askecksy loamy sand, 0 to 2 percent slopes							
Askecksy, undrained	45	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Filtering capacity	1.00
						Ponding	1.00
Askecksy, drained	30	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
						Filtering capacity	1.00
KsA—Klej loamy sand, 0 to 2 percent slopes							
Klej	70	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
						Filtering capacity	1.00

Selected Soil Interpretations–Sussex County, Delaware							
Map symbol and soil name	Pct. of map unit	ENG - Dwellings W/O Basements		ENG - Dwellings With Basements		ENG - Septic Tank Absorption Fields (DE)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
MuA—Mullica-Berryland complex, 0 to 2 percent slopes							
Berryland, drained	25	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
Mullica, drained	25	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
Berryland, undrained	15	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
Mullica, undrained	15	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00

Data Source Information

Soil Survey Area: Sussex County, Delaware
Survey Area Data: Version 19, Sep 14, 2018

Prime and other Important Farmlands

This table lists the map units in the survey area that are considered important farmlands. Important farmlands consist of prime farmland, unique farmland, and farmland of statewide or local importance. This list does not constitute a recommendation for a particular land use.

In an effort to identify the extent and location of important farmlands, the Natural Resources Conservation Service, in cooperation with other interested Federal, State, and local government organizations, has inventoried land that can be used for the production of the Nation's food supply.

Prime farmland is of major importance in meeting the Nation's short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil quality, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. The water supply is dependable and of adequate quality. Prime farmland is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

For some of the soils identified in the table as prime farmland, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures.

A recent trend in land use in some areas has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

Unique farmland is land other than prime farmland that is used for the production of specific high-value food and fiber crops, such as citrus, tree nuts, olives, cranberries, and other fruits and vegetables. It has the special combination of soil quality, growing season, moisture supply, temperature, humidity, air drainage, elevation, and aspect needed for the soil to economically produce sustainable high yields of these crops when properly managed. The water supply is dependable and of adequate quality. Nearness to markets is an additional consideration. Unique farmland is not based on national criteria. It commonly is in areas where there is a special microclimate, such as the wine country in California.

In some areas, land that does not meet the criteria for prime or unique farmland is considered to be *farmland of statewide importance* for the production of food, feed, fiber, forage, and oilseed crops. The criteria for defining and delineating farmland of statewide importance are determined by the appropriate State agencies. Generally, this land includes areas of soils that nearly meet the requirements for prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. Some areas may produce as high a yield as prime farmland if conditions are favorable. Farmland of statewide importance may include tracts of land that have been designated for agriculture by State law.

In some areas that are not identified as having national or statewide importance, land is considered to be *farmland of local importance* for the production of food, feed, fiber, forage, and oilseed crops. This farmland is identified by the appropriate local agencies. Farmland of local importance may include tracts of land that have been designated for agriculture by local ordinance.

Report—Prime and other Important Farmlands

Prime and other Important Farmlands–Sussex County, Delaware		
Map Symbol	**Map Unit Name**	**Farmland Classification**
AsA	Askecksy loamy sand, 0 to 2 percent slopes	Not prime farmland
KsA	Klej loamy sand, 0 to 2 percent slopes	Farmland of statewide importance
MuA	Mullica-Berryland complex, 0 to 2 percent slopes	Prime farmland if drained

Data Source Information

Soil Survey Area: Sussex County, Delaware
Survey Area Data: Version 19, Sep 14, 2018

SOILS

ADD ANY ADDITIONAL INFORMATION THAT MAY BE CONSIDERED PERTINENT:

SOILS:

AsA	Askecksy loamy sand, 0 to 2 percent slopes
KsA	Klej loamy sand, 0 to 2 percent slopes
MuA	Mullica-Berryland complex, 0 to 2 percent slopes

A. SUITABILITY OF SOILS INTENDED USE:
See attached table for suitability.

B. EVALUATE THE SOILS INCLUDED IN THIS PROJECT WITH RESPECT TO EROSION AND SEDIMENTATION CONTROL:

1. DURING CONSTRUCTION:

   Follow recommended erosion and sediment control practices.

2. AFTER CONSTRUCTION:

   Maintain vegetation.

C. FARMLAND RATING (PRIME, UNIQUE, STATEWIDE IMPORTANCE, ETC.):
See attached table(s) for ratings.

D. ADDITIONAL COMMENTS (IF APPLICABLE):

DRAINAGE AND FLOODING

Add any additional information that may be considered pertinent:

DRAINAGE:

A. Any Storm flood hazard area affected? ☐ Yes ☑ No

B. Would the proposed project necessitate any off-site drainage improvements?

No

C. Would the proposed project necessitate any on-site drainage improvements?

Possibly

D. Any Tax Ditch affected? ☑ Yes ☐ No

Not Likely

Additional Comments (if applicable)

All landowners, developers, and site designers are strongly encouraged to thoroughly investigate the presence of easements or right-of-ways along tax ditches. These documents are located in the Prothonotary's Office and/or with the Recorder of Deeds. If a stormwater management facility is proposed along a stream or ditch, the Sussex Conservation District will require verification of any easements. Before you start any project design, please look into this matter by calling the Division of Soil and Water Conservation-Drainage Program at (302) 855-1930 or the Sussex Conservation District Sediment and Stormwater Program at (302) 856-7219 for more information.

Atlantic Resource Management, Inc.
Soil Resource Consulting • Environmental Planning

June 13, 2019 ARM # 120-DS19-SR

Mr. Ralph A. Timmons, Jr., *Trustee*
Mr. John I. Timmons, *Trustee*
25771Timmons Lane
Dagsboro, DE 19939

To Whom It May Concern:

This letter summarizes the information collected to date with regards to the siting and planning of On-site Wastewater Treatment and Disposal Systems (OWTDS – Septic) for the 5 proposed Lots/ Tracts noted below on Tax Map 2-33-14.00-10.00 *et al*, located east of Hickory Hill Road and both sides of Nine Foot Road (SR 26) and Timmons Lane in Dagsboro, Sussex County, Delaware. This soils based land planning work scope was done in conformance with the State of Delaware Department of Natural Resources and Environmental Control (DNREC) Regulations and our understanding of operational policies and standards of practice. Based on my best professional judgment, greater than 24 years of professional experience, and reasonable scientific certainty, I do not believe that each of the proposed tracts shown on the attached Plot Drawing are feasible for OWTDS – Septic provided the below-referenced testing protocols are performed.

◉ Proposed ***Agricultural Parcel A*** (53.4 acres) is *optimally* suited for an ***Innovative and Alternative*** (*I/A*) **Capping Fill Low Pressure Pipe** OWTDS-Septic with an **Advanced Treatment Unit (ATU, PSN3 standard)** *et seq* (i.e. PSN3 Elevated Sand Mound, PSN3 Peat Biofilter, PSN3 ATU Micro-Irrigation *Drip*) at the highest, respective design area elevations (*approximately* 42 feet elevation along Timmons Lane) as noted on the attached *Plot Drawing*. There is an ***additional area*** (*approximately* 40 feet elevation along Eastern portion of Tract) for an ***Innovative and Alternative*** (*I/A*) **Elevated Sand Mound** OWTDS-Septic with an **Advanced Treatment Unit (ATU, PSN3 standard)** *et seq* (i.e. PSN3 Peat Biofilter, PSN3 ATU Micro-Irrigation *Drip*). Site Evaluation by way of soil morphology.

◉ Proposed ***Agricultural Parcel B*** (20.59 acres) is *optimally* suited for an ***Innovative and Alternative*** (*I/A*) **Elevated Sand Mound** OWTDS-Septic with an **Advanced Treatment Unit (ATU, PSN3 standard)** *et seq* at the highest, respective design area elevations (2 areas of favorable landform noted at *approximately* 38 feet elevation) with the greatest groundwater draw-down and proximity to the effective deep, canal-sized, Tax Ditch (Wharton's Branch) as noted on the attached *Plot Drawing*. Site Evaluation by way of Wet Season Testing via Observation Wells or *Rural Area* (> 10.0 acres and OWTDS > 100 feet from property lines)/*Formal* Waiver ***required***.

◉ Proposed ***Agricultural Parcel C*** (15.65 acres) is *optimally* suited for an ***Innovative and Alternative*** (*I/A*) **Capping Fill Low Pressure Pipe** OWTDS-Septic with an **Advanced Treatment Unit (ATU, PSN3 standard)** *et seq* at the highest, respective design area elevations (*approximately* 42 feet along Timmons Lane) as noted on the attached *Plot Drawing*. There is an ***additional area*** (*approximately* 38 feet elevation along western portion of Tract) of higher elevation reserved for future investigations. Site Evaluation by way of soil morphology.

◉ Proposed ***Agricultural Parcel D*** (16.04 acres) is *optimally* suited for an ***Innovative and Alternative*** (*I/A*) **Elevated Sand Mound** OWTDS-Septic with an **Advanced Treatment Unit (ATU, PSN3 standard)** *et seq* at the highest, respective design area elevations (4 areas with favorable landform noted at *approximately* 37 to 38 feet elevation) with the greatest groundwater draw-down and proximity to the effective deep, canal-sized, Tax Ditch (Wharton's Branch) as noted on the attached *Plot Drawing*. Site Evaluation by way of Wet Season Testing via Observation Wells or *Rural Area* (> 10.0 acres and OWTDS > 100 feet from property lines)/*Formal* Waiver ***required***.

P.O. Box 869 • Ocean View, DE 19970 • Phone (302) 539-2029 • Fax (302) 539-4601 • DE@atlanticresource.net

◉ Proposed ***Lot 4*** (0.95 acres) meets replacement criteria given the existing residence and septic area. Site Evaluation by way of soil morphology, *when necessary (not authorized by this work scope; I/A* ESM worst case scenario).

◉ Proposed ***Lot 5*** (1.60 acres) is *optimally* suited for an ***Innovative and Alternative*** (*I/A*) **Elevated Sand Mound** OWTDS-Septic with an **Advanced Treatment Unit (ATU, PSN3 standard)** *et seq* (i.e. PSN3 Peat Biofilter, PSN3 ATU Micro-Irrigation *Drip*) at the highest, respective design area elevations (favorable landform *approximately* 40 feet elevation along Hickory Hill Road) as noted on the attached *Plot Drawing*. Site Evaluation by way of soil morphology.

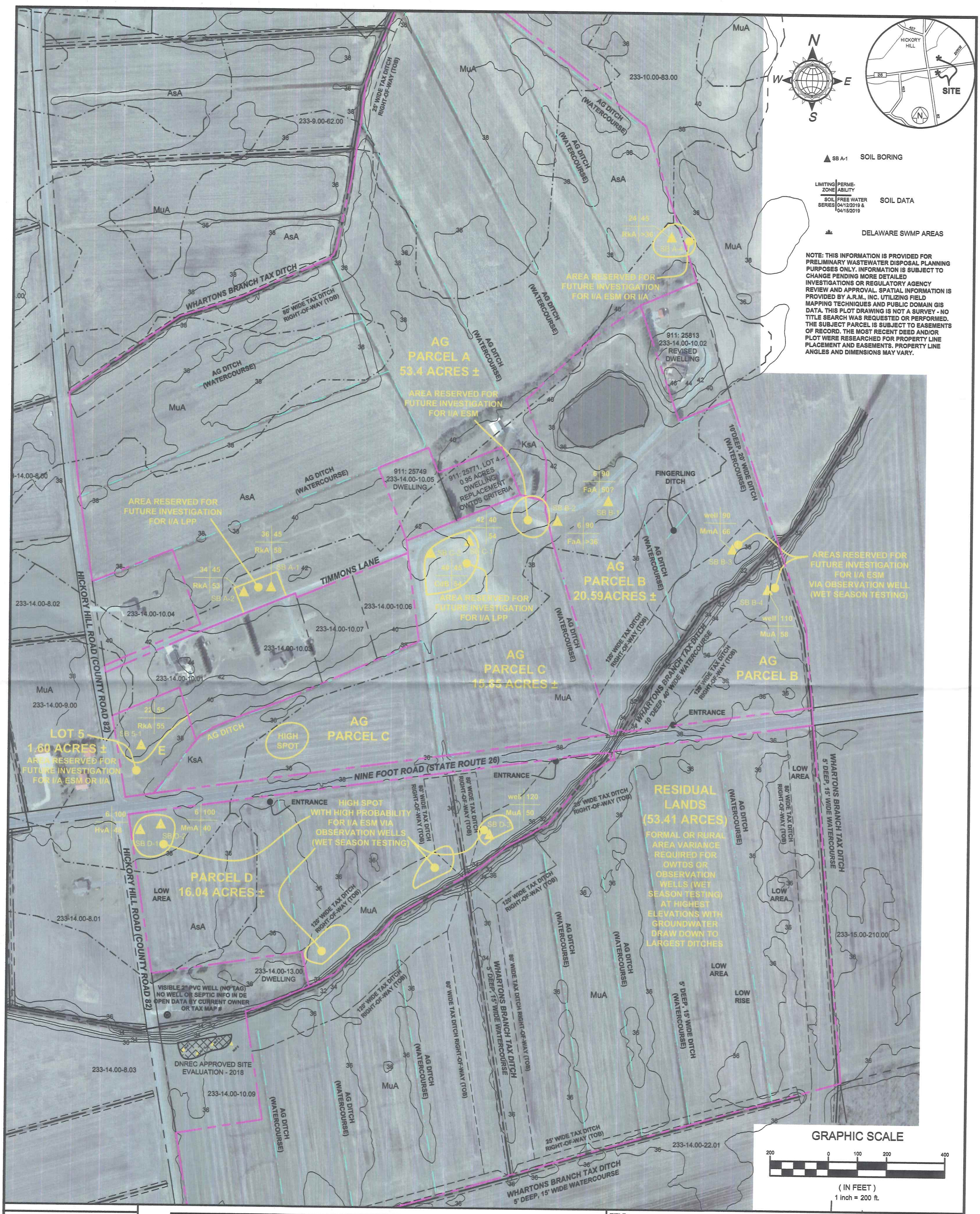
◉ Proposed ***Residual Lands*** (53.41 acres) is *optimally* suited for an ***Innovative and Alternative*** (*I/A*) **Elevated Sand Mound** OWTDS-Septic with an **Advanced Treatment Unit (ATU, PSN3 standard)** *in the most* favorable landform (*to be determined based on future building location, approximate* elevations of 36 to 37 feet are *best case scenario*) with the greatest groundwater draw-down and proximity to the effective deep, canal-sized, Tax Ditch (Wharton's Branch, 2 prongs on property). Site Evaluation by way of Wet Season Testing via Observation Wells or *Rural Area* (> 10.0 acres and OWTDS > 100 feet from property lines)/*Formal* Waiver ***required***.

PSN3 Advanced Treatment is required by the State of Delaware Department of Natural Resources and Environmental Control (DNREC) Pollution Control Strategy Regulations for the **Inland Bays Watershed** (non, near-term sewer district). The OWTDS areas are illustrated on the attached **Plot Drawing** which was adapted from a True North Land Surveying, Inc. *Subdivision* and *Lot Line Adjustment* Survey Plan *emailed* 05/10/2019. Following the receipt of individual Tax Map numbers and a Recorded Subdivision Plan, the next step to proceed with the DNREC filing of Site Evaluation(s) to site OWTDS-Septic would be to authorize the work scope based on: **1)** Typical soils work utilizing soil morphology (redoximorphic characteristics to determine limiting zone); or **2)** Perform wet season testing via observation wells of a future water year (December 01 to May 15) to prove the seasonal high water table/ limiting zone based on weekly measurements of groundwater fluctuations to quantify groundwater draw-down to local and regional ditches (effective drainage features); or **3)** Conduct a *Rural Area* (> 10.0 acres and OWTDS > 100 feet from property lines)/ *Formal* Waiver (where noted on Plot Drawing), which is subject to DNREC review/ approval and open to a Public comment period. Upon approval, the reports would be mailed by DNREC to the Deeded property owner(s). Additionally, upon approval, the site documentation becomes public information. In the meantime, this letter is provided for planning purposes, Sussex County *Planning and Zoning* review, and pertinent site planning/ financial transactions. Final Regulatory authority in these matters rests with DNREC.

Lāf P. Erickson (Class D Site Evaluator and A Percolation Tester # 2460) of Atlantic Resource Management, Inc is licensed by DNREC to conduct Site Evaluations for the siting of On-site Wastewater Treatment and Disposal Systems (OWTDS-Septic). Please contact me should you need additional information or if you have any questions, 302-539-2029.

Sincerely,
For Atlantic Resource Management, Inc.

Lāf P. Erickson
Soil Scientist, DNREC Class A/D # 2460 - CPSS/SC # 327701



PARCEL SIZE:	107 ACRES ±
SURVEYED BY:	ONLINE TAXMAP
DRAWN BY:	ARM, INC
CHECKED BY:	L. ERICKSON
JOB #:	120-DS19-SR
SCALE:	1" = 200'
TAX MAP:	2-33-14.00-10.00
DATE:	JUNE 24, 2019

SHEET NO: 1

ATLANTIC RESOURCE MANAGEMENT, INC.

Post Office Box 869
Ocean View, DE 19970

(302) 539-2029
Fax: (302) 539-4601

DE@atlanticresource.net

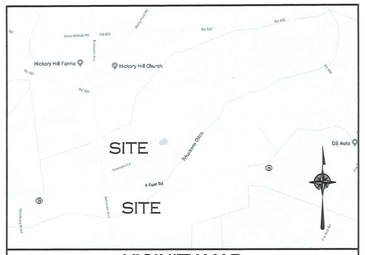
ENVIRONMENTAL CONSULTANTS

TITLE:

SOILS RECONNAISSANCE FOR OWTDS - SEPTIC

PROJECT:

THE TIMMONS PROPERTY



VICINITY MAP
1" = 2,000' ±

PROPERTY LINE TABLE		
LINE	BEARING	DISTANCE
L1	N 81°11'15" E	10.13'
L2	N 67°45'26" E	224.07'
L3	N 63°04'04" E	99.81'
L4	N 41°23'05" E	113.93'
L5	N 58°21'47" E	84.30'
L6	N 42°11'23" E	93.88'
L7	N 59°51'32" E	329.21'
L8	N 51°06'19" E	112.93'
L9	N 60°47'22" E	166.89'
L10	N 39°10'18" E	225.24'
L11	N 13°04'56" W	110.13'
L12	N 00°39'53" E	164.53'
L13	S 00°39'53" W	135.93'
L14	N 78°29'23" W	89.90'
L15	N 21°53'24" W	175.01'
L16	N 21°53'24" W	91.99'
L17	S 05°40'03" E	41.77'
L18	N 18°03'04" W	15.04'
L19	S 67°52'46" W	175.00'
L20	S 67°15'16" W	87.44'
L21	S 67°15'16" W	87.50'
L22	N 09°46'38" W	23.11'
L23	N 38°22'07" E	21.15'
L24	N 58°15'36" E	55.69'
L25	N 66°45'06" E	104.95'
L26	N 69°33'22" E	146.58'
L27	N 08°00'46" W	2.00'
L28	S 81°59'14" W	23.00'
L29	N 59°21'10" W	12.81'
L30	S 81°59'14" W	29.00'
L31	S 08°00'46" E	9.98'
L32	N 57°22'01" E	84.86'
L33	N 81°59'14" E	13.00'
L34	N 08°00'46" W	30.00'
L35	S 08°00'46" E	2.02'
L36	N 81°59'14" E	28.00'
L37	S 59°21'10" E	6.40'
L38	S 08°00'46" E	24.00'
L39	S 82°01'00" W	18.38'

NOTES

TAX MAP: 2-33 - 14.00 - 10.00

1. TAX MAP: 2-33 - 14.00 - 10.00 IS CURRENTLY OWNED BY JOHN I. TIMMONS, TRUSTEE & RALPH A. TIMMONS JR., TRUSTEE, 25771 TIMMONS LANE, DAGSBORO, DE. 19939
   TAX MAP: 2-33 - 14.00 - 10.02 IS CURRENTLY OWNED BY RALPH A. TIMMONS JR. AND JUDITH A. TIMMONS, 25813 TIMMONS LANE, DAGSBORO, DE. 19939
2. DEED BOOK REF: 4950 / 257 (2-33 - 14.00 - 10.00)
   1975 / 242 (2-33 - 14.00 - 10.02)
3. PLAT REF: 129/1, 112/313, 83/260,1975/243
4. TAX MAP: 2 - 33 - 14.00 - 10.00
   NUMBER OF RESIDENTIAL LOTS: 2
   NUMBER OF AGRICULTURAL LOTS: 4 + RESIDUAL

AREAS:		
	LOT 4	0.95 ACRES±
	LOT 5	1.60 ACRES±
	PARCEL A	53.44 ACRES±
	PARCEL B	20.59 ACRES±
	PARCEL C	15.65 ACRES±
	PARCEL D	16.04 ACRES±
	RESIDUAL	53.41 ACRES±
	TOTAL	161.68 ACRES±

   TAX MAP: 2-33 - 14.00 - 10.02
   REVISED AREA: 1.92 ACRES±
5. ZONING: AR-1

SETBACKS:		
FRONT	=	40'
SIDE	=	15'
REAR	=	20'

6. PRESENT USE: AGRICULTURAL/RESIDENTIAL
   PROPOSED USE: AGRICULTURAL/RESIDENTIAL
7. PRIVATE WATER & SEWER WILL BE REQUIRED FOR PROPOSED LOTS.
8. CLASSIFICATION OF SURVEY: SUBURBAN
9. ALL ENTRANCES SHALL CONFORM TO DELDOT'S DEVELOPMENT COORDINATION MANUAL (DCM) AND SHALL BE SUBJECT TO ITS APPROVAL.
10. PARCEL A SHALL HAVE ACCESS FROM SCR 82 PER THE EXISTING ENTRANCES SHOWN HEREON. PARCEL C, PARCEL D AND RESIDUAL LANDS SHALL ACCESS FROM SR 26 PER THE EXISTING ENTRANCES SHOWN HEREON. LOT 4 AND PARCEL B SHALL HAVE ACCESS TO SR 26 VIA THE 50-FOOT WIDE INGRESS/EGRESS EASEMENT. LOT 5 SHALL HAVE SINGLE ACCESS FROM SCR 82, IN WHICH THE ENTRANCE SHALL BE ALONG THE WESTERN PROPERTY LINE. SHOULD ADDITIONAL LOTS EVER BE DEVELOPED FROM THE RESIDUAL LANDS, THE THE SINGLE ACCESS SHALL BE CONVERTED TO A COMBINED ACCESS.

