JAMIE WHITEHOUSE, AICP DIRECTOR OF PLANNING & ZONING (302) 855-7878 T (302) 854-5079 F jamie.whitehouse@sussexcountyde.gov





PLEASE NOTE

This paperless packet is published on the County's website for convenience purposes, and only includes information received up to the close of business on the day before a public hearing. Documents received after this, or documents submitted during the public hearing are not uploaded to the Paperless Packet. The legal record is the paper record maintained in the Offices of the Planning & Zoning Department.







Memorandum

To: Sussex County Planning Commission Members

From: Jamie Whitehouse, AICP, Director, Department of Planning & Zoning; Jenny Norwood, Planning and Zoning Manager; Lauren DeVore, Planner III; Michael Lowrey, Planner III; Chase Phillips, Planner II; Christin Scott, Planner I; Elliott Young, Planner I & Jesse Lindenberg, Planner I CC: Vince Robertson, Assistant County Attorney Date: June 16th, 2022

RE: Other Business for the June 23rd, 2022, Planning Commission Meeting

This memo provides background for the Planning Commission to consider as a part of the Other Business to be reviewed during the June 23rd, 2022, Meeting of the Planning & Zoning Commission.

(2020-18) Sycamore at Seaway Chase (F.K.A. Woodlands II)

Final Subdivision Plan

This is a Final Subdivision Plan for the creation of a cluster subdivision consisting of thirty-three (33) single-family lots. The Preliminary Subdivision Plan was approved by the Planning and Zoning Commission at their meeting of Thursday, January 7, 2021. The property is located on the southeast corner of Central Avenue (Route 84) and Bayard Rd. (Route 84). The Final Subdivision Plan complies with the Sussex County Zoning and Subdivision Code and all Conditions of Approval. Zoning District: AR-1 (Agricultural Residential District). Tax Parcel: 134-19.00-23.00. Staff are in receipt of all agency approvals.

(S-20-38 & C/Z 1858) Ashton Oaks RPC

Final Site Plan

This is a Final Site Plan for a Residential Planned Community (RPC) to consist of 178 apartment units to be located on a 14.845-acre parcel off Zion Church Rd. (Route 20). The Sussex County Council approved Change of Zone No. 1858 at their meeting of Tuesday, December 11, 2018, through Ordinance No. 2621. The Preliminary Site Plan was approved by the Planning & Zoning Commission at their meeting of Thursday, November 19, 2020. The Final Site Plan includes two (2) 32-unit, 4-story apartment buildings, three (3) 30-unit, 4-story apartment buildings and one (1) 24-unit, 4-story apartment building, with parking, amenities, and other improvements. The Site Plan complies with the Sussex County Zoning Code and all Conditions of Approval. Tax Parcel: 533-11.00-82.00. Zoning: HR-1-RPC (High Density Residential Zoning District, Residential Planned Community). Staff are in receipt of all agency approvals.

(S-22-16) Village Center - Commercial

Revised Preliminary Site Plan

This is a Revised Preliminary Site Plan for a Commercial Center to be located on 11.649-acre portion of a parcel on the corner of Kings Highway (Route 9) and Gills Neck Rd. (S.C.R. 267). The Sussex County Council approved Change of Zone 1802 at its meeting of Tuesday, December 13th, 2016 through Ordinance No. 2480. The Final Site Plan includes one (1) 1,800 sq. ft. commercial building, four (4) 4,800 sq. ft. commercial buildings, three (3) 13,000 square foot commercial buildings, and one (1) 15,000 square foot commercial building, with parking, roads, green areas, and other improvements. The Applicant has submitted a written request to allow eighty-one (81) parking spaces to be located



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Other Business Memo for June 23rd, 2022 Page 2

in the front yard setback. The Site Plan otherwise complies with the Sussex County Zoning Code. Tax Parcel: 335-12.00-3.00 (portion of). Zoning: B-1 (Neighborhood Business Zoning District). Staff are awaiting agency approvals. If the Commission desire to act favorably on this plan, final approvals are requested to be made by staff upon the receipt of all agency approvals.

(S-21-36 & C/U 2249) Mayapple Farm

Preliminary Site Plan & Landscape Plan

This is a Preliminary Site Plan & Landscape Plan for the development of forty-one (41) multifamily units (as a single-family detached condominium regime), a clubhouse and pool amenity, kayak pier, private roads, and open space to be constructed on a 20.91 acre +/- parcel of land. The site was the subject of a related Conditional Use Application, C/U No. 2249 to allow for a multifamily use within the AR-1 District. The Sussex County Council approved the Conditional Use at its meeting of Tuesday, October 26, 2021, and the change was adopted through Ordinance No. 2806. The property is located on the southwest side of Williamsville Road (S.C.R. 395), approximately 0.76 mile southeast of Lighthouse Road (Route 54). The Preliminary Site Plan complies with the Sussex County Zoning Code and all Conditions of Approval. Tax Parcel: 533-19.00-289.05. Zoning: AR-1 (Agricultural Residential District). Staff are awaiting agency approvals. If the Commission desire to act favorably on this plan, final approvals are requested to be made by staff upon the receipt of all agency approvals.

(S-22-18 & C/U 2252) Cedar Grove Road Substation

Preliminary Site Plan

This is a Preliminary Site Plan for the construction of Cedar Grove Road Substation, an electrical substation for the Delaware Electric Co-Op. The proposed use was approved as a Conditional Use (C/U No. 2252) by the Sussex County Council at their meeting of Tuesday, July 13th, 2021, via Ordinance No. 2788. The Plan's proposed improvements include a 200 square foot Control House, various electrical utility components, a primary access road, a maintenance access road, a nine (9) foot galvanized steel fence surrounding the development area, and landscaping to provide screening from adjacent properties. The parcel of 8.24 +/- acres is located on the southwest corner of the intersection Cedar Grove Road (S.C.R. 283) and Plantations Road (S.C.R. 275) with access for ingress/egress from Cedar Grove Road. Tax Parcel: 334-12.00-2.00. Zoning: MR (Medium-Density Residential Zoning District). Staff are awaiting agency approvals. If the Commission desires to act favorably on this plan, final approvals are requested to be made by staff upon the receipt of all agency approvals.

Waters Edge Church

Preliminary Site Plan

This is a Preliminary Site Plan for the establishment of a 1-story 6,806 square foot proposed building, a 1-story proposed 1,506 square foot building and other associated site improvements. The proposed 6,806 square foot building was approved for a variance of 23.48-ft from the required 60-ft front setback. The variance was approved by the Board of Adjustment through BOA Case No. 12679 at their meeting of Monday, April 18, 2022. The property is located on the northside of Broadkill Road (Route 16) and the east side of Reynolds Road (S.C.R. 233), approximately 0.75-miles southwest of the intersection of Zion Church Road (S.C.R. 235) and Broadkill Road (Route 16). Also, please note that there are five (5) existing parking spaces on the site which are currently located within the front yard setback. The Preliminary Site Plan complies with the Sussex County Zoning Code. Tax Parcel: 235-15.00-7.01. Zoning: CR-1 (Commercial Residential Zoning District). Staff are awaiting agency approvals. If the Commission desires to act favorably on this plan, final approvals are requested to be made by staff upon the receipt of all agency approvals.

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Assawoman Lakes (F.K.A. Evergreen) RPC (C/Z 1900)

Revised Final Site Plan

This is a Revised Final Site Plan for the previously approved Assawoman Lakes Residential Planned Community (RPC) for an amendment to the Record Plan. Specifically, this revision includes a 1-ft strip transfer of land from parcel 134-16.00-51.00 to 134-16.00-52.00. This 1-ft strip of land was previously included within the forested buffer (for a total width of 21-ft) and is now being removed and conveyed, resulting in the buffer now achieving the required 20-ft buffer width as required under §99-5 of the Sussex County Code and Condition "L" of the Conditions of Approval. The Sussex County Council approved a Change of Zone Application (C/Z 1900) for the property at their meeting of Tuesday, March 17, 2020, and the change was adopted through Ordinance No. 2711. The property is located on the east side of Parker House Road (S.C.R. 362), approximately 0.35 mile south of Beaver Dam Road (S.C.R. 368). The Revised Final Site Plan complies with the Sussex County Zoning Code and all Conditions of Approval. Tax Parcel: 134-16.00-51.00. Zoning: GR-RPC (General Residential District – Residential Planned Community). Staff are in receipt of all agency approvals.

(S-21-37 & C/U 2105) Lands of Thomas Engel

Revised Preliminary Site Plan

This is a Revised Preliminary Site Plan for the Lands of Thomas R. Engel for the site to host Double E. Lawn Care, a commercial landscaping business owned by the Applicant. This use was approved as a Conditional Use (C/U No. 2105) by Sussex County Council at their meeting of Tuesday, December 5th, 2017, via Ordnance No. 2538. The parcel contains a single-family residential improvement as well as two 7,000 square foot pole buildings to the rear of the parcel with access off Doddtown Road. The Plan proposes to utilize a portion of the parcel for operations associated with Double E. Lawn Care including outdoor parking and vehicle or equipment storage. The parcel of 25.156 +/- acres is located on the northwest side of Doddtown Road (S.C.R. 293), approximately (0.25) miles west of Harbeson Road (Route 5). The Revised Preliminary Site Plan complies with the Sussex County Zoning Code. Tax Parcel: 235-30.00-103.09. Zoning: AR-1 (Agricultural Residential Zoning District). Staff are awaiting agency approvals. If the Commission desire to act favorably on this plan, final approvals are requested to be made by staff upon the receipt of all agency approvals.

(S-22-03) Steiner Road Industrial Park

Revised Preliminary Site Plan

This is a Revised Preliminary Site Plan for the Lands of Steiner Land LLC for the construction of Concrete Central Mixing and Proportioning Plant. The Applicant seeks Preliminary Site Plan approval for this Plan separate from the proposed "Building Materials Recycling & Sorting Facility" site to be located on the parcel adjacent immediately to the west. An existing fifty (50) foot wide Perpetual Cross Access Easement will serve as access for ingress/egress for both parcels. The proposed projects also share the same stormwater management facility. The parcel is 7.50 +/- acres and located on the east side of Steiner Road (S.C.R. 320) approximately 1,060 feet south of Lewes Georgetown Highway (Route 9) with approximately (486) feet of frontage on Steiner Road. Tax Parcel: 135-16.00-23.05 Zoning: HI-1 (Heavy Industrial Zoning District). Staff are awaiting agency approvals. If the Commission desire to act favorably on this plan, final approvals are requested to be made by staff upon the receipt of all agency approvals.

(S-22-03) Steiner Road Industrial Park

Requested Determination of Permitted Use

Pursuant to the staff's review of the Preliminary Site Plan for the site, the Applicant has requested the Planning & Zoning Commission review the type and nature of the proposed uses at the site in terms

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Other Business Memo for June 23rd, 2022 Page 4

of (§115-110); Permitted Uses and "potentially hazardous uses" as described in (§115-110(C)). The Preliminary Site Plan proposes for industrial uses to include the following as described in the plan; a "Concrete Central Mixing and Proportioning Plant" and a "Building Materials Recycling and Sorting Facility." Prior to any determination by the Director (§115-111), the Applicant has requested for Commission to consider if the proposed uses may be categorized under "similar industrial uses" as listed in (§115-110(C)). The parcels are a combined total of 15.0 +/- acres and located on the east side of Steiner Road (S.C.R. 320) approximately 1,060 feet south of Lewes Georgetown Highway (Route 9). Tax Parcels: 135-16.00-23.05, 135-16.00-23.06 Zoning District: HI-1 (Heavy Industrial District).

(2004-17) The Villages at Red Mill Pond South

Request to Amend Conditions of Approval

The Planning and Zoning Department has received a request to amend Conditions of Approval for the Revised Final Subdivision Plan for The Villages at Red Mill Ponds South (2004-17) as approved by the Planning & Zoning Commission at their meeting of Thursday, January 24th, 2019. On June 10th, 2022, staff received a formal request to amend Condition #11 of the Plan's approval. Due to recent revisions and updates to proposed amenities, the Applicant requests that Condition 11, which states, *"All amenities and recreational facilities shall be constructed and open for use by the residents of the development within 2 years of the issuance of the first building permit"* be amended. This standard AR-1 subdivision contains one-hundred and seventy-seven (177) single-family lots on 82.10 acres +/- and is located on the northeast side of Lewes Georgetown Highway (Route 9). Tax Parcel: 334-5.00-170.00. Zoning: AR-1 (Agricultural Residential District).

(2021-04) Autumndale (F.K.A. Autumdale & Fairmont)

Request to Amend Conditions of Approval

The Planning and Zoning Department has received a request to amend Conditions of Approval of the Preliminary Subdivision Plan for Autumndale (F.K.A. Fairmont) (2021-04) as approved by the Planning & Zoning Commission at their meeting of Thursday, January 27, 2022. On June 15th, 2022, staff received a supplemental request to amend Condition B of the Plan's approval. The Commission last reviewed this request at their meeting of Thursday, May 12th, 2022, where the Commission chose to take no action for further consideration of the proposal. The Applicant requests that Condition B, which states, "*The Final Site Plan shall confirm that at least 50 acres of the site remains as open space, with existing woodlands being preserved as "Non-Disturbance Areas"*, be amended to, "*The Final Site Plan shall confirm that 50 acres, more or less, of the site remains as open space subject to final engineering*." This amendment would allow for variations in the amount of open space provided subject to final engineering. This AR-1 cluster subdivision proposes one-hundred and four (104) single-family lots on 73.905 acres +/- and is located on the south side of Hollyville Road (S.C.R. 48), approximately 0.43 mile southwest of the intersection of Harbeson Road (Route 5) and Hollyville Road. Tax Parcel: 234-10.00-14.00. Zoning: AR-1 (Agricultural Residential District).

(2021-05) Turnberry (F.K.A. Unity Branch)

Request to Amend Conditions of Approval

The Planning and Zoning Department has received a request to amend Conditions of Approval of the Preliminary Subdivision Plan for Turnberry (F.K.A. Unity Branch) (2021-05) as approved by the Planning & Zoning Commission at their meeting of Thursday, January 27, 2022. On June 15th, 2022, staff received a supplemental request to amend Condition B of the Plan's approval. The Commission last reviewed this request at their meeting of Thursday, May 12th, 2022, where the Commission chose to take no action for further consideration of the proposal. The Applicant requests that Condition B,

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which states, "The Final Site Plan shall confirm that at least 65% of the site remains as open space", be amended to, "The Final Site Plan shall confirm that at least 65%, more or less, of the site remains as open space subject to final engineering." This amendment would allow for variations in the amount of open space provided subject to final engineering. This AR-1 cluster subdivision proposes one-hundred and ninety-six (196) single-family lots on 135.524 acres +/- and is located on the east and southeast side of Hollyville Road, approximately 0.8 miles south of Hurdle Ditch Road (S.C.R. 290). Tax Parcels: 234-16.00-1.01, 1.02, 3.00, 4.00 and 5.00. Zoning: AR-1 (Agricultural Residential District).

(2021-11) Lightship Cove (F.K.A. Fisher Road)

Request to Amend Conditions of Approval

The Planning and Zoning Department has received a request to amend Conditions of Approval for the Preliminary Subdivision Plan for Lightship Cove (F.K.A. Fisher Road) (2021-11) as approved by the Planning and Zoning commission at their meeting of Thursday, December 9, 2021. On June 15th, 2022, staff received a supplemental request to amend Condition J of the Plan's approval. The Commission last reviewed this request at their meeting of Thursday, May 12th, 2022, where the Commission chose to take no action for further consideration of the proposal. The Applicant requests that Condition B, which states, *"The Final Site Plan shall confirm that at least 54% of the site remains as open space,"* be amended to, *"The Final Site Plan shall confirm that 54%, more or less, of existing woodlands, subject to final engineering."* This amendment would allow for variants in the amount of open space provided subject to final engineering. This AR-1 cluster subdivision proposes ninety-seven (97) single-family lots on 48.93 acres +/- and is located on the south side of Fisher Road (S.C.R. 262). Tax Parcel: 334-10.00-69.00. Zoning: AR-1 (Agricultural Residential District).

(2021-12) Miralon (F.K.A. Cool Spring)

Request to Amend Conditions of Approval

The Planning and Zoning Department has received a request to amend Conditions of Approval of the Preliminary Subdivision Plan for Miralon (F.K.A. Cool Spring) (2021-12) as approved by the Planning & Zoning Commission at their meeting of Thursday, January 27, 2022. On June 15th, 2022, staff received an updated supplemental request to amend Condition B, Condition E and Condition J of the Plan's approval. The Commission last reviewed this request at their meeting of Thursday, May 12th, 2022, where the Commission chose to take no action for further consideration of the proposal. The Applicant requests that Condition B, requiring "The Final Site Plan shall confirm that at least 50% of the site remains as open space," be amended to "The Final Site Plan shall confirm that at least 50%, more or less, of the site remains as open space subject to final engineering", that Condition E be deleted in its entirety and replaced with "As recommended by D.N.R.E.C., a forest assessment shall be conducted to determine if mature forest areas exist on site and to identify any mature trees," and that a portion of Condition J, in relation to the provision of amenities, be amended to "Amenities including a pool and pool house shall be constructed and open to use by residents of this development on or before the issuance of the 71st residential building permit." These amendments would allow for variations in the amount of open space provided subject to final engineering, remove the requirement that a forest assessment be provided with the Final Site Plan and would require amenities to be provided by 60% of buildout. This AR-1 cluster subdivision proposes one-hundred and forty-four (144) single-family lots on 72.02 acres +/- and is located on the northeast

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side of Cool Spring Road (S.C.R 290). Tax Parcels: 234-5.00-37.00. Zoning: AR-1 (Agricultural Residential District).

Lands of Ethan & Glenda Knepp

Minor Subdivision off of a 30-ft easement

This is a concept plan for the proposed subdivision of an 8.5 acre +/- parcel into one (1) lot and residual lands. The lot will be located off of a proposed 20-ft wide ingress/egress access easement over an existing private road. The proposed lot consists of approximately 2.517 acres +/- and the residual land consists of approximately 45.19 acres +/-. The property is located on the south side of Baker Road (S.C.R. 455A). The Preliminary Site Plan complies with the Sussex County Zoning and Subdivision Codes. Zoning: AR-1 (Agricultural Residential District). Tax Parcel: 532-22.00-38.01. Staff are awaiting agency approvals. If the Commission desires to act favorably on this plan, final approvals are requested to be made by staff upon the receipt of all agency approvals.

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Yamil Rivera

From:	Katherine Garrison <kgarrison@artesianwater.com></kgarrison@artesianwater.com>
Sent:	Tuesday, March 15, 2022 11:01 AM
То:	Yamil Rivera; Adam Gould
Cc:	Ron Sutton; awruble@aol.com
Subject:	RE: EXTERNAL: Seaway at Sycamore Chase

Good morning, I have no additional comments for this project upon review of the plans sent to me yesterday. Let me know if you need a letter or anything. Thanks.

Katherine E. Garrison Supervisor of Survey/Senior Planning Designer/CCR (302)453-2508



From: Yamil Rivera <yamil@cea-de.com>
Sent: Monday, March 14, 2022 2:33 PM
To: Katherine Garrison <kgarrison@artesianwater.com>; Adam Gould <AGould@artesianwater.com>
Cc: Ron Sutton <ron@cea-de.com>; awruble@aol.com
Subject: RE: EXTERNAL: Seaway at Sycamore Chase

Good-afternoon,

Please see the dropbox link below with the following items for review:

- Water Plan
- Record Plan

https://www.dropbox.com/sh/mhyu0jc562veorn/AAB5vyvcgXWpHBEOHs4TVqUya?dl=0

If you have any questions or require any additional information, please do not hesitate to email me.

Thanks, Yamil Morera-Rivera Staff Engineer

Civil Engineering Associates, LLC

55 W. Main Street Middletown, DE 19709 Phone: (302) 376-8833

From: Katherine Garrison <kgarrison@artesianwater.com>
Sent: Thursday, March 10, 2022 11:32 AM
To: Yamil Rivera <yamil@cea-de.com>; Adam Gould <AGould@artesianwater.com>
Cc: Ron Sutton <ron@cea-de.com>; awruble@aol.com
Subject: RE: EXTERNAL: Seaway at Sycamore Chase



STATE OF DELAWARE **DEPARTM ENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL** DIVISION OF WATERSHED STEWARDSHIP 21309 BERLIN RD UNIT #6 GEORGETOWN, DE 19947

DRAINAGE PROGRAM

PHONE: (302) 855-1930 FAX: (302) 670-7059

December 23, 2021

Scott Roberts Civil Engineering Assoc., LLC 55 W. Main Street Middletown, DE 19709

RE: Parcel # 134-19.00-23.00 & 24.00 Seaway at Sycamore Chase FKA: Jankovic Parcel

Delaware's Department of Natural Resources and Environmental Control (DNREC), Drainage Program has reviewed the plans submitted by Civil Engineering Assoc., LLC for the above noted properties located within the Beaver Dam Canal Tax Ditch Watershed.

My office has **no objection** to the works of improvement to these parcels with the following provisions:

- It is highly recommended that the landowner evaluates and cleans out the tax ditch channel to design grade, if needed, prior to construction of this project. The DNREC Drainage Program can provide technical assistance and tax ditch asbuilts on this matter.
- Tax ditch right-of-ways must remain traversable for tax ditch maintenance personnel, large equipment and/or disposal of spoil and debris.
- When scheduling the sediment and stormwater pre-construction meeting for this project, please contact the DNREC Drainage Program.

Please note that changes to the Beaver Dam Canal Tax Ditch as a result of this project per Court Order Change (COC) Number 44 which became effective on December 15, 2021, (see attached copy of COC #44).

Consultants working on behalf of a landowner, are responsible for passing on this information to the landowner(s).

If you have any questions or concerns, please contact the Drainage Program at (302) 855-1930.

Sincerely,

Melíssa Hubert

Melissa Hubert Tax Ditch Program Manager II

pc: Brittany Haywood, Program Manager



STATE OF DELAWARE **DEPARTM ENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL** DIVISION OF WATERSHED STEWARDSHIP

21309 BERLIN RD UNIT #6 GEORGETOWN, DE 19947

DRAINAGE PROGRAM

PHONE: (302) 855-1930 FAX: (302) 670-7059

December 21, 2021

Myrtle A. Thomas Prothonotary of Sussex County 1 The Circle, Suite 2 Georgetown, DE 19947

RE: Beaver Dam Canal Tax Ditch, C.A. #06M-11-010

Dear Ms. Thomas:

In the matter of the Beaver Dam Canal Tax Ditch, attached is the original request with supporting papers for the forty-fourth desired change in the Order that created this Tax Ditch. I have examined these papers and have found that they are sufficient to meet the requirements of Section 4189 (2a & 2b), Chapter 41, Title 7, Delaware Code, as amended, entitled "Alteration of Tax Ditches, Amendments to Ditch Orders". This change shall be known as Change No. 44 of the Beaver Dam Canal Tax Ditch Court Order.

Sincerely,

Melíssa Hubert Melissa Hubert Program Manager

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Enclosure

Prepared by:DNRECDivision of Watershed StewardshipReturn to:21309 Berlin Road, Unit 6Georgetown, DE 19947

Page 1 of 3

BEAVER DAM CANAL TAX DITCH C.A. #06M-11-010

COURT ORDER CHANGE NO. 44 (SUSSEX COUNTY)

WHEREAS, the present owners of Property Nos. 8A and 9 of the Beaver Dam Canal Tax Ditch desire to eliminate a portion of Sub 3 of Prong 1 (S3P1) from Sta 5+63 to Sta 17+49, including the associated rights-of-way; and

WHEREAS, there will be no reduction in individual assessment bases as a result of the elimination of a portion of Sub 3 of Prong 1 (S3P1); and

WHEREAS, tax ditch rights-of-way include the cross-section of the ditch; and

WHEREAS, the landowner of Property No. 8A shall be responsible for assuring that this Court Order Change is filed with the Recorder of Deeds for Sussex County; and

WHEREAS, no other landowners are involved;

NOW, THEREFORE, we the undersigned, landowners of Property Nos. 8A and 9 of the Beaver Dam Canal Tax Ditch, hereby agree to the elimination of a portion of Sub 3 of Prong 1, including the associated rights-of-way on S3P1 from Sta 5+63 to Sta 17+49 as described above; and as shown on the drawing attached hereto and made a part of this agreement; and understand that there will be no reduction to our individual property assessment bases and Property No. 8A further agrees to be responsible for assuring that this Court Order Change is filed with the Recorder of Deeds for Sussex County.

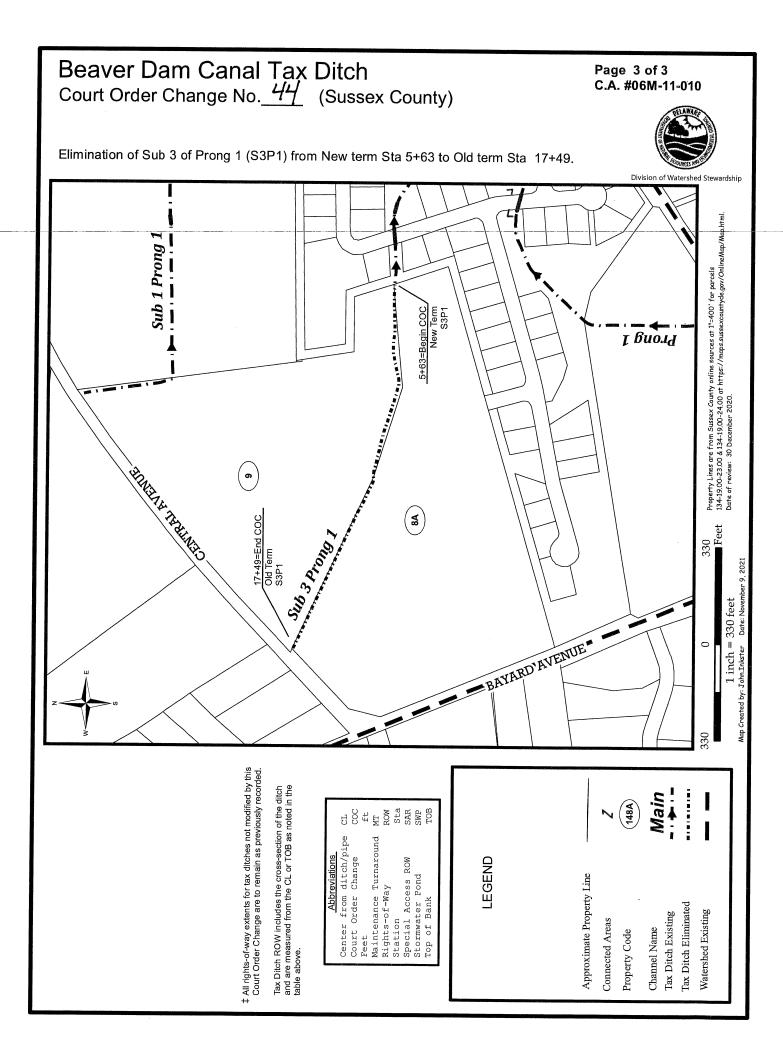
In 2.24 Witness Date Paul D. Jankovic Printer Name: Keplert, (prop. 8A) 134-19.00-23.00 12.2.21 Cone equ Witness Date Peggy W. Toomey Printed Name: (prop. 9) 134-19.00-24.00 mant 12-2-21 less Date Ronald P. Wilson Printed Name: (prop. 9) 134-19.00-24.00

The Beaver Dam Canal Tax Ditch Officers, Donald Powell, Randy Powell and Gary Hickman were consulted by the Delaware Department of Natural Resources and Environmental Control, Division of Watershed Stewardship, Conservation Programs Section, Drainage Program and verbally approved of this change as documented above on 11/19/2021, respectively as such their signatures were not obtained. Document dates on map and text pages may vary.

APPROVED: DIVISION OF WATERSHED STEWARDSHIP

12-15-280 Terry L. Deputy, Director Date

Division of Watershed Stewardship





OFFICE OF THE STATE FIRE MARSHAL Technical Services

22705 Park Avenue Georgetown, DE 19947



SFMO PERMIT

Plan Review Number: 2021-04-207837-MJS-01 Status: Approved as Submitted

Tax Parcel Number: 134-19.00-23.00 Date: 08/12/2021

Seaway a Sycamore Chase

Paul Janovic Property

Project

34731 Central Ave Frankford DE 19945

Scope of Project

Number of Stories: Square Footage: Construction Class: Fire District: 84 - Millville Volunteer Fire Co

Occupant Load Inside: Occupancy Code:

Applicant

Ronald Sutton 55 West Main Street Middletown, DE 19709

This office has reviewed the plans and specifications of the above described project for compliance with the Delaware State Fire Prevention Regulations, in effect as of the date of this review.

A Review Status of "Approved as Submitted" or "Not Approved as Submitted" must comply with the provisions of the attached Plan Review Comments. Any Conditional Approval does not relieve the Applicant, Owner, Engineer, Contractor, nor their representatives from their responsibility to comply with the plan review comments and the applicable provisions of the Delaware State Fire Prevention Regulations in the construction, installation and/or completion of the project as reviewed by this Agency.

A final inspection is required.

This Plan Review Project was prepared by:

Jefferson Cerri Fire Protection Specialist II

FIRE PROTECTION PLAN REVIEW COMMENTS

Plan Review Number: 2021-04-207837-MJS-01 Status: Approved as Submitted

Tax Parcel Number: 134-19.00-23.00 Date: 08/12/2021

PROJECT COMMENTS

1002 A	This project has been reviewed under the provisions of the Delaware State Fire Prevention Regulations (DSFPR) UPDATED March 11, 2016. The current Delaware State Fire Prevention Regulations are available on our website at www.statefiremarshal.delaware.gov. These plans were not reviewed for compliance with the Americans with Disabilities Act (ADA). These plans were not reviewed for compliance with any Local, Municipal, nor County Building Codes.
1040 A	This site meets Water Flow Table 2, therefore the following water for fire protection requirements apply: Main Sizes: 6" minimum. Minimum Capacity: 1,000 gpm @ 20 psi residual for 1 hour duration. Hydrant Spacing: 800' on center.
1180 A	This report reflects site review only. It is the responsibility of the applicant and owner to forward copies of this review to any other agency as required by those agencies.
1032 A	Additional hydrants and/or relocation of proposed hydrants are required for this project (DSFPR Part II Chapter 6). Contact this Agency for location information.
1132 A	Fire hydrants shall be color coded in accordance with the DSFPR, Part III, Section 3 4. This includes both color coding the bonnet and 2" reflective tape around the barrel under the top flange.
1232 A	All threads provided for fire department connections, to sprinkler systems, standpipes, yard hydrants or any other fire hose connections shall be uniform to those used by the fire department in whose district they are located. DSFPR Part III,Section 1.1.5.1.
1332 A	The distance between a fire hydrant and the fire lane shall not be greater than seven feet (DSFPR Part V, Chapter 5, Section 5 10.4).
1432 A	The steamer connection of all fire hydrants shall be so positioned so as to be

	facing the street or fire lane. (DSFPR Regulation 705, Chapter 5, Section 10). The center of all hose outlet(s) on fire hydrants shall be not less than 18 inches above finalgrade (NFPA 24, Section 7.3.3).
11130 A	Provide a water flow test on the subdivision hydrant(s) once they have been installed, and before they are placed into service (DSFPR Part I, Section 4 4.2 and Part III, Chapter 3). Results are to be forwarded to this Agency for review.
1501 A	If there are any questions about the above referenced comments please feel free to contact the Fire Protection Specialist who reviewed this project. Please have the plan review number available when calling about a specific project. When changes orrevisions to the plans occur, plans are required to be submitted, reviewed, and approved.



DELAWARE HEALTH AND SOCIAL SERVICES

Division of Public Health

Office of Engineering Phone: (302) 741-8640 Fax: (302) 741-8631

October 15, 2021

TIDEWATER UTILITIES, INC.

APPROVAL TO CONSTRUCT

Bethany Bay/Ocean View District Seaway at Sycamore Chase Connection PWS #DE0000221 Approval #21W149

Mr. Robert Harris Gulfstream Development, LLC 27 Atlantic Avenue Ocean View, DE 19970

Dear Mr. Harris:

As provided by Section 2.11 of the *State of Delaware Regulations Governing Public Drinking Water Systems*, you are granted approval to connect Seaway at Sycamore Chase to the existing main in accordance with the plans submitted by Civil Engineering Associates, LLC. The plans consist of:

- 1. Transmittal letter dated October 11, 2021.
- 2. Two copies of the plans entitled "Office of Drinking Water Plans for Seaway at Sycamore Chase" dated March 31, 2020 and revised October 8, 2021.

These plans, as noted, are made a part of this approval. This approval is granted subject to the enclosed list of conditions.

It is the owner's responsibility to ensure as-built drawings are maintained throughout all phases of construction. Prior to receiving an Approval to Operate, the Office of Engineering requires one set of as-built drawings, including profile markups. A profile mark-up will be required where the proposed sanitary sewer crosses the existing 12-inch water main by Hydrant #3 on sheet W-2.

The Office of Engineering recommends detectable tracer tape that is three inches wide and blue in color to be installed directly above all water mains larger than two inches in diameter.

Mr. Robert Harris Gulfstream Development, LLC October 15, 2021 Page 2

Should you have any questions regarding this matter, please feel free to contact Bill Milliken at (302) 741-8646.

Plans reviewed by: Willies William J. Milliken, Jr.

Engineer III Office of Engineering

Sincerely, Doug Lodge, R.E.

Supervisor of Engineering Office of Engineering

cc: Public Service Commission Ron Sutton, P.E., Civil Engineering Associates, LLC Alexis Virdin-Gede, Tidewater Utilities, Inc. Ashley Kunder, Office of Drinking Water

- 1. The approval is void if construction has not started by October 15, 2022.
- 2. The project shall be constructed in accordance with the approved plans and all required conditions listed in this Approval to Construct. If any changes are necessary, revised plans shall be submitted and a supplemental approval issued prior to the start of construction. Asbuilt plans including profile mark-ups must be submitted to the Office of Engineering after construction has been completed.
- 3. Representatives of the Division of Public Health may inspect this project at any time during the construction.
- 4. This approval does not cover the structural stability of any units or parts of this project.
- 5. The water system shall be operated in conformance with the *State of Delaware Regulations Governing Public Drinking Water Systems.*
- 6. All potable water lines and appurtenances shall be disinfected using one of the methods in the American Water Works Association Standard C651, current edition.
- 7. Water mains crossing sanitary and storm sewers should be laid to provide a minimum vertical distance of 18 inches between the outside of the water main and the outside of the sewer, and the water main should be above the sewer. At crossings, one full length of water pipe should be located so both joints will be as far from the sewer as possible. Special structural support for the water and sewer pipes may be required. In cases where it is not practical to maintain an 18-inch separation, the Division may allow deviation on a case-by-case basis if supported by data from the design engineer.
- 8. Water mains should be laid 10 feet horizontally from any existing or proposed sanitary or storm sewers. The distance should be measured edge to edge. In cases where it is not practical to maintain a 10-foot separation, the Division may allow deviation on a case-by-case basis if supported by data from the design engineer.
- 9. All chemicals, materials, mechanical devices, and coatings in contact with potable water shall comply with National Sanitation Foundation/American National Standards Institute Standards (NSF/ANSI) 60 and 61 and shall be inert, nontoxic, and shall not import any taste, odor, or color to the water.
- 10. Sufficient valves should be provided so that inconvenience and sanitary hazards will be minimized during repairs. Valves should be located at not more than 500-foot intervals in commercial districts and at not more than one block or 800-foot intervals in other districts.
- 11. There shall be no connection between the distribution system and any pipes, pumps, hydrants, or tanks whereby unsafe water or other contaminating materials may be discharge or drawn into the system.

- 12. Fire hydrant drains shall not be connected to or located within 10 feet of sanitary sewers, storm sewers, or storm drains.
- 13. Prior to usage of water from this new well, water plant, storage plant, or distribution system, approval for the water quality must be obtained from the Division of Public Health.
- 14. The water system should be capable of providing at least 25 psi at ground level at all times throughout the distribution system.
- 15. All plastic pipe utilized in this drinking water system shall be approved for potable water use (NSF-pw). If any piping is joined with solder or flux, the solder and flux shall be lead free (less than or equal to 0.2 percent lead).
- 16. All water lines should be buried to a depth of at least 3 feet.
- 17. A Certificate of Public Conveniences and Necessity should be acquired from the Public Service Commission, (302) 739-4247.
- 18. This approval is for the distribution system only. Plans and specifications for all well plumbing, pumps, storage (including any interior coatings), and treatment must be submitted to and approved by this office prior to their installation.
- 19. The approval is subject to immediate revocation upon violation of any of the preceding conditions.
- 20. All other local (county/city/town) approvals or permits needed must be obtained prior to beginning construction.
- 21. Upon completion of construction and before the system is placed into operation, a "Notice of Completion" must be submitted to the Office of Engineering. Before placing the system into operation, the following must be adhered to:
 - a. Submit a set of as-built plans with profile markups to the Office of Engineering.
 - b. Obtain an Approval to Operate from the Office of Engineering.

Prepared by:DNRECDivision of Watershed StewardshipReturn to:21309 Berlin Road, Unit 6Georgetown, DE 19947

Page 1 of 3

BEAVER DAM CANAL TAX DITCH C.A. #06M-11-010

COURT ORDER CHANGE NO. _____ (SUSSEX COUNTY)

WHEREAS, the present owners of Property Nos. 8A and 9 of the Beaver Dam Canal Tax Ditch desire to eliminate a portion of Sub 3 of Prong 1 (S3P1) from Sta 5+63 to Sta 17+49, including the associated rights-of-way; and

WHEREAS, there will be no reduction in individual assessment bases as a result of the elimination of a portion of Sub 3 of Prong 1 (S3P1); and

WHEREAS, tax ditch rights-of-way include the cross-section of the ditch; and

WHEREAS, the landowner of Property No. 8A shall be responsible for assuring that this Court Order Change is filed with the Recorder of Deeds for Sussex County; and

WHEREAS, no other landowners are involved;

NOW, THEREFORE, we the undersigned, landowners of Property Nos. 8A and 9 of the Beaver Dam Canal Tax Ditch, hereby agree to the elimination of a portion of Sub 3 of Prong 1, including the associated rights-of-way on S3P1 from Sta 5+63 to Sta 17+49 as described above; and as shown on the drawing attached hereto and made a part of this agreement; and understand that there will be no reduction to our individual property assessment bases and Property No. 8A further agrees to be responsible for assuring that this Court Order Change is filed with the Recorder of Deeds for Sussex County.

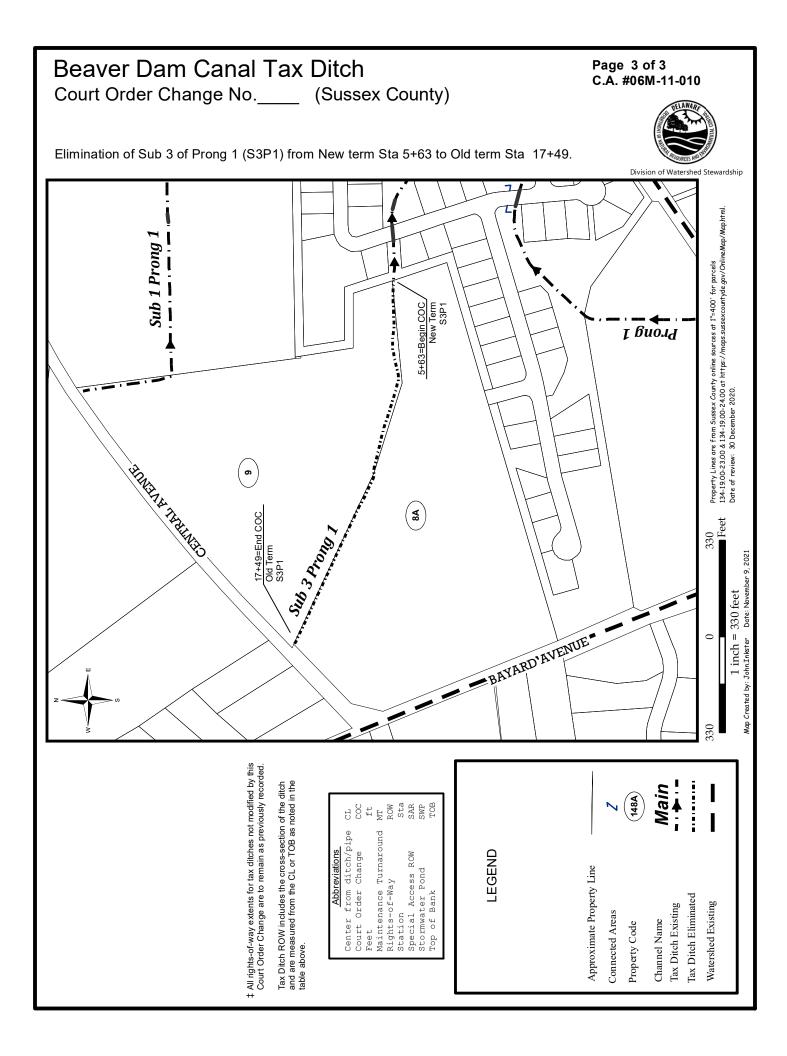
Witness Printer Name:	Date	Paul D. Jankovic (prop. 8A) 134-19.00-23.00
Witness Printed Name:	Date	Peggy W. Toomey (prop. 9) 134-19.00-24.00
Witness Printed Name:	Date	Ronald P. Wilson (prop. 9) 134-19.00-24.00

The Beaver Dam Canal Tax Ditch Officers, Donald Powell, Randy Powell and Gary Hickman were consulted by the Delaware Department of Natural Resources and Environmental Control, Division of Watershed Stewardship, Conservation Programs Section, Drainage Program and verbally approved of this change as documented above on 11/19/2021, respectively as such their signatures were not obtained. Document dates on map and text pages may vary.

APPROVED: DIVISION OF WATERSHED STEWARDSHIP

Date

Terry L. Deputy, Director Division of Watershed Stewardship



ENGINEERING DEPARTMENT

JOHN J. ASHMAN SR. MANAGER OF UTILITY PLANNING & DESIGN REVIEW

(302) 855-7370 T (302) 854-5391 F jashman@sussexcountyde.gov

October 28, 2021



Sussex County

DELAWARE sussexcountyde.gov

HANS M. MEDLARZ, P.E. COUNTY ENGINEER

Civil Engineering Associates 55 West Main Street Middletown, DE 19709 Attn: Ronald H. Sutton, P.E.

RE: SEAWAY AT SYCAMORE CHASE (FKA WOODLANDS II) MILLER CREEK SANITARY SEWER DISTRICT SUBDIVISION NO. 2020-18 SUSSEX COUNTY TAX MAP NUMBERS 1-34-19.00-23.00 – CLASS-1 AGREEMENT NO. 1154

Dear Mr. Sutton,

A review of the above referenced plans has been completed by the Sussex County Engineering Department. Please have a completed review, **with confirmation** from DNREC for this projects waste water construction permit before submitting plans for Sussex County approval. Provide three (3) sets of plans in a size of 24" x 36", and one (1) CD or file transfer of PDFs for each sheet. One set of plans will be returned to the Engineer/Consultant for their record.

Each sheet must be signed and sealed by the Engineer and the cover sheet of the plan shall have the owner/developer's and wetland consultant signature, this includes PDFs being submitted prior to Sussex County Engineering Department approval.

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

Sincerely,

SUSSEX COUNTY ENGINEERING DEPARTMENT

Scott A. Thornton Engineering Technician IV





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

NICOLE MAJESKI SECRETARY

December 02, 2021

Mr. Jamie Whitehouse, Director Sussex County Planning & Zoning Commission Sussex County Administration Building P.O. Box 417 Georgetown, Delaware 19947

SUBJECT: Letter of No Objection to Recordation Seaway at Sycamore Chase Tax Parcel # 134-19.00-23.00 SCR00084-BAYARD ROAD SCR00084-CENTRAL AVENUE Baltimore Hundred, Sussex County

Dear Mr. Whitehouse:

The Department of Transportation has reviewed the Site Plan, dated November 24, 2021 (last revised November 24, 2021), for the above referenced site, and has no objection to its recordation as shown on the enclosed drawings. This "No Objection to Recordation" approval shall be valid for a period of <u>five (5) years</u>. If the Site Plan is not recorded prior to the expiration of the "No Objection to Recordation", then the plan must be updated to meet current requirements and resubmitted for review and approval.

This letter does not authorize the commencement of entrance construction. Entrance plans shall be developed in accordance with DelDOT's <u>Development Coordination Manual</u> and submitted to the Development Coordination Section for review and approval.

This "No Objection to Recordation" letter is <u>not</u> a DelDOT endorsement of the project discussed above. Rather, it is a recitation of the transportation improvements, which the applicant may be required to make as a pre-condition to recordation steps and deed restrictions as required by the respective county/municipality in which the project is located. If transportation investments are necessary, they are based on an analysis of the proposed project, its location, and its estimated impact on traffic movements and densities. The required improvements conform to DelDOT's published rules, regulations and standards. Ultimate responsibility for the approval of



Seaway at Sycamore Chase Mr. Jamie Whitehouse Page 2 December 02, 2021

any project rests with the local government in which the land use decisions are authorized. There may be other reasons (environmental, historic, neighborhood composition, etc.) which compel that jurisdiction to modify or reject this proposed plan even though DelDOT has established that these enumerated transportation improvements are acceptable.

If I can be of any further assistance, please call me at (302) 760-2266.

Very truly yours,

Hichard S. MCalo

R. Stephen McCabe Sussex County Review Coordinator Development Coordination

Robert Harris, Gulf Stream Development cc: Scott Roberts, Civil Engineering Associates, LLC Sussex County Planning & Zoning Jessica L. Watson, Sussex Conservation District Matt Schlitter, South District Public Works Engineer Scott Rust, South District Public Work Manager James Argo, South District Project Reviewer Richard Larkin, South District Subdivision Manager Jennifer Pinkerton, Chief Materials & Research Engineer Linda Osiecki, Pedestrian Coordinator John Fiori, Bicycle Coordinator Mark Galipo, Traffic Development Coordination Engineer Tim Phillips, Maintenance Support Manager Dan Thompson, Safety Officer North District Jared Kauffman, DTC Planner James Kelley, JMT Wendy L. Polasko, P.E., Subdivision Engineer Kevin Hickman, Sussex County Reviewer

Yamil Rivera

From:	Maximum Morowsky <mmorowsky@middlesexwater.com></mmorowsky@middlesexwater.com>
Sent:	Monday, November 01, 2021 11:58 AM
То:	'Yamil Morera-Rivera'
Cc:	'Ron Sutton'; Kelly Bailey; Tawanda Priester
Subject:	RE: [EXTERNAL] RE: Seaway at Sycamore Chase PLREV 04 - 11.01.2021
Attachments:	Plan Approval App Rev.10 - 10.30.2020.pdf; Seaway at Sycamore Chase PLREV 04 -
	11.01.2021.pdf

Dear Mr. Morera-Rivera,

At this time, TUI has no further comments of the attached utility plan. TUI's acceptance of these plans shall expire one (1) year for the date of this email. In the event final approval is not granted and construction is not started within the year, resubmission to TUI will be required. Also, if the project and/or utility plans are revised, resubmission will be required.

Prior to final approval, the following open items must be completed:

- 1. WSA must be executed between TUI and the developer and the income liability taxes must be paid. To initiate the process, the developer should contact Kelly Bailey at <u>kbailey@tuiwater.com</u> or by phone at 302-747-1304.
- 2. DelDOT permit must be completed. Please contact me to electronically submit the DelDOT permit for this project.

Once the open items are completed, the following documentation may be submitted for final approval:

- 1. Completed plan approval application, signed and dated. Attached is the latest application.
- 2. Hard copies of all permits.
- 3. One hard copy of the recorded record plat for the subdivision with book and page.
- 4. Three copies of final plans sealed by a professional engineer registered in the State of Delaware. Final plans should include: cover sheet, utility plans, profiles, water details, and water notes.
- 5. Electronic files on CD:
 - a. Final water utility plan in full .dwg format (AutoCAD 2018 or earlier versions),
 - b. Sealed final water utility plan in .pdf format.
 - c. Recorded record plat in .pdf format.

Please let me know if you have any questions. Thank you for your time.

Maximum Morowsky, E.I. Staff Engineer | <u>Tidewater Utilities, Inc.</u> "Southern Delaware's Premier Water Company Since 1964" Phone: 302-747-1321

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mmorowsky@middlesexwater.com

From: Yamil Morera-Rivera <yamil@cea-de.com>
Sent: Friday, October 8, 2021 4:05 PM
To: Maximum Morowsky <mmorowsky@middlesexwater.com>
Cc: 'Ron Sutton' <ron@cea-de.com>
Subject: [EXTERNAL] RE: Seaway at Sycamore Chase PLREV 03 - 09.28.2021

RECORD PLAN FOR **SEAWAY AT SYCAMORE CHASE BALTIMORE HUNDRED**

ROBERT T MASON

T.P.#: 134-19.00-7.16 D.B. 3789, P. 332

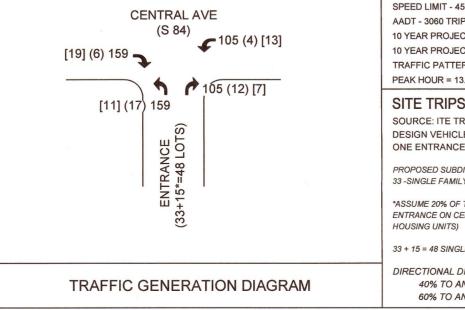
DELDOT GENERAL NOTES (LAST REVISED 3/21/19):

- ALL ENTRANCES SHALL CONFORM TO THE DELAWARE DEPARTMENT OF TRANSPORTATION'S (DELDOT'S) CURRENT DEVELOPMENT COORDINATION MANUAL AND SHALL BE SUBJECT TO ITS APPROVAL.
- NO LANDSCAPING SHALL BE ALLOWED WITHIN THE RIGHT-OF-WAY UNLESS THE PLANS ARE COMPLIANT WITH SECTION 3.7 OF THE DEVELOPMENT COORDINATION MANUAL.
- 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 ESTABLISHED ON THIS PLAN. 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.
- UPON COMPLETION OF THE CONSTRUCTION OF THE SIDEWALK OR SHARED-USE PATH ACROSS THIS PROJECT'S FRONTAGE AND PHYSICAL CONNECTION TO ADJACENT EXISTING FACILITIES, THE DEVELOPER, THE PROPERTY OWNERS OR BOTH ASSOCIATED WITH THIS PROJECT. SHALL BE RESPONSIBLE TO REMOVE ANY EXISTING ROAD TIE-IN CONNECTIONS LOCATED ALONG ADJACENT PROPERTIES, AND RESTORE THE AREA TO GRASS. SUCH ACTIONS SHALL BE COMPLETED AT DELDOT'S DISCRETION, AND IN CONFORMANCE WITH DELDOT'S DEVELOPMENT COORDINATION MANUAL.
- PRIVATE STREETS CONSTRUCTED WITHIN THIS SUBDIVISION SHALL BE MAINTAINED BY THE DEVELOPER, THE PROPERTY OWNERS WITHIN THIS SUBDIVISION OR BOTH (TITLE 17 \$131). DELDOT ASSUMES NO RESPONSIBILITIES FOR THE FUTURE MAINTENANCE OF THESE STREETS.
- THE SHARED-USE PATH SHALL BE THE RESPONSIBILITY OF THE DEVELOPER, THE 6. PROPERTY OWNERS OR BOTH WITHIN THIS SUBDIVISION. THE STATE OF DELAWARE ASSUMES NO RESPONSIBILITY FOR THE FUTURE MAINTENANCE OF THE SHARED-USE PATH
- ALL LOTS SHALL HAVE ACCESS FROM THE INTERNAL SUBDIVISION STREET. 7.
- 8. DRIVEWAYS WILL NOT BE PERMITTED TO BE PLACED AT CATCH BASIN LOCATIONS.
- THE DEVELOPER SHALL BE REQUIRED TO FURNISH AND PLACE RIGHT-OF-WAY MONUMENTS IN ACCORDANCE WITH DELDOT'S DEVELOPMENT COORDINATION MANUAL.
- THE DEVELOPER SHALL BE REQUIRED TO FURNISH AND PLACE RIGHT-OF-WAY MARKERS 10. TO PROVIDE A PERMANENT REFERENCE FOR RE-ESTABLISHING THE RIGHT-OF-WAY AND PROPERTY CORNERS ON LOCAL AND HIGHER ORDER FRONTAGE ROADS. RIGHT-OF-WAY MARKERS SHALL BE SET AND/OR PLACED ALONG THE FRONTAGE ROAD RIGHT-OF-WAY AT PROPERTY CORNERS AND AT EACH CHANGE IN RIGHT-OF-WAY ALIGNMENT IN ACCORDANCE WITH SECTION 3.2.4.2 OF THE DEVELOPMENT COORDINATION MANUAL.

ARTESIAN WATER COMPANY, INC. NOTE:

ARTESIAN WATER COMPANY, INC IS HEREBY GRANTED UNINTERRUPTED AND PERPETUAL EASEMENT WITHIN THE PRIVATE COMMUNITY STREET RIGHT OUT WAY AND OPEN SPACE.

TRIP GENERATION - CENTRAL AVE (S 84) (FULL MOVEMENT) CENTRAL AVE



WETLANDS CERTIFICATION

THIS PROPERTY, TAX MAP 134-19.00-23.00, HAS BEEN EXAMINED BY ENVIRONMENTAL RESOURCES, INC. FOR THE PRESENCE OF WATERS OF THE UNITED STATES, INCLUDING WETLANDS (SECTION 404 AND SECTION 10), STATE SUBAQUEOUS LANDS AND STATE REGULATED WETLANDS AS ESTABLISHED BY THE REVIEWING AGENCIES IN THE FORM OF MANUALS, POLICIES AND PROCEDURES IN PLACE AT THE TIME THAT THE INVESTIGATION WAS CONDUCTED. THERE WERE NO WETLANDS FOUND WITHIN THE SUBJECT PROPERTY

NAME

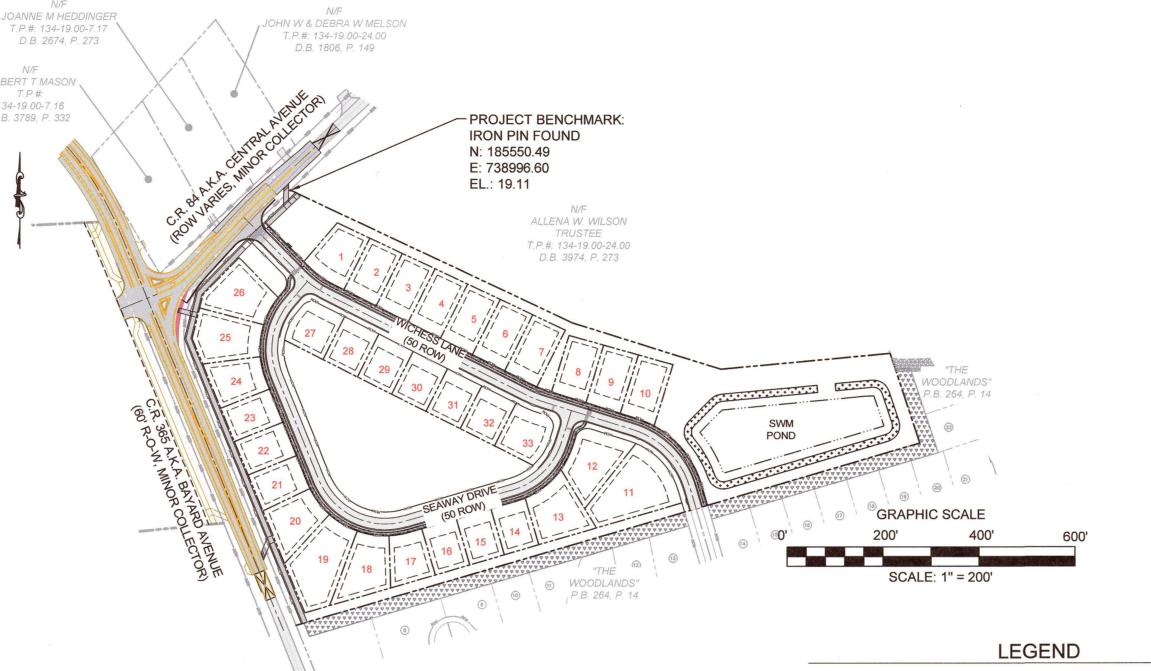
DATE

CERTIFICATION OF OWNERSHIP:

WE HEREBY CERTIFY THAT WE ARE THE OWNERS OF THE PROPERTY DESCRIBED AND SHOWN ON THIS PLAN, THAT THE PLAN WAS MADE AT OUR DIRECTION, THAT ALL STREETS HEREON AND NOT HERETOFORE DEDICATED ARE HEREBY DEDICATED TO THE PUBLIC USE AND ALL PROPOSED MONUMENTS AND MARKERS SHOWN HEREON WILL BE SET AT THE LOCATION INDICATED. WE ACKNOWLEDGE THE SAME TO BE OUR ACT AND DESIRE THE PLAN TO BE RECORDED ACCORDING TO LAW.

DATE 4/6/2.2 SIGNATURE

SUSSEX COUNTY, DELAWARE PREPARED FOR: GULFSTREAM DEVELOPMENT, LLC



ROAD TRAFFIC DATA:

FUNCTIONAL CLASSIFICATION - S 84 (CENTRAL AVE) - MINOR COLLECTOR
SPEED LIMIT - 45 MPH (DESIGN SPEED 50 MPH)
AADT - 3060 TRIPS (FROM 2019 DELDOT TRAFFIC SUMMARY)
10 YEAR PROJECTED AADT = 3256
10 YEAR PROJECTED AADT + SITE ADT (375) = 3631
TRAFFIC PATTERN GROUP - 3 (FROM 2018 DELDOT TRAFFIC SUMMARY)

PEAK HOUR = 13.70% X 375 = 51 TRIPS SITE TRIPS GENERATED: SOURCE: ITE TRIP GENERATION MANUAL 10TH EDITION

DESIGN VEHICLE: WB-40 **ONE ENTRANCE - FULL MOVEMENT** PROPOSED SUBDIVISION: 33 -SINGLE FAMILY DETACHED HOUSING (210) = 375 TRIPS

*ASSUME 20% OF TRAFFIC FROM THE WOODLANDS (NORTH) WILL USE ENTRANCE ON CENTRAL AVE (74 * 0.20 = 15 SINGLE FAMILY DETACHED

33 + 15 = 48 SINGLE FAMILY DETACHED HOUSING (210) = 527 TRIPS DIRECTIONAL DISTRIBUTION

40% TO AND FROM THE EAST - 105 TRIPS (4 AM PK) [13 PM PK] 60% TO AND FROM THE WEST - 159 TRIPS (6 AM PK) [19 PM PK]

CERTIFICATION OF PLAN ACCURACY:

I RONALD H. SUTTON, JR. HEREBY CERTIFY THAT I AM A REGISTERED PROFESSIONAL

ENGINEER IN THE STATE OF DELAWARE, THAT THE INFORMATION SHOWN HEREON HAS

BEEN PREPARED UNDER MY SUPERVISION AND TO THE BEST OF MY KNOWLEDGE AND

BELIEF REPRESENTS GOOD SURVEYING PRACTICES AS REQUIRED BY APPLICABLE LAWS OF THE STATE OF DELAWARE.