    REVISED 2-33 - 14.00 - 10.02 SHALL HAVE ACCESS TO SR 82 VIA THE 50-FOOT WIDE INGRESS/EGRESS EASEMENT.
11. OTHER THAN SHOWN, THIS SURVEY PLAT DOES NOT VERIFY THE EXISTENCE OR NONEXISTENCE OF RIGHTS-OF-WAY OR EASEMENTS ON THIS PROPERTY. NO TITLE SEARCH WAS REQUESTED OR PERFORMED.
12. IF THE RESIDUAL LANDS OF THE APPLICANT ARE EVER DEVELOPED INTO A MAJOR SUBDIVISION, THEN THE ACCESS TO THE PARCELS CREATED BY THIS MINOR SUBDIVISION PLAN MAY BE REQUIRED TO BE FROM AN INTERNAL SUBDIVISION STREET.
13. SHRUBBERY, PLANTINGS, SIGNS AND/OR OTHER VISUAL BARRIERS THAT COULD OBSTRUCT THE SIGHT DISTANCE OF A DRIVER PREPARING TO ENTER THE ROADWAY ARE PROHIBITED WITHIN THE DEFINED DEPARTURE SIGHT TRIANGLE AREA TO BE ESTABLISHED. IF THE ESTABLISHED DEPARTURE SIGHT TRIANGLE AREA IS OUTSIDE THE RIGHT OF WAY OR PROJECTS ONTO AN ADJACENT PROPERTY OWNER'S LAND, A SIGHT EASEMENT SHOULD BE ESTABLISHED AND RECORDED WITH ALL AFFECTED PROPERTY OWNERS TO MAINTAIN THE REQUIRED SIGHT DISTANCE.
14. THE SPEED LIMIT FOR SCR 82 (BLACKBERRY ROAD) IS FIFTY (50) M.P.H. THE SPEED LIMIT FOR SCR 82 (HICKORY HILL ROAD) IS FIFTY (50) M.P.H. THE SPEED LIMIT FOR SCR 26 (NINE FOOT ROAD) IS FIFTY (50) M.P.H.
15. 7 MILE PROXIMITY TO HENLOPEN TID.

LEGEND

- CONCRETE MONUMENT FOUND
- IRON PIPE FOUND
- IRON ROD & CAP FOUND
- UNMARKED POINT
- IRON ROD & CAP SET
- UTILITY POLE
- EXISTING DITCH
- EX. PROPERTY LINE AND/OR RIGHT OF WAY LINE
- PROPERTY LINE CREATED PER THIS PLAT
- RESERVATION LINE CREATED PER THIS PLAT
- TAX DITCH EASEMENT LINE

0' 200' 400' 600'

LAND SURVEYOR CERTIFICATION

I, BRADLEY A. ABSHER, HEREBY CERTIFY THAT I AM A REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF DELAWARE, THAT THE INFORMATION SHOWN HEREON HAS BEEN PREPARED UNDER MY SUPERVISION, AND IN MY BEST KNOWLEDGE AND BELIEF REPRESENTS GOOD SURVEYING PRACTICES AS REQUIRED BY THE APPLICABLE LAWS OF THE STATE OF DELAWARE.

BRADLEY A. ABSHER — PROFESSIONAL LAND SURVEYOR # 735 — DATE 3/27/19

OWNER CERTIFICATION

I/WE, THE UNDERSIGNED, HEREBY CERTIFY TO THE OWNERSHIP OF THE PROPERTY DESCRIBED AND SHOWN ON THIS PLAN, THAT THE PLAN WAS MADE AT MY/OUR DIRECTION, AND THAT I/WE ACKNOWLEDGE THE SAME TO BE OUR ACT AND THAT I/WE DESIRE THE PLAN TO BE RECORDED ACCORDING TO LAW.

I CERTIFY THAT TITLE 17, SECTION 530 IS APPLICABLE TO THE PROPERTY DESCRIBED AND SHOWN ON THIS PLAN BY VIRTUE OF : THE SUBDIVIDED PARCEL OR PARCELS WILL BE TRANSFERRED TO A FAMILY MEMBER OR MEMBERS FOR PURPOSES OF USE AS A FAMILY MEMBER OR MEMBER'S PRINCIPAL RESIDENCE OR FARMLAND.

JOHN I. TIMMONS — DATE
CO-EXECUTOR

RALPH A. TIMMONS JR. — DATE
CO-EXECUTOR

NOTE:

FOR ANY NEW SUBDIVISION DEVELOPMENT LOCATED IN WHOLE OR IN PART WITHIN 300 FEET OF THE BOUNDARY OF LAND USED PRIMARILY FOR AGRICULTURAL PURPOSES, THE OWNER OF THE DEVELOPMENT SHALL PROVIDE IN THE DEED RESTRICTIONS AND ANY LEASES OR AGREEMENTS OF SALE FOR ANY RESIDENTIAL LOT OR DWELLING UNIT THE FOLLOWING NOTICE: "THIS PROPERTY IS LOCATED IN THE VICINITY OF LAND USED PRIMARILY FOR AGRICULTURAL PURPOSES ON WHICH NORMAL AGRICULTURAL USES AND ACTIVITIES HAVE BEEN AFFORDED THE HIGHEST PRIORITY USE STATUS. IT CAN BE ANTICIPATED THAT SUCH AGRICULTURAL USES AND ACTIVITIES MAY NOW OR IN THE FUTURE INVOLVE NOISE, DUST, MANURE AND OTHER ODORS. THE USE OF AGRICULTURAL CHEMICALS AND NIGHTTIME FARM OPERATIONS. THE USE AND ENJOYMENT OF THIS PROPERTY IS EXPRESSLY CONDITIONED ON ACCEPTANCE OF ANY ANNOYANCE OR INCONVENIENCE WHICH MAY RESULT FROM SUCH NORMAN AGRICULTURAL USES AND ACTIVITIES.

INGRESS/EGRESS LINE TABLE		
LINE	BEARING	DISTANCE
E1	S 10°05'24" E	400.30'
E2	N 82°01'00" E	50.03'
E3	N 10°05'24" W	401.16'
E4	N 07°51'44" W	315.99'
E5	N 67°36'26" E	145.37'
E6	N 67°36'26" E	219.05'
E7	S 76°29'23" E	98.17'
E8	N 44°22'54" E	289.58'
E9	N 43°01'19" E	115.80'
E10	N 19°09'56" W	56.53'
E11	S 43°01'19" W	141.58'
E12	S 44°22'54" W	258.99'
E13	N 76°29'23" W	111.37'
E14	S 67°36'26" W	235.16'
E15	S 67°36'26" W	185.00'
E16	S 21°53'24" E	10.00'
E17	S 05°40'03" E	41.77'
E18	S 07°51'44" E	304.00'

CURVE	RADIUS	ARC LENGTH	CHORD BEARING	CHORD LENGTH	DELTA ANGLE
EC1	200.00'	208.40'	N 73°56'46" E	197.36'	59°07'43"
EC2	150.00'	154.80'	S 73°56'46" W	148.02'	59°07'43"

TAX MAP #	2-33 - 14.00 - 10.00, 10.02
STATE	DELAWARE
COUNTY	SUSSEX
HUNDRED	DAGSBORO
TOWN	——
SUBDIVISION	——
LOT	——
DEED REF.	4950 / 257, 1975 / 242
PLAT REF.	MULTIPLE
DRAWN BY	CJP
DATE	01 / 24 / 19
REVISED	——
SCALE	1" = 150'
SURVEY #	DE - 05143

SUBDIVISION & LOT LINE ADJUSTMENT

OF THE LANDS OF

JOHN I. TIMMONS, TRUSTEE
RALPH A. TIMMONS JR., TRUSTEE

NINE FOOT ROAD, FRANKFORD, DE. 19945

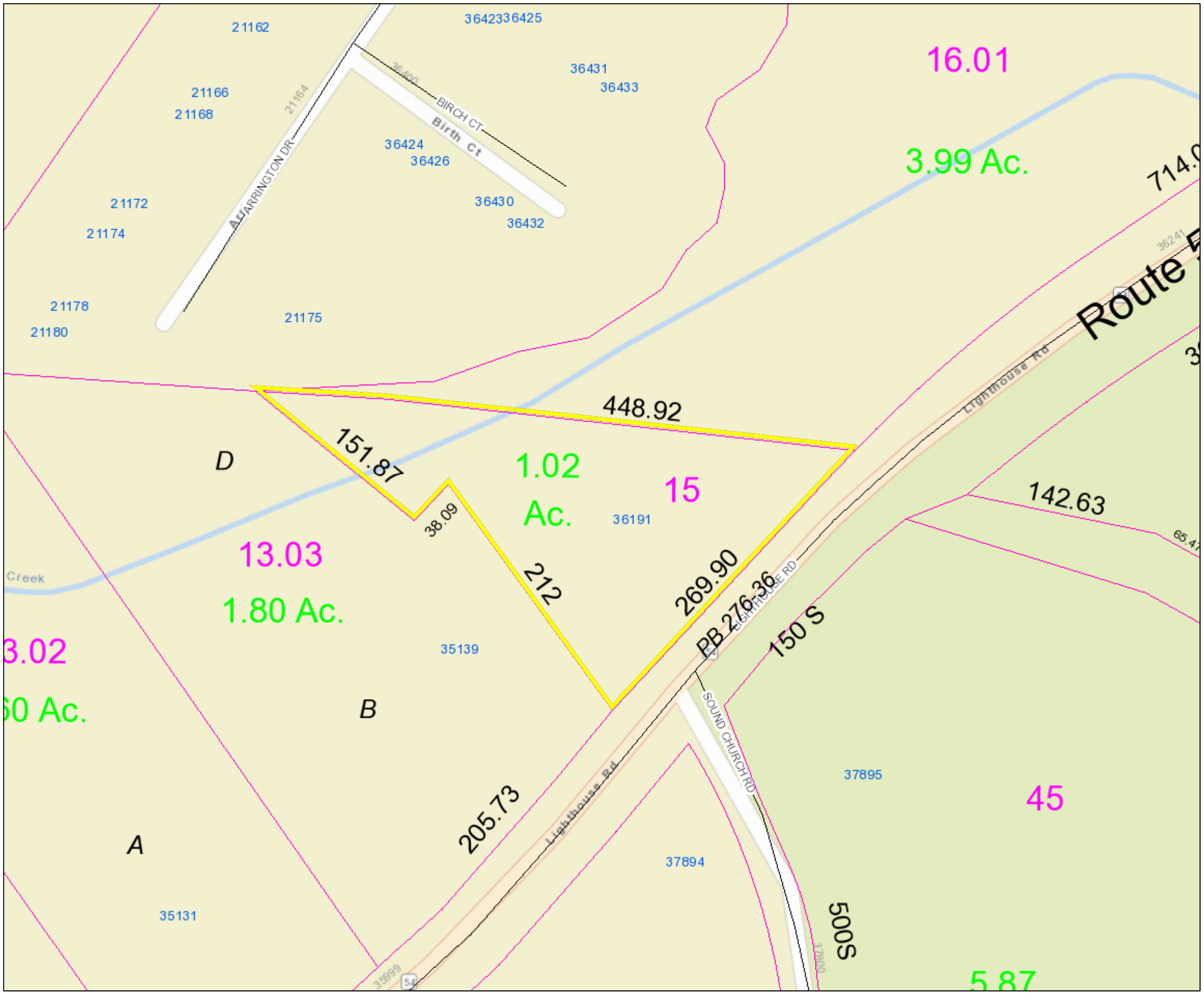
TRUE NORTH
LAND SURVEYING
118 ATLANTIC AVENUE, SUITE 202
OCEAN VIEW, DE 19970
DE: 302-539-2488
MD: 410-430-2092
FX: 302-539-2499
WEB: TRUENORTHLS.COM

Sussex County
DELAWARE
sussexcountyde.gov
302-855-7878 T
302-854-5079 F
JANELLE CORNWELL, AICP
DIRECTOR

PLANNING AND ZONING AND COUNTY COUNCIL INFORMATION SHEET
Planning Commission Public Hearing Date: July 25, 2019

Application:	CZ 1885 36191 DWB, LLC
Applicant/Owner:	36191 DWB, LLC 35089 Lighthouse Rd. Selbyville, DE 19975
Site Location:	36191 Lighthouse Rd., north side of Lighthouse Rd., approximately 850 feet west of Zion Church Rd.
Current Zoning:	AR-1 (Agricultural Residential District)
Proposed Zoning:	C-3 (Heavy Commercial District)
Comprehensive Land Use Plan Reference:	Coastal Area
Councilmatic District:	Mr. Rieley
School District:	Indian River School District
Fire District:	Roxana Fire District
Sewer:	Sussex County
Water:	Private, On-Site
Site Area:	1.015 acres +/-
Tax Map ID.:	533-19.00-15.00

Sussex County



PIN:	533-19.00-15.00
Owner Name	BRASURE DARRYL W
Book	3697
Mailing Address	35089 LIGHTHOUSE RD
City	SELBYVILLE
State	DE
Description	NW/LIGHTHOUSE RD &
Description 2	SOUND CHURCH RD
Description 3	1.02 AC
Land Code	

polygonLayer

Override 1

polygonLayer

Override 1

Tax Parcels

911 Address

Streets

County Boundaries

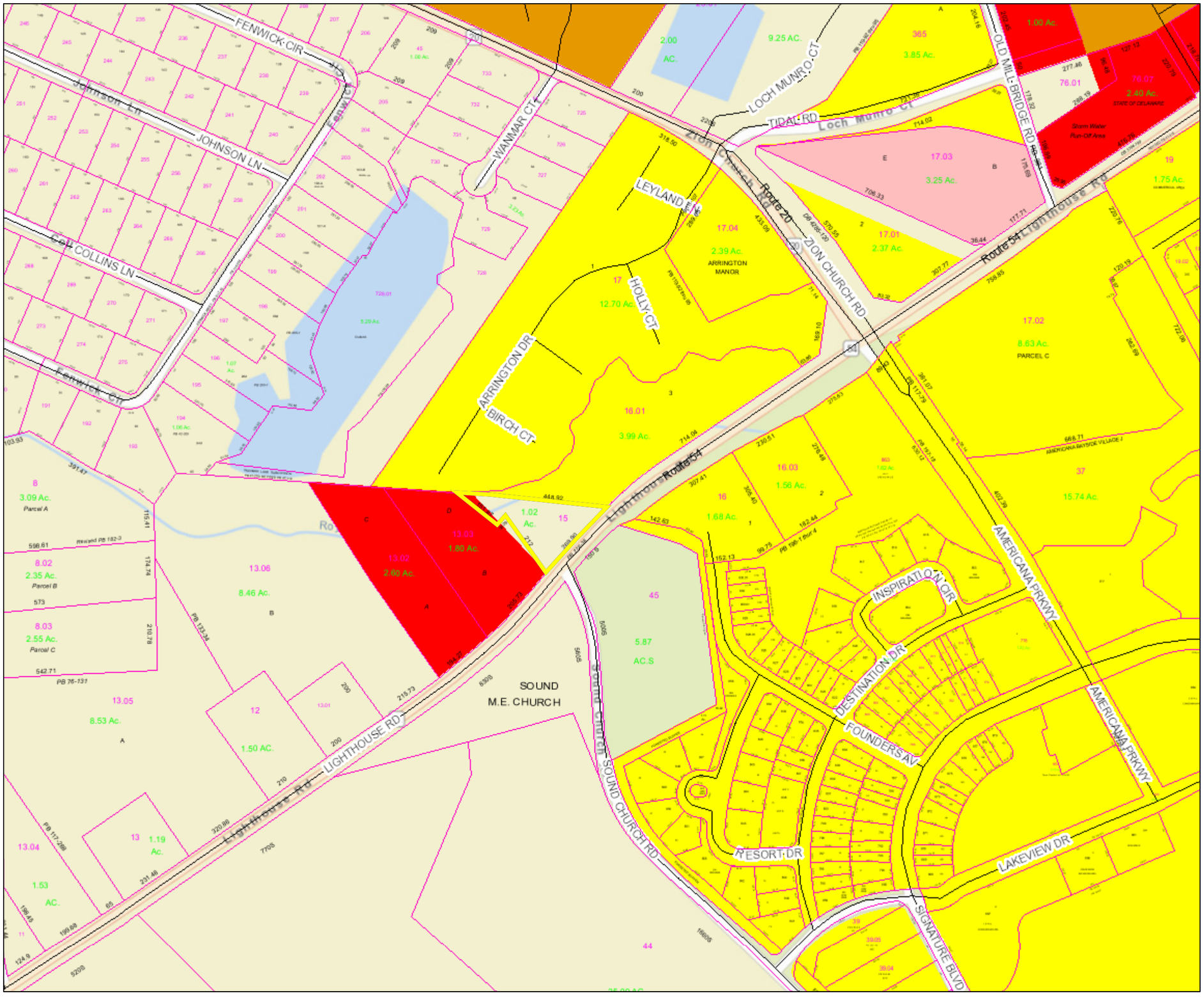
1:1,128

0 0.0125 0.025 0.05 mi

0 0.02 0.04 0.08 km

June 11, 2019

Sussex County



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Land Code	

polygonLayer
- Override 1

polygonLayer
- Override 1
- Tax Parcels
- Streets

Zoning
- Agricultural Residential - AR-1
- Agricultural Residential - AR-2
- Medium Residential - MR
- General Residential - GR
- High Density Residential - HR-1
- High Density Residential - HR-2
- Vacation, Retire, Resident - VRP
- Neighborhood Business - B-1
- General Commercial - C-1
- Commercial Residential - CR-1
- Marine - M
- Limited Industrial - LI-1
- Limited Industrial - LI-2
- Heavy Industrial - HI-1

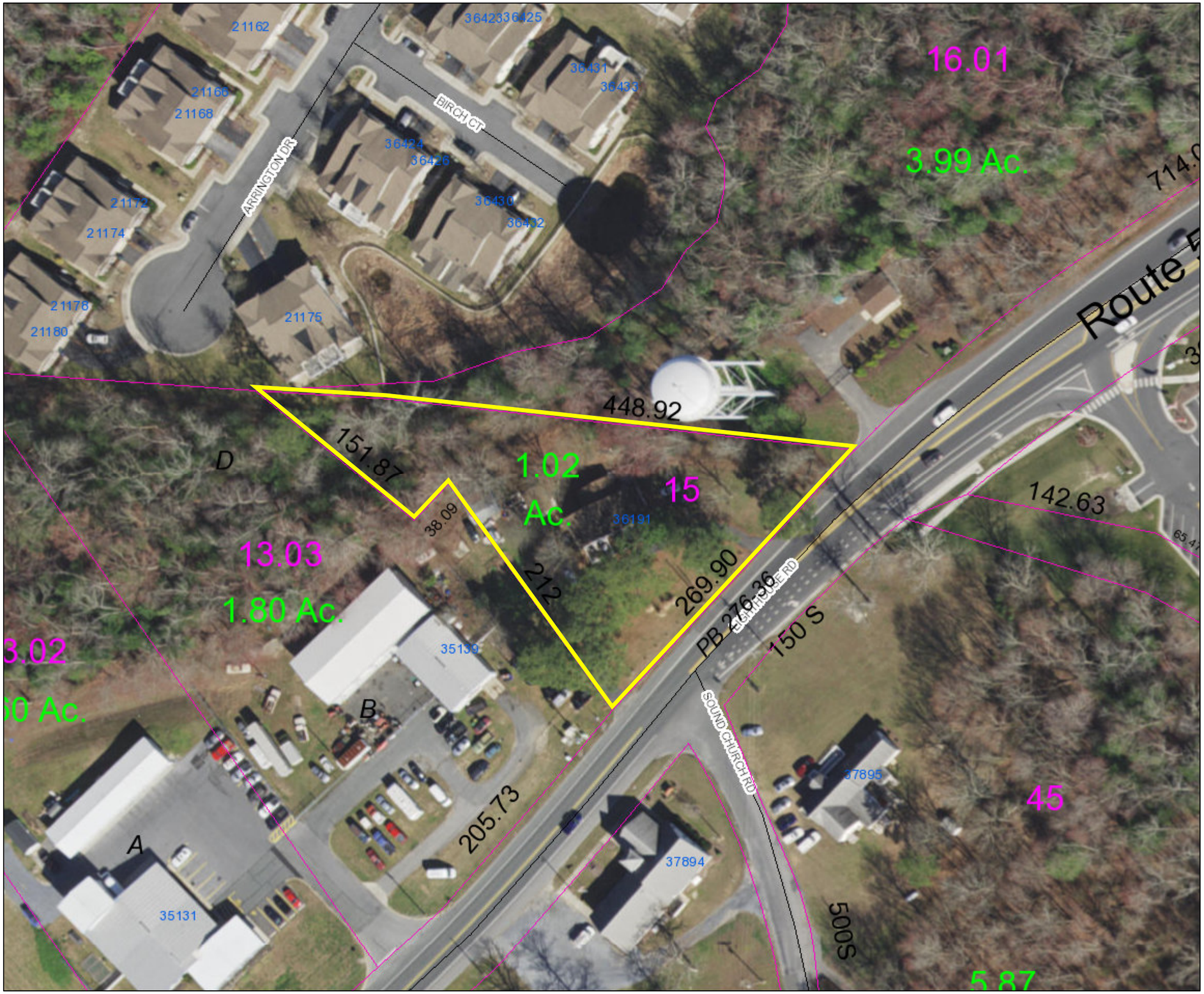
1:4,514

0 0.05 0.1 0.2 mi

0 0.075 0.15 0.3 km

June 11, 2019

Sussex County



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polygonLayer

Override 1

polygonLayer

Override 1

Tax Parcels

911 Address

Streets

County Boundaries

June 11, 2019

1:1,128

0 0.0125 0.025 0.05 mi

0 0.02 0.04 0.08 km

PLANNING & ZONING
JANELLE M. CORNWELL, AICP
DIRECTOR
(302) 855-7878 T
(302) 854-5079 F

Sussex County
DELAWARE
sussexcountyde.gov

RECEIVED
FEB 26 2019
SUSSEX COUNTY
PLANNING & ZONING

Service Level Evaluation Request Form

This form **shall** be submitted to the Planning and Zoning Office and a response **shall** be received back from DelDOT prior to the applicant being able to submit an application to the Planning and Zoning Office.

Date: 2-26-19

Site Information:

Site Address/Location: 38079 Bayard Road Frankford, DE 19945

Tax Parcel Number: 533-19.00-15.00
Current Zoning: AR
Proposed Zoning: C3
Land Use Classification: ESDD

Proposed Use(s):
Auto Repair or Office

Square footage of any proposed buildings or number of units: see attached survey & Deed

Applicant Information:

Applicant's Name: DWB LLC
Applicant's Address: c/o Tim Willard 26 The Circle
City: Georgetown, State: DE Zip Code: 19947

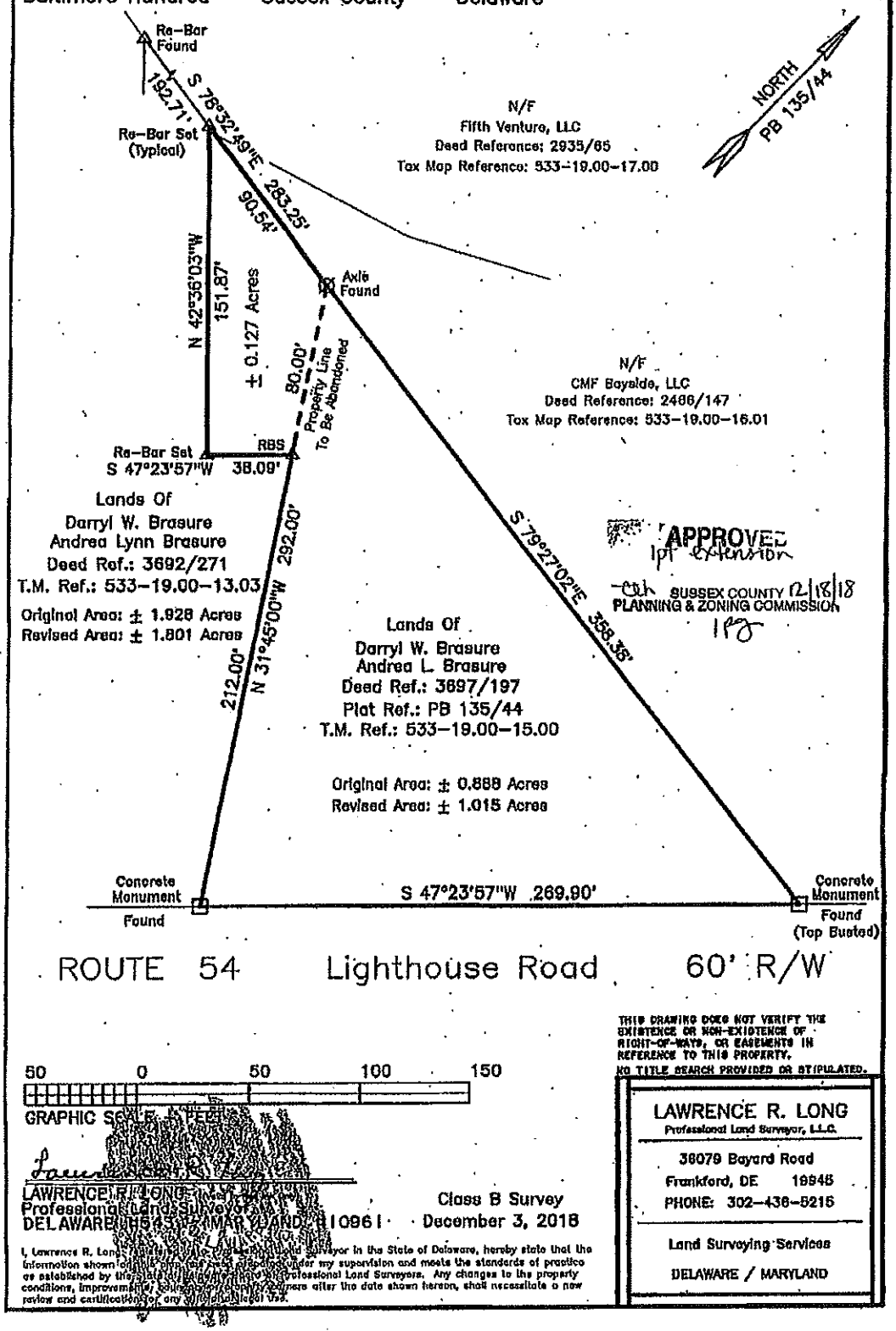
Applicant's Phone Number: 302-856-7777
Applicant's e-mail address: tim@fwsslaw.com

MADE CONTACT
3/25/2019 11:33 AM

Document# 201800046291 BK: 276 PG: 36
Recorder of Deeds, Scott Dailey On 12/18/2018 at 10:49:40 AM Sussex County, DE
Doc Surcharge Paid

533 19.00 15.00

Survey For Lot Extension: A Portion Of The Lands Of – [SURVEY BOUNDARY PLAN]
Darryl W. Breasure & Andrea Lynn Brasure To Be Conveyed To And Made A Part Of
The Lands Of Darryl W. Brasure & Andrea L. Brasure
Baltimore Hundred Sussex County Delaware



THIS DRAWING DOES NOT VERIFY THE EXISTENCE OR NON-EXISTENCE OF RIGHT-OF-WAYS, OR EASEMENTS IN REFERENCE TO THIS PROPERTY.
NO TITLE SEARCH PROVIDED OR STIPULATED.

50 0 50 100 150
GRAPHIC SCALE IN FEET

LAWRENCE R. LONG
Professional Land Surveyor
DELAWARE #S543 MARYLAND #10961

Class B Survey
December 3, 2018

I, Lawrence R. Long, a Professional Land Surveyor in the State of Delaware, hereby state that the information shown hereon is correct to the best of my knowledge and was prepared under my supervision and meets the standards of practice as established by the State of Delaware Board of Professional Land Surveyors. Any changes to the property conditions, improvements, boundaries or property corners after the date shown hereon, shall necessitate a new review and certification of any affected lines.

LAWRENCE R. LONG
Professional Land Surveyor, L.L.C.
38079 Bayard Road
Frankford, DE 19945
PHONE: 302-436-5215
Land Surveying Services
DELAWARE / MARYLAND

Document# 201800046294 BK: 4993 PG: 267
Recorder of Deeds, Scott Dailey On 12/18/2018 at 10:56:29 AM Sussex County, DE
Consideration: $0.00 County/Town: $0.00 State: $0.00 Total: $0.00
Doc Surcharge Paid Town: SUSSEX COUNTY

Tax Map and Parcel #: 533-19.00-15.00 &
p/o 533-19.00-13.03

PREPARED BY:
TOMASETTI LAW LLC
1100 Coastal Hwy., Unit 3
Fenwick Island, DE 19944
File No. 518-362/DS

RETURN TO:
36191 DWB, LLC,
35089 Lighthouse Road
Selbyville, DE 19975

THIS DEED, made this 12th day of December, 2018,

- BETWEEN -

DARRYL W. BRASURE and **ANDREA L. BRASURE**, husband and wife, of 35089 Lighthouse Road, Selbyville, DE 19975, parties of the first part,

- AND -

36191 DWB, LLC, A DELAWARE LIMITED LIABILITY COMPANY, of 35089 Lighthouse Road, Selbyville, DE 19975, party of the second part.

WITNESSETH: That the said parties of the first part, for and in consideration of the sum of **Ten and 00/100 Dollars ($10.00)**, lawful money of the United States of America, the receipt whereof is hereby acknowledged, hereby grant and convey unto the party of the second part, and its heirs and assigns, in fee simple, the following described lands, situate, lying and being in Sussex County, State of Delaware, :

PARCEL #1- TAX MAP: P/O 533-19.00-13.03

All that certain lot, piece or parcel of land, situate, lying and being northerly of the northerly right-of-way of State Route 54, Baltimore Hundred, Sussex County, State of Delaware, and being more particularly described in a survey prepared by Lawrence R. Long, P.LS. dated

Document# 201800046294 BK: 4993 PG: 268
Recorder of Deeds, Scott Dailey On 12/18/2018 at 10:56:29 AM Sussex County, DE
Doc Surcharge Paid

December 3, 2018, as follows to wit:

Commencing at a concrete monument situate on the northerly right-of-way of State Route 54 (known locally as Lighthouse Road – having a width of 60'), said point of commencement being a corner for the lands of Darryl W. Brasure & Andrea Lynn Brasure (Deed Reference: 3692/271) and also being a corner for the lands of Darryl W. Brasure and Andrea L. Brasure (Deed Reference: 3697/197); thence with the common property line of Brasure, N 31° 45' 00" W, 212.00 feet to a re-bar set, said re-bar being the Point Of Beginning for this lot, piece or parcel of land.

Beginning at a re-bar set on the common property line of Brasure, thence with two new lines into the Lands of Darryl W. Brasure & Andrea Lynn Brasure (Deed Reference: 3692/271) the following: 1) S 47° 23' 57" W, 38.09 feet to a re-bar set; 2) N 42° 36' 03" W, 151.87 feet to a re-bar set on the property line of the lands of Brasure and being a point on the line of the lands of Fifth Venture, LLC; thence with the lands of Brasure, the lands of Fifth Venture, LLC part of the way and with the lands of CMF Bayside, LLC, S 78° 32' 49" E, 90.54 feet to an axle found, said found axle being a corner for the lands of CMF Bayside, LLC, a corner for the lands of Darryl W. Brasure & Andrea Lynn Brasure (Deed Reference: 3692/271) and a corner for the lands of Darryl W. Brasure & Andrea L. Brasure (Deed Reference: 3697/197); thence with the common property line of Brasure, S 31° 45' 00" E, 80.00 feet home to the Point Of Beginning, said to contain 0.127 acres more or less.

BEING a part of the same lands conveyed to Darryl W. Brasure and Andrea Lynn Brasure, husband and wife, by deed of Darryl W. Brasure, dated July 14, 2009 and recorded in the office of the Recorder of Deeds, in and for Sussex County, Georgetown, Delaware in Deed Book 3692 page 271.

PARCEL #2 – TAX MAP: 533-19.00-15.00

ALL THAT CERTAIN LOT, piece of land or parcel of land lying and being situated in Baltimore Hundred, Sussex County, Delaware, and being more particularly bounded and described according to a survey made by C. Kenneth Carter & Associates, in August, 1978, and being further described in a more recent survey made by Lawrence R. Long, dated July 3, 2009 recorded in Plot Book 135, Page 44 as follows, to wit:

BEGINNING at a concrete monument set in the Westerly right-of-way line of State Road No. 54, marking a corner of the parcel herein conveyed and lands now or formerly of CMF Bayside, L.L.C.; thence by the aforesaid right-of-way line, South 47° 23' 59" West 269.90 feet to another concrete monument marking a corner of the parcel herein conveyed and lands now or formerly of Darryl W. Brasure; thence by the division line between the parcel herein conveyed and the aforesaid lands now or formerly of Darryl W. Brasure, North 31° 45' 00" West 292.00 feet to a concrete monument set (being at a corner previously marked by an iron pipe found); thence by the division line between the parcel herein conveyed and the aforesaid lands now or formerly of CMF Bayside, L.L.C, South 79° 27' 02" East 358.38 feet to the point and place of beginning, containing by computation 0.888 acres more or less.

Document# 201800046294 BK: 4993 PG: 269
Recorder of Deeds, Scott Dailey On 12/18/2018 at 10:56:29 AM Sussex County, DE
Doc Surcharge Paid

BEING the same land conveyed unto Darryl W. Brasure and Andrea L. Brasure, husband and wife, by deed of Matthew Chiasson, Dale Baker, Mannde A. Dugan, Bradford D. Chiasson, Heirs of the Estate of Edward J. Chiasson, dated July 20, 2009, and filed for record in the Office of the Recorder of Deeds, in and for Sussex County, State of Delaware, in Book 3697, Page 197.

Parcel #1 and Parcel #2 are being combined to create the new Parcel as set forth below in the metes and bounds description for Parcel #3, with Parcel #1 being a lot extension and addition to Parcel #2 and to be known only as Tax Map 533-19.00-15.00, as reflected in a Survey for Lot Extension prepared by Lawrence R. Long, dated December 3, 2018 and recorded in Plot Book 276, Page 36 and being described below as Parcel #3, being a combination of Parcel #1 and Parcel #2:

PARCEL #3- Being new TAX MAP 533-19.00-15.00 after the addition of Parcel #1 to Parcel #2

All that certain lot, piece or parcel of land, situate, lying and being on the northerly right-of-way of State Route 54, Baltimore Hundred, Sussex County, State of Delaware, and being more particularly described in a survey prepared by Lawrence R. Long, P.LS. dated December 3, 2018, as recorded in the Office of the Recorder of Deeds in Plot Book 276, Page 36 as follows to wit:

Beginning at a concrete monument situate on the northerly right-of-way of State Route 54 (known locally as Lighthouse Road – having a width of 60'), said point of beginning being a corner for the lands of Darryl W. Brasure & Andrea Lynn Brasure (Deed Reference: 3692/271) and also being a corner for the lands herein described; thence with the property lines of Darryl W. Brasure and Andrea Lynn Brasure the following three courses and distances: 1) N 31° 45' 00" W, 212.00 feet to a re-bar set; 2) S 47° 23' 57" W, 38.09 feet to a re-bar set; 3) N 42° 36' 03" W, 151.87' to a re-bar set at the corner of Brasure and being a point on the line of the lands of Fifth Venture, LLC; thence with the lands of Fifth Venture, LLC part of the way and with the lands of CMF Bayside, LLC, S 78° 32' 49" E, a total of 90.54 feet to an axle found; thence continuing with the lands of CMF Bayside, LLC, S 79° 27' 02" E, 358.38 feet to a concrete monument found (top busted), said concrete monument being a corner for the lands herein described, a corner for the lands of CMF Bayside, LLC and being a point on the northerly right-of-way of the aforementioned State Route 54; thence with the northerly right-of-way of State Route 54, S 47° 23' 57" W, 269.90 feet, home to the Point Of Beginning, said to contain 1.015 acres more or less.

SUBJECT to any and all restrictions, reservations, conditions, easements and agreements of record in the Office of the Recorder of Deeds in and for Sussex County, Delaware.

Document# 201800046294 BK: 4993 PG: 270
Recorder of Deeds, Scott Dailey On 12/18/2018 at 10:56:29 AM Sussex County, DE
Doc Surcharge Paid

IN WITNESS WHEREOF, the parties of the first part have hereunto set their hands and seals the day and year first above written.

Signed, Sealed and Delivered
in the presence of:

AS TO BOTH

(SEAL)
DARRYL W. BRASURE

(SEAL)
ANDREA L. BRASURE

STATE OF DELAWARE, COUNTY OF SUSSEX: to-wit

BE IT REMEMBERED, that on December 12, 2018, personally came before me, the subscriber, DARRYL W. BRASURE and ANDREA L. BRASURE, husband and wife, parties of the first part to this Indenture, known to me personally to be such, and acknowledged this Indenture to be their act and deed.

GIVEN under my Hand and Seal of ~~Office~~ the day and year aforesaid.

Notary Public

My Commission Expires: none

RAYMOND E. TOMASETTI, JR.
ATTORNEY AT LAW
STATE OF DELAWARE
Admitted 1980

STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION
800 BAY ROAD
P.O. BOX 778
DOVER, DELAWARE 19903

JENNIFER COHAN
SECRETARY

March 22, 2019

Ms. Janelle Cornwell, Director
Sussex County Planning & Zoning
P.O. Box 417
Georgetown, DE 19947

Dear Ms. Cornwell:

The Department has completed its review of a Service Level Evaluation Request for the **DWB, LLC** rezoning application, which we received on February 26, 2019. This application is for a 1.02-acre parcel (Tax Parcel: 533-19.00-15.00). The subject land is located on the northwest side of Lighthouse Road (Sussex Road 58), opposite Sound Church Road (Sussex Road 394A). The subject land is currently zoned as AR-1 (Agricultural Residential), and the applicant is seeking to rezone the land to C-3 (Heavy Commercial) to use the facility for auto repair or as office space.

Per the 2017 Delaware Vehicle Volume Summary, the annual average and summer average daily traffic volumes along the segment of Lighthouse Road where the subject land is located, which is from West Line Road (Sussex Road 396) to Delaware Route 1, are 7,384 and 9,503 vehicles per day, respectively.

Our volume-based criteria for requiring a traffic impact study (TIS), addressed in Section 2.2.2.1 of the Development Coordination Manual, are that a development generates more than 500 trips per day or 50 trips during a weekly peak hour. While it seems that the above criteria could be met, we presently cannot predict the site's trip generation with enough accuracy to make a TIS useful. Thus, we recommend that this rezoning application be considered without a TIS and that the need for a TIS be evaluated when a subdivision or land development plan is proposed.

DelDOT

Please contact Mr. Claudy Joinville, at (302) 760-2124, if you have questions concerning this correspondence.

Sincerely,

T. William Brockenbrough, Jr.

T. William Brockenbrough, Jr.
County Coordinator
Development Coordination

TWB:cjm
cc: Constance C. Holland, Coordinator, Cabinet Committee on State Planning Issues
DWB, LLC, Applicant
J. Marc Coté, Assistant Director, Development Coordination
Gemez Norwood, South District Public Works Manager, Maintenance and Operations
Susanne Laws, Sussex County Subdivision Coordinator, Development Coordination
Derek Sapp, Subdivision Manager, Development Coordination
Brian Yates, Subdivision Manager, Development Coordination
John Andrescavage, Subdivision Manager, Development Coordination
Troy Brestel, Project Engineer, Development Coordination
Claudy Joinville, Project Engineer, Development Coordination

STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION
800 BAY ROAD
P.O. BOX 778
DOVER, DELAWARE 19903

JENNIFER COHAN
SECRETARY

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Sussex County Planning & Zoning
P.O. Box 417
Georgetown, DE 19947

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Sincerely,

T. William Brockenbrough, Jr.
County Coordinator
Development Coordination

TWB:cjm
cc: Constance C. Holland, Coordinator, Cabinet Committee on State Planning Issues
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Troy Brestel, Project Engineer, Development Coordination
Claudy Joinville, Project Engineer, Development Coordination

PLANNING & ZONING
JANELLE M. CORNWELL, AICP
DIRECTOR
(302) 855-7878 T
(302) 854-5079 F

Sussex County
DELAWARE
sussexcountyde.gov

Memorandum

To: Sussex County Planning Commission Members
From: Janelle Cornwell, AICP, Planning & Zoning Director
CC: Vince Robertson, Assistant County Attorney and applicant
Date: July 18, 2019
RE: Staff Analysis for CZ 1885 36191 DWB, LLC

This memo is to provide background and analysis for the Planning Commission to consider as a part of application CZ 1885 36191 DWB, LLC to be reviewed during the July 25, 2019 Planning Commission Meeting. This analysis should be included in the record of this application and is subject to comments and information that may be presented during the public hearing.

The request is for a Change of Zone for parcel 533-19.00-15.00 to allow for a change from AR-1 (Agricultural Residential District) to C-3 (Heavy Commercial District) to be located at 36191 Lighthouse Rd. The size of the property is 1.015 ac. +/-.

The 2018/2019 Sussex County Comprehensive Plan Update (Comprehensive Plan) provides a framework of how land is to be developed. As part of the Comprehensive Plan a Future Land Use Map is included to help determine how land should be zoned to ensure responsible development. The Future Land Use Map indicates that the properties have the land use designation Coastal Area.

The surrounding land use to the north, south, east and west is Coastal Area. The Coastal Areas land use designation recognizes that "a range of housing types should be permitted in Coastal Areas, including single-family homes, townhouses, and multi-family units. Retail and office uses are appropriate but larger shopping centers and office parks should be confined to selected locations with access along arterial roads. Appropriate mixed-use development should also be allowed. In doing so, careful mixtures of homes with light commercial, office and institutional uses can be appropriate to provide for convenient services and to allow people to work close to home. Major new industrial uses are not proposed in these areas." C-3 is a zoning district that may be considered in the Coastal Area land use.

The property is zoned AR-1 (Agricultural Residential District). The properties to the north and south are zoned MR (Medium-Density Residential District - Residential Planned Community) and AR-1 (Agricultural Residential District). The properties to the east are zoned C-1 General Commercial District). The properties to the west are MR-RPC (Medium-Density Residential District - Residential Planned Community). There are no known Conditional Use in the area.

Based on the analysis of the land use, surrounding zoning and uses, the Change of Zone to allow a change from AR-1 (Agricultural Residential District) to C-3 (Heavy Commercial District) would be considered consistent with the land use, area zoning and uses.

SUSSEX COUNTY ENGINEERING DEPARTMENT
UTILITY PLANNING DIVISION
C/U & C/Z COMMENTS

TO: **Janelle Cornwell**

REVIEWER: **Chris Calio**

DATE: **6/20/2019**

APPLICATION: **CZ 1885 36191 DWB, LLC**

APPLICANT: **36191 DWB, LLC**

FILE NO: **OM-4.05**

TAX MAP & PARCEL(S): **533-19.00-15.00**

LOCATION: **36191 Lighthouse Road, north side of Lighthouse Road, approximately 850 feet west of Zion Church Road.**

NO. OF UNITS: **Upzone from AR-1 to C-3**

GROSS ACREAGE: **1.015**

SYSTEM DESIGN ASSUMPTION, MAXIMUM NO. OF UNITS/ACRE: **4**

SEWER:

(1). Is the project in a County operated and maintained sanitary sewer and/or water district?

Yes ☒ No ☐

a. If yes, see question (2).
b. If no, see question (7).

(2). Which County Tier Area is project in? **Tier 1**

(3). Is wastewater capacity available for the project? **Yes, As Proposed** If not, what capacity is available? **N/A**.

(4). Is a Construction Agreement required? **Yes** If yes, contact Utility Engineering at (302) 855-7717.

(5). Are there any System Connection Charge (SCC) credits for the project? **No** If yes, how many? **N/A**. Is it likely that additional SCCs will be required? **Yes** If yes, the current System Connection Charge Rate is **Unified $6,360.00** per EDU. Please contact **Noell Warren** at **302-855-7719** for additional information on charges.

(6). Is the project capable of being annexed into a Sussex County sanitary sewer district? **N/A**

☐ Attached is a copy of the Policy for Extending District Boundaries in a Sussex County Water and/or Sanitary Sewer District.

(7). Is project adjacent to the Unified Sewer District? **No**

(8). Comments: **If the current single-family home is disconnected from the sanitary sewer and demolished that would result in a credit of 1.0 EDU. If the final commercial development on this parcel exceeds 4.0 EDU's a lateral upgrade to 8" shall be necessary**

(9). Is a Sewer System Concept Evaluation required? **No**

(10). Is a Use of Existing Infrastructure Agreement Required? **Yes**

UTILITY PLANNING APPROVAL:

John J. Ashman
Director of Utility Planning

Xc: Hans M. Medlarz, P.E.
Jayne Dickerson
Noell Warren

Sussex conservation district
PREPARE. PROTECT. PRESERVE.