ADJOINING PROPERTY LINE **RIGHT-OF-WAY** EXISTING RIGHT-OF-WAY

PROPOSED SWALE PERMANENT EASEMENT

(STATE OF DELAWARE)

ARTESIAN WATER MAIN EASEMENT SANITARY SEWER EASEMENT

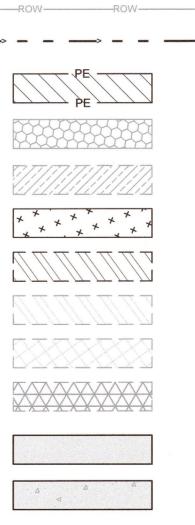
MAINTENANCE EASEMENT

DRAINAGE EASEMENT (STATE OF DELAWARE)

EXISTING DRAINAGE EASEMENT (STATE OF DELAWARE) DRAINAGE EASEMENT (PRIVATE) EXISTING TAX DITCH ROW

PROPOSED SHARED USE PATH

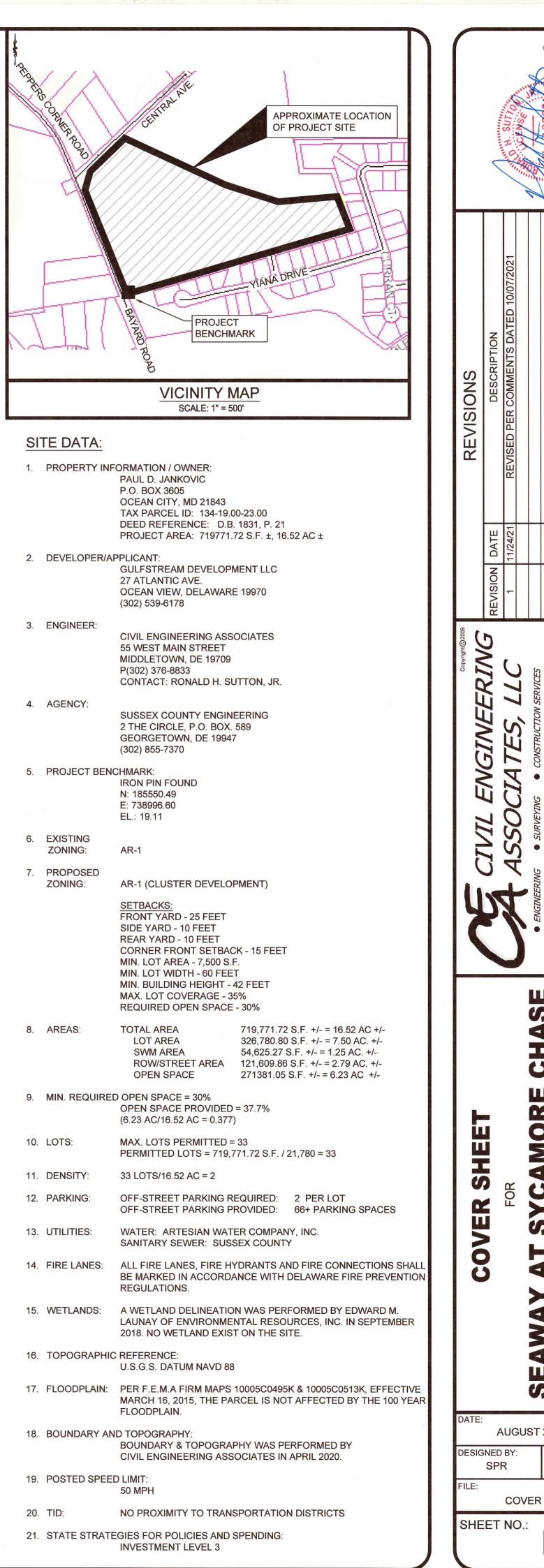
PROPOSED SIDEWALK



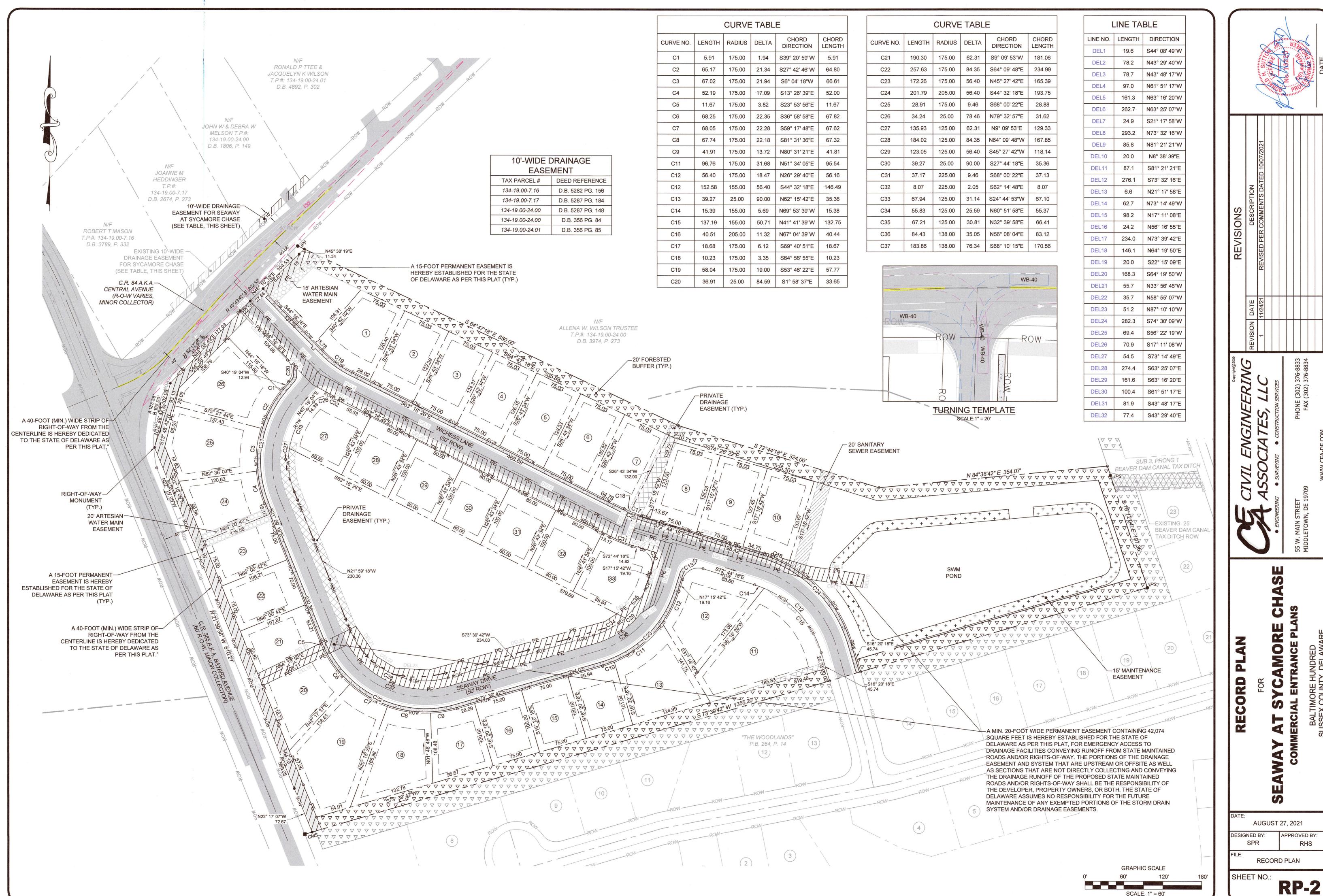
------ROW-------ROW-------

INDEX OF DRAWINGS

SHEET NUMBER	SHEET TITLE
RP-1	COVER SHEET
RP-2	RECORD PLAN







		CURVE	TABL	E	
CURVE NO.	LENGTH	RADIUS	DELTA	CHORD DIRECTION	CHORD LENGTH
C1	5.91	175.00	1.94	S39° 20' 59''W	5.91
C2	65.17	175.00	21.34	S27° 42' 46"W	64.80
C3	67.02	175.00	21.94	S6° 04' 18"W	66.61
C4	52.19	175.00	17.09	S13° 26' 39"E	52.00
C5	11.67	175.00	3.82	S23° 53' 56"E	11.67
C6	68.25	175.00	22.35	S36° 58' 58"E	67.82
C7	68.05	175.00	22.28	S59° 17' 48"E	67.62
C8	67.74	175.00	22.18	S81° 31' 36"E	67.32
C9	41.91	175.00	13.72	N80° 31' 21"E	41.81
C11	96.76	175.00	31.68	N51° 34' 05"E	95.54
C12	56.40	175.00	18.47	N26° 29' 40"E	56.16
C12	152.58	155.00	56.40	S44° 32' 18"E	146.49
C13	39.27	25.00	90.00	N62° 15' 42"E	35.36
C14	15.39	155.00	5.69	N69° 53' 39"W	15.38
C15	137.19	155.00	50.71	N41° 41' 39"W	132.75
C16	40.51	205.00	11.32	N67° 04' 39"W	40.44
C17	18.68	175.00	6.12	S69° 40' 51"E	18.67
C18	10.23	175.00	3.35	S64° 56' 55"E	10.23
C19	58.04	175.00	19.00	S53° 46' 22"E	57.77
C20	36.91	25.00	84.59	S1° 58' 37"E	33.65

CURVE TABLE					
CURVE NO.	LENGTH	RADIUS	DELTA	CHORD DIRECTION	CHORD LENGTH
C21	190.30	175.00	62.31	S9° 09' 53''W	181.06
C22	257.63	175.00	84.35	S64° 09' 48"E	234.99
C23	172.26	175.00	56.40	N45° 27' 42"E	165.39
C24	201.79	205.00	56.40	S44° 32' 18"E	193.75
C25	28.91	175.00	9.46	S68° 00' 22"E	28.88
C26	34.24	25.00	78.46	N79° 32' 57"E	31.62
C27	135.93	125.00	62.31	N9° 09' 53"E	129.33
C28	184.02	125.00	84.35	N64° 09' 48''W	167.85
C29	123.05	125.00	56.40	S45° 27' 42"W	118.14
C30	39.27	25.00	90.00	S27° 44' 18"E	35.36
C31	37.17	225.00	9.46	S68° 00' 22"E	37.13
C32	8.07	225.00	2.05	S62° 14' 48"E	8.07
C33	67.94	125.00	31.14	S24° 44' 53"W	67.10
C34	55.83	125.00	25.59	N60° 51' 58"E	55.37
C35	67.21	125.00	30.81	N32° 39' 58"E	66.41
C36	84.43	138.00	35.05	N56° 08' 04"E	83.12
C37	183.86	138.00	76.34	S68° 10' 15"E	170.56

10'-WIDE DRAINAGE EASEMENT		
TAX PARCEL #	DEED REFERENCE	
134-19.00-7.16	D.B. 5282 PG. 156	
134-19.00-7.17	D.B. 5287 PG. 184	
134-19.00-24.00	D.B. 5287 PG. 148	
134-19.00-24.00	D.B. 356 PG. 84	
134-19.00-24.01	D.B. 356 PG. 85	

LINE TABLE			
LINE NO.	LENGTH	DIRECTION	
DEL1	19.6	S44° 08' 49"W	
DEL2	78.2	N43° 29' 40"W	
DEL3	78.7	N43° 48' 17"W	
DEL4	97.0	N61° 51' 17"W	
DEL5	161.3	N63° 16' 20"W	
DEL6	262.7	N63° 25' 07"W	
DEL7	24.9	S21° 17' 58''W	
DEL8	293.2	N73° 32' 16"W	
DEL9	85.8	N81° 21' 21"W	
DEL10	20.0	N8° 38' 39"E	
DEL11	87.1	S81° 21' 21"E	
DEL12	276.1	S73° 32' 16"E	
DEL13	6.6	N21° 17' 58"E	
DEL14	62.7	N73° 14' 49"W	
DEL15	98.2	N17° 11' 08"E	
DEL16	24.2	N56° 16' 55"E	
DEL17	234.0	N73° 39' 42"E	
DEL18	146.1	N64° 19' 50"E	
DEL19	20.0	S22° 15' 09"E	
DEL20	168.3	S64° 19' 50''W	
DEL21	55.7	N33° 56' 46"W	
DEL22	35.7	N58° 55' 07''W	
DEL23	51.2	N87° 10' 10''W	
DEL24	282.3	S74° 30' 09''W	
DEL25	69.4	S56° 22' 19"W	
DEL26	70.9	S17° 11' 08''W	
DEL27	54.5	S73° 14' 49"E	
DEL28	274.4	S63° 25' 07"E	
DEL29	161.6	S63° 16' 20"E	
DEL30	100.4	S61° 51' 17"E	
DEL31	81.9	S43° 48' 17"E	
DEL32	77.4	S43° 29' 40"E	

SCALE: 1" = 60'

MAPPING & ADDRESSING

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





October 18, 2021

Ocean Atlantic Companies 18949 Coastal Highway, Unit 301 Rehoboth Beach, DE 19971

Attn: Ben Gordy

RE: Ashton Oaks Road Names

I have received proposed street name(s) for the proposed subdivision, **Ashton Oaks**, located on **Zion Church RD Frankford**, **DE 19945**. In reviewing the proposed street name(s) the following street name has been approved:

Ashton Circle

Use only approved road names that you have written confirmation for or you will be required to rerecord. Each street name is to be used only once.

Upon final approval of **Ashton Oaks** please forward a digital copy of the recorded site plan to my attention for the purpose of addressing. Should you have any questions, please contact the **Sussex County GIS Department** at 302-855-1176.

Sincerely,

Brian 2. Zalley

Brian L. Tolley GIS Specialist II

CC: Christin Scott Planning & Zoning





OFFICE OF THE STATE FIRE MARSHAL Technical Services

22705 Park Avenue Georgetown, DE 19947



SFMO PERMIT – SHALL BE POSTED ON JOBSITE UNTIL FINAL INSPECTION

Plan Review Number: 2021-04-208714-MJS-01 Status: Approved as Submitted

Tax Parcel Number: 533-11.00-82.00 Date: 11/10/2021

Project

Ashton Oaks

Ashton Oaks

Zion Church Road Frankford DE 19945

Scope of Project

Number of Stories: Square Footage: Construction Class: Fire District: 90 - Roxana Volunteer Fire Co

Occupant Load Inside: Occupancy Code: 9603

Applicant

Jamie Sechler 1 Park Avenue Milford, DE 19963

This office has reviewed the plans and specifications of the above described project for compliance with the Delaware State Fire Prevention Regulations, in effect as of the date of this review.

A Review Status of "Approved as Submitted" or "Not Approved as Submitted" must comply with the provisions of the attached Plan Review Comments. Any Conditional Approval does not relieve the Applicant, Owner, Engineer, Contractor, nor their representatives from their responsibility to comply with the plan review comments and the applicable provisions of the Delaware State Fire Prevention Regulations in the construction, installation and/or completion of the project as reviewed by this Agency.

A final inspection is required.

This Plan Review Project was prepared by:

oalo

Fire Protection Specialist

FIRE PROTECTION PLAN REVIEW COMMENTS

Plan Review Number: 2021-04-208714-MJS-01 Status: Approved as Submitted **Tax Parcel Number:** 533-11.00-82.00 **Date:** 11/10/2021

PROJECT COMMENTS

1002 A	This project has been reviewed under the provisions of the Delaware State Fire Prevention Regulations (DSFPR) ADOPTED September 1, 2. The current Delaware State Fire Prevention Regulations are available on our website at www.statefiremarshal.delaware.gov. These plans were not reviewed for compliance with the Americans with Disabilities Act (ADA). These plans were not reviewed for compliance with any Local, Municipal, nor County Building Codes.
1040 A	This site meets Water Flow Table 2, therefore the following water for fire protection requirements apply: Main Sizes: 6" minimum. Minimum Capacity: 1,000 gpm @ 20 psi residual for 1 hour duration. Hydrant Spacing: 800' on center.
2500 A	A final inspection is required for this project prior to occupancy (DSFPR Part I, Section 4-7). Contact this Agency to schedule this inspection. Please have the plan review number available. A MINIMUM OF FIVE (5) WORKING DAYS NOTICE IS REQUIRED.
2710 A	The following items will be field verified by this Agency at the time of final inspection:
1417 A	All Fire Lanes shall be marked and identified in accordance with DSFPR Regulation 705, Chapter 5, Section 7.0.
1418 A	All building exits leading to a fire lane shall be marked and identified in accordance with DSFPR Regulation 705, Chapter 5, Section 8.0.
1411 A	Fire Lane signs shall be placed at each end of the fire lane and spaced at 150 foot intervals maximum. All Fire Lane signs shall be located no less than six feet and no higher than eight feet above the pavement and shall face oncoming traffic.Where no parking is provided between the building and the Fire Lane, Fire Lane signs shall be posted along the inner curb, building line, or edge of the roadway immediately adjacent to the fire lane. (DSFPR Regulation 705, Chapter 6, Section 7.0).

Page 2 of 4

1088 A The closest edge of fire lanes shall not be located closer than ten (10) feet to the exterior wall; where parking is located between the building and the fire lane, parking shall not be located closer than 15 feet to the exterior wall.(DSFPR Regulation 705, Chapter 5, Sections 6.4 and 6.4.1). 1189 A Parking between the primary fire lane(s) and the building shall meet the requirements of DSFPR Regulation 705, Chapter 5, Sections 6.3 through 6.3.6. 1095 A The closest edge of fire lanes shall not be located further than 50 feet from the exterior wall if the building is one or two stories; 40 feet if three or four stories and 30 feet if over four stories in height. (DSFPR Regulation 705, Chapter 5, Section 6.5). 1198 A All standpipe and sprinkler connections shall be marked and identified in accordance with DSFPR Regulation 705, Chapter 6, Section 3.0). NOTE: No objects, stands, displays, or other impediments (such as parking) shall be located within the demarcationarea. This will be field verified at the final inspection. Noncompliance may cause a delay in approval for Certificate of Occupancy. 1199 A The fire department connection shall be located per the site plan as approved by this Agency. This will be field verified at the final inspection. Noncompliance may cause a delay in approval for Certificate of Occupancy. 1299 A The required Fire Lane Access and Perimeter Access and all fire lane markings shall be in accordance with the site plan as approved by this Agency. This will be field verified at the final inspection. Noncompliance may cause a delay in approval forCertificate of Occupancy. 1100 A Hydrants shall be provided in such a manner that all fire department connections and/or standpipe connections shall be within 300' of a hydrant and shall meet the provisions of the applicable NFPA Regulations as adopted and/or modified by these Regulations. 1132 A Fire hydrants shall be color coded in accordance with the DSFPR, Part III, Section 3 4. This includes both color coding the bonnet and 2" reflective tape around the barrel under the top flange. 1232 A All threads provided for fire department connections, to sprinkler systems, standpipes, yard hydrants or any other fire hose connections shall be uniform



to those used by the fire department in whose district they are located. DSFPR Part III,Section 1.1.5.1.

- 1332 A The distance between a fire hydrant and the fire lane shall not be greater than seven feet (DSFPR Part V, Chapter 5, Section 5 10.4).
- 1432 A The steamer connection of all fire hydrants shall be so positioned so as to be facing the street or fire lane. (DSFPR Regulation 705, Chapter 5, Section 10). The center of all hose outlet(s) on fire hydrants shall be not less than 18 inches above finalgrade (NFPA 24, Section 7.3.3).
- 1151 A A lock box containing keys for fire department access shall be provided for any occupancy that contains an automatic sprinkler system. (DSFPR Regulation 705, Chapter 1, Section 2)

EACH BUILDING SHALL BE PROVIDED WITH ITS OWN KNOX BOX FOR THAT BUILDING

1501 A If there are any questions about the above referenced comments please feel free to contact the Fire Protection Specialist who reviewed this project. Please have the plan review number available when calling about a specific project. When changes orrevisions to the plans occur, plans are required to be submitted, reviewed, and approved.

Page 4 of 4



OVER 100 YEARS OF SUPERIOR SERVICE

Artesian Water Company 🛕 Artesian Wastewater Management 🛕 Artesian Utility Development 🛕 Artesian Water Pennsylvania A Artesian Water Maryland A Artesian Wastewater Maryland

June 2, 2022

Ben Gordy OA Oaks, LLC 18949 Coastal Highway, Unit 301 Rehoboth Beach, DE 19971

RE: Ashton Oaks Ability to Serve and Plan Approval Letter

With reference to your request concerning Water Service ("Service") for the proposed Ashton Oaks project on Zion Church Road in Baltimore Hundred, Sussex County, Delaware known as Tax Parcel Number 5-33-11.00-82.00, consisting of 178 apartment units (the "Property"), please be advised as follows:

Subject to the following conditions, Artesian Water Company, Inc. ("Artesian") is willing and able to provide Service to the Property that meets all applicable State of Delaware, Delaware Department of Natural Resources and Environmental Control standards. Artesian currently has the water Certificate of Public Convenience and Necessity ("CPCN") from the Delaware Public Service Commission (the "Commission"). Artesian will provide Service in accordance with Artesian's Commission approved tariffs, as amended from time to time.

Based on current conditions and subject to the development entity and Artesian entering Water Service Agreements ("Agreements") that addresses the financial terms of the provision of Service for the Property, in accordance with Artesian's tariff, Artesian is willing and able to provide the required Service for this Property.

We have also reviewed and approved the Water Distribution Plans prepared by Davis, Bowen & Friedel, Inc. dated October 2021 last revised May 25, 2022.

This letter shall expire if Agreements are not executed within one year of the date of this letter.

Yours very truly,

ARTESIAN WATER COMPANY, INC.

Katherine E. Garrison

Katherine E. Garrison Senior Planning Designer

ENGINEERING DEPARTMENT

JOHN J. ASHMAN SR. MANAGER OF UTILITY PLANNING & DESIGN REVIEW

(302) 855-7370 T (302) 854-5391 F jashman@sussexcountyde.gov

Sussex County

DELAWARE sussexcountyde.gov

HANS M. MEDLARZ, P.E. COUNTY ENGINEER

April 14, 2022

Davis, Bowen & Friedel, Inc. 1 Park Ave. Milford, DE 19963 Attn: Jamie Sechler, P.E.

RE: ASHTON OAKS JOHNSON'S CORNER SANITARY SEWER DISTRICT SUBDIVISION NO. RPC 2621 SUSSEX COUNTY TAX MAP NUMBERS 5-33-11.00-82.00 – CLASS-1 AGREEMENT NO. 1098

Dear Mr. Sechler,

A review of the above referenced plans has been completed by the Sussex County Engineering Department. Please have a completed review, **with confirmation** from DNREC for this projects wastewater construction permit before submitting plans for Sussex County approval. Provide five (5) sets of plans in a size of 24" x 36", and one (1) CD or file transfer of PDFs for each sheet. One set of plans will be returned to the Engineer/Consultant for their record.

Each sheet must be signed and sealed by the Engineer and the cover sheet of the plan shall have the owner/developer's and wetland consultant signature, this includes PDFs being submitted prior to Sussex County Engineering Department approval.

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

Sincerely,

SUSSEX COUNTY ENGINEERING DEPARTMENT

Scott A. Thornton Engineering Technician IV





May 31, 2022

Mr. Jamie Sechler, PE Davis, Bowen & Friedel, Inc. jla@dbfinc.com

RE: Ashton Oaks

Dear Mr. Sechler:

The Sussex Conservation District has reviewed the sediment and stormwater management plans submitted for the above referenced project and they are acceptable. Please provide the District with the following:

- \square Five sets of plans.
- \boxdot One set of plans scaled 12 x 18.
- ☑ An electronic copy in PDF format of the project's complete construction plan set.
- ☑ An electronic copy in PDF format of the stormwater report, and all exhibits.
- ☑ A check for inspection fee of \$5,750 and maintenance fee of \$850. These fees can be combined into one check.

Please note:

- \square Every plan sheet is to be signed and sealed by a qualified design professional.
- ☑ The SCD Owners Certification Statement is to be signed in ink on each set of plans.

If plans are submitted with any of the above items missing, they will not be approved. Be advised if there are any deficiencies which cannot be addressed within 72 hours the plans will be considered withdrawn and therefore, you will need to entirely resubmit. We appreciate your cooperation in this matter as we are trying to maintain a professional and structured office to better serve you.

If ownership is going to change, the District will require a new application and two sets of plans with the new owner's information and signed certification statement. In addition, the authorization to discharge stormwater under the regulations *Part 2 Special Conditions for Storm Water Discharges Associated with Construction Activities*, must be

23818 SHORTLY ROAD, GEORGETOWN, DE office: 302-856-2105 fax: 302-856-0951 WWW.SUSSEXCONSERVATION.ORG

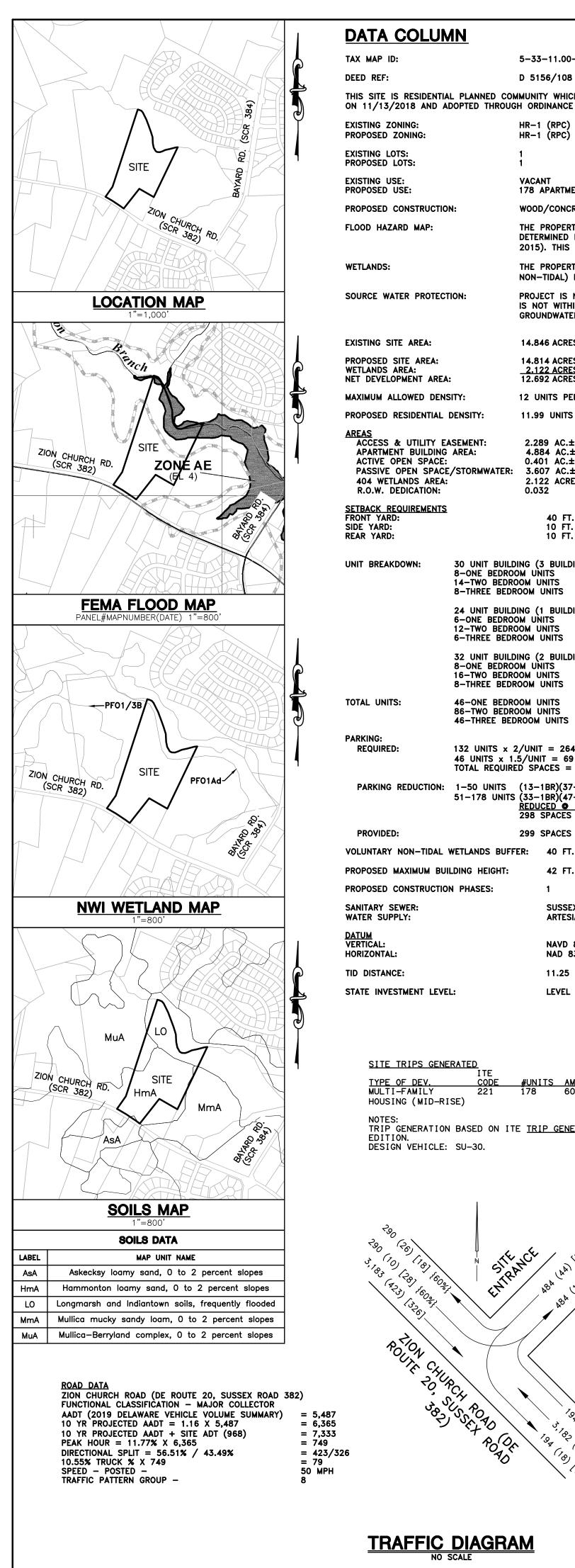
PREPARE. PROTECT. PRESERVE.

transferred by the original owner to the new owner, please contact DNREC at 302-739-9921 for assistance.

If you have any questions or concerns regarding the aforementioned, please do not hesitate to contact the District at 302-856-2105.

Sincerely,

Barbara Schauer, PE Plan Review



DATA COLUMN

5-33-11.00-82.00

THIS SITE IS RESIDENTIAL PLANNED COMMUNITY WHICH WAS APPROVED BY THE SUSSEX COUNTY COUNCIL ON 11/13/2018 AND ADOPTED THROUGH ORDINANCE NO. 2621.

D 5156/108

HR-1 (RPC) HR-1 (RPC)

VACANT 178 APARTMENTS

WOOD/CONCRETE BLOCK

THE PROPERTY IS IMPACTED BY THE 100 YEAR FLOODPLAIN AS DETERMINED BY FEMA MAP 10005C0635K (DATED MARCH 16, 2015). THIS PROJECT IS LOCATED IN FLOOD ZONE "AE" THE PROPERTY AS SHOWN DOES CONTAIN FEDERALLY (404

NON-TIDAL) REGULATED WETLANDS.

PROJECT IS NOT WITHIN A WELLHEAD PROTECTION AREA. PROJECT IS NOT WITHIN THE "EXCELLENT", "GOOD" AND "POOR" GROUNDWATER RECHARGE AREAS.

OA OAKS, LLC.

1 PARK AVE.

14.846 ACRES± 14.814 ACRES± 2.122 ACRES± 12.692 ACRES± 12 UNITS PER ACRE

11.99 UNITS PER ACRE

2.289 AC.± 4.884 AC.± 0.401 AC.± 3.607 AC.±

2.122 ACRES 0.032

40 FT. 10 FT. 10 FT.

30 UNIT BUILDING (3 BUILDINGS) 8-ONE BEDROOM UNITS 14-TWO BEDROOM UNITS 8-THREE BEDROOM UNITS

24 UNIT BUILDING (1 BUILDING) 6-ONE BEDROOM UNITS 12-TWO BEDROOM UNITS 6-THREE BEDROOM UNITS 32 UNIT BUILDING (2 BUILDINGS) 8-ONE BEDROOM UNITS 16-TWO BEDROOM UNITS

46-ONE BEDROOM UNITS 86-TWO BEDROOM UNITS 46-THREE BEDROOM UNITS

8-THREE BEDROOM UNITS

132 UNITS x 2/UNIT = 264 SPACES 46 UNITS x 1.5/UNIT = 69 SPACES

TOTAL REQUIRED SPACES = 333 BEFORE REDUCTION PARKING REDUCTION: 1-50 UNITS (13-1BR)(37-2BR) 94 REDUCED TO 94 SPACES 51-178 UNITS (33-1BR)(47-2BR)(48-3BR) 239

<u>ŘEDUCED © 15% TO 204 ŠPACES</u> 298 SPACES REQUIRED 299 SPACES INCLUDING 14 HANDICAPPED ACCESSIBLE

LEVEL 3

42 FT. (3-1/2 STORIES)

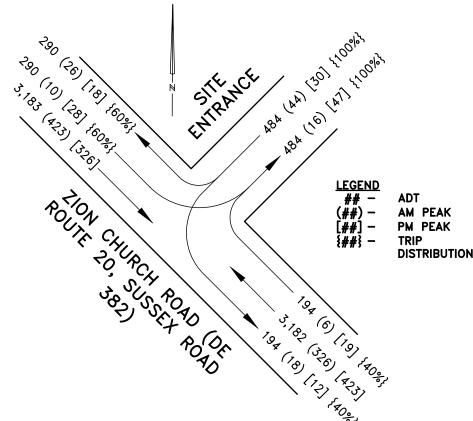
SUSSEX COUNTY (JOHNSON CORNER SSD) ARTESIAN WATER CO., INC.

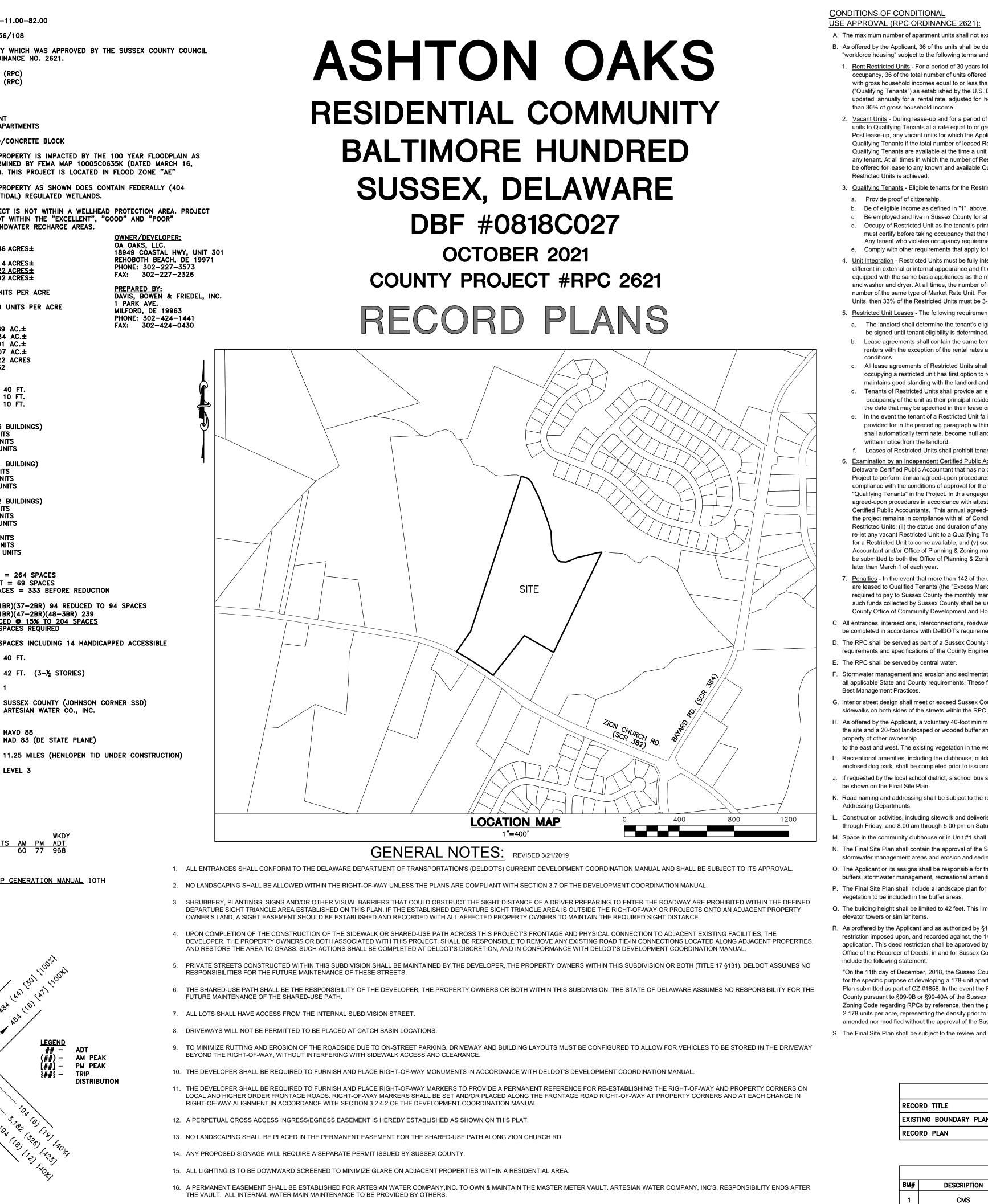
NAVD 88 NAD 83 (DE STATE PLANE)

SITE TRIPS GENERATED

HOUSING (MID-RISE)

TRIP GENERATION BASED ON ITE TRIP GENERATION MANUAL 10TH DESIGN VEHICLE: SU-30.





CONDITIONS OF CONDITIONAL

JSE APPROVAL (RPC ORDINANCE 2621)

A. The maximum number of apartment units shall not exceed 178. B. As offered by the Applicant, 36 of the units shall be designated as "Restricted Units" for the purpose of providing

"workforce housing" subject to the following terms and conditions: 1. Rent Restricted Units - For a period of 30 years following the date the first building receives its certificate of

occupancy, 36 of the total number of units offered for lease (the "Restricted Units"), shall be rented to tenants with gross household incomes equal to or less than 70% of the area median income for Sussex County ("Qualifying Tenants") as established by the U.S. Department of Housing and Urban Development ("HUD") and updated annually for a rental rate, adjusted for household and unit size as per HUD guidelines, no greater than 30% of gross household income.

2. Vacant Units - During lease-up and for a period of 2 years, the Applicant must actively seek to lease available units to Qualifying Tenants at a rate equal to or greater than the ratio of Restricted Units to market rate units. Post lease-up, any vacant units for which the Applicant is actively seeking tenants must first be offered to Qualifying Tenants if the total number of leased Restricted Units is less than the targeted amount (36). If no Qualifying Tenants are available at the time a unit becomes vacant that unit may be leased at market rates to any tenant. At all times in which the number of Restricted Units is less than 36, the next available unit(s) must be offered for lease to any known and available Qualified Tenant(s), until such time as the 36-unit target for Restricted Units is achieved.

3. <u>Qualifying Tenants</u> - Eligible tenants for the Restricted Units must:

a. Provide proof of citizenship.

b. Be of eligible income as defined in "1", above.

c. Be employed and live in Sussex County for at least one year preceding the date of application. d. Occupy of Restricted Unit as the tenant's principal residence during the lease period. Each eligible tenant must certify before taking occupancy that the tenant will occupy the unit as the tenant's principal residence. Any tenant who violates occupancy requirements will be subject to eviction procedures. e. Comply with other requirements that apply to tenants of Non-Restricted Units.

4. Unit Integration - Restricted Units must be fully integrated into the community and shall not be substantially different in external or internal appearance and fit out from market-rate units. Restricted Units shall be equipped with the same basic appliances as the market rate units, such as an oven, refrigerator, dishwasher, and washer and dryer. At all times, the number of type of Restricted Units shall remain in proportion to the number of the same type of Market Rate Unit. For example, if 33% of the Market Rate Units are 3-Bedroom Units, then 33% of the Restricted Units must be 3-Bedroom Units.

5. <u>Restricted Unit Leases</u> - The following requirements shall apply to Restricted Unit Leases:

a. The landlord shall determine the tenant's eligibility to rent a Restricted Unit and lease agreements shall not

be signed until tenant eligibility is determined. b. Lease agreements shall contain the same terms and conditions as the lease agreements with market-rate renters with the exception of the rental rates and other terms and conditions as required under these

conditions. c. All lease agreements of Restricted Units shall cover a period of one year. An eligible tenant already

occupying a restricted unit has first option to renew the lease agreement each year, as long as the tenant maintains good standing with the landlord and continues to qualify as a Qualifying Tenant. Tenants of Restricted Units shall provide an executed affidavit on an annual basis certifying their continuing occupancy of the unit as their principal residence. Tenants shall provide such affidavit to the landlord by the date that may be specified in their lease or that may otherwise be specified by the landlord.

e. In the event the tenant of a Restricted Unit fails to provide his or her landlord with an executed affidavit as provided for in the preceding paragraph within 30 days of written request for such affidavit, then the lease shall automatically terminate, become null and void and the occupant shall vacate the unit within 30 days o written notice from the landlord. f. Leases of Restricted Units shall prohibit tenants from subletting or subleasing the Restricted Unit.

. Examination by an Independent Certified Public Accountant - The developer shall contract with an independent Delaware Certified Public Accountant that has no other relationship with the Developer/Owner/Manager of the Project to perform annual agreed-upon procedures with respect to the Project, reporting upon elements of compliance with the conditions of approval for the Project related to the rental of the "Restricted Units" and the "Qualifying Tenants" in the Project. In this engagement, the Delaware Certified Public Accountant will perform agreed-upon procedures in accordance with attestation standards established by the American Institute of Certified Public Accountants. This annual agreed-upon procedures engagement shall be used to confirm that the project remains in compliance with all of Condition B of this approval, and (i) the status of each of the 36 Restricted Units; (ii) the status and duration of any vacancy of any Restricted Unit: (iii) the marketing efforts to re-let any vacant Restricted Unit to a Qualifying Tenant; (iv) the status of any list of Qualifying Tenants waiting for a Restricted Unit to come available; and (v) such other information as the Delaware Certified Public Accountant and/or Office of Planning & Zoning may deem appropriate and necessary. This information shall be submitted to both the Office of Planning & Zoning and the Community Development & Housing Office no later than March 1 of each year

Penalties - In the event that more than 142 of the units are rented at Market Rate because fewer than 36 units are leased to Qualified Tenants (the "Excess Market Rate Units"), the Applicant or owner of the project shall be required to pay to Sussex County the monthly market rent collected from any Excess Market Rate Units. Any such funds collected by Sussex County shall be used and administered for housing purposes by the Sussex County Office of Community Development and Housing.

C. All entrances, intersections, interconnections, roadways and multi-modal improvements required by DelDOT shall be completed in accordance with DelDOT's requirements.

D. The RPC shall be served as part of a Sussex County Sanitary Sewer District. The Developer shall comply with al requirements and specifications of the County Engineering Department

E. The RPC shall be served by central water.

F. Stormwater management and erosion and sedimentation control facilities shall be constructed in accordance with all applicable State and County requirements. These facilities shall be operated in a manner that is consistent with **Best Management Practices**

G. Interior street design shall meet or exceed Sussex County's street design requirements. There shall also be

H. As offered by the Applicant, a voluntary 40-foot minimum buffer will be established from any wetlands located on the site and a 20-foot landscaped or wooded buffer shall be established along the boundary of the site adjacent to property of other ownership

to the east and west. The existing vegetation in the wetlands buffer area shall not be disturbed. . Recreational amenities, including the clubhouse, outdoor swimming pool and deck, playground, walking trail and enclosed dog park, shall be completed prior to issuance of a building permit for fourth multi-family building.

J. If requested by the local school district, a school bus stop shall be provided. The location of the bus stop area shall be shown on the Final Site Plan

K. Road naming and addressing shall be subject to the review and approval of Sussex County Mapping and Addressing Departments.

L. Construction activities, including sitework and deliveries, shall only occur between 7:30 am and 7:00 pm Monday through Friday, and 8:00 am through 5:00 pm on Saturdays.

Space in the community clubhouse or in Unit #1 shall be permitted as an on-site management office. N. The Final Site Plan shall contain the approval of the Sussex Conservation District for the design and location of all

stormwater management areas and erosion and sedimentation control facilities.

O. The Applicant or its assigns shall be responsible for the maintenance of interior drives and parking areas, buildings, buffers, stormwater management, recreational amenities and all open space.

P. The Final Site Plan shall include a landscape plan for all of the buffer areas, showing all of the landscaping and vegetation to be included in the buffer areas.

Q. The building height shall be limited to 42 feet. This limitation shall not apply to pitched roofs or chimneys, vents, elevator towers or similar items. R. As proffered by the Applicant and as authorized by §115-125(B) of the Zoning Code, there shall be a deed

restriction imposed upon, and recorded against, the 14.84-acre parcel that is the subject of this rezoning application. This deed restriction shall be approved by the Office of Planning & Zoning and shall be recorded in the Office of the Recorder of Deeds, in and for Sussex County, within 30 days of the approval of this ordinance. It shall include the following statement:

"On the 11th day of December, 2018, the Sussex County Council rezoned this 14.84 acre parcel to an HR-1/RPC for the specific purpose of developing a 178-unit apartment development as depicted on the RPC Preliminary Site Plan submitted as part of CZ #1858. In the event the RPC is not developed and is declared null and void by Sussex County pursuant to §99-9B or §99-40A of the Sussex County Code, which are incorporated into §115-218 of the Zoning Code regarding RPCs by reference, then the permitted density of this 14.84 acre parcel shall not exceed 2.178 units per acre, representing the density prior to the approval of CZ #1858. This restriction shall not be amended nor modified without the approval of the Sussex County Council."

S. The Final Site Plan shall be subject to the review and approval of the Planning and Zoning Commission.

INDEX OF SHEETS	5
RECORD TITLE	V-101
EXISTING BOUNDARY PLAN	V-102
RECORD PLAN	V-103

	BENCHMARK INFORMATION		
BM#	DESCRIPTION	LOCATION	ELEVATION
1	CMS	N 174928.9295 E 734063.3225	13.04' (NAVD 88)
2	CMS	N 175911.1193 E 734123.5836	12.37' (NAVD 88)

ENGINEER'S STATEMENT

, THE UNDERSIGNED, HEREBY STATE 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 BELIEF REPRESENTS GOOD ENGINEERING PRACTICES AS REQUIRED BY THE APPLICABLE LAWS OF THE STATE OF DELAWARE.

JAMIE L. SECHLER, P.E. DAVIS, BOWEN & FRIEDEL, INC. I PARK AVENUE MILFORD, DELAWARE, 19963

OWNER/DEVELOPER STATEMENT

, THE UNDERSIGNED, CERTIFY THAT I AM THE OWNER OF THE PROPERTY DESCRIBED AND SHOWN ON THIS PLAN, THAT THE PLAN WAS MADE AT MY DIRECTION, AND THAT I ACKNOWLEDGE THE SAME TO BE ACT AND DESIRE THE PLAN TO BE RECORDED TO ORDINANCE.

DA OAKS. LLC. 18949 COASTAL HWY, UNIT 301 REHOBOTH BEACH, DE 19971

DATE

DATE

APPROVED BY:

CHAIRMAN OF PLANNING COMMISSION

PRESIDENT OF SUSSEX COUNCIL

DATE

SUSSEX CONSERVATION DISTRICT

WETLANDS STATEMENT

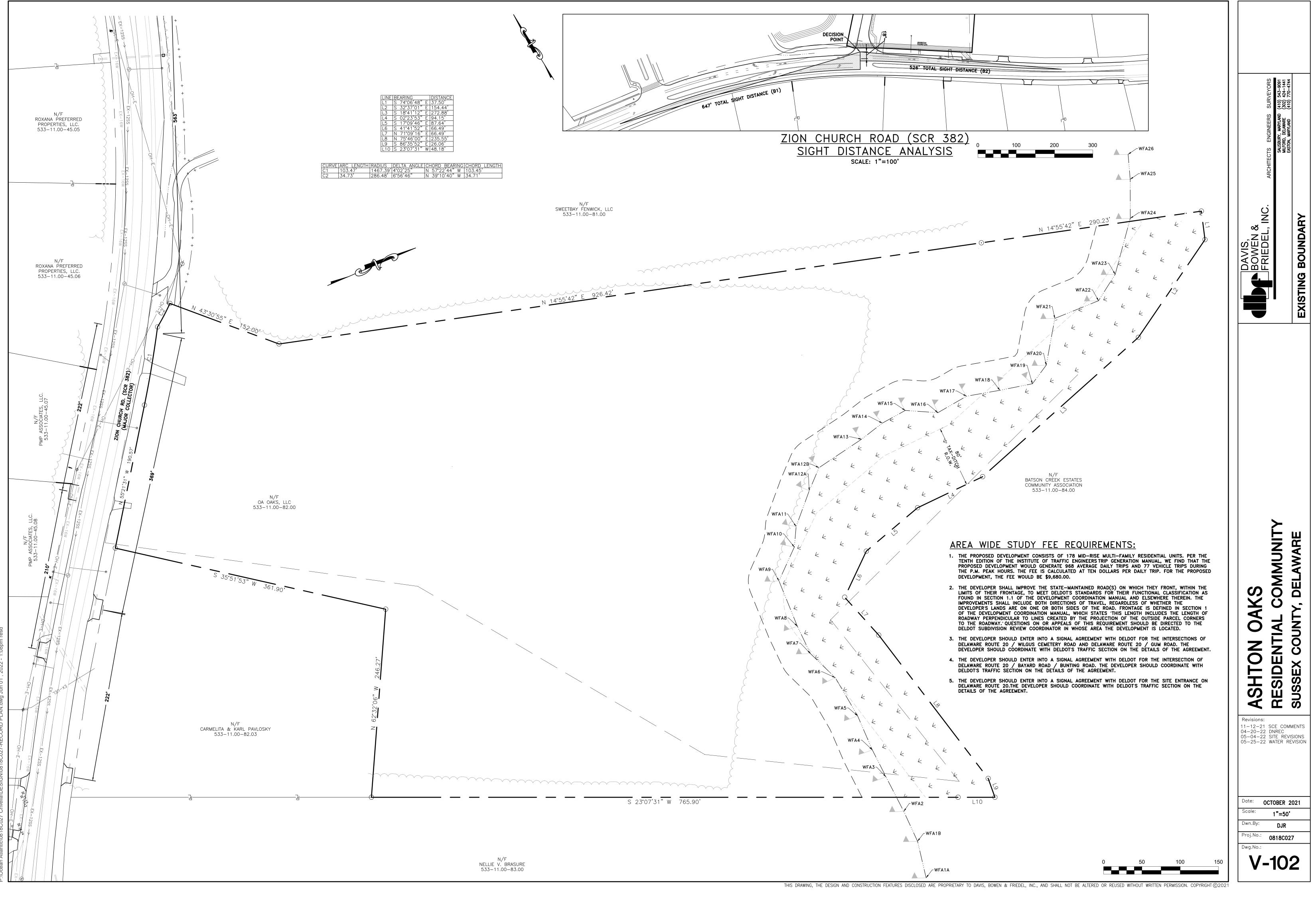
ENVIRONMENTAL RESOURCES, INC. (ERI) COMPLETED A WETLAND DELINEATION OF THIS PARCEL THAT HAS ABANDONED FARM FIELD FROM THE ROAD TO THE TREELINE. WHICH ABUTS BATSON BRANCH. IN ALICUIST OF THE DELINEATION FLAGS AND HAVE ADDED THEM TO THIS PLAN. TH PARCEL, 533-11.00-82.00, IS ON THE NORTH SIDE OF ZION CHURCH ROAD EAST OF ROXANNA, SUSSEX COUNTY, DELAWARE. THE MAJORITY OF THE OLD FIELD AREA IS MAPPED AS MODERATELY WELL DRAINED SOIL AND THESE CONDITIONS, WHICH ARE NOT INDICATIVE OF WETLANDS, WERE NOTED AT A NUMBER OF SOIL BORINGS. ERI INSPECTED THIS SITE FOR THE PRESENCE OF JURISDICTIONAL WATERS, INCLUDING NONTIDAL WETLANDS, ACCORDING TO THE CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL (1987), ASSOCIATED GUIDANCE IN AFFECT AT THAT TIME AND BEST PROFESSIONAL JUDGMENT. BACKGROUND INFORMATION FOR THE PARCEL, OF ABOUT 15 ACRES, INDICATED THAT WETLANDS WERE LIKELY ON THIS SITE IN ASSOCIATION WITH BATSON BRANCH THAT IS THE NORTHERN PROPERTY LINE. WETLANDS WERE DELINEATED IN THE WOODED AREA BELOW A CLEAR DROP IN ELEVATION ASSOCIATED WITH THE BRANCH AND THI FLAGS ARE SHOWN ON THIS PLAN. AS OF THIS DATE NO VERIFICATION HAS BEEN REQUESTED OF THE US ARMY CORPS OF ENGINEERS.

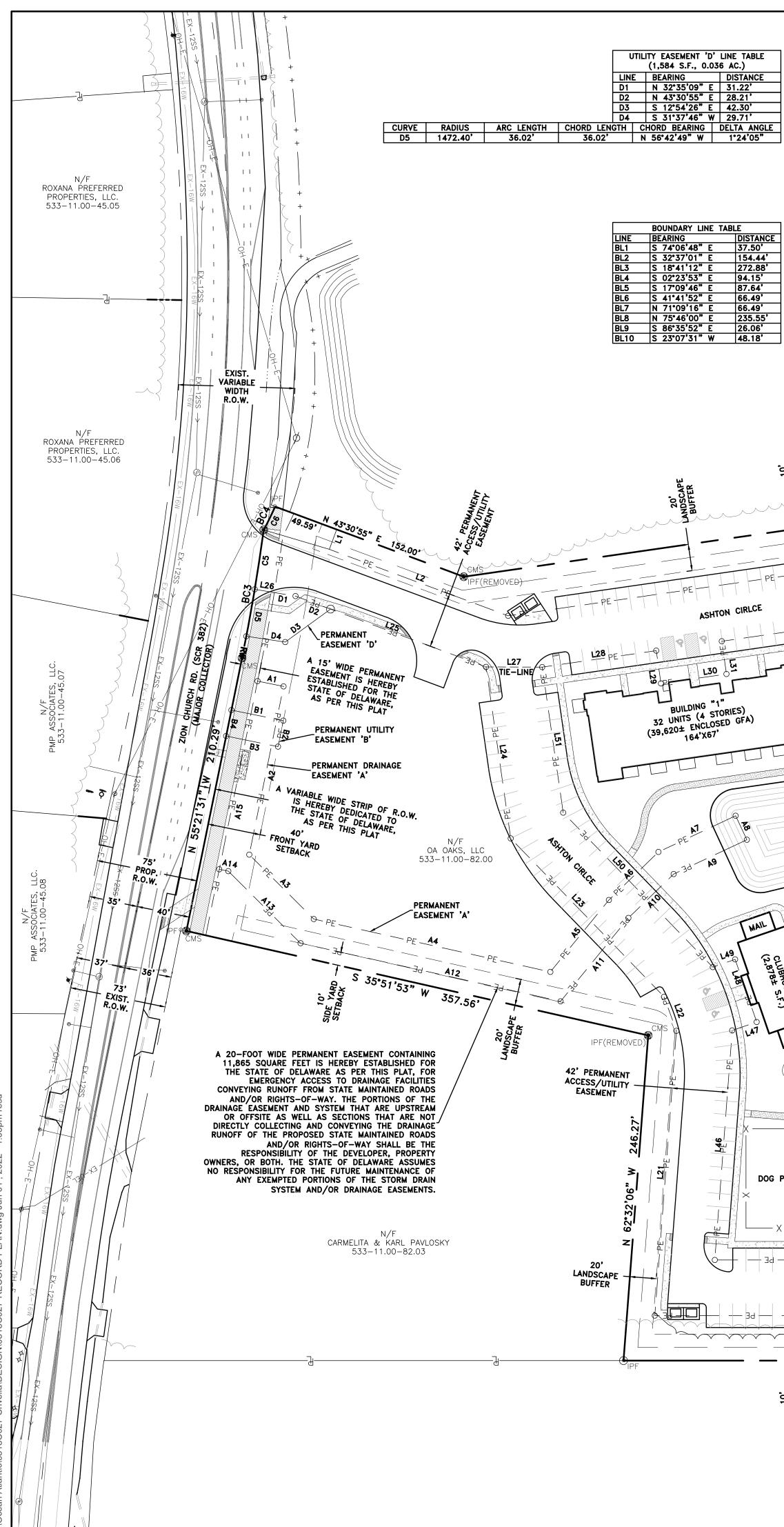
HOMAS D. NOBILE, PWS NO. 389 SOCIETY OF WETLANDS SCIENTISTS CORPS OF ENGINEERS, CERTIFIED WETLAND DELINEATOR WDCP93MD0310001A

Revisions

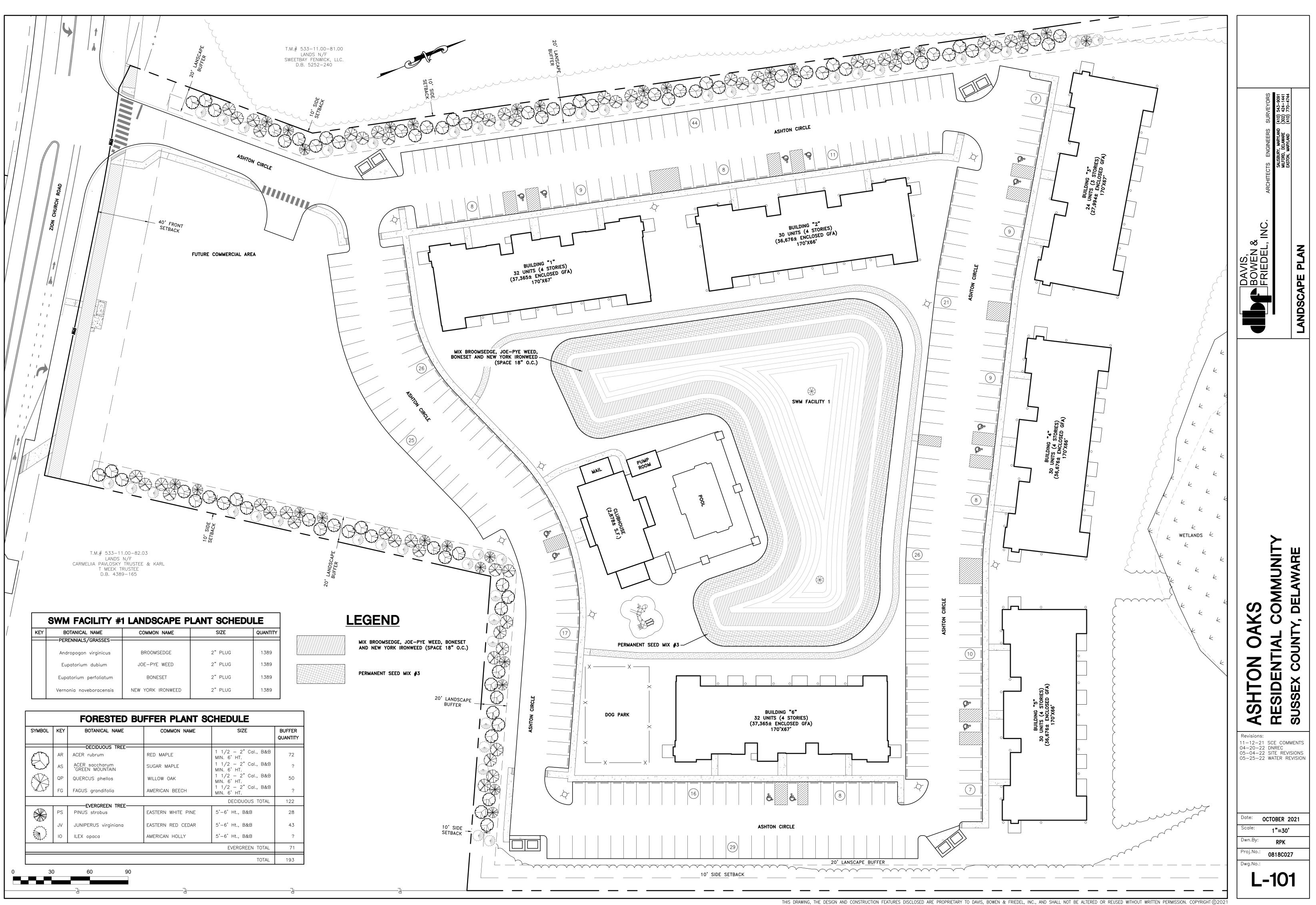
VIS, N 11-12-21 SCE COMMENTS 04-20-22 DNREC 05-04-22 SITE REVISIONS **F**BDA 05-25-22 WATER REVIS IΙ

DATE

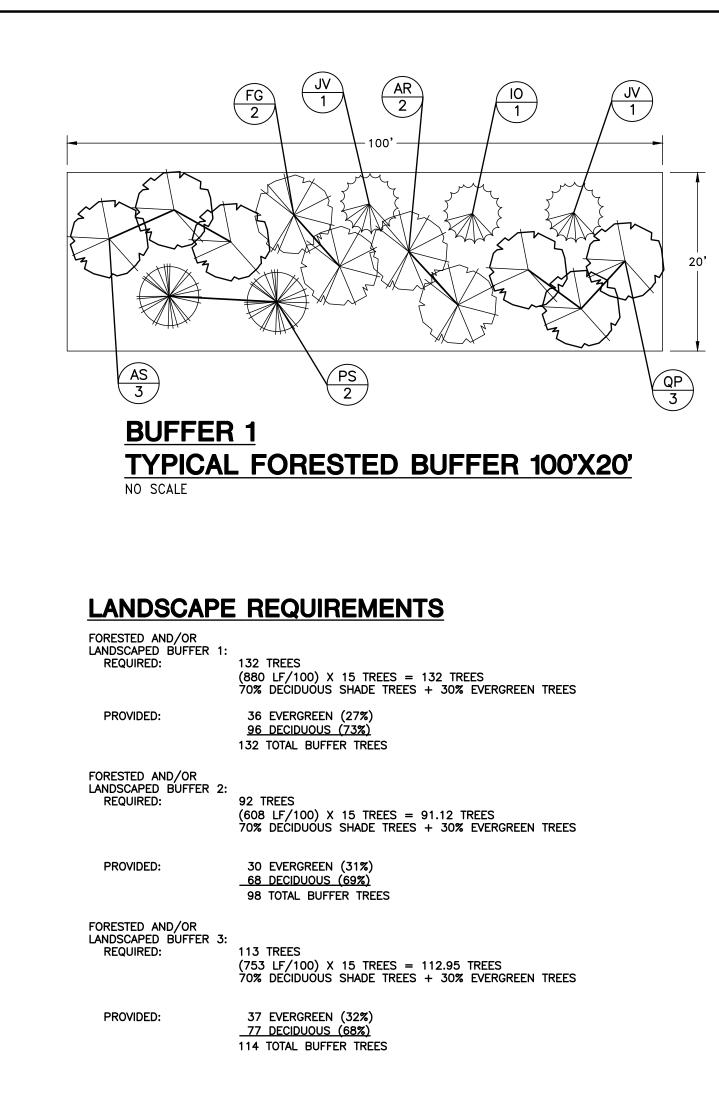




NE TABLE AC.) DISTANCE 31.22' 28.21' 42.30' 29.71' LITA ANGLE 1*24'05"	LEGEND PROPERTY BOUNDARY LINE PROPOSED RIGHT-OF-WAY LINE PE PROPOSED PERMANENT EASEMENT PROPOSED BUILDING SETBACK LINE WOODSLINE	BOUNDARY MONUMENT LEGEND ○ POINT (2 SHOWN) CMF□ CONCRETE MONUMENT FOUND (1 EXISTING) IPF ○ IRON PIPE FOUND (6 EXISTING) ICONCRETE MONUMENT SET (3 NEW)		RVEYORS 543-9091 1 770-4744
BLE BOUNDARY CURVE TABLE DISTANCE CURVE RADIUS ARC LENGTH CHORD LENGTH CHORD BEARI 37.50' BC1 1467.39' 103.47' 103.45' N 57*22'44" BC2 286.48' 34.73' 34.71' N 39*10'40" 272.88' 94.15' B7.64' 66.49' 34.73' 34.71' N 39*10'40" 235.55' 26.06' N/F 48.18' SWEETBAY FENWICK, LLC 533-11.00-81.00	W 4*02'25" W 6*56'46"		WFA26 WFA25 .23' WFA24 PF P K K K	& INC. ARCHITECTS ENGINEERS SUR SALSBURY, MARYLAND (410) MILFORD, DELAWARE (302) EASTON, MARYLAND (410)
$\frac{1}{1} = \frac{1}{1} = \frac{1}$			$A23 \\ k \\ $	PAVIS, BOWEN FRIEDEL
PE BUILDING "2" BUILDING "2" BUILDING "2" SO UNITS (4 STORIES) SO UNITS (4 STORIES) (39,620± ENCLOSED GFA) 164'X67' PE PE	WFA12B WFA12B WFA12A K	WFA15 WFA15 WFA16 WFA16 WFA16 WFA16 WFA16 WFA16 WFA16 WFA16 K K K K K K K K K K K K K K K K K K K	ACCESS/UTILITY EASEMENT LINE TABLE (99,712 S.F., 2.289 AC.)LINEBEARINGDISTANCEL1S 46*29'05" E16.00'L2N 43*30'55" E144.11'L3N 14*55'42" E464.22'L4N 33*46'12" E73.45'L5S 56*13'48" E28.11'L6N 33*46'12" E50.00'L8S 33*46'12" W25.85'L7S 56*13'48" E64.18'L10S 60*15'22" E98.18'L11N 29*44'38" E25.69'L12S 60*15'22" E63.54'L14S 60*15'22" E63.54'L15S 66*52'29" E102.54'L16N 23*07'31" E25.60'	
SWM FACILITY 1 HANL HERON ROP HERON	LII WFA11 K K K K K K K K K K K K K	$\frac{WETLANDS LINE TABLE}{LINE WETLANDS LINE TABLE}$ $\frac{WETLANDS LINE TABLE}{UNE BEARING LENGTH}$ $\frac{WFA1A - WFA1B N 80^{\circ}03'49'' W 49.00'}{WFA1B - WFA2} S 88^{\circ}19'13'' W 42.95'}$ $\frac{WFA2 - WFA3}{WFA2 - WFA3} S 85^{\circ}55'06'' W 50.65'}$ $\frac{WFA3 - WFA4}{WFA5 - WFA5} S 89^{\circ}46'02'' W 48.47'}$ $\frac{WFA5 - WFA6}{WFA7} S 67^{\circ}10'58'' W 455.22'}$ $\frac{WFA7 - WFA8}{WFA9} N 88^{\circ}57'43'' W 633.80'}$ $\frac{WFA9 - WFA11}{WFA10} N 42^{\circ}31'18'' W 48.66'}$ $\frac{WFA11 - WFA12B}{WFA10} N 42^{\circ}51'31'' W 32.61'}$ $\frac{WFA12B - WFA13}{WFA12B - WFA13} N 10^{\circ}38'30'' W 66.86'}$ $\frac{WFA13 - WFA15}{WFA14 - WFA15} N 05'47'17'' W 34.22'}$	L17S $66^{\circ}52'29"$ E $50.00'$ L18S $23^{\circ}07'31"$ W $25.50'$ L19S $66^{\circ}52'29"$ E $78.33'$ L20S $23^{\circ}07'31"$ W $370.21'$ L21N $62^{\circ}32'06"$ W $215.62'$ L22N $86^{\circ}45'13"$ W $27.36'$ L23S $69^{\circ}01'40"$ W $166.47'$ L24N $75^{\circ}04'18"$ W $130.85'$ L25S $43^{\circ}30'55"$ W $153.51'$ L26S $32^{\circ}35'09"$ W $31.22'$ L27N $23^{\circ}18'16"$ E $42.45'$ L28N $14^{\circ}55'42"$ E $87.00'$ L29S $75^{\circ}04'18"$ W $25.00'$ L30N $14^{\circ}55'42"$ E $50.00'$ L31N $75^{\circ}04'18"$ W $25.50'$ L34N $14^{\circ}55'42"$ E $50.00'$ L35N $75^{\circ}04'18"$ W $25.50'$ L36N $14^{\circ}55'42"$ E $90.96'$ L37N $33^{\circ}46'12"$ E $24.48'$ L38S $56^{\circ}13'48"$ E $101.76'$	KS COMMUNITY , DELAWARE
$\begin{array}{c} BUILDING "6" \\ BUILDING "6" \\ 32 UNITS (4 STORIES) \\ (39,620 \pm ENCLOSED GFA) \\ 164'X67' \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\$	SI HE HI HE HI HI HI HI HI HI HI HI HI HI	C5 1472.40' 45.38'	L39 S 60°15'22" E 215.62' L40 S 66°52'29" E 191.30' L41 S 23°07'31" W 39.21' L42 S 23°34'13" W 69.71' L43 S 23°07'31" W 22.42' L44 S 66°52'29" E 25.04' L45 S 23°07'31" W 151.57' L46 N 62°32'06" W 173.82' L47 N 04°07'52" E 19.55' L48 N 85°52'08" 50.00' L49 S 04°07'52" W 17.88' L50 S 69°01'40" W 162.34' L51 N 75°04'18" W 111.06' CD LENGTH CHORD BEARING DELTA ANGLE 45.37' N 58'17'50" W 1°45'57" 19.61' N 40°41'24" W 3°55'18"	Revisions:
ASHTON CIRLCE 3d 3d 3d 4 5 23°07'31" S 23°07'31" S 23°07'31"		WFA3 WFA2 WFA2 WFA1B WFA1B WFA1B UTILITY EASEMENT 'B' LINE TABLE (800 S.F., 0.018 AC.) B1 S 34'38'29" W 40.00'	DRAINAGE EASEMENT 'A' LINE TABLE (11,865 S.F., 0.272 AC.)LINEBEARINGDISTANCEA1S $34^{\circ}38'29"$ W20.00'A2N $55^{\circ}21'31"$ W129.62'A3S $68^{\circ}04'11"$ W $68.84'$ A4S $35^{\circ}42'56"$ W183.10'A5S $27^{\circ}43'57"$ E70.00'A6S $20^{\circ}58'20"$ E52.12'A7S $01^{\circ}59'37"$ E64.37'A8N $88^{\circ}00'23"$ E20.00'A9S $01^{\circ}59'37"$ E61.02'A10S $20^{\circ}58'20"$ E47.60'A11S $27^{\circ}43'57"$ E81.19'A12S $35^{\circ}51'53"$ W326.40'A13S $68^{\circ}04'11"$ W77.02'A14S $34^{\circ}38'29"$ W7.00'	11-12-21 SCE COMMENTS 04-20-22 DNREC 05-04-22 SITE REVISIONS 05-25-22 WATER REVISION Date: OCTOBER 2021 Scale: 1"=50' Dwn.By: DJR Proj.No.: 0818C027
N/F NELLIE V. BRASURE 533–11.00–83.00		WFA1A WF	A15 N 55°21'31" W 145.00' 0 50 100 150	Dwg.No.: V-103



an Atlantic\0818C027 Crivella\DESIGN\0818C027-LANDSCAPE PLAN.dwg Jun 01,2022-1:08











1. FOREST PROTECTION DEVICE ONLY. 2. RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS. 3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE. 4. ROOT DAMAGE SHOULD BE AVOIDED. 5. PROTECTIVE SIGNAGE MAY ALSO BE USED. 6. DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

VISE 8" WIRE

FENCE BOTTOM.

() 'U' TO SECURE

- ANCHOR POSTS SHOULD BE MIN. 2"

BLAZE ORANGE PLASTIC MESH

STEEL 'U' CHANNEL OR 2" x 2"

TIMBER, 6' IN LENGTH

TEMPORARY FOREST/TREE PROTECTION FENCING

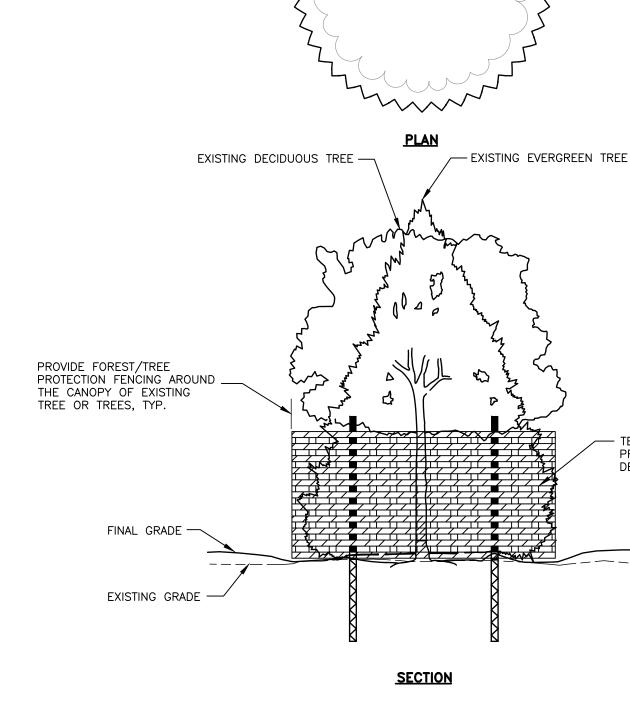
NOT TO SCALE

MAXIMUM 8'

ANCHOR POSTS MUST BE

INSTALLED TO A DEPTH OF NO LESS THAN 1/3 OF THE

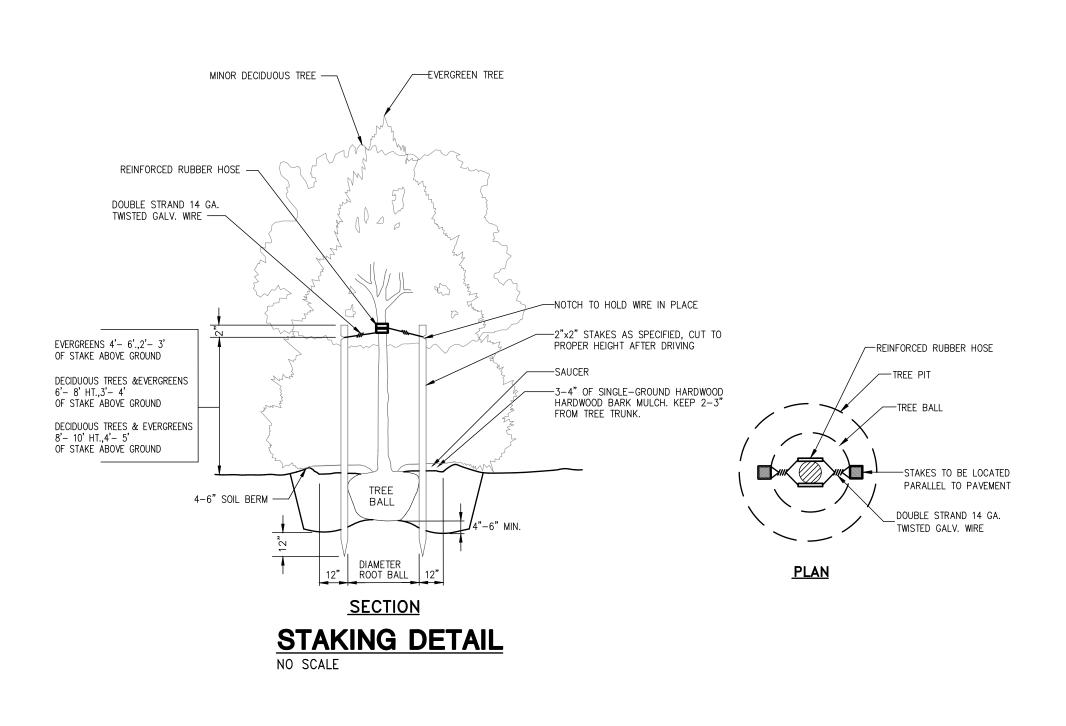
TOTAL HEIGHT OF POST.



NOT TO SCALE

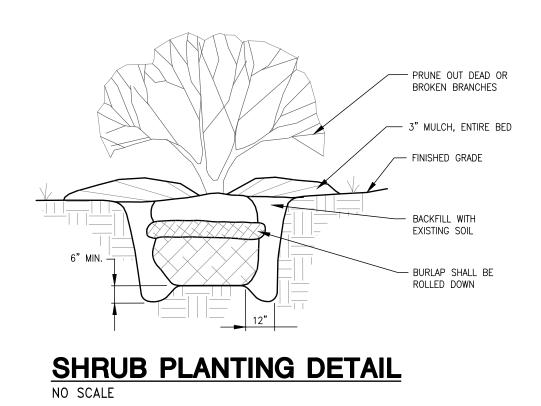
M

EXISTING TREE, TYP.



GENERAL LANDSCAPE NOTES

- 1 QUALITY AND SIZE OF PLANTS, SPREAD OF ROOTS, AND SIZE OF ROOT BALLS SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS OF THE AMERICAN ASSOCIATION OF NURSERYMEN "AMERICAN STANDARDS FOR NURSERY STOCK".
- 2 CONTRACTOR SHALL BE REQUIRED TO GUARANTEE ALL PLANT MATERIALS FOR A PERIOD OF ONE YEAR AFTER INSTALLATION IS COMPLETE AND FINAL ACCEPTANCE OF PHASE I SITE WORK HAS BEEN GIVEN. AT THE END OF ONE YEAR ALL PLANT MATERIAL WHICH IS DEAD OR DYING SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE AS ORIGINALLY SPECIFIED.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO UTILITIES AND MAY MAKE MINOR ADJUSTMENTS IN SPACING AND/OR LOCATION OF PLANT MATERIALS. CONTRACTOR TO VERIFY "AS BUILT" LOCATION OF ALL UTILITIES.
- 4 NO SUBSTITUTIONS SHALL BE MADE WITHOUT APPROVAL OF THE OWNER. 5 ALL AREAS NOT STABILIZED IN PAVING OR PLANT
- MATERIALS SHOULD BE SEEDED AND MULCHED. (SEE EROSION & SEDIMENT CONTROL PLAN.)
- 6 EVERGREEN TREES SHALL HAVE A FULL, WELL-BRANCHED, CONICAL FORM TYPICAL OF THE SPECIES.
- 7 ALL DECIDUOUS SHADE TREES SHALL BRANCH A MINIMUM OF 7'-0" ABOVE GROUND LEVEL. TREES SHALL BE PLANTED AND STAKED IN ACCORDANCE WITH THE STAKING DETAIL SHOWN.
- 8 THE FULL EXTENT OF ALL PLANTING BEDS SHALL RECEIVE 4" OF TOPSOIL AND 3" OF SHREDDED HARDWOOD MULCH PER SPECIFICATIONS.
- 9 THE CONTRACTOR SHALL SUPPLY ALL PLANT MATERIALS IN QUANTITIES SUFFICIENT TO COMPLETE THE PLANTINGS SHOWN ON THIS DRAWING AND AS SPECIFIED.
- 10 ALL PLANTS SHALL BEAR THE SAME RELATIONSHIP TO FINISHED GRADE AS THE PLANT'S ORIGINAL GRADE BEFORE DIGGING.
- 11 THE CONTRACTOR SHALL WATER ALL PLANTS THOROUGHLY TWICE DURING THE FIRST 24-HOUR PERIOD AFTER PLANTING, AND THEN WEEKLY OR MORE OFTEN, IF NECESSARY, DURING THE FIRST GROWING SEASON.



- TEMPORARY FOREST/TREE PROTECTION FENCING, SEE DETAIL DWG 6.

PROVIDE FOREST/TREE PROTECTION FENCING AROUND

THE CANOPY OF EXISTING TREE OR TREES, TYP.

LANDSCAPE ARCHITECT'S STATEMENT

I, TIMOTHY M. METZNER, HEREBY STATE THAT I AM A REGISTERED LANDSCAPE ARCHITECT 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.

NOTE: ALL GRADING WILL BE LIMITED TO THE CANOPY AND/OR TEMPORARY FOREST/TREE PROTECTION FENCING. **EXISTING TREE PROTECTION DETAIL**

by TIMOTHY M. METZNER. DAVIS, BOWEN & FRIEDEL, INC. 1 PARK AVENUE MILFORD, DELAWARE, 19963

DATE

543-9091 424-1441 770-4744 Y, MARYL Dei awar \mathbf{O} Ž Š A ZШ ш ωшΟ RIE VAI PAE $|\Box$ \square \square $\overline{\mathbf{O}}$ Ň LAND MMUNIT DELAWARE Ο S \mathbf{Y} C . ح OUNT A 0 Ζ Ż Ŏ 0 Ш SUSSEX SID Ī S Ш́И Revisions: 11-12-21 SCE COMMENTS 04-20-22 DNREC 05-04-22 SITE REVISIONS 05-25-22 WATER REVISION Date: OCTOBER 2021 Scale: NOT TO SCALE Dwn.By: RPK Proj.No.: 0818C027 Dwg.No.: L-102



ARCHITECTS • ENGINEERS • SURVEYORS

Michael R. Wigley, AIA, LEED AP W. Zachary Crouch, P.E. Michael E. Wheedleton, AIA, LEED GA Jason P. Loar, P.E. Ring W. Lardner, P.E. Jamie L. Sechler, P.E.

June 06, 2022 *Revised: June 7, 2022*

Sussex County Planning & Zoning Commission Sussex County Administration Building 2 The Circle, Georgetown, DE 19947

- Attn: Honorable Robert C. Wheatley Chairman
- RE: Village Center Commercial (S-22-16) Parking Setback waiver Request Tax Map No.: 335-12.00-3.00 (portion) DBF #: 2261J020.B01

Dear Mr. Wheatley:

On behalf of our client, **J.G. Townsend Jr. & Co.**, we are writing this letter to request that parking be allowed in the 60-foot front-yard setback, but no closer than 40' from the right-of-way line. First, we will provide a summary of the project.

Project Summary

The property is located on the east side of Kings Highway and the south side of Gills Neck Road. The project will be served by an entrance on Kings Highway aligned with Clay Road and an entrance on Gills Neck Road aligned with the Mitchell Farm (Zwaanendael Farm) entrance. A connector road will be built to Stockley Blvd at Governors with pedestrian connections to Stockley Blvd. and Cannon Road. The entrance at Gills Neck will be constructed with a stub road to the future Village Center Cottages property.

The property is currently zoned B-1. The project includes nine commercial buildings with a total square footage of 75,000 square feet. Sanitary sewer will be provided by Sussex County and water service will be provided by Tidewater Utilities. Stormwater from the site will drain to the existing shared Governors ponds, which were designed to capture runoff from this site.

In 2015, a 30' wide strip of land was dedicated to the State of Delaware by the property owner for improvements to Kings Highway. This right-of-way dedication was provided as part of the Letter Agreement dated September 24, 2009 between the developer and the Delaware Department of Transportation, wherein this right-of-way was specified as being sufficient for any future road projects along Kings Highway.

Village Center Commercial June 6, 2022 *Revised: June 7, 2022* Page 2

Front-yard Setback

The code-stipulated front yard setback is out of context with the existing neighborhood. The front yard setback for C-3 is 60 feet from the right-of-way line. Kings Highway is classified as a principal arterial by DelDOT, therefore 50' of right-of-way is required from the centerline of the road, whereas 60' of right-of-way from centerline is existing Across the street from the site, at Kingston Court and the Cape Professional Campus, there are several buildings within the 60' setback. The Kings Highway and Gills Neck Road Byways plan encourages buildings that front the street as proposed by this project.

Existing Parking

The parking proposed for this project is consistent with other sites along Kings Highway; beginning at the Cape Professional Campus and moving north there are multiple instances of businesses that have parking close to the right-of-way line. Across Gills Neck Road, at the Cape Henlopen Medical Center, parking was allowed to be 40' from the right-of-way line, which is consistent with this application.

For all the reasons listed above, we respectfully request that parking be allowed within the front setback line (no closer than 40' from the r/w) as it is in context with the neighborhood, maintains sufficient distance from the actual roadway, and would not negatively affect adjacent properties. The parking is shown on the preliminary plan for reference.

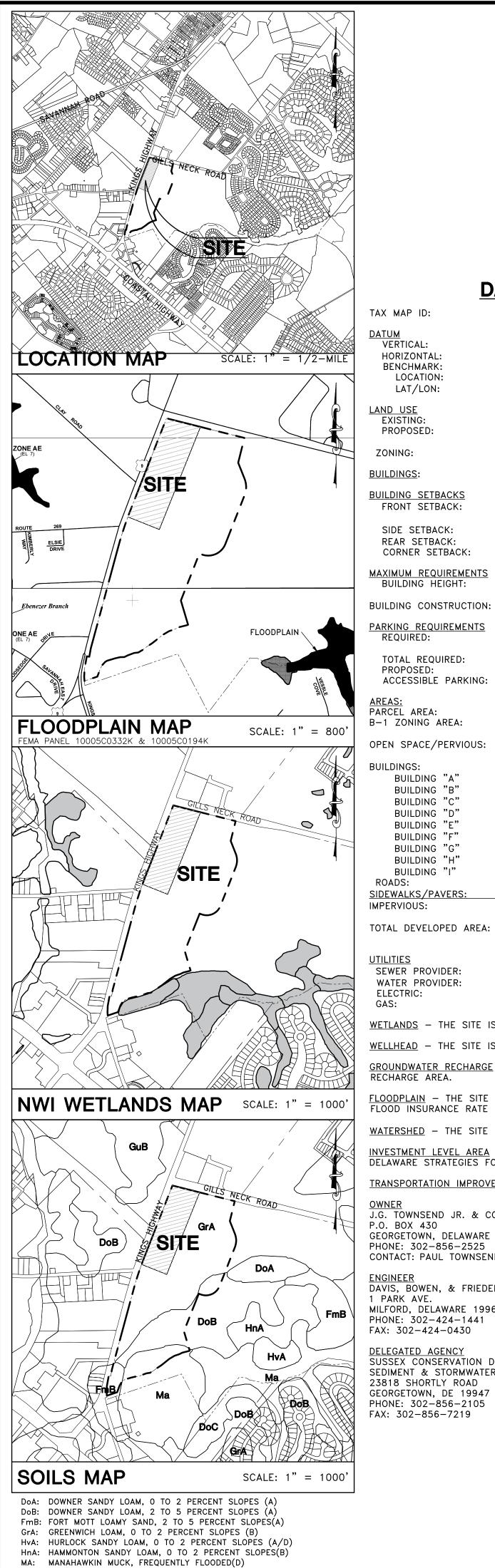
If you have any questions or need additional information, please contact me at (302) 424-1441 or via email at <u>cdm@dbfinc.com</u>.

Sincerely, DAVIS, BOWEN & FRIEDEL, INC.

Ciff unfof

Cliff Mumford, P.E. Associate

P:\JG Townsend\Village Center\2261J020 - Commercial\Docs\P&Z\2022-06-07 Parking setback waiver rev\VC-Commerical_Parking-setback-waiver_PZCommission-BWheatley-Cover-rev.docx



VILLAGE CENTER - COMMERCIAL LEWES AND REHOBOTH HUNDRED, SUSSEX COUNTY, DELAWARE

DATA COLUMN

3-35-12.00-3.00

NAVD 88 NAD 83 (DE STATE PLANE) CONCRETÈ MONUMENT NE PROPERTY CORNER (38.7548, -75.1450)

AGRICULTURAL COMMERCIAL

B-1 (NEIGHBORHOOD BUSINESS)

60 FT. (KINGS HWY & GILLS NECK ROAD) 30 FT. (STOCKLEY BLVD.) 5 FT. (20 FT. WHEN ADJACENT TO RESIDENTIAL) 5 FT. (30 FT. WHEN ADJACENT TO RESIDENTIAL) 15 FT.

42 FT.

5 SPACES PER 1000 SF. 75,000 SF. / 1000 * 5 = 375 SPACES 375 SPACES MIN. 378 SPACES 8 REQUIRED & PROVIDED

65.051 AC. 11.649 AC.

2.419 AC.

1.722 AC. (75,000 SF)

WOOD/CONCRETE BLOCK

6.011 AC. <u>3.445 AC.</u> 11.178 AC. (17%) 13.597 AC. (21%)

4.800 SF

4,800 SF

1,800 SF

4,800 SF

4,800 SF

13,000 SF

13,000 SF

13,000 SF

15,000 SF

<u>UTILITIES</u> SEWER PROVIDER: WATER PROVIDER: ELECTRIC:

TAX MAP ID:

VERTICAL:

<u>LAND USE</u>

ZONING:

BUILDINGS:

EXISTING:

PROPOSED:

HORIZONTAL

BENCHMARK:

LOCATION:

LAT/LON:

BUILDING SETBACKS

SIDE SETBACK:

REAR SETBACK:

CORNER SETBACK:

MAXIMUM REQUIREMENTS

BUILDING CONSTRUCTION:

PARKING REQUIREMENTS

TOTAL REQUIRED:

ACCESSIBLE PARKING:

REQUIRED:

PROPOSED:

PARCEL AREA:

UILDINGS:

ROADS:

GAS:

B-1 ZONING AREA:

OPEN SPACE/PERVIOUS:

BUILDING "A"

BUILDING "B"

BUILDING "C"

BUILDING "D"

BUILDING "E"

BUILDING "F"

BUILDING "G"

BUILDING "H"

BUILDING "I"

SIDEWALKS/PAVERS:

AREAS

BUILDING HEIGHT:

FRONT SETBACK:

DATUM

PUBLIC (SUSSEX COUNTY) PUBLIC (TIDEWATER UTILITIES, INC.) DELAWARE ELECTRIC CO-OP

WELLHEAD - THE SITE IS LOCATED PARTIALLY WITHIN A WELLHEAD PROTECTION AREA.

GROUNDWATER RECHARGE - THE SITE IS LOCATED IN A FAIR AND GOOD AQUIFER RECHARGE AREA.

FLOODPLAIN - THE SITE IS NOT WITHIN THE FLOOD PLAIN AS DETERMINED BY FEMA FLOOD INSURANCE RATE MAP #10005C0194K & 10005C0332K, DATED MARCH 16, 2015.

WATERSHED - THE SITE IS LOCATED IN THE (HUC 10) REHOBOTH BAY WATERSHED INVESTMENT LEVEL AREA – THIS SITE IS LOCATED IN INVESTMENT LEVEL 1 PER 2020

J.G. TOWNSEND JR. & CO. P.O. BOX 430 GEORGETOWN, DELAWARE 19947 PHONE: 302-856-2525 CONTACT: PAUL TOWNSEND

ENGINEER DAVIS, BOWEN, & FRIEDEL, INC. 1 PARK AVE. MILFORD, DELAWARE 19963 PHONE: 302-424-1441 FAX: 302-424-0430

DELEGATED AGENCY

SUSSEX CONSERVATION DISTRICT SEDIMENT & STORMWATER PROGRAM 23818 SHORTLY ROAD GEORGETOWN, DE 19947 PHONE: 302-856-2105 FAX: 302-856-7219

CHESAPEAKE UTILITIES

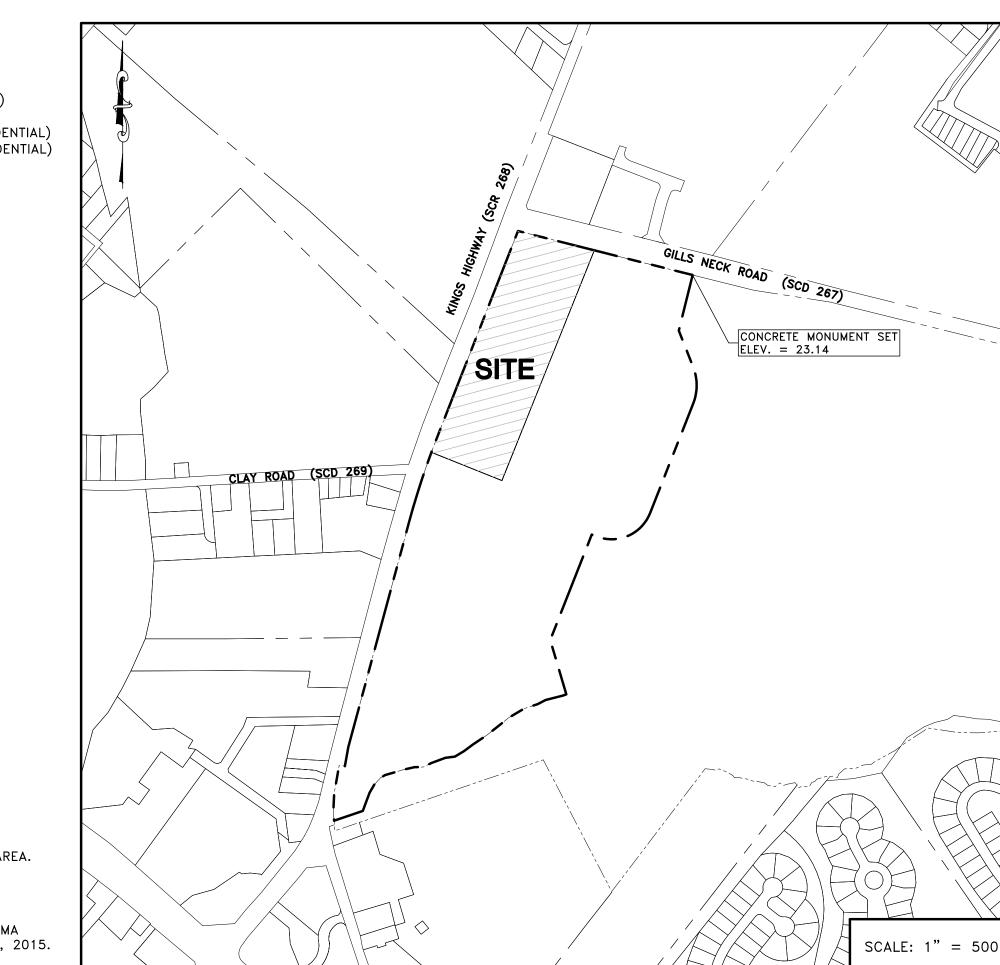
WETLANDS - THE SITE IS NOT IMPACTED BY WETLANDS.

DELAWARE STRATEGIES FOR STATE POLICIES AND SPENDING.

TRANSPORTATION IMPROVEMENT DISTRICT - THE SITE IS NOT LOCATED IN A TID.

KINGS HIGHWAY (SCR 268) PRELIMINARY PLAN

MARCH, 2022 DBF # 2261J020 **REVISED: JUNE 2022**



SHEET INDEX	
TITLE SHEET	PL-00
PRELIMINARY PLAN - OVERVIEW	PL-01
PRELIMINARY PLAN	PL-02 - PL-05

OWNER'S CERTIFICATION I, THE UNDERSIGNED, HEREBY CERTIFY THAT I AM THE OWNER OF THE PROPERTY DESCRIBED ON THIS PLAN, THAT THE PLAN WAS MADE BY MY DIRECTION AND THAT I ACKNOWLEDGE THE SAME TO BE MY ACT AND DESIRE THE PLAN TO BE DEVELOPED AS SHOWN IN ACCORDANCE WITH ALL APPLICABLE LAWS AND REGULATIONS.

ARCHITECTS, ENGINEERS & SURVEYORS SALISBURY, MARYLAND (410) 543-9091 MILFORD, DELAWARE (302) 424-1441

EASTON, MARYLAND (410) 770-4744

DAVIS, BOWEN & FRIEDEL, INC.

PAUL TOWNSEND P.O. BOX 450

(DCM).

FENCE

GENERAL NOTES:

1. NO LANDSCAPING SHALL BE ALLOWED WITHIN R/W UNLESS THE PLANS ARE COMPLIANT WITH SECTION 3.7 OF THE DELDOT DEVELOPMENT COORDINATION MANUAL

2. INTERNAL STREETS CONSTRUCTED WITHIN THE DEVELOPMENT ARE PRIVATE AS SHOWN ON THIS PLAN AND ARE TO BE MAINTAINED BY THE DEVELOPER, PROPERTY OWNERS OR BOTH. THE STATE OF DELAWARE ASSUMES NO MAINTENANCE RESPONSIBILITIES FOR THE FUTURE MAINTENANCE OF THESE STREETS. 3. THE SIDEWALK AND SHARED-USE PATH SHALL BE THE RESPONSIBILITY OF THE DEVELOPER, THE PROPERTY OWNERS OR BOTH WITHIN THIS SITE. THE STATE OF DELAWARE ASSUMES NO RESPONSIBILITY FOR THE FUTURE MAINTENANCE OF THE SIDEWALK AND/OR SHARED-USE PATH. 4. ALL UNITS SHALL HAVE ACCESS FROM THE INTERNAL SUBDIVISION STREET

5. ALL FIRE LANES, FIRE HYDRANTS, AND FIRE DEPARTMENT CONNECTIONS SHALL BE MARKED IN ACCORDANCE WITH THE DELAWARE STATE FIRE PREVENTION REGULATIONS. BUILDING CONSTRUCTION TO BE MASONRY AND WOOD.

BOUNDARY INFORMATION, EXISTING UTILITIES, AND TOPOGRAPHICAL INFORMATION SHOWN ON THIS PLAN IS THE RESULT OF A BOUNDARY SURVEY PERFORMED BY DAVIS, BOWEN, & FRIEDEL INC. IN OCTOBER 2021 AND INFORMATION FOUND AT THE RECORDER OF DEEDS OFFICE FOR SUSSEX COUNTY. 8. THIS PLAN DOES NOT VERIFY THE LOCATION, EXISTENCE, OR NON-EXISTENCE OF EASEMENTS OR RIGHT-OF-WAYS CROSSING THE SUBJECT PROPERTY AS NO TITLE SEARCH WAS PERFORMED OR PROVIDED.

9. UTILITY EASEMENTS DEPICTED HEREON REPRESENT, TO THE GREATEST EXTENT PERMITTED BY LAW. PRIVATE EASEMENTS FOR THE EXCLUSIVE USE AND BENEFIT OF THOSE UTILITY COMPANIES AND/OR OTHER PROVIDERS OF SERVICES TO THE DEVELOPMENT AS MAY BE DESIGNATED BY THE OWNER, OR ITS SUCCESSORS AND ASSIGNS, FROM TIME TO TIME BY AN INSTRUMENT IN WRITING, AND IN NO WAY GRANT, CONVEY OR CREATE ANY GENERAL PUBLIC UTILITY EASEMENT OR ANY GENERAL OR PUBLIC ACCESS RIGHTS.

EXISTI	NG
RIGHT-OF-WAY	EX-RW
ADJACENT PROPERTY OWNER	
EASEMENT	+ +
CONTOUR	
CATCH BASIN, STORM PIPE	
SANITARY SEWER MANHOLE, PIPE	•
WATER MAIN	EX-W
FIRE HYDRANT ASSEMBLY	—
UTILITY POLE	
SIGN	þ
FENCE	——×———×———×——
TREE	
TREE LINE	
WETLANDS	$\begin{array}{cccc} \psi & \psi & \psi \\ \psi & \psi & \psi & \psi \end{array}$
PAVEMENT	

LEGEND

PROPO	SED
RIGHT-OF-WAY / BOUNDARY LINE	R₩
PROPERTY LINE	
SETBACK	
EASEMENT	——— PE —— ———
BUFFER	
SANITARY SEWER IDENTIFICATION, MANHOLE, PIPE, FLOW ARROW, PIPE SIZE	O
WATER MAIN, TEE W/ VALVES, PIPE SIZE	- ቀו_וφ 10₩
FIRE HYDRANT ASSEMBLY	<u>-</u> +-\$-\$-
TREE LINE	
PAVEMENT	
SIDEWALK	
PAVERS	
LEASE LINE	
TREES/SHRUBS	

ENGINEER'S STATEMENT

I, CLIFTON D. MUMFORD, P.E., HEREBY STATE THAT I AM A REGISTERED ÉNGINEER 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.

DAVIS, BOWEN & FRIEDEL, INC. by CLIFTON D. MUMFORD, P.E.

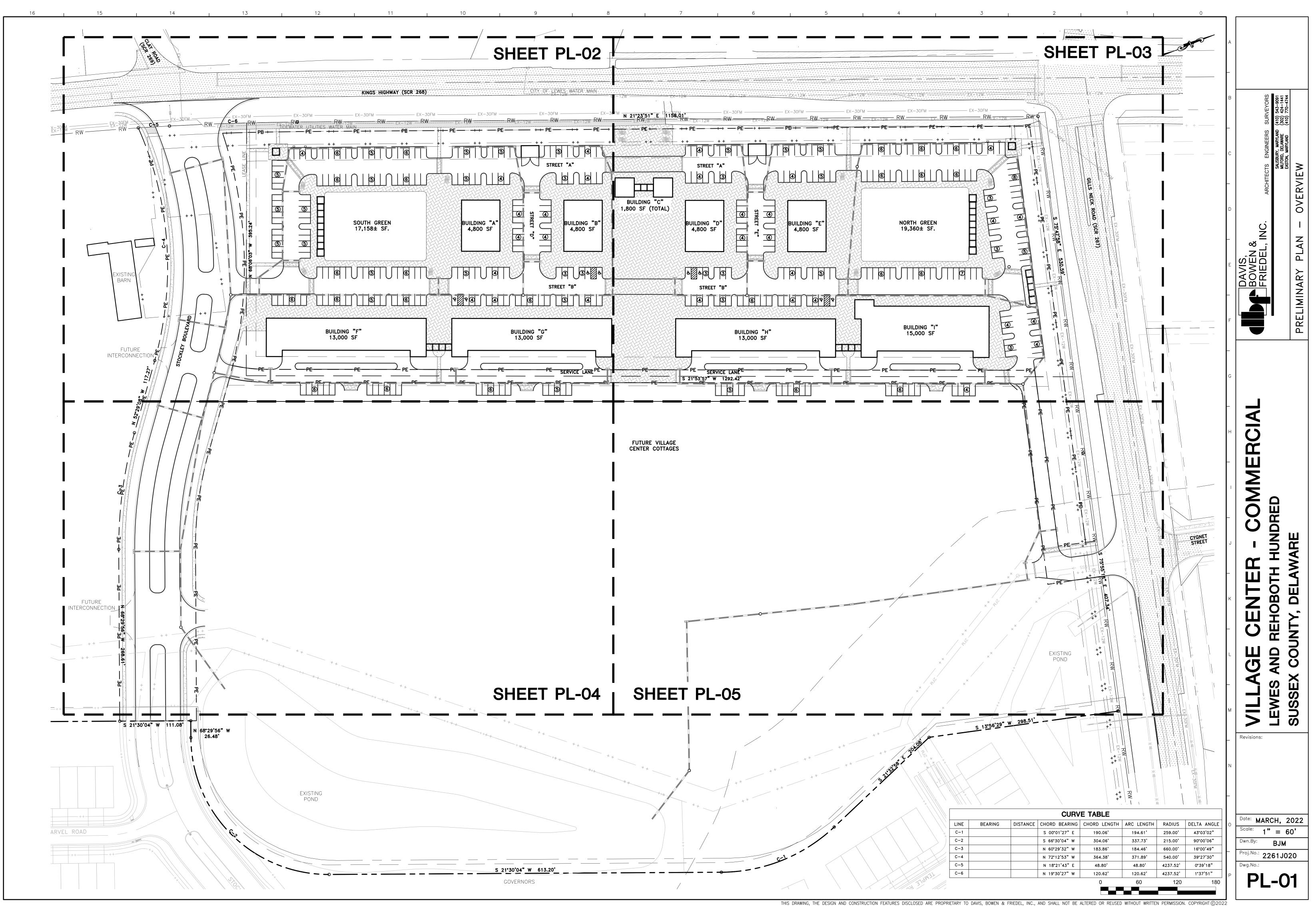
SUSSEX CONSERVATION DISTRICT APPROVAL BOX

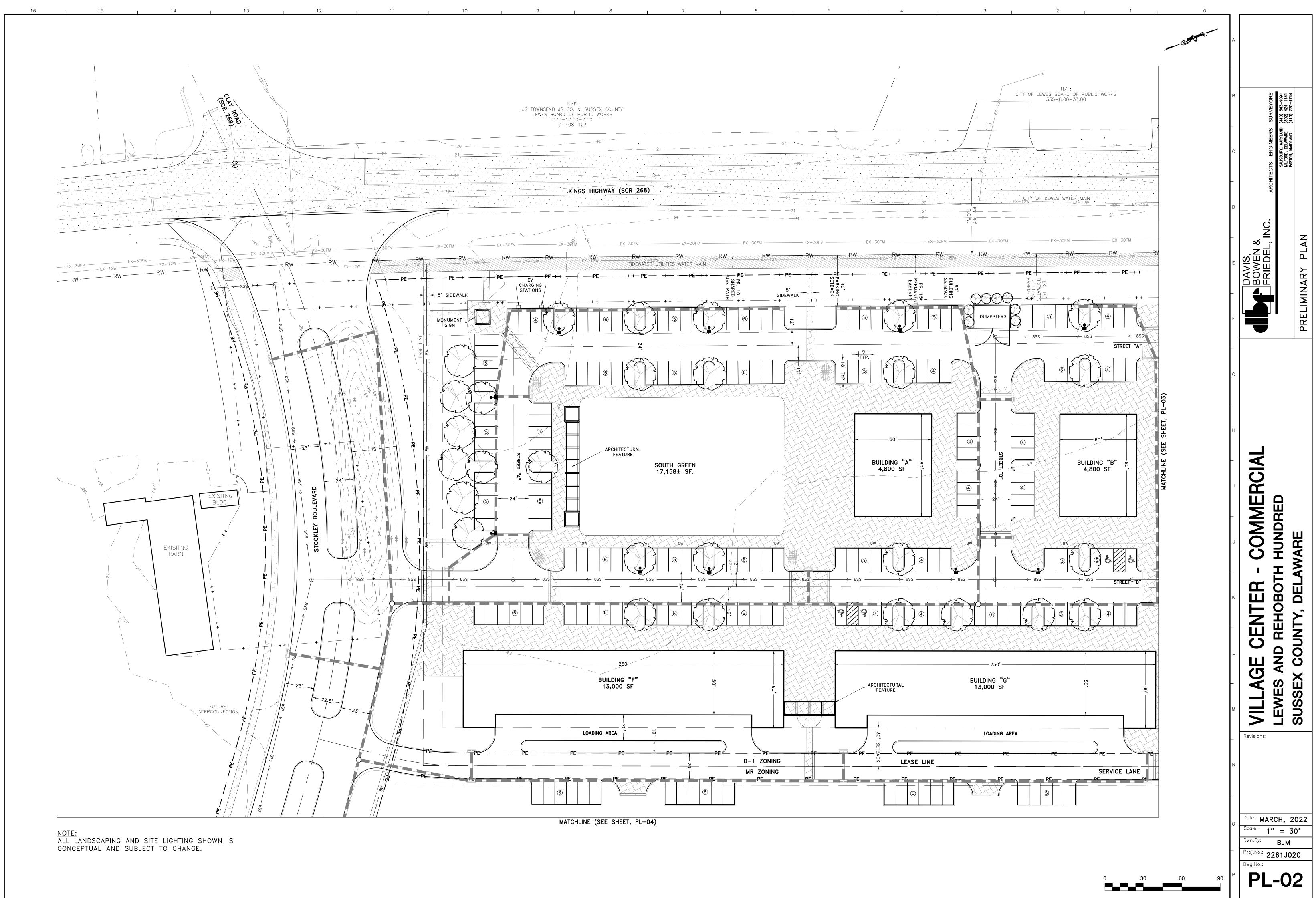
DATE

J.G. TOWNSEND JR. & CO. GEORGETOWN, DE. 19947

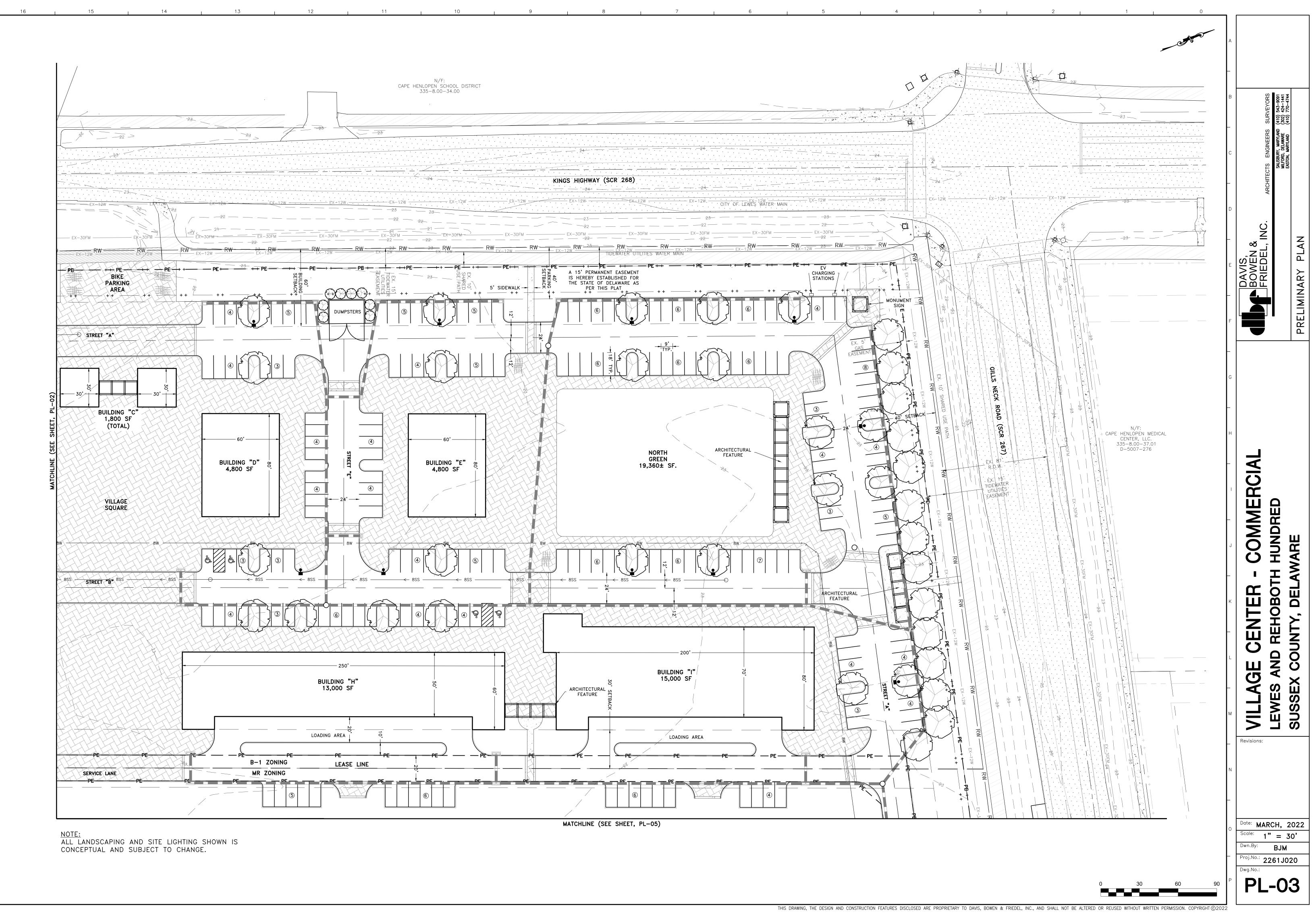
PHONE: (302) 856-2525

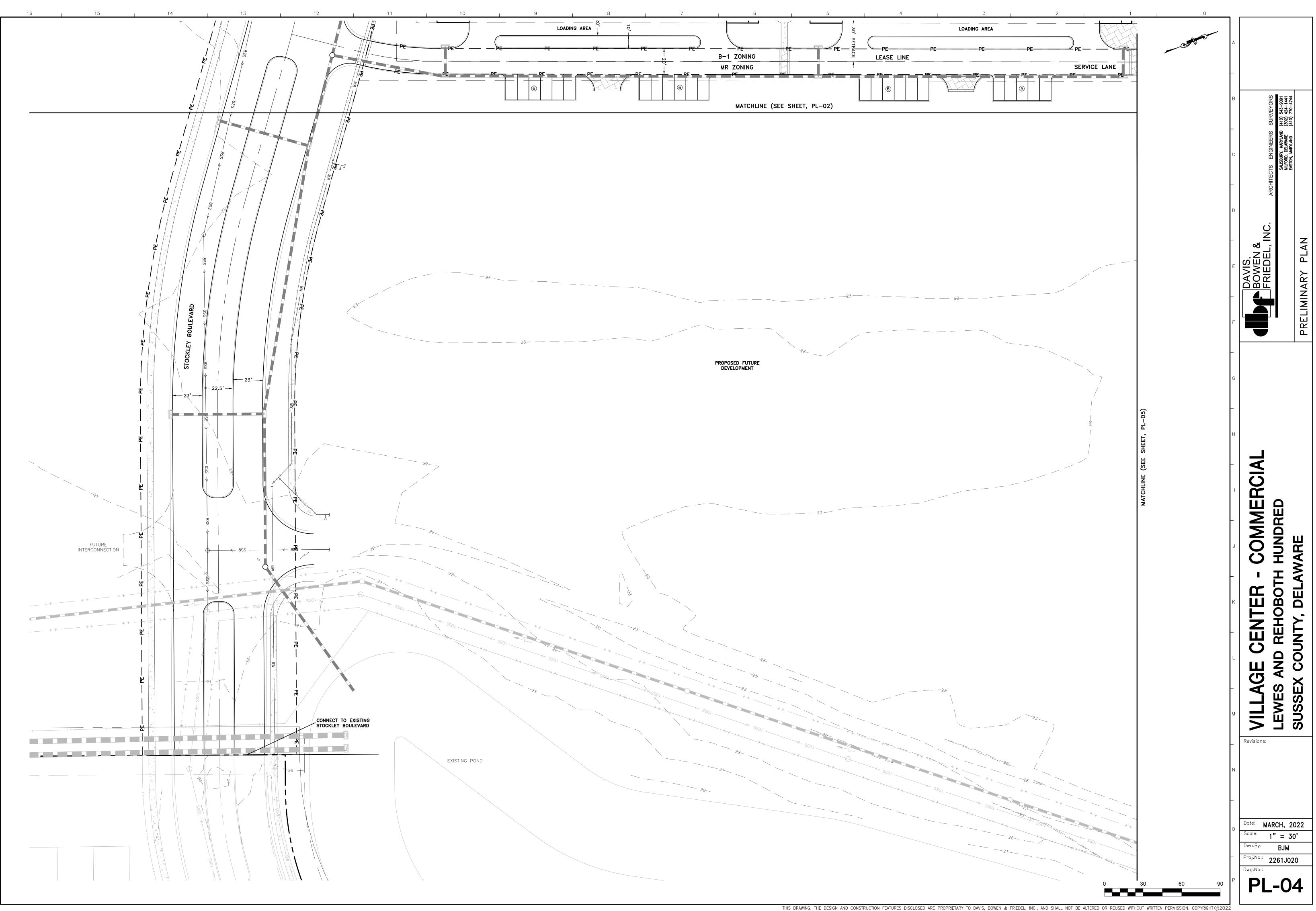
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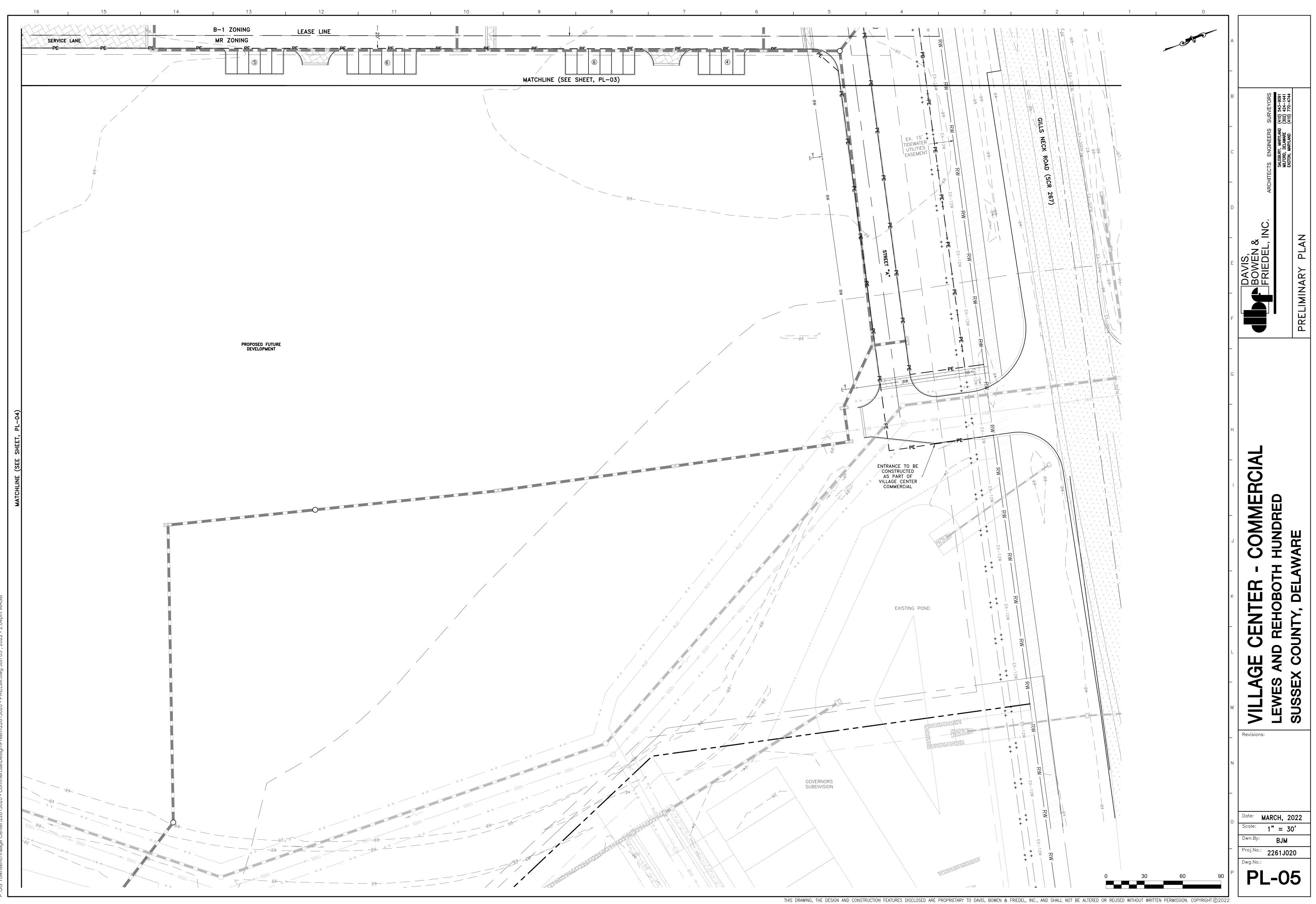
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THIS DRAWING, THE DESIGN AND CONSTRUCTION



3 Townsend\\Village Center\2261J020 - Commercial\Design\Prelim\2261J020 - PRELIM.dwg Jun 03 , 2022 - 2:04pm MASB



800 BAY ROAD P.O. BOX 778 Dover, Delaware 19903

NICOLE MAJESKI SECRETARY

December 22, 2021

Mr. Jamie Whitehouse, Director Sussex County Planning & Zoning Commission Sussex County Administration Building P.O. Box 417 Georgetown, Delaware 19947

SUBJECT: Letter of No Objection to Recordation Mayapple Farm Tax Parcel # 533-19.00-289.05 SCR00395-WILLIAMSVILLE ROAD Baltimore Hundred, Sussex County

Dear Mr. Whitehouse:

The Department of Transportation has reviewed the Site Plan, dated December 17, 2021 (signed and stamped December 17, 2021), for the above referenced site, and has no objection to its recordation as shown on the enclosed drawings. This "No Objection to Recordation" approval shall be valid for a period of <u>five (5) years</u>. If the Site Plan is not recorded prior to the expiration of the "No Objection to Recordation", then the plan must be updated to meet current requirements and resubmitted for review and approval.

This letter does not authorize the commencement of entrance construction. Entrance plans shall be developed in accordance with DelDOT's <u>Development Coordination Manual</u> and submitted to the Development Coordination Section for review and approval.

This "No Objection to Recordation" letter is <u>not</u> a DelDOT endorsement of the project discussed above. Rather, it is a recitation of the transportation improvements, which the applicant may be required to make as a pre-condition to recordation steps and deed restrictions as required by the respective county/municipality in which the project is located. If transportation investments are necessary, they are based on an analysis of the proposed project, its location, and its estimated impact on traffic movements and densities. The required improvements conform to DelDOT's published rules, regulations and standards. Ultimate responsibility for the approval of any project rests with the local government in which the land use decisions are authorized. There



Mayapple Farm Mr. Jamie Whitehouse Page 2 December 22, 2021

may be other reasons (environmental, historic, neighborhood composition, etc.) which compel that jurisdiction to modify or reject this proposed plan even though DelDOT has established that these enumerated transportation improvements are acceptable.

If I can be of any further assistance, please call me at (302) 760-2266.

Very truly yours,

Hichard S.

R. Stephen McCabe Sussex County Review Coordinator Development Coordination

Lawton Myrick, Lawton Myrick cc: Stephen Marsh, George, Miles & Buhr, LLC Sussex County Planning & Zoning Jessica L. Watson, Sussex Conservation District Matt Schlitter, South District Public Works Engineer Scott Rust, South District Public Work Manager James Argo, South District Project Reviewer Richard Larkin, South District Subdivision Manager Jennifer Pinkerton, Chief Materials & Research Engineer Linda Osiecki, Pedestrian Coordinator John Fiori, Bicycle Coordinator Mark Galipo, Traffic Development Coordination Engineer Tim Phillips, Maintenance Support Manager Dan Thompson, Safety Officer North District Jared Kauffman, DTC Planner James Kelley, JMT Wendy L. Polasko, P.E., Subdivision Engineer Kevin Hickman, Sussex County Reviewer

is verticated are never never (here are beind on as analysis of the proposed project, it) hereiting and fore-tracted impact on forffic movements and densition. The required impersonments conferra to DelDOF a publicited refer, sugnitions and superdards. Differ to experileding for the approval of ony project with the local povernancet in which the land use devisions are antiprized. There





ARCHITECTS ENGINEERS

206 WEST MAIN STREET SALISBURY, MD 21801 PH: 410.742.3115 PH: 800.789.4462 FAX: 410.548.5790

> SALISBURY BALTIMORE SEAFORD

www.gmbnet.com

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JAMES H. WILLEY, JR., P.E. PETER A. BOZICK, JR., P.E. CHARLES M. O'DONNELL, III, P.E. A. REGGIE MARINER, JR., P.E. JAMES C. HOAGESON, P.E. STEPHEN L. MARSH, P.E. DAVID A. VANDERBEEK, P.E. ROLAND E. HOLLAND, P.E. JASON M. LYTLE, P.E. CHRIS B. DERBYSHIRE, P.E. MORGAN H. HELFRICH, AIA KATHERINE J. MCALLISTER, P.E. W. MARK GARDOCKY, P.E. ANDREW J. LYONS, JR., P.E.

JUDY A. SCHWARTZ, P.E. W. BRICE FOXWELL, P.E.

JOHN E. BURNSWORTH, P.E. VINCENT A. LUCIANI, P.E. AUTUMN J. WILLIS CHRISTOPHER J. PFEIFER, P.E.

April 28, 2022

Sussex County Department of Planning and Zoning 2 The Circle Georgetown, DE 19947

Attn: Ms. Lauren DeVore Planner III

RE: Mayapple Farm (S-21-36) Preliminary Site Plan GMB # 200123

Dear Ms. DeVore:

Please accept this letter as the formal response to your Staff Review Letter, dated February 23, 2022. We have provided point by point responses to the Preliminary/Final Site Plan below.

Revised Preliminary Site Plan

Comment 1:

Cononco 1:

Please show the location and nature of the Limited Common Elements in order to delineate those areas that are to be considered in common ownership by the homeowners in the community and those areas that will be held in private ownership. If a portion of the lands around the dwellings are to be sold and construed as fee simple, please indicate this on the plans and also as part of any subsequent Declaration Plans which are filed for the community.

Response 1:

Comment 2:

We have shown the Limited Common Elements on a separate exhibit. The homes and driveways will be under private ownership. All other areas will be held in Common Ownership by the Condo Owners' Association (COA).

Please ensure that no stormwater management ponds exist within the proposed landscape buffer. Please note that stormwater outfalls are permitted to be included within this area as required to drain surface or stormwater outside of the perimeter of the subdivision, but that this area shall not contain any stormwater management facilities (§99-5 "Forested and/or Landscaped Buffer Strip" (I)).

Response 2:

There are no stormwater management ponds within the proposed landscape buffer. Only outfall structures, where necessary, are located within this prescribed area.

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SUSSEX COUNTY PLANNING & ZONING



MAN-D N TITT	nent 3: onse 3: 02 4419	Please ensure that the proposed kayak pier does not project more than 10% the width of the waterway (§115-186(B)(2)). The proposed pier is approximately 8' wide and will be field located by Ed Launay of Environmental Resources, Inc. to ensure that it will not extend into the tidal canal more than 10% of the overall width of the waterway. ERI will also obtain any necessary permits for the pier construction.
	nent 4: onse 4:	Please ensure that the proposed name of the Subdivision and all street names are approved by the Geographic Information Office (F.K.A. the Sussex County Department of Mapping and Addressing). Names should not duplicate or approximate any existing and previously approved names in the County. We have a letter from the Geographic Information Office, dated February 28, 2022, approving the Subdivision name as well as the four (4) street names.
Comm	nent 5:	Please ensure that, if required by the local school district, the proposed location and nature of a school bus stop is shown on the plans to comply with Condition "J" of the Conditions of Approval. If not required by the school district, please provide relevant documentation from the local school district which clarifies this.
Respo	onse 5:	We are proposing a bus stop shelter to be located outside the Community, near the entrance along Williamsville Road per the School District's direction.
Comm	nent 6:	Please provide a Landscape Plan with the Final Site Plan submittal which depicts a proposed landscape buffer which meets the requirements set forth in §115-22(G)(1-7) of the Sussex County Code as also required under Condition "L" of the Conditions of Approval.
Respo	onse 6:	We have provided a Landscape Plan which includes the 75' buffer along Williamsville Road. We have used Delaware Native species in this area.
Comm	nent 7:	Please add hatching which clearly indicates those forested areas to be preserved to comply with Condition "O" of the Conditions of Approval. The forested acres to remain/be preserved and also those areas to be removed shall be included within the Site Data Column on the Cover Sheet. Please also clearly delineate on the plans, the proposed "Limit of Disturbance."
Respo	onse 7:	The Lighting & Landscape Plan includes a cross hatched area indicating the Forested Area to remain. This area is approximately 9.27 acres.



Comment 8: Please add the Agricultural Use Protection Notice to the plans and to all future recorded condominium documents. The notice shall also be included in any leases or agreements of sale and shall read: "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 normal agricultural uses and activities" in order to comply with Condition "S" of the Conditions of Approval as well as §99-6(G)(1) of the Sussex County Code. The Agricultural Use Protection Note has been included on **Response 8:** the Cover Sheet as part of the General Notes. Comment 9: Please fix two minor typographical errors. The first is located as part of Condition of Approval "R" which states, "there shall not bee any fountains" to "there shall not be any fountains. The second is located as part of Condition of Approval "T" which states, "Non additional recreational amenities shall be permitted" to "No additional recreational amenities shall be permitted." **Response 9:** These typographical errors have been corrected. Comment 10: Please add hatching or a gradient which clarifies the location and nature of all proposed sidewalks in order to address Condition "I" of the Conditions of Approval. **Response 10:** The sidewalk is hatched on the Proposed Site Plan and is colored white on the Proposed Site Plan Rendering. Comment 11: Staff note that at least 40% of the site has been retained as Open Space (63%) and that a 75-ft planted landscape buffer has been depicted on the plans, which aligns with Condition "L" of the Conditions of Approval for the site. **Response 11:** Comment Noted. Comment 12: Staff note that a buffer at least 50-ft wide has been provided from all tidal waters, tidal tributary streams and tidal wetlands reflected on the plans. Additionally, a 25-ft buffer from all non-tidal wetlands has also been shown on the plans. This accords with Condition "N" of the Conditions of Approval. **Comment Noted.**

Response 12:



	Comment 13:	Please include the County Project Reference Number (S-21-36 & CU 2249) at the top center within the sub header of the Cover Sheet.
d M	Response 13:	The Project Reference Number has been added to the Sub Header on the Cover Sheet.
	Comment 14:	Please note within the Site Data Column that the project is located within the "Coastal Area" as noted as part of the Future Land Use Map included within the Sussex County 2018 Comprehensive Plan Update.
	Response 14:	The designation of Coastal Area has been added to the Site Data Column on the Cover Sheet.
	Comment 15:	Please include on the plans that the project is located within an area of "Good" Groundwater Recharge Potential in order to comply with Chapter 89 "Source Water Protection" of the Sussex County Code (§89-7).
	Response 15:	We have included the designation of Good Groundwater Recharge Potential to the Site Data Column on the Cover Sheet.
	Comment 16:	Please add to the plans the maximum height permitted within the Agricultural Residential (AR-1) Zoning District (42-ft) (§115-25(D)).
	Response 16:	The Maximum Height of 42' has been added to the Site Data Column on the Cover Sheet.
	Comment 17:	Please ensure that the plans show the seal and signature of a registered Delaware land surveyor or registered professional engineer (§115-220(B)(1)).
	Response 17:	All sheets will be sealed and signed by a registered Professional Engineer, except for the Lighting and Landscape Plans, which will be sealed and signed by a Delaware Registered Landscape Architect.
	Comment 18:	Please include on the plans, the location and nature of all proposed construction, excavation, or grading (§115-220(B)(5)).
	Response 18:	A separate Utility Layout plan has been included, which includes the proposed grading.
	Comment 19:	Please add to the plans, the approximate location and size of all recreational areas, if any (§115-220(B)(10)).
	Response 19:	The Location of the Pool and Clubhouse amenity is indicated on the Site Plan. A more detailed Amenity Site Plan will be submitted under separate cover for review and approval.



Di ren	Comment 20:	Please include the number of construction phases proposed, if any, with the plot showing the approximate boundaries of each phase and the proposed completion date of each phase (§115-220(B)(12)).
	Response 20:	The Community will be constructed as one phase. The Amenity Complex will be constructed prior to the issuance
المارية بالعام. محد الملاكمين ا		of the 20 th Home Building Permit.
	Comment 21:	Please include the location of all wetlands on the site including the agency which retains jurisdiction over those wetlands (ie: Delaware Department of Natural Resources & Environmental Control (DNREC) or the Army Corps of Engineers) and the nature of the wetlands (ie: federal or state jurisdictional wetlands) (§115-220(B)(13)).
moo da Braq Lana e esse	Response 21:	The Wetlands are indicated on the Site Plan and the respective designations are called out within the Site Data Column on the Cover Sheet.
ng ng ng g Pro juliang ng sa	Comment 22:	Staff note that the appropriate number of parking spaces (82 spaces) have been provided. The total number of proposed parking spaces achieves parking requirements for multifamily dwellings which require two spaces per dwelling unit (§115-162(B)).
	Response 22:	Comment noted.
enti tisi onga dattaine n an seconda	Comment 23:	Please include the required 15-ft corner yard setback on the plans (§115-182(A)).
e in multiplication and	Response 23:	Because this project is under a Condominium regime, the setbacks are indicated around the perimeter of the site. However, the intent of the 15' corner setback is still being met by the proposed unit layout.
	Comment 24:	Please include the Net Development Area on the Cover Sheet. Please note that that the Net Development Area shall refer to the total area of land available for development and shall not include open space, drainage land, regional roads and land used for other
no qui nasche	Response 24:	public facilities (§115-220(B)(6)). The Net Development Area has been added to the Site Data
a na sa ba		Column on the Cover Sheet.
ZP N ^E U INCENS	Comment 25:	Please ensure that the proposed kayak pier is ADA accessible in that the material to be provided as part of the parking lot is both durable and slip-resistant.)



& BUHR, LLC		Page 6
1	Response 25:	We will design the kayak pier to be ADA accessible. Our intent is for the loading space to consist of crushed
2010-0. K 28		clamshells.
Contraction of the		
	Final Site Plan	
distanting of the	0	
te tori one	Comment 1:	Please add to the plans the location of all outdoor lighting systems. As per Condition "H," please ensure that any proposed lighting is downward screened to prevent glare on adjacent residential properties (§115-221(B)(5)).
terrare and	Response 1:	We indicate the streetlight locations on the Lighting &
and some li		Landscape Plan. The streetlights we propose are approved
veriande) !		models per Delmarva Power / Delaware Electric Co-op.
	Comment 2:	Please include the plans and elevations of the proposed dwelling types on the plans (§115-221(B)(8)).
	Response 2:	We have included plans and elevations for the proposed Architecture under separate cover.
non-qa gi ka paso ka ma	Comment 3:	Please include on the plans the location, character, size, height, and orientation of all proposed signs (§115-221(B)(11).
. 1891 (P.11) 	Response 3:	We are not proposing an entrance monument sign due to the small scale of the neighborhood.
nd na doar	Comment 4:	Please add to the plans the gross acres of the project and the percentage thereof proposed to be devoted to the several dwelling types, other nonresidential uses, parking, etc. (§115-221(B)(12)).
i andra i Stratig	Response 4:	The Gross acreage and Net Development area has been added to the Site Data Column on the Cover Sheet.
	Comment 5:	Please include on the plans, the project density in dwelling units per acre (§115-221(B)(13)).
k nin av light Isten ha ist I son hada	Response 5:	The density of the project has been included in the Site Data column on the Cover Sheet.
nt been in	Comment 6:	Please include the percentage of impervious surface cover area and open space on the plans as this information appears to be missing from the Cover Sheet (§115-221(B)(15)).
amota (d	Response 6:	The breakdown of impervious area has been added to the Site Data Column on the Cover Sheet.
r tal grið es	Comment 7:	Please include a bulk grading plan if one has not already been provided as part of this proposal (§115-221(B)(17)).



Response 7:

The proposed Grading is included in the Site Plan and Utility Plan for clarity. The proposed homes are elevated beach style homes with parking underneath. The Proposed grading plan indicates positive drainage is maintained from the prepared building pads.

Comment 8:

Response 8:

Please add to the plans a General Note which indicates that any additional proposed signage will be subject to the submittal of a separate building permit to the County.

A note has been added to the General Notes regarding any additional signage. We don't anticipate additional signage.

Comment 9:

Upon further review, it appears that 220 out of the 330 plantings proposed are deciduous trees (67%) and that 110 of the 330 plantings proposed are evergreen trees (33%). Please ensure that enough deciduous tree plantings are provided to meet the 70% deciduous tree requirement under §99-5 "Forested and/or Landscaped Buffer Strip" (A) of the Sussex County Code. Since there are slightly more evergreen trees proposed to be provided, some of these trees may be removed to reach the adequate deciduous tree requirement. If the Applicant wishes to have more evergreen trees and less deciduous trees than this requirement, a separate request may be made to the Planning and Zoning Commission for their review and approval as part of a Revised Landscape Plan.

Response 9:

Response 10:

The ratio of Deciduous to Evergreen Trees has been adjusted to better reflect the goal of the Code requirements.

Also, the 30' planted Landscaped Buffer is more densely planted than the 75' wide buffer per §115-22(G)(1-7). We may augment these plantings for more immediate impact at planting, but our goal is to meet the requirements of the Code for approval and bonding purposes.

Comment 10: Please confirm whether mail is to be centralized. If so, please show the location of any proposed community mailbox provisions on the plans.

Mail will be centralized and located at the Amenity building.

Comment 11: Prior to approval of any Final Site Plan, approval letters or 'noobjection' letters from the following agencies shall be submitted to the Sussex County Planning and Zoning Department (All items in **bold** still require submittal to the Department and all items in which



a check mark appear have been submitted and received by the Department):

- a. Delaware Department of Transportation (DelDOT)
- b. Delaware Department of Natural Resources & Environmental Control (DNREC) and/or the Army Corps of Engineers – Subaqueous Lands Permit for the proposed dock/kayak amenity.
- c. Delaware Department of Public Health Office of Drinking Water
- d. Sussex Conservation District
- e. Office of the State Fire Marshal
- f. Sussex County Geographic Information Office (F.K.A. Sussex County Department of Mapping and Addressing) – Approval of the subdivision name and street names.
- g. Sussex County Engineering Department
- h. The local school district with regard to any proposed bus stop provisions.
- i. Copies of draft COA documents or restrictive covenants for the development. (This would also achieve the requirements of Condition "Q" as noted in the Conditions of Approval which requires that language prohibiting soil additives be included within all draft restrictive covenants.)

Response 11:

Comments noted. All Agency approvals will be obtained prior to Final Site Plan approval.

Upon your review, please place the project on the next available Planning & Zoning Commission Agenda.

If you have any questions or comments, please feel free to contact me by telephone at (410) 742-3115 or by e-mail at cpfeifer@gmbnet.com.