RECEIVED
JUL 17 2019
SUSSEX COUNTY
PLANNING & ZONING

MEMORANDUM

TO: Janelle M. Cornwell

FROM: Debbie Absher, Director of Ag Programs

SUBJECT: LUPA

DATE: July 17, 2019

Attached you will find the comments for the following proposed zoning changes:

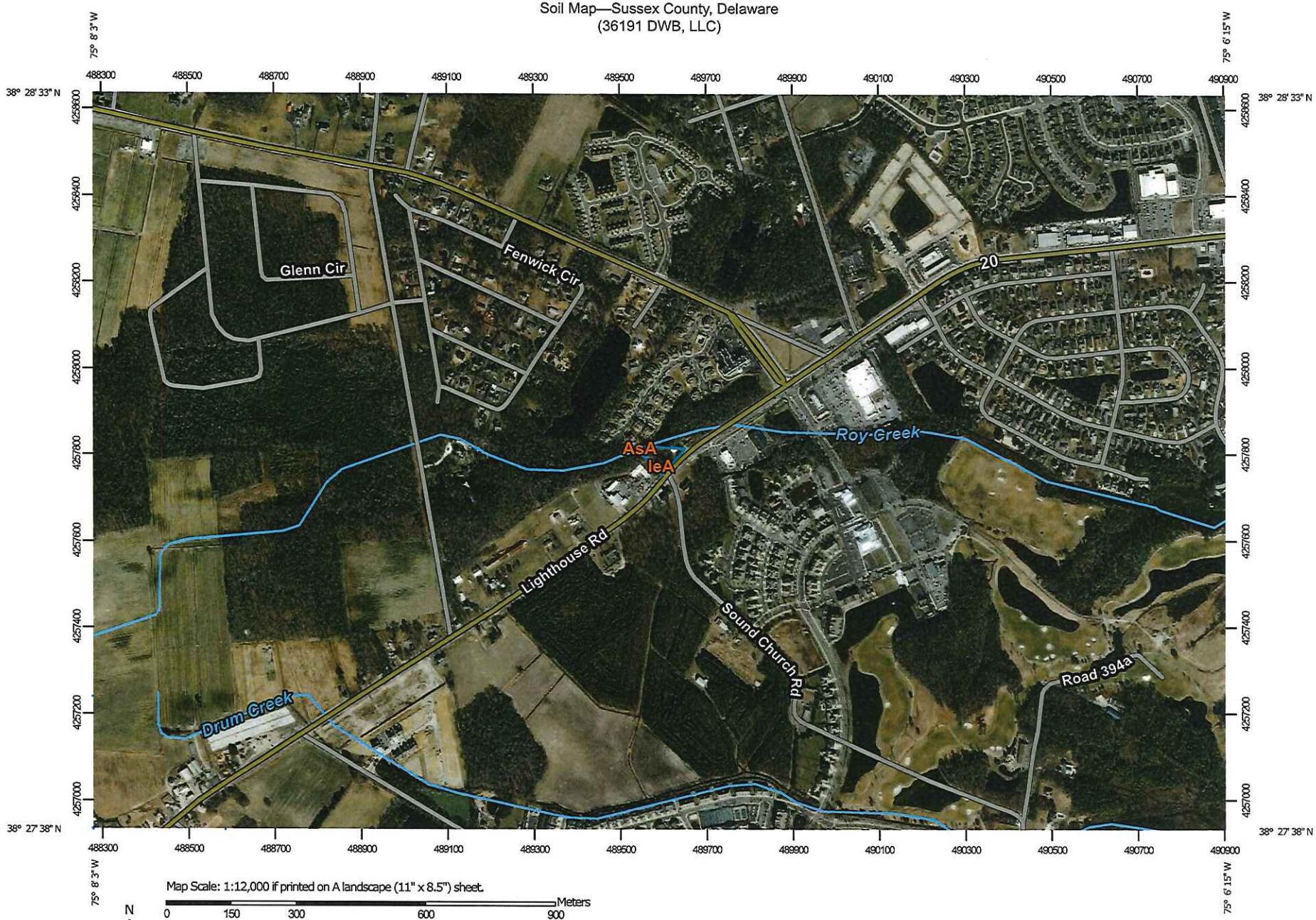
- 2018-34 – Keastone Bay
- 2019-10 – Lands of Timmons
- CZ 1885 – 36191 DWB, LLC

If you have any questions, I can be reached at 856-3990, ext. 3.

BJH
Enclosures

CZ 1885
TM #533-19.00-15.00
36191 DWB, LLC

Soil Map—Sussex County, Delaware
(36191 DWB, LLC)



Map Scale: 1:12,000 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 150 300 600 900

Feet: 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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

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

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

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

Soil Survey Area: Sussex County, Delaware
Survey Area Data: Version 19, Sep 14, 2018

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

Date(s) aerial images were photographed: Nov 21, 2018—Mar 12, 2019

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AsA	Askecksy loamy sand, 0 to 2 percent slopes	0.0	4.0%
IeA	Ingleside loamy sand, 0 to 2 percent slopes	0.9	96.0%
Totals for Area of Interest		**1.0**	**100.0%**

Selected Soil Interpretations

This report allows the customer to produce a report showing the results of the soil interpretation(s) of his or her choice. It is useful when a standard report that displays the results of the selected interpretation(s) is not available.

When customers select this report, they are presented with a list of interpretations with results for the selected map units. The customer may select up to three interpretations to be presented in table format.

For a description of the particular interpretations and their criteria, use the "Selected Survey Area Interpretation Descriptions" report.

Report—Selected Soil Interpretations

Selected Soil Interpretations–Sussex County, Delaware							
Map symbol and soil name	Pct. of map unit	ENG - Dwellings W/O Basements		ENG - Dwellings With Basements		ENG - Septic Tank Absorption Fields (DE)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AsA—Askecksy loamy sand, 0 to 2 percent slopes							
Askecksy, undrained	45	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Filtering capacity	1.00
						Ponding	1.00
Askecksy, drained	30	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
						Filtering capacity	1.00
IeA—Ingleside loamy sand, 0 to 2 percent slopes							
Ingleside	75	Not limited		Somewhat limited		Very limited	
				Depth to saturated zone	0.73	Depth to saturated zone	1.00
						Restricted permeability	1.00

Data Source Information

Soil Survey Area: Sussex County, Delaware
Survey Area Data: Version 19, Sep 14, 2018

Prime and other Important Farmlands

This table lists the map units in the survey area that are considered important farmlands. Important farmlands consist of prime farmland, unique farmland, and farmland of statewide or local importance. This list does not constitute a recommendation for a particular land use.

In an effort to identify the extent and location of important farmlands, the Natural Resources Conservation Service, in cooperation with other interested Federal, State, and local government organizations, has inventoried land that can be used for the production of the Nation's food supply.

Prime farmland is of major importance in meeting the Nation's short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil quality, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. The water supply is dependable and of adequate quality. Prime farmland is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

For some of the soils identified in the table as prime farmland, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures.

A recent trend in land use in some areas has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

Unique farmland is land other than prime farmland that is used for the production of specific high-value food and fiber crops, such as citrus, tree nuts, olives, cranberries, and other fruits and vegetables. It has the special combination of soil quality, growing season, moisture supply, temperature, humidity, air drainage, elevation, and aspect needed for the soil to economically produce sustainable high yields of these crops when properly managed. The water supply is dependable and of adequate quality. Nearness to markets is an additional consideration. Unique farmland is not based on national criteria. It commonly is in areas where there is a special microclimate, such as the wine country in California.

In some areas, land that does not meet the criteria for prime or unique farmland is considered to be *farmland of statewide importance* for the production of food, feed, fiber, forage, and oilseed crops. The criteria for defining and delineating farmland of statewide importance are determined by the appropriate State agencies. Generally, this land includes areas of soils that nearly meet the requirements for prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. Some areas may produce as high a yield as prime farmland if conditions are favorable. Farmland of statewide importance may include tracts of land that have been designated for agriculture by State law.

In some areas that are not identified as having national or statewide importance, land is considered to be *farmland of local importance* for the production of food, feed, fiber, forage, and oilseed crops. This farmland is identified by the appropriate local agencies. Farmland of local importance may include tracts of land that have been designated for agriculture by local ordinance.

Report—Prime and other Important Farmlands

Prime and other Important Farmlands–Sussex County, Delaware		
Map Symbol	**Map Unit Name**	**Farmland Classification**
AsA	Askecksy loamy sand, 0 to 2 percent slopes	Not prime farmland
IeA	Ingleside loamy sand, 0 to 2 percent slopes	All areas are prime farmland

Data Source Information

Soil Survey Area: Sussex County, Delaware
Survey Area Data: Version 19, Sep 14, 2018

SOILS

ADD ANY ADDITIONAL INFORMATION THAT MAY BE CONSIDERED PERTINENT:

SOILS:

AsA Askecksy loamy sand, 0 to 2 percent slopes
IeA Ingleside loamy sand, 0 to 2 percent slopes

A. SUITABILITY OF SOILS INTENDED USE:
See attached table for suitability.

B. EVALUATE THE SOILS INCLUDED IN THIS PROJECT WITH RESPECT TO EROSION AND SEDIMENTATION CONTROL:

1. DURING CONSTRUCTION:

Follow recommended erosion and sediment control practices.

2. AFTER CONSTRUCTION:

Maintain vegetation.

C. FARMLAND RATING (PRIME, UNIQUE, STATEWIDE IMPORTANCE, ETC.):
See attached table(s) for ratings.

D. ADDITIONAL COMMENTS (IF APPLICABLE):

DRAINAGE AND FLOODING

Add any additional information that may be considered pertinent:

DRAINAGE:

A. Any Storm flood hazard area affected? ☐ Yes ☐ No

N/A - ZONING CHANGE

B. Would the proposed project necessitate any off-site drainage improvements?

N/A - ZONING CHANGE

C. Would the proposed project necessitate any on-site drainage improvements?

N/A - ZONING CHANGE

D. Any Tax Ditch affected? ☐ Yes ☑ No

Additional Comments (if applicable)

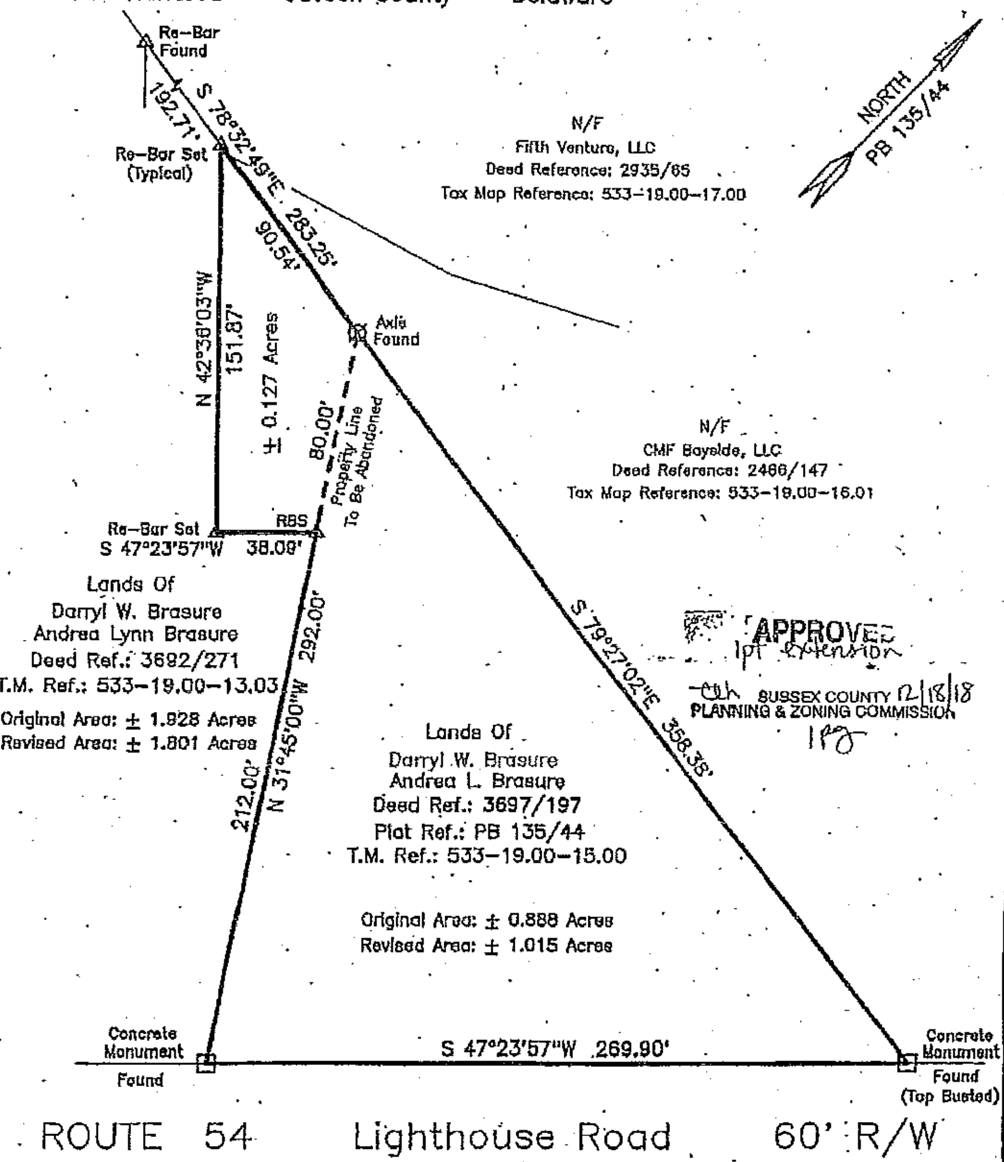
All landowners, developers, and site designers are strongly encouraged to thoroughly investigate the presence of easements or right-of-ways along tax ditches. These documents are located in the Prothonotary's Office and/or with the Recorder of Deeds. If a stormwater management facility is proposed along a stream or ditch, the Sussex Conservation District will require verification of any easements. Before you start any project design, please look into this matter by calling the Division of Soil and Water Conservation-Drainage Program at (302) 855-1930 or the Sussex Conservation District Sediment and Stormwater Program at (302) 856-7219 for more information.

Document# 201800046291 BK: 276 PG: 36
Recorder of Deeds, Scott Dailey On 12/18/2018 at 10:49:40 AM Sussex County, DE
Doc Surcharge Paid

533 19.00 15.00

Survey For Lot Extension: A Portion Of The Lands Of — Darryl W. Breasure & Andrea Lynn Brasure To Be Conveyed To And Made A Part Of The Lands Of Darryl W. Brasure & Andrea L. Brasure
Baltimore Hundred Sussex County Delaware

[SURVEY BOUNDARY PLAN]



THIS DRAWING DOES NOT VERIFY THE EXISTENCE OR NON-EXISTENCE OF RIGHT-OF-WAYS, OR EASEMENTS IN REFERENCE TO THIS PROPERTY.
NO TITLE SEARCH PROVIDED OR STIPULATED.

50 0 50 100 150
GRAPHIC SCALE (FEET)

LAWRENCE R. LONG
Professional Land Surveyor
DELAWARE #545 MARYLAND #10961

Class B Survey
December 3, 2018

I, Lawrence R. Long, a registered Professional Land Surveyor in the State of Delaware, hereby state that the information shown on this plan has been prepared under my supervision and meets the standards of practice as established by the State of Delaware Board of Professional Land Surveyors. Any changes to the property conditions, improvements, boundary or property corners after the date shown hereon, shall necessitate a new review and certification for any official legal use.

LAWRENCE R. LONG
Professional Land Surveyor, LLC
36079 Bayard Road
Frankford, DE 19945
PHONE: 302-436-5215
Land Surveying Services
DELAWARE / MARYLAND

FUQUA, WILLARD, STEVENS & SCHAB, P.A.

PAYNTER HOUSE ☒
26 THE CIRCLE OR P.O. BOX 250
GEORGETOWN, DELAWARE 19947
PHONE 302-856-7777
FAX 302-856-2128
onthecircle@fwsslaw.com

REHOBOTH OFFICE ☐
20245 BAY VISTA ROAD, UNIT 203
REHOBOTH BEACH, DE 19971
PHONE 302-227-7727
FAX 302-227-2226

JAMES A. FUQUA, JR.
WILLIAM SCHAB
TIMOTHY G. WILLARD
TASHA MARIE STEVENS
MELISSA S. LOFLAND
NORMAN C. BARNETT
www.fwsslaw.com

HART HOUSE ☐
9 CHESTNUT STREET
GEORGETOWN, DELAWARE 19947
PHONE 302-856-9024
FAX 302-856-6360
realestate@fwsslaw.com

LEWES REAL ESTATE OFFICE ☐
16698 KINGS HIGHWAY, SUITE B
LEWES, DELAWARE 19958
PHONE 302-645-6626
FAX 302-645-6620
realestate@fwsslaw.com

July 15, 2019

HAND DELIVERED

Robert C. Wheatley, Chairman
Sussex County Planning & Zoning Commission
2 The Circle
Georgetown, Delaware 19947

RECEIVED
JUL 15 2019
SUSSEX COUNTY
PLANNING & ZONING

Re: Change of Zone #1885 36191 DWB, LLC
Hearing Scheduled for 7/25/19

Dear Chairman Wheatley:

I represent the Applicant who is asking for a change of zone from AR-1 to C-3 for 1.03 acres on Lighthouse Road. Please find information in support of that application.

1. Aerial Tax Map;
2. Survey;
3. Zoning Map;
4. Photographs;
5. DelDot Letter – No TIS;
6. County Engineer – Sewer Available; and
7. Proposed Findings – to be provided;

Respectfully submitted,

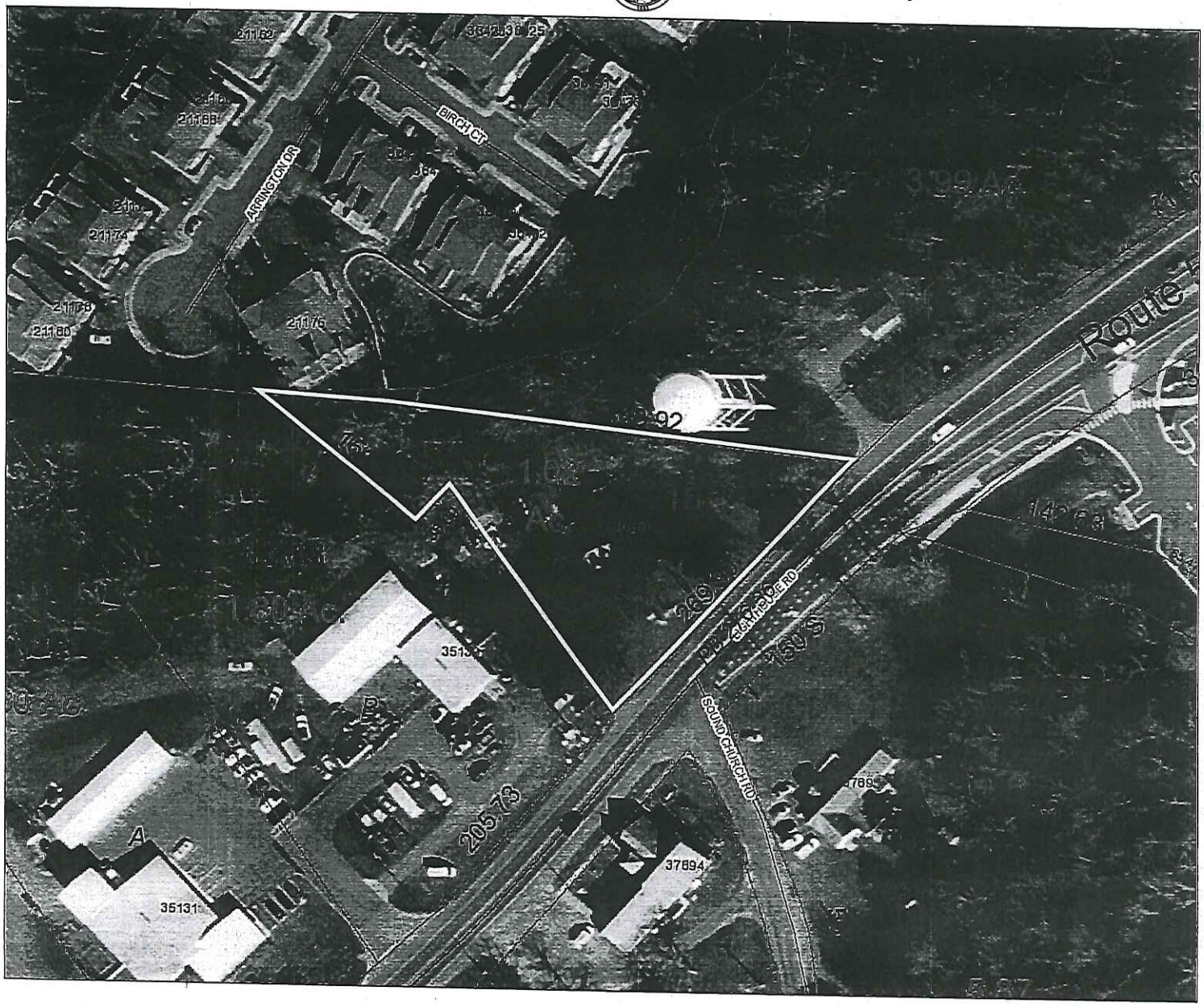
FUQUA, WILLARD,
STEVENS & SCHAB, P.A.