Sincerely,

Christopher J. Pfeifer, P.E. **Project Manager**

Enclosures

- Two (2) copies of the Revised Preliminary/Final Site Plan (24x36)
- One (1) copy of the Revised Preliminary/Final Site Plan (electronic via email)
 - Sussex Conservation District Approval Letter, dated 03/29/2022
- Office of the State Fire Marshal Permit, dated 03/28/2022
- DelDOT Final Record Plan (LONO) Approval, dated 12/22/2021
 - Mapping and Addressing Subdivision and Street Name Approval, dated 02/28/2022



OFFICE OF THE STATE FIRE MARSHAL Technical Services

22705 Park Avenue Georgetown, DE 19947



SFMO PERMIT - SHALL BE POSTED ON JOBSITE UNTIL FINAL INSPECTION

Status: Approved as Submitted	Tax Parcel Number: 533-19.00-289.05 Date: 03/28/2022
- Control Manufacture and the second s second second se Second second se Second second sec	RECEIVED
Project	MAY 0 2 2022
	ville Road SUSSEX COUNTY ville DE 19975 PLANNING & ZONING
Scope of Project	
Number of Stories: Square Footage: Construction Class: Fire District: 90 - Roxana Volunteer Fire Co	Occupant Load Inside: Occupancy Code:
Applicant	en en elemente en elemente en elemente en elemente elemente elemente elemente elemente elemente elemente elemen Elemente elemente e Elemente elemente e elemente elemente elemen
and have been and the second of the second	

- 1332 A The distance between a fire hydrant and the fire lane shall not be greater than seven feet (DSFPR Part V, Chapter 5, Section 5 10.4).
- 1432 A The steamer connection of all fire hydrants shall be so positioned so as to be facing the street or fire lane. (DSFPR Regulation 705, Chapter 5, Section 10). The center of all hose outlet(s) on fire hydrants shall be not less than 18 inches above finalgrade (NFPA 24, Section 7.3.3).
- 1501 A If there are any questions about the above referenced comments please feel free to contact the Fire Protection Specialist who reviewed this project. Please have the plan review number available when calling about a specific project. When changes orrevisions to the plans occur, plans are required to be submitted, reviewed, and approved.

Page 3 of 3



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





February 28, 2022

GMB Architects/Engineers 206 West Main St Salisbury, MD 21801

Attn: Cathy Lyons, Sr. Project Coordinator

RE: Mayapple Farm Approved Streets

Our office has received proposed street name(s) for the approved subdivision, **Mayapple Farm**, located on parcel 533-19.00-289.05 in Selbyville, DE 19975. Based on our review the following proposed street name(s) have been **approved**:

Saluda Av	Congaree Ct	Seneca Ln
Edisto Ct		

Use only road names **approved** and issued by this office on letterhead or you will be required to rerecord. Each street name is to be used only <u>once</u>.

Upon final approval of **Mayapple Farm** please forward a digital copy of the <u>recorded</u> site plan to my attention for the purpose of addressing. Should you have any questions, please contact the **Geographic Information Office** at 302-855-1176.

Sincerely,

Brian 2 Zalley

Brian L. Tolley GIS Specialist II

CC: Christin Scott, Office of Planning & Zoning





March 29, 2022

Mr. Robert Myrick Mayapple Farm, LLC 5973 Smithy's Lane Salisbury, MD 21801 Imyrick@gmbnet.com

RE: Mayapple Farm

Dear Mr. Myrick:

A Sediment and Stormwater Management Plan has been reviewed for compliance with the Sediment and Stormwater Regulations and is approved with conditions (see attached). Enclosed herein please find a copy of the approved application form and approved plan sets. Please retain a copy for your use, and provide the contractor with a copy to be retained onsite at all times. Failure to keep an approved plan onsite is a violation of the approved plan.

Approval of a Sediment and Stormwater Plan does not grant or imply a right to discharge stormwater runoff. The owner/developer is responsible for acquiring any and all agreements, easements, etc., necessary to comply with State drainage and other applicable laws.

This plan approval pertains to compliance with the Delaware Sediment and Stormwater Regulations. Please understand that the approval of this plan does not relieve you from complying with any and all federal, state, county, or municipal laws and regulations.

As of January 1, 2014, the Sussex Conservation District began collecting financial guarantees to ensure the construction of stormwater management practices is accomplished in accordance with the approved sediment and stormwater plan. Please refer to the SCD Policy on Bonds located on our website at Sussexconservation.org. If you have any questions concerning the aforementioned, please do not hesitate to call 302 856-7219.

Sincerely,

Jessica Watson

Jessica Watson Program Manager

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SUSSEX COUNTY PLANNING & ZONING

CONDITIONS OF APPROVAL / CU 2249 (DATED OCTOBER 26, 2021)

- A. THE MAXIMUM NUMBER OF RESIDENTIAL UNITS WITHIN THIS ENTIRE DEVELOPMENT SHALL BE 41
- B. THE APPLICANT SHALL FORM A CONDOMINIUM ASSOCIATION TO BE RESPONSIBLE FOR THE PERPETUAL MAINTENANCE OF THE DEVELOPMENT'S ROADWAYS, BUFFERS, STORMWATER MANAGEMENT FACILITIES, EROSION AND SEDIMENTATION CONTROL FACILITIES, AND OTHER COMMON AREAS.
- C. ALL ENTRANCE, INTERSECTION, ROADWAY, AND MULTI-MODAL IMPROVEMENTS SHALL BE COMPLETED BY THE DEVELOPER IN ACCORDANCE WITH ALL DELDOT REQUIREMENTS
- D. THE PROJECT SHALL BE SERVED BY SUSSEX COUNTY SEWER. THE DEVELOPER SHALL COMPLY WITH ALL SUSSEX COUNTY ENGINEERING DEPARTMENT REQUIREMENTS INCLUDING ANY OFFSITE UPGRADES NECESSARY TO PROVIDE SERVICE TO THE PROJECT
- E. THE PROJECT SHALL BE SERVED BY CENTRAL WATER TO PROVIDE DRINKING WATER AND FIRE PROTECTION.
- F. STREET NAMING AND ADDRESSING SHALL BE SUBJECT TO THE REVIEW AND APPROVAL OF THE COUNTY MAPPING AND ADDRESSING DEPARTMENTS. G. THE FINAL SITE PLAN SHALL CONTAIN THE APPROVAL OF THE SUSSEX
- CONSERVATION DISTRICT FOR THE DESIGN AND LOCATION OF ALL STORMWATER MANAGEMENT AREAS AND EROSION AND SEDIMENTATION CONTROL FACILITIES. H. ALL STREETLIGHTS SHALL BE SHIELDED AND DOWNWARD SCREENED SO THAT THEY
- DO NOT SHINE ON NEIGHBORING PROPERTIES OR ROADWAYS. I. THE INTERIOR STREET DESIGN SHALL MEET OR EXCEED SUSSEX COUNTY'S STREET DESIGN REQUIREMENTS. THERE SHALL BE SIDEWALKS ON AT LEAST ONE SIDE OF ALL STREETS
- J. IF REQUESTED BY THE LOCAL SCHOOL DISTRICT, A SCHOOL BUS STOP SHALL BE PROVIDED. THE LOCATION OF THE BUS STOP SHALL BE SHOWN ON THE FINAL SITE PLAN.
- K. RECREATIONAL AMENITIES SHALL BE COMPLETED NO LATER THAN THE ISSUANCE OF THE 20TH RESIDENTIAL BUILDING PERMIT. L. AS REQUIRED BY SECTION 115-22 OF THE ZONING CODE FOR MULTIFAMILY DEVELOPMENTS IN THE AR-1 ZONE, THE SITE PLAN SHALL BE REVISED TO INCLUDE AT LEAST 40% OF THE SITE OPEN SPACE AND THERE SHALL BE A 75-FT WIDE PERIMETER BUFFER ALONG THE COUNTY ROAD. THE DEVELOPMENT SHALL COMPLY WITH THE DESIGN, VEGETATION TYPE, PLANTING, AND OTHER
- REQUIREMENTS OF SECTION 115-22(G) REGARDING MULTIFAMILY DWELLINGS IN THE AR-1 DISTRICT. M. CONSTRUCTION, SITE WORK, AND DELIVERIES SHALL ONLY OCCUR ON THE SITE BETWEEN THE HOURS OF 8:00 AM THROUGH 5:00 PM, MONDAY THROUGH FRIDAY. NO SATURDAY OR SUNDAY HOURS ARE PERMITTED. A 24 INCH BY 36 INCH "NOTICE" SIGN CONFIRMING THESE HOURS IN BOTH ENGLISH AND SPANISH SHALL BE PROMINENTLY DISPLAYED AT ALL ENTRANCES TO THE SITE DURING
- CONSTRUCTION. N. THERE SHALL BE A BUFFER THAT IS AT LEAST 50 FT WIDE FROM ALL TIDAL WATERS, TIDAL TRIBUTARY STREAMS, TIDAL WETLANDS, PERENNIAL RIVERS, AND NON-TIDAL STREAMS. THERE SHALL ALSO BE 25 FT WIDE BUFFER FROM ALL NON-TIDAL WETLANDS. THERE SHALL BE A MINIMUM DISTURBANCE OF TREES AND OTHER VEGETATION WITHIN THESE BUFFER AREAS. THIS SPECIFICALLY INCLUDES THE EXISTING WOODLANDS BUFFER ALONG THE SOUTHEASTERN BOUNDARY OF THE DEVELOPMENT BETWEEN THE PROPOSED UNITS AND THE ADJACENT PROPERTY. REQUIRED SILT FENCING SHALL BE INSTALLED UPLAND OF THESE BUFFER AREAS (USING THE EDGE OF THE BUFFER NEAREST THE INTERIOR OF THE DEVELOPMENT) TO AVOID DISTURBANCE. CONSTRUCTION ACTIVES WITHIN THE BUFFER AREA SHALL BE INDICATED ON THE FINAL SITE PLAN AND THE "LIMITS OF DISTURBANCE" SHALL BE INDICATED ON THE FINAL SITE PLAN.
- 0. THE FINAL SITE PLAN SHALL INCLUDE A LANDSCAPE PLAN CONFIRMING ALL LANDSCAPING TO BE PROVIDED, THE PRESERVATION OF ALL BUFFER AREAS, AND THE FORESTED AREAS THAT WILL BE PRESERVED. THIS LANDSCAPE PLAN SHALL FURTHER IDENTIFY ALL "LIMITS OF DISTURBANCE" WITHIN THE SITE.
- P. THE FINAL SITE PLAN SHALL INCLUDE A GRADING PLAN FOR THE SITE. NO BUILDING PERMIT SHALL BE ISSUED FOR INDIVIDUAL LOTS UNTIL AN INDIVIDUAL LOT GRADING PLAN HAS BEEN SUPPLIED TO AND APPROVED BY SUSSEX COUNTY. NO CERTIFICATE OF OCCUPANCY SHALL BE ISSUED UNTIL A GRADING CERTIFICATE IS SUBMITTED TO THE BUILDING CODE DEPARTMENT DEMONSTRATING GENERAL CONFORMITY WITH THE INDIVIDUAL SITE GRADING PLAN.
- Q. AS PROFFERED BY THE APPLICANT, THE FINAL SITE PLAN AND THE RECORDED CONDOMINIUM COVENANTS SHALL PROHIBIT THE APPLICATION OF FERTILIZERS OR SIMILAR SOIL ADDITIVES ON THE PROPERTY BY THE INDIVIDUAL OWNERS. ALL SUCH APPLICATIONS SHALL BE MANAGED BY THE CONDOMINIUM ASSOCIATION AND A CONTRACTOR OF ITS DESIGNATION USING BEST-MANAGED PRACTICES TO SEEK TO MINIMIZE THE RISK OF RUNOFF INTO THE STORMWATER MANAGEMENT SYSTEM, WETLANDS, AND WATERWAYS.
- R. BECAUSE THE PROPOSED STORMWATER MANAGEMENT POND IS LOCATED ADJACENT TO A PROPERTY USED FOR AGRICULTURAL PURPOSES, INCLUDING LIVE ANIMALS, THERE SHALL NOT BE ANY FOUNTAINS OR SIMILAR EQUIPMENT THAT MIGHT GENERATE NOISE OR SPRAY USED IN THESE PONDS. S. THE FINAL SITE PLAN AND RECORDED CONDOMINIUM DOCUMENTS SHALL CONTAIN
- THE "AGRICULTURAL USE PROTECTION NOTICE". T. THE FINAL SITE PLAN SHALL BE SUBJECT TO THE REVIEW AND APPROVAL OF THE SUSSEX COUNTY PLANNING AND ZONING COMMISSION. ALL RECREATIONAL
- AMENITIES SHALL BE SHOWN ON THE FINAL SITE PLAN. NO ADDITIONAL RECREATIONAL AMENITIES SHALL BE PERMITTED WITHOUT A REVISED FINAL SITE PLAN HAVING BEEN APPROVED BY THE PLANNING AND ZONING COMMISSION.

GENERAL NOTES:

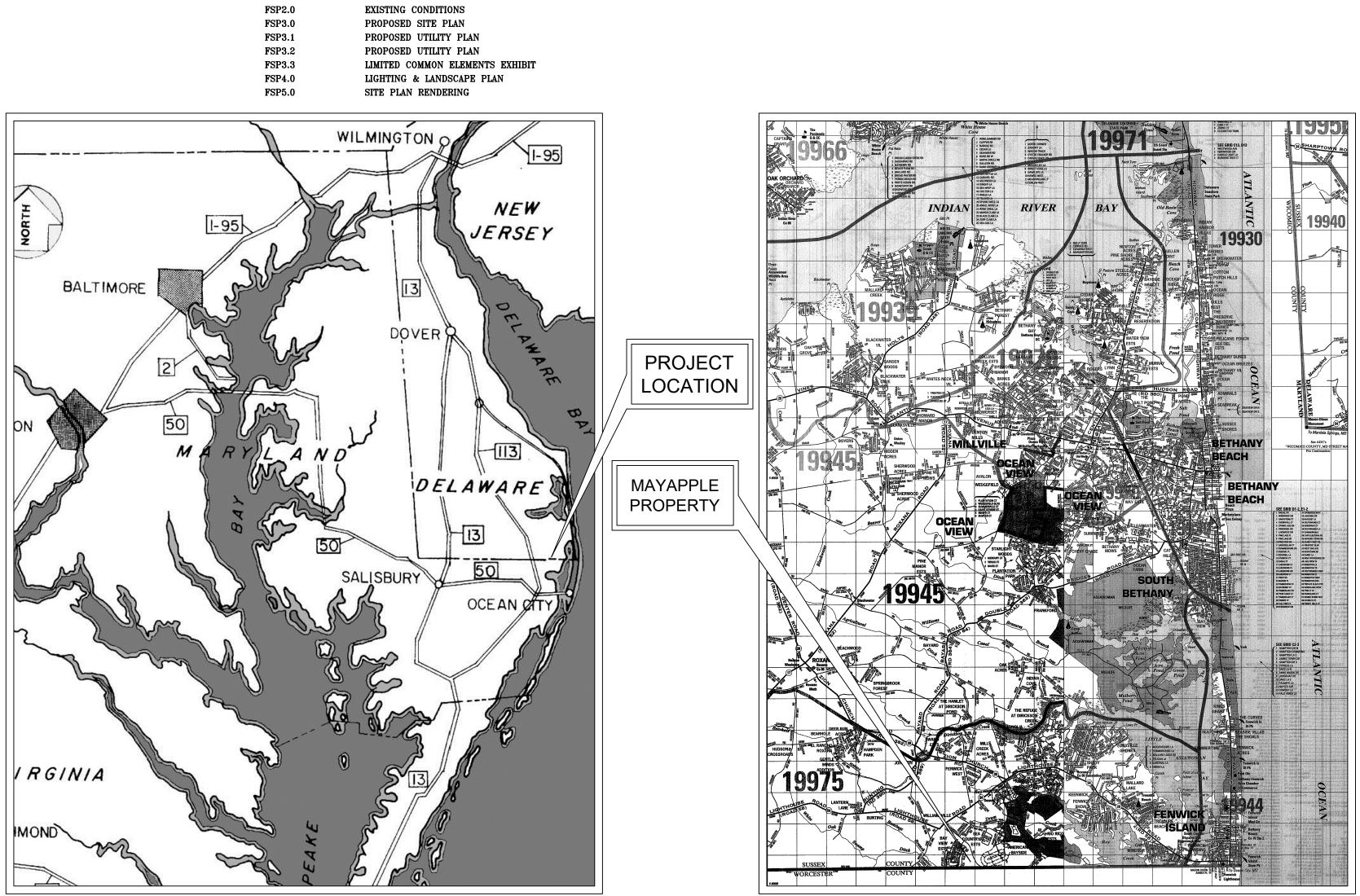
- 1. BOUNDARY SURVEY PREPARED BY CYPRESS SURVEYS, LLC 10/06/2020. SURVEY DATUM: HORIZONTAL NAD 83/2011 VERTICAL NAVD 88
- 2. WETLANDS DELINEATION PERFORMED BY ENVIRONMENTAL RESOURCES, INC. JURISDICTIONAL DETERMINATION NUMBER CENAP-OP-R 2018-358-23 DATED MAY 29, 2018 AND IS GOOD FOR FIVE(5) YEARS
- 3. 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 NORMAL AGRICULTURAL USES AND ACTIVITIES.
- 4. ANY ADDITIONAL PROPOSED SIGNAGE WILL BE SUBJECT TO THE SUBMITTAL OF A SEPARATE BUILDING PERMIT TO THE COUNTY.
- 5. MAILBOXES WILL BE CENTRALLY LOCATED AT THE AMENITY BUILDING.

MAYAPPLE FARM SUSSEX COUNTY, DELAWARE S-21-36 & CU 2249 **REVISED PRELIMINARY / FINAL SITE PLAN** PARCEL 533-19.00-289.05

GMB NO. 200123

LIST OF DRAWINGS

FSP1.0	COVER SHEET
FSP1.1	BOUNDARY SURVEY
FSP2.0	EXISTING CONDITION
FSP3.0	PROPOSED SITE PLA
FSP3.1	PROPOSED UTILITY
FSP3.2	PROPOSED UTILITY
FSP3.3	LIMITED COMMON E
FSP4.0	LIGHTING & LANDSO
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VICINITY MAP SCALE: 1" = 20 MILES

WETLANDS CERTIFICATION:

"I EDWARD M. LAUNAY, PWS. STATE THAT THE BOUNDARIES OF WATERS OF THE UNITED STATES INCLUDING WETLANDS SUBJECT TO THE CORPS OF ENGINEERS REGULATORY PROGRAM DELINEATED UPON THIS PLAN HAVE BEEN DETERMINED USING MY PROFESSIONAL JUDGEMENT IN ACCORDANCE WITH THE 1987 CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL, REGULATIONS AND SUPLEMENTAL GUIDANCE (33 CFR 328.3(a)(8), WATERS OF THE U.S. DEFINITION/CECW-OR, 10-7-1991, QUESTIONS AND ANSWERS ON THE 1987 COE MANUAL/CECW-OR, 9-26-1990, RGL 90-7/CECW-OR, 3-6-1992, CLARIFICATION AND INTERPRETATION OF THE 1987 MANUAL). THIS DELINEATION HAS NOT BEEN CONDUCTED FOR USDA PROGRAM OR AGRICULTURAL PURPOSES. DNREC STATE REGULATED WETLANDS HAVE BEEN IDENTIFIED IN ACCORDANCE WITH DNREC WETLAND MAP NOS. 2 & 28 SUSSEX COUNTY.

EDWARD M. LAUNAY, PWS NO. 875 DATE SOCIETY OF WETLAND SCIENTISTS CORPS OF ENGINEERS. CERTIFIED WETLAND DELINEATOR WDCP93MD0510036B LOCATION MAP SCALE: 1" = 2000'



SALISBURY · BALTIMORE · SEAFORD 206 WEST MAIN STREET SALISBURY, MARYLAND 21801 410-742-3115, FAX 410-548-5790 www.gmbnet.com



CONSULTANT TEAM

OWNER/APPLICANT:

CIVIL ENGINEER:

SITE DATA:

TAX MAP #: DEED REFERENCE: PRESENT ZONING CLASSIFICATION: PRESENT USE: COMPREHENSIVE PLAN DESIGNATION PROPOSED ZONING CLASSIFICATION PROPOSED USE:

LAND USE APPROVAL AUTHORITY:

TOTAL LAND AREA: NET DEVELOPMENT AREA: TOTAL OPEN SPACE: NON TIDAL WETLANDS: TIDAL WETLANDS: FLOOD INFORMATION:

SOURCE WATER PROTECTION:

ALLOWED SINGLE FAMILY UNITS: PROPOSED SINGLE FAMILY UNITS: REQUIRED PARKING: PROVIDED PARKING:

FRONT YARD SETBACK: SIDE YARD SETBACK: REAR YARD SETBACK: REQUIRED DISTANCE BETWEEN UNITS: PROVIDED DISTANCE BETWEEN UNITS: MAXIMUM BUILDING HEIGHT:

WATER PROVIDER: SEWER PROVIDER:

PROPOSED AMENITIES:

EXISTING WOODED AREA: WOODS TO REMAIN:

IMPERVIOUS AREA:

ROOFTOPS: DRIVEWAYS: STREETS & SIDEWALKS POOL DECK: PARKING & LOADING: SUBTOTAL:

MAYAPPLE FARM, LLC 5973 SMITHY'S LANE SALISBURY, MD 21801 CONTACT: R. LAWTON MYRICK 410-742-3115 (PHONE)

GEORGE, MILES & BUHR, LLC 206 WEST MAIN STREET SALISBURY, MARYLAND 21801 CONTACT: STEPHEN L. MARSH, P.E. 410-742-3115 (PHONE) 410-548-5790 (FAX)

TM ID 533-19.00-289.05 BOOK 5264 PAGE 217 AR-1 AGRICULTURAL COASTAL AREA AR-1 CONDITIONAL USE SINGLE FAMILY RESIDENTIAL DETACHED CONDOMINIUM SUSSEX COUNTY

<u>ACRES</u>

±20.91 ±6.41 ±14.50 ±5.06 FEDERAL JURISDICTION (USACOE) ±0.05 STATE JURISDICTION (DNREC) SPECIAL FLOOD HAZARD AREA ZONE AE 5 & ZONE X PER FEMA MAPS 10005C0653K & 10005C0635K DATED MARCH 16, 2015. PROJECT IS LOCATED WITHIN A GOOD

(20.86 ACRES X 2 = 41.72)41 (41/20.86 = 1.96 UNITS/ACRE)82 (2 PER RESIDENTIAL UNIT) 113 (2.75 PER UNIT)

GROUNDWATER RECHARGE POTENTIAL AREA

40' 15' 20' 10' MINIMUM 12' MINIMUM 42'

ARTESIAN WATER COMPANY, INC. SUSSEX COUNTY

POOL COMPLEX AND KAYAK PIER

10.73 ACRES 9.28 ACRES (86 %)

±73,500 SF

±18,000 SF ±65,000 SF ±6,500 SF ±7,100 SF ±170,100 SF (3.90 ACRES)(±19% IMPERVIOUS)

ENGINEER'S CERTIFICATION:

"I STEPHEN L. MARSH, P.E. HEREBY CERTIFY THAT I AM A REGISTERED ENGINEER IN THE STATE OF DELAWARE, THAT THE INFORMATION SHOWN HERE HAS BEEN PREPARED UNDER MY SUPERVISION AND TO THE BEST OF MY KNOWLEDGE AND BELIEVE REPRESENTS GOOD ENGINEERING PRACTICES AS REQUIRED BY THE APPLICABLE LAWS OF THE STATE OF DELAWARE."

STEPHEN L. MARSH, P.E. GEORGE, MILES, & BUHR, LLC. 206 W. MAIN STREET SALISBURY, MD 21801

OWNER / DEVELOPER'S CERTIFICATION: I HEREBY CERTIFY THAT I AM THE OWNER OF THE PROPERTY DESCRIBED AND SHOWN ON THIS PLAN AND THAT THE PLAN WAS MADE AT MY DIRECTION. IT IS MY DESIRE TO HAVE THE PLAN DEVELOPED AS SHOWN AND IN ACCORDANCE WITH ALL APPLICABLE LAWS AND REGULATIONS.

R. LAWTON MYRICK MAYAPPLE FARM, LLC. DATE

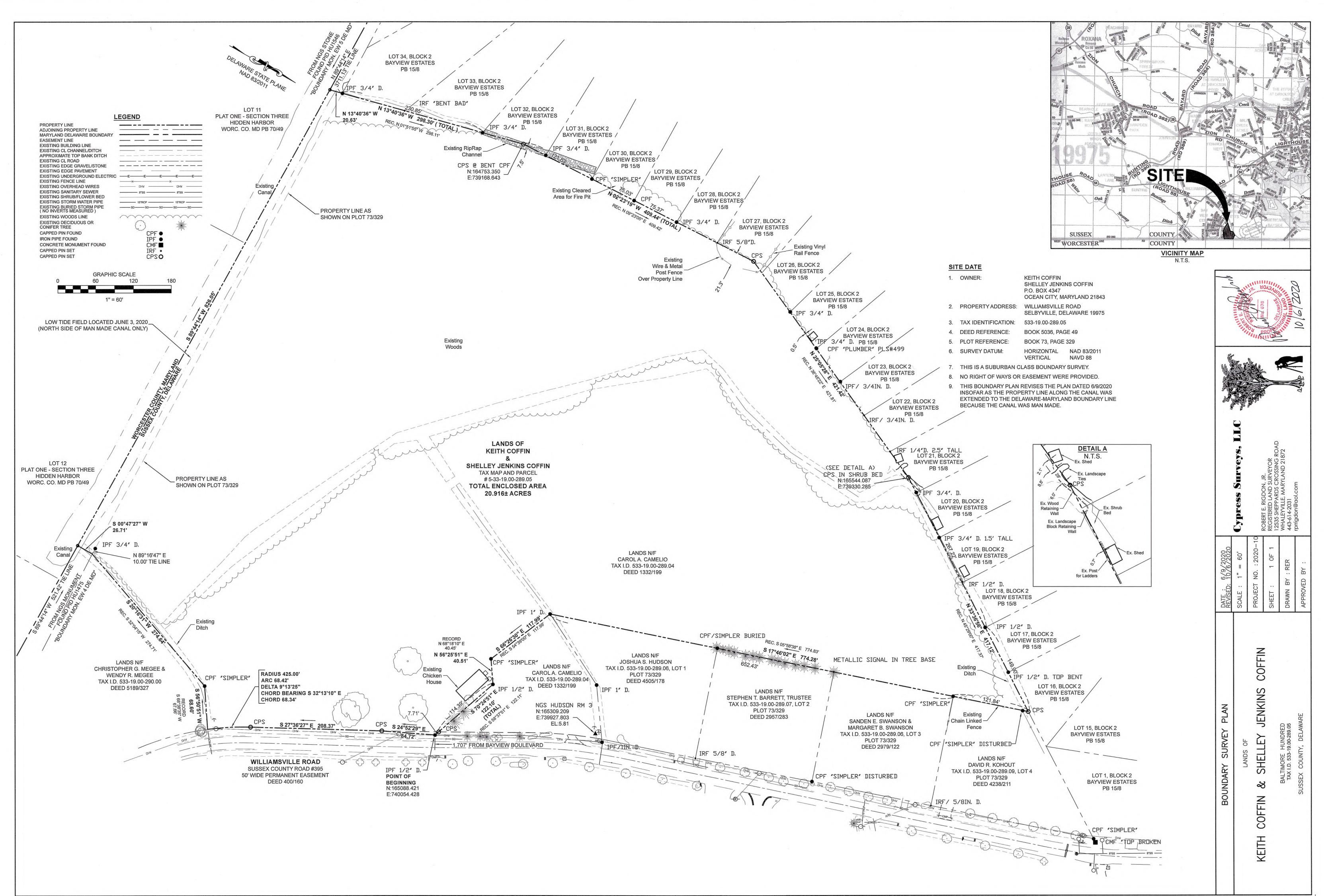
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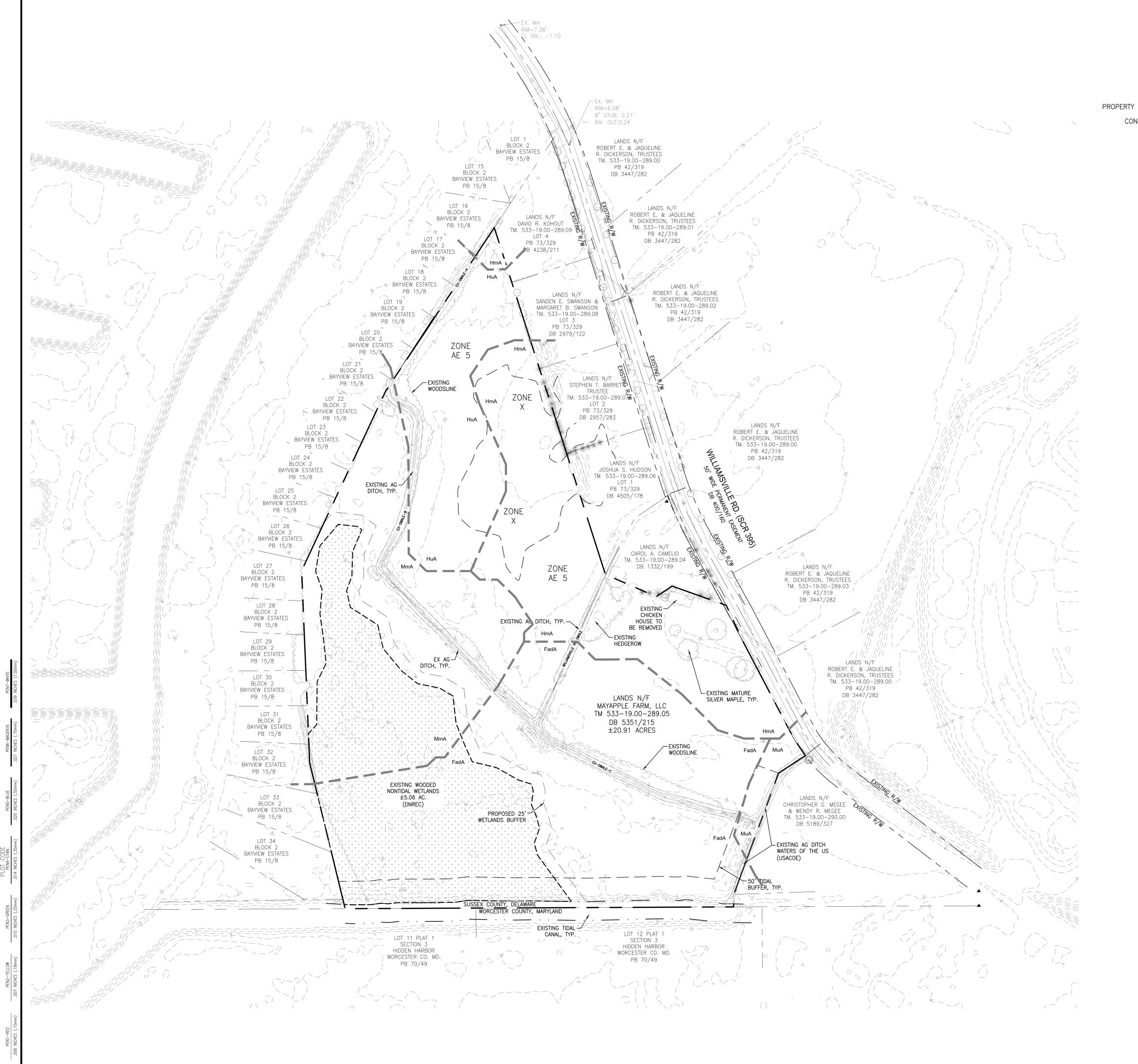
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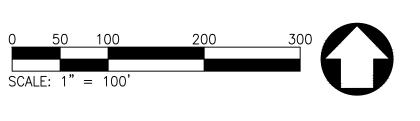
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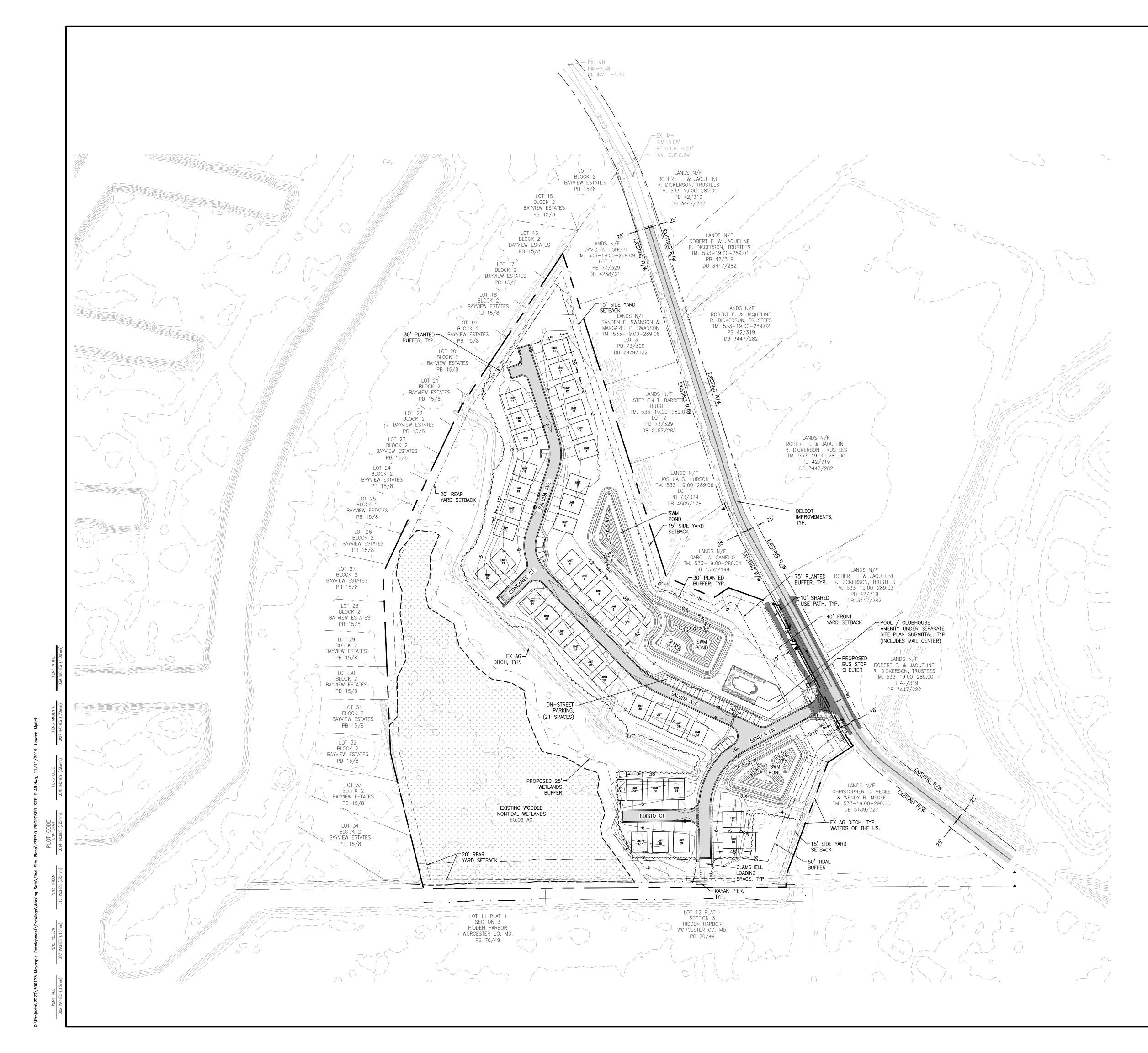
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SANITARY PIPE	
WATER PIPE	
OVERHEAD ELECTRIC	
UTILITY POLE	\bigcirc
TREE LINE	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

SOILS LEGEND:

FadA	FALLSINGTON SANDY LOAMS, 0-2% SLOPES, NORTHERN TIDEWATER AREA
HmA	HAMMONTON LOAMY SAND, 0-2% SLOPES
HuA	HURLOCK LOAMY SAND, 0-2% SLOPES
MmA	MULLICA MUCKY SANDY LOAM, 0-2% SLOPES
MuA	MULLICA-BERRYLAND COMPLEX, 0-2% SLOPES



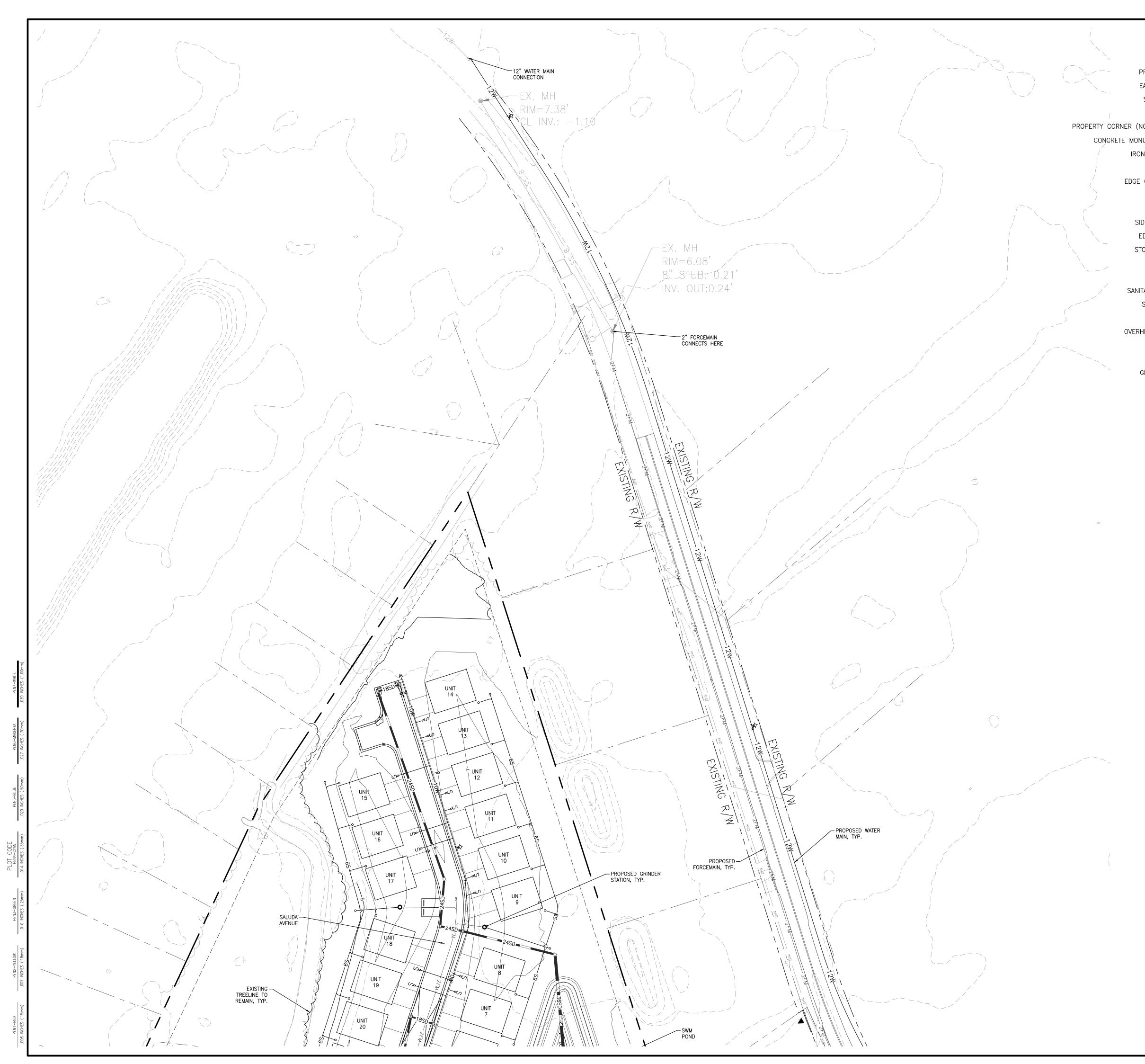


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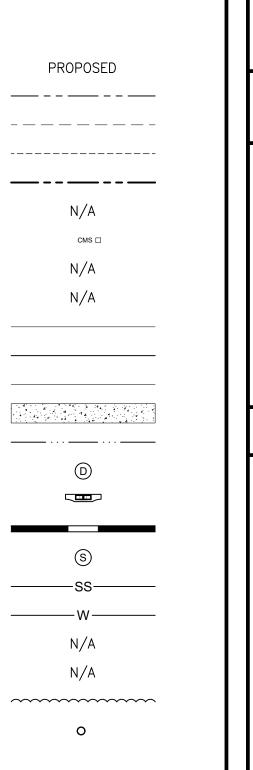
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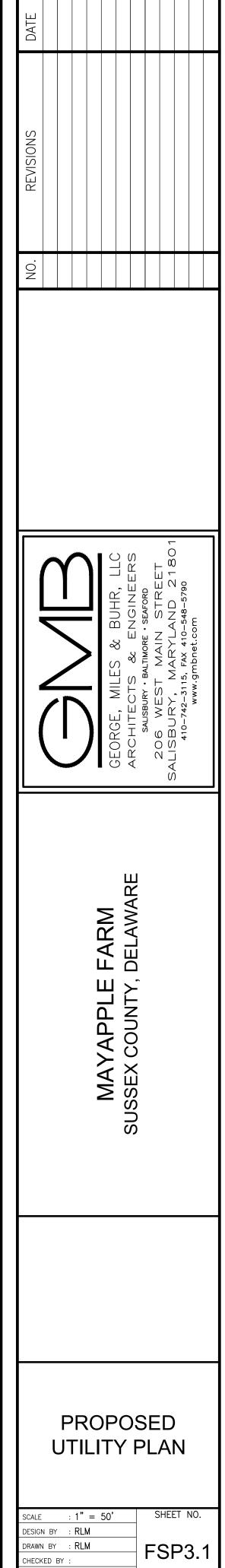
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:\Projects\2020\200123 Mayapple Development\Drawings\Working Sets\Final Site Plans\FSP3.2 PROPOSED UTILITY PLAN.dwg, 11//11/2019, Lawton Myrick

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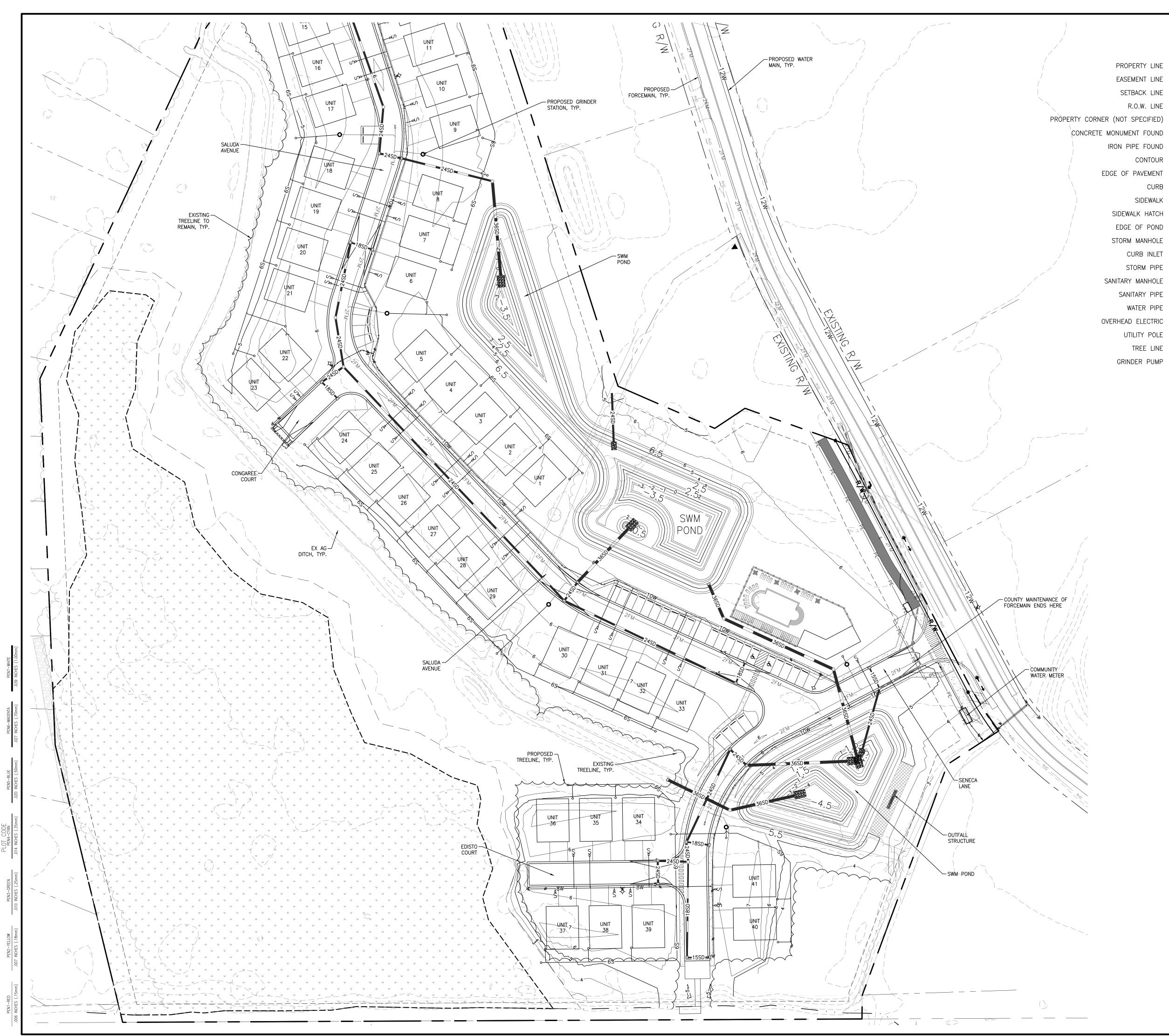
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50	100	150
= 50'		

SCALE: 1" = 50'



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	PROPOSED UTILITY PLAN
0 150	SCALE : 1" = 50' SHEET NO.

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STORM MANHOLE CURB INLET SANITARY MANHOLE UTILITY POLE TREE LINE GRINDER PUMP



	PEN7-WHITE	.039 INCHES (1.00mm)
	PEN6-MAGENTA	.027 INCHES (.70mm)
	PEN5-BLUE	.020 INCHES (.50mm)
PLOT CODE	PEN4-CYAN	.014 INCHES (.35mm)
	PEN3-GREEN	.010 INCHES (.25mm)
	PEN2-YELLOW	.007 INCHES (.18mm)
	PEN1-RED	.006 INCHES (.15mm)



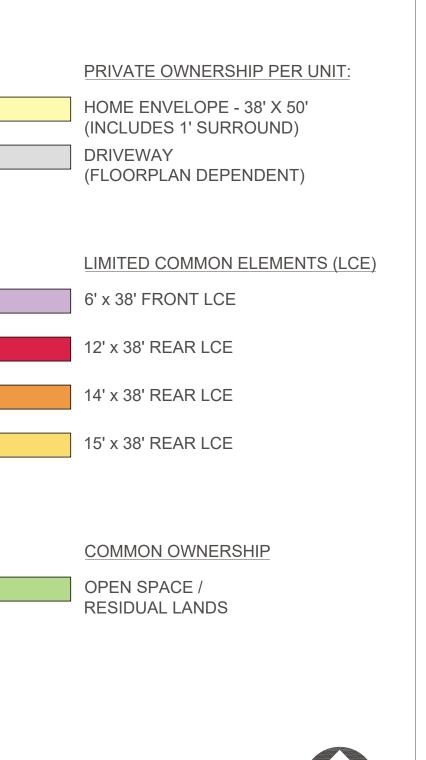


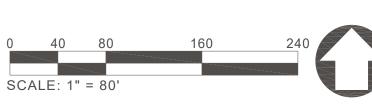
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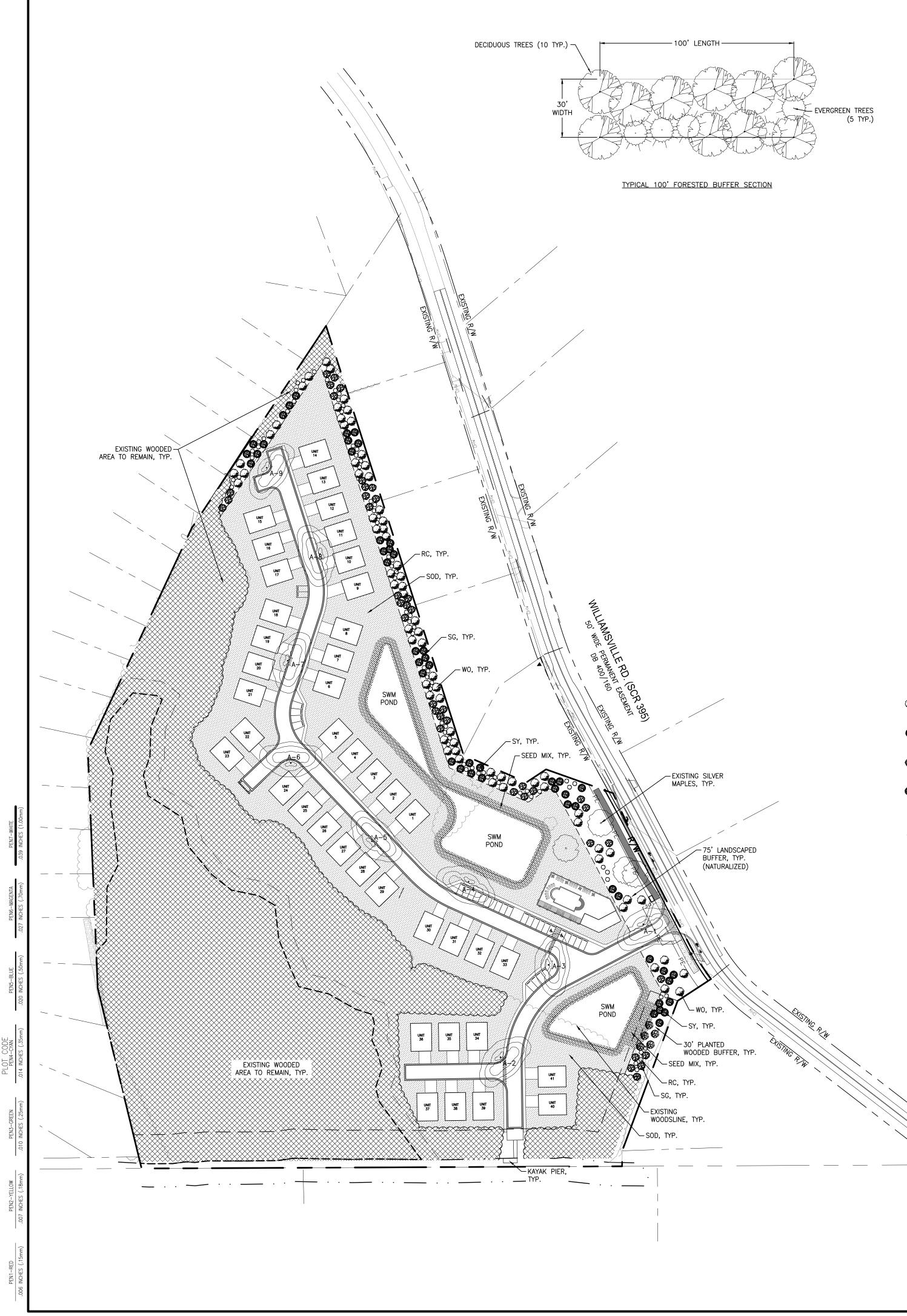
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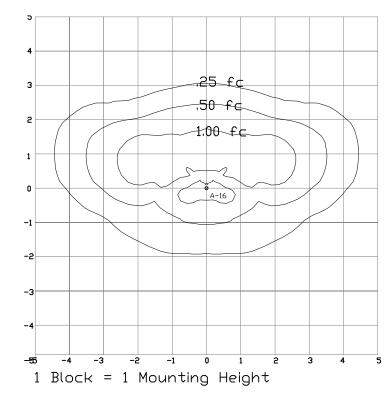
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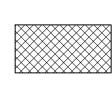
12 ft Pole Height.

Delmarva Powe Std #1648416

Symbol	Label	Image	Quantity	Manufacturer	Catalog Number	Description	Number Lamps	Lumens Per Lamp	Light Loss Factor	Wattag
ô	A			LIGHT #9503-7120 DR		GranVille Gen3, P30 Performance Package, 300K CCT, 70CRI, TYPE 3 DISTRIBUTION, NO TRIM	1	8256	0.85	60



2 2	SYM.	<u>QTY.</u>	COMMON NAME	BOTANICAL NAME	<u>SIZE</u>	SPACING	NOTES
	<u>DECII</u> WT	<u>00005</u> 70	WHITE OAK	QUERCUS ALBA	6-8' HT.	AS SHOWN	DOMINANT LEADER
8	SY	50	SYCAMORE	PLATANUS OCCIDENTALIS	6-8' HT.	AS SHOWN	DOMINANT LEADER
\$	SG	40	SWEETGUM	LIQUIDAMBAR STYRACIFLUA	6-8' HT.	AS SHOWN	DOMINANT LEADER
6	RB	5	RIVER BIRCH	BETULA NIGRA	6-8' HT.	AS SHOWN	MULTI-TRUNK, HEALTHY, FULL, VIGOROUS
	<u>EVER</u>	<u>GREEN</u>					
0	RC	75	RED CEDAR	JUNIPERUS VIRGINIANA	5-6'HT.	AS SHOWN	DOMINANT LEADER

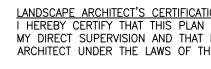


EXISTING WOODED AREA TO REMAIN - ± 9.28 ACRES

SOD – TURF TYPE TALL FESCUE 192,500 SF (±4.42 ACRES)



SEED - (ERNST CONSERVATION SEED MIX) ERNMX-122 FACW WETLAND MEADOW MIX (OR COMPARABLE) ±27,000 SF (0.62 ACRES)



LANDSCAPE ARCHITECT

NOTES:

1. PLANTS SHALL CONFORM TO CURRENT "AMERICAN STANDARDS FOR NURSERY STOCK" BY AMERICAN ASSOCIATION OF NURSERYMEN (AAN). PARTICULARLY WITH REGARDS TO SIZE, GROWTH AND SIZE OF BALL AND DENSITY OF BRANCH STRUCTURE.

2. CONTRACTOR IS TO ENSURE CONFORMANCE TO NATIONAL AND LOCAL BUILDING CODES AND ORDINANCES.

3. ALL PLANTS (B&B OR CONTAINER) SHALL BE PROPERLY IDENTIFIED BY WEATHERPROOF LABELS SECURELY ATTACHED HERETO BEFORE DELIVERY TO THE PROJECT SITE. LABELS SHALL IDENTIFY PLANTS BY NAME, SPECIES, AND SIZE. LABELS SHALL NOT BE REMOVED UNTIL THE FINAL INSPECTION BY THE OWNER'S REPRESENTATIVE.

4. ANY MATERIAL AND/OR WORK MAY BE REJECTED BY THE OWNER'S REPRESENTATIVE IF IT DOES NOT MEET THE REQUIREMENTS OF THE SPECIFICATIONS. THE CONTRACTOR SHALL REMOVE ALL REJECTED MATERIAL FROM THE SITE.

5. THE CONTRACTOR SHALL FURNISH ALL PLANTS IN QUANTITIES AND SIZES TO COMPLETE THE WORK AS SPECIFIED IN THE PLANT SCHEDULE. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY ALL PLANT QUANTITIES ON THE PLANS PRIOR TO THE COMMENCEMENT OF WORK. QUANTITIES IN THE PLANT SCHEDULE ARE FOR THE CONTRACTOR'S CONVENIENCE ONLY AND DO NOT CONSTITUTE THE FINAL COUNT.

6. SUBSTITUTION IN PLANT SPECIES OR SIZE SHALL NOT BE PERMITTED EXCEPT WITH THE WRITTEN APPROVAL OF THE OWNER OR THE OWNER'S REPRESENTATIVE.

7. PLANTS SHALL BE LOCATED AS SHOWN ON THE DRAWINGS AND BY SCALING OR AS DESIGNED IN THE FIELD BY THE OWNER OR THE OWNER'S REPRESENTATIVE. ALL LOCATIONS ARE TO BE APPROVED BY THE OWNER OR THE OWNER'S REPRESENTATIVE BEFORE EXCAVATION.

8. CONTRACTOR SHALL LOCATE AND MARK ALL UNDERGROUND UTILITY LINES AND IRRIGATION SYSTEMS PRIOR TO EXCAVATING PLANT BEDS OR PITS. ALL UTILITY EASEMENT AREAS WHERE NO PLANTING SHALL TAKE PLACE SHALL ALSO BE MARKED ON THE SITE PRIOR TO LOCATING AND DIGGING THE TREE PITS. IF UTILITY LINES ARE ENCOUNTERED IN EXCAVATION OF TREE PITS OTHER LOCATIONS FOR THE TREES SHALL BE SELECTED BY THE OWNER OR THE OWNER'S REPRESENTATIVE. SUCH CHANGE SHALL BE MADE BY THE CONTRACTOR WITHOUT ADDITIONAL COMPENSATION. NO CHANGES OF LOCATION SHALL BE MADE WITHOUT THE APPROVAL OF THE OWNER OR THE OWNER'S REPRESENTATIVE.

9. ALL EQUIPMENT AND TOOLS SHALL BE PLACED SO AS NOT TO INTERFERE OR HINDER THE PEDESTRIAN AND VEHICULAR TRAFFIC FLOW.

10. DURING PLANTING OPERATIONS, EXCESS AND WASTE MATERIALS SHALL BE PROMPTLY AND FREQUENTLY REMOVED FROM THIS SITE.

11. ALL PLANTED SHRUB BEDS ARE TO BE DUG TO A MINIMUM OF 12" DEEP AND ALL EXISTING SOIL, CONSTRUCTION DEBRIS, ROOT AND OTHER FOREIGN MATERIALS ARE TO BE REMOVED AND DISCARDED OFF SITE. ALL PLANTED SHRUB BEDS ARE TO BE EXCAVATED TO THE WIDTH SHOWN ON THE PLANS.

12. ALL TREE PITS ARE TO BE EXCAVATED TO A MINIMUM DEPTH TO ALLOW THE TREE ROOT BALL TO BE A MINIMUM OF 4" HIGHER THAN FINISHED GRADE. THE TREE ROOT BALL IS TO REST ON UNDISTURBED SOIL, OR A COMPACTED BED MUST BE PREPARED FOR THE TREE ROOT BALL TO REST ON AND WHICH WILL NOT SUBSIDE CAUSING THE TREE TO SINK BELOW FINISHED GRADE. ALL TREE PITS ARE TO BE A MINIMUM OF 12" LARGER ON EVERY SIDE OF THE TREE ROOT BALL

13. THE PLANTER BEDS ARE TO BE ENTIRELY CLEANED OUT TO THE UNDISTURBED SOIL LEVEL. ALL EXISTING SOIL, CONSTRUCTION DEBRIS, ROOTS AND OTHER FOREIGN MATERIAL ARE TO BE REMOVED AND DISCARDED OFF SITE. 14. THE TOP SOIL TO BE USED TO FILL THE TREE PITS, SHRUB BEDS AND PLANTERS IS TO BE PLANT SPECIFIC. THE

TOPSOIL FOR TREES, SHRUBS AND PLANTERS SHALL CONSIST OF A MAXIMUM OF 2/3 EXISTING TOPSOIL FROM THE SITE, WHICH IS CLEANED AND FREE OF CLAY, A MINIMUM OF 1/3 PEAT MOSS, OR OTHER APPROVED ORGANIC MATERIALS OR IMPORTED NEW LOAMY TOPSOIL AND 10 % COW MANURE. ALL OF THESE MATERIALS ARE TO BE MIXED PRIOR TO PLACING IN THE PLANTER OR BACKFILLING WHEN PLANTING.

15. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT ALL TREE PITS, SHRUB BEDS AND PLANTERS ARE WELL DRAINED. THE LANDSCAPE CONTRACTOR WILL REPLACE ALL PLANT MATERIAL WHICH IS AFFECTED BY POOR DRAINAGE, AT NO CHARGE TO THE OWNER.

16. ALL LAWN AREAS ARE TO BE SODDED WITH GRASS APPROPRIATE FOR EACH OF THE SUNLIGHT CONDITIONS, WHICH EXIST ON SITE.

17. ALL LAWN AREAS ARE TO BE TILLED TO A DEPTH OF 6" AND ALL FOREIGN MATERIAL REMOVED WHICH WILL INHIBIT THE HEALTHY GROWTH OF THE LAWN. ALL OLD GRASS AND GRASS ROOTS ARE TO BE REMOVED FORM THE SITE. NEW TOPSOIL OF A MINIMUM 4" IS TO BE PLACED OVER THE AREA TO BE SODDED. THE GRASS AREAS ARE TO BE FINE GRADED TO ENSURE THAT NO UNDULATIONS OCCUR IN THE LAWN. THE LAWNS ARE TO BE GRADED IN SUCH A WAY AS TO APPEAR PERFECTLY WELL TAILORED AND EVEN. THE LAWN TOPSOIL IS TO BE ROLLED AND LIGHTLY IRRIGATED PRIOR TO PLACING THE SOD. THE SOD IS NOT TO BE LAID ON FROZEN OR SOAKED SOIL.

18. THE EXISTING TREES ARE TO BE PROTECTED DURING THE PREPARATION OF LAWN AREAS. THE ROOTS OF THE TREES ARE TO BE UNDISTURBED DURING THE CLEANING OF THE TOPSOIL.

19. THE TREES AND SHRUBS ARE TO BE HANDLED WITH THE BEST CARE AND ATTENTION TO ENSURE THAT THE PLANTS ARE NOT BRUISED, BROKEN, TORN, DAMAGED IN ANY WAY WHICH WILL AFFECT THE PLANTS GENERAL APPEARANCE AND WELL BEING.

20. THE TREES MUST BE STAKED IN ACCORDANCE WITH ACCEPTABLE NURSERY PRACTICES TO ENSURE THAT THEY ARE SECURE IN THE GROUND AND WILL GROW STRAIGHT AND UNIFORM. THE TREES ARE TO BE WRAPPED IF THE CONTRACTOR DEEMS IT NECESSARY TO PROTECT THE TREES FROM SUN SCALD OR INSECT ATTACK.

21. THE LANDSCAPE CONTRACTOR IS TO PROVIDE A ONE YEAR WARRANTY FOR ALL PLANT MATERIAL AND OTHER WORK DONE ON SITE. THIS WARRANTY WILL BEGIN AT EITHER SUBSTANTIAL COMPLETION OR AT FINAL ACCEPTANCE AS DETERMINED BY THE OWNER.

22. LARGE GROWING PLANTS ARE NOT TO BE PLANTED IN FRONT OF WINDOWS, UNDER BUILDING OVERHANGS, OR IN DRAINAGE SWALES. SHRUBS PLANTED NEAR H.V.A.C. UNITS TO BE LOCATED SO THAT SHRUBS AT MATURITY WILL MAINTAIN 1' AIR SPACE BETWEEN THE UNIT AND THE PLANT.

23. THE CONTRACTOR IS TO SLIGHTLY ADJUST PLANT LOCATIONS IN THE FIELD AS NECESSARY TO BE CLEAR OF DRAINAGE SWALES AND UTILITIES. FINISHED PLANTING BEDS SHALL BE GRADED SO AS NOT TO IMPEDE DRAINAGE AWAY FROM BUILDINGS.

24. GROUPS OF SHRUBS SHALL BE PLACED IN A CONTINUOUS RAISED MULCH BED WITH SMOOTH CONTINUOUS LINES. ALL MULCH BED EDGES SHALL BE CURVILINEAR IN SHAPE FOLLOWING THE CONTOUR OF THE PLANT MASS. TREES LOCATED WITHIN 4' OF SHRUB BEDS SHALL SHARE SAME MULCH BED.

25. SECTION 99-5 OF THE CODE OF SUSSEX COUNTY REQUIRES A FORESTED BUFFER TO CONSIST OF 15 TREES PER 100 LINEAR FEET (70% DECIDUOUS AND 30% EVERGREEN). THIS PLAN PROVIDES 15 TREES PER 100 LINEAR FEET AS REQUIRED AT AN APPROXIMATE RATIO OF 10 DECIDUOUS TREES AND 5 EVERGREEN TREES PER R100 LINEAR FEET OF BUFFER.

WAS PREPARED BY ME OR UNDER	
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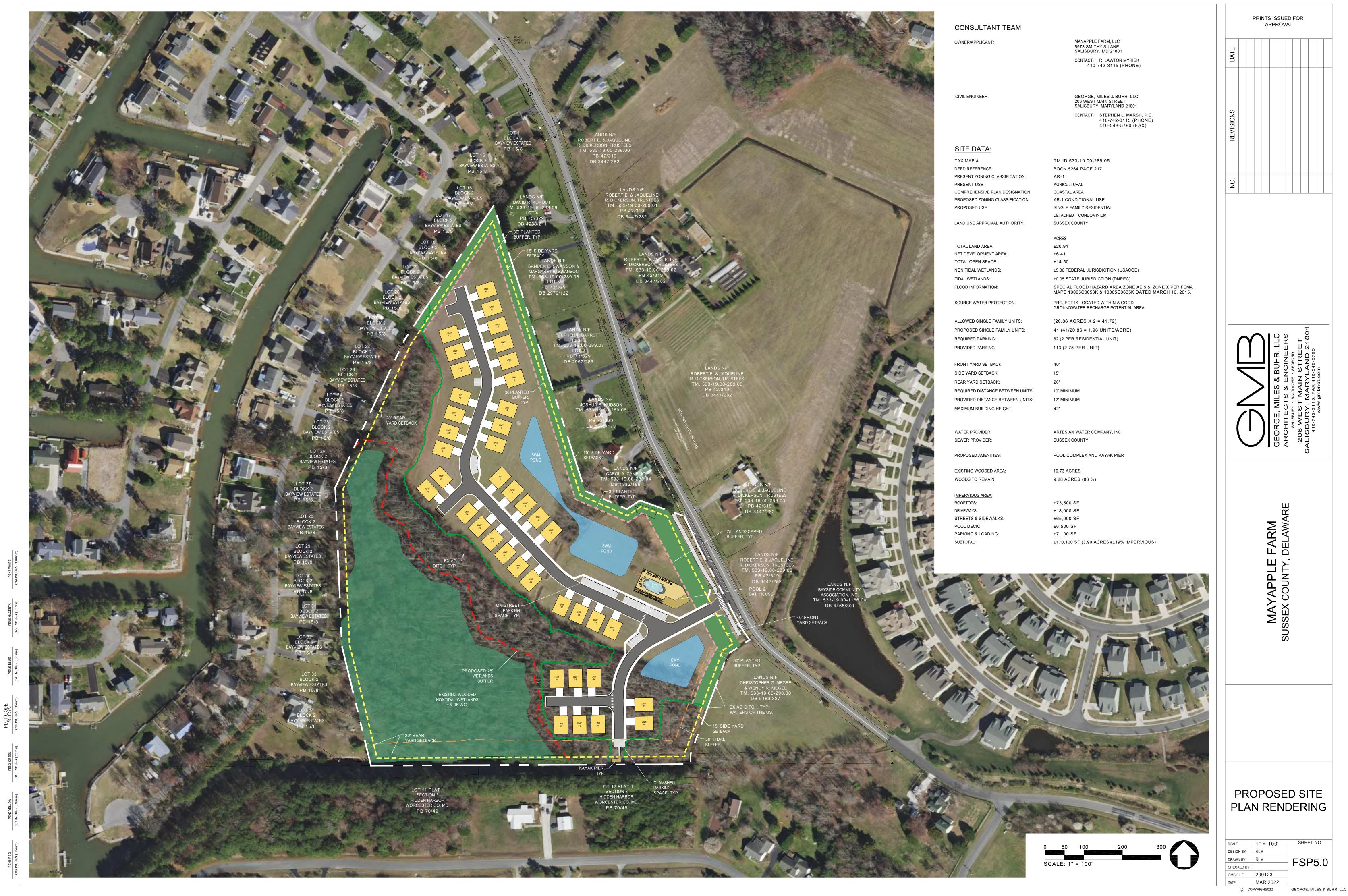
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				OUDDEA COUNTY, DELAWARE					
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Delaware Electric CO-OP Cedar Grove Substation



Final Stormwater Management Report January 2022

Prepared By:



550 Bay Road Dover, DE 19901 (302)-734-9188

Table of Contents

Introduction	1
Existing Site Conditions	1
Existing Soils Description	6
Post-Development Description	6
Stormwater Modeling Approach	6
Construction Site Conditions	7
Conclusion	7

Figures

Figure #1

Site Aerial

Appendices

Appendix A Maps

- A-1 Site Location Map
- A-2 USDA Web Soil Survey Map
- A-3 Pre-Development Drainage Area Map
- A-4 Post Development Drainage Area Map

Appendix B Calculations

- B-1 Pre-Development HydroCAD
- B-2 Post-Development HydroCAD
- B-3 Project Level DURMM Calculations
- B-4 DURMM Drainage Area Calculations
- B-5 DURMM Summary Table

Appendix C Report

C-1 Geotechnical Report

Introduction

The Delaware Electric Cooperative is planning to construct a new substation along Cedar Grove Road in Sussex County, Delaware, outside the Town of Lewes. The proposed substation will support the growing demand for electric access to the surrounding areas. The project is located approximately 300 yards southwest of the Plantation Road and Cedar Grove Road Intersection.

Existing Site Conditions

The proposed project is located near the intersection of Cedar Grove Road and Plantation Road, west of Lewes, within unincorporated Sussex County, Delaware. The project parcel is approximately 9.10 acres in size and the LOD is estimated to be 5.3 acres. Surrounding the project site are single-family dwellings to the north, single-family homes, and farm fields to the south and east, and retail, single-family homes, and farm fields to the west. Existing conditions on the project site, based on 2017 Land Use/Land Cover data, are Transitional. No areas of the site are located within any flood hazard areas. Additionally, roughly 7.06 acres of the site are in a "Good" aquifer recharge area. The entire site is located within the Rehoboth Bay subwatershed which is part of the Inland Bays/Atlantic Ocean watershed.

The project site features four drainage areas. The site cover conditions are mainly agricultural with an abandoned residential property that is heavily overgrown with small shrub and trees in the south corner. The agricultural field has a high point towards the middle of the parcel with the northern portion not being part of this project.

The project wide (10% analysis) POA (delineated by USGS StreamStats) is in the Rehoboth Bay sub-watershed, approximately 1.3 miles southwest of the site in a tributary leading to Goslee Creek. The StreamStats Basin Characteristics shows an 0.82 square mile (542.8 acre) contributing area to this POA. The estimated LOD is 5.3 acres (0.004 square miles) and well within the 10% threshold. The POA used when modeling is in the western corner of the project site, flow through the adjacent wooded area and farm fields, before entering a well-defined swale and reaching the 10% POA located along Robinsonville Road.

Drainage Area 1 includes a small portion of the field that flows towards the west as sheet flow until leaving the site at POA 1. Drainage Area 2 includes most of the project site. This area includes portions of the abandoned residential structures, wooded area, and agricultural field. Runoff flows through the field towards the west corner where it leaves the site at POA 2. West of the parcel boundary runoff continues flowing through the adjacent wooded area and farm fields, before entering a well-defined swale and reaching the 10% POA located along Robinsonville Road. Drainage Area 3 is a small area located in the south corner of the site. Runoff flows into a large swale that flows south adjacent to Cedar Grove Road at POA 3. Drainage Area 4 includes the remaining area of the agricultural field. Runoff flows northeast into a large swale that flows north adjacent to Cedar Grove Road at POA 4.



Figure 1 – Site Aerial showing POAs (Source: Google Earth pro, Image Dated April 2017



Photo 1 – Landscape looking west towards POA 1.



Photo 2 – Landscape of Drainage Area 1 looking west towards POA 2.



Photo 3 – Close up of POA 2 at project limits.



Photo 4 – Landscape of Drainage Area 3 looking south towards POA 3.



Photo 5 – Close up of POA 3 at project limits.



Photo 6 – Landscape of Drainage Area 4 looking west.



Photo 7 – Close up of POA 4 at project limits.

Existing Soils Description

USDA Web Soil Survey reports indicate that existing soil is classified largely as hydrologic soil group A type GrA (Greenwich Loam) with a portion of the site being hydrologic soil group B type DodB (Downer Sandy Loam). Both soil types are considered well drained.

In April of 2021 a subsurface exploration study to evaluate the subsurface conditions of the proposed site was performed. A total of 4 infiltration tests were performed within the footprint of the proposed stormwater management facility. Neither the seasonal high groundwater table nor a restrictive layer were identified during the excavations.

In accordance with DNREC guidelines, all infiltration tests demonstrated passing field rates (greater than 1.02 in/hr). DNREC guidelines state 15 in/hr is the maximum allowable design infiltration rate. While INF-1, INF-2, and INF-3 significantly exceed that standard, a design infiltration rate of 10 in/hr was used.

Post-Development Description

The purpose of the project is to develop a substation to be jointly used by the Delaware Electric Co-op (DEC) and Delmarva Power. The project will contain power line transmission towers in addition to transformers mounted on concrete foundations and will be fenced. The site entrance is proposed along Cedar Grove Road. In total, the proposed improvements will result in 1.31 acres of new impervious cover.

Resource Protection Event (RPv) compliance will be achieved by using an infiltration facility. Conveyance Event (Cv) and Flooding Event (Fv) volume compliance is provided through "No Adverse Impact" principles.

Stormwater Modeling Approach

A stormwater management infiltration basin provides RPv compliance for the entire site. The facility has been designed to also provide Cv and Fv compliance for POA 2. The remaining POAs do not require RPv and show no adverse impacts for the Cv and Fv due to the decrease in peak flows. DURMM calculations and HydroCAD models are in Appendix B.

For RPv, from the project level DURMM the site requires 4,315 CF of treatment. The infiltration basin has been designed with an infiltration rate of 10 in/hr based on the recommendations from the Geotechnical Report. The facility infiltrates the entire RPv storm event and provides 5,866 CF of treatment. Due to excess RPv treatment provided and a decrease in impervious area in the remaining drainage areas the project wide site credit is 1,494 CF.

Cv and Fv compliance are demonstrated at each POA based on no adverse impact due to the decrease in peak flows. The decrease occurs from the decrease in size, removal of impervious area and converting the agricultural field to open space. Below is a summary of the peak runoff at each POA.

	Pre-Dev	elopment	Post-Dev	velopment	Difference		
	Cv (10 YR)	Fv (100 YR)	Cv (10 YR)	Fv (100 YR)	Cv (10 YR)	Fv (100 YR)	
POA 1	1.37	3.18	0.9	2.17	-0.47	-1.01	
POA 2	3.83	10.06	0.2	1.62	-3.63	-8.44	
POA 3	0.02	0.22	0.01	0.16	-0.01	-0.06	
POA 4	2.99	6.96	2.51	6.69	-0.48	-0.27	

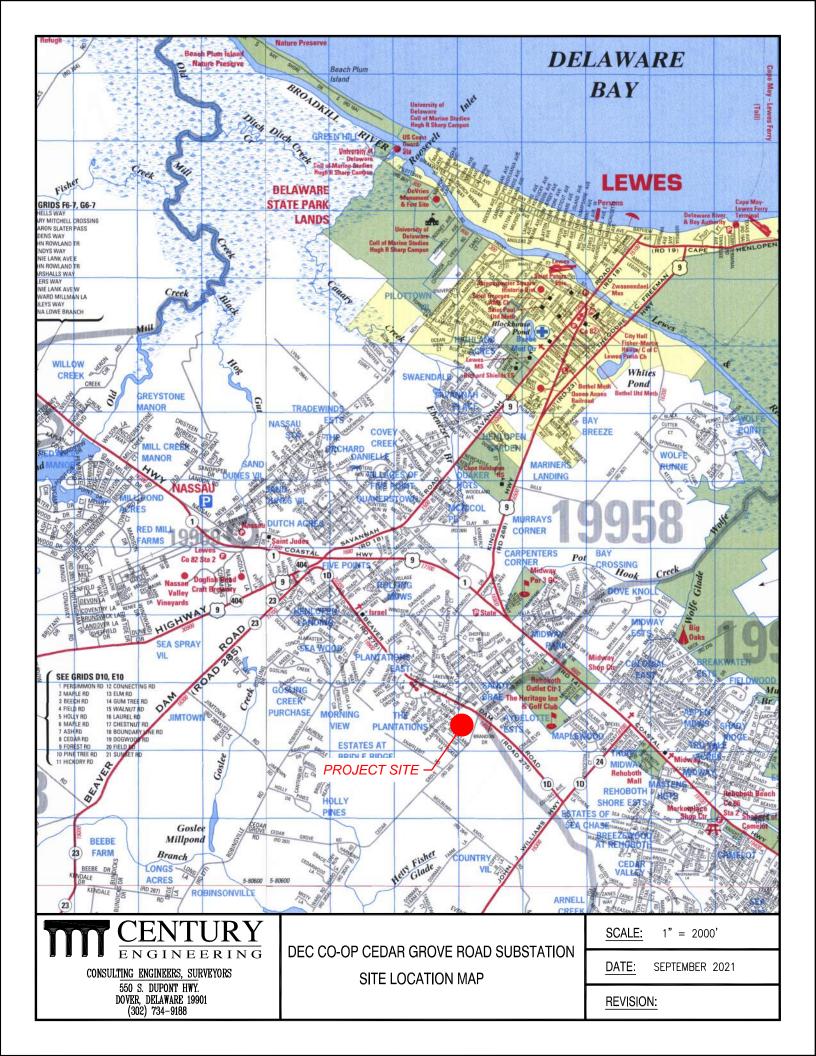
Construction Site Conditions

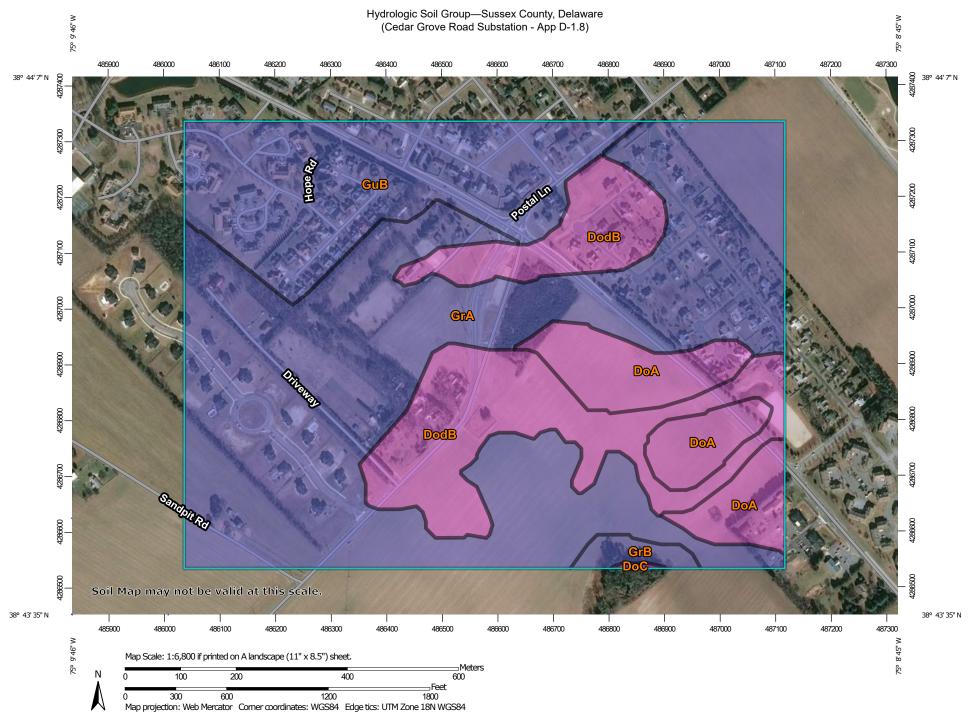
Erosion and sediment controls outlined in the current *Delaware Erosion and Sediment Control Handbook* will be utilized in applicable locations. The infiltration facility will act as a temporary sediment basin during construction. Two feet of material will remain in the bottom of the facility during construction to eliminate issues with sediment accumulating within the infiltration facility bottom. Silt fence and stabilized construction entrances will be utilized as appropriate. Sensitive area protection will be utilized surrounding existing trees that are to remain after demolition of the residential structures. Throughout the duration of the project, pollution prevention and dust control strategies will further reduce negative environmental impacts.

Conclusion

The proposed development will consist of a new 1.31 acre gravel substation with a reconstructed entrance along Cedar Grove Road outside the Town of Lewes, Delaware. Drainage swales adjacent to the substation with direct runoff into the designed infiltration basin. RPv compliance will be provided by the infiltration basin with pre-treatment provided using the gravel substation, grass buffer, and grass swales. Cv & Fv compliance will be provide through a "No Adverse Impact" principles through a reduction of the peak flow rates. Erosion and Sediment control practices outlined in the *Delaware Erosion and Sediment Control Handbook* will be utilized before and during construction to minimize downstream sedimentation and site erosion.

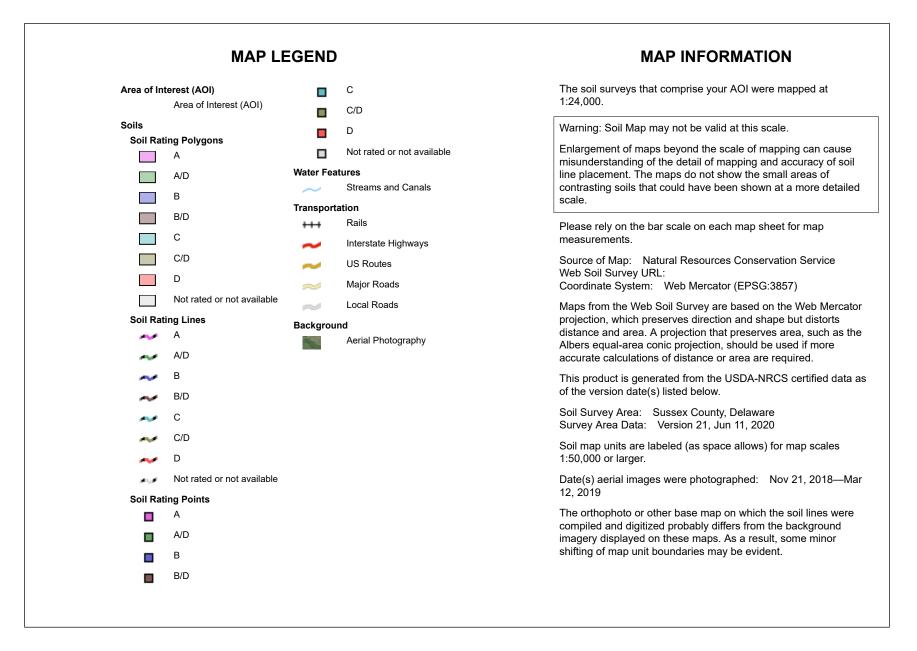
APPENDIX A Maps





USDA Natural Resources

Conservation Service



Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
DoA	Downer sandy loam, 0 to 2 percent slopes, Northern Tidewater Area	A	21.0	9.8%
DoC	Downer sandy loam, 5 to 10 percent slopes	A	0.2	0.1%
DodB	Downer sandy loam, 2 to 5 percent slopes, Northern Tidewater Area	A	39.6	18.4%
GrA	Greenwich loam, 0 to 2 percent slopes	В	112.7	52.4%
GrB	Greenwich loam, 2 to 5 percent slopes	В	2.4	1.1%
GuB	Greenwich-Urban land complex, 0 to 5 percent slopes	В	39.2	18.2%
Totals for Area of Inter	rest		215.0	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

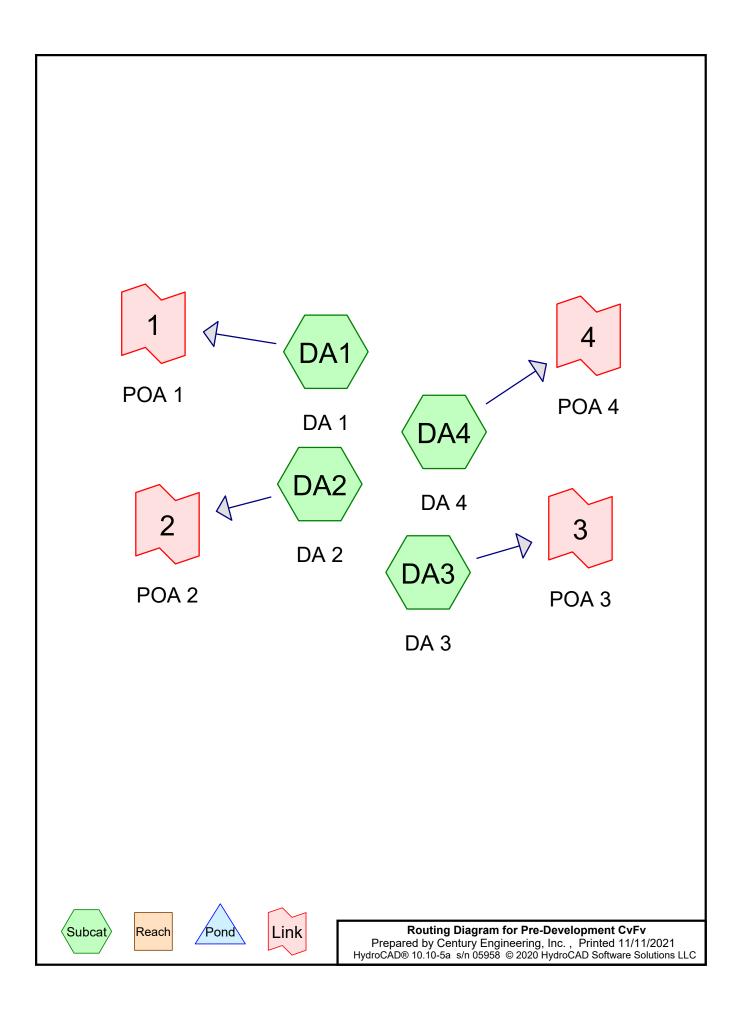
Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition Component Percent Cutoff: None Specified Tie-break Rule: Higher

APPENDIX B Calculations



				•	•		•	
Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	10 YR (Cv)	NOAA 24-hr	D	Default	24.00	1	5.30	2
2	100 YR (Fv)	NOAA 24-hr	D	Default	24.00	1	9.20	2

Rainfall Events Listing (selected events)

Pre-Development CvFv	NOAA 24-hr D	10 YR (Cv) Rainfall=5.30"
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Time span=0.10-72.00 hrs, dt=0.01 hrs, 7191 points Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

SubcatchmentDA1: DA 1 Flow Length=100	Runoff Area=0.830 ac 0.00% Impervious Runoff Depth=2.61" 2' Slope=0.0100 '/' Tc=13.9 min CN=74 Runoff=1.37 cfs 0.180 af
SubcatchmentDA2: DA 2	Runoff Area=4.440 ac 2.70% Impervious Runoff Depth=2.10" Flow Length=630' Tc=28.6 min CN=68 Runoff=3.83 cfs 0.776 af
SubcatchmentDA3: DA 3	Runoff Area=0.390 ac 15.38% Impervious Runoff Depth=0.31" Flow Length=200' Tc=30.6 min CN=40 Runoff=0.02 cfs 0.010 af
SubcatchmentDA4: DA 4	Runoff Area=1.920 ac 3.65% Impervious Runoff Depth=2.61" Flow Length=448' Tc=15.5 min CN=74 Runoff=2.99 cfs 0.417 af
Link 1: POA 1	Inflow=1.37 cfs 0.180 af Primary=1.37 cfs 0.180 af
Link 2: POA 2	Inflow=3.83 cfs 0.776 af Primary=3.83 cfs 0.776 af
Link 3: POA 3	Inflow=0.02 cfs 0.010 af Primary=0.02 cfs 0.010 af
Link 4: POA 4	Inflow=2.99 cfs 0.417 af Primary=2.99 cfs 0.417 af

Total Runoff Area = 7.580 acRunoff Volume = 1.383 afAverage Runoff Depth = 2.19"96.70% Pervious = 7.330 ac3.30% Impervious = 0.250 ac

Summary for Subcatchment DA1: DA 1

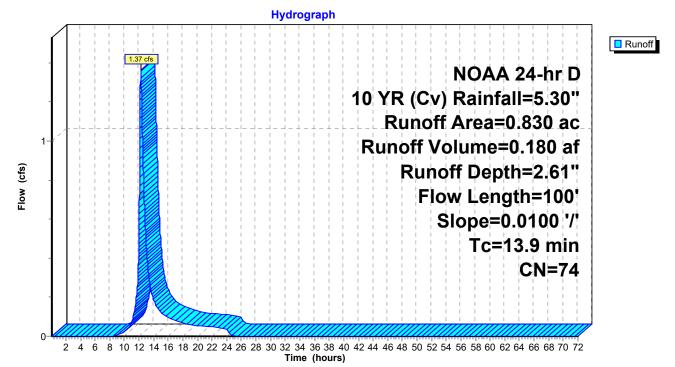
Runoff = 1.37 cfs @ 12.24 hrs, Volume= 0.180 af, Depth= 2.61"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs NOAA 24-hr D 10 YR (Cv) Rainfall=5.30"

	Area	(ac)	CN	Desc	cription		
	0.	070	67	Row	crops, stra	aight row, (Good, HSG A
	0.	670	78	Row	crops, stra	aight row, (Good, HSG B
	0.	010	30	Brus	h, Good, H	ISG A	
_	0.	080	48	Brus	h, Good, H	ISG B	
	0.	830	74	Weig	hted Aver	age	
	0.	830		100.	00% Pervi	ous Area	
	Тс	Length	ר ני ר	Slope	Velocity	Capacity	Description
	(min)	(feet		(ft/ft)	(ft/sec)	(cfs)	
	13.9	100) ()	.0100	0.12		Sheet Flow,
							Cultivated Desidues $200/$ = 0.470 D2 - 2.40"

Cultivated: Residue>20% n= 0.170 P2= 3.40"

Subcatchment DA1: DA 1



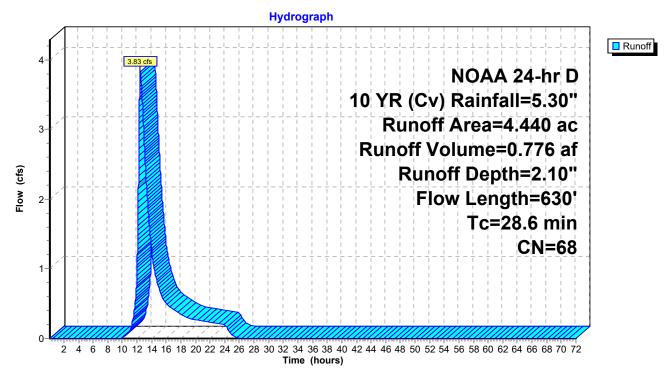
Summary for Subcatchment DA2: DA 2

Runoff = 3.83 cfs @ 12.46 hrs, Volume= 0.776 af, Depth= 2.10"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs NOAA 24-hr D 10 YR (Cv) Rainfall=5.30"

_	Area ((ac)	CN	Desc	cription				
	0.780 67 Row crops, straight row, Good, HSG A								
	2.	670	78	Row	crops, str	aight row,	Good, HSG B		
	0.	300	48	Brus	h, Good, H	ISG B			
	0.	570	30	Woo	ds, Good,	HSG A			
	0.	120	98	Pave	ed parking	, HSG A			
	4.4	440	68	Weig	ghted Aver	age			
	4.	320		97.3	0% Pervio	us Area			
	0.	120		2.70	% Impervi	ous Area			
	Тс	Lengt	h :	Slope	Velocity	Capacity	Description		
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)			
	22.8	10	0 0	.0160	0.07		Sheet Flow,		
							Woods: Light underbrush n= 0.400 P2= 3.40"		
	5.8	53	0 0	.0090	1.53		Shallow Concentrated Flow,		
							Unpaved Kv= 16.1 fps		
	28.6	63	о т	otal					

Subcatchment DA2: DA 2



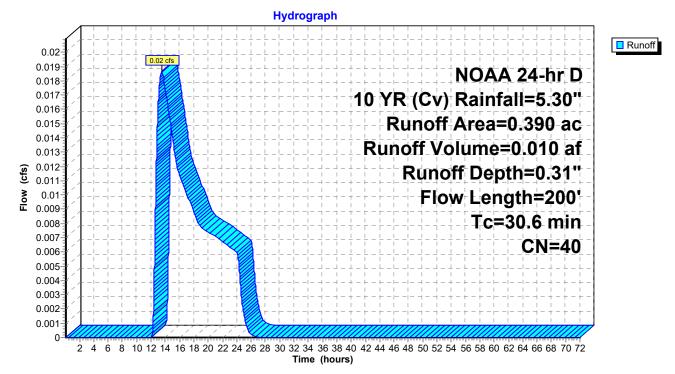
Summary for Subcatchment DA3: DA 3

Runoff = 0.02 cfs @ 13.47 hrs, Volume= 0.010 af, Depth= 0.31"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs NOAA 24-hr D 10 YR (Cv) Rainfall=5.30"

Area	(ac) C	N Dese	cription			
0.	0.330 30 Wo		Noods, Good, HSG A			
0.	060 9	8 Pave	ed parking	, HSG A		
0.	390 4	0 Weig	ghted Aver	age		
0.	330	84.6	2% Pervio	us Area		
0.	060	15.3	8% Imperv	/ious Area		
Тс	Length	Slope	Velocity	Capacity	Description	
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)		
30.1	100	0.0080	0.06		Sheet Flow,	
					Woods: Light underbrush n= 0.400 P2= 3.40"	
0.3	43	0.0210	2.33		Shallow Concentrated Flow,	
					Unpaved Kv= 16.1 fps	
0.2	57	0.0120	4.09	32.68	Trap/Vee/Rect Channel Flow,	
					Bot.W=4.00' D=1.00' Z= 4.0 '/' Top.W=12.00'	
. <u> </u>					n= 0.030 Earth, grassed & winding	
30.6	200	Total				

Subcatchment DA3: DA 3



Summary for Subcatchment DA4: DA 4

Runoff = 2.99 cfs @ 12.26 hrs, Volume= 0.417 af, Depth= 2.61"

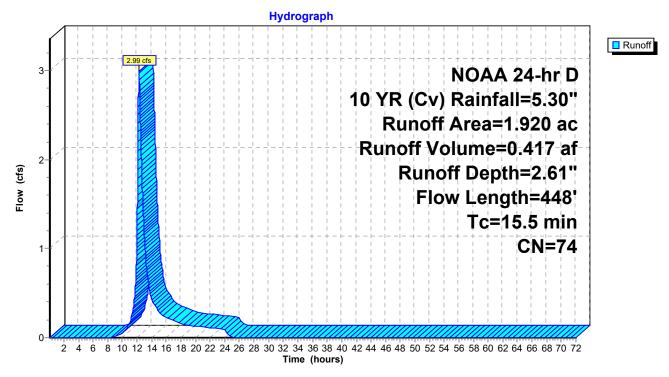
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs NOAA 24-hr D 10 YR (Cv) Rainfall=5.30"

Area	(ac) (CN Des	cription				
0.	0.080 39 >75% Grass cover, Good, HSG A						
0.	.290	61 >75	% Grass c	over, Good	, HSG B		
0.	.180				Good, HSG A		
					Good, HSG B		
0.	.070	98 Pav	ed roads w	/curbs & se	ewers, HSG A		
			ghted Aver				
	.850		5% Pervio				
0.	.070	3.65	5% Impervi	ous Area			
_		<u>.</u>		a 14			
Tc	Length		Velocity	Capacity	Description		
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)			
11.5	100	0.0160	0.15		Sheet Flow,		
					Cultivated: Residue>20%		
3.1	188	0.0040	1.02		Shallow Concentrated Flow,		
					Unpaved Kv= 16.1 fps		
0.9	160	0.0060	2.89	23.11	Trap/Vee/Rect Channel Flow,		
					Bot.W=4.00' D=1.00' Z= 4.0 '/' Top.W=12.00'		
					n= 0.030		
15.5	448	Total					

Pre-Development CvFv

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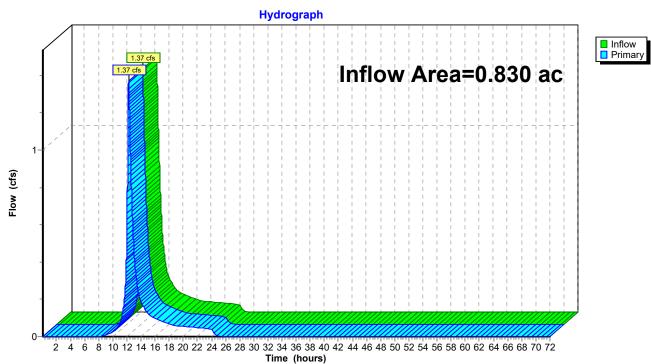
Subcatchment DA4: DA 4



Summary for Link 1: POA 1

Inflow Area :	=	0.830 ac,	0.00% Impervious,	Inflow Depth =	2.61"	for 10 YR (Cv) event
Inflow =	:	1.37 cfs @	12.24 hrs, Volume	= 0.180	af	
Primary =		1.37 cfs @	12.24 hrs, Volume	= 0.180	af, Atte	en= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs

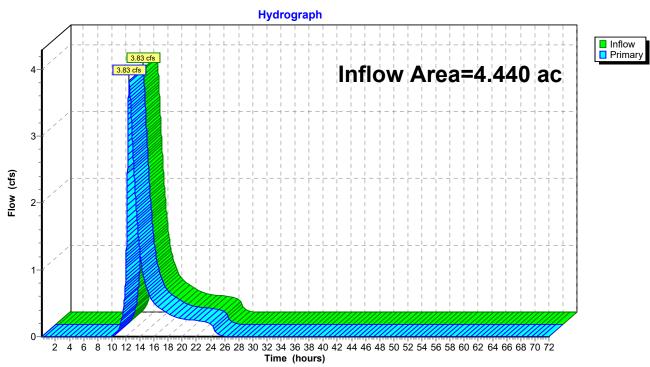


Link 1: POA 1

Summary for Link 2: POA 2

Inflow Area =	4.440 ac,	2.70% Impervious, Inflo	<i>w</i> Depth = 2.10"	for 10 YR (Cv) event
Inflow =	3.83 cfs @	12.46 hrs, Volume=	0.776 af	
Primary =	3.83 cfs @	12.46 hrs, Volume=	0.776 af, Atte	en= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs

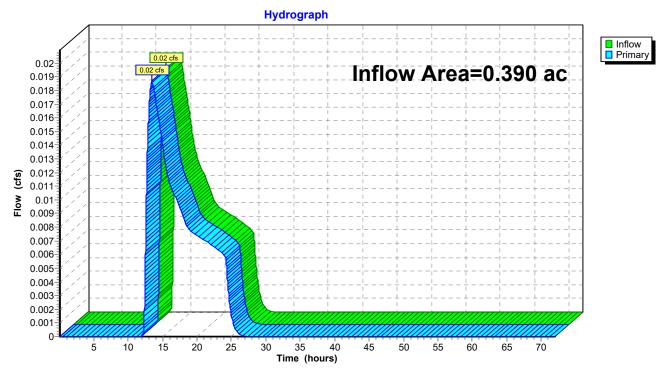


Link 2: POA 2

Summary for Link 3: POA 3

Inflow Area =	0.390 ac, 15.38% Impervious, Inflow Depth = 0.31" for 10 YR (Cv) ev	ent
Inflow =	0.02 cfs @ 13.47 hrs, Volume= 0.010 af	
Primary =	0.02 cfs @ 13.47 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.0 n	nin

Primary outflow = Inflow, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs



Link 3: POA 3

Summary for Link 4: POA 4

Inflow Area =	1.920 ac,	3.65% Impervious, Infl	ow Depth = 2.61"	for 10 YR (Cv) event
Inflow =	2.99 cfs @	12.26 hrs, Volume=	0.417 af	
Primary =	2.99 cfs @	12.26 hrs, Volume=	0.417 af, Atte	en= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs

Pigrograph Inflow Area=1.920 ac Inflow Area </

Link 4: POA 4

Pre-Development CvFv	NOAA 24-hr D	100 YR (Fv) Rainfall=9.20"
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HydroCAD® 10.10-5a s/n 05958 © 2020 HydroCAD Software S	Solutions LLC	Page 13

Time span=0.10-72.00 hrs, dt=0.01 hrs, 7191 points Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

SubcatchmentDA1: DA 1 Flow Length=100	Runoff Area=0.830 ac 0.00% Impervious Runoff Depth=6.01" D' Slope=0.0100 '/' Tc=13.9 min CN=74 Runoff=3.18 cfs 0.416 af
SubcatchmentDA2: DA 2	Runoff Area=4.440 ac 2.70% Impervious Runoff Depth=5.26" Flow Length=630' Tc=28.6 min CN=68 Runoff=10.06 cfs 1.947 af
SubcatchmentDA3: DA 3	Runoff Area=0.390 ac 15.38% Impervious Runoff Depth=1.81" Flow Length=200' Tc=30.6 min CN=40 Runoff=0.22 cfs 0.059 af
SubcatchmentDA4: DA 4	Runoff Area=1.920 ac 3.65% Impervious Runoff Depth=6.01" Flow Length=448' Tc=15.5 min CN=74 Runoff=6.96 cfs 0.962 af
Link 1: POA 1	Inflow=3.18 cfs 0.416 af Primary=3.18 cfs 0.416 af
Link 2: POA 2	Inflow=10.06 cfs 1.947 af Primary=10.06 cfs 1.947 af
Link 3: POA 3	Inflow=0.22 cfs 0.059 af Primary=0.22 cfs 0.059 af
Link 4: POA 4	Inflow=6.96 cfs 0.962 af Primary=6.96 cfs 0.962 af
Total Dupoff Area = 7.5	20 co. Bunoff Volumo = 2 282 of Average Bunoff Donth = 5 26

Total Runoff Area = 7.580 acRunoff Volume = 3.383 afAverage Runoff Depth = 5.36"96.70% Pervious = 7.330 ac3.30% Impervious = 0.250 ac

Summary for Subcatchment DA1: DA 1

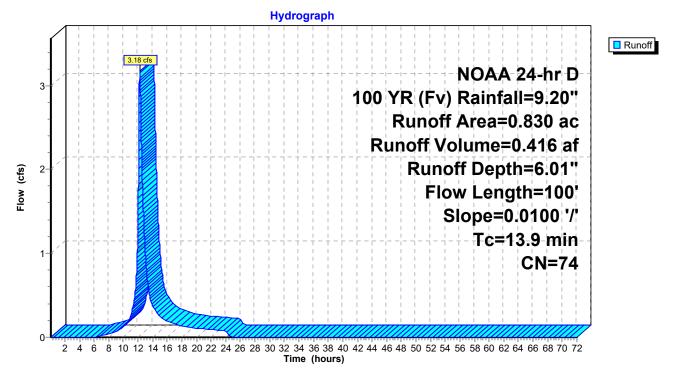
Runoff 3.18 cfs @ 12.23 hrs, Volume= 0.416 af, Depth= 6.01" =

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs NOAA 24-hr D 100 YR (Fv) Rainfall=9.20"

_	Area	(ac) (CN	Desc	ription		
	0.	070	67	Row	crops, stra	aight row, (Good, HSG A
	0.	670	78	Row	crops, stra	aight row, (Good, HSG B
	0.	010	30	Brus	h, Good, H	ISG A	
_	0.	080	48	Brus	h, Good, H	ISG B	
	0.	830	74	Weig	hted Aver	age	
	0.	830		100.0	00% Pervi	ous Area	
	-		~			o	
	Tc	Length		Slope	Velocity	Capacity	Description
_	(min)	(feet)		<u>(ft/ft)</u>	(ft/sec)	(cfs)	
	13.9	100	0.0	0100	0.12		Sheet Flow,
							Cultiveted Desidues 2001 mm 0 170 D2- 2 10"

Cultivated: Residue>20% n= 0.170 P2= 3.40'

Subcatchment DA1: DA 1



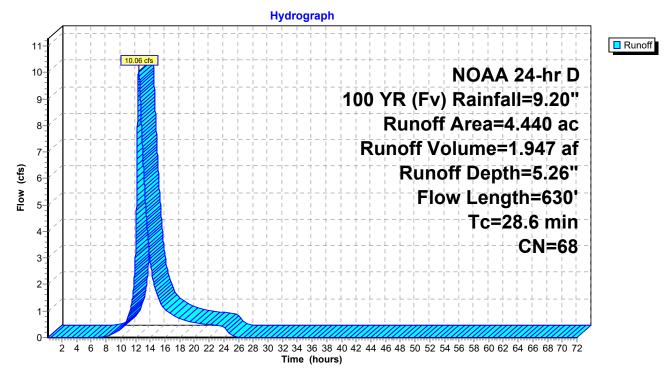
Summary for Subcatchment DA2: DA 2

Runoff = 10.06 cfs @ 12.46 hrs, Volume= 1.947 af, Depth= 5.26"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs NOAA 24-hr D 100 YR (Fv) Rainfall=9.20"

_	Area ((ac)	CN	Desc	cription				
	0.780 67 Row crops, straight row, Good, HSG A								
	2.	670	78	Row	crops, str	aight row,	Good, HSG B		
	0.	300	48	Brus	h, Good, H	ISG B			
	0.	570	30	Woo	ds, Good,	HSG A			
	0.	120	98	Pave	ed parking	, HSG A			
	4.4	440	68	Weig	ghted Aver	age			
	4.	320		97.3	0% Pervio	us Area			
	0.	120		2.70	% Impervi	ous Area			
	Тс	Lengt	h :	Slope	Velocity	Capacity	Description		
	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)			
	22.8	10	0 0	.0160	0.07		Sheet Flow,		
							Woods: Light underbrush n= 0.400 P2= 3.40"		
	5.8	53	0 0	.0090	1.53		Shallow Concentrated Flow,		
							Unpaved Kv= 16.1 fps		
	28.6	63	о т	otal					

Subcatchment DA2: DA 2



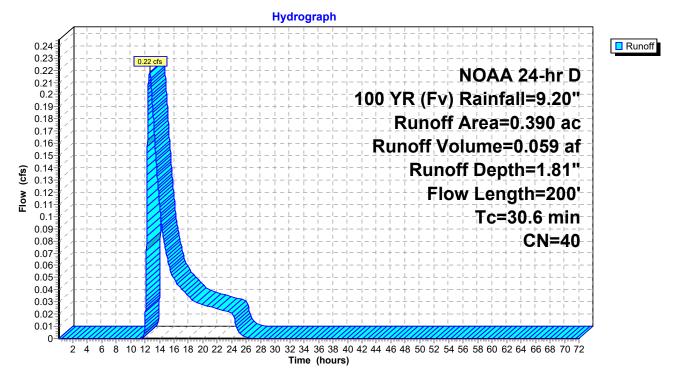
Summary for Subcatchment DA3: DA 3

Runoff 0.22 cfs @ 12.64 hrs, Volume= 0.059 af, Depth= 1.81" =

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs NOAA 24-hr D 100 YR (Fv) Rainfall=9.20"

Area	(ac) C	N Dese	cription		
0.	330 3	0 Woods, Good, HSG A			
0.	060 9	8 Pave	ed parking	, HSG A	
0.	390 4	0 Weig	ghted Aver	age	
0.	0.330		2% Pervio	us Area	
0.	0.060		8% Imperv	vious Area	
Тс	Length	Slope	Velocity	Capacity	Description
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
30.1	100	0.0080	0.06		Sheet Flow,
					Woods: Light underbrush n= 0.400 P2= 3.40"
0.3	43	0.0210	2.33		Shallow Concentrated Flow,
					Unpaved Kv= 16.1 fps
0.2	57	0.0120	4.09	32.68	Trap/Vee/Rect Channel Flow,
					Bot.W=4.00' D=1.00' Z= 4.0 '/' Top.W=12.00'
					n= 0.030 Earth, grassed & winding
30.6	200	Total			

Subcatchment DA3: DA 3



Summary for Subcatchment DA4: DA 4

Runoff = 6.96 cfs @ 12.26 hrs, Volume= 0.962 af, Depth= 6.01"

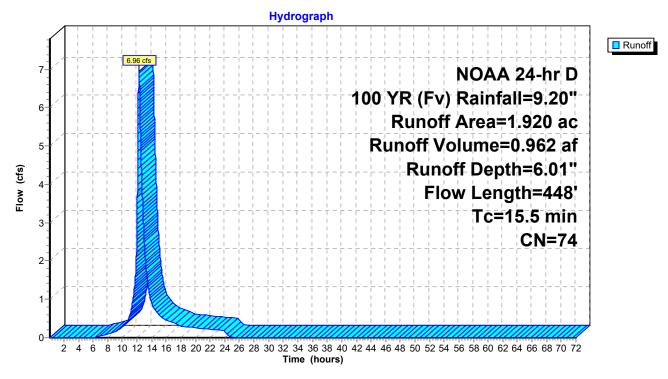
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs NOAA 24-hr D 100 YR (Fv) Rainfall=9.20"

Area	(ac) (CN Des	cription					
0.080 39		39 >75	>75% Grass cover, Good, HSG A					
0.290 61		61 >75	>75% Grass cover, Good, HSG B					
0.	.180		Row crops, straight row, Good, HSG A					
					Good, HSG B			
0.	.070	98 Pav	ed roads w	//curbs & se	ewers, HSG A			
	1.920 74 Weighted Average							
1.850 96.35% Pervious Area								
0.	0.070		3.65% Impervious Area					
_		<u>.</u>		a				
Tc	Length		Velocity		Description			
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
11.5	100	0.0160	0.15		Sheet Flow,			
					Cultivated: Residue>20%			
3.1	188	0.0040	1.02		Shallow Concentrated Flow,			
					Unpaved Kv= 16.1 fps			
0.9	160	0.0060	2.89	23.11	Trap/Vee/Rect Channel Flow,			
					Bot.W=4.00' D=1.00' Z= 4.0 '/' Top.W=12.00'			
					n= 0.030			
15.5	448	Total						

Pre-Development CvFv

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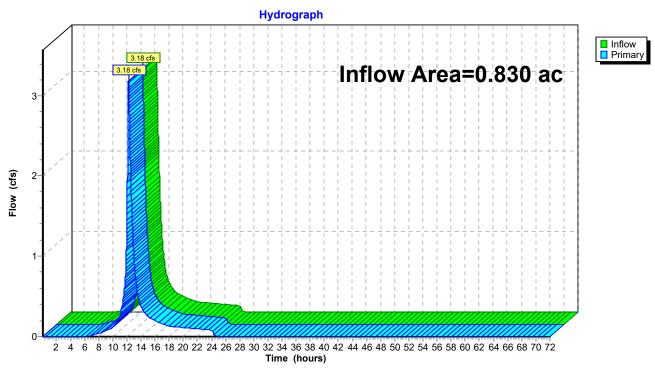
Subcatchment DA4: DA 4



Summary for Link 1: POA 1

Inflow Area =	0.830 ac,	0.00% Impervious, Inflow D	epth = 6.01" for 100 YR (Fv) event
Inflow =	3.18 cfs @	12.23 hrs, Volume=	0.416 af
Primary =	3.18 cfs @	12.23 hrs, Volume=	0.416 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs

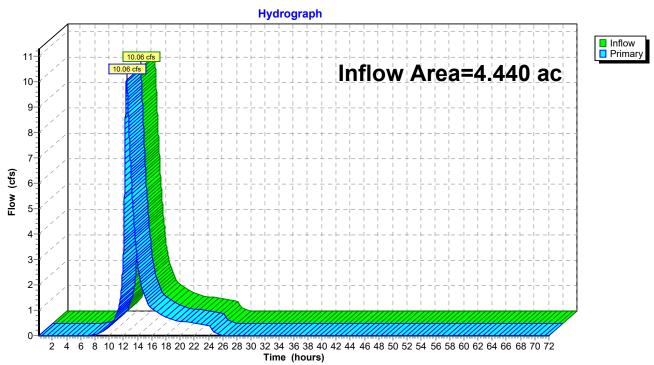


Link 1: POA 1

Summary for Link 2: POA 2

Inflow Are	a =	4.440 ac,	2.70% Impervious, Inflow	Depth = 5.26"	for 100 YR (Fv) event
Inflow	=	10.06 cfs @	12.46 hrs, Volume=	1.947 af	
Primary	=	10.06 cfs @	12.46 hrs, Volume=	1.947 af, Atte	en= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs

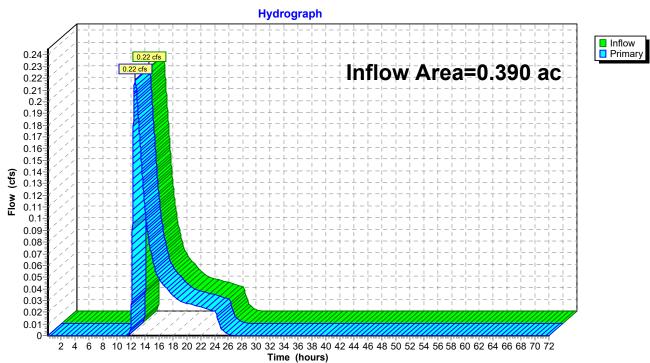


Link 2: POA 2

Summary for Link 3: POA 3

Inflow Area =	0.390 ac, 15.38% Impervious,	Inflow Depth = 1.81" for 100 YR (Fv) event
Inflow =	0.22 cfs @ 12.64 hrs, Volume	e= 0.059 af
Primary =	0.22 cfs @ 12.64 hrs, Volume	e= 0.059 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs

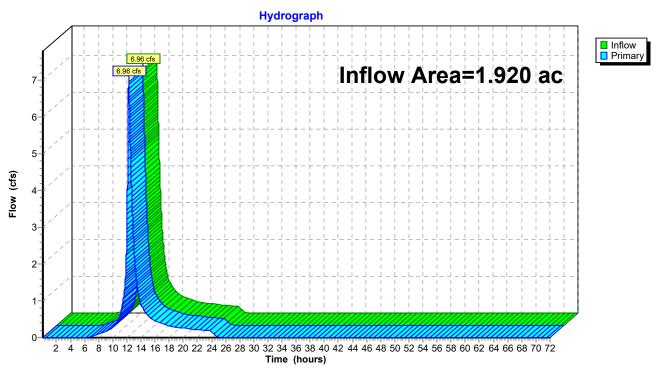


Link 3: POA 3

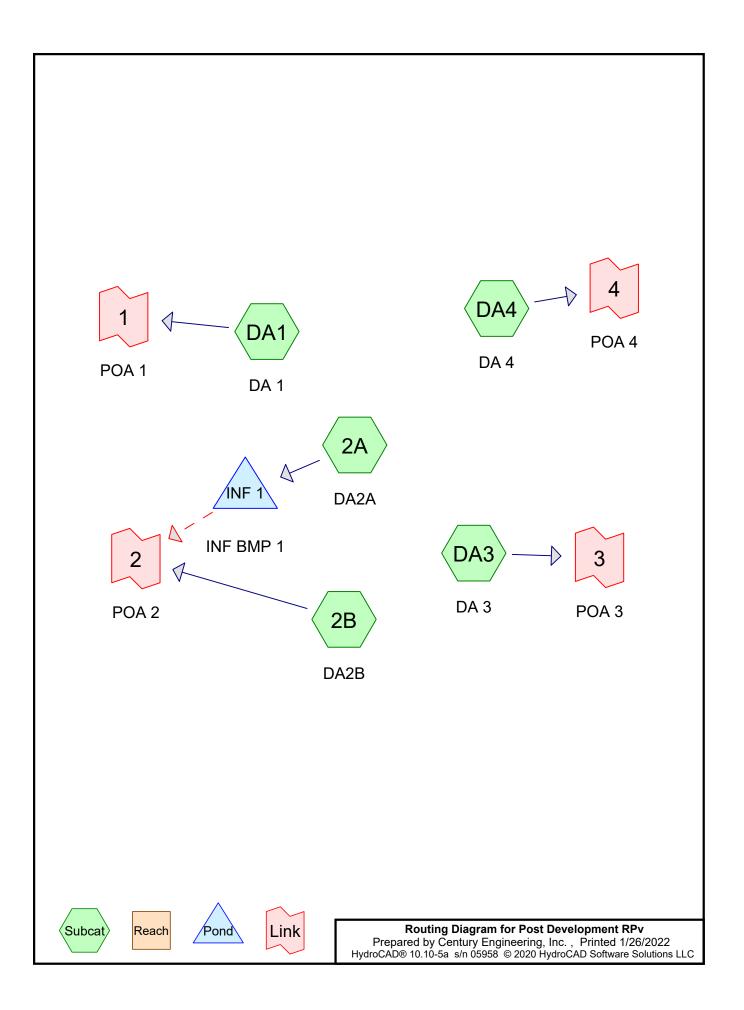
Summary for Link 4: POA 4

Inflow Area =	1.920 ac,	3.65% Impervious, Inflow D	epth = 6.01" for 100 YR (Fv) event
Inflow =	6.96 cfs @	12.26 hrs, Volume=	0.962 af
Primary =	6.96 cfs @	12.26 hrs, Volume=	0.962 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs



Link 4: POA 4



			Naim						
Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC	
1	1 YR (RPv)	NOAA 24-hr	D	Default	24.00	1	2.70	2	

Rainfall Events Listing

Post Development RPv	NOAA 24-hr D 1 YR	(RPv) Rainfall=2.70", Ia/S=0.05
Prepared by Century Engineering, Inc.		Printed 1/26/2022
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Time span=0.10-72.00 hrs, dt=0.01 hrs, 7191 points Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment2A: DA2A	Runoff Area=2.330 ac 56.22% Impervious Runoff Depth=1.35" Flow Length=490' Tc=4.4 min CN=81 Runoff=3.15 cfs 0.263 af
Subcatchment2B: DA2B	Runoff Area=1.980 ac 0.00% Impervious Runoff Depth=0.29" Flow Length=505' Tc=28.5 min CN=44 Runoff=0.19 cfs 0.048 af
SubcatchmentDA1: DA 1 Flow Length=100	Runoff Area=0.590 ac 0.00% Impervious Runoff Depth=0.98" 0' Slope=0.0100 '/' Tc=13.9 min CN=72 Runoff=0.34 cfs 0.048 af
SubcatchmentDA3: DA 3	Runoff Area=0.390 ac 10.26% Impervious Runoff Depth=0.18" Flow Length=200' Tc=30.6 min CN=37 Runoff=0.02 cfs 0.006 af
SubcatchmentDA4: DA 4	Runoff Area=2.160 ac 6.48% Impervious Runoff Depth=0.82" Flow Length=448' Tc=15.5 min CN=67 Runoff=0.97 cfs 0.147 af
Pond INF 1: INF BMP 1 Discarded=0.81	Peak Elev=22.52' Storage=2,281 cf Inflow=3.15 cfs 0.263 af cfs 0.263 af Primary=0.00 cfs 0.000 af Outflow=0.81 cfs 0.263 af
Link 1: POA 1	Inflow=0.34 cfs 0.048 af Primary=0.34 cfs 0.048 af
Link 2: POA 2	Inflow=0.19 cfs 0.048 af Primary=0.19 cfs 0.048 af
Link 3: POA 3	Inflow=0.02 cfs 0.006 af Primary=0.02 cfs 0.006 af
Link 4: POA 4	Inflow=0.97 cfs 0.147 af Primary=0.97 cfs 0.147 af

Total Runoff Area = 7.450 acRunoff Volume = 0.511 afAverage Runoff Depth = 0.82"80.00% Pervious = 5.960 ac20.00% Impervious = 1.490 ac

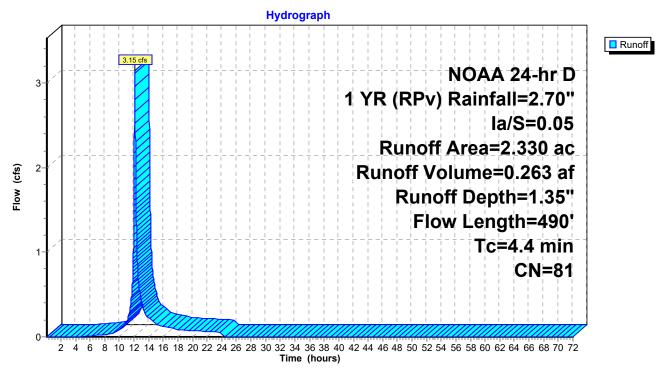
Summary for Subcatchment 2A: DA2A

Runoff = 3.15 cfs @ 12.13 hrs, Volume= 0.263 af, Depth= 1.35"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs NOAA 24-hr D 1 YR (RPv) Rainfall=2.70", Ia/S=0.05

Area	(ac) (CN Des	scription							
0.	110	39 >75	75% Grass cover, Good, HSG A							
0.	910	61 >75	% Grass c	over, Good	, HSG B					
1.	310	98 Pav	Paved parking, HSG A							
2.	330	81 We	ighted Avei	rage						
1.	020	43.	78% Pervic	ous Area						
1.	310	56.2	22% Imper	vious Area						
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description					
0.4	25	0.0200	1.07		Sheet Flow,					
4.0	465	0.0030	1.93	9.66	Smooth surfaces n= 0.011 P2= 3.40" Trap/Vee/Rect Channel Flow, Bot.W=2.00' D=1.00' Z= 3.0 '/' Top.W=8.00' n= 0.030					
4.4	490	Total								

Subcatchment 2A: DA2A



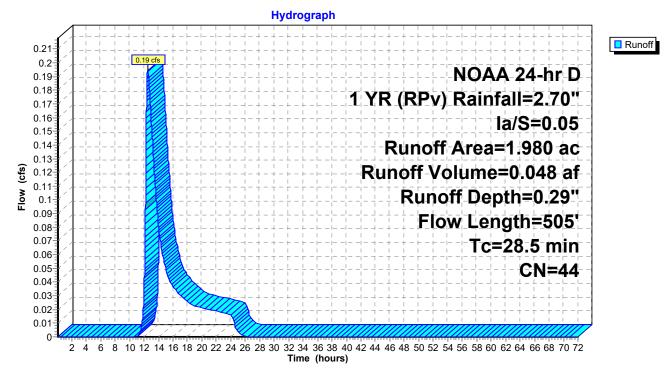
Summary for Subcatchment 2B: DA2B

Runoff = 0.19 cfs @ 12.53 hrs, Volume= 0.048 af, Depth= 0.29"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs NOAA 24-hr D 1 YR (RPv) Rainfall=2.70", Ia/S=0.05

Area	(ac) C	N Dese	cription						
0.	770 3	39 >759	% Grass c	over, Good	, HSG A				
0.	670 6	61 >75 ⁹	>75% Grass cover, Good, HSG B						
0.	540 3	30 Woo	ods, Good,	HSG A					
1.	980 4	4 Weig	ghted Aver	age					
1.	980	100.	00% Pervi	ous Area					
Тс	Length	Slope	Velocity	Capacity	Description				
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)					
22.8	100	0.0160	0.07		Sheet Flow,				
					Woods: Light underbrush n= 0.400 P2= 3.40"				
2.8	253	0.0090	1.53		Shallow Concentrated Flow,				
					Unpaved Kv= 16.1 fps				
2.9	152	0.0030	0.88		Shallow Concentrated Flow,				
					Unpaved Kv= 16.1 fps				
28.5	505	Total							

Subcatchment 2B: DA2B



Summary for Subcatchment DA1: DA 1

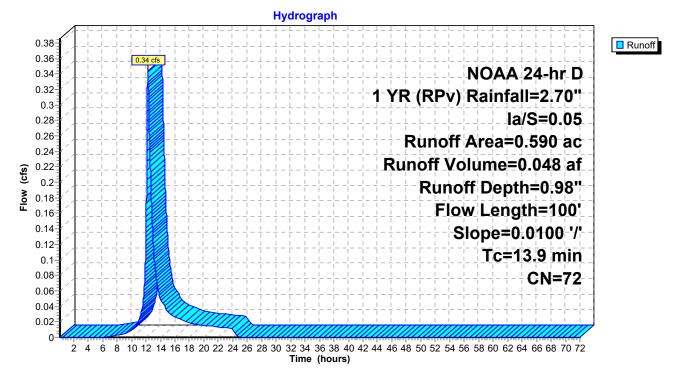
Runoff = 0.34 cfs @ 12.24 hrs, Volume= 0.048 af, Depth= 0.98"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs NOAA 24-hr D 1 YR (RPv) Rainfall=2.70", Ia/S=0.05

_	Area	(ac)	CN	Desc	ription		
	0.	070	67	Row	crops, stra	aight row, (Good, HSG A
	0.	430	78	Row	crops, stra	aight row, (Good, HSG B
	0.	010	30	Brus	h, Good, F	ISG A	
_	0.	080	48	Brus	h, Good, F	ISG B	
	0.	590	72	Weig	hted Aver	age	
	0.	590		100.0	00% Pervi	ous Area	
	_		_				
	Tc	Length		Slope	Velocity	Capacity	Description
_	(min)	(feet)		(ft/ft)	(ft/sec)	(cfs)	
	13.9	100	0.0	0100	0.12		Sheet Flow,

Cultivated: Residue>20% n= 0.170 P2= 3.40"

Subcatchment DA1: DA 1



Summary for Subcatchment DA3: DA 3

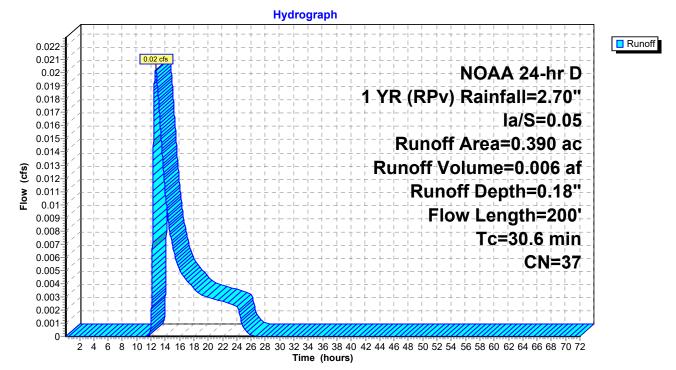
Runoff = 0.02 cfs @ 12.65 hrs, Volume= 0.006 af, Depth= 0.18"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs NOAA 24-hr D 1 YR (RPv) Rainfall=2.70", Ia/S=0.05

Area	(ac) C	N Dese	cription					
0.	.330 3	30 Woo	ds, Good,	HSG A				
0.	0.040 98 Paved parking, HSG A							
0.	0.020 39 >75% Grass cover, Good, HSG A							
0.	.390 3		ghted Aver					
	.350		4% Pervio					
0.	.040	10.2	6% Imperv	vious Area				
_				a 14	-			
Tc	Length	Slope	Velocity	Capacity	Description			
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
30.1	100	0.0080	0.06		Sheet Flow,			
					Woods: Light underbrush n= 0.400 P2= 3.40"			
0.3	43	0.0210	2.33		Shallow Concentrated Flow,			
					Unpaved Kv= 16.1 fps			
0.2	57	0.0120	4.09	32.68	Trap/Vee/Rect Channel Flow,			
					Bot.W=4.00' D=1.00' Z= 4.0 '/' Top.W=12.00'			
					n= 0.030 Earth, grassed & winding			
20.0	000	Tatal						

30.6 200 Total

Subcatchment DA3: DA 3



Summary for Subcatchment DA4: DA 4

Runoff = 0.97 cfs @ 12.27 hrs, Volume= 0.147 af, Depth= 0.82"

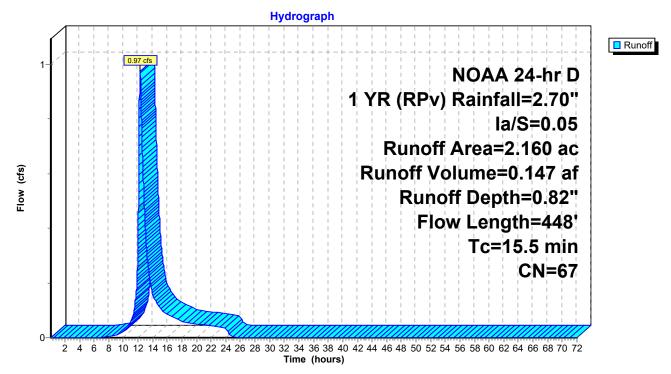
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs NOAA 24-hr D 1 YR (RPv) Rainfall=2.70", Ia/S=0.05

Area	(ac) C	N Des	cription							
0.	150 3	39 >75	75% Grass cover, Good, HSG A							
1.	200 (61 >759	75% Grass cover, Good, HSG B							
			aved roads w/curbs & sewers, HSG A							
			Row crops, straight row, Good, HSG B							
0.	070 6	67 Row	v crops, str	aight row, 0	Good, HSG A					
			ghted Aver	0						
	020		2% Pervio							
0.	140	6.48	% Impervi	ous Area						
Тс	Length	Slope	Velocity	Capacity	Description					
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	Description					
11.5	100	0.0160	0.15	(010)	Sheet Flow,					
11.5	100	0.0100	0.10		Cultivated: Residue>20% $n=0.170$ P2= 3.40"					
3.1	188	0.0040	1.02		Shallow Concentrated Flow,					
••••					Unpaved Kv= 16.1 fps					
0.9	160	0.0060	2.89	23.11	Trap/Vee/Rect Channel Flow,					
					Bot.W=4.00' D=1.00' Z= 4.0 '/' Top.W=12.00'					
					n= 0.030					
15.5	448	Total								