By: T. G. Willard
Timothy G. Willard

TGW/jel
Enclosures
Pc: Mr. Darryl Brasure

** Please reply to the above referenced location*

Sussex County



PIN:	533-19.00-15.00
Owner Name	BRASURE DARRYL W
Book	3697
Mailing Address	35089 LIGHTHOUSE RD
City	SELBYVILLE
State	DE
Description	NW/LIGHTHOUSE RD &
Description 2	SOUND CHURCH RD
Description 3	1.02 AC
Land Code	

polygonLayer
Override 1
polygonLayer
Override 1
Tax Parcels
911 Address
Streets
County Boundaries

1:1,128

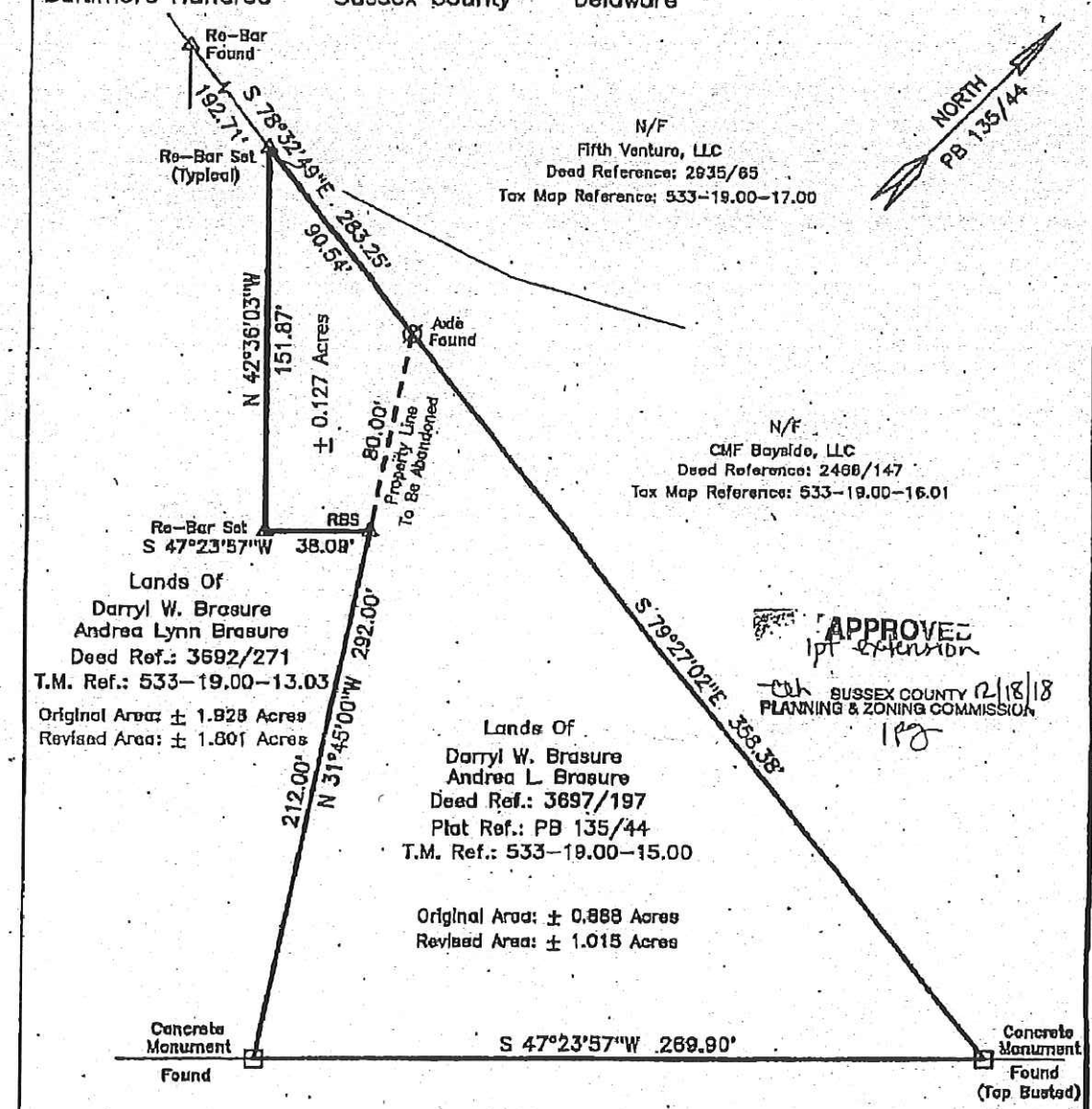
0 0.0125 0.025 0.05 mi
0 0.02 0.04 0.08 km

June 11, 2019

Document# 20180046291 BK: 276 PG: 36
Recorder of Deeds, Scott Dailey On 12/18/2018 at 10:49:40 AM Sussex County, DE
Doc Surcharge Paid

533 19.00 15.00

Survey For Lot Extension: A Portion Of The Lands Of — [SURVEY BOUNDARY PLAN]
Darryl W. Brasure & Andrea Lynn Brasure To Be Conveyed To And Made A Part Of
The Lands Of Darryl W. Brasure & Andrea L. Brasure
Baltimore Hundred Sussex County Delaware



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NO TITLE SEARCH PROVIDED OR STIPULATED.

50 0 50 100 150
GRAPHIC SCALE IN FEET

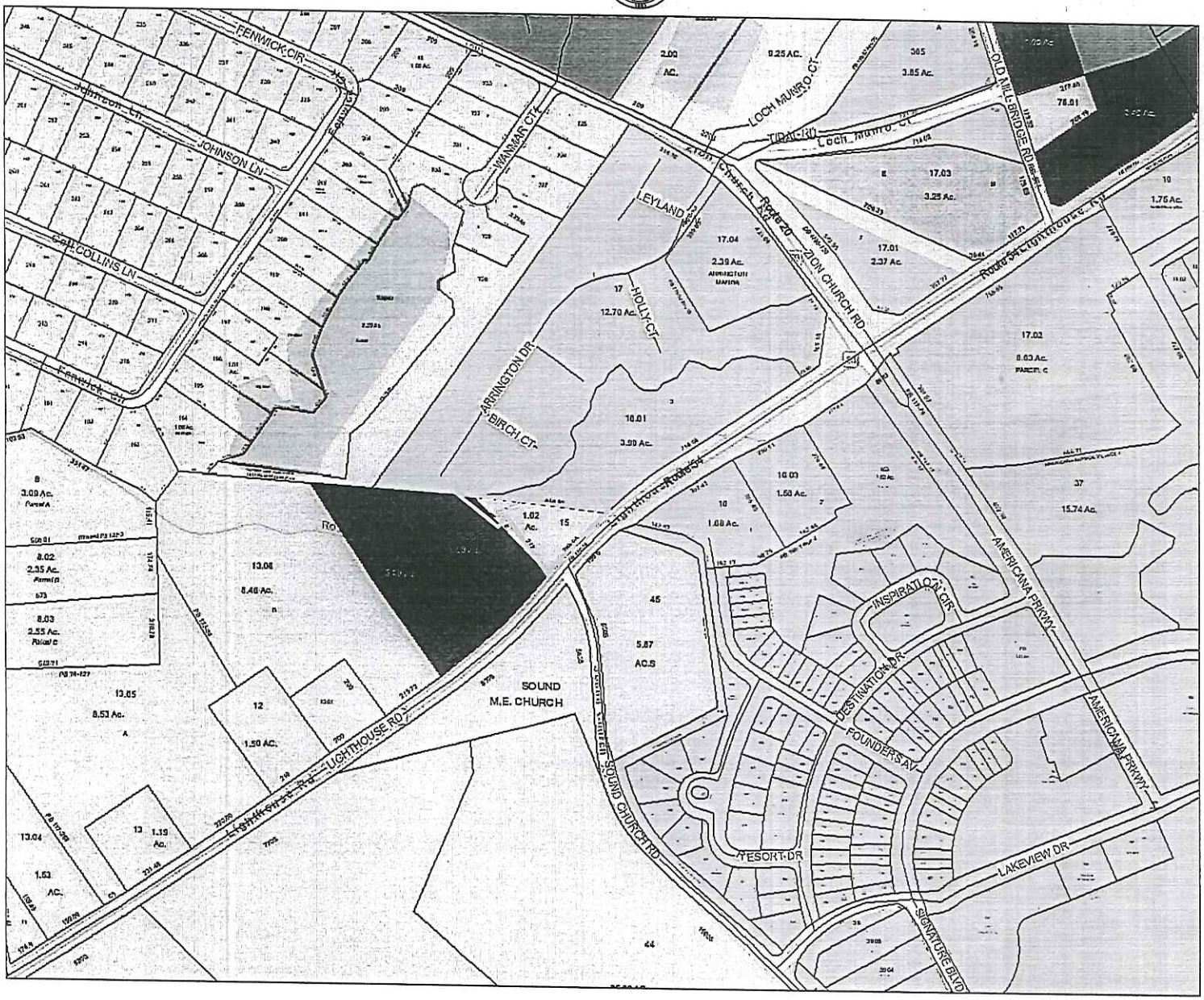
LAWRENCE R. LONG
Professional Land Surveyor, LLC.
36078 Bayard Road
Frankford, DE 19945
PHONE: 302-436-5215
Land Surveying Services
DELAWARE / MARYLAND

LAWRENCE R. LONG
Professional Land Surveyor
DELAWARE #S-543 MARYLAND #10961

Class B Survey
December 3, 2018

I, Lawrence R. Long, a Professional Land Surveyor in the State of Delaware, hereby state that the information shown on this plan was prepared under my supervision and meets the standards of practice as established by the State Board of Examiners of Professional Land Surveyors. Any changes to the property conditions, improvements or boundaries after the date shown hereon, shall necessitate a new review and certification by any surveyor legally thereto.

Sussex County



PIN:	533-19.00-15.00
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Description	NW/LIGHTHOUSE RD &
Description 2	SOUND CHURCH RD
Description 3	1.02 AC
Land Code	

polygonLayer
Override 1
polygonLayer
Override 1
Tax Parcels
Streets
Zoning
Agricultural Residential - AR-1
Agricultural Residential - AR-2
Medium Residential - MR
General Residential - GR
High Density Residential - HR-1
High Density Residential - HR-2
Vacation, Retire, Resident - VRP
Neighborhood Business - B-1
General Commercial - C-1
Commercial Residential - CR-1
Marine - M
Limited Industrial - LI-1
Limited Industrial - LI-2
Heavy Industrial - HI-1

1:4,514

0 0.05 0.1 0.2 mi
0 0.075 0.15 0.3 km

June 11, 2019

Google Maps lighthouse road and zion selbyville de

Imagery ©2019 Google, Map data ©2019 200 ft

Google Maps Lighthouse Rd

Image capture: May 2018 © 2019 Google

Selbyville, Delaware

Google

Street View - May 2018

Google Maps Lighthouse Rd

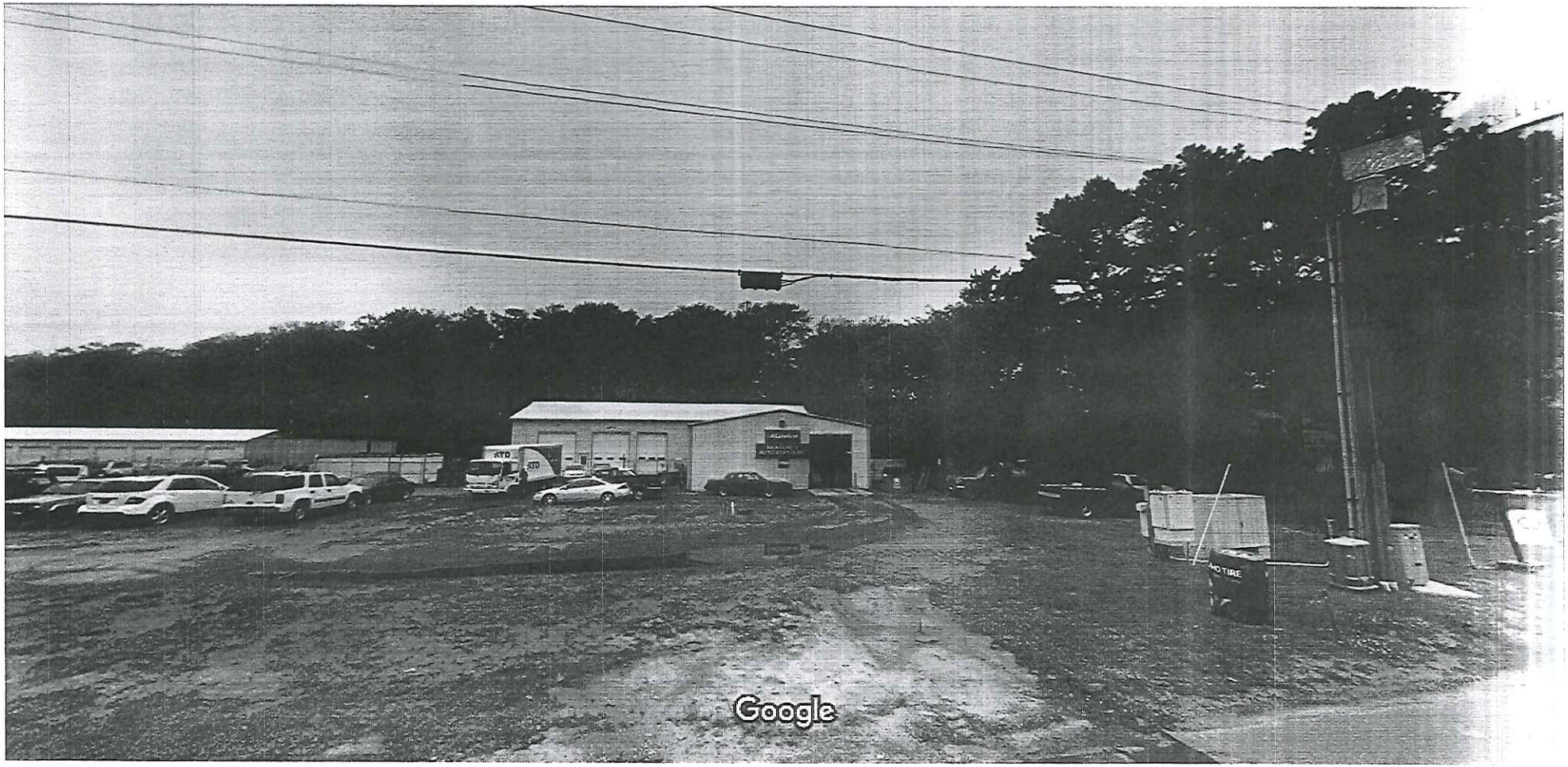


Image capture: May 2018 © 2019 Google

Selbyville, Delaware

Google

Street View - May 2018

Google Maps 36191 Lighthouse Rd

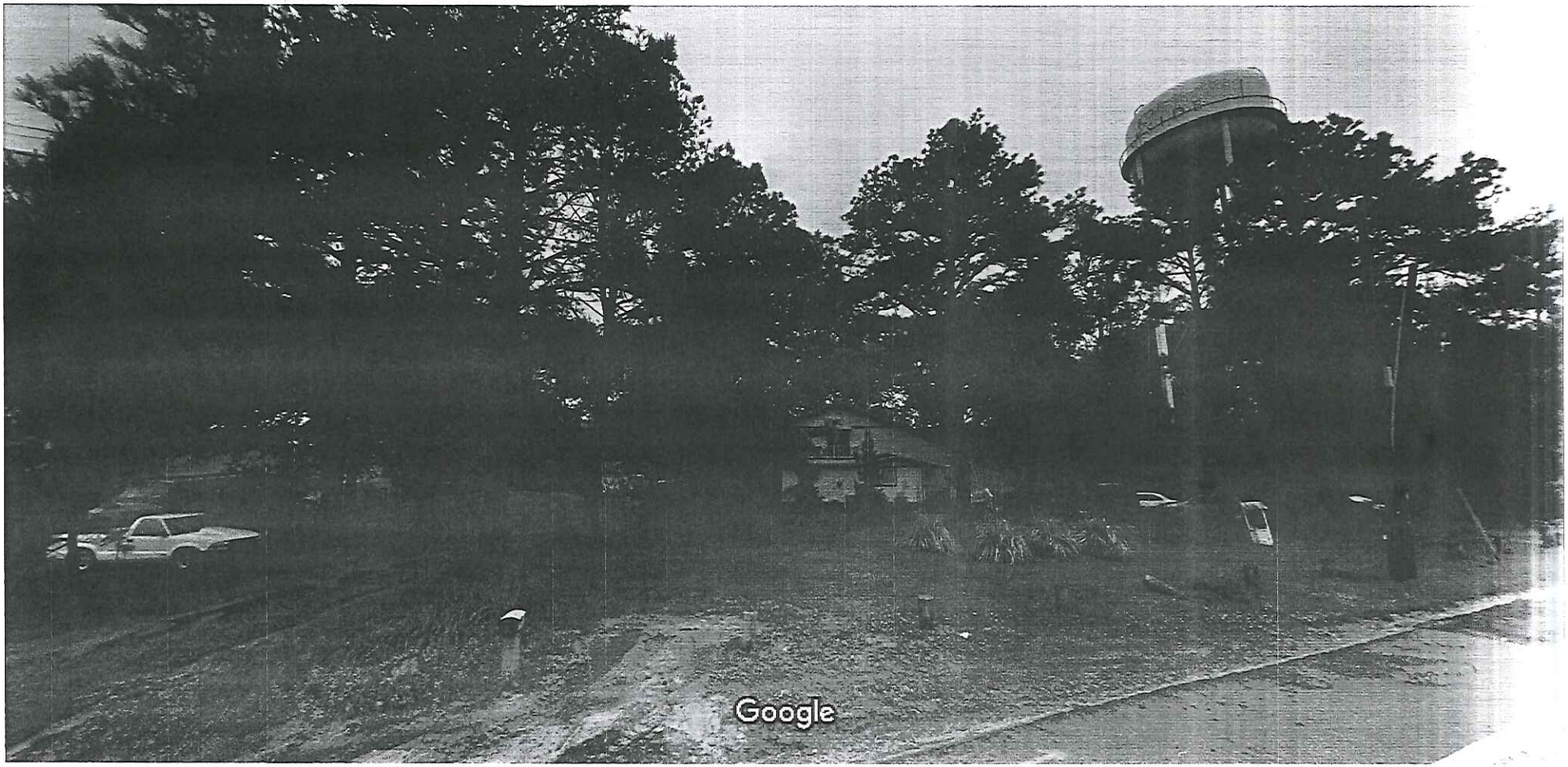


Image capture: May 2018 © 2019 Google

Selbyville, Delaware

Google

Street View - May 2018

Google Maps 36218 DE-54

Image capture: May 2018 © 2019 Google

Selbyville, Delaware

Google

Street View - May 2018

STATE OF DELAWARE
DEPARTMENT OF TRANSPORTATION
800 BAY ROAD
P.O. BOX 778
DOVER, DELAWARE 19903

JENNIFER COHAN
SECRETARY

March 22, 2019

Ms. Janelle Cornwell, Director
Sussex County Planning & Zoning
P.O. Box 417
Georgetown, DE 19947

Dear Ms. Cornwell:

The Department has completed its review of a Service Level Evaluation Request for the **DWB, LLC** rezoning application, which we received on February 26, 2019. This application is for a 1.02-acre parcel (Tax Parcel: 533-19.00-15.00). The subject land is located on the northwest side of Lighthouse Road (Sussex Road 58), opposite Sound Church Road (Sussex Road 394A). The subject land is currently zoned as AR-1 (Agricultural Residential), and the applicant is seeking to rezone the land to C-3 (Heavy Commercial) to use the facility for auto repair or as office space.

Per the 2017 Delaware Vehicle Volume Summary, the annual average and summer average daily traffic volumes along the segment of Lighthouse Road where the subject land is located, which is from West Line Road (Sussex Road 396) to Delaware Route 1, are 7,384 and 9,503 vehicles per day, respectively.

Our volume-based criteria for requiring a traffic impact study (TIS), addressed in Section 2.2.2.1 of the Development Coordination Manual, are that a development generates more than 500 trips per day or 50 trips during a weekly peak hour. While it seems that the above criteria could be met, we presently cannot predict the site's trip generation with enough accuracy to make a TIS useful. Thus, we recommend that this rezoning application be considered without a TIS and that the need for a TIS be evaluated when a subdivision or land development plan is proposed.

Please contact Mr. Claudy Joinville, at (302) 760-2124, if you have questions concerning this correspondence.

Sincerely,

T. William Brockenbrough, Jr.
County Coordinator
Development Coordination

TWB:cjm
cc: Constance C. Holland, Coordinator, Cabinet Committee on State Planning Issues
DWB, LLC, Applicant
J. Marc Coté, Assistant Director, Development Coordination
Gemez Norwood, South District Public Works Manager, Maintenance and Operations
Susanne Laws, Sussex County Subdivision Coordinator, Development Coordination
Derek Sapp, Subdivision Manager, Development Coordination
Brian Yates, Subdivision Manager, Development Coordination
John Andrescavage, Subdivision Manager, Development Coordination
Troy Brestel, Project Engineer, Development Coordination
Claudy Joinville, Project Engineer, Development Coordination

SUSSEX COUNTY ENGINEERING DEPARTMENT
UTILITY PLANNING DIVISION
C/U & C/Z COMMENTS

TO: **Janelle Cornwell**

REVIEWER: **Chris Calio**

DATE: **6/20/2019**

APPLICATION: **CZ 1885 36191 DWB, LLC**

APPLICANT: **36191 DWB, LLC**

FILE NO: **OM-4.05**

TAX MAP & PARCEL(S): **533-19.00-15.00**

LOCATION: **36191 Lighthouse Road, north side of Lighthouse Road, approximately 850 feet west of Zion Church Road.**

NO. OF UNITS: **Upzone from AR-1 to C-3**

GROSS ACREAGE: **1.015**

RECEIVED
JUL 09 2019
SUSSEX COUNTY
PLANNING & ZONING

SYSTEM DESIGN ASSUMPTION, MAXIMUM NO. OF UNITS/ACRE: **4**

SEWER:

(1). Is the project in a County operated and maintained sanitary sewer and/or water district?
Yes ☒ No ☐

a. If yes, see question (2).
b. If no, see question (7).

(2). Which County Tier Area is project in? **Tier 1**

(3). Is wastewater capacity available for the project? **Yes, As Proposed** If not, what capacity is available? **N/A.**

(4). Is a Construction Agreement required? **Yes** If yes, contact Utility Engineering at (302) 855-7717.

(5). Are there any System Connection Charge (SCC) credits for the project? **No** If yes, how many? **N/A.** Is it likely that additional SCCs will be required? **Yes** If yes, the current System Connection Charge Rate is **Unified $6,360.00** per EDU. Please contact **Noell Warren** at **302-855-7719** for additional information on charges.

(6). Is the project capable of being annexed into a Sussex County sanitary sewer district? **N/A**

☐ Attached is a copy of the Policy for Extending District Boundaries in a Sussex County Water and/or Sanitary Sewer District.