Post Development RPv

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Subcatchment DA4: DA 4



Summary for Pond INF 1: INF BMP 1

Inflow Area =	2.330 ac, 56.22% Impervious, Inflow De	epth = 1.35" for 1 YR (RPv) event
Inflow =	3.15 cfs @ 12.13 hrs, Volume=	0.263 af
Outflow =	0.81 cfs @ 12.52 hrs, Volume=	0.263 af, Atten= 74%, Lag= 23.8 min
Discarded =	0.81 cfs @ 12.52 hrs, Volume=	0.263 af
Primary =	0.00 cfs $\overline{@}$ 0.10 hrs, Volume=	0.000 af

Routing by Stor-Ind method, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs Peak Elev= 22.52' @ 12.52 hrs Surf.Area= 4,818 sf Storage= 2,281 cf

Plug-Flow detention time= 18.0 min calculated for 0.263 af (100% of inflow) Center-of-Mass det. time= 18.0 min (846.1 - 828.1)

Volume	Invert	: Avail.S	torage	orage Storage Description				
#1	#1 22.00' 30,329 cf		,329 cf	f Custom Stage Data (Irregular)Listed below (Recalc)				
Elevatio (fee	et)	urf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)		
22.0	00	3,906	442.0	0	0	3,906		
23.0	00	5,729	468.0	4,788	4,788	5,843		
24.0	00	7,651	493.0	6,667	11,455	7,814		
25.0	00	9,674	518.0	8,643	20,098	9,888		
26.0	00	10,798	543.0	10,231	30,329	12,065		
Device	Routing	Inve	rt Outle	et Devices				
#1	Discarded	22.00)' 7.26	0 in/hr Exfiltration	over Surface are	ea		
#2	Primary	25.50)' 50.0	long x 20.0' brea	dth Broad-Crest	ed Rectangular Weir		
	-		Head	d (feet) 0.20 0.40 (0.60 0.80 1.00 1	1.20 1.40 1.60		
			Coet	f. (English) 2.68 2.3	70 2.70 2.64 2.6	3 2.64 2.64 2.63		
Discarded OutFlow Max=0.81 cfs @ 12.52 hrs $HW=22.52'$ (Free Discharge)								

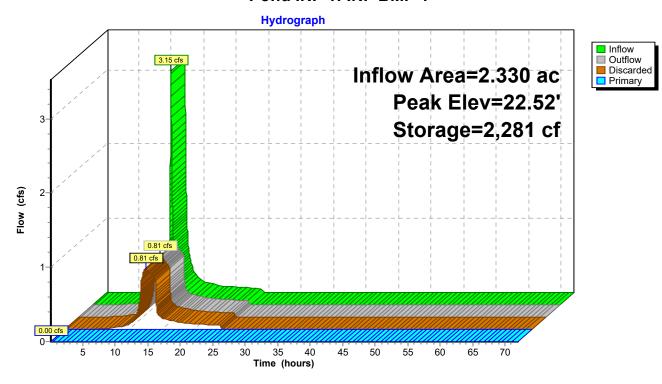
Discarded OutFlow Max=0.81 cfs @ 12.52 hrs HW=22.52' (Free Discharge) **1=Exfiltration** (Exfiltration Controls 0.81 cfs)

Primary OutFlow Max=0.00 cfs @ 0.10 hrs HW=22.00' (Free Discharge) 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Post Development RPv

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Pond INF 1: INF BMP 1



Summary for Link 1: POA 1

Inflow Area	ı =	0.590 ac,	0.00% Impervious, Inf	flow Depth = 0.98"	for 1 YR (RPv) event
Inflow	=	0.34 cfs @	12.24 hrs, Volume=	0.048 af	
Primary	=	0.34 cfs @	12.24 hrs, Volume=	0.048 af, Att	en= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs

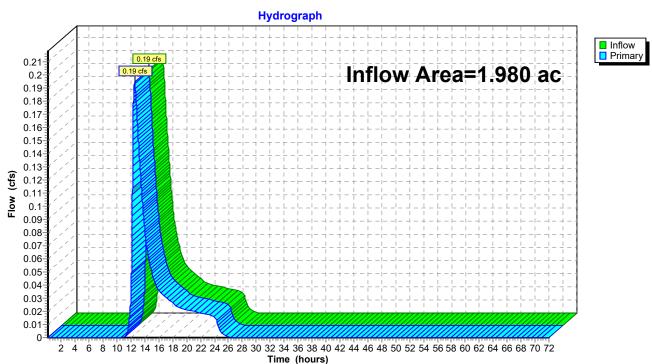
Hydrograph Inflow Primary 0.38 0.34 cfs Inflow Area=0.590 ac 0.36 0.34 cfs 0.34 0.32 0.3 0.28 0.26 0.24 0.22 0.2 0.18 0.16 0.22 0.16 0.14 0.12 0.1 0.08 0.06 0.04 0.02 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 Time (hours)

Link 1: POA 1

Summary for Link 2: POA 2

Inflow Area =	1.980 ac,	0.00% Impervious, Inflow	Depth = 0.29"	for 1 YR (RPv) event
Inflow =	0.19 cfs @	12.53 hrs, Volume=	0.048 af	
Primary =	0.19 cfs @	12.53 hrs, Volume=	0.048 af, Atte	en= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs

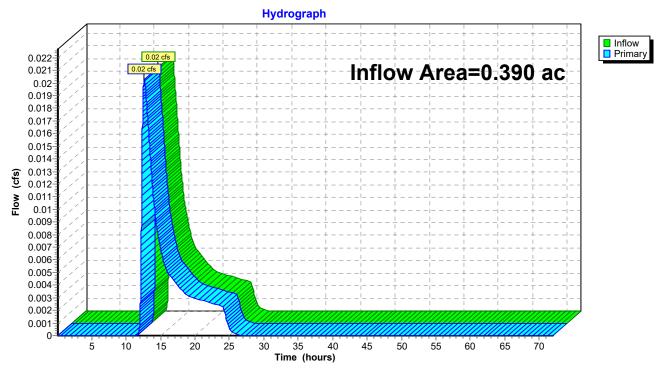


Link 2: POA 2

Summary for Link 3: POA 3

Inflow Area =	0.390 ac, 10.26% Impervious, Inflow Depth = 0.18" for 1 YR (RPv) event	
Inflow =	0.02 cfs @ 12.65 hrs, Volume= 0.006 af	
Primary =	0.02 cfs @ 12.65 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min	

Primary outflow = Inflow, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs



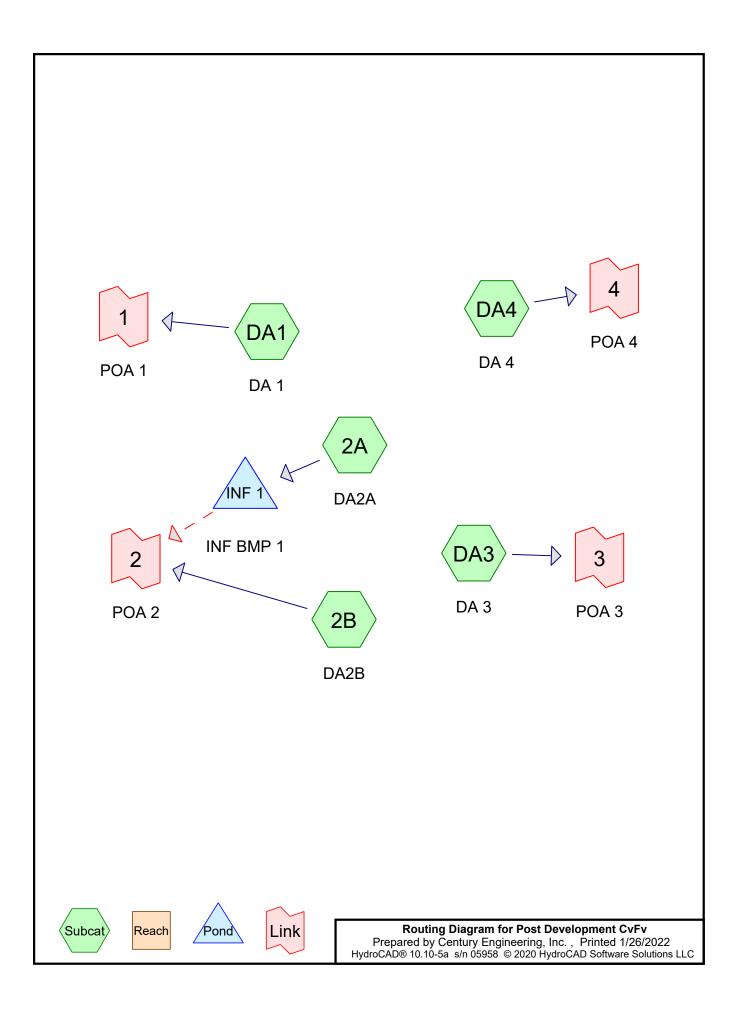
Link 3: POA 3

Summary for Link 4: POA 4

Inflow Area	a =	2.160 ac,	6.48% Impervious, Inflow	Depth = 0.82"	for 1 YR (RPv) event
Inflow	=	0.97 cfs @	12.27 hrs, Volume=	0.147 af	
Primary	=	0.97 cfs @	12.27 hrs, Volume=	0.147 af, Atte	en= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs

Link 4: POA 4



Post Development CvFv

Duration B/B Depth Event# Event Storm Type Curve Mode AMC Name (hours) (inches) 1 10 YR (Cv) NOAA 24-hr D Default 24.00 1 5.30 2 2 100 YR (Fv) NOAA 24-hr D Default 24.00 1 9.20 2

Rainfall Events Listing

Post Development CvFv	NOAA 24-hr D	10 YR (Cv) Rainfall=5.30"
Prepared by Century Engineering, Inc.		Printed 1/26/2022
HydroCAD® 10.10-5a s/n 05958 © 2020 HydroCAD Software So	olutions LLC	Page 3

Time span=0.10-72.00 hrs, dt=0.01 hrs, 7191 points Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment2A: DA2A	Runoff Area=2.330 ac 56.22% Impervious Runoff Depth=3.25" Flow Length=490' Tc=4.4 min CN=81 Runoff=7.89 cfs 0.631 af
Subcatchment2B: DA2B	Runoff Area=1.980 ac 0.00% Impervious Runoff Depth=0.49" Flow Length=505' Tc=28.5 min CN=44 Runoff=0.20 cfs 0.081 af
SubcatchmentDA1: DA 1 Flow Length=100	Runoff Area=0.590 ac 0.00% Impervious Runoff Depth=2.43" 0' Slope=0.0100 '/' Tc=13.9 min CN=72 Runoff=0.90 cfs 0.120 af
SubcatchmentDA3: DA 3	Runoff Area=0.390 ac 10.26% Impervious Runoff Depth=0.19" Flow Length=200' Tc=30.6 min CN=37 Runoff=0.01 cfs 0.006 af
SubcatchmentDA4: DA 4	Runoff Area=2.160 ac 6.48% Impervious Runoff Depth=2.01" Flow Length=448' Tc=15.5 min CN=67 Runoff=2.51 cfs 0.363 af
Pond INF 1: INF BMP 1 Discarded=1.17	Peak Elev=23.65' Storage=8,889 cf Inflow=7.89 cfs 0.631 af cfs 0.631 af Primary=0.00 cfs 0.000 af Outflow=1.17 cfs 0.631 af
Link 1: POA 1	Inflow=0.90 cfs 0.120 af Primary=0.90 cfs 0.120 af
Link 2: POA 2	Inflow=0.20 cfs 0.081 af Primary=0.20 cfs 0.081 af
Link 3: POA 3	Inflow=0.01 cfs 0.006 af Primary=0.01 cfs 0.006 af
Link 4: POA 4	Inflow=2.51 cfs 0.363 af Primary=2.51 cfs 0.363 af

Total Runoff Area = 7.450 acRunoff Volume = 1.201 afAverage Runoff Depth = 1.93"80.00% Pervious = 5.960 ac20.00% Impervious = 1.490 ac

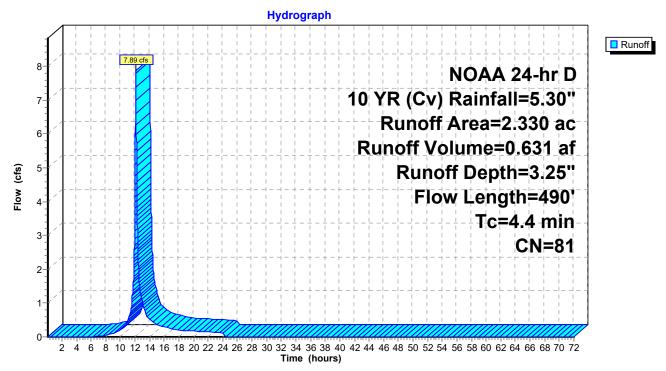
Summary for Subcatchment 2A: DA2A

Runoff = 7.89 cfs @ 12.13 hrs, Volume= 0.631 af, Depth= 3.25"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs NOAA 24-hr D 10 YR (Cv) Rainfall=5.30"

Area	(ac) C	N Des	escription					
0.	110	39 >75	% Grass c	over, Good	, HSG A			
0.	0.910 61 >75% Grass cover, Good, HSG B							
1.310 98 Paved parking, HSG A								
2.	2.330 81 Weighted Average							
1.	020	43.7	8% Pervio	us Area				
1.	310	56.2	2% Imperv	vious Area				
Тс	Length	Slope	Velocity	Capacity	Description			
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
0.4	25	0.0200	1.07		Sheet Flow,			
					Smooth surfaces n= 0.011 P2= 3.40"			
4.0	465	0.0030	1.93	9.66	Trap/Vee/Rect Channel Flow,			
					Bot.W=2.00' D=1.00' Z= 3.0 '/' Top.W=8.00'			
					n= 0.030			
4.4	490	Total						

Subcatchment 2A: DA2A



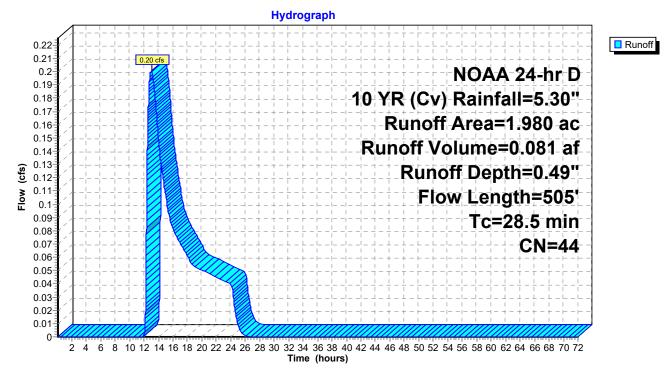
Summary for Subcatchment 2B: DA2B

Runoff = 0.20 cfs @ 13.04 hrs, Volume= 0.081 af, Depth= 0.49"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs NOAA 24-hr D 10 YR (Cv) Rainfall=5.30"

_	Area	(ac) C	N Des	cription					
	0.	770 3	39 >75°	% Grass c	over, Good	, HSG A			
	0.670 61 >75% Grass cover, Good, HSG B								
_	0.540 30 Woods, Good, HSG A								
	1.980 44 Weighted Average								
	1.	980	100.	00% Pervi	ous Area				
	Тс	Length	Slope	Velocity	Capacity	Description			
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
	22.8	100	0.0160	0.07		Sheet Flow,			
						Woods: Light underbrush n= 0.400 P2= 3.40"			
	2.8	253	0.0090	1.53		Shallow Concentrated Flow,			
						Unpaved Kv= 16.1 fps			
	2.9	152	0.0030	0.88		Shallow Concentrated Flow,			
_						Unpaved Kv= 16.1 fps			
	28.5	505	Total						

Subcatchment 2B: DA2B



Summary for Subcatchment DA1: DA 1

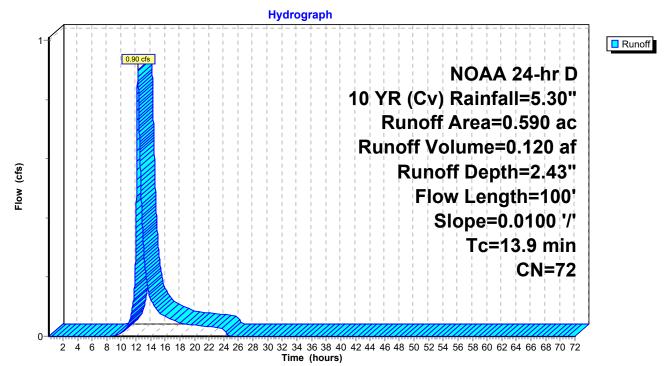
Runoff = 0.90 cfs @ 12.24 hrs, Volume= 0.120 af, Depth= 2.43"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs NOAA 24-hr D 10 YR (Cv) Rainfall=5.30"

_	Area	(ac)	CN	Desc	Description				
	0.070 67 Row crops, straight row, Good, HSG A								
	0.430 78 Row crops, straight row, Good, HSG B						Good, HSG B		
	0.	010	30	Brus	h, Good, H	ISG A			
_	0.	080	48	Brus	h, Good, H	ISG B			
	0.	590	72	Weig	phted Aver	age			
	0.	590		100.	00% Pervi	ous Area			
	_			<u>.</u> .		a 1/			
	Tc	Length		Slope	Velocity	Capacity	Description		
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)			
	13.9	100) 0.	.0100	0.12		Sheet Flow,		
							Cultiveted Desidues 200/ n= 0.170 D2= 2.40"		

Cultivated: Residue>20% n= 0.170 P2= 3.40"

Subcatchment DA1: DA 1



Summary for Subcatchment DA3: DA 3

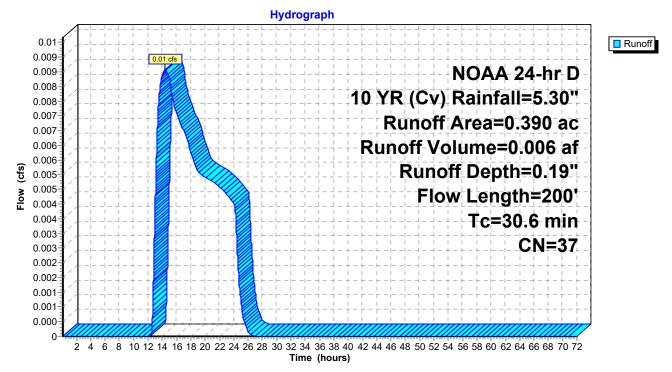
Runoff = 0.01 cfs @ 14.42 hrs, Volume= 0.006 af, Depth= 0.19"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs NOAA 24-hr D 10 YR (Cv) Rainfall=5.30"

Area	(ac) C	N Dese	cription						
0.	.330 3	30 Woo	ds, Good,	HSG A					
0.	.040 🤮		ed parking						
0.	0.020 39 >75% Grass cover, Good, HSG A								
0.	0.390 37 Weighted Average								
	0.350 89.74% Pervious Area								
0.	.040	10.2	6% Imperv	vious Area					
_				a 14	-				
Tc	Length	Slope	Velocity	Capacity	Description				
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)					
30.1	100	0.0080	0.06		Sheet Flow,				
					Woods: Light underbrush n= 0.400 P2= 3.40"				
0.3	43	0.0210	2.33		Shallow Concentrated Flow,				
					Unpaved Kv= 16.1 fps				
0.2	57	0.0120	4.09	32.68	Trap/Vee/Rect Channel Flow,				
					Bot.W=4.00' D=1.00' Z= 4.0 '/' Top.W=12.00'				
					n= 0.030 Earth, grassed & winding				
20.0	000	Tatal							

30.6 200 Total

Subcatchment DA3: DA 3



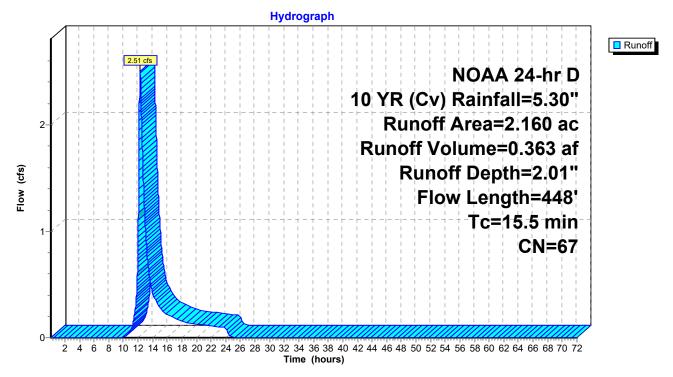
Summary for Subcatchment DA4: DA 4

Runoff = 2.51 cfs @ 12.27 hrs, Volume= 0.363 af, Depth= 2.01"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs NOAA 24-hr D 10 YR (Cv) Rainfall=5.30"

Area	(ac) C	N Des	cription		
0.	150 3	39 >75	>75% Grass cover, Good, HSG A		
1.:	200 6			over, Good	,
					ewers, HSG A
					Good, HSG B
0.	070 6	67 Row	/ crops, str	aight row, 0	Good, HSG A
			ghted Aver	0	
	020		2% Pervio		
0.	140	6.48	% Impervi	ous Area	
т.	1	0	V/-1!6	0	
Tc	Length	Slope	Velocity	Capacity	Description
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
11.5	100	0.0160	0.15		Sheet Flow,
					Cultivated: Residue>20% n= 0.170 P2= 3.40"
3.1	188	0.0040	1.02		Shallow Concentrated Flow,
	400				Unpaved Kv= 16.1 fps
0.9	160	0.0060	2.89	23.11	Trap/Vee/Rect Channel Flow,
					Bot.W=4.00' D=1.00' Z= 4.0 '/' Top.W=12.00'
					n= 0.030
15.5	448	Total			

Subcatchment DA4: DA 4



Summary for Pond INF 1: INF BMP 1

Inflow Area =	2.330 ac, 56.22% Impervious, Inflow D	epth = 3.25" for 10 YR (Cv) event
Inflow =	7.89 cfs @ 12.13 hrs, Volume=	0.631 af
Outflow =	1.17 cfs @ 12.87 hrs, Volume=	0.631 af, Atten= 85%, Lag= 44.8 min
Discarded =	1.17 cfs @ 12.87 hrs, Volume=	0.631 af
Primary =	0.00 cfs @ 0.10 hrs, Volume=	0.000 af

Routing by Stor-Ind method, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs Peak Elev= 23.65' @ 12.87 hrs Surf.Area= 6,943 sf Storage= 8,889 cf

Plug-Flow detention time= 63.9 min calculated for 0.631 af (100% of inflow) Center-of-Mass det. time= 63.9 min (890.2 - 826.3)

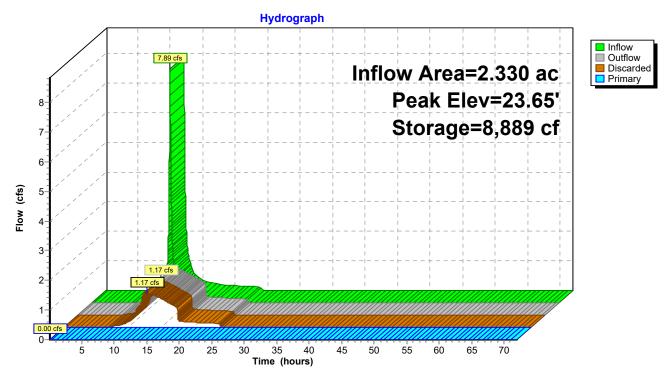
Volume	Invert	Avail.	Storage	Storage Description	n	
#1	22.00'	3	0,329 cf	Custom Stage Da	ta (Irregular) Listed	l below (Recalc)
Elovatio		urf.Area	Perim.	Inc.Store	Cum.Store	Wet Area
Elevatio					•	Wet.Area
(fee	/	(sq-ft)	(feet)	(cubic-feet)	(cubic-feet)	<u>(sq-ft)</u>
22.0	00	3,906	442.0	0	0	3,906
23.0	0	5,729	468.0	4,788	4,788	5,843
24.0	0	7,651	493.0	6,667	11,455	7,814
25.0	0	9,674	518.0	8,643	20,098	9,888
26.0	00	10,798	543.0	10,231	30,329	12,065
Device	Routing	Inv	ert Outle	et Devices		
#1	Discarded	22.0	00' 7.26	0 in/hr Exfiltration	over Surface area	1
#2	Primary	25.5	50' 50.0	long x 20.0' brea	dth Broad-Crestee	d Rectangular Weir
			Head	d (feet) 0.20 0.40 (0.60 0.80 1.00 1.1	20 1.40 1.60
				f. (English) 2.68 2.7		
Discarded OutFlow Max=1.17 cfs @ 12.87 hrs HW=23.65' (Free Discharge) 1=Exfiltration (Exfiltration Controls 1.17 cfs)						

Primary OutFlow Max=0.00 cfs @ 0.10 hrs HW=22.00' (Free Discharge) ←2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Post Development CvFv

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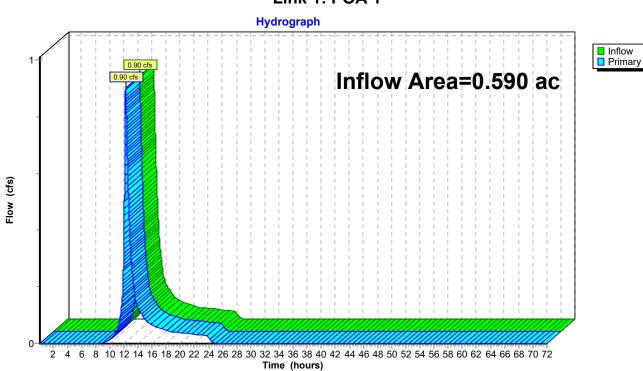
Pond INF 1: INF BMP 1



Summary for Link 1: POA 1

Inflow Area =	0.590 ac,	0.00% Impervious, Ir	nflow Depth = 2.43"	for 10 YR (Cv) event
Inflow =	0.90 cfs @	12.24 hrs, Volume=	0.120 af	
Primary =	0.90 cfs @	12.24 hrs, Volume=	0.120 af, Atte	en= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs

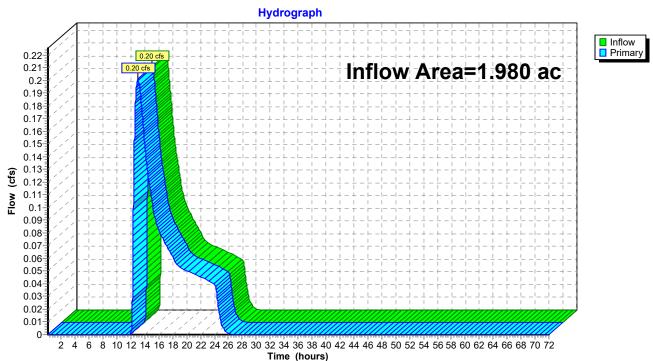


Link 1: POA 1

Summary for Link 2: POA 2

Inflow Area =	1.980 ac,	0.00% Impervious, Inflow	Depth = 0.49"	for 10 YR (Cv) event
Inflow =	0.20 cfs @	13.04 hrs, Volume=	0.081 af	
Primary =	0.20 cfs @	13.04 hrs, Volume=	0.081 af, Atte	en= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs

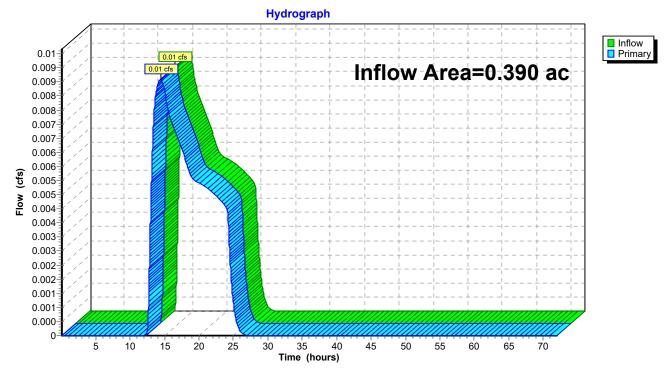


Link 2: POA 2

Summary for Link 3: POA 3

Inflow Area =	0.390 ac, 10.2	6% Impervious, Inflow	Depth = 0.19"	for 10 YR (Cv) event
Inflow =	0.01 cfs @ 14	.42 hrs, Volume=	0.006 af	
Primary =	0.01 cfs @ 14	.42 hrs, Volume=	0.006 af, Atte	en= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs

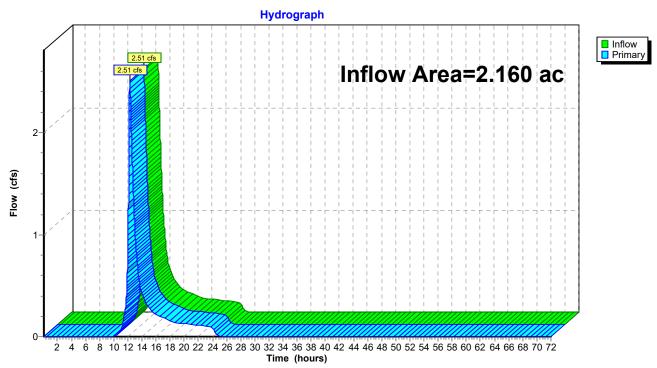


Link 3: POA 3

Summary for Link 4: POA 4

Inflow Area	=	2.160 ac,	6.48% Impervious, I	Inflow Depth = 2	2.01"	for 10 YR (Cv) event
Inflow =	=	2.51 cfs @	12.27 hrs, Volume=	= 0.363 a	af	
Primary =	=	2.51 cfs @	12.27 hrs, Volume=	= 0.363 a	af, Atte	n= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs



Link 4: POA 4

Post Development CvFv	NOAA 24-hr D	100 YR (Fv) Rainfall=9.20"
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Time span=0.10-72.00 hrs, dt=0.01 hrs, 7191 points Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment2A: DA2A	Runoff Area=2.330 ac 56.22% Impervious Runoff Depth=6.88" Flow Length=490' Tc=4.4 min CN=81 Runoff=16.17 cfs 1.336 af
Subcatchment2B: DA2B	Runoff Area=1.980 ac 0.00% Impervious Runoff Depth=2.28" Flow Length=505' Tc=28.5 min CN=44 Runoff=1.62 cfs 0.377 af
SubcatchmentDA1: DA 1 Flow Length=100	Runoff Area=0.590 ac 0.00% Impervious Runoff Depth=5.76" V Slope=0.0100 '/' Tc=13.9 min CN=72 Runoff=2.17 cfs 0.283 af
SubcatchmentDA3: DA 3	Runoff Area=0.390 ac 10.26% Impervious Runoff Depth=1.47" Flow Length=200' Tc=30.6 min CN=37 Runoff=0.16 cfs 0.048 af
SubcatchmentDA4: DA 4	Runoff Area=2.160 ac 6.48% Impervious Runoff Depth=5.14" Flow Length=448' Tc=15.5 min CN=67 Runoff=6.69 cfs 0.924 af
Pond INF 1: INF BMP 1 Discarded=1.69	Peak Elev=25.35' Storage=23,569 cf Inflow=16.17 cfs 1.336 af cfs 1.336 af Primary=0.00 cfs 0.000 af Outflow=1.69 cfs 1.336 af
Link 1: POA 1	Inflow=2.17 cfs 0.283 af Primary=2.17 cfs 0.283 af
Link 2: POA 2	Inflow=1.62 cfs 0.377 af Primary=1.62 cfs 0.377 af
Link 3: POA 3	Inflow=0.16 cfs 0.048 af Primary=0.16 cfs 0.048 af
Link 4: POA 4	Inflow=6.69 cfs 0.924 af Primary=6.69 cfs 0.924 af

Total Runoff Area = 7.450 acRunoff Volume = 2.969 afAverage Runoff Depth = 4.78"80.00% Pervious = 5.960 ac20.00% Impervious = 1.490 ac

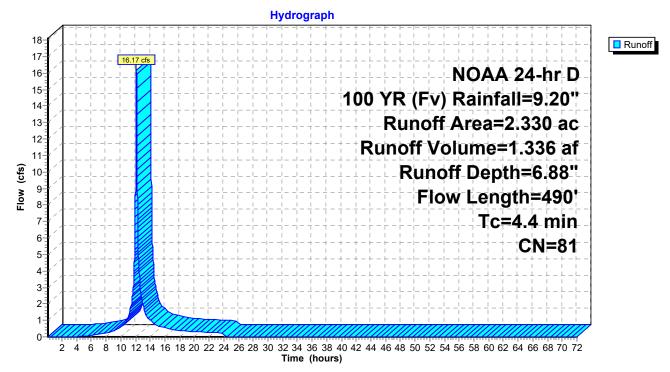
Summary for Subcatchment 2A: DA2A

Runoff = 16.17 cfs @ 12.12 hrs, Volume= 1.336 af, Depth= 6.88"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs NOAA 24-hr D 100 YR (Fv) Rainfall=9.20"

Area	(ac) (CN Des	scription		
0.	110	39 >75	% Grass c	over, Good	, HSG A
0.	910	61 >75	% Grass c	over, Good	, HSG B
1.	310	98 Pav	ed parking	, HSG A	
2.	330	81 We	ighted Ave	rage	
1.	020	43.	78% Pervic	ous Area	
1.	310	56.2	22% Imper	vious Area	
Тс	Length			Capacity	Description
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
0.4	25	0.0200	1.07		Sheet Flow,
					Smooth surfaces n= 0.011 P2= 3.40"
4.0	465	0.0030	1.93	9.66	Trap/Vee/Rect Channel Flow,
					Bot.W=2.00' D=1.00' Z= 3.0 '/' Top.W=8.00'
					n= 0.030
4.4	490	Total			

Subcatchment 2A: DA2A



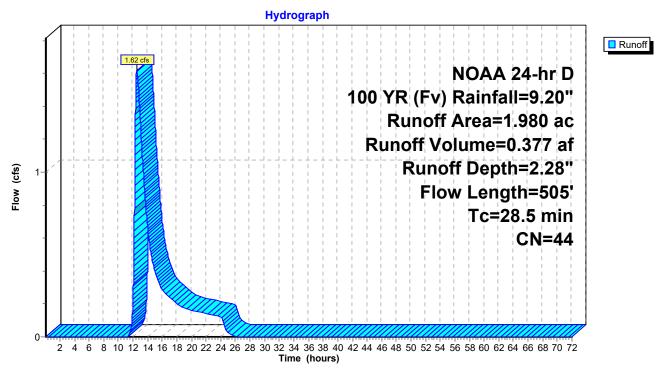
Summary for Subcatchment 2B: DA2B

Runoff = 1.62 cfs @ 12.54 hrs, Volume= 0.377 af, Depth= 2.28"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs NOAA 24-hr D 100 YR (Fv) Rainfall=9.20"

Area	(ac) C	N Des	cription		
0	.770	39 >75°	% Grass co	over, Good	, HSG A
0	.670	61 >75°	% Grass co	over, Good	, HSG B
0	.540	30 Woo	ods, Good,	HSG A	
1	.980 4	44 Weig	ghted Aver	age	
1	.980	100.	00% Pervi	ous Area	
Tc	Length	Slope	Velocity	Capacity	Description
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
22.8	100	0.0160	0.07		Sheet Flow,
					Woods: Light underbrush n= 0.400 P2= 3.40"
2.8	253	0.0090	1.53		Shallow Concentrated Flow,
					Unpaved Kv= 16.1 fps
2.9	152	0.0030	0.88		Shallow Concentrated Flow,
					Unpaved Kv= 16.1 fps
28.5	505	Total			

Subcatchment 2B: DA2B



Summary for Subcatchment DA1: DA 1

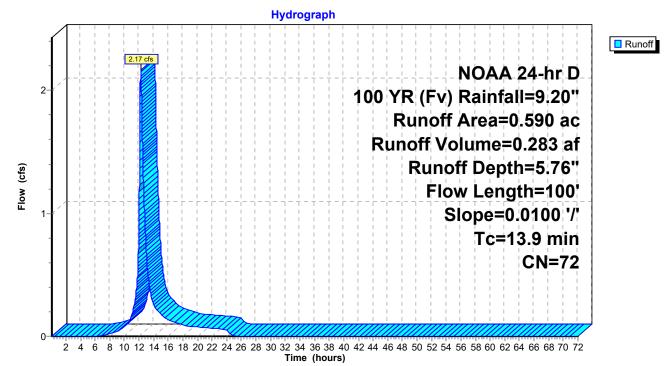
Runoff = 2.17 cfs @ 12.23 hrs, Volume= 0.283 af, Depth= 5.76"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs NOAA 24-hr D 100 YR (Fv) Rainfall=9.20"

_	Area	(ac)	CN	Desc	cription			
	0.	070	67	Row	crops, stra	aight row, (Good, HSG A	
	0.	430	78	Row	crops, stra	aight row, (Good, HSG B	
	0.	010	30	Brus	h, Good, H	ISG A		
_	0.	080	48	Brus	h, Good, H	ISG B		
	0.	590	72	Weig	hted Aver	age		
	0.	590		100.	00% Pervi	ous Area		
	_			<u>.</u> .		• •		
	Tc	Lengt		Slope	Velocity	Capacity	Description	
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)		
	13.9	100	0 (.0100	0.12		Sheet Flow,	
							Cultivated, Desidues 200/ n= 0.170 D2-	- 2 40"

Cultivated: Residue>20% n= 0.170 P2= 3.40"

Subcatchment DA1: DA 1



Summary for Subcatchment DA3: DA 3

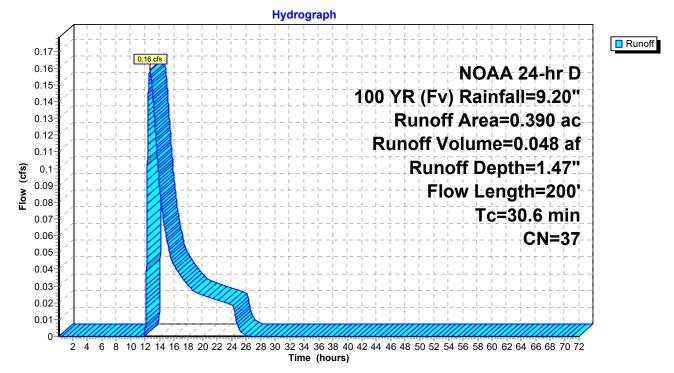
Runoff = 0.16 cfs @ 12.71 hrs, Volume= 0.048 af, Depth= 1.47"

Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs NOAA 24-hr D 100 YR (Fv) Rainfall=9.20"

Are	a (ac)	С	N Dese	cription					
	0.330 30		0 Woo	Woods, Good, HSG A					
	0.040 98 Paved parking, HSG A								
	0.020	3	<u>9 >75</u>	% Grass c	over, Good	, HSG A			
	0.390	3		ghted Aver					
	0.350			4% Pervio					
	0.040		10.2	6% Imperv	vious Area				
-			<u></u>		A B				
T (Slope	Velocity	Capacity	Description			
(min) (fee	et)	(ft/ft)	(ft/sec)	(cfs)				
30.	1 1	00	0.0080	0.06		Sheet Flow,			
						Woods: Light underbrush n= 0.400 P2= 3.40"			
0.3	3 4	43	0.0210	2.33		Shallow Concentrated Flow,			
						Unpaved Kv= 16.1 fps			
0.2	2	57	0.0120	4.09	32.68	Trap/Vee/Rect Channel Flow,			
						Bot.W=4.00' D=1.00' Z= 4.0 '/' Top.W=12.00'			
						n= 0.030 Earth, grassed & winding			
20.0	2 0	~~	Tatal						

30.6 200 Total

Subcatchment DA3: DA 3



Summary for Subcatchment DA4: DA 4

Runoff = 6.69 cfs @ 12.26 hrs, Volume= 0.924 af, Depth= 5.14"

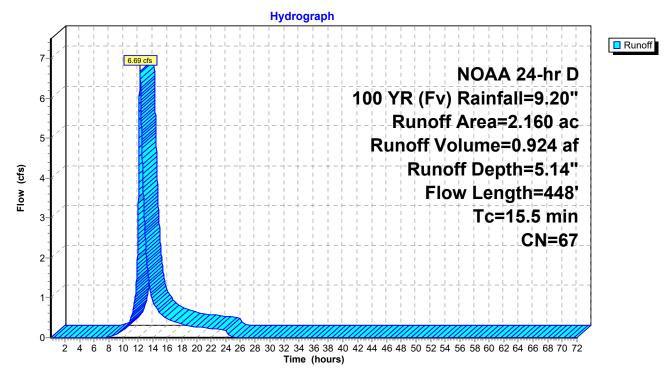
Runoff by SCS TR-20 method, UH=Delmarva, Weighted-CN, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs NOAA 24-hr D 100 YR (Fv) Rainfall=9.20"

Area	(ac) C	N Des	cription		
0.	150	39 >75	% Grass c	over, Good	, HSG A
1.	Area (ac) CN Description 0.150 39 >75% Grass cover, Good, HSG A 1.200 61 >75% Grass cover, Good, HSG B 0.140 98 Paved roads w/curbs & sewers, HSG A 0.600 78 Row crops, straight row, Good, HSG B 0.070 67 Row crops, straight row, Good, HSG A 2.160 67 Weighted Average 2.020 93.52% Pervious Area 0.140 6.48% Impervious Area 0.140 6.48% Impervious Area 0.140 6.48% Impervious Area 0.140 0.0160 0.15 Sheet Flow, (min) (ff/ft) (ff/sec) 11.5 100 0.0060 2.89 2.1 0.0060 2.89 23.11 Trap/vee/Rect Channel Flow, Bot.W=4.00' D=1.00' Z= 4.0 '/' Top.W=12.00' n = 0.030 0.00'				
0.	140	98 Pav	ed roads w	/curbs & se	ewers, HSG A
0.	070	67 Row	/ crops, str	aight row, (Good, HSG A
0.	140	6.48	% Impervi	ous Area	
-		01		0	
	•	•		• •	Description
/				(CIS)	
11.5	100	0.0160	0.15		•
3.1	188	0.0040	1.02		
0.9	160	0.0060	2.89	23.11	
					n= 0.030
15.5	448	Total			

Post Development CvFv

Prepared by Century Engineering, Inc. HydroCAD® 10.10-5a s/n 05958 © 2020 HydroCAD Software Solutions LLC

Subcatchment DA4: DA 4



Summary for Pond INF 1: INF BMP 1

Inflow Area =	2.330 ac, 56.22% Impervious, Inflow	Depth = 6.88" for 100 YR (Fv) event
Inflow =	16.17 cfs @ 12.12 hrs, Volume=	1.336 af
Outflow =	1.69 cfs @ 13.17 hrs, Volume=	1.336 af, Atten= 90%, Lag= 62.5 min
Discarded =	1.69 cfs @ 13.17 hrs, Volume=	1.336 af
Primary =	0.00 cfs @ 0.10 hrs, Volume=	0.000 af

Routing by Stor-Ind method, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs Peak Elev= 25.35' @ 13.17 hrs Surf.Area= 10,062 sf Storage= 23,569 cf

Plug-Flow detention time= 133.5 min calculated for 1.336 af (100% of inflow) Center-of-Mass det. time= 133.5 min (936.2 - 802.8)

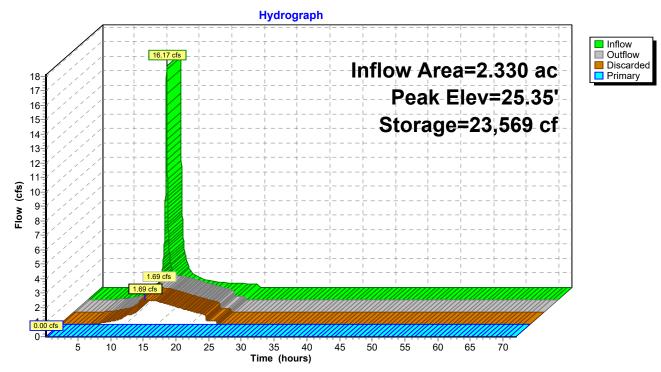
Volume	Inver	t Avail.S	Storage	Storage Descriptio	n	
#1	22.00	' 30),329 cf	Custom Stage Da	ta (Irregular) Liste	ed below (Recalc)
Elevatio (fee		urf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
22.0	00	3,906	442.0	0	0	3,906
23.0	00	5,729	468.0	4,788	4,788	5,843
24.0	00	7,651	493.0	6,667	11,455	7,814
25.0)0	9,674	518.0	8,643	20,098	9,888
26.0	00	10,798	543.0	10,231	30,329	12,065
Device	Routing	Inve	ert Outle	et Devices		
#1	Discarded	22.0	0' 7.26	0 in/hr Exfiltration	over Surface are	a
#2	Primary	25.5	60' 50.0	' long x 20.0' brea	dth Broad-Creste	ed Rectangular Weir
			Head	d (feet) 0.20 0.40	0.60 0.80 1.00 1	.20 1.40 1.60
			Coet	f. (English) 2.68 2.	70 2.70 2.64 2.6	3 2.64 2.64 2.63
Discard	ed OutFlov	v Max=1.69) cfs @ 1	3.17 hrs HW=25.35	5' (Free Discharg	je)

[™]1=Exfiltration (Exfiltration Controls 1.69 cfs)

Primary OutFlow Max=0.00 cfs @ 0.10 hrs HW=22.00' (Free Discharge) ←2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

NOAA 24-hr D 100 YR (Fv) Rainfall=9.20" Printed 1/26/2022 Page 24

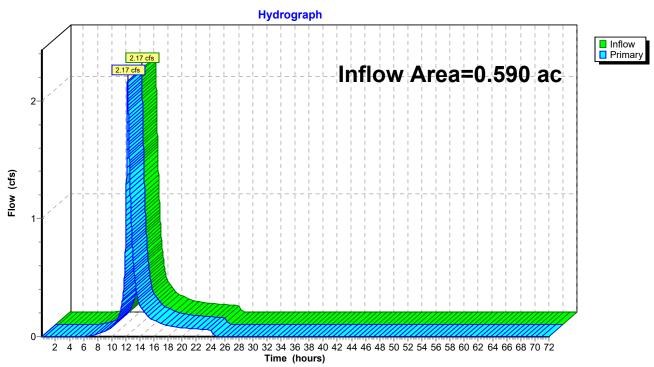
Pond INF 1: INF BMP 1



Summary for Link 1: POA 1

Inflow Area =	0.590 ac,	0.00% Impervious, Inflow D	epth = 5.76"	for 100 YR (Fv) event
Inflow =	2.17 cfs @	12.23 hrs, Volume=	0.283 af	
Primary =	2.17 cfs @	12.23 hrs, Volume=	0.283 af, Atte	en= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs

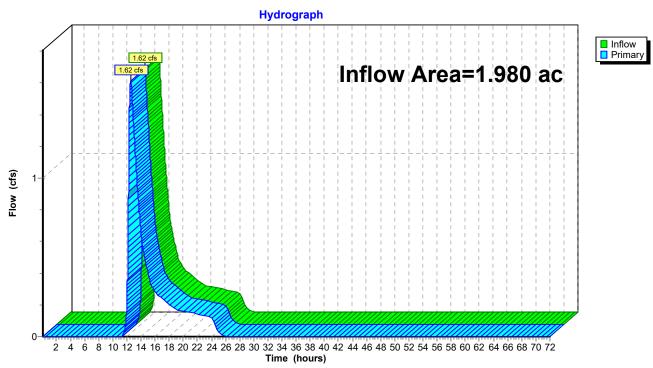


Link 1: POA 1

Summary for Link 2: POA 2

Inflow Area =	1.980 ac,	0.00% Impervious, Inflow D	epth = 2.28" for 100 YR (Fv) event
Inflow =	1.62 cfs @	12.54 hrs, Volume=	0.377 af
Primary =	1.62 cfs @	12.54 hrs, Volume=	0.377 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs

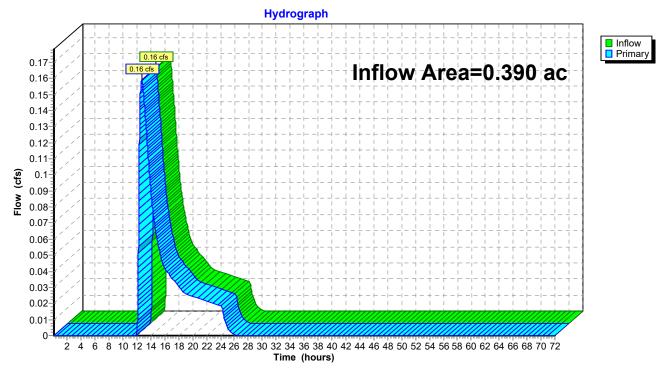


Link 2: POA 2

Summary for Link 3: POA 3

Inflow Area =	0.390 ac, 10.26% Impervious, Inflow Depth = 1.47" for 100 YR (Fv) event
Inflow =	0.16 cfs @ 12.71 hrs, Volume= 0.048 af
Primary =	0.16 cfs @ 12.71 hrs, Volume= 0.048 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs

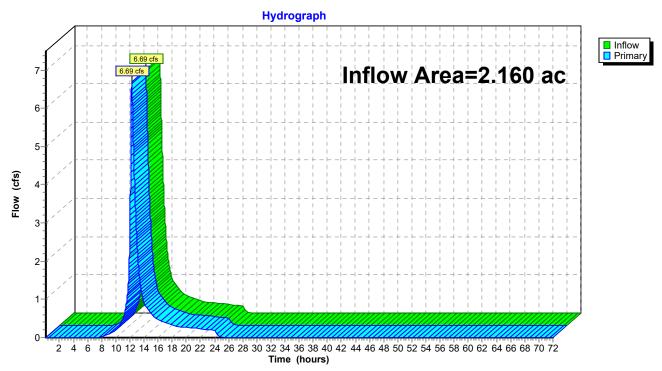


Link 3: POA 3

Summary for Link 4: POA 4

Inflow Area	a =	2.160 ac,	6.48% Impervious, Inflow D	epth = 5.14"	for 100 YR (Fv) event
Inflow	=	6.69 cfs @	12.26 hrs, Volume=	0.924 af	
Primary	=	6.69 cfs @	12.26 hrs, Volume=	0.924 af, Atte	n= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.10-72.00 hrs, dt= 0.01 hrs



Link 4: POA 4

	DRAINAGE SUBAREA I LOCATION (Count									
	UNIT HYDROGRAP	H: DMV								
CON	ITRIBUTING AREA RUNOFF CURVE NUMBI									
over Type	(C.A. RCN) WORKSHE	Hydrologic	A		/e Numb B		Hydrolog		Type D	
		Condition	Acres	RCN	Acres	RCN	Acres	RCN	Acres	RCN
OLTIVATED AC	GRICULTURAL LANDS Bare soil			77		86		91		94
allow	Crop residue (CR)	poor		76		85		90		93
	Crop residue (CR)	good		74		83		88		90
Row Crops	Straight row (SR)	poor		72		81		88		91
	Straight row (SR)	good	-	67		78		85		89
	SR + Crop residue SR + Crop residue	poor good		71 64		80 75		87 82		90 85
	Contoured (C)	poor		70		79		84		88
	Contoured (C)	good		65		75		82		86
	C + Crop residue	poor		69		78		83		87
	C + Crop residue	good	-	64		74		81		85
	Cont & terraced(C&T) Cont & terraced(C&T)	poor		66 62		74 71		80 78		82 81
	C&T + Crop residue	good poor		65		73		79		81
	C&T + Crop residue	good		61		70		77		80
mall Grain	Straight row (SR)	poor		65		76		84		88
	Straight row (SR)	good		63		75		83		87
	SR + Crop residue	poor		64		75		83		86
	SR + Crop residue Contoured (C)	good poor	-	60 63		72 74		80 82		84 85
	Contoured (C)	good		61		73		81		84
	C + Crop residue	poor		62		73		81		84
	C + Crop residue	good		60		72		80		83
	Cont & terraced(C&T)	poor		61		72		79		82
	Cont & terraces(C&T) C&T + Crop residue	good poor		59 60		70 71		78 78		81 81
	C&T + Crop residue	good		58		69		76		80
Close-seeded	Straight row	poor		66		77		85		89
or broadcast	Straight row	good		58		72		81		85
egumes or	Contoured	poor		64		75		83		85
otation neadow	Contoured Cont & terraced	good	-	55 63		69 73		78 80		83 83
leadow	Cont & terraced	good		51		67		76		80
		3							1	
THER AGRICU	ILTURAL LANDS									
	Pasture, grassland or range	poor	-	68		79		86		89
		fair	-	49		69		79		84
	Meadow -cont. grass (non grazed)	good		39 30		61 58		74 71		80 78
	Brush - brush, weed, grass mix	poor		48		67		77		83
	,,,	fair		35		56		70		77
		good		30		48		65		73
	Woods - grass combination	poor		57		73		82		86
		fair		43		65		76		82
	Woods	good poor		32 45		58 66		72 77		79 83
	Woods	fair		36		60		73		79
		good	0.8	30		55		70		77
	Farmsteads			59		74		82		86
	PED URBAN AREAS (Veg Established)									
Open space (Law										
poin opuoo (zun	Poor condition; grass cover < 50%			68		79		86		89
	Fair condition; grass cover 50% to 75 %			49		69		79		84
	Good condition; grass cover > 75%		0.99	39	2.04	61		74		80
npervious Areas										
	Paved parking lots, roofs, driveways		0.08	98	1.25	98		98		98
	Streets and roads Paved; curbs and storm sewers			98		98		98		98
	Paved; open ditches (w/right-of-way)			83		89		92		93
	Gravel (w/ right-of-way)			76		85		89		91
	Dirt (w/ right-of-way)			72		82		87		89
Irban Districts		Avg % impervious					_			6-
	Commercial & business Industrial	85 72		89 81		92 88		94 91		95 93
esidential dietric	Industrial cts by average lot size	72 Avg % impervious		01		00		91		33
	1/8 acre (town houses)	65		77		85		90		92
	1/4 acre	38		61		75		83		87
	1/3 acre	30		57		72		81		86
	1/2 acre	25		54		70		80		85
	1 acre 2 acre	20 12		51 46		68 65		79 77		84 82
										2
EVELOPING U	RBAN AREA (No Vegetation)					86		91		94
EVELOPING U	RBAN AREA (No Vegetation) Newly graded area (pervious only)			77		00				
				77		00				
				77		00				
				77		00				
				77		80				
	Newly graded area (pervious only)				3.00					
	Newly graded area (pervious only) Subarea Contributing Area per Soi		1.87		3.29		0		0]
DEVELOPING U	Newly graded area (pervious only) Subarea Contributing Area per Soi Subarea Contributing Area (ac)	5.16	1.87		3.29		0		0]
	Newly graded area (pervious only) Subarea Contributing Area per Soi		1.87		3.29		0		0]
JSER DEFINED	Newly graded area (pervious only) Subarea Contributing Area per Soi Subarea Contributing Area (ac) Subarea Weighted RCN NTRIBUTING AREAS	5.16	1.87		3.29		0]	0]
SER DEFINED	Newly graded area (pervious only) Subarea Contributing Area per Soi Subarea Contributing Area (ac) Subarea Weighted RCN NTRIBUTING AREAS Upstream Contributing Area 1	5.16 62]		3.29		0		0]
JSER DEFINED	Newly graded area (pervious only) Subarea Contributing Area per Soi Subarea Contributing Area (ac) Subarea Weighted RCN NTRIBUTING AREAS Upstream Contributing Area 1 Upstream Contributing Area 2	5.16 62]		3.29		0		0	
SER DEFINED	Newly graded area (pervious only) Subarea Contributing Area per Soi Subarea Contributing Area (ac) Subarea Weighted RCN NTRIBUTING AREAS Upstream Contributing Area 1 Upstream Contributing Area 2 Upstream Contributing Area 3	5.16 62]		3.29		0		0]
SER DEFINED	Newly graded area (pervious only) Subarea Contributing Area per Soi Subarea Contributing Area (ac) Subarea Weighted RCN NTRIBUTING AREAS Upstream Contributing Area 1 Upstream Contributing Area 2	5.16 62]		3.29		0		0]
SER DEFINED	Newly graded area (pervious only) Subarea Contributing Area per Soi Subarea Contributing Area (ac) Subarea Weighted RCN NTRIBUTING AREAS Upstream Contributing Area 1 Upstream Contributing Area 2 Upstream Contributing Area 3	5.16 62	Acres	RCN]	5.16	-	0	

PROJECT: DEC Cedar Grove Substation

DRAINAGE SUBAREA ID: PLD

LOCATION (County): Sussex

UNIT HYDROGRAPH: DMV

LIMIT OF DISTURBANCE (LOD) WORKSHEET

Step 1 - Subarea LOD Data

- 1.1 HSG Area Within LOD (ac)
- 1.2 Pre-Developed Woods/Meadow Within LOD (ac)
- 1.3 Pre-Developed Impervious Within LOD (ac)
- 1.4.a Post-Developed Imperviousness Within LOD, Option #1 (ac); OR
- 1.4.b Post-Developed Imperviousness Within LOD, Option #2 (%)

Step 2 - Subarea LOD Runoff Calculations

- 2.1 RCN per HSG
- 2.2 RPv per HSG (in.)
- 2.3 Target RCN per HSG
- 2.4 Target Runoff per HSG (in.)

2.5 Subarea LOD (ac)

- 2.6 Subarea Weighted RCN
- 2.7 Subarea Weighted RPv (in.)
- 2.8 Subarea Weighted Target Runoff (in.)

Step 3 - Upstream LOD Areas (from previous DURMM Report as applicable)

- 3.1 Upstream Sub-Area ID
- 3.2 Upstream Contributing Area (ac)
- 3.3 Target Runoff for Upstream Area (in.)
- 3.4 Adjusted CN after all reductions
- 3.5 Adjusted RPv (in.)
- 3.6 Adjusted Cv (in.)
- 3.7 Adjusted Fv (in.)

Step 4 - RPv Calculations for Combined LOD

- 4.1 Combined LOD (ac)
- 4.2 Weighted RCN
- 4.3 Weighted RPv (in.)
- 4.4 Weighted Target Runoff (in.)
- 4.5 Estimated Annual Runoff (in.)
- 4.6 Req'd Runoff to be Managed within LOD (in.)
- 4.7 Req'd Runoff to be Managed within LOD (%)

HSG	ìΑ	HSG B	HSG C	HSG D
	1.87	3.29		
	0.8			
	0.01			
	0.08	1.25		
	4%	38%	0%	0%

41.52	75.06	0.00	0.00
0.25	1.10	0.00	0.00
35.42	61.00	0.00	0.00
0.16	0.65	0.00	0.00

5.16
62.91
0.70
0.47

Area 1	Area 2	Area 3	Area 4

5.16
62.91
0.70
0.47
7.90
0.23
33%

PROJECT:	DEC Cedar Grove Substation
DRAINAGE SUBAREA ID:	PLD
LOCATION (County):	Sussex
UNIT HYDROGRAPH:	DMV
OUTSIDE LIMIT OF DISTURBANCE	
(OLOD) WORKSHEET	

Step 1 - Site Data

1.1 Total Contributing Area (ac)	N/
1.2 C.A. RCN	N/
1.3 LOD Area (ac)	N/
1.4 LOD RCN	N/
1.5 Outside LOD Area (ac)	N/
1.6 Outside LOD RCN	N/

N/A	
N/A	

Step 2 - Time of Concentration	2.1	2.2	2.3	2.4	2.5	2.6
	LENGTH	SLOPE	SURFACE	MANNINGS	VELOCITY	TRAVEL
FLOW TYPE	(feet)	(ft./ft.)	CODE	"n"	(ft./sec.)	TIME (hrs)
Sheet					N/A	0.00
					N/A	0.00
					N/A	0.00
Shallow Concentrated				N/A		0.00
				N/A		0.00
				N/A		0.00
Open Channel			N/A			0.00
			N/A			0.00
			N/A			0.00
			N/A			0.00
			N/A			0.00
			2.	7 Time of Cor	centration (Tc)	0.10

Sheet Flow Surface Codes a smooth surface b fallow (no residue) c cultivated < 20% Res. d cultivated > 20% Res.

e grass - range, short

f grass, dense g grass, bermuda h woods, light i woods, dense j range, natural Shallow Concentrated Surface Codes

u unpaved surface p paved surface

Step 3 - Peak Discharge

3.1 Unit Hydrograph Type

3.2 Frequency (yr)

3.3 24-HR Rainfall, P (in.)3.4 Initial Abstraction, Ia (in.)

3.5 Ia/P ratio

3.6 Unit Peak Discharge, qu (csm/in)

3.7 Runoff (in.)

3.8 Peak Discharge, qp (cfs)

3.9 Equiv. unit peak discharge (cfs/ac)

DN	٨V
10	100
5.3	9.2
#N/A	#N/A
#N/A	#N/A
#N/A	#N/A
#VALUE!	#VALUE!
#VALUE!	#VALUE!
0.00	0.00

PROJECT:	DEC Cedar Grove Substation													
DRAINAGE SUBAREA ID:														
LOCATION (County):														
RESOURCE PROTECTION EVENT (RPv) WORKSHEET	Sussex													
RESOURCE PROTECTION EVENT (RPV) WORKSHEET			1						r –					
		BMP 1		BMP 2	BMP 3		BMP 4		BMP 5					
	Type	0-No BMP	Туре	-	Type		Type		Type					
Step 1 - Calculate Initial RPv	Data													
 1.1 Total contributing area to BMP (ac) 	5.16													
1.2 Initial RCN	62.91													
1.3 RPv for Contributing Area (in.)	0.70													
1.4 Req'd RPv to be Managed for Contributing Area (in.)	0.23													
1.5 Req'd RPv to be Managed for Contributing Area (%)	33%													
Step 2 - Adjust for Retention Reduction														
2.1 Retention volume provided (cu. ft.)														
2.2 Retention reduction allowance (%)	0%		N/A		N/A		N/A	-	N/A					
2.3 Retention reduction andwance (76)	0,00		N/A		N/A		N/A N/A		N/A					
2.4 Retention reduction volume (in.)	0.00		N/A		N/A		N/A	-	N/A					
2.5 Runoff volume after retention reduction (in.)	0.70		N/A		N/A		N/A		N/A					
2.6 Adjusted CN*	63.02		N/A		N/A		N/A		N/A					
			,.											
Step 3 - Adjust for Annual Runoff Reduction														
3.1 Annual CN (ACN)	62.91		N/A		N/A		N/A		N/A					
3.2 Annual runoff (in.)	7.90		N/A		N/A		N/A	Ī	N/A					
3.3 Proportion A/B soils in BMP footprint (%)	0%		0%		0%		0%	Ī	0%					
3.4 Annual runoff reduction allowance (%)	0%		N/A		N/A		N/A		N/A					
3.5 Annual runoff after reduction (in.)	7.90		N/A		N/A		N/A		N/A					
3.6 Adjusted ACN	62.91		N/A		N/A		N/A		N/A					
3.7 Annual Runoff Reduction Allowance for RPv (in.)	0.00		N/A		N/A		N/A		N/A					
Step 4 - Calculate RPv with BMP Reductions														
4.1 RPv Runoff Manangement Provided (cu. ft.)	0		N/A		N/A		N/A		N/A					
4.1 RPV Runoff Manangement Provided (cu. rt.) 4.2 RPv runoff volume after all reductions (in.)	0.70		N/A N/A		N/A N/A		N/A N/A		N/A N/A					
 4.2 RPV runoff volume after all reductions (in.) 4.3 RPV runoff volume after all reductions (cu.ft.) 	13.112		N/A N/A		N/A N/A		N/A N/A		N/A N/A					
4.5 KPV fullow volume arter an reductions (cd.rt.) 4.4 Total RPv runoff reduction (in.)	0.00		N/A N/A		N/A		N/A N/A		N/A N/A					
4.5 Total RPv runoff reduction (%)	0%		N/A		N/A		N/A	-	N/A					
4.6 Adjusted CN after all reductions*	62.91		N/A		N/A		N/A		N/A					
4.7 Adjusted equivalent annual runoff (in.)	7.90		N/A		N/A		N/A		N/A					
4.8 RPv Compliance Met Through Runoff Reduction?	NO		N/A		N/A		N/A		N/A					
4.9 Runoff Reduction Credit, if Applicable (cu.ft)	N/A		N/A	•	N/A		N/A		N/A					
Step 5 - Determine Residual Volume to be Managed or Offset														
5.1 RPv Residual Volume (in.)	0.23		N/A		N/A		N/A		N/A					
5.2 RPv Residual Volume (cu.ft./ac)	836		N/A		N/A		N/A		N/A					
5.3 Residual Volume to be Managed or Offset (cu.ft.)	4,315		N/A		N/A		N/A		N/A					
5.4 RPv avg. discharge rate for 48-hr detention (cfs)	0.025		N/A		N/A		N/A		N/A					
5.5 RPv max. discharge rate for 48-hr detention (cfs)	0.125		N/A		N/A		N/A		N/A					
*NOTE: No additional runoff reduction credit can be taken fo				d CN offer all advette		C) and the section	and Chi feed							

*NOTE: No additional runoff reduction credit can be taken for surface recharge practices once the "Adjusted CN after all reductions" (Step 4.6) reaches the equivalent CN for the native soil-cover condition of the BMP footprint itself (i.e. for Sheet Flow to Turf Filter Strip on B soils Step 4.6 cannot be below 61). If this occurs contact the DNREC – SSP for further guidance.

		EC Cedar Grove Substation																		
DRAINAGE SUBAREA ID:																				
TMDL WATERSHED:	Rehoboth Ba	1																		
TOTAL MAXIMUM DAILY LOAD (TMDL) WORKSHEET																				
		BMF	1		BMP 2			BMP 3			BMP 4				BMP 5					
	Type:		0-No BMP		Type:	vpe: -				Type:			Type:	-			Type:			
Step 1 - Calculate Annual Runoff Volume	Data	TN	TP	TSS	Data	TN	TP	TSS	Data	TN	TP	TSS	Data	TN	TP	TSS	Data	TN	TP	TSS
1.1 Total contributing area to BMP (ac)	5.16					•														
1.2 Initial RCN	63																			
1.3 Annual runoff volume (in.)	7.90																			
1.4 Annual runoff volume (liters)	4.19E+06																			
Step 2 - Calculate Annual Pollutant Load																				
2.1 EMC (mg/L)		2.80	0.49	90		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A
2.2 Load (mg/yr)		1.17E+07		3.77E+08		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A
2.3 Stormwater Load (lb/ac/yr)		5.01	0.88	161		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A
-																				
Step 3 - Adjust for Pollutant Reduction																				
3.1 BMP annual runoff reduction (%)	0%				N/A	ļ			N/A				N/A				N/A			
3.2 Adjusted annual runoff volume (in)	7.90				N/A	ļ			N/A				N/A				N/A			
3.3 Adjusted annual runoff volume (liters)	4.19E+06				N/A				N/A				N/A				N/A			
3.4 Adjusted load from annual reductions (lb/ac/yr)		5.01	0.88	161.13		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A N/A	N/A
3.5 BMP removal efficiency (%) 3.6 BMP effluent concentration (mg/L)		0%	0%	0% 90.00		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A		N/A
3.5 BMP effluent concentration (mg/L) 3.7 Final Adjusted load (lb/ac/vr)		2.80	0.49	90.00		N/A N/A	N/A N/A	N/A N/A		N/A N/A	N/A N/A	N/A N/A		N/A N/A	N/A N/A	N/A N/A		N/A N/A	N/A N/A	N/A N/A
5.7 Final Adjusted Ioad (I0/aC/yr)		5.01	0.88	161		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A
Step 4 - Pollutant Reduction Met? (For Informational Purposes)																				
4.1 TMDL (lb/ac/yr)		5.70	0.23	N/A																
4.2 Reduction met?		YES	NO	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A
4.3 Final Adjusted Load (lb/yr)		25.87	4.53	831		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A

PROJECT:	DEC Cedar Grove Substation			
DRAINAGE SUBAREA ID:	PLD			
COUNTY:	Sussex	UNIT H	DROGRAPH:	DMV
TMDL Watershed:	Rehoboth Bay	VERSION:	DURMM v2.51.210802	
DURMM OUTPUT WORKSHEET				

N/A

0.00

N/A

0.00

N/A

0.00

Site Data Contributing Area to BMPs (ac.) C.A. RCN 5.16 61.51 5.16 Subarea LOD (ac.) Subarea RCN 62.91 Upstream Subarea ID N/A . Upstream Subarea LOD (ac.) 0.00 5.16 62.91 5.70 Combined LOD with Upstream Areas (ac.) Combined RCN with Upstream Areas (ac.) Watershed TMDL-TN (lb/ac/yr) Watershed TMDL-TP (lb/ac/yr) 0.23 Watershed TMDL-TSS (lb/ac/yr) N/A

BMP Data

P Data	BMP 1	BMP 2	BMP 3	BMP 4	BMP 5
	0-No BMP			-	-
RPv runoff volume after all reductions (in.)	0.70	N/A	N/A	N/A	N/A
Total RPv runoff reduction (in.)	0.00	N/A	N/A	N/A	N/A
Total RPv runoff reduction (%)	0%	N/A	N/A	N/A	N/A
RPv Compliance Met Through Runoff Reduction?	NO	N/A	N/A	N/A	N/A
RPv Residual Volume (cu. ft.)	4,315	N/A	N/A	N/A	N/A
Adjusted pollutant load, TN (lb/ac/yr)	5.01	N/A	N/A	N/A	N/A
Adjusted pollutant load, TP (lb/ac/yr)	0.88	N/A	N/A	N/A	N/A
Adjusted pollutant load, TSS (lb/ac/yr)	161.13	N/A	N/A	N/A	N/A
Cv runoff volume after all reductions (in.)	1.69	N/A	N/A	N/A	N/A
Fv runoff volume after all reductions (in.)	4.62	N/A	N/A	N/A	N/A

Resource Protection Event (RPV)

Percent Impervious Cover

Resource Protection Event (RPV)			
RPv for Contributing Area (in.)	0.70		
Annual Runoff for Contributing Area (in.)	7.90		
Req'd RPv to be Managed for Contributing Area (in.)	0.23		
Req'd RPv to be Managed for Contributing Area (%)	33%		
RPv Runoff Management Required (cu. Ft.)	4315		
RPv Runoff Management Provided (cu. Ft.)	0		
RPv Residual Volume (cu.ft.)	4315	SHORTFALL	(Requires additional management or offset)
C.A. RPv avg. discharge rate (cfs)	0.02		
C.A. RPv max. discharge rate (cfs)	0.12		
TN Pollutant Load (lb/yr)	25.87		
TP Pollutant Load (lb/yr)	4.53		
TSS Pollutant Load (lb/yr)	831		
Conveyance Event (Cv)			
Cv runoff volume (in.)	1.69		
Adjusted RCN for H&H Modeling (CN*)	62.91		
Flooding Event (Fv)			
Fv runoff volume (in.)	4.62		
Equivalent RCN for H&H Modeling (CN*)	62.91		
Adjusted Subarea Data for Downstream DURMM Modelin	ng		
Subarea ID	PLD		
Contributing Area (ac.)	5.16		
Weighted Target Runoff (in.)	0.47		
Adjusted CN after all reductions	62.91		
Adjusted RPv (in.)	0.70		
Adjusted Cv (in.)	1.69		
Adjusted Fv (in.)	4.62		
Adjusted Subarea Data for Nutrient Protocol Modeling			
Contributing Area (ac.)	5.16		
LOD Area (ac.)	5.16		
TN Pollutant Load (lb/yr)	25.87		
TP Pollutant Load (lb/yr)	4.53		
TSS Pollutant Load (lb/yr)	831		
Descent last a final Canada	260/		

Adjusted Subarea Data for the Summary Table for Sub-Areas Draining to a Common Point of Interest

Contributing Area (ac.) 5.16	
RPv Residual Volume (cu.ft.) 4315 SHORTFALL (Requires additional management or	offset)
Adjusted CN after all reductions 62.91	
Cv RCN for H&H Modeling 62.91	
Fv RCN for H&H Modeling 62.91	
TN Pollutant Load (lb/yr) 25.87	
TP Pollutant Load (lb/yr) 4.53	
TSS Pollutant Load (lb/yr) 831	

26%

	PROJECT		station							
	DRAINAGE SUBAREA ID LOCATION (County)									
	UNIT HYDROGRAPH									
CON	ITRIBUTING AREA RUNOFF CURVE NUMBER									
· · · · - · · ·	(C.A. RCN) WORKSHEE			Curv			Hydrolog	ic Soil		
over Type	Treatment	Hydrologic Condition	Acres	RCN	B Acres	RCN	C Acres	RCN	D Acres	RCI
ULTIVATED AG	GRICULTURAL LANDS	contraction				-				
allow	Bare soil			77		86		91		94
	Crop residue (CR) Crop residue (CR)	poor good		76 74		85 83		90 88		93 90
ow Crops	Straight row (SR)	poor		74		81		88		91
	Straight row (SR)	good		67		78		85		89
	SR + Crop residue	poor		71		80		87		90
	SR + Crop residue	good		64		75		82		85
	Contoured (C)	poor		70		79		84		88
	Contoured (C) C + Crop residue	good poor		65 69		75 78		82 83		86 87
	C + Crop residue	good		64		74		81		85
	Cont & terraced(C&T)	poor		66		74		80		82
	Cont & terraced(C&T)	good		62		71		78		81
	C&T + Crop residue	poor		65		73		79		81
nall Grain	C&T + Crop residue	good		61 65		70 76		77 84		80 88
nali Grain	Straight row (SR) Straight row (SR)	poor good		63		75		83		87
	SR + Crop residue	poor		64		75		83		86
	SR + Crop residue	good		60		72		80		84
	Contoured (C)	poor		63		74		82		85
	Contoured (C)	good		61		73		81		84
	C + Crop residue	poor		62 60		73		81 80		84
	C + Crop residue Cont & terraced(C&T)	good poor		60 61		72 72		80 79		83 82
	Cont & terraces(C&T)	good		59		70		78		81
	C&T + Crop residue	poor		60		71		78		81
	C&T + Crop residue	good		58		69		77		80
ose-seeded	Straight row	poor		66		77		85		89
broadcast	Straight row	good		58 64		72 75		81 83		85 85
gumes or tation	Contoured Contoured	poor good		55		69		78		83
eadow	Cont & terraced	poor		63		73		80		83
	Cont & terraced	good		51		67		76		80
THER AGRICU	ILTURAL LANDS		-		1		1		1	
	Pasture, grassland or range	poor		68		79		86		89
		fair		49 39		69 61		79 74		84 80
	Meadow -cont. grass (non grazed)	good 		30		58		74		78
	Brush - brush, weed, grass mix	poor		48		67		77		83
	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	fair		35		56		70		77
		good		30		48		65		73
	Woods - grass combination	poor		57		73		82		86
		fair		43		65		76		82
	Woods	good poor		32 45		58 66		72 77		79 83
	10003	fair		36		60		73		79
		good		30		55		70		77
	Farmsteads			59		74		82		86
	PED URBAN AREAS (Veg Established)									
pen space (Law										
peri space (Eav	Poor condition; grass cover < 50%			68		79		86		89
	Fair condition; grass cover 50% to 75 %			49		69		79		84
	Good condition; grass cover > 75%		0.11	39	0.91	61		74		80
pervious Areas			-				1			
	Paved parking lots, roofs, driveways			98	1.31	98		98		98
	Streets and roads			0.0		00		00		0.0
	Paved; curbs and storm sewers Paved; open ditches (w/right-of-way)			98 83		98 89		98 92		98 93
	Gravel (w/ right-of-way)			76		85		89		91
	Dirt (w/ right-of-way)			72		82		87		89
ban Districts		Avg % impervious								
	Commercial & business	85		89		92		94		95
	Industrial cts by average lot size	72 Avg % impervious		81		88		91		93
neidontial -!-+ '		AVU 70 IMDERVIOUS						90		92
esidential distric		•		77		85			1	
esidential distric	1/8 acre (town houses) 1/4 acre	65 38		77 61		85 75		83		87
esidential distric	1/8 acre (town houses)	65				85 75 72				
esidential distric	1/8 acre (town houses) 1/4 acre 1/3 acre 1/2 acre	65 38 30 25		61 57 54		75 72 70		83 81 80		87 86 85
esidential distric	1/8 acre (town houses) 1/4 acre 1/3 acre 1/2 acre 1 acre 1 acre	65 38 30 25 20		61 57 54 51		75 72 70 68		83 81 80 79		86 85 84
sidential distric	1/8 acre (town houses) 1/4 acre 1/3 acre 1/2 acre	65 38 30 25		61 57 54		75 72 70		83 81 80		86 85
	1/8 acre (town houses) 1/4 acre 1/3 acre 1/2 acre 1 acre 2 acre 2 acre	65 38 30 25 20		61 57 54 51		75 72 70 68		83 81 80 79		86 85 84
	1/8 acre (town houses) 1/4 acre 1/3 acre 1/2 acre 1 acre 1 acre	65 38 30 25 20		61 57 54 51		75 72 70 68		83 81 80 79		86 85 84
VELOPING U	1/8 acre (town houses) 1/4 acre 1/3 acre 1/2 acre 1 acre 2 acre RBAN AREA (No Vegetation)	65 38 30 25 20		61 57 54 51 46		75 72 70 68 65		83 81 80 79 77		86 85 84 82
VELOPING U	1/8 acre (town houses) 1/4 acre 1/3 acre 1/2 acre 1 acre 2 acre RBAN AREA (No Vegetation)	65 38 30 25 20		61 57 54 51 46		75 72 70 68 65		83 81 80 79 77		86 85 84 82
VELOPING U	1/8 acre (town houses) 1/4 acre 1/3 acre 1/2 acre 1 acre 2 acre RBAN AREA (No Vegetation)	65 38 30 25 20		61 57 54 51 46		75 72 70 68 65		83 81 80 79 77		86 85 84 82
VELOPING U	1/8 acre (town houses) 1/4 acre 1/3 acre 1/2 acre 1 acre 2 acre RBAN AREA (No Vegetation)	65 38 30 25 20		61 57 54 51 46		75 72 70 68 65		83 81 80 79 77		86 85 84 82
EVELOPING U	1/8 acre (town houses) 1/4 acre 1/3 acre 1/2 acre 1 acre 2 acre RBAN AREA (No Vegetation) Newly graded area (pervious only) Subarea Contributing Area per Soil Subarea Contributing Area (ac)	65 38 30 25 20 12 Type (ac) [2.33	0.11	61 57 54 51 46	2.22	75 72 70 68 65 86		83 81 80 79 77 91	0	86 85 84 82 94
EVELOPING U	1/8 acre (town houses) 1/4 acre 1/3 acre 1/2 acre 1 acre 2 acre RBAN AREA (No Vegetation) Newly graded area (pervious only)	65 38 30 25 20 12 Type (ac)	0.11	61 57 54 51 46	2.22	75 72 70 68 65 86		83 81 80 79 77 91		86 85 84 82 94
EVELOPING U SER DEFINED	1/8 acre (town houses) 1/4 acre 1/3 acre 1/2 acre 1 acre 2 acre RBAN AREA (No Vegetation) Newly graded area (pervious only) Subarea Contributing Area per Soil Subarea Contributing Area (ac)	65 38 30 25 20 12 Type (ac) [2.33	0.11	61 57 54 51 46	2.22	75 72 70 68 65 86	0	83 81 80 79 77 91		86 85 84 82 94
EVELOPING U SER DEFINED	1/8 acre (town houses) 1/4 acre 1/3 acre 1/2 acre 1 acre 2 acre RBAN AREA (No Vegetation) Newly graded area (pervious only) Subarea Contributing Area per Soil Subarea Contributing Area (ac) Subarea Weighted RCN	65 38 30 25 20 12 Type (ac) 2.33 81		61 57 54 51 46 77	2.22	75 72 70 68 65 86	0	83 81 80 79 77 91		86 85 84 82 94
EVELOPING U SER DEFINED		65 38 30 25 20 12 Type (ac) 2.33 81		61 57 54 51 46 77	2.22	75 72 70 68 65 86	0	83 81 80 79 77 91		86 85 84 82 94
EVELOPING U SER DEFINED		65 38 30 25 20 12 Type (ac) 2.33 81		61 57 54 51 46 77	2.22	75 72 70 68 65 86		83 81 80 79 77 91		86 85 84 82 94
VELOPING U ER DEFINED		65 38 30 25 20 12 Type (ac) 2.33 81		61 57 54 51 46 77	2.22	75 72 70 68 65 86	0	83 81 80 79 77 91		86 85 84 82 94
VELOPING U ER DEFINED		65 38 30 25 20 12 Type (ac) 2.33 81 Subarea ID	Acres	61 57 54 51 46 77 77 <i>RCN</i>		75 72 70 68 65 86		83 81 80 79 77 91		86 85 84 82 94
VELOPING U ER DEFINED		65 38 30 25 20 12 Type (ac) 2.33 81	Acres	61 57 54 51 46 77 77 <i>RCN</i>		75 72 70 68 65 86	0	83 81 80 79 77 91		86 85 84 82 94

PROJECT: DEC Cedar Grove Substation

DRAINAGE SUBAREA ID: LOCATION (County):

ty): 2A

UNIT HYDROGRAPH: DMV

LIMIT OF DISTURBANCE (LOD) WORKSHEET

Step 1 - Subarea LOD Data

- 1.1 HSG Area Within LOD (ac)
- 1.2 Pre-Developed Woods/Meadow Within LOD (ac)
- 1.3 Pre-Developed Impervious Within LOD (ac)
- 1.4.a Post-Developed Imperviousness Within LOD, Option #1 (ac); OR
- 1.4.b Post-Developed Imperviousness Within LOD, Option #2 (%)

Step 2 - Subarea LOD Runoff Calculations

- 2.1 RCN per HSG
- 2.2 RPv per HSG (in.)
- 2.3 Target RCN per HSG
- 2.4 Target Runoff per HSG (in.)

2.5 Subarea LOD (ac)

- 2.6 Subarea Weighted RCN
- 2.7 Subarea Weighted RPv (in.)
- 2.8 Subarea Weighted Target Runoff (in.)

Step 3 - Upstream LOD Areas (from previous DURMM Report as applicable)

- 3.1 Upstream Sub-Area ID
- 3.2 Upstream Contributing Area (ac)
- 3.3 Target Runoff for Upstream Area (in.)
- 3.4 Adjusted CN after all reductions
- 3.5 Adjusted RPv (in.)
- 3.6 Adjusted Cv (in.)
- 3.7 Adjusted Fv (in.)

Step 4 - RPv Calculations for Combined LOD

- 4.1 Combined LOD (ac)
- 4.2 Weighted RCN
- 4.3 Weighted RPv (in.)
- 4.4 Weighted Target Runoff (in.)
- 4.5 Estimated Annual Runoff (in.)
- 4.6 Req'd Runoff to be Managed within LOD (in.)
- 4.7 Req'd Runoff to be Managed within LOD (%)

HSG A	HSG B	HSG C	HSG D
0.11	2.22		
	1.31		
0%	59%	0%	0%

39.00	82.83	0.00	0.00
0.21	1.44	0.00	0.00
39.00	61.00	0.00	0.00
0.21	0.65	0.00	0.00

2.33
80.76
1.34
0.63

Area 1	Area 2	Area 3	Area 4

2.33	
80.76	
1.34	
0.63	
18.94	
0.71	
53%	

-	
PROJECT:	DEC Cedar Grove Substation
DRAINAGE SUBAREA ID:	2A
LOCATION (County):	Sussex
UNIT HYDROGRAPH:	DMV
OUTSIDE LIMIT OF DISTURBANCE	
(OLOD) WORKSHEET	

Step 1 - Site Data

1.1 Total Contributing Area (ac)	N/
1.2 C.A. RCN	N/
1.3 LOD Area (ac)	N/
1.4 LOD RCN	N/
1.5 Outside LOD Area (ac)	N/
1.6 Outside LOD RCN	N/

N/A	
N/A	

Step 2 - Time of Concentration	2.1	2.2	2.3	2.4	2.5	2.6
	LENGTH	SLOPE	SURFACE	MANNINGS	VELOCITY	TRAVEL
FLOW TYPE	(feet)	(ft./ft.)	CODE	"n"	(ft./sec.)	TIME (hrs)
Sheet					N/A	0.00
					N/A	0.00
					N/A	0.00
Shallow Concentrated				N/A		0.00
				N/A		0.00
				N/A		0.00
Open Channel			N/A			0.00
			N/A			0.00
			N/A			0.00
			N/A			0.00
			N/A			0.00
			2.	7 Time of Cor	centration (Tc)	0.10

Sheet Flow Surface Codes a smooth surface b fallow (no residue) c cultivated < 20% Res.

c cultivated < 20% Res. d cultivated > 20% Res. e grass - range, short

f grass, dense g grass, bermuda h woods, light i woods, dense j range, natural

Shallow Concentrated Surface Codes

u unpaved surface p paved surface

Step 3 - Peak Discharge

- 3.1 Unit Hydrograph Type
- 3.2 Frequency (yr)
- 3.3 24-HR Rainfall, P (in.)3.4 Initial Abstraction, Ia (in.)
- 3.5 la/P ratio
- 3.6 Unit Peak Discharge, qu (csm/in)
- 3.7 Runoff (in.)
- 3.8 Peak Discharge, qp (cfs)
- 3.9 Equiv. unit peak discharge (cfs/ac)

DMV								
10	100							
5.3	9.2							
#N/A	#N/A							
#N/A	#N/A							
#N/A	#N/A							
#VALUE!	#VALUE!							
#VALUE!	#VALUE!							
0.00	0.00							

PROJECT:	DEC Codar	Grove Substation								
DRAINAGE SUBAREA ID:	2A	GIOVE Substation								
LOCATION (County):	Sussex									
RESOURCE PROTECTION EVENT (RPv) WORKSHEET	Sussex									
RESOURCE PROTECTION EVENT (RPV) WORKSHEET									r –	
		BMP 1		BMP 2		BMP 3		BMP 4		BMP 5
	Type	1-B Infiltration Basin	Туре	-	Type	-	Type	-	Type	-
Step 1 - Calculate Initial RPv	Data									
 1.1 Total contributing area to BMP (ac) 	2.33									
1.2 Initial RCN	80.76									
1.3 RPv for Contributing Area (in.)	1.34									
1.4 Req'd RPv to be Managed for Contributing Area (in.)	0.71									
 1.5 Req'd RPv to be Managed for Contributing Area (%) 	53%									
Chan D. Addiest for Detection Deduction										
Step 2 - Adjust for Retention Reduction	44450								-	
2.1 Retention volume provided (cu. ft.) 2.2 Retention reduction allowance (%)	11456 100%		N/A		N/A		N/A		N/A	
2.2 Retention reduction allowance (%) 2.3 Retention reduction volume (ac-ft)	0.26		N/A N/A	-	N/A N/A		N/A N/A		N/A N/A	
	1.35		N/A N/A	-	N/A N/A		N/A N/A		N/A N/A	
2.4 Retention reduction volume (in.) 2.5 Runoff volume after retention reduction (in.)	0.00		N/A N/A	-	N/A N/A		N/A N/A		N/A N/A	
2.5 Adjusted CN*	15.63		N/A	-	N/A		N/A	-	N/A	
2.8 Adjusted CN	15.05		N/A		N/A		IN/A		N/A	
Step 3 - Adjust for Annual Runoff Reduction										
3.1 Annual CN (ACN)	80.76		N/A		N/A		N/A		N/A	
3.2 Annual runoff (in.)	18.94		N/A		N/A		N/A		N/A	
3.3 Proportion A/B soils in BMP footprint (%)	0%		0%		0%		0%		0%	
3.4 Annual runoff reduction allowance (%)	0%		N/A		N/A		N/A		N/A	
3.5 Annual runoff after reduction (in.)	18.94		N/A	1	N/A		N/A		N/A	
3.6 Adjusted ACN	80.76		N/A	1	N/A		N/A		N/A	
3.7 Annual Runoff Reduction Allowance for RPv (in.)	0.00		N/A		N/A		N/A		N/A	
Chan d. Caladata DDrawith DMD Dadattions										
Step 4 - Calculate RPv with BMP Reductions	11334		A1/A		N1/A		A1 / A		N1/A	
4.1 RPv Runoff Manangement Provided (cu. ft.)	0.00		N/A		N/A N/A		N/A N/A		N/A N/A	
 4.2 RPv runoff volume after all reductions (in.) 4.3 RPv runoff volume after all reductions (cu.ft.) 	0.00		N/A N/A		N/A N/A		N/A N/A		N/A N/A	
4.4 Total RPv runoff reduction (in.)	1.34		N/A N/A	-	N/A		N/A N/A	-	N/A N/A	
4.5 Total RPV runoff reduction (%)	1.54		N/A N/A	-	N/A		N/A	-	N/A	
4.5 Adjusted CN after all reductions*	15.63		N/A		N/A		N/A		N/A	
4.7 Adjusted equivalent annual runoff (in.)	0.06		N/A		N/A		N/A		N/A	
4.8 RPv Compliance Met Through Runoff Reduction?	YES		N/A		N/A		N/A		N/A	
4.9 Runoff Reduction Credit, if Applicable (cu.ft)	-5287.77		N/A		N/A		N/A		N/A	
· · · · · · · · · · · · · · · · · · ·			,				,			
Step 5 - Determine Residual Volume to be Managed or Offset										
5.1 RPv Residual Volume (in.)	N/A		N/A		N/A		N/A		N/A	
5.2 RPv Residual Volume (cu.ft./ac)	N/A		N/A		N/A		N/A		N/A	
5.3 Residual Volume to be Managed or Offset (cu.ft.)	N/A		N/A		N/A		N/A		N/A	
5.4 RPv avg. discharge rate for 48-hr detention (cfs)	N/A		N/A		N/A		N/A		N/A	
5.5 RPv max. discharge rate for 48-hr detention (cfs)	N/A		N/A		N/A		N/A		N/A	
*NOTE: No additional runoff reduction credit can be taken fo										

*NOTE: No additional runoff reduction credit can be taken for surface recharge practices once the "Adjusted CN after all reductions" (Step 4.6) reaches the equivalent CN for the native soil-cover condition of the BMP footprint itself (i.e. for Sheet Flow to Turf Filter Strip on B soils Step 4.6 cannot be below 61). If this occurs contact the DNREC – SSP for further guidance.

PROJECT	DEC Cedar Gr	ovo Substat	lon																	
DRAINAGE SUBAREA ID:		ove Substat	1011																	
TMDL WATERSHED:																				
TOTAL MAXIMUM DAILY LOAD (TMDL) WORKSHEET																				
TOTAL MAXIMUM DAILT LOAD (TMDL) WORKSHEET		BMF	1			PA	1P 2		l	DA	1P 3		l	BM	D A			BM	DE	
		Divir	. 1			Div	IF 2			Div	11-3			DIVI	F 4			DIV	- 3	
	Type:	1-B I	nfiltration Ba	sin	Type:				Type:		-		Type:		-		Type:			
Step 1 - Calculate Annual Runoff Volume	Data	TN	TP	TSS	Data	TN	TP	TSS	Data	TN	TP	TSS	Data	TN	TP	TSS	Data	TN	TP	TSS
1.1 Total contributing area to BMP (ac)	2.33																			
1.2 Initial RCN	81																			
1.3 Annual runoff volume (in.)	18.94																			
1.4 Annual runoff volume (liters)	4.54E+06																			
Step 2 - Calculate Annual Pollutant Load																				
2.1 EMC (mg/L)		2.80	0.49	90		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A
2.2 Load (mg/vr)		1.27E+07		4.08E+08		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A
2.3 Stormwater Load (lb/ac/yr)		12.02	2.10	386		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A
Step 3 - Adjust for Pollutant Reduction																				
3.1 BMP annual runoff reduction (%)	100%				N/A				N/A				N/A				N/A			
3.2 Adjusted annual runoff volume (in)	0.06				N/A				N/A				N/A				N/A			
3.3 Adjusted annual runoff volume (liters)	1.44E+04				N/A				N/A				N/A				N/A			
3.4 Adjusted load from annual reductions (lb/ac/yr)		0.04	0.01	1.23		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A
3.5 BMP removal efficiency (%)		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A
3.6 BMP effluent concentration (mg/L)		2.80	0.49	90.00		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A
3.7 Final Adjusted load (lb/ac/yr)		0.04	0.01	1		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A
Step 4 - Pollutant Reduction Met? (For Informational Purposes)																				
4.1 TMDL (lb/ac/yr)		5.70	0.23	N/A																
4.2 Reduction met?		YES	YES	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A
4.3 Final Adjusted Load (lb/yr)		0.09	0.02	3		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A
4.5 (mai riajasca cosa (ib/yi)		0.09	0.02	2			/A	/A		/A				/A	/A				/A	

PROJECT:	DEC Cedar Grove Substation			
DRAINAGE SUBAREA ID:	2A			
COUNTY:	Sussex	UNIT HY	DROGRAPH:	DMV
TMDL Watershed:	Rehoboth Bay	VERSION:	DURMM	v2.51.210802
DURMM OUTPUT WORKSHEET				

2.33

Site Data Contributing Area to BMPs (ac.) C.A. RCN Subarea LOD (ac.) Subarea RCN Upstream Subarea ID Upstream Subarea LOD (ac.) Combined LOD with Upstream Areas (ac.) Combined RCN with Upstream Areas (ac.)

Watershed TMDL-TN (lb/ac/yr) Watershed TMDL-TP (lb/ac/yr) Watershed TMDL-TSS (lb/ac/yr)

80.76			
2.33			
80.76			
N/A	N/A	N/A	N/A
0.00	0.00	0.00	0.00
2.33			
80.76			
5.70			
0.23			
N/A			

 BMP 1
 BMP 2
 BMP 3
 BMP 4
 BMP 5

BMP Data

	1-B Infiltration Basin				
RPv runoff volume after all reductions (in.)	0.00	N/A	N/A	N/A	N/A
Total RPv runoff reduction (in.)	1.34	N/A	N/A	N/A	N/A
Total RPv runoff reduction (%)	100%	N/A	N/A	N/A	N/A
RPv Compliance Met Through Runoff Reduction?	YES	N/A	N/A	N/A	N/A
RPv Residual Volume (cu. ft.)	N/A	N/A	N/A	N/A	N/A
Adjusted pollutant load, TN (lb/ac/yr)	0.04	N/A	N/A	N/A	N/A
Adjusted pollutant load, TP (lb/ac/yr)	0.01	N/A	N/A	N/A	N/A
Adjusted pollutant load, TSS (lb/ac/yr)	1.23	N/A	N/A	N/A	N/A
Cv runoff volume after all reductions (in.)	1.87	N/A	N/A	N/A	N/A
Fv runoff volume after all reductions (in.)	5.50	N/A	N/A	N/A	N/A

Resource Protection Event (RPV)

Resource Protection Event (RPV)		
RPv for Contributing Area (in.)	1.34	
Annual Runoff for Contributing Area (in.)	18.94	
Req'd RPv to be Managed for Contributing Area (in.)	0.71	
Req'd RPv to be Managed for Contributing Area (%)	53%	
RPv Runoff Management Required (cu. Ft.)	6046	
RPv Runoff Management Provided (cu. Ft.)	11334	
RPv Residual Volume (cu.ft.)	-5288	CREDIT
C.A. RPv avg. discharge rate (cfs)	0.00	
C.A. RPv max. discharge rate (cfs)	0.00	
TN Pollutant Load (lb/yr)	0.09	
TP Pollutant Load (lb/yr)	0.02	
TSS Pollutant Load (lb/yr)	3	
Conveyance Event (Cv)		
Cv runoff volume (in.)	3.23	
Adjusted RCN for H&H Modeling (CN*)	65.24	
Adjusted New Ior High Modeling (CNV)	05.24	
Flooding Event (Fv)		
Fv runoff volume (in.)	6.85	
Equivalent RCN for H&H Modeling (CN*)	69.89	
Adjusted Subarea Data for Downstream DURMM Modeling		
Subarea ID	2A	
Contributing Area (ac.)	2.33	
Weighted Target Runoff (in.)	0.63	
Adjusted CN after all reductions	15.63	
Adjusted RPv (in.)	0.00	
Adjusted Cv (in.)	1.87	
Adjusted Cv (in.) Adjusted Fv (in.)	1.87 5.50	
Adjusted Fv (in.)	-	
Adjusted Fv (in.) Adjusted Subarea Data for Nutrient Protocol Modeling	5.50	
Adjusted Fv (in.) Adjusted Subarea Data for Nutrient Protocol Modeling Contributing Area (ac.)	2.33	
Adjusted Fv (in.) Adjusted Subarea Data for Nutrient Protocol Modeling Contributing Area (ac.) LOD Area (ac.)	2.33 2.33	
Adjusted Fv (in.) Adjusted Subarea Data for Nutrient Protocol Modeling Contributing Area (ac.) LOD Area (ac.) TN Pollutant Load (lb/yr)	2.33 2.33 0.09	
Adjusted Fv (in.) Adjusted Subarea Data for Nutrient Protocol Modeling Contributing Area (ac.) LOD Area (ac.) TN Pollutant Load (lb/yr) TP Pollutant Load (lb/yr)	2.33 2.33 0.09 0.02	
Adjusted Fv (in.) Adjusted Subarea Data for Nutrient Protocol Modeling Contributing Area (ac.) LOD Area (ac.) TN Pollutant Load (lb/yr) TP Pollutant Load (lb/yr) TSS Pollutant Load (lb/yr)	5.50 2.33 2.33 0.09 0.02 3	
Adjusted Fv (in.) Adjusted Subarea Data for Nutrient Protocol Modeling Contributing Area (ac.) LOD Area (ac.) TN Pollutant Load (lb/yr) TP Pollutant Load (lb/yr)	2.33 2.33 0.09 0.02	
Adjusted Fv (in.) Adjusted Subarea Data for Nutrient Protocol Modeling Contributing Area (ac.) LOD Area (ac.) TN Pollutant Load (lb/yr) TP Pollutant Load (lb/yr) TSS Pollutant Load (lb/yr)	5.50 2.33 2.33 0.09 0.02 3 56%	Common Point of Interest
Adjusted Fv (in.) Adjusted Subarea Data for Nutrient Protocol Modeling Contributing Area (ac.) LOD Area (ac.) TN Pollutant Load (lb/yr) TP Pollutant Load (lb/yr) TSS Pollutant Load (lb/yr) Percent Impervious Cover	5.50 2.33 2.33 0.09 0.02 3 56%	Common Point of Interest
Adjusted Fv (in.) Adjusted Subarea Data for Nutrient Protocol Modeling Contributing Area (ac.) LOD Area (ac.) TN Pollutant Load (lb/yr) TP Pollutant Load (lb/yr) TSS Pollutant Load (lb/yr) Percent Impervious Cover Adjusted Subarea Data for the Summary Table for Sub-Area Subarea ID	5.50 2.33 2.33 0.09 0.02 3 56% s Draining to a C 2A	Common Point of Interest
Adjusted Fv (in.) Adjusted Subarea Data for Nutrient Protocol Modeling Contributing Area (ac.) LOD Area (ac.) TN Pollutant Load (lb/yr) TP Pollutant Load (lb/yr) TS Pollutant Load (lb/yr) Percent Impervious Cover Adjusted Subarea Data for the Summary Table for Sub-Area	5.50 2.33 2.33 0.09 0.02 3 56% s Draining to a	Common Point of Interest

Contributing Area (ac.)	2.33	1
RPv Residual Volume (cu.ft.)	-5288	CREDIT
Adjusted CN after all reductions	15.63	1
Cv RCN for H&H Modeling	65.24	
Fv RCN for H&H Modeling	69.89	
TN Pollutant Load (lb/yr)	0.09	
TP Pollutant Load (lb/yr)	0.02	
TSS Pollutant Load (lb/yr)	3	

	PROJECT	DEC Cedar Grove Sub	station							
	DRAINAGE SUBAREA ID	2B			_				_	
	LOCATION (County) UNIT HYDROGRAPH									
CON	TRIBUTING AREA RUNOFF CURVE NUMBER									
	(C.A. RCN) WORKSHEET					ers for	Hydrolog	ic Soil		
Cover Type	Treatment	Hydrologic Condition	Acres	RCN	Acres	RCN	C Acres	RCN	D Acres	RCN
	GRICULTURAL LANDS	contraction								
Fallow	Bare soil Crop residue (CR)		-	77 76		86 85		91 90		94 93
	Crop residue (CR)	poor good		76		83		88		90
Row Crops	Straight row (SR)	poor	-	72		81		88		91
	Straight row (SR) SR + Crop residue	good	-	67 71		78 80		85 87		89 90
	SR + Crop residue	poor aood		64		75		82		85
	Contoured (C)	poor		70		79		84		88
	Contoured (C)	good		65		75		82		86
	C + Crop residue C + Crop residue	poor good	-	69 64		78 74		83 81		87 85
	Cont & terraced(C&T)	poor	-	66		74		80		82
	Cont & terraced(C&T)	good		62		71		78		81
	C&T + Crop residue C&T + Crop residue	poor good		65 61		73 70		79 77		81 80
Small Grain	Straight row (SR)	poor		65		76		84		88
	Straight row (SR)	good		63		75		83		87
	SR + Crop residue	poor	-	64		75		83		86
	SR + Crop residue Contoured (C)	good poor		60 63		72 74		80 82		84 85
	Contoured (C)	good		61		73		81		84
	C + Crop residue	poor		62		73		81		84
	C + Crop residue Cont & terraced(C&T)	good poor		60 61		72 72		80 79		83 82
	Cont & terraces(C&T)	good		59		70		78		81
	C&T + Crop residue	poor		60		71		78		81
Close-seeded	C&T + Crop residue Straight row	good poor		58 66		69 77		77 85		80 89
or broadcast	Straight row	good		58		72		81		85
legumes or	Contoured	poor		64		75		83		85
rotation meadow	Contoured Cont & terraced	good poor		55 63		69 73		78 80		83 83
meadow	Cont & terraced	good		51		67		76		80
OTHER AGRICU						70				
	Pasture, grassland or range	poor fair		68 49		79 69		86 79		89 84
		good	-	39		61		74		80
	Meadow -cont. grass (non grazed)			30		58		71		78
	Brush - brush, weed, grass mix	poor fair		48 35		67 56		77 70		83 77
		good	-	30		48		65		73
	Woods - grass combination	poor		57		73		82		86
		fair	-	43		65		76		82
	Woods	good poor	-	32 45		58 66		72 77		79 83
		fair		36		60		73		79
		good	0.54	30		55		70		77
	Farmsteads			59		74		82		86
FULLY DEVELO	PED URBAN AREAS (Veg Established)									
Open space (Law						70				
	Poor condition; grass cover < 50% Fair condition; grass cover 50% to 75 %		-	68 49		79 69		86 79		89 84
	Good condition; grass cover > 75%		0.77	39	0.67	61		74		80
Impervious Areas										
	Paved parking lots, roofs, driveways			98		98		98		98
	Streets and roads Paved; curbs and storm sewers			98		98		98		98
	Paved; open ditches (w/right-of-way)			83		89		92		93
	Gravel (w/ right-of-way)			76		85		89 87		91 90
Urban Districts	Dirt (w/ right-of-way)	Avg % impervious		72		82		87		89
	Commercial & business	85		89		92		94		95
	Industrial	72		81		88		91		93
Residential distric	ts by average lot size 1/8 acre (town houses)	Avg % impervious 65		77		85		90		92
	1/8 acre (town houses) 1/4 acre	38		61		75		83		92 87
	1/3 acre	30		57		72		81		86
	1/2 acre	25		54 51		70		80		85
	1 acre 2 acre	20 12		51 46		68 65		79 77		84 82
DEVELOPING U	RBAN AREA (No Vegetation)			77		0.0		64		0.1
	Newly graded area (pervious only)			77		86		91		94
USER DEFINED										
	Subarea Contributing Area per Soil	Type (ac)	1.31	1	0.67	1	0	1	0	1
	Subarea Contributing Area per Soli	1.98	1.31	-	0.07	1	0	1	U	1
	Subarea Weighted RCN	44								
	TRIBUTING AREAS	Subarea ID	Acres	RCN						
	Upstream Contributing Area 1		10/63							
	Upstream Contributing Area 2									
	Upstream Contributing Area 3									
	Upstream Contributing Area 4				l					
		Total Contributing	Area w. I	Jpstrea	am Areas	s (ac)	1.98	1		
						()				
		Weighted R	unoff Cu	rve Nu	mber (R	CN)	44			

PROJECT: DEC Cedar Grove Substation

DRAINAGE SUBAREA ID: 2B

LOCATION (County): Sussex

UNIT HYDROGRAPH: DMV

LIMIT OF DISTURBANCE (LOD) WORKSHEET

Step 1 - Subarea LOD Data

- 1.1 HSG Area Within LOD (ac)
- 1.2 Pre-Developed Woods/Meadow Within LOD (ac)
- 1.3 Pre-Developed Impervious Within LOD (ac)
- 1.4.a Post-Developed Imperviousness Within LOD, Option #1 (ac); OR
- 1.4.b Post-Developed Imperviousness Within LOD, Option #2 (%)

Step 2 - Subarea LOD Runoff Calculations

- 2.1 RCN per HSG
- 2.2 RPv per HSG (in.)
- 2.3 Target RCN per HSG
- 2.4 Target Runoff per HSG (in.)
- 2.5 Subarea LOD (ac)
- 2.6 Subarea Weighted RCN
- 2.7 Subarea Weighted RPv (in.)
- 2.8 Subarea Weighted Target Runoff (in.)

Step 3 - Upstream LOD Areas (from previous DURMM Report as applicable)

- 3.1 Upstream Sub-Area ID
- 3.2 Upstream Contributing Area (ac)
- 3.3 Target Runoff for Upstream Area (in.)
- 3.4 Adjusted CN after all reductions
- 3.5 Adjusted RPv (in.)
- 3.6 Adjusted Cv (in.)
- 3.7 Adjusted Fv (in.)

Step 4 - RPv Calculations for Combined LOD

- 4.1 Combined LOD (ac)
- 4.2 Weighted RCN
- 4.3 Weighted RPv (in.)
- 4.4 Weighted Target Runoff (in.)
- 4.5 Estimated Annual Runoff (in.)
- 4.6 Req'd Runoff to be Managed within LOD (in.)
- 4.7 Req'd Runoff to be Managed within LOD (%)

HSG A	HSG B	HSG C	HSG D
1.31	0.67		
	0.12		
	0		
0%	0%	0%	0%

39.00	61.00	0.00	0.00
0.21	0.65	0.00	0.00
39.00	66.63	0.00	0.00
0.21	0.80	0.00	0.00

1.98
46.44
0.33
0.41

Area 1	Area 2	Area 3	Area 4

1.98
46.44
0.33
0.41
2.73
-0.08
-25%

-	
PROJECT:	DEC Cedar Grove Substation
DRAINAGE SUBAREA ID:	2B
LOCATION (County):	Sussex
UNIT HYDROGRAPH:	DMV
OUTSIDE LIMIT OF DISTURBANCE	
(OLOD) WORKSHEET	

Step 1 - Site Data

1.1 Total Contributing Area (ac)	N/
1.2 C.A. RCN	N/
1.3 LOD Area (ac)	N/
1.4 LOD RCN	N/
1.5 Outside LOD Area (ac)	N/
1.6 Outside LOD RCN	N/
	1.2 C.A. RCN 1.3 LOD Area (ac) 1.4 LOD RCN 1.5 Outside LOD Area (ac)

N/A	
N/A	

Step 2 - Time of Concentration	2.1	2.2	2.3	2.4	2.5	2.6
	LENGTH	SLOPE	SURFACE	MANNINGS	VELOCITY	TRAVEL
FLOW TYPE	(feet)	(ft./ft.)	CODE	"n"	(ft./sec.)	TIME (hrs)
Sheet					N/A	0.00
					N/A	0.00
					N/A	0.00
Shallow Concentrated				N/A		0.00
				N/A		0.00
				N/A		0.00
Open Channel			N/A			0.00
			N/A			0.00
			N/A			0.00
			N/A			0.00
			N/A			0.00
			2.	7 Time of Cor	centration (Tc)	0.10

Sheet Flow Surface Codes a smooth surface b fallow (no residue) c cultivated < 20% Res.

c cultivated < 20% Res. d cultivated > 20% Res. e grass - range, short

f grass, dense g grass, bermuda h woods, light i woods, dense j range, natural

Shallow Concentrated Surface Codes

u unpaved surface p paved surface

Step 3 - Peak Discharge

- 3.1 Unit Hydrograph Type
- 3.2 Frequency (yr)
- 3.3 24-HR Rainfall, P (in.)3.4 Initial Abstraction, Ia (in.)
- 3.5 la/P ratio
- 3.6 Unit Peak Discharge, qu (csm/in)
- 3.7 Runoff (in.)
- 3.8 Peak Discharge, qp (cfs)
- 3.9 Equiv. unit peak discharge (cfs/ac)

DMV								
10	100							
5.3	9.2							
#N/A	#N/A							
#N/A	#N/A							
#N/A	#N/A							
#VALUE!	#VALUE!							
#VALUE!	#VALUE!							
0.00	0.00							

PROJECT:	DEC Codar	Grove Substation									
DRAINAGE SUBAREA ID:	28										
LOCATION (County):											
RESOURCE PROTECTION EVENT (RPv) WORKSHEET	Sussex										
RESOURCE PROTECTION EVENT (RPV) WORKSHEET									r	1	
		BMP 1		BMP 2		BMP 3		BMP 4		BMP 5	
	Type	0-No BMP	Туре	-	Type		Type		Type	-	
Step 1 - Calculate Initial RPv	Data										
 1.1 Total contributing area to BMP (ac) 	1.98										
1.2 Initial RCN	46.44										
 1.3 RPv for Contributing Area (in.) 	0.33										
1.4 Req'd RPv to be Managed for Contributing Area (in.)	-0.08										
1.5 Req'd RPv to be Managed for Contributing Area (%)	-25%										
Step 2 - Adjust for Retention Reduction											
2.1 Retention volume provided (cu. ft.)											
2.2 Retention reduction allowance (%)	0%		N/A		N/A		N/A		N/A		
2.3 Retention reduction volume (ac-ft)	0.00		N/A		N/A		N/A		N/A		
2.4 Retention reduction volume (in.)	0.00		N/A		N/A		N/A		N/A		
2.5 Runoff volume after retention reduction (in.)	0.33		N/A		N/A		N/A		N/A		
2.6 Adjusted CN*	46.43		N/A		N/A		N/A		N/A		
Step 3 - Adjust for Annual Runoff Reduction											
3.1 Annual CN (ACN)	46.44		N/A		N/A		N/A		N/A		
3.2 Annual runoff (in.)	2.73		N/A		N/A		N/A		N/A		
3.3 Proportion A/B soils in BMP footprint (%)	0%		0%		0%		0%		0%		
3.4 Annual runoff reduction allowance (%)	0%		N/A		N/A		N/A		N/A		
3.5 Annual runoff after reduction (in.)	2.73		N/A		N/A		N/A		N/A		
3.6 Adjusted ACN	46.44		N/A		N/A		N/A		N/A		
3.7 Annual Runoff Reduction Allowance for RPv (in.)	0.00		N/A		N/A		N/A		N/A		
Step 4 - Calculate RPv with BMP Reductions											
4.1 RPv Runoff Manangement Provided (cu. ft.)	0		N/A		N/A		N/A		N/A		
4.2 RPv runoff volume after all reductions (in.)	0.33		N/A		N/A		N/A		N/A		
4.3 RPv runoff volume after all reductions (cu.ft.)	2,372		N/A		N/A		N/A		N/A		
4.4 Total RPv runoff reduction (in.)	0.00		N/A	1	N/A		N/A		N/A		
4.5 Total RPv runoff reduction (%)	0%		N/A	1	N/A		N/A		N/A		
4.6 Adjusted CN after all reductions*	46.43		N/A		N/A		N/A		N/A		
4.7 Adjusted equivalent annual runoff (in.)	2.73		N/A		N/A		N/A		N/A		
4.8 RPv Compliance Met Through Runoff Reduction?	YES		N/A		N/A		N/A		N/A		
4.9 Runoff Reduction Credit, if Applicable (cu.ft)	-581.42		N/A	Ī	N/A		N/A		N/A		
Step 5 - Determine Residual Volume to be Managed or Offset											
5.1 RPv Residual Volume (in.)	N/A		N/A		N/A		N/A		N/A		
5.2 RPv Residual Volume (m.)	N/A N/A		N/A		N/A		N/A		N/A N/A		
5.3 Residual Volume to be Managed or Offset (cu.ft.)	N/A		N/A		N/A		N/A		N/A		
5.4 RPv avg. discharge rate for 48-hr detention (cfs)	N/A		N/A		N/A		N/A		N/A N/A		
5.5 RPv max. discharge rate for 48-hr detention (cfs)	N/A N/A		N/A		N/A		N/A		N/A		
ene in a menu discharge rate for 40 in determini (bla)											
*NOTE: No additional runoff reduction credit can be taken fo	r surface re	harge practices once	the "Adjust	ad CN after all reductio	ns" (Ston A	6) reaches the equival	ent CN for t	he native soil-cover co	ndition of th	NO BMD	

*NOTE: No additional runoff reduction credit can be taken for surface recharge practices once the "Adjusted CN after all reductions" (Step 4.6) reaches the equivalent CN for the native soil-cover condition of the BMP footprint itself (i.e. for Sheet Flow to Turf Filter Strip on B soils Step 4.6 cannot be below 61). If this occurs contact the DNREC – SSP for further guidance.

	DEC Cedar Gr	ove Substat	ion																	
DRAINAGE SUBAREA ID:																				
TMDL WATERSHED:		/																		
TOTAL MAXIMUM DAILY LOAD (TMDL) WORKSHEET																				
		BMI	1		BMP 2			BMP 3			BMP 4				BMP 5					
	Type:		0-No BMP		Type:				Type:		-		Type:		-		Type:		-	
Step 1 - Calculate Annual Runoff Volume	Data	TN	TP	TSS	Data	TN	TP	TSS	Data	TN	TP	TSS	Data	TN	TP	TSS	Data	TN	TP	TSS
1.1 Total contributing area to BMP (ac)	1.98																			
1.2 Initial RCN	46	1																		
1.3 Annual runoff volume (in.)	2.73	1																		
1.4 Annual runoff volume (liters)	5.56E+05	1																		
Step 2 - Calculate Annual Pollutant Load																				
		0.00	0.40	0.0																
2.1 EMC (mg/L)		2.80 1.56E+06	0.49	90 5.00E+07		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A
2.2 Load (mg/yr) 2.3 Stormwater Load (lb/ac/yr)			2.72E+05 0.30			N/A N/A	N/A	N/A		N/A N/A	N/A	N/A N/A		N/A	N/A	N/A		N/A	N/A	N/A
2.5 Stormwater Load (Ib/ac/yr)		1.73	0.30	56		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A
Step 3 - Adjust for Pollutant Reduction																				
3.1 BMP annual runoff reduction (%)	0%				N/A				N/A				N/A				N/A			
3.2 Adjusted annual runoff volume (in)	2.73				N/A	ſ			N/A				N/A				N/A			
3.3 Adjusted annual runoff volume (liters)	5.55E+05				N/A	ſ			N/A				N/A				N/A			
3.4 Adjusted load from annual reductions (lb/ac/yr)		1.73	0.30	55.66		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A
3.5 BMP removal efficiency (%)		0%	0%	0%		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A
3.6 BMP effluent concentration (mg/L)		2.80	0.49	90.00		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A
3.7 Final Adjusted load (lb/ac/yr)		1.73	0.30	56		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A
Step 4 - Pollutant Reduction Met? (For Informational Purposes)																				
4.1 TMDL (lb/ac/yr)		5.70	0.23	N/A																
4.2 Reduction met?		YES	NO	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A	[N/A	N/A	N/A
4.3 Final Adjusted Load (lb/vr)		3.43	0.60	110		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A
							, ,							· · · · ·				<i>(</i> **	/**	

PROJECT:	DEC Cedar Grove Substation						
DRAINAGE SUBAREA ID:	2B						
COUNTY:	Sussex UNIT HYDROGRAPH: DMV						
TMDL Watershed:	Rehoboth Bay	VERSION:	DURMM	v2.51.210802			
DURMM OUTPUT WORKSHEET							

Site Data

Contributing Area to BMPs (ac.)	1.98			
C.A. RCN	43.99			
Subarea LOD (ac.)	1.98			
Subarea RCN	46.44			
Upstream Subarea ID	N/A	N/A	N/A	N/A
Upstream Subarea LOD (ac.)	0.00	0.00	0.00	0.00
Combined LOD with Upstream Areas (ac.)	1.98			
Combined RCN with Upstream Areas (ac.)	46.44			
Watershed TMDL-TN (lb/ac/yr)	5.70			
Watershed TMDL-TP (lb/ac/yr)	0.23			
Watershed TMDL-TSS (lb/ac/yr)	N/A			

BMP Data

P Data	BMP 1	BMP 2	BMP 3	BMP 4	BMP 5
	0-No BMP				
RPv runoff volume after all reductions (in.)	0.33	N/A	N/A	N/A	N/A
Total RPv runoff reduction (in.)	0.00	N/A	N/A	N/A	N/A
Total RPv runoff reduction (%)	0%	N/A	N/A	N/A	N/A
RPv Compliance Met Through Runoff Reduction?	YES	N/A	N/A	N/A	N/A
RPv Residual Volume (cu. ft.)	N/A	N/A	N/A	N/A	N/A
Adjusted pollutant load, TN (lb/ac/yr)	1.73	N/A	N/A	N/A	N/A
Adjusted pollutant load, TP (lb/ac/yr)	0.30	N/A	N/A	N/A	N/A
Adjusted pollutant load, TSS (lb/ac/yr)	55.66	N/A	N/A	N/A	N/A
Cv runoff volume after all reductions (in.)	0.62	N/A	N/A	N/A	N/A
Fv runoff volume after all reductions (in.)	2.58	N/A	N/A	N/A	N/A

Resource Protection Event (RPV)

Resource Frotection Event (RFV)		
RPv for Contributing Area (in.)	0.33	
Annual Runoff for Contributing Area (in.)	2.73	
Req'd RPv to be Managed for Contributing Area (in.)	-0.08	
Req'd RPv to be Managed for Contributing Area (%)	-25%	
RPv Runoff Management Required (cu. Ft.)	-581	
RPv Runoff Management Provided (cu. Ft.)	0	
RPv Residual Volume (cu.ft.)	-581	CREDIT
C.A. RPv avg. discharge rate (cfs)	0.00	
C.A. RPv max. discharge rate (cfs)	0.00	
TN Pollutant Load (lb/yr)	3.43	
TP Pollutant Load (lb/yr)	0.60	
TSS Pollutant Load (lb/yr)	110	
Conveyance Event (Cv)		
Cv runoff volume (in.)	0.62	
Adjusted RCN for H&H Modeling (CN*)	46.44	
Flooding Event (Fv)		
Fv runoff volume (in.)	2.58	
Equivalent RCN for H&H Modeling (CN*)	46.44	
Adjusted Subaran Data for Devicetore DUDAMA Medaline		
Adjusted Subarea Data for Downstream DURMM Modeling Subarea ID	2B	1
Contributing Area (ac.) Weighted Target Runoff (in.)	1.98 0.41	
Adjusted CN after all reductions	46.43	
Adjusted RPv (in.)	0.33	
Adjusted Cv (in.)	0.55	
Adjusted Ev (iii.)	2.58	
Aujusted PV (III.)	2.36	
Adjusted Subarea Data for Nutrient Protocol Modeling		
Contributing Area (ac.)	1.98	
LOD Area (ac.)	1.98	
TN Pollutant Load (lb/yr)	3.43	
TP Pollutant Load (lb/yr)	0.60	
TSS Pollutant Load (lb/yr)	110	
Percent Impervious Cover	0%	
Adjusted Subarea Data for the Summary Table for Sub-Area	s Draining to a	Common Poir
Subarea ID	2B	
Contributing Area (ac.)	1.98	
RPv Residual Volume (cu.ft.)	-581	CREDIT
Adjusted CN after all reductions	46.43	

	0.62
	46.44
	2.58
	46.44
MM Modeling	

Point of Interest

Subarea ID	2B	
Contributing Area (ac.)	1.98	
RPv Residual Volume (cu.ft.)	-581	CREDIT
Adjusted CN after all reductions	46.43	
Cv RCN for H&H Modeling	46.44	
Fv RCN for H&H Modeling	46.44	
TN Pollutant Load (lb/yr)	3.43	
TP Pollutant Load (lb/yr)	0.60	
TSS Pollutant Load (lb/yr)	110	

	PROJECT	DEC Cedar Grove Sub	station					
	DRAINAGE SUBAREA ID	3	Station					
	LOCATION (County) UNIT HYDROGRAPH:							
CON	TRIBUTING AREA RUNOFF CURVE NUMBER							
	(C.A. RCN) WORKSHEET			Curv	e Numbers for			
Cover Type	Treatment	Hydrologic Condition	Acres	RCN	B Acres RCN	C Acres RC	D N Acres	RCN
	RICULTURAL LANDS							
allow	Bare soil Crop residue (CR)			77 76	86	91		94 93
	Crop residue (CR)	poor good		74	83	88		90
low Crops	Straight row (SR)	poor	-	72	81	88		91
	Straight row (SR)	good		67	78	85		89
	SR + Crop residue SR + Crop residue	poor good		71 64	80 75	87		90 85
	Contoured (C)	poor		70	79	84		88
	Contoured (C)	good		65	75	82		86
	C + Crop residue	poor		69	78	83		87
	C + Crop residue Cont & terraced(C&T)	good poor		64 66	74	81		85 82
	Cont & terraced(C&T)	good		62	71	78		81
	C&T + Crop residue	poor		65	73	79		81
	C&T + Crop residue	good		61 65	70	77		80
mall Grain	Straight row (SR) Straight row (SR)	poor good		63	76	84		88 87
	SR + Crop residue	poor	-	64	75	83		86
	SR + Crop residue	good		60	72	80		84
	Contoured (C) Contoured (C)	poor	-	63	74	82		85
	Contoured (C) C + Crop residue	good poor		61 62	73	81		84 84
	C + Crop residue	good		60	72	80)	83
	Cont & terraced(C&T)	poor		61	72	79		82
	Cont & terraces(C&T) C&T + Crop residue	good		59 60	70	78		81 81
	C&I + Crop residue C&T + Crop residue	poor good		58	69	78		81 80
lose-seeded	Straight row	poor		66	77	85	5	89
r broadcast	Straight row	good		58	72	81		85
gumes or otation	Contoured Contoured	poor		64 55	75 69	83		85 83
eadow	Cont & terraced	good poor		63	73	80		83
	Cont & terraced	good	-	51	67	76		80
THER AGRICUI	LTURAL LANDS Pasture, grassland or range	poor		68	79	86		89
	Pasture, grassianu or range	fair		49	69	79		84
		good		39	61	74		80
	Meadow -cont. grass (non grazed)			30	58	71		78
	Brush - brush, weed, grass mix	poor		48	67	77		83
		fair good		35 30	56 48	70		77 73
	Woods - grass combination	poor		57	73	82		86
	Ŭ	fair		43	65	76		82
	Woods	good		32 45	58	72		79
	woods	poor fair	-	45 36	66 60	73		83 79
		good	0.26	30	55	70		77
	Farmsteads			59	74	82	2	86
ULLY DEVELOP	PED URBAN AREAS (Veg Established)							
pen space (Law								
	Poor condition; grass cover < 50%			68	79	86		89
	Fair condition; grass cover 50% to 75 %		0.02	49	69	79		84
npervious Areas	Good condition; grass cover > 75%		0.02	39	61	74	,	80
10000711000	Paved parking lots, roofs, driveways			98	98	98	3	98
	Streets and roads							
	Paved; curbs and storm sewers			98	98	98		98
	Paved; open ditches (w/right-of-way) Gravel (w/ right-of-way)			83 76	89 85	92		93 91
	Dirt (w/ right-of-way)			70	82	87		89
rban Districts		Avg % impervious						
	Commercial & business	85		89	92	94		95
esidential dietric	Industrial ts by average lot size	72 Avg % impervious		81	88	91		93
ooluoniidi uladiiG	1/8 acre (town houses)	65		77	85	90)	92
	1/4 acre	38		61	75	83	3	87
	1/3 acre	30		57	72	81		86
	1/2 acre 1 acre	25 20		54 51	70 68	80		85 84
	2 acre	12		46	65	73		82
EVELOPING UF	RBAN AREA (No Vegetation)		_	77	00			04
	Newly graded area (pervious only)			77	86	91		94
SER DEFINED								
	Subarea Contributing Area per Soil	Type (ac)	0.00	1	0	0		1
	Subarea Contributing Area per Soli Subarea Contributing Area (ac)	0.28	0.28	1	U	U	0	Ч
	Subarea Weighted RCN	31						
	-							
PSTREAM CON		Subarea ID	Acres	RCN	1			
	Upstream Contributing Area 1 Upstream Contributing Area 2							
	Upstream Contributing Area 3							
	Upstream Contributing Area 4							
		Total Contributing	Area w. L	pstrea	am Areas (ac)	0.28		
		14/	unc# o		mbor (DOM	24		
		weighted R	unon cur	ve NU	mber (RCN)	31		

PROJECT: DEC Cedar Grove Substation

DRAINAGE SUBAREA ID:

LOCATION (County): Sussex

UNIT HYDROGRAPH: DMV

3

LIMIT OF DISTURBANCE (LOD) WORKSHEET

Step 1 - Subarea LOD Data

- 1.1 HSG Area Within LOD (ac)
- 1.2 Pre-Developed Woods/Meadow Within LOD (ac)

1.3 Pre-Developed Impervious Within LOD (ac)

- 1.4.a Post-Developed Imperviousness Within LOD, Option #1 (ac); OR
- 1.4.b Post-Developed Imperviousness Within LOD, Option #2 (%)

Step 2 - Subarea LOD Runoff Calculations

- 2.1 RCN per HSG
- 2.2 RPv per HSG (in.)
- 2.3 Target RCN per HSG
- 2.4 Target Runoff per HSG (in.)

2.5 Subarea LOD (ac)

- 2.6 Subarea Weighted RCN
- 2.7 Subarea Weighted RPv (in.)
- 2.8 Subarea Weighted Target Runoff (in.)

Step 3 - Upstream LOD Areas (from previous DURMM Report as applicable)

- 3.1 Upstream Sub-Area ID
- 3.2 Upstream Contributing Area (ac)
- 3.3 Target Runoff for Upstream Area (in.)
- 3.4 Adjusted CN after all reductions
- 3.5 Adjusted RPv (in.)
- 3.6 Adjusted Cv (in.)
- 3.7 Adjusted Fv (in.)

Step 4 - RPv Calculations for Combined LOD

- 4.1 Combined LOD (ac)
- 4.2 Weighted RCN
- 4.3 Weighted RPv (in.)
- 4.4 Weighted Target Runoff (in.)
- 4.5 Estimated Annual Runoff (in.)
- 4.6 Req'd Runoff to be Managed within LOD (in.)

4.7 Req'd Runoff to be Managed within LOD (%)

HSG A	HSG B	HSG C	HSG D
0.28			
0.02			
	0		
0%	0%	0%	0%

39.00	0.00	0.00	0.00
0.21	0.00	0.00	0.00
42.58	0.00	0.00	0.00
0.26	0.00	0.00	0.00

0.28
39.00
0.21
0.26

Area 1	Area 2	Area 3	Area 4

0.28
39.00
0.21
0.26
1.48
-0.05
-26%

PROJECT: DEC Cedar Grove Substation
--

3

DRAINAGE SUBAREA ID:

LOCATION (County): Sussex

UNIT HYDROGRAPH: DMV

OUTSIDE LIMIT OF DISTURBANCE (OLOD) WORKSHEET

Step 1 - Site Data

1.1 Total	Contributing Area (ac)	N//
1.2 C.A. R	CN	N//
1.3 LOD A	Area (ac)	N//
1.4 LOD F	RCN	N//
1.5 Outsi	de LOD Area (ac)	N//
1.6 Outsi	de LOD RCN	N//

I/A	
I/A	

Step 2 - Time of Concentration

Step 2 - Time of Concentration	2.1	2.2	2.3	2.4	2.5	2.6
	LENGTH	SLOPE	SURFACE	MANNINGS	VELOCITY	TRAVEL
FLOW TYPE	(feet)	(ft./ft.)	CODE	"n"	(ft./sec.)	TIME (hrs)
Sheet					N/A	0.00
					N/A	0.00
					N/A	0.00
Shallow Concentrated				N/A		0.00
				N/A		0.00
				N/A		0.00
Open Channel			N/A			0.00
			N/A			0.00
			N/A			0.00
			N/A			0.00
			N/A			0.00

2.7 Time of Concentration (Tc)

0.10

Sheet Flow Surface Codes

- a smooth surface b fallow (no residue) c cultivated < 20% Res. d cultivated > 20% Res. e grass - range, short
- f grass, dense g grass, bermuda h woods, light i woods, dense j range, natural

Shallow Concentrated Surface Codes

- u unpaved surface
- p paved surface

Step 3 - Peak Discharge

3.1 Unit Hydrograph Type	DN	1V
3.2 Frequency (yr)	10	1(
3.3 24-HR Rainfall, P (in.)	5.3	9
3.4 Initial Abstraction, Ia (in.)	#N/A	#N/A
3.5 Ia/P ratio	#N/A	#N/A
3.6 Unit Peak Discharge, qu (csm/in)	#N/A	#N/A
3.7 Runoff (in.)	#VALUE!	#VALUE
3.8 Peak Discharge, qp (cfs)	#VALUE!	#VALUE
3.9 Equiv. unit peak discharge (cfs/ac)	0.00	0.0

DMV					
10	100				
5.3	9.2				
#N/A	#N/A				
#N/A	#N/A				
#N/A	#N/A				
#VALUE!	#VALUE!				
#VALUE!	#VALUE!				
0.00	0.00				

PROJECT: DEC Cedar Grove Substation

DRAINAGE SUBAREA ID: 3

LOCATION (County): Sussex

RESOURCE PROTECTION EVENT (RPv) WORKSHEET

	BMP 1		BMP 2		BMP 3		BMP 4		BMP 5
Туре	0-No BMP	Туре		Туре		Туре		Туре	
Data									
0.28									
39.00									
0.21									
-0.05									
-26%								_	

Step 1 - Calculate Initial RPv

- 1.1 Total contributing area to BMP (ac)
- 1.2 Initial RCN
- 1.3 RPv for Contributing Area (in.)
- 1.4 Req'd RPv to be Managed for Contributing Area (in.)
- 1.5 Req'd RPv to be Managed for Contributing Area (%)

Step 2 - Adjust for Retention Reduction

- 2.1 Retention volume provided (cu. ft.)
- 2.2 Retention reduction allowance (%)
- 2.3 Retention reduction volume (ac-ft)
- 2.4 Retention reduction volume (in.)
- 2.5 Runoff volume after retention reduction (in.)
- 2.6 Adjusted CN*

Step 3 - Adjust for Annual Runoff Reduction

- 3.1 Annual CN (ACN)
- 3.2 Annual runoff (in.)
- 3.3 Proportion A/B soils in BMP footprint (%)
- 3.4 Annual runoff reduction allowance (%)
- 3.5 Annual runoff after reduction (in.)
- 3.6 Adjusted ACN
- 3.7 Annual Runoff Reduction Allowance for RPv (in.)