(7). Is project adjacent to the Unified Sewer District? **No**

(8). Comments: **If the current single-family home is disconnected from the sanitary sewer and demolished that would result in a credit of 1.0 EDU. If the final commercial development on this parcel exceeds 4.0 EDU's a lateral upgrade to 8" shall be necessary**

(9). Is a Sewer System Concept Evaluation required? **No**

(10). Is a Use of Existing Infrastructure Agreement Required? **Yes**

UTILITY PLANNING APPROVAL:

John J. Ashman
Director of Utility Planning

Xc: Hans M. Medlarz, P.E.
Jayne Dickerson
Noell Warren

PLANNING & ZONING
JAMIE WHITEHOUSE
PLANNING & ZONING MANAGER

(302) 855-7878 T
(302) 854-5079 F

Sussex County
DELAWARE
sussexcountyde.gov

Memorandum

To: Sussex County Planning Commission Members
From: Jamie Whitehouse, Planning and Zoning Manager; Lauren DeVore, Planner III; Samantha Bulkilvish, Planner I and Jenny Norwood, Planner I
CC: Vince Robertson, Assistant County Attorney
Date: July 18, 2019
RE: Other Business for July 25, 2019 Planning Commission Meeting

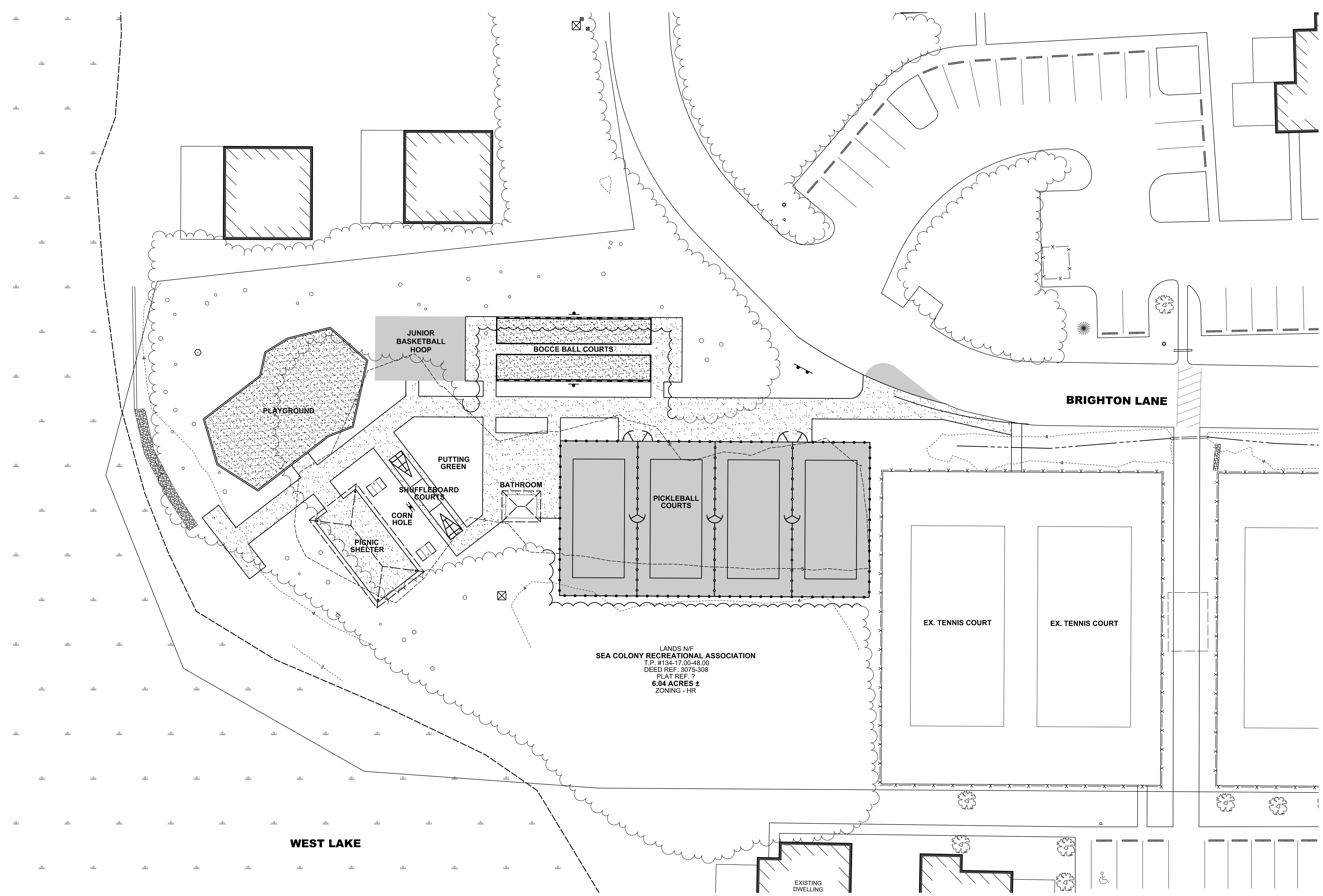
---

This memo is to provide background for the Planning Commission to consider as a part of the Other Business to be reviewed during the July 25, 2019 Planning Commission meeting.

Sea Colony West BM
Revised Amenity Plan
This is a Revised Amenity Plan for the construction of a 108 sf. bathroom/storage building, picnic shelter, pickleball courts, and other site improvements to be located within the Sea Colony West Phases VII, VIII, IX, X, XI, XII, XIII, XIV. The site currently has 4 existing tennis courts that will remain. The applicant has obtained unanimous consent from the Board of Directors of Sea Colony Recreational Association, Inc. The Site Plan is in compliance with the Sussex County Zoning Code. Tax Parcel: 134-17.00-48.00. Zoning District: HR-2 (High Density Residential Zoning District). Staff are awaiting agency approvals.

Angola Beach & Estates BM
Revised Site Plan
This is a Revised Site Plan to amend the layout of the Angola Beach & Estates manufactured home park along Lighthouse and Ships Courts. The number of lots is proposed to be reduced from 56 lots to 40 lots. The purpose of this is to allow for double-wide homes to be placed on the newly configured lots. The lots removed from this area of the manufactured home park shall be relocated to another area of the park and submitted as a separate Site Plan. The Site Plan is in compliance with the Sussex County Zoning Code. Tax Parcel: 234-18.00-1.00. Zoning: AR-1 (Agricultural Residential District). Staff are awaiting agency approvals.

SEA COLONY RECREATIONAL ASSOCIATION
WEST LAKE
REVISED AMENITY PLAN



SITE DATA

1.	OWNER OF RECORD:	SEA COLONY RECREATION ASSOCIATION INC. 33363 SEA COLONY WAY, SUITE A BETHANY BEACH, DE 19930
3.	ENGINEER / SURVEYOR:	BECKER MORGAN GROUP INC. 309 SOUTH GOVERNORS AVENUE DOVER, DELAWARE 19904 302.734.7950 PHONE 302.734.7965 FAX
3.	PROPERTY MAP NUMBER:	1-34-17.00-48.00
4.	ZONING CLASSIFICATION:	EXISTING: HR-2 / SUSSEX COUNTY PROPOSED: HR-2 / SUSSEX COUNTY
5.	DEED SUMMARY:	DEED BOOK 3076, PAGE 001
6.	PRESENT USE:	FITNESS CENTER / COMMERCIAL
7.	PROPOSED USE:	FITNESS CENTER / COMMERCIAL
8.	TOTAL SITE AREA:	6.02 ACRES
9.	EXISTING BUILDING:	N/A
10.	PROPOSED BUILDING:	BATHROOM: 72 SF ±
11.	SETBACKS:	HIGH DENSITY RESIDENTIAL DISTRICT (HR-2) FRONT: 40 FT. SIDE: 10 FT. REAR: 10 FT.
12.	SIGNAGE	FUTURE PERMIT SUBMISSION
13.	SOURCE OF WATER:	TIDEWATER UTILITIES INC.
14.	SOURCE OF SEWER:	SUSSEX COUNTY
15.	SOURCE OF GAS:	CHESAPEAKE UTILITIES, INC.
16.	SOURCE OF ELECTRIC:	DELMARVA POWER
17.	SURVEY BENCHMARK:	60 D NAIL B.M. NO.1 & NO.2 VERTICAL: NAVD 88 HORIZONTAL: NAD 83
18.	MONUMENTATION:	EXISTING: 0 FOUND PROPOSED: 0 SET
19.	TOTAL DISTURBED AREA:	29,125 SF (0.67 AC) ±
20.	BUILDING HEIGHT:	BATHROOM : 1 STORY, 12 FT., PERMITTED: 42'-0"
21.	BUILDING CONST. TYPE:	BATHROOM : TYPE V-000

GENERAL NOTES :

1. THE EXISTING UTILITIES SHOWN WERE TAKEN FROM THE BEST AVAILABLE RECORDS. THE CONTRACTOR SHALL CONTACT MISS UTILITY OF DELMARVA (1-800-282-8555) TO VERIFY THEIR EXACT LOCATION PRIOR TO THE START OF ANY CONSTRUCTION. ANY DAMAGE INCURRED TO ANY UTILITIES SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTORS EXPENSE. IF THE CONTRACTOR RELIES ON THE UTILITY LOCATIONS SHOWN HEREON, HE DOES SO AT HIS OWN RISK AND WILL NOT BE ENTITLED TO ADDITIONAL COMPENSATION DUE TO TIME DELAYS FROM SAID RELIANCE.
2. TOPOGRAPHIC SURVEY DATA SHOWN HERE ON WAS PREPARED BY BECKER MORGAN GROUP, SALISBURY, MD IN SEPTEMBER 2011, VERTICAL DATUM IS BASED ON NAVD 88, HORIZONTAL DATUM IS BASED NAD 83.
3. DELAWARE REGULATIONS PROHIBIT THE BURIAL OF CONSTRUCTION DEMOLITION DEBRIS, INCLUDING TREES AND STUMPS ON CONSTRUCTION SITES. ANY SOLID WASTE FOUND DURING EXCAVATION MUST BE REMOVED AND PROPERLY DISCARDED.
4. THIS DRAWING DOES NOT INCLUDE NECESSARY COMPONENT FOR CONSTRUCTION SAFETY. ALL CONSTRUCTION MUST BE DONE IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AND ALL RULES AND REGULATIONS
5. BEFORE THE CONTRACTOR CAN BEGIN CONSTRUCTION HE MUST OBTAIN THE PROPER PERMITS AND/OR APPROVALS FROM ALL STATE AGENCIES INCLUDING SUSSEX CONSERVATION DISTRICT, STATE FIRE MARSHAL AND APPROPRIATE STATE AND COUNTY AGENCIES.
6. A WETLANDS DELINEATION WAS CONDUCTED ON THIS SITE BY ENVIRONMENTAL RESOURCES, INC. IN SEPTEMBER 2011. FRESH WATER WETLANDS (WATERS OF THE U.S.) WERE FOUND TO EXIST ON THIS SITE AND ARE SHOWN ON THIS PLAN.
7. THIS AREA OF DEVELOPMENT IS NOT IMPACTED BY THE 100 YEAR FLOOD PLAN AS SHOWN ON FIRM # 10005C0514K, DATED MARCH 16, 2015, IS INSIDE OF ZONE X AREAS DETERMINED OUTSIDE OF 0.2 ANNUAL CHANCE OF FLOODING.
8. ALL ROADS, PARKING AND OTHER PAVED AREAS WILL BE PRIVATELY OWNED AND MAINTAINED AND ARE NOT INTENDED FOR DEDICATION.
9. ALL ACCESSIBLE PARKING DEMARCATIONS STALLS AND BUILDING ACCESSIBLE ROUTES SHALL COMPLY WITH THE "AMERICAN WITH DISABILITIES ACT".
10. ALL CONSTRUCTION METHODS AND MATERIALS SHALL BE ACCORDING TO THE SUSSEX COUNTY AND THE STATE OF DELAWARE STANDARDS, SUSSEX COUNTY DEPARTMENT OF PUBLIC WORKS AND CONSTRUCTION SPECIFICATIONS.
11. SITE LANDSCAPE WILL BE COMPLETED BY OTHERS
12. **LANDSCAPE IRRIGATION SYSTEM TO BE PROVIDED BY CONTRACTOR. CONTRACTOR TO COORDINATE WITH OWNER AND ENGINEER. CONTRACTOR TO SUBMIT A SHOP DRAWINGS / DESIGN DRAWINGS FOR REVIEW BY ENGINEER PRIOR TO INSTALLATION OF SYSTEM.**

FIRE MARSHAL GENERAL NOTES:

1. ALL FIRE LANES, FIRE HYDRANTS, AND FIRE DEPARTMENT CONNECTIONS SHALL BE MARKED IN ACCORDANCE WITH THE DELAWARE'S STATE FIRE PREVENTION REGULATIONS (DSFPR)

WATER SYSTEM - GENERAL NOTES

1. PRESSURE PIPE FOR WATER MAINS 4" AND GREATER SHALL BE IN ACCORDANCE WITH AWWA C900 DR18 FOR PVC PIPE OR AWWA C909 CLASS 150 FOR PVCO PIPE.
2. FITTINGS FOR WATER MAINS 4" AND GREATER SHALL BE MECHANICAL JOINT DUCTILE IRON PROVIDED BY TYLER UNION OR APPROVED EQUAL. MECHANICAL JOINT RESTRAINTS SHALL BE MEGALUG R SERIES 2000PV PRODUCED BY EBAA IRON INC. OR APPROVED EQUAL.
3. DUCTILE IRON PIPE SHALL BE CLASS 150 IN ACCORDANCE WITH AWWA C151 AWWA C111 WITH CEMENT LINING AND BITUMINOUS COATING.
4. PRESSURE PIPE FOR 2" AND LESS SHALL BE HIGH DENSITY POLYETHYLENE PIPE IN ACCORDANCE WITH AWWA C901 FABRICATED FROM MATERIAL WITH A CLASSIFICATION OF ASTM D1248. THE PIPE SHALL BE COPPER TUBE I.D., SDR 9.
5. WATER VALVES FOR MAINS 4" AND GREATER SHALL BE RESILIENT WEDGE GATE VALVES CONFORMING TO AWWA C509. BURIED VALVES TO BE FITTED WITH A 2" OPERATING NUT WITH A NON-RISING STEM. VALVES SHALL BE AMERICAN FLOW CONTROL, SERIES 500 OR APPROVED EQUAL.
6. VALVE BOXES SHALL BE CAST IRON 2 PIECE SCREW TYPE ADJUSTABLE WITH "WATER" CAST IN THE COVER PROVIDED BY TYLER UNION MODEL 564-S OR APPROVED EQUAL.
7. CURB STOPS SHALL BE FORD FB1700 BALLCORP SERIES WITH CC THREADS.
8. ALL WATER MAINS SHALL BE INSTALLED WITH TRACER WIRE FOR LOCATION EQUIPMENT CONNECTION. TRACER WIRE SHALL BE #12 SOLID COPPER CORE, BLUE COLOR, WITH THHN OR EQUAL INSULATION. TRACER WIRE TO BE RAN CONTINUOUSLY ALONG AND DIRECTLY ADHERED TO WATER MAIN ON TOP OF WATER MAIN UTILIZING INDUSTRIAL ADHESIVE DUCT TAPE.TRACER WIRE TO BE ADHERED TO PIPE WITH A MINIMUM OF 3 LOCATIONS ON ANY LENGTH OF PIPE TO INSURE ACCURATE WATER MAIN LOCATION. LOCATION WIRE TO BE PULLED UP THROUGH ALL VALVE BOXES FOR LOCATION EQUIPMENT CONNECTION.
9. BURIAL DEPTH OF WATER MAINS TO BE A MINIMUM OF 48".
10. ALL WATER MAINS TO HAVE METAL CONDUCTOR TYPE DETECTOR TAPE INSTALLED 2' DIRECTLY ABOVE AND CONTINUOUSLY ALONG WATER MAIN. DETECTOR TAPE SHALL BE TERRA-TAPE BY ALLEN SYSTEMS OR APPROVED EQUAL.
11. BACKFLOW PREVENTERS, WHERE REQUIRED, SHALL MEET ALL REQUIREMENTS OF ASSE STANDARD 1013 AND AWWA C506, LATEST REVISION. BACKFLOW PREVENTERS SHALL BE WATTS SERIES 909 HW, CONBRACO SERIES 40-200 OR APPROVED EQUAL.
12. NEWLY INSTALLED WATER MAIN SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA C651 STANDARDS, LATEST REVISION BEFORE ACCEPTANCE CAN BE GRANTED.
13. WATER MAINS SHALL HAVE A MINIMUM 10' HORIZONTAL AND 18" VERTICAL SEPARATION FROM SANITARY SEWER COMPONENTS.
14. A PRE-CONSTRUCTION MEETING IS TO BE HELD BEFORE ANY CONSTRUCTION ACTIVITIES CAN COMMENCE.
15. ALL WATER SYSTEM COMPONENTS ARE TO BE INSTALLED IN ACCORDANCE WITH THE LATEST APPLICABLE AWWA STANDARDS.
NOTE: "APPROVED EQUAL" DEFINED AS APPROVED BY THE ENGINEER.

SHEET INDEX

OWNERS CERTIFICATION

WE, SEA COLONY RECREATION ASSOCIATION INC., CERTIFY THAT ALL LAND CLEARING, CONSTRUCTION AND DEVELOPMENT SHALL BE DONE PURSUANT TO THE APPROVED PLAN AND THAT RESPONSIBLE PERSONNEL INVOLVED IN THE LAND DISTURBANCE WILL HAVE A CERTIFICATION OF TRAINING AT A DEPARTMENTAL SPONSORED OR APPROVED TRAINING PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT CONTROL BEFORE INITIATION OF THE PROJECT.

MR. TOM OLSON / GENERAL MANAGER DATE

ENGINEERS CERTIFICATION

I, J. MICHAEL RIEMANN, HEREBY CERTIFY THAT I AM A REGISTERED ENGINEER IN THE STATE OF DELAWARE, THAT THE INFORMATION SHOWN HEREON HAS BEEN PREPARED UNDER MY SUPERVISION AND TO MY BEST KNOWLEDGE AND BELIEF REPRESENTS GOOD ENGINEERING PRACTICES AS REQUIRED BY THE APPLICABLE LAWS OF THE STATE OF DELAWARE.

J. MICHAEL RIEMANN P.E. NO. DATE

BECKER MORGAN GROUP
ARCHITECTURE ENGINEERING

Dover, DE
309 S. Governors Ave.
Dover, DE 19904
Ph. 302.734.7950
Fax 302.734.7965

Salisbury, MD
312 West Main St. Suite 300
Salisbury, MD 21801
Ph. 410.546.9100
Fax 410.546.5824

Wilmington, NC
3333 Jaeckle Drive, Suite 120
Wilmington, North Carolina 28403
Ph. 910.341.7600
Fax 910.341.7506

www.beckermorgan.com

PROJECT TITLE

SEA COLONY WEST LAKE AMMENITY

BRIGHTON LANE
BETHANY BEACH
SUSSEX COUNTY, DE

SHEET TITLE

COVER SHEET

ISSUE BLOCK

MARK	DATE	DESCRIPTION

LAYER STATE: C-001

PROJECT NO.:	**2018212.00**
DATE:	**06/10/2019**
SCALE:	**1" = 20**
DRAWN BY: **C.D.C.**	PROJ. MGR.: **W.E.S.**

SHEET
C-001

DEMOLITION CONSTRUCTION NOTES

R-01	REMOVE & RELOCATED EXISTING SIGNAGE. SEE SHEET C-201 FOR LOCATION.
R-02	REMOVE EXISTING PLAYGROUND MULCH AND CURBING. NOTE SIZE AND SHAPE FOR RELOCATION SHEET C-201.
R-03	REMOVE EXISTING LIGHT POLE & BASE. CAP OFF ALL EXISTING UTILITIES TO BE ABANDONED.
R-04	REMOVE EXISTING BASKETBALL HOOP.
R-05	SCRAPE TURF TO PREPARE FOR FULL DEPTH BITUMINOUS PAVEMENT
R-06	REMOVE EXISTING CLUSTER MAILBOXES & CONCRETE FOUNDATION
R-07	REMOVE EXISTING TREES AS REQUIRED FOR NEW CONSTRUCTION. GRIND STUMPS TO 3" BELOW SURFACE.
R-08	REMOVE EXISTING ASPHALT PAVEMENT IN ITS ENTIRETY. PREPARE SUBGRADE FOR NEW PAVEMENT.
R-09	ENSURE NO DAMAGE OCCURS TO THE EXISTING SANITARY SEWER SYSTEM. EXISTING MANHOLE LOCATIONS TO REMAIN.
R-10	REMOVE AND RELOCATE EXISTING PLAYGROUND EQUIPMENT. SEE SHEET C-201 FOR NEW LOCATION.

RIGHT-OF-WAY

KENT AVENUE (SCR # 361)
70' RIGHT-OF-WAY "MAJOR COLLECTOR"

WOODLAND COURT

BENCH MARK:
SET P.K. NAIL
ELEVATION: 4.14' NAVD88
N: 191912.26' NAD83 (2011) DSP
E: 757101.34' NAD83 (2011) DSP

WELL (#222558)

R-01 R-02 R-07 R-03 R-10 R-01 R-03 R-03 R-09 R-04 R-08 R-05 R-09 R-06 R-03

EX. 8"S

PLAYGROUND

EDGE OF PAVEMENT

BENCH MARK:
SET P.K. NAIL
ELEVATION: 4.14' NAVD88
N: 191871.32' NAD83 (2011) DSP
E: 756880.42' NAD83 (2011) DSP

EX. SAN. MH.
RIM EL.: 5.14'
INV. IN: 0.94'
INV. OUT: 0.84'

EX. SAN. MH.
RIM EL.: 4.90'
INV. IN: 0.10'
INV. OUT: 0.00'

W.V.

EX. 7?" WATER

BRIGHTON LANE

EX. 8"S

EX. SAN. MH.
RIM EL.: 4.03'
INV. IN: -1.07'
INV. OUT: -1.17'

W.V.

12" C.M.P.
INV: 1.97'

EX. 8"S

EX. SAN. MH.
RIM EL.: 4.17'
INV. IN: -1.36'
INV. OUT: -1.48'

8" STEEL
INV: 3.35'

8" STEEL
INV: 3.35'

12" C.M.P.
INV: 2.37'

TENNIS COURT
TENNIS COURT
TENNIS COURT
TENNIS COURT

EX. 8"S

MAILBOX UNITS

LANDS N/F
SEA COLONY RECREATIONAL ASSOCIATION
T.P. #134-17.00-48.00
DEED REF. 3075-308
PLAT REF. ?
6.04 ACRES ±
ZONING - HR

WEST LAKE

F.H.

EXISTING DWELLING

WOODLAND VIEW

EX. SAN. MH.
RIM EL.: 4.02'
INV. IN: ??.??'
INV. OUT: ??.??'

BECKER MORGAN GROUP

ARCHITECTURE
ENGINEERING

Dover, DE
309 S. Governors Ave.
Dover, DE 19904
Ph. 302.734.7950
Fax 302.734.7965

Salisbury, MD
312 West Main St. Suite 300
Salisbury, MD 21801
Ph. 410.546.9100
Fax 410.546.5824

Wilmington, NC
3333 Jaeckle Drive, Suite 120
Wilmington, North Carolina 28403
Ph. 910.341.7600
Fax 910.341.7506

www.beckermorgan.com

PROJECT TITLE

SEA COLONY WEST LAKE AMMENITY

BRIGHTON LANE
BETHANY BEACH
SUSSEX COUNTY, DE

SHEET TITLE

EXISTING COND. & DEMOLITION PLAN

ISSUE BLOCK

MARK	DATE	DESCRIPTION

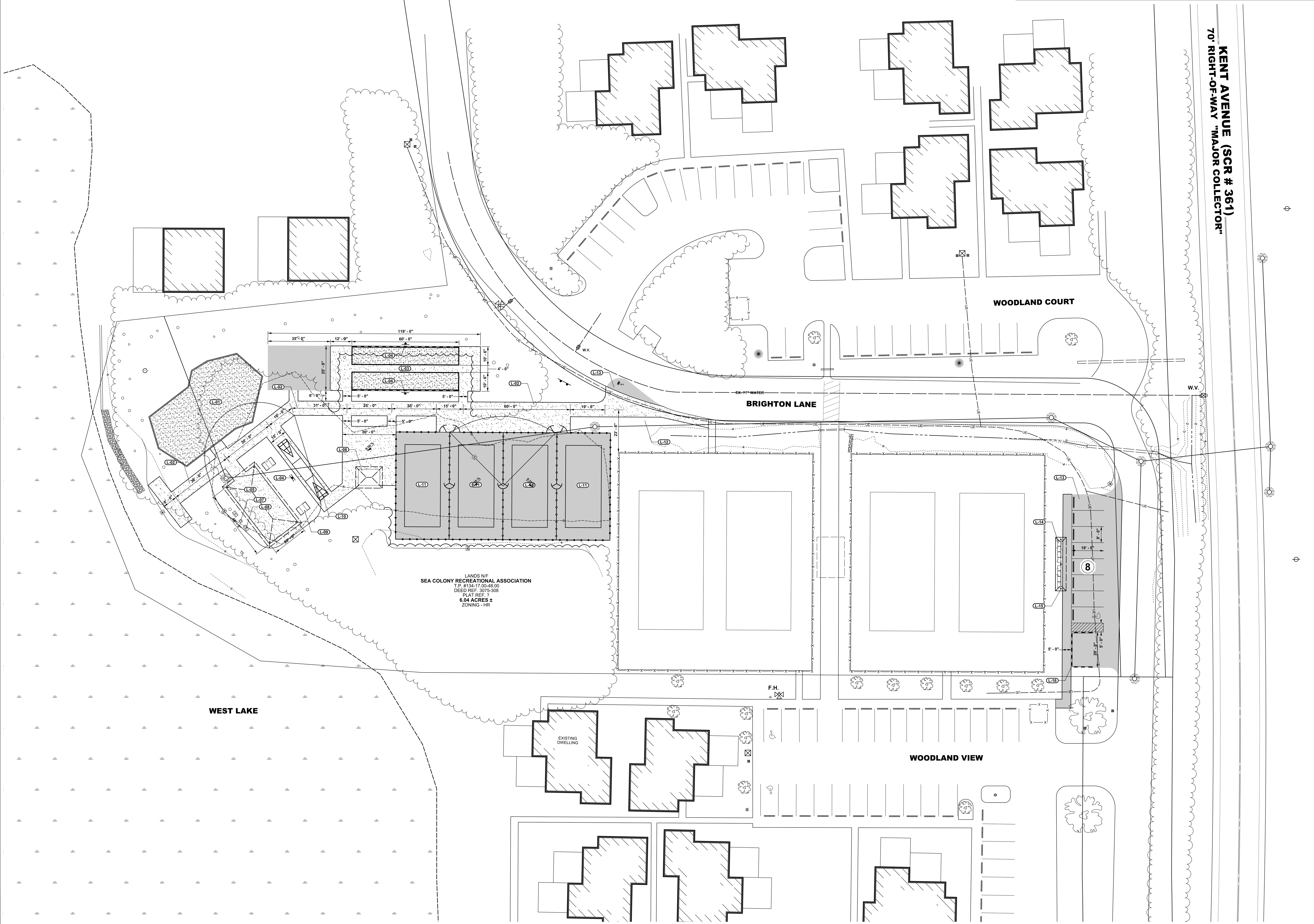
PROJECT NO.:	**2018212.00**
DATE:	**06/10/2019**
SCALE:	**1" = 20**
DRAWN BY: **C.D.C.**	PROJ. MGR.: **W.E.S.**

SHEET
C-101

F:\A□□CAD P\□□□□2018 2018212.DWG 20182100-SITE-C3D18-DE.d□□, J 15, 2019 - 3:07□□

LANDSCAPE NOTES

L-01	INSTALL RELOCATED PLAYGROUND EQUIPMENT IN NEW LOCATION. ENSURE PROPER FALL CLEARANCES FOR EXISTING EQUIPMENT.
L-02	POUR AND PROVIDE BROOM FINISH ON 4" MIN. CONCRETE SIDEWALK. SEE SHEET L-204 FOR 4" SIDEWALK SLAB DETAIL C-13.
L-03	CONSTRUCT BOCCE COURT PER CONSTRUCTION DETAIL.
L-04	INSTALL 1 SCOREBOARD SIGN PER COURT IN LOCATION SHOWN.
L-05	INSTALL 20' X 40' SHADE STRUCTURE BY ICON STRUCTURES PER MFG SPECIFICATIONS (OR APPROVED EQUAL).
L-06	CONSTRUCT 9' X12' BATHROOM AND STORAGE BUILDING PER DETAILS.
L-07	INSTALL HOT COAL CONTAINMENT BIN
L-08	INSTALL COVERED PARK GRILLS IN LOCATION NOTED. 2 TOTAL.
L-09	INSTALL CONCRETE CORN HOLE BOARDS PER STANDARD DETAIL.
L-10	CONSTRUCT SHUFFLEBOARD COURT PER CONSTRUCTION DETAIL.
L-11	CONSTRUCT PICKLEBALL COURTS PER CONSTRUCTION DETAIL.
L-12	INSTALL AMENITY WELCOME SIGN - COORDINATE WITH OWNER.
L-13	INSTALL FULL DEPTH ASPHALT PAVEMENT PER CONSTRUCTION DETAIL.
L-14	INSTALL CLUSTER MAILBOXES ON CONCRETE SLAB PER DETAIL.
L-15	INSTALL 6' X 30' SHADE STRUCTURE BY ICON STRUCTURES PER MFG SPECIFICATIONS (OR APPROVED EQUAL) OVER CLUSTER MAILBOXES.
L-16	INSTALL 12' X 20' DUMPSTER ENCLOSURE PER CONSTRUCTION DETAIL.



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Ph. 302.734.7950
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Salisbury, MD
312 West Main St. Suite 300
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Ph. 410.546.9100
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Wilmington, NC
3333 Jaeckle Drive, Suite 120
Wilmington, North Carolina 28403
Ph. 910.341.7600
Fax 910.341.7506

www.beckermorgan.com

PROJECT TITLE

SEA COLONY WEST LAKE AMMENITY

BRIGHTON LANE
BETHANY BEACH
SUSSEX COUNTY, DE

SHEET TITLE

SITE & LAYOUT PLAN

ISSUE BLOCK

MARK	DATE	DESCRIPTION

LAYER STATE: C-201

PROJECT NO.:	**2018212.00**
DATE:	**06/10/2019**
SCALE:	**1" = 20**
DRAWN BY: **C.D.C.**	PROJ. MGR.: **W.E.S.**

SHEET

C-201

SANITARY SEWER CONSTRUCTION NOTES

S-1	CONNECT PROPOSED 4" PVC SDR 35 SANITARY SEWER LATERAL AT INVERT ELEVATION 0.60' (1.04□ MINIMUM SLOPE). CONTRACTOR SHALL MAINTAIN A MINIMUM OF 30" OF COVER ABOVE LATERAL.
S-2	INSTALL PROPOSED 4" SANITARY SEWER LATERAL CLEANOUT AS SHOWN HEREON. CONTRACTOR SHALL MAINTAIN A MINIMUM OF 30" OF COVER ABOVE LATERAL. SEE DETAIL, SHEET C-901. SEE SHEET A-101 FOR BUILDING TIE-IN LOCATION.

DOMESTIC WATER SYSTEM CONSTRUCTION NOTES

W-1	TAP EXISTING 8" WATER MAIN WITHIN BRIGHTON LANE WITH A 8"x3/4" TAPPING SLEEVE AND VALVE.
W-2	INSTALL 3/4" C900 PVC WATER SERVICE AS SHOWN HEREON (± 202 L.F.). CONTRACTOR SHALL MAINTAIN A MINIMUM OF 24" OF COVER ABOVE SERVICE.
W-3	CONTRACTOR TO DEFLECT WATER LINE AS NECESSARY TO MAINTAIN A MINIMUM OF 18" OF VERTICAL SEPARATION BETWEEN SANITARY SEWER LATERAL. SEE DETAIL, SHEET C-901.

EX. 8"S

EX. SAN. MH.
RIM EL.: 5.14'
INV. IN: 0.94'
INV. OUT: 0.64'

EX. SAN. MH.
RIM EL.: 4.90'
INV. IN: 0.10'
INV. OUT: 0.00'

W.V.

W-1

W-2

W-3

S-1

S-2

3/4" W

EX. 8"S

UE

LANDS N/F
SEA COLONY RECREATIONAL ASSOCIATION
T.P. #134-17.00-48.00
DEED REF. 3075-308
PLAT REF. ?
6.04 ACRES ±
ZONING - HR

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ARCHITECTURE
ENGINEERING

Dover, DE
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Ph. 302.734.7950
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Fax 910.341.7506

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PROJECT TITLE

SEA COLONY WEST LAKE AMMENITY

BRIGHTON LANE
BETHANY BEACH
SUSSEX COUNTY, DE

SHEET TITLE

UTILITY PLAN

ISSUE BLOCK

MARK	DATE	DESCRIPTION

LAYER/STATE: C-901

PROJECT NO.:	**2018212.00**
DATE:	**06/10/2019**
SCALE:	**1" = 20**
DRAWN BY: **C.D.C.**	PROJ. MGR.: **W.E.S.**

SHEET

C-301

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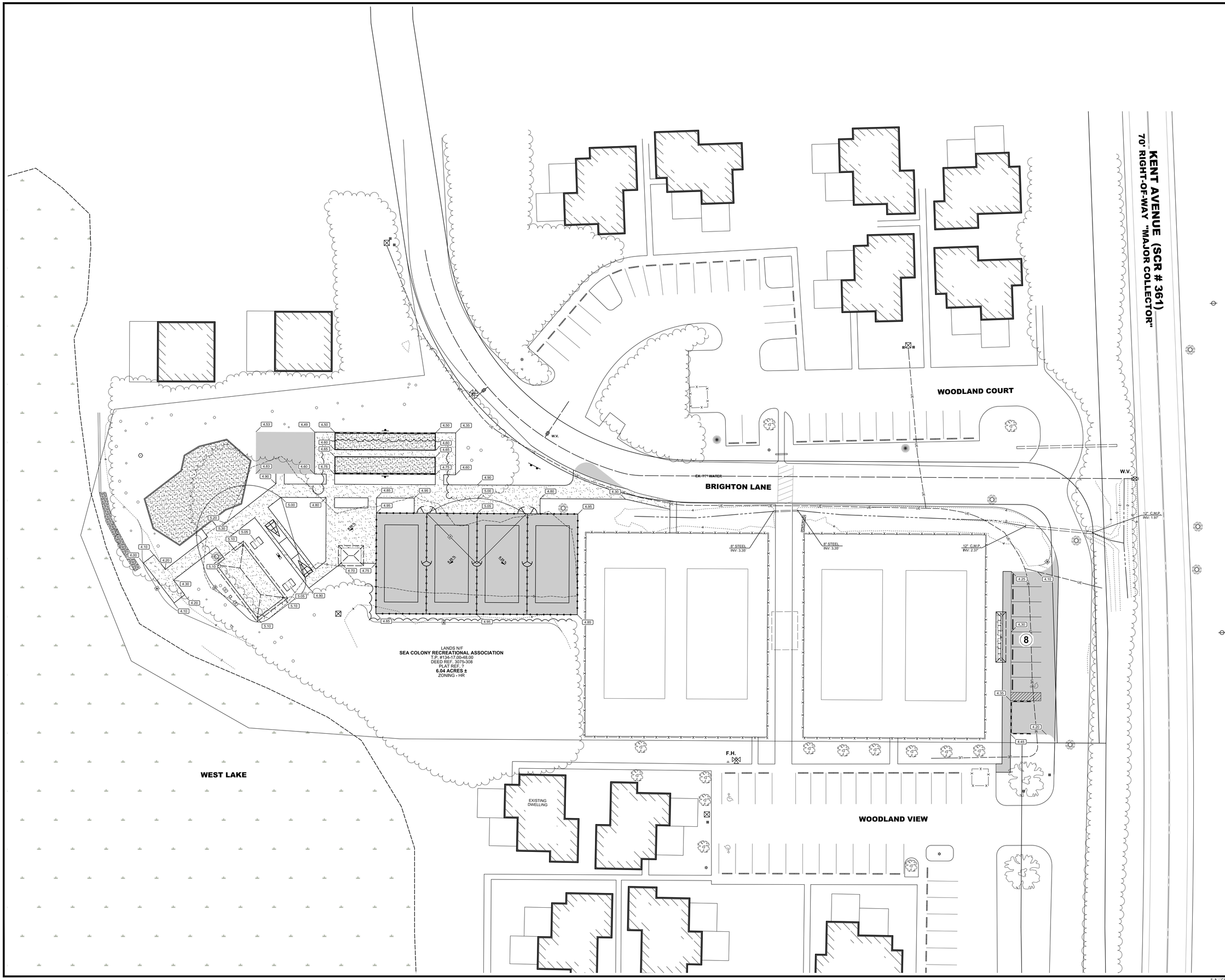

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ARCHITECTURE
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Dover, DE 19904
Ph. 302.734.7950
Fax 302.734.7965

Salisbury, MD
312 West Main St. Suite 300
Salisbury, MD 21801
Ph. 410.546.9100
Fax 410.546.5824

Wilmington, NC
3333 Jaeckle Drive, Suite 120
Wilmington, North Carolina 28403
Ph. 910.341.7600
Fax 910.341.7506

www.beckermorgan.com

PROJECT TITLE

SEA COLONY WEST LAKE AMMENITY

BRIGHTON LANE
BETHANY BEACH
SUSSEX COUNTY, DE

SHEET TITLE

GRADING PLAN

ISSUE BLOCK

MARK	DATE	DESCRIPTION

UPDATED: Date

PROJECT NO.:	2018212.00
DATE:	06/10/2019
SCALE:	1" = 20
DRAWN BY: C.D.C.	PROJ. MGR.: W.E.S.

SHEET
C-401

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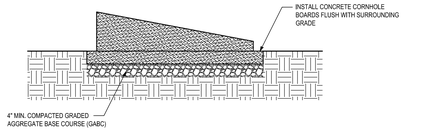
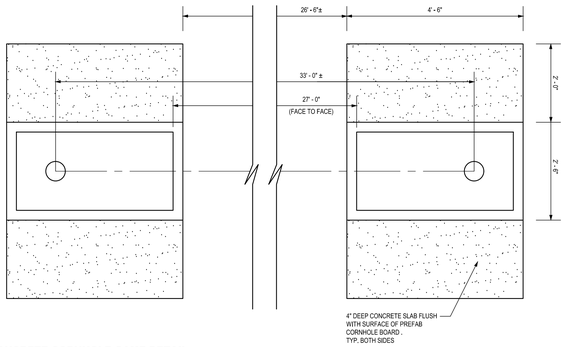
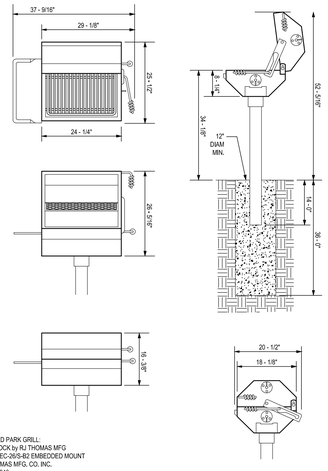
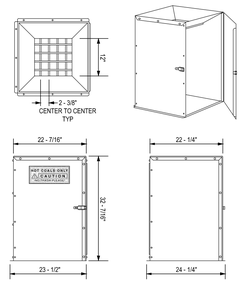
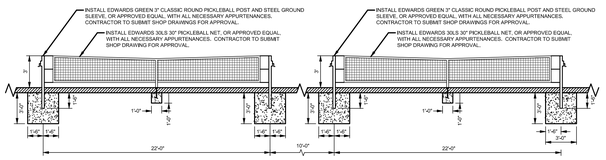










CONCRETE CORNHOLE BOARDS:
Doty & Sons Concrete Products, Inc.
1275 East State Street
Sycamore, IL 60178
800-233-3907
info@dotyconcrete.com
OR APPROVED EQUAL

CONCRETE CORNHOLE GAME DETAIL

NO SCALE

COVERED PARK GRILL:
PILOT ROCK by RJ THOMAS MFG
MODEL: EC-26/S-B2 EMBEDDED MOUNT
R.J. THOMAS MFG. CO. INC.
PO BOX 946
CHEROKEE, IA 51012-0946
1-800-762-5002
OR APPROVED EQUAL

COVERED PARK CHARCOAL GRILL

NO SCALE

HOT COAL BIN:
PILOT ROCK by RJ THOMAS MFG
MODEL: HCB
R.J. THOMAS MFG. CO. INC.
PO BOX 946
CHEROKEE, IA 51012-0946
1-800-762-5002
OR APPROVED EQUAL

HOT COAL BIN

NO SCALE

PICKLEBALL COURT TYPICAL CROSS SECTION

NO SCALE

COURT PAVEMENT SECTION DETAIL

NO SCALE

SHUFFLEBOARD SURFACE:
Planet Shuffleboard
(800) 377-1066
Model: 10' x 52' "Rolls-Royce'
OR APPROVED EQUAL

SHUFFLEBOARD LAYOUT DETAIL

NO SCALE

SANITARY SEWER CLEANOUT

NO SCALE BMG NO. : SS-3B

WATER MAIN / UTILITY CROSSING DETAIL

NO SCALE BMG NO. : W-12

C-07 - 6" CONCRETE SLAB DETAIL

NO SCALE

NOTES:

1. MARK IN 5' SQUARES, USE PREMOLDED EXPANSION JOINTS AT INTERVALS NOT GREATER THAN 16'
2. CONCRETE SIDEWALKS SHALL BE CONSTRUCTED AS PER SPECIFICATIONS.

CONCRETE SIDEWALK DETAIL

NO SCALE BMG NO.: SW-03C

NET POST
22' INSIDE TO INSIDE POST
36" NET HEIGHT AT POST
34" NET HEIGHT AT CENTER

NOTES:
ALL DIMENSIONS ARE TO THE OUTSIDE EDGE OF LINES.
LINES SHALL BE 2" WIDE

PICKLEBALL COURT STRIPING PLAN

NO SCALE

US Mail Supply
800.571.0147
Model: 16 Door Cluster Mail Box
1XF181570-16 (8 total units)
OR APPROVED EQUAL

CLUSTER MAILBOX

NO SCALE

BOCCE COURT TYPICAL SECTION

NO SCALE

NOTES :

1. THE CONTRACTOR SHALL PROVIDE, COMPLETE AND IN PLACE, FENCING AND GATES AS SHOWN ON THE CONTRACT DRAWINGS AND REQUIRED BY THE CONTRACT DOCUMENTS
2. THE FENCING SHALL BE CHAIN LINK FENCE 6 FEET HIGH, FABRIC TO BE 2" DIAMOND MESH, 9 GAUGE (MIN.) GALVANIZED STEEL. FENCE SHALL BE PROVIDED AND INSTALLED AS SHOWN ON CONSTRUCTION DOCUMENTS. BLACK VINYL COATING SHALL BE APPLIED TO THE STEEL MESH, FITTINGS AND ACCESSORIES.
3. ALL POST SHALL BE PLUMB, AND SPACED AT 10' CENTERS MAXIMUM, WITH A TOLERANCE OF MINUS 2". SPACING OF POSTS SHALL BE INSTALLED AT ALL ABRUPT CHANGES IN GRADE, AT CHANGES IN GRADE. ALL POSTS SHALL BE HEAVY WEIGHT GALVANIZED PIPE, SS-40 INDUSTRIAL GRADE FENCE PIPE.
4. ALL RAILS AND MID-BRACING SHALL BE HEAVY WEIGHT GALVANIZED PIPE, SS-40 INDUSTRIAL GRADE FENCE PIPE.
5. GATE SHALL BE DOUBLE SWING TYPE, PROVIDED WITH GATE HOLD BACKS, LOCKABLE GATE LATCH AND DROP BAR INSTALLED IN A MINIMUM OF 1 CUBIC FOOT OF CONCRETE. GATES SHALL BE INSTALLED AND BRACED IN ACCORDANCE WITH THE MANUFACTURERS REQUIREMENTS. ALL GATE POSTS SHALL BE A MINIMUM OF 3" IN DIAMETER OR AS RECOMMENDED BY THE MANUFACTURER.
6. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL

6' HIGH CHAIN LINK FENCE DETAIL

NO SCALE BMG NO.: SW-

NOTES :

1. GATE SHALL BE DOUBLE SWING TYPE, PROVIDED WITH GATE HOLD BACKS, LOCKABLE GATE LATCH AND DROP BAR INSTALLED IN A MINIMUM OF 1 CUBIC FOOT OF CONCRETE. GATES SHALL BE INSTALLED AND BRACED IN ACCORDANCE WITH THE MANUFACTURERS REQUIREMENTS. ALL GATE POSTS SHALL BE A MINIMUM OF 3" IN DIAMETER OR AS RECOMMENDED BY THE MANUFACTURER.
2. THE FENCING SHALL BE CHAIN LINK FENCE 6 FEET HIGH, FABRIC TO BE 2" DIAMOND MESH, 9 GAUGE (MIN.) GALVANIZED STEEL. BLACK VINYL COATING SHALL BE APPLIED TO THE POSTS, STEEL MESH, FITTINGS AND ACCESSORIES.
3. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL.

6' HIGH X 6' WIDE DOUBLE SWING GATE

NO SCALE BMG NO.: SW-

PAVEMENT SECTION DETAIL

NO SCALE BMG NO. : SW-2A

WALL AND PAD SECTION

PLAN

DUMPSTER ENCLOSURE DETAIL

NO SCALE BMG NO. : SW-12C

BECKER MORGAN GROUP

ARCHITECTURE
ENGINEERING

Dover, DE
309 S. Governors Ave.
Dover, DE 19904
Ph. 302.734.7950
Fax 302.734.7965

Salisbury, MD
312 West Main St. Suite 300
Salisbury, MD 21801
Ph. 410.546.9100
Fax 410.546.5824

Wilmington, NC
3333 Jaeckle Drive, Suite 120
Wilmington, North Carolina 28403
Ph. 910.341.7600
Fax 910.341.7506

www.beckermorgan.com

PROJECT TITLE

SEA COLONY WEST LAKE AMMENITY

BRIGHTON LANE
BETHANY BEACH
SUSSEX COUNTY, DE

SHEET TITLE

DETAILS

ISSUE BLOCK

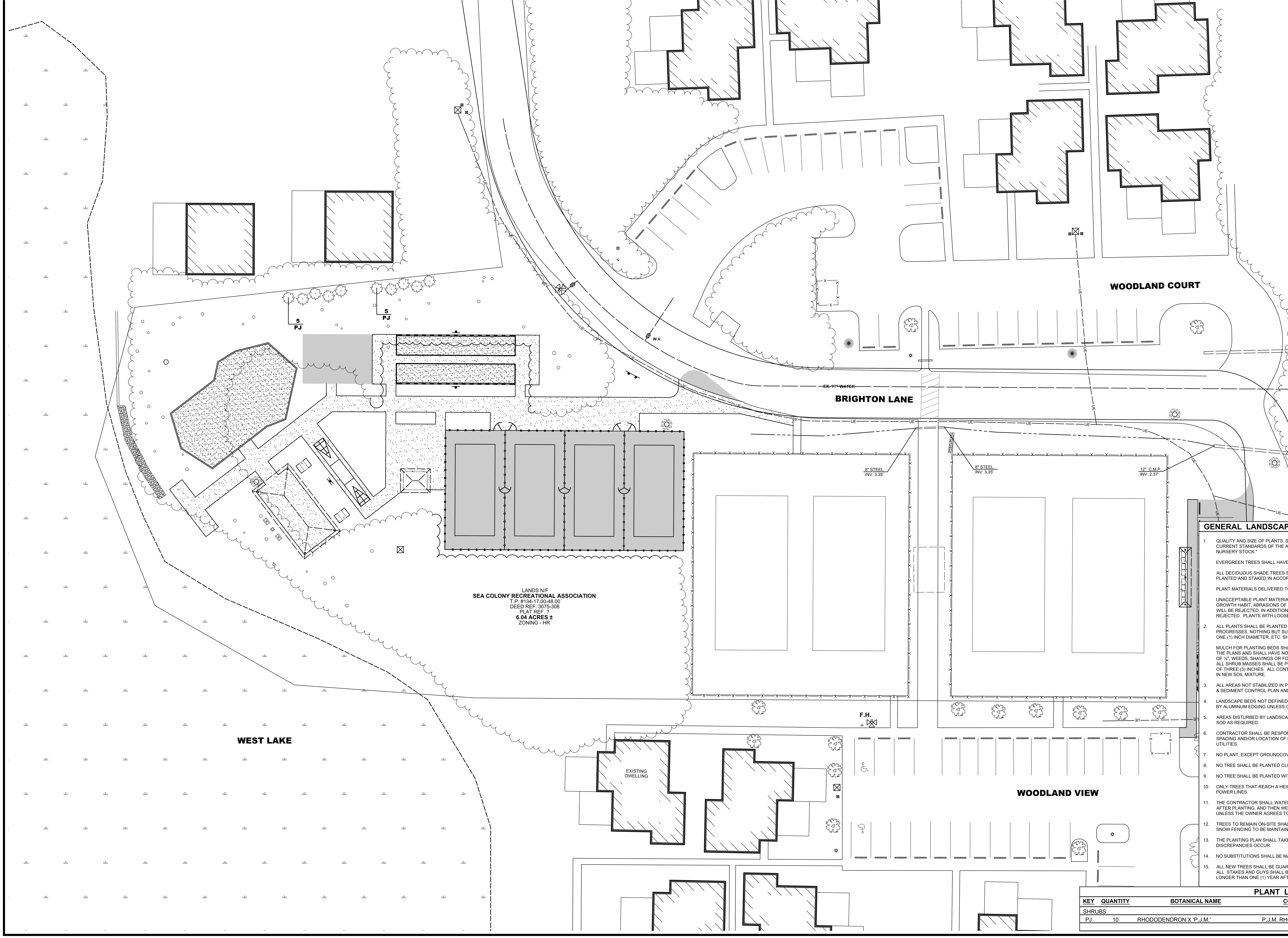
MARK	DATE	DESCRIPTION

LAYER STATE: C-901

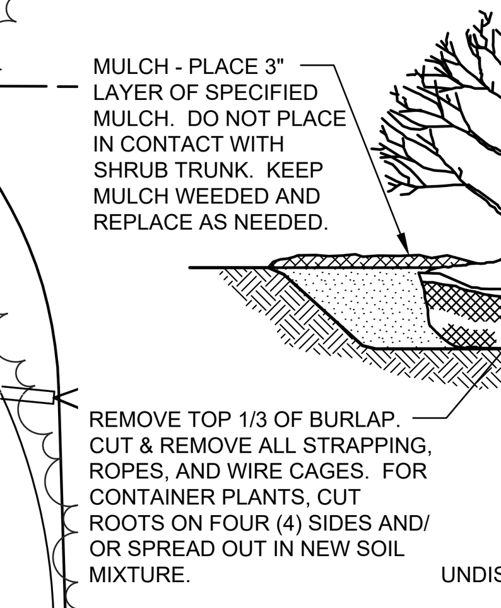
PROJECT NO.:	**2018212.00**
DATE:	**06/10/2019**
SCALE:	**AS NOTED**
DRAWN BY: **C.D.C.**	PROJ. MGR.: **W.E.S.**

SHEET

C-901



NOTE:
PRIOR TO MULCHING. APPLY APPROVED PRE-EMERGENT WEED CONTROL ON ALL SHRUB BEDS.



SHRUB PLANTI

NO SCALE

GENERAL LANDSCAPE NOTES :

1. QUALITY AND SIZE OF PLANTS, SPREAD OF ROOTS, AND SIZE OF BALLS SHAL
CURRENT STANDARDS OF THE AMERICAN ASSOCIATION OF NURSERYMEN "A
NURSERY STOCK."

EVERGREEN TREES SHALL HAVE A FULL, WELL-BRANCHED, CONICAL FORM T

ALL DECIDUOUS SHADE TREES SHALL BRANCH A MINIMUM OF 7'-0" ABOVE GR
PLANTED AND STAKED IN ACCORDANCE WITH THE DETAIL SHOWN.

PLANT MATERIALS DELIVERED TO THE SITE IN UNCOVERED TRUCKS WILL BE

UNACCEPTABLE PLANT MATERIALS: MATERIALS WHICH HAVE DAMAGED OR
GROWTH HABIT, ABRASIONS OF THE BARK, SUN SCALD, WINDBURN, DISFIGU
WILL BE REJECTED. IN ADDITION, TREES HAVING THEIR CENTRAL LEADERS H
REJECTED. PLANTS WITH LOOSE OR CRACKED ROOT BALL OR CONTAINERS

2. ALL PLANTS SHALL BE PLANTED IN TOPSOIL THAT IS THOROUGHLY WATERED
PROGRESSES. NOTHING BUT SUITABLE TOPSOIL, FREE OF DRY SOD, STIFF C
ONE (1) INCH DIAMETER, ETC. SHALL BE USED FOR PLANTING.

MULCH FOR PLANTING BEDS SHALL BE SHREDDED HARDWOOD BARK MULCH
THE PLANS AND SHALL HAVE NO LEAVES, YOUNG GREEN GROWTH, BRANCH
OF ½", WEEDS, SHAVINGS OR FOREIGN MATERIAL SUCH AS STONES, ETC. SH
ALL SHRUB MASSES SHALL BE PLANTED IN CONTINUOUS MULCHED BEDS WI
OF THREE (3) INCHES. ALL CONTAINER PLANTS ARE TO HAVE ROOTS CUT O
IN NEW SOIL MIXTURE.

3. ALL AREAS NOT STABILIZED IN PAVING OR PLANT MATERIALS SHOULD BE SE
& SEDIMENT CONTROL PLAN AND NOTES.)

4. LANDSCAPE BEDS NOT DEFINED BY CURBS, SIDEWALKS, WALLS OR OTHER S
BY ALUMINUM EDGING UNLESS OTHERWISE INDICATED.

5. AREAS DISTURBED BY LANDSCAPE OPERATIONS SHALL BE GRADED TO MAT
SOD AS REQUIRED.

6. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO UTILITIES AND
SPACING AND/OR LOCATION OF PLANT MATERIALS. CONTACTOR TO VERIFY "
UTILITIES.

7. NO PLANT, EXCEPT GROUNDCOVERS, SHALL BE WITHIN THREE (3) FEET FRO

8. NO TREE SHALL BE PLANTED CLOSER THAN TEN (10) FEET FROM ANY STRUC

9. NO TREE SHALL BE PLANTED WITHIN TEN (10) FEET OF UNDERGROUND UTILI

10. ONLY TREES THAT REACH A HEIGHT AND SIZE AT MATURITY OF SMALL TO M
POWER LINES.

11. THE CONTRACTOR SHALL WATER ALL PLANTS THOROUGHLY TWICE DURING
AFTER PLANTING, AND THEN WEEKLY OR MORE OFTEN, IF NECESSARY, DUR
UNLESS THE OWNER AGREES TO MAINTAIN AND WATER THEM.

12. TREES TO REMAIN ON-SITE SHALL BE PROTECTED WITH SNOW FENCE DURIN
SNOW FENCING TO BE MAINTAINED DURING CONSTRUCTION BY CONTRACT

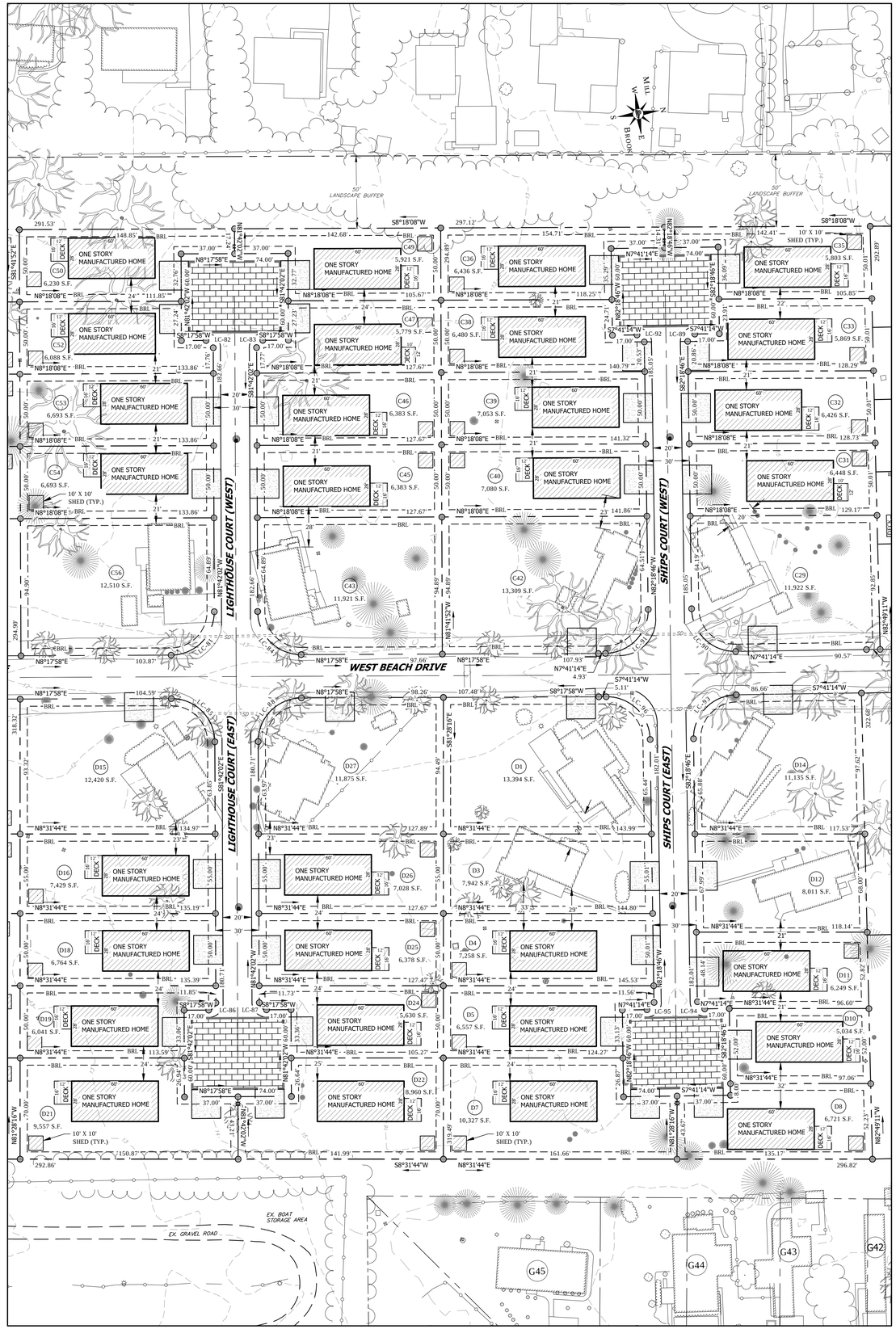
13. THE PLANTING PLAN SHALL TAKE PRECEDENCE OVER THE PLANT SCHEDUL
DISCREPANCIES OCCUR.

14. NO SUBSTITUTIONS SHALL BE MADE WITHOUT APPROVAL OF THE OWNER A

15. ALL NEW TREES SHALL BE GUARANTEED TO SURVIVE FOR ONE FULL YEAR A
ALL STAKES AND GUYS SHALL BE REMOVED FROM TREES AND SITE AS EAR
LONGER THAN ONE (1) YEAR AFTER PLANTING.

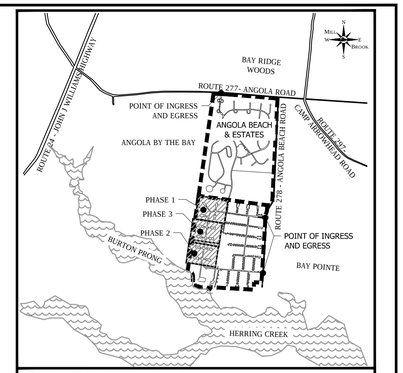
PLANT LIST

KEY	QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE
SHRUBS				
PJ	10	RHODODENDRON X 'P.J.M.'	P.J.M. RHODODENDRON	3 Gal.



GENERAL NOTES

1. THIS PLAN DOES NOT PROPOSE ANY LAND DEVELOPMENT IMPROVEMENTS. THIS PLAN PROPOSES TO RECONFIGURE LEASEABLE LOT LINES TO ACCOMODATE DOUBLE WIDE UNITS AND ALLOW FOR OFF STREET PARKING
2. AN AERIAL MAPPING SURVEY WAS PERFORMED ON THE SITE, FLIGHT DATE 01/13/2017 BY AXIS GEOSPATIAL. BOUNDARY SURVEY PERFORMED BY BOCK AND CLARK DATED APRIL 2017.
3. PART OF THE SITE (ANGOLA BEACH T.P. 234-18.00-1.00) IS WITHIN THE 100 AND 500 YEAR FLOODPLAIN ACCORDING TO FEMA FIRM MAP #10005C0341K DATED MARCH 16, 2015. THE 500 YEAR FLOOD PLAIN IS LOCATED IN A PORTION OF WATERVIEW COURT (WEST).
4. PLAN LOCATIONS AND DIMENSIONS SHALL BE STRICTLY ADHERED TO UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
5. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND DIMENSIONS PRIOR TO ORDERING AND/OR FABRICATION OF ANY MATERIALS.
6. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR INITIATING, MAINTAINING, AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK. ALL CONSTRUCTION MUST BE DONE IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AND ALL RULES AND REGULATIONS THERETO APPURTENANT. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY.
7. CONTRACTOR SHALL PATCH, REPAIR, AND FINISH ALL DAMAGED SURFACES CAUSED BY THE WORK, USING THE MATERIALS OF THE SAME KIND. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACEMENT OF DAMAGED OR DESTROYED LANDSCAPING OR EXISTING FEATURES.
8. ALL EXCESS EXCAVATION AND ALL OLD PAVEMENT, BASE COURSE, BROKEN CONCRETE, ETC. SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE HAULED AWAY FROM THE SITE.
9. NO DEBRIS SHALL BE BURIED ON THIS SITE.
10. SUBDIVISION STREETS ARE TO REMAIN 30' PRIVATE RIGHT OF WAY AND IN ACCORDANCE WITH COUNTY REGULATIONS. SUSSEX COUNTY ASSUMES NO RESPONSIBILITY FOR THE FUTURE MAINTENANCE OF THE STREETS.
11. MAINTENANCE OF THE STREETS WITHIN THIS SUBDIVISION WILL BE THE RESPONSIBILITY OF THE OWNER/DEVELOPER.
12. PARKING SHALL BE PROHIBITED IN THE TURN-AROUNDS AND CUL-DE-SACS.



SITE LOCATION MAP
SCALE: 1"= 2,000'

PROPOSED LOT CURVE DATA

CURVE	RADIUS	LENGTH	TANGENT	DELTA	CH BEARING	CH DISTANCE
LC-81	30.00'	47.12'	30.00'	90°00'00"	N36°42'02"W	42.43'
LC-82	5.00'	7.85'	5.00'	90°00'00"	S53°17'58"W	7.07'
LC-83	5.00'	7.85'	5.00'	90°00'00"	S36°42'02"E	7.07'
LC-84	30.00'	47.12'	30.00'	90°00'00"	N53°17'58"E	42.43'
LC-85	30.00'	47.12'	30.00'	90°00'00"	N53°17'58"E	42.43'
LC-86	5.00'	7.85'	5.00'	90°00'00"	S36°42'02"E	7.07'
LC-87	5.00'	7.85'	5.00'	90°00'00"	S53°17'58"W	7.07'
LC-88	30.00'	47.12'	30.00'	90°00'00"	N36°42'02"W	42.43'
LC-89	5.00'	7.85'	5.00'	90°00'00"	S37°18'46"E	7.07'
LC-90	30.00'	47.12'	30.00'	90°00'00"	N52°41'26"E	42.42'
LC-91	30.00'	47.14'	30.02'	90°02'08"	N37°17'42"W	42.44'
LC-92	5.00'	7.85'	5.00'	90°00'00"	S52°41'14"W	7.07'
LC-93	30.00'	47.12'	30.00'	90°00'00"	S37°18'46"E	42.43'
LC-94	5.00'	7.85'	5.00'	90°00'00"	N52°41'14"E	7.07'
LC-95	5.00'	7.85'	5.00'	90°00'00"	N37°18'46"W	7.07'
LC-96	30.00'	47.12'	30.00'	90°00'00"	S52°41'14"W	42.43'

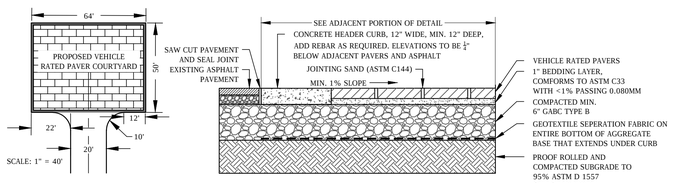
LEGEND

EXISTING FEATURES

- EXISTING TREES
- 33271 EXISTING ADDRESS LABEL
- EXISTING TREELINE
- EXISTING FENCE LINE
- 15 EXISTING MAJOR CONTOUR
- 14 EXISTING MINOR CONTOUR
- EXISTING CENTERLINE OF ROAD
- EXISTING EDGE OF PAVEMENT
- EXISTING PROPERTY BOUNDARY
- EXISTING DRAINAGE PIPE
- EXISTING BUILDING TO REMAIN
- EXISTING LIGHT POLE
- EXISTING ELEC/TELECOM/GAS STRUCTURE
- EXISTING ELEC BOX

PROPOSED FEATURES

- PROPOSED LEASABLE LOTLINE
- BRL PROPOSED BUILDING RESTRICTION LINE
- PROPOSED CONCRETE DRIVEWAY
- PROPOSED RESIDENTIAL UNIT
- PROPOSED STAMPED CONCRETE PAVERS
- PROPOSED TRAFFIC FLOW ARROW
- A69 PROPOSED LOT LABEL
- PROPOSED PROPERTY PIN
- PROPOSED LIGHT POLE



1/1 VEHICLE RATED PAVER COURTYARD AND SECTION

SITE DATA

OWNER/DEVELOPER:	STEPHEN BRAUN, PRESIDENT/CHIEF OPERATING OFFICER HOMETOWN ANGOLA BEACH, LLC HOMETOWN AMERICA COMMUNITIES 150 N. WACKER DRIVE, SUITE 2800 CHICAGO, IL 60606
CONTACT EMAIL:	TEDMONDS@HOMETOWNAMERICA.NET
SITE ADDRESS:	22971 SUBURBAN BLVD. LEWES, DE 19958
TAX MAP PARCEL NO.:	234-18.00-1.00 (ANGOLA BEACH)
HUC12:	020403030102
EXISTING ZONING:	AR-1 (AGRICULTURAL RESIDENTIAL) MHC (CONDITIONAL USE)
SOURCE OF TITLE:	DEED BOOK 3647, PAGE 216 AND DEED BOOK 1913, PAGE 236 AND DEED BOOK 248, PAGE 17
HORIZONTAL DATUM:	NAD 83
VERTICAL DATUM:	NAVD 88
PROPOSED LAND USE:	RESIDENTIAL
PHASE 2 LOTS:	40

DISTRICT & BULK STANDARDS:		REQUIRED	PROPOSED
	MIN. LOT AREA:	5,000 SQ. FT.	>5,034± SQ. FT.
	SETBACKS ALONG LOT LINES:	5'	5+'
	MIN. LOT FRONTAGE (WIDTH):	50' (MIN.)	50+'
	SEPARATION BETWEEN BUILDINGS:	20'	20+'
WATER:	COMMUNITY WATER SYSTEM (PRIVATE)		
SEWER:	ON-SITE COMMUNITY SEWER SYSTEM (PRIVATE)		
TYPE OF PLAN:	PRELIMINARY PLAN FOR FOR LIGHTHOUSE COURT (EAST AND WEST) AND SHIPS COURT (EAST AND WEST).		
PURPOSE OF PLAN:	TO DEPICT PHASE 3 OF THE RECONFIGURATION OF THE LOTS TO ACCOMMODATE DOUBLE WIDE HOMES WITHIN THE SUBJECT STREETS. NO NEW LOTS ARE CREATED AS PER THIS PLAN. EXISTING LOTS FOR THE SUBJECT 4 STREETS EQUAL TO 56 LOTS. THE PROPOSED RECONFIGURATION PROVIDES 40 LOTS. THE APPLICANT INTENDS TO MAKE A SEPARATE APPLICATION TO RELOCATE THE RESIDUAL LOTS.		

SUSSEX COUNTY- PLANNING & ZONING APPROVAL BLOCK

CERTIFICATE OF OWNER

I, STEPHEN BRAUN, OWNER/DEVELOPER OF HOMETOWN ANGOLA BEACH, L.L.C., HEREBY CERTIFY THAT I AM THE CURRENT, LEGAL OWNER OF THE PROPERTY AND I AGREE TO THE RECONFIGURATION OF THE LOTS AS SHOWN.

OWNER/DEVELOPER
HOMETOWN ANGOLA BEACH, L.L.C.

DATE

CERTIFICATE OF ACCURACY

I, MICHAELENA M. HAYES, P.E., HEREBY CERTIFY THAT I AM A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF DELAWARE WITH A BACKGROUND IN CIVIL ENGINEERING AND TO THE BEST OF MY KNOWLEDGE AND BELIEF; I CERTIFY THAT ALL OF THE INFORMATION ON THESE DRAWINGS IS TRUE AND CORRECT TO THE ACCURACY REQUIRED BY ACCEPTED SURVEYING AND ENGINEERING STANDARDS AND PRACTICES AND BY THE SUSSEX COUNTY CODE.

MICHAELENA M. HAYES, P.E.
DE. LICENSE NO. 17597

07/03/2019
DATE

DATE	REVISIONS	BY

HOMETOWN ANGOLA BEACH, LLC - ANGOLA BEACH & ESTATES

RECONFIGURED LEASED LOTS

REHOBOTH HUNDRED DELAWARE SUSSEX COUNTY

PRELIMINARY PLAN
LIGHTHOUSE / SHIPS COURT

M-16-ANGOLA-001-003

SEAL

Mill Brook Engineering, LLC
PO BOX 966
DOVER, DE 19903
PHONE: 302.312.4716
WWW.MILLBROOKENG.COM

SCALE: 1"=40' (0, 40', 80')

DATE: 7/03/2019
CREATED BY: EMB
DRAWN BY: EMB
CHECKED BY: MMH
SHEET NO. 01 OF 01