Step 4 - Calculate RPv with BMP Reductions

- 4.1 RPv Runoff Manangement Provided (cu. ft.)
- 4.2 RPv runoff volume after all reductions (in.)
- 4.3 RPv runoff volume after all reductions (cu.ft.)
- 4.4 Total RPv runoff reduction (in.)
- 4.5 Total RPv runoff reduction (%)
- 4.6 Adjusted CN after all reductions*
- 4.7 Adjusted equivalent annual runoff (in.)
- 4.8 RPv Compliance Met Through Runoff Reduction?
- 4.9 Runoff Reduction Credit, if Applicable (cu.ft)

Step 5 - Determine Residual Volume to be Managed or Offset

- 5.1 RPv Residual Volume (in.)
- 5.2 RPv Residual Volume (cu.ft./ac)
- 5.3 Residual Volume to be Managed or Offset (cu.ft.)
- 5.4 RPv avg. discharge rate for 48-hr detention (cfs)
- 5.5 RPv max. discharge rate for 48-hr detention (cfs)

0%	N/A	N/A	N/A	N/A	
0.00	N/A	N/A	N/A	N/A	
0.00	N/A	N/A	N/A	N/A	
0.21	N/A	N/A	N/A	N/A	
39.03	N/A	N/A	N/A	N/A	

39.00	N/A	N/A	N/A	
1.48	N/A	N/A	N/A	
0%	0%	0%	0%	
0%	N/A	N/A	N/A	
1.48	N/A	N/A	N/A	
39.00	N/A	N/A	N/A	
0.00	N/A	N/A	N/A	

0	N/A	N/A	N/A	N/A	
0.21	N/A	N/A	N/A	N/A	
213	N/A	N/A	N/A	N/A	
0.00	N/A	N/A	N/A	N/A	
0%	N/A	N/A	N/A	N/A	
39.00	N/A	N/A	N/A	N/A	
1.48	N/A	N/A	N/A	N/A	
YES	N/A	N/A	N/A	N/A	
-55.49	N/A	N/A	N/A	N/A	

N/A	N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	N/A	

*NOTE: No additional runoff reduction credit can be taken for surface recharge practices once the "Adjusted CN after all reductions" (Step 4.6) reaches the equivalent CN for the native soil-cover condition of the BMP footprint itself (i.e. for Sheet Flow to Turf Filter Strip on B soils Step 4.6 cannot be below 61). If this occurs contact the DNREC – SSP for further guidance.

N/A	
N/A	
0%	
N/A	
N/A	
N/A	
N/A	

PROJECT: DEC Cedar Grove Substation

Type:

Data

0.28

39 1.48

4.26E+04

BMP 1

TN

0-No BMP

ТР

TSS

DRAINAGE SUBAREA ID: 3

TMDL WATERSHED: Rehoboth Bay

TOTAL MAXIMUM DAILY LOAD (TMDL) WORKSHEET

Step 1 - Calculate Annual Runoff Volume

1.1 Total contributing area to BMP (ac)

- 1.2 Initial RCN
- 1.3 Annual runoff volume (in.)
- 1.4 Annual runoff volume (liters)

Step 2 - Calculate Annual Pollutant Load

- 2.1 EMC (mg/L)
- 2.2 Load (mg/yr)
- 2.3 Stormwater Load (lb/ac/yr)

| 2.80 | 0.49 | 90 | N/A |
|----------|----------|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1.19E+05 | 2.09E+04 | 3.84E+06 | N/A |
| 0.94 | 0.16 | 30 | N/A |

BMP 3

TN

ТР

Type:

Data

Type:

Data

TN

N/A

N/A

TSS

Step 3 - Adjust for Pollutant Reduction

3.1 BMP annual runoff reduction (%)

3.2 Adjusted annual runoff volume (in)

3.3 Adjusted annual runoff volume (liters)

3.4 Adjusted load from annual reductions (lb/ac/yr)

- 3.5 BMP removal efficiency (%)
- 3.6 BMP effluent concentration (mg/L)
- 3.7 Final Adjusted load (lb/ac/yr)

Step 4 - Pollutant Reduction Met? (For Informational Purposes)

- 4.1 TMDL (lb/ac/yr)
- 4.2 Reduction met?

4.3 Final Adjusted Load (lb/yr)

0%				N/A				N/A				N/A				N/A			
1.48				N/A				N/A				N/A				N/A			
4.26E+04				N/A				N/A				N/A				N/A			
	0.94	0.16	30.23		N/A	N/A	N/A												
	0%	0%	0%		N/A	N/A	N/A												
	2.80	0.49	90.00		N/A	N/A	N/A												
	0.94	0.16	30		N/A	N/A	N/A												

ooses)									
	5.70	0.23	N/A						
	YES	YES	N/A						
	0.26	0.05	8	N/A	N/A	N/A	N/A	N/A	N/A

BMP 2

TN

ТР

TSS

Type:

Data

BM	IP 4		BMP 5				
			Type:				
	ТР	TSS	Data	TN	ТР	TSS	

N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A

PROJECT:	DEC Cedar Grove Substation			
DRAINAGE SUBAREA ID:	3			
COUNTY:	Sussex	UNIT HY	DROGRAPH:	DMV
TMDL Watershed:	Rehoboth Bay	VERSION:	DURMM	v2.51.210802
DURMM OUTPUT WORKSHEET				

Site Data

Contributing Area to BMPs (ac.) C.A. RCN Subarea LOD (ac.) Subarea RCN Upstream Subarea ID Upstream Subarea LOD (ac.) Combined LOD with Upstream Areas (ac.) Combined RCN with Upstream Areas (ac.) Watershed TMDL-TN (lb/ac/yr) Watershed TMDL-TP (lb/ac/yr) Watershed TMDL-TSS (lb/ac/yr)

RPv runoff volume after all reductions (in.)

RPv Compliance Met Through Runoff Reduction?

Total RPv runoff reduction (in.) Total RPv runoff reduction (%)

RPv Residual Volume (cu. ft.)

Adjusted pollutant load, TN (lb/ac/yr) Adjusted pollutant load, TP (lb/ac/yr) Adjusted pollutant load, TSS (lb/ac/yr) Cv runoff volume after all reductions (in.) Fv runoff volume after all reductions (in.)

N/A	N/A	N/A
0.00	0.00	0.00

BMP Data

BMP 1	BMP 2	BMP 3	BMP 4	BMP 5
0-No BMP				
0.21	N/A	N/A	N/A	N/A
0.00	N/A	N/A	N/A	N/A
0%	N/A	N/A	N/A	N/A
YES	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
0.94	N/A	N/A	N/A	N/A
0.16	N/A	N/A	N/A	N/A
30.23	N/A	N/A	N/A	N/A
0.26	N/A	N/A	N/A	N/A
1.70	N/A	N/A	N/A	N/A

. nt (RD\/)

Resource Protection Event (RPV)		
RPv for Contributing Area (in.)	0.21	
Annual Runoff for Contributing Area (in.)	1.48	
Req'd RPv to be Managed for Contributing Area (in.)	-0.05	
Req'd RPv to be Managed for Contributing Area (%)	-26%	
RPv Runoff Management Required (cu. Ft.)	-55	
RPv Runoff Management Provided (cu. Ft.)	0	
RPv Residual Volume (cu.ft.)	-55	CREDIT
C.A. RPv avg. discharge rate (cfs)	0.00	
C.A. RPv max. discharge rate (cfs)	0.00	
TN Pollutant Load (lb/yr)	0.26	
TP Pollutant Load (lb/yr)	0.05	
TSS Pollutant Load (lb/yr)	8	
Conveyance Event (Cv) Cv runoff volume (in.) Adjusted RCN for H&H Modeling (CN*)	0.26 39.00	
Flooding Event (Fv)		
Fv runoff volume (in.)	1.70	
Equivalent RCN for H&H Modeling (CN*)	39.00	
Adjusted Subarea Data for Downstream DURMM Modeling		
Subarea ID	3.00	
Contributing Area (ac.)	0.28	
Weighted Target Runoff (in.)	0.26	
Adjusted CN after all reductions	39.00	
Adjusted RPv (in.)	0.21	
Adjusted Cv (in.)	0.26	

Adjusted Subarea Data for Nutrient Protocol Modeling

Contributing Area (ac.)	
LOD Area (ac.)	

TN Pollutant Load (lb/yr) TP Pollutant Load (lb/yr) TSS Pollutant Load (lb/yr) Percent Impervious Cover

Adjusted Fv (in.)

0.26
0.05
8
0%

1.70

0.28

0.28

Adjusted Subarea Data for the Summary Table for Sub-Areas Draining to a Common Point of Interest

Subarea ID		
Contributing Area (ac.)		
RPv Residual Volume (cu.ft.)		
Adjusted CN after all reductions		
Cv RCN for H&H Modeling		
Fv RCN for H&H Modeling		
TN Pollutant Load (lb/yr)		
TP Pollutant Load (lb/yr)		
TSS Pollutant Load (lb/yr)		

as braining to a common rol		
	3.00	
	0.28	
	-55	CREDIT
	39.00	
	39.00	
	39.00	
	0.26	
	0.05	
	8	

	PROJEC		ostation							
	DRAINAGE SUBAREA I									
	LOCATION (Count UNIT HYDROGRAP									
CON	TRIBUTING AREA RUNOFF CURVE NUMB									
	(C.A. RCN) WORKSHE			Curv	ve Numb	ers for	Hydrolog	ic Soil	Туре	
over Type	Treatment	Hydrologic	Α		В		С		D	
	RICULTURAL LANDS	Condition	Acres	RCN	Acres	RCN	Acres	RCN	Acres	RCI
allow	Bare soil			77		86		91		94
	Crop residue (CR)	poor		76		85		90		93
	Crop residue (CR)	good		74		83		88		90
ow Crops	Straight row (SR)	poor		72 67		81 78		88 85		91 89
	Straight row (SR) SR + Crop residue	good poor		71		80		87		90
	SR + Crop residue	good		64		75		82		85
	Contoured (C)	poor		70		79		84		88
	Contoured (C)	good		65		75		82		86
	C + Crop residue	poor		69		78		83		87
	C + Crop residue	good		64		74		81		85
	Cont & terraced(C&T) Cont & terraced(C&T)	poor good		66 62		74 71		80 78		82 81
	C&T + Crop residue	poor		65		73		79		81
	C&T + Crop residue	good		61		70		77		80
mall Grain	Straight row (SR)	poor		65		76		84		88
	Straight row (SR)	good		63		75		83		87
	SR + Crop residue	poor		64 60		75 72		83 80		86
	SR + Crop residue Contoured (C)	good poor		63		74		82		84 85
	Contoured (C)	good		61		74		81		84
	C + Crop residue	poor		62		73		81		84
	C + Crop residue	good		60		72		80		83
	Cont & terraced(C&T)	poor		61		72		79		82
	Cont & terraces(C&T)	good		59		70		78		81
	C&T + Crop residue	poor		60		71		78 77		81
ose-seeded	C&T + Crop residue Straight row	good poor		58 66		69 77		77 85		80 89
broadcast	Straight row	good		58		72		81		85
gumes or	Contoured	poor		64		75		83		85
tation	Contoured	good		55		69		78		83
eadow	Cont & terraced	poor		63		73		80		83
	Cont & terraced	good		51		67		76		80
THER AGRICUI	LTURAL LANDS									
	Pasture, grassland or range	poor		68		79		86		89
		fair		49		69		79		84
		good		39		61		74		80
	Meadow -cont. grass (non grazed)			30		58		71		78
	Brush - brush, weed, grass mix	poor		48		67		77		83
		fair		35 30		56 48		70 65		77
	Woods - grass combination	good poor		57		40		82		86
	Woods - grass combination	fair		43		65		76		82
		good		32		58		72		79
	Woods	poor		45		66		77		83
		fair		36		60		73		79
	Farmsteads	good		30 59		55 74		70 82		77 86
	PED URBAN AREAS (Veg Established)									
pen space (Lawr						70				
								00		
	Poor condition; grass cover < 50%		-	68 49		79 69		86 79		89 84
	Fair condition; grass cover 50% to 75 %		0.09	68 49 39	0.46	79 69 61		86 79 74		89 84 80
npervious Areas	Fair condition; grass cover 50% to 75 % Good condition; grass cover > 75%		0.09	49	0.46	69		79		84
npervious Areas	Fair condition; grass cover 50% to 75 % Good condition; grass cover > 75% Paved parking lots, roofs, driveways		0.09	49	0.46	69		79		84 80
npervious Areas	Fair condition; grass cover 50% to 75 % Good condition; grass cover > 75% Paved parking lots, roofs, driveways Streets and roads		0.09	49 39 98		69 61 98		79 74 98		84 80 98
npervious Areas	Fair condition; grass cover 50% to 75 % Good condition; grass cover > 75% Paved parking lots, roofs, driveways Streets and roads Paved; curbs and storm sewers		0.09	49 39 98 98		69 61 98 98		79 74 98 98		84 80 98 98
npervious Areas	Fair condition; grass cover 50% to 75 % Good condition; grass cover > 75% Paved parking lots, roofs, driveways Streets and roads Paved; curbs and storm sewers Paved; open dliches (w/right-of-way)		0.09	49 39 98 98 83		69 61 98 98 89		79 74 98 98 98 92		84 80 98 98 98
npervious Areas	Fair condition; grass cover 50% to 75 % Good condition; grass cover > 75% Paved parking lots, roofs, driveways Streets and roads Paved; ourbs and storm sewers Paved; ourbs and storm sewers Paved; open ditches (wiright-of-way) Gravel (w/ right-of-way)		0.09	49 39 98 98		69 61 98 98		79 74 98 98		84 80 98 98 93 93 91
	Fair condition; grass cover 50% to 75 % Good condition; grass cover > 75% Paved parking lots, roofs, driveways Streets and roads Paved; curbs and storm sewers Paved; open dliches (w/right-of-way)	Avg % impervious	0.09	49 39 98 98 83 76 72		69 61 98 98 89 85 82		79 74 98 98 92 89 87		84 80 98 98 93 91 89
	Fair condition; grass cover 50% to 75 % Good condition; grass cover > 75% Paved parking lots, roofs, driveways Streets and roads Paved; ourbs and storm sewers Paved; open ditches (w/right-of-way) Gravel (w/ right-of-way) Dirt (w/ right-of-way) Commercial & business	85	0.09	49 39 98 98 83 76 72 89		69 61 98 98 89 85 82 92		79 74 98 98 92 89 87 87		84 80 98 98 93 91 89 95
ban Districts	Fair condition; grass cover 50% to 75 % Good condition; grass cover > 75% Paved parking lots, roofs, driveways Stretels and roads Paved; curbs and storm sewers Paved; open ditches (wright-of-way) Gravel (w/ right-of-way) Dirt (w/ right-of-way) Commercial & business Industrial	85 72	0.09	49 39 98 98 83 76 72		69 61 98 98 89 85 82		79 74 98 98 92 89 87		84 80 98 98 93 91 89 95
ban Districts	Fair condition; grass cover 50% to 75 % Good condition; grass cover > 75% Paved parking lots, roofs, driveways Streets and roads Paved; corbs and storm severs Paved; open ditches (w/right-of-way) Gravel (w/ right-of-way) Dirt (w/ right-of-way) Commercial & business Industrial ts by average lot size	85 72 Avg % impervious	0.09	49 39 98 83 76 72 89 81		69 61 98 98 89 85 82 92 88		79 74 98 98 92 89 87 94 91		84 80 98 93 93 91 89 95 93
rban Districts	Fair condition: grass cover 50% to 75 % Good condition; grass cover > 75% Paved parking lots, roofs, driveways Streets and roads Paved; curbs and storm severs Paved; curbs and storm severs Commercial & business Industrial ts by average lot size 1/8 acre (town houses)	85 72 Avg % impervious 65	0.09	49 39 98 83 76 72 89 81 77		69 61 98 98 89 85 82 92 88 88 85		79 74 98 98 92 89 87 87 94 91 90		844 80 98 93 93 91 89 93 93 95 93 92
ban Districts	Fair condition; grass cover 50% to 75 % Good condition; grass cover > 75% Paved parking lots, roofs, driveways Streets and roads Paved; curbs and storm severs Paved; ourbs and severs Paved; ourbs an	85 72 Avg % impervious 65 38	0.09	49 39 98 98 83 76 72 89 81 77 61		69 61 98 98 89 85 82 92 88 88 85 75		79 74 98 98 92 89 87 94 91 90 83		844 800 988 933 91 899 955 933 922 87
ban Districts	Fair condition: grass cover 50% to 75 % Good condition; grass cover > 75% Paved parking lots, roofs, driveways Streets and roads Paved; curbs and storm severs Paved; curbs and storm severs Commercial & business Industrial ts by average lot size 1/8 acre (town houses)	85 72 Avg % impervious 65	0.09	49 39 98 83 76 72 89 81 77		69 61 98 98 89 85 82 92 88 88 85		79 74 98 98 92 89 87 87 94 91 90		844 80 98 98 93 91 89 95 93 95 93 92 87 86
ban Districts	Fair condition; grass cover 50% to 75 % Good condition; grass cover > 75% Paved parking lots, roofs, driveways Streets and roads Paved; courbs and storm severs Paved; open ditches (wiright-of-way) Gravel (w/ right-of-way) Dirt (w/ right-of-way) Dirt (w/ right-of-way) Commercial & business Industrial Is by average lot size 1/8 acre (town houses) 1/4 acre 1/3 acre 1/2 acre 1 acre	85 72 Avg % impervious 65 38 30 25 20		49 39 98 83 76 72 89 81 77 61 57 54 51		69 61 98 89 85 82 92 88 85 75 72 70 68		79 74 98 92 89 87 94 91 90 83 81 80 79		84 80 98 93 93 91 89 95 93 92 87 86 85 84
ban Districts	Fair condition; grass cover 50% to 75% Good condition; grass cover > 75% Paved parking lots, roofs, driveways Streets and roads Paved; curbs and storm severs Paved; curbs and storm severs Paved; orpen ditches (w/right-of-way) Gravel (w/ right-of-way) Dirt (w/ right-of-way) Dirt (w/ right-of-way) Commercial & business Industrial ts by average lot size 1/8 acre (town houses) 1/4 acre	85 72 Avg % impervious 65 38 30 25	0.09	49 39 98 83 76 72 89 81 77 61 57 54		69 61 98 89 85 82 92 88 85 75 72 70		79 74 98 92 89 87 94 91 90 83 81 80		84 80 98 93 93 91 89 95 93 92 87 86 85 84
ban Districts	Fair condition; grass cover 50% to 75% Good condition; grass cover > 75% Paved parking lots, roofs, driveways Streets and roads Paved; curbs and storm severs Paved; curbs and storm severs Paved; open ditches (wright-of-way) Gravel (wright-of-way) Dirt (wright-of-way) Dirt (wright-of-way) Commercial & business Industrial ts by average lot size 1/8 acre (town houses) 1/4 acre 1/2 acre 1 acre 2 acre	85 72 Avg % impervious 65 38 30 25 20		49 39 98 83 76 72 89 81 77 61 57 54 51		69 61 98 89 85 82 92 88 85 75 72 70 68		79 74 98 92 89 87 94 91 90 83 81 80 79		84 80 98 93 93 91 89 95 93 92 87 86 85 84
ban Districts	Fair condition; grass cover 50% to 75 % Good condition; grass cover > 75% Paved parking lots, roofs, driveways Streets and roads Paved; copen ditches (wiright-of-way) Gravel (wi right-of-way) Dirt (wi right-of-way) Dirt (wi right-of-way) Commercial & business Industrial Is by average lot size 1/8 acre (town houses) 1/4 acre 1/3 acre 1/2 acre 2 acre RBAN AREA (No Vegetation)	85 72 Avg % impervious 65 38 30 25 20		49 39 98 83 76 72 89 81 77 61 57 54 51		69 61 98 89 85 82 92 88 85 75 72 70 68		79 74 98 92 89 87 94 91 90 83 81 80 79		84 80 98 93 91 89 95 93 95 93 92 87 86 85 84 82
ban Districts	Fair condition; grass cover 50% to 75% Good condition; grass cover > 75% Paved parking lots, roofs, driveways Streets and roads Paved; curbs and storm severs Paved; curbs and storm severs Paved; open ditches (wright-of-way) Gravel (wright-of-way) Dirt (wright-of-way) Dirt (wright-of-way) Commercial & business Industrial ts by average lot size 1/8 acre (town houses) 1/4 acre 1/2 acre 1 acre 2 acre	85 72 Avg % impervious 65 38 30 25 20		49 39 98 83 76 72 89 81 77 61 57 54 51 46		69 61 98 98 85 82 92 88 85 75 72 70 68 65		79 74 98 92 89 87 92 97 91 90 83 81 80 79 77		84 80 98 93 91 89 95 93 95 93 92 87 86 85 84 82
ban Districts sidential district EVELOPING UR	Fair condition; grass cover 50% to 75 % Good condition; grass cover > 75% Paved parking lots, roofs, driveways Streets and roads Paved; copen ditches (wiright-of-way) Gravel (wi right-of-way) Dirt (wi right-of-way) Dirt (wi right-of-way) Commercial & business Industrial Is by average lot size 1/8 acre (town houses) 1/4 acre 1/3 acre 1/2 acre 2 acre RBAN AREA (No Vegetation)	85 72 Avg % impervious 65 38 30 25 20		49 39 98 83 76 72 89 81 77 61 57 54 51 46		69 61 98 98 85 82 92 88 85 75 72 70 68 65		79 74 98 92 89 87 92 97 91 90 83 81 80 79 77		84 80 98 93 91 89 95 93 95 93 92 87 86 85 84 82
ban Districts esidential district	Fair condition; grass cover 50% to 75 % Good condition; grass cover > 75% Paved parking lots, roofs, driveways Streets and roads Paved; copen ditches (wiright-of-way) Gravel (wi right-of-way) Dirt (wi right-of-way) Dirt (wi right-of-way) Commercial & business Industrial Is by average lot size 1/8 acre (town houses) 1/4 acre 1/3 acre 1/2 acre 2 acre RBAN AREA (No Vegetation)	85 72 Avg % impervious 65 38 30 25 20		49 39 98 83 76 72 89 81 77 61 57 54 51 46		69 61 98 98 85 82 92 88 85 75 72 70 68 65		79 74 98 92 89 87 92 97 91 90 83 81 80 79 77		84 80 98 93 91 89 95 93 95 93 92 87 86 85 84 82
ban Districts sidential district EVELOPING UR	Fair condition; grass cover 50% to 75 % Good condition; grass cover > 75% Paved parking lots, roofs, driveways Streets and roads Paved; copen ditches (wiright-of-way) Gravel (wi right-of-way) Dirt (wi right-of-way) Dirt (wi right-of-way) Commercial & business Industrial Is by average lot size 1/8 acre (town houses) 1/4 acre 1/3 acre 1/2 acre 2 acre RBAN AREA (No Vegetation)	85 72 Avg % impervious 65 38 30 25 20		49 39 98 83 76 72 89 81 77 61 57 54 51 46		69 61 98 98 85 82 92 88 85 75 72 70 68 65		79 74 98 92 89 87 92 97 91 90 83 81 80 79 77		844 800 988 933 911 899 955 933 922 877 866 855 844 822
rban Districts esidential district	Fair condition; grass cover 50% to 75 % Good condition; grass cover > 75% Paved parking lots, roofs, driveways Streets and roads Paved; curbs and storm severs Paved; curbs and storm severs Paved; open ditches (wiright-of-way) Gravel (wi right-of-way) Dirt (wi right-of-way) Commercial & business Industrial Is by average lot size 1/8 acre 1/3 acre 1/2 acre 1 acre 2 acre 8BAN AREA (No Vegetation) Newly graded area (pervious only)	85 72 Avg % Impervious 65 38 30 25 20 12	0.09	49 39 98 83 76 72 77 61 57 54 51 46		69 61 98 89 85 82 82 88 85 75 72 70 68 65 86		79 74 98 98 92 89 89 91 90 83 81 80 79 77 91 91		84 80 98 93 91 89 95 93 92 87 86 85 84 82 94
rban Districts esidential district EVELOPING UR SER DEFINED	Fair condition; grass cover 50% to 75 % Good condition; grass cover > 75% Paved parking lots, roofs, driveways Streets and roads Paved; curbs and storm severs Paved; curbs and storm severs Paved; open ditches (w/right-of-way) Gravel (w/ right-of-way) Dirt (w/ right-of-way) Dirt (w/ right-of-way) Commercial & business Industrial ts by average lot size 1/8 acre (town houses) 1/4 acre 1/3 acre 1/2 acre 1 acre 2 acre RBAN AREA (No Vegetation) Newly graded area (pervious only) Subarea Contributing Area per So Subarea Contributing Area (ac) Subarea Weighted RCN	85 72 Avg % impervious 65 38 30 25 20 12 12		49 39 98 83 76 72 77 61 57 54 51 46	0.02	69 61 98 89 85 82 82 88 85 75 72 70 68 65 86		79 74 98 98 92 89 89 91 90 83 81 80 79 77 91 91		84 80 98 93 91 89 95 93 92 87 86 85 84 82 94
rban Districts esidential district EVELOPING UR SER DEFINED	Fair condition; grass cover 50% to 75% Good condition; grass cover > 75% Paved parking lots, roofs, driveways Streets and roads Paved; curbs and storm severs Paved; curbs and storm severs Paved; open ditches (wright-of-way) Gravel (wr ight-of-way) Dirt (wr ight-of-way) Dirt (wr ight-of-way) Commercial & business Industrial Is by average lot size 1/8 acre 1/3 acre 1/2 acre 1 acre 2 acre 8EAN AREA (No Vegetation) Newly graded area (pervious only) Subarea Contributing Area per So Subarea Contributing Area (ac) Subarea Weighted RCN	85 72 Avg % impervious 65 38 30 25 20 12 12		49 39 98 83 76 72 77 61 57 54 51 46	0.02	69 61 98 89 85 82 82 88 85 75 72 70 68 65 86		79 74 98 98 92 89 89 91 90 83 81 80 79 77 91 91		844 800 98 93 91 89 95 93 92 87 86 85 84 82 94
ban Districts esidential district EVELOPING UR SER DEFINED	Fair condition: grass cover 50% to 75 % Good condition; grass cover > 75% Paved parking lots, roofs, driveways Streets and roads Paved; curbs and storm severs Paved; open ditches (w/right-of-way) Gravel (w/ right-of-way) Dirt (w/ right-of-way) Dirt (w/ right-of-way) Commercial & business Industrial ts by average lot size 1/8 acre 1/2 acre 1/2 acre 1 acre 2 acre RBAN AREA (No Vegetation) Newly graded area (pervious only) Subarea Contributing Area per So Subarea Contributing Area (ac) Subarea Contributing Area (ac) Subarea Contributing Area (ac) Upstream Contributing Area 1	85 72 Avg % impervious 65 38 30 25 20 12 12 il Type (ac) 0.57 59	0.09	49 39 98 83 76 72 89 81 57 54 51 46	0.02	69 61 98 89 85 82 82 88 85 75 72 70 68 65 86		79 74 98 98 92 89 89 91 90 83 81 80 79 77 91 91		844 800 98 93 91 89 95 93 92 87 86 85 84 82 94
EVELOPING UF SER DEFINED	Fair condition; grass cover 50% to 75 % Good condition; grass cover > 75% Paved parking lots, roofs, driveways Streets and roads Paved; curbs and storm severs Paved; curbs and storm severs Paved; open ditches (w/right-of-way) Gravel (w/ right-of-way) Dirt (w/ right-of-way) Dirt (w/ right-of-way) Commercial & business Industrial ts by average lot size 1/8 acre (town houses) 1/4 acre 1/3 acre (town houses) 1/4 acre 1/3 acre 1/2 acre 1 acre 2 acre RBAN AREA (No Vegetation) Newly graded area (pervious only) Subarea Contributing Area per So Subarea Contributing Area a Upstream Contributing Area 1 Upstream Contributing Area 1	85 72 Avg % impervious 65 38 30 25 20 12 12 il Type (ac) 0.57 59	0.09	49 39 98 83 76 72 89 81 57 54 51 46	0.02	69 61 98 89 85 82 82 88 85 75 72 70 68 65 86		79 74 98 98 92 89 87 87 90 83 81 80 79 77 91 91		844 800 98 93 91 89 95 93 92 87 86 85 84 82 94
ban Districts esidential district EVELOPING UR BER DEFINED	Fair condition; grass cover 50% to 75 % Good condition; grass cover > 75% Paved parking lots, roofs, driveways Streets and roads Paved; curbs and storm severs Paved; curbs and storm severs Industrial Its by average lot size 1/2 acre 1 acre 2 acre RBAN AREA (No Vegetation) Newly graded area (pervious only)	85 72 Avg % impervious 65 38 30 25 20 12 12 il Type (ac) 0.57 59	0.09	49 39 98 83 76 72 89 81 57 54 51 46	0.02	69 61 98 89 85 82 82 88 85 75 72 70 68 65 86		79 74 98 98 92 89 87 87 90 83 81 80 79 77 91 91		844 800 98 93 91 93 93 93 93 93 93 93 94 85 85 84 82 94
oan Districts sidential district EVELOPING UR	Fair condition; grass cover 50% to 75 % Good condition; grass cover > 75% Paved parking lots, roofs, driveways Streets and roads Paved; curbs and storm severs Paved; curbs and storm severs Paved; open ditches (w/right-of-way) Gravel (w/ right-of-way) Dirt (w/ right-of-way) Dirt (w/ right-of-way) Commercial & business Industrial ts by average lot size 1/8 acre (town houses) 1/4 acre 1/3 acre (town houses) 1/4 acre 1/3 acre 1/2 acre 1 acre 2 acre RBAN AREA (No Vegetation) Newly graded area (pervious only) Subarea Contributing Area per So Subarea Contributing Area a Upstream Contributing Area 1 Upstream Contributing Area 1	85 72 Avg % impervious 65 38 30 25 20 12 12 il Type (ac) 0.57 59	0.09	49 39 98 83 76 72 89 81 57 54 51 46	0.02	69 61 98 89 85 82 82 88 85 75 72 70 68 65 86		79 74 98 98 92 89 87 87 90 83 81 80 79 77 91 91		844 800 98 93 91 93 93 93 93 93 93 93 94 85 85 84 82 94
oan Districts sidential district EVELOPING UR	Fair condition; grass cover 50% to 75 % Good condition; grass cover > 75% Paved parking lots, roofs, driveways Streets and roads Paved; curbs and storm severs Paved; curbs and storm severs Industrial Its by average lot size 1/2 acre 1 acre 2 acre RBAN AREA (No Vegetation) Newly graded area (pervious only)	85 72 Avg % impervious 65 38 30 25 20 12 12 il Type (ac) 0.57 59		49 39 98 83 76 72 89 81 81 57 54 51 46 77 89 81 77 72	0.02	69 61 98 98 89 85 82 92 88 88 82 92 88 85 75 72 70 68 65 86	0.57	79 74 98 98 92 89 87 87 90 83 81 80 79 77 91 91		844 800 98 93 91 89 95 93 95 93 92 87 86 85 84 82 94
oan Districts sidential district VELOPING UR	Fair condition; grass cover 50% to 75 % Good condition; grass cover > 75% Paved parking lots, roofs, driveways Streets and roads Paved; curbs and storm severs Paved; curbs and storm severs Industrial Its by average lot size 1/2 acre 1 acre 2 acre RBAN AREA (No Vegetation) Newly graded area (pervious only)	85 72 Avg % impervious 65 38 30 25 20 12 il Type (ac) 0.57 59 Subarea ID	0.09	49 39 98 83 76 83 77 72 89 81 77 61 51 51 46 77 77	0.02	69 61 98 98 85 85 82 88 88 85 82 88 85 85 85 86 86 86 86 86		79 74 98 98 92 89 87 91 90 83 87 91 90 83 81 80 79 77 77		844 800 98 93 91 93 93 93 93 93 93 93 94 85 85 84 82 94

PROJECT: DEC Cedar Grove Substation

DRAINAGE SUBAREA ID: LOCATION (County):

D: 4
/): Sussex

UNIT HYDROGRAPH: DMV

LIMIT OF DISTURBANCE (LOD) WORKSHEET

Step 1 - Subarea LOD Data

- 1.1 HSG Area Within LOD (ac)
- 1.2 Pre-Developed Woods/Meadow Within LOD (ac)
- 1.3 Pre-Developed Impervious Within LOD (ac)
- 1.4.a Post-Developed Imperviousness Within LOD, Option #1 (ac); OR
- 1.4.b Post-Developed Imperviousness Within LOD, Option #2 (%)

Step 2 - Subarea LOD Runoff Calculations

- 2.1 RCN per HSG
- 2.2 RPv per HSG (in.)
- 2.3 Target RCN per HSG
- 2.4 Target Runoff per HSG (in.)

2.5 Subarea LOD (ac)

- 2.6 Subarea Weighted RCN
- 2.7 Subarea Weighted RPv (in.)
- 2.8 Subarea Weighted Target Runoff (in.)

Step 3 - Upstream LOD Areas (from previous DURMM Report as applicable)

- 3.1 Upstream Sub-Area ID
- 3.2 Upstream Contributing Area (ac)
- 3.3 Target Runoff for Upstream Area (in.)
- 3.4 Adjusted CN after all reductions
- 3.5 Adjusted RPv (in.)
- 3.6 Adjusted Cv (in.)
- 3.7 Adjusted Fv (in.)

Step 4 - RPv Calculations for Combined LOD

- 4.1 Combined LOD (ac)
- 4.2 Weighted RCN
- 4.3 Weighted RPv (in.)
- 4.4 Weighted Target Runoff (in.)
- 4.5 Estimated Annual Runoff (in.)
- 4.6 Req'd Runoff to be Managed within LOD (in.)
- 4.7 Req'd Runoff to be Managed within LOD (%)

HSG A	HSG B	HSG C	HSG D
0.09	0.48		
	0.01		
	0.01		
0%	2%	0%	0%

39.00	61.77	0.00	0.00
0.21	0.67	0.00	0.00
39.00	61.66	0.00	0.00
0.21	0.66	0.00	0.00

0.57
58.18
0.57
0.59

Area 1	Area 2	Area 3	Area 4

0.57
58.18
0.57
0.59
6.01
-0.02
-4%

PROJECT:	DEC Cedar Grove Substation
DRAINAGE SUBAREA ID:	4
LOCATION (County):	Sussex
UNIT HYDROGRAPH:	DMV
OUTSIDE LIMIT OF DISTURBANCE	
(OLOD) WORKSHEET	

Step 1 - Site Data

1.1 Total Contributing Area (ac)	N/
1.2 C.A. RCN	N/
1.3 LOD Area (ac)	N/
1.4 LOD RCN	N/
1.5 Outside LOD Area (ac)	N/
1.6 Outside LOD RCN	N/

N/A	
N/A	

Step 2 - Time of Concentration	2.1	2.2	2.3	2.4	2.5	2.6
	LENGTH	SLOPE	SURFACE	MANNINGS	VELOCITY	TRAVEL
FLOW TYPE	(feet)	(ft./ft.)	CODE	"n"	(ft./sec.)	TIME (hrs)
Sheet					N/A	0.00
					N/A	0.00
					N/A	0.00
Shallow Concentrated				N/A		0.00
				N/A		0.00
				N/A		0.00
Open Channel			N/A			0.00
			N/A			0.00
			N/A			0.00
			N/A			0.00
			N/A			0.00
			2.	7 Time of Cor	centration (Tc)	0.10

Sheet Flow Surface Codes a smooth surface b fallow (no residue) c cultivated < 20% Res. d cultivated > 20% Res.

e grass - range, short

f grass, dense g grass, bermuda h woods, light i woods, dense j range, natural Shallow Concentrated Surface Codes

u unpaved surface p paved surface

Step 3 - Peak Discharge

- 3.1 Unit Hydrograph Type
- 3.2 Frequency (yr)
- 3.3 24-HR Rainfall, P (in.)3.4 Initial Abstraction, Ia (in.)
- 3.5 Ia/P ratio
- 3.6 Unit Peak Discharge, qu (csm/in)
- 3.7 Runoff (in.)
- 3.8 Peak Discharge, qp (cfs)
- 3.9 Equiv. unit peak discharge (cfs/ac)

DMV							
10	100						
5.3	9.2						
#N/A	#N/A						
#N/A	#N/A						
#N/A	#N/A						
#VALUE!	#VALUE!						
#VALUE!	#VALUE!						
0.00	0.00						

PROJECT: DEC Cedar Grove Substation										
DRAINAGE SUBAREA ID:										
LOCATION (County):	4 Sussex									
RESOURCE PROTECTION EVENT (RPv) WORKSHEET	Sussex									
RESOURCE PROTECTION EVENT (RPV) WORKSHEET									r	
		BMP 1	BMP 2	BMP 3		BMP 4			BMP 5	
	Type	0-No BMP	Туре	-	Type		Type		Type	-
Step 1 - Calculate Initial RPv	Data									
 1.1 Total contributing area to BMP (ac) 	0.57									
1.2 Initial RCN	58.18									
 1.3 RPv for Contributing Area (in.) 	0.57									
1.4 Req'd RPv to be Managed for Contributing Area (in.)	-0.02									
1.5 Req'd RPv to be Managed for Contributing Area (%)	-4%									
Chan D. Addiest for Detection Deduction										
Step 2 - Adjust for Retention Reduction									-	
2.1 Retention volume provided (cu. ft.)	0%		N/A		N/A		N/A		N/A	
2.2 Retention reduction allowance (%)			N/A							
2.3 Retention reduction volume (ac-ft)	0.00		N/A		N/A		N/A		N/A	
2.4 Retention reduction volume (in.)	0.00		N/A		N/A		N/A		N/A N/A	
2.5 Runoff volume after retention reduction (in.)	0.57		N/A		N/A		N/A			
2.6 Adjusted CN*	57.98		N/A		N/A		N/A		N/A	
Step 3 - Adjust for Annual Runoff Reduction										
3.1 Annual CN (ACN)	58.18		N/A		N/A		N/A		N/A	
3.2 Annual runoff (in.)	6.01		N/A		N/A		N/A		N/A	
3.3 Proportion A/B soils in BMP footprint (%)	0%		0%		0%		0%		0%	
3.4 Annual runoff reduction allowance (%)	0%		N/A		N/A		N/A		N/A	
3.5 Annual runoff after reduction (in.)	6.01		N/A		N/A		N/A		N/A	
3.6 Adjusted ACN	58.18		N/A	•	N/A		N/A	•	N/A	
3.7 Annual Runoff Reduction Allowance for RPv (in.)	0.00		N/A		N/A		N/A		N/A	
Step 4 - Calculate RPv with BMP Reductions	0		NI/A		NI/A		NI/A		NI/A	
4.1 RPv Runoff Manangement Provided (cu. ft.) 4.2 RPv runoff volume after all reductions (in.)	0		N/A		N/A		N/A N/A		N/A	
 4.2 RPv runoff volume after all reductions (in.) 4.3 RPv runoff volume after all reductions (cu.ft.) 	0.57		N/A N/A		N/A N/A		N/A N/A		N/A N/A	
4.3 RPV runoff volume after all reductions (cu.rt.) 4.4 Total RPv runoff reduction (in.)	0.00		N/A N/A		N/A N/A		N/A N/A		N/A N/A	
4.5 Total RPv runoff reduction (%)	0.00		N/A	-	N/A		N/A N/A	-	N/A	
4.5 Adjusted CN after all reductions*	57.98		N/A		N/A		N/A		N/A	
4.7 Adjusted equivalent annual runoff (in.)	5.93		N/A		N/A		N/A		N/A	
4.8 RPv Compliance Met Through Runoff Reduction?	YES		N/A		N/A		N/A		N/A N/A	
4.9 Runoff Reduction Credit, if Applicable (cu.ft)	-44.31		N/A		N/A		N/A		N/A	
4.5 Kullon Reduction creat, in Applicable (culty	-44.51		19/15		N/A		19/14		N/A	
Step 5 - Determine Residual Volume to be Managed or Offset										
5.1 RPv Residual Volume (in.)	N/A		N/A		N/A		N/A		N/A	
5.2 RPv Residual Volume (cu.ft./ac)	N/A		N/A		N/A		N/A		N/A	
5.3 Residual Volume to be Managed or Offset (cu.ft.)	N/A		N/A		N/A		N/A		N/A	
5.4 RPv avg. discharge rate for 48-hr detention (cfs)	N/A		N/A		N/A		N/A		N/A	
5.5 RPv max. discharge rate for 48-hr detention (cfs)	N/A		N/A		N/A		N/A		N/A	
*NOTE: No additional runoff reduction credit can be taken fo	r surface re	charge practices once	the "Adjust	ad CN after all reductio	ne" (Ston A	6) reaches the equival	ent CN for t	he native soil-cover co	ndition of th	NO RMD

*NOTE: No additional runoff reduction credit can be taken for surface recharge practices once the "Adjusted CN after all reductions" (Step 4.6) reaches the equivalent CN for the native soil-cover condition of the BMP footprint itself (i.e. for Sheet Flow to Turf Filter Strip on B soils Step 4.6 cannot be below 61). If this occurs contact the DNREC – SSP for further guidance.

PROJECT:	DEC Cedar Gr	ove Substat	tion																	
DRAINAGE SUBAREA ID:																				
TMDL WATERSHED:	Rehoboth Ba	v																		
TOTAL MAXIMUM DAILY LOAD (TMDL) WORKSHEET																				
		BM	P 1			BN	1P 2			BN	1P 3			BM	P 4			BN	IP 5	
	Type:		0-No BMP		Type:				Type:				Type:		-		Type:			
Step 1 - Calculate Annual Runoff Volume	Data	TN	TP	TSS	Data	TN	TP	TSS	Data	TN	TP	TSS	Data	TN	TP	TSS	Data	TN	TP	TSS
1.1 Total contributing area to BMP (ac)	0.57					,				,										
1.2 Initial RCN	58																			
1.3 Annual runoff volume (in.)	6.01																			
1.4 Annual runoff volume (liters)	3.52E+05																			
Step 2 - Calculate Annual Pollutant Load																				
2.1 EMC (mg/L)		2.80	0.49	90		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A
2.1 EWC (mg/c) 2.2 Load (mg/vr)		2.80 9.85E+05	0.49 1.72E+05	3.17E+07		N/A	N/A N/A	N/A		N/A N/A	N/A N/A	N/A		N/A N/A	N/A	N/A N/A		N/A N/A	N/A N/A	N/A N/A
2.3 Stormwater Load (lb/ac/yr)		3.81	0.67	123		N/A	N/A N/A	N/A		N/A N/A	N/A N/A	N/A		N/A N/A	N/A	N/A N/A		N/A N/A	N/A N/A	N/A N/A
2.5 5(6)(((0)00)((0)00)(1))		3.01	0.07	123		N/A	19/74	N/A		N/A	IN/A	N/A		19/74	19/74	NYA		IN/A	N/A	N/A
Step 3 - Adjust for Pollutant Reduction																				
3.1 BMP annual runoff reduction (%)	1%				N/A				N/A				N/A				N/A			
3.2 Adjusted annual runoff volume (in)	5.93				N/A				N/A				N/A				N/A			
3.3 Adjusted annual runoff volume (liters)	3.48E+05				N/A				N/A				N/A				N/A			
3.4 Adjusted load from annual reductions (lb/ac/yr)		3.77	0.66	121.06		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A
3.5 BMP removal efficiency (%)		0%	0%	0%		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A
3.6 BMP effluent concentration (mg/L)		2.80	0.49	90.00		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A
3.7 Final Adjusted load (lb/ac/yr)		3.77	0.66	121		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A
Step 4 - Pollutant Reduction Met? (For Informational Purposes)																				
4.1 TMDL (lb/ac/yr)		5.70	0.23	N/A																
4.2 Reduction met?		YES	NO	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A	[N/A	N/A	N/A
4.3 Final Adjusted Load (lb/vr)		2.15	0.38	69		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A
			0.00																	

PROJECT:	DEC Cedar Grove Substation				
DRAINAGE SUBAREA ID:	4				
COUNTY:	Sussex	UNIT HYDROGRAPH: DMV		DMV	
TMDL Watershed:	Rehoboth Bay	VERSION:	DURMM	v2.51.210802	
DURMM OUTPUT WORKSHEET					

Site Data Contributing Area to BMPs (ac.) C.A. RCN Subarea LOD (ac.) Subarea RCN Upstream Subarea ID Upstream Subarea LOD (ac.) Combined LOD with Upstream Areas (ac.) Combined RCN with Upstream Areas (ac.) Watershed TMDL-TN (lb/ac/yr)

Watershed TMDL-TP (lb/ac/yr) Watershed TMDL-TSS (lb/ac/yr)

0.57			
58.82			
0.57			
58.18			
N/A	N/A	N/A	N/A
0.00	0.00	0.00	0.00
0.57			
58.18			
5.70			
0.23			
N/A			

BMP Data

PData	BMP 1	BMP 2	BMP 3	BMP 4	BMP 5
	0-No BMP				
RPv runoff volume after all reductions (in.)	0.57	N/A	N/A	N/A	N/A
Total RPv runoff reduction (in.)	0.00	N/A	N/A	N/A	N/A
Total RPv runoff reduction (%)	0%	N/A	N/A	N/A	N/A
RPv Compliance Met Through Runoff Reduction?	YES	N/A	N/A	N/A	N/A
RPv Residual Volume (cu. ft.)	N/A	N/A	N/A	N/A	N/A
Adjusted pollutant load, TN (lb/ac/yr)	3.77	N/A	N/A	N/A	N/A
Adjusted pollutant load, TP (lb/ac/yr)	0.66	N/A	N/A	N/A	N/A
Adjusted pollutant load, TSS (lb/ac/yr)	121.06	N/A	N/A	N/A	N/A
Cv runoff volume after all reductions (in.)	1.35	N/A	N/A	N/A	N/A
Fv runoff volume after all reductions (in.)	4.03	N/A	N/A	N/A	N/A

Resource Protection Event (RPV)

Resource Protection Event (RPV)		
RPv for Contributing Area (in.)	0.57	
Annual Runoff for Contributing Area (in.)	6.01	
Req'd RPv to be Managed for Contributing Area (in.)	-0.02	
Req'd RPv to be Managed for Contributing Area (%)	-4%	
RPv Runoff Management Required (cu. Ft.)	-44	
RPv Runoff Management Provided (cu. Ft.)	0	
RPv Residual Volume (cu.ft.)	-44	CREDIT
C.A. RPv avg. discharge rate (cfs)	0.00	
C.A. RPv max. discharge rate (cfs)	0.00	
TN Pollutant Load (lb/yr)	2.15	
TP Pollutant Load (lb/yr)	0.38	
TSS Pollutant Load (lb/yr)	69	
Conveyance Event (Cv)		
Cv runoff volume (in.)	1.35	
Adjusted RCN for H&H Modeling (CN*)	58.18	
Flooding Event (Fv)		
Fv runoff volume (in.)	4.03	
Equivalent RCN for H&H Modeling (CN*)	58.18	
Adjusted Subarea Data for Downstream DURMM Modeling		
Subarea ID	4.00	
Contributing Area (ac.)	0.57	
Weighted Target Runoff (in.)	0.59	
Adjusted CN after all reductions	57.98	
Adjusted RPv (in.)	0.57	
Adjusted Cv (in.)	1.35	
Adjusted Fv (in.)	4.03	
Adjusted Subarea Data for Nutrient Protocol Modeling		
Contributing Area (ac.)	0.57	
LOD Area (ac.)	0.57	
TN Pollutant Load (lb/yr)	2.15	
TP Pollutant Load (lb/yr)	0.38	
TSS Pollutant Load (lb/yr)	69	
Percent Impervious Cover	2%	
Adjusted Subarea Data for the Summary Table for Sub-Area	c Draining to a (Common Doint of Interact
Subarea ID	4.00	ommon Point of interest
Contributing Area (ac.)	0.57	CDEDIT
RPv Residual Volume (cu.ft.)	-44	CREDIT
Adjusted CN after all reductions	57.98	
Cv RCN for H&H Modeling	58.18	
Fv RCN for H&H Modeling	58.18	

Subarea ID	4.00	
Contributing Area (ac.)	0.57	
RPv Residual Volume (cu.ft.)	-44	CREDIT
Adjusted CN after all reductions	57.98	
Cv RCN for H&H Modeling	58.18	
Fv RCN for H&H Modeling	58.18	
TN Pollutant Load (lb/yr)	2.15	
TP Pollutant Load (lb/yr)	0.38	
TSS Pollutant Load (lb/yr)	69	

	Summary Table for Site RPv Compliance ⁽¹⁾								
Project: DEC Cedar Grove Substation				TMDL WS:	Rehoboth Ba	у	Rel. 1		
Ref. #	Sub-Area ID ⁽²⁾	Contributing Area ⁽³⁾	Runoff ⁽⁴⁾	Runoff		Management cf)	TN Pollutant Load ⁽⁷⁾	TP Pollutant Load ⁽⁷⁾	: TSS Pollutant Load ⁽⁷⁾
		(ac)	(in)	(cf)	Required ⁽⁵⁾	Provided ⁽⁶⁾	(lb/yr)	(lb/yr)	(lb/yr)
Section I -	Complete this section for total site LO	D management	requirement						
0	Total Site LOD	5.16	0.70	13111.6	4315		25.87	4.53	831
Section II -	Section II - Complete this section for BMPs provided for partial LOD management OR sub-area by sub-area management								
	2A	2.33	1.34	11333.6	6046	10995	0.09	0.02	3
2	2B	1.98	0.33	2371.8	-581	0	3.43	0.60	110
3	3	0.28	0.21	213.4	-55	0	0.26	0.05	8
4	4	0.57	0.57	1179.4	-44	0	2.15	0.38	69
5				0.0					
6				0.0					
7				0.0					
8				0.0					
9				0.0					
10				0.0					
11				0.0					
12				0.0					
13				0.0					
14				0.0					
15				0.0					
16				0.0					
17				0.0					
18				0.0					
19 20				0.0					
20	Tatala			0.0	0691 of	10005 of	5 02 lb /	1.05 lb/	100 lb /
	Totals RPv Runoff Reduction Goal Met?	YES			9681 cf	10995 cf	5.93 lb/yr	1.05 lb/yr	190 lb/yr
	Total Credit/Shortfall	-	Credit	I					
Notes:	rotal Credit/Shortfall	1514 (1	Credit						

Notes:

1. All subareas must lie within the same HUC 8 watershed.

2. Only the most downstream sub-area information should be entered for a series of sub-areas that drain to each other or for a treatment train.

3. From DURMM v2.5 Report, Line 7 OR Approved Hydrologic Software Report

4. From DURMM v2.5 Report, Line 35 OR Approved Hydrologic Software Report

5. From DURMM v2.5 Report, Line 39 OR Approved Hydrologic Software Report

6. From DURMM v2.5 Report, Line 40 OR Approved Hydrologic Software Report

7. From DURMM v2.5 Report, Lines 44-46 OR Complete Sheet 2

APPENDIX C Geotechnical Report

DEC Cedar Grove Substation

Infiltration Testing Report

August 2021

CEI No. 145015.11





Contents

Disclosure Statements	1
Purpose and Scope	2
Project Characteristics	2
xisting Site Conditions	2
ield Exploration and Study	3
ubsurface Conditions	4
nfiltration Testing	4
Conclusion and Recommendations	5

List of Tables

Table 1 - Infiltration Test Results	5
Table 2 - Recommended Design Infiltration Rates	6

Appendices

Appendix A	Soil Investigation Report Submittal Checklist
Appendix B	Project Location Map
Appendix C	Existing Conditions and Test Pit Locations Map
Appendix D	Background Information
Appendix E	Boring Logs
Appendix F	Field Data
Appendix G	Infiltration Test Data and Results

Disclosure Statements

I, Alex Schmidt, P.E. certify that I am a Registered Professional Engineer who meets the criteria required by DNREC. I personally acted as the Project Engineer, oversaw performance of the geotechnical investigation, and preparation of this report.



<u>August 13, 2021</u>

Date

Alex Schmidt, P.E. No. 16139

Vice President

I, Elizabeth Chandler, P.E. certify that I am a professional in the related fields with a background education including, but not limited to, engineering and geology. I personally acted as a Field Technician under the supervision of the Project Engineer and prepared this report.

Elizabeth

Elizabeth Chandler, P.E. No. 25243 Engineer II

AND SEAMS TO THE SEAMS

<u>August 13, 2021</u>

Date

Purpose and Scope

On April 27th of 2021 Century Engineering personnel performed a subsurface exploration study to evaluate the subsurface conditions of the proposed Delaware Electric Cooperative (DEC) Cedar Grove Substation site. The purpose of the study was to gather data necessary to develop a site-specific engineered design including:

- Research historical groundwater conditions and existing geologic conditions to develop a background history of the location;
- Characterize the soil and determine field-verified groundwater conditions for the proposed stormwater management facilities;
- Perform infiltration test and analyze results for all test pit locations;
- Approximate depth to apparent groundwater and the seasonal high groundwater table.

A location map, site background information, soil boring logs, and infiltration test results are included in their respective appendices as a part of this report. All soil classifications are in accordance with the USCS soil classification systems and are indicative of a visually estimated soil identification. Infiltration tests were performed as per ASTM procedures. This report was developed according to the *Soil Investigation Report Submittal Checklist*. A completed checklist is available in Appendix A.

Project Characteristics

The proposed project is located in Sussex County, Delaware, in unincorporated Sussex County near Lewes. The purpose of the project is to construct a substation for the DEC with an entrance off of Cedar Grove Road. A location map is available in Appendix B.

The proposed site development involves the construction of concrete pads within a 57-stone area to support a series of transformers and towers operated and maintained by the DEC. The transformers will be fenced for security purposes. The plan also involves the construction of stormwater management infrastructure. Proposed improvements will align with surrounding land uses. At the time of testing in April, one stormwater facility with an infiltration area less than or equal to 11,300 square feet was proposed. A series of five (5) test pits and four (4) infiltration tests were performed to explore the potential location and adhere to the Delaware Sediment and Stormwater requirements stating there must be two sample sites for a facility of that size. Additional tests were performed to provide flexibility for the facility location. Infiltration tests were performed to determine subsurface conditions and infiltration rates in accordance with Delaware Department of Natural Resources and Environmental Control (DNREC) and ASTM specifications.

Existing Site Conditions

That DEC Cedar Grove Substation site is located in unincorporated Sussex County, Delaware. Currently, the site is an undeveloped 9.1 acre agricultural field bounded by Plantation Road to the north, Cedar Grove Road to the east and south, and farmsteads to the west. At the time of testing, surface conditions consisted of maintained grasses and flat land. Surrounding land use includes other agricultural, farmsteads and farm related buildings, shrub/brush rangeland, and cropland. The site itself is mapped as transitional. According to historical aerials, the site does not appear to have undergone bulk grading and has remained undeveloped. Therefore, the assumption has been made that the soil profile will remain

consistent throughout the site. The ambient temperature varied between the mid-70's and low 80's. A location map showing the existing site conditions is available in Appendix C.

Prior to any exploratory investigations background information of the site was gathered to perform an initial screening of available data pertaining to site topography, soil characteristics, and depth to groundwater. The DGS has a series of wells in proximity to the site, however, not all wells were screened in the surficial aquifer. However, one well, Oh25-09, was screened in the surficial Columbia Aquifer and was near the project site. The well appears to have been installed in the early nineties and remains actively observed. With the exception of an extreme peak in groundwater around 2011, the groundwater flux measured in this well appears to hover around 4 feet.

Available soil data indicates that existing soil is classified largely as hydrologic soil group A type GrA (Greenwich Loam) with a portion of the site being hydrologic soil group B type DodB (Downer Sandy Loam). Both soil types are considered well drained. The site falls within the Coastal Plain physiographic province and is comprised largely of unaltered younger layers of sediments. According to the DGS data, the Lynch Heights Formation is the dominant surficial unit on the project site. Lynch Heights Formation is said to be a heterogenous unit comprised of medium to fine sand with discontinuous beds of coarse sand, gravel, silty, and fine to very fine sediments. Groundwater in the area may be sourced from either the Cheswold or Columbia aquifers. A series of confined and shallow unconfined aquifers are located regionally. Flow direction, gradient, and pressures of the groundwater are not currently known. All background information is available in Appendix D.

Field Exploration and Study

To effectively determine the subsurface conditions on the site a total of 5 test pits (TP 1-5) were excavated and four infiltration tests were performed adjacent to the pits (INF 1-4), except TP-5. Pits were excavated to depths between 7.5 and 10 feet using an excavator. Test pit depths allowed for effective determination of limiting layers beneath the proposed facility. Approximate pit locations are available on the map provided in Appendix C.

Apparent groundwater depth and seasonal groundwater high depth were visually estimated by identifying presence of redoximorphic formations, such as mottling, the presence of water, soil with low chroma values, and/or changes in soil moisture. A limiting layer was not established for this site as no restrictive layers were encountered, including the seasonal high groundwater table. Trace amounts of silt and clay were noted in the topsoil layer limited to approximately the first foot of the excavations. The underlying strata were comprised of fine to coarse clean sands that were very well sorted and poorly graded.

Additionally, geotechnical staff observed and classified soil types adhering to guidelines established by the United Soil Classification System (USCS). Results from the analyses, including estimated descriptions, stratum attributes, and Munsell soil color codes are available on the boring logs provided in Appendix E and F. Please note that all data noted on the boring logs is approximate and represent the interpretation of the stratum by Century Engineering professionals. Indicated depths may vary and interfaces between materials and formations may be gradual.

Double ring infiltration tests were performed adjacent to the test pits, except for TP-5. More information pertaining to the execution and results of the infiltration tests are available later in this report.

Laboratory testing and Standard Penetration Tests (SPTs) were not conducted in association with this project.

Subsurface Conditions

Throughout the test pits soil composition, thickness, and order remained largely consistent. Evidence of seasonal high groundwater was not encountered. Some discontinuous lenses of small gravel were noted; however, such inclusions are characteristic of the Lynch Heights Formation.

As reflected on the boring logs, approximately 1 - 1.5 feet of organic-bearing topsoil was encountered in the test pit excavations. Underlying layers consisted of fine to medium-coarse clean sand with rare small gravel and a fine to medium clean sand.

As per the USCS classification system, soils were assigned unified symbols based on their respective texture class. Soils on site were noted as SAND (SP), SILTY SAND (SM), GRAVEL (GP). Soils found on site align with what is expected of the Coastal Plain physiographic province and, more specifically, the Lynch Heights Formation. No rock or bedrock materials was encountered in any of the excavations.

Groundwater was not encountered in any of the excavations. Additionally, mottling indicative of the seasonal high groundwater table was not identified. Although neither groundwater nor signs of a seasonal high groundwater level were encountered, groundwater levels may rise and fall throughout the year in accordance with seasonal changes, local precipitation, and surrounding surface conditions.

Infiltration Testing

An infiltration test was performed adjacent to 4 of the 5 test pits. Tests strictly adhere to information provided in Appendix 1 of the DNREC BMP Standards and Specifications document and ASTM D-3385 guidelines. Double ring infiltration tests were performed for this project. The double ring testing method was used in conjunction with the quasi-constant head method to determine the infiltration rates of the soil. In some testing locations, it was difficult to keep the outer ring filled for the duration of the test due to the rapid infiltration rates observed.

A total of 4 tests were performed within the footprints of the proposed stormwater management facility. Neither the seasonal high groundwater table nor a restrictive layer were identified during the excavations. Therefore, the tests were performed at an elevation of 20 feet as per the direction of the designer. The test pits were excavated to a minimum elevation of 18 feet to maintain the required 2 feet of separation from any restrictive layer as required by the DNREC guidelines. As no restrictive layers were identified within the test pits, all testing was performed a minimum of 2 feet above the bottom.

The typical 60-minute pre-soaking period was not observed for any of the four infiltration tests. Instead, a drop of over 12" was observed and is deemed sufficient for the pre-soaking period as per the DNREC regulations. After pre-soak requirements were met, the rings were re-filled with water and a timer was started. All infiltration tests except for INF-4 yielded a drop of at least 12 inches in 15 minutes or less for a minimum of 30 minutes. Rates observed at INF-4 did not meet the criteria for a high rate of infiltration, therefore requiring continued testing with readings every 15 minutes for 3 hours. A steady state was never achieved in the tests due to the high rates of infiltration. Due to the high rates, difficulty maintaining a consistent head, and homogenous soil conditions across all excavations, tests were terminated early.

Considering the factors, a professional decision was made to provide a conservative design infiltration rate significantly less than the rates observed during the course of the testing.

The final field infiltration rate for INF-4 was determined by averaging the last four infiltration rates observed. However, given the high infiltration rates observed for INF-1, INF-2, and INF-3, the final field infiltration rate was determined by using the lowest infiltrate rate observed during testing as opposed to an average of the final four readings. Final boring logs and field data sheets are available in Appendix E and F, respectively. A table summarizing the results is available below while raw data and infiltration rate curves are available in Appendix G.

Depth identified in the table are from existing ground at the time the test was performed. INF-1 is associated with TP-1 and so on. TP-5 did not have an affiliated infiltration test.

Test	Testing Method	Depth to Apparent Groundwater	Depth to Limiting Layer	Infiltration Test Depth	Infiltration Test Elevation (AMSL)	Final Field Measured Infiltration Rate (In/Hr)
INF-1	Double	Not	Not	5.46'	20.00'	103.50
	Ring	Encountered	Encountered			
INF-2	Double	Not	Not	5.64'	20.00'	138.60
	Ring	Encountered	Encountered			
INF-3	Double	Not	Not	5.70'	20.00'	50.40
	Ring	Encountered	Encountered			
INF-4	Double	Not	Not	5.85'	20.00'	14.52
	Ring	Encountered	Encountered			

Table 1 - Infiltration Test Results

Conclusion and Recommendations

This report was developed solely for the use of Century Engineering in relation to the proposed development of the DEC Cedar Grove Substation in Lewes, Delaware. This complete report shall be attached to any future project specifications. The analyses of subsurface conditions, soil type, and infiltration rates are based upon the information and equipment made available at the time of testing, report generation, and is based on observed on-site conditions. All services and findings have been prepared as per generally accepted engineering principles and guidelines. All recommendations are based solely on field findings and require additional engineering to determine suitability.

In accordance with DNREC guidelines, all infiltration tests demonstrated passing field rates (greater than 1.02 in/hr). Due to the high rates observed during testing, the standard factor of safety was not applied to the field rates to determine the design rates. DNREC guidelines state 15 in/hr is the maximum allowable design infiltration rate. While INF-1, INF-2, and INF-3 significantly exceed that standard, a design infiltration rate of 10 in/hr is recommended for the tests. The lower rate is recommended to provide an additional factor of safety to the design. A factor of safety of 2.0 was applied to the field measured results from the double ring infiltration tests to determine the recommended design infiltration rate for INF-4. The recommended rates are available in Table 2 below.

Test Pit	Allowable Pond Bottom	Field Measured Infiltration	Design Infiltration Rate
	Elevations (AMSL)	Rate (In/Hr)	(In/Hr)
INF-1	16.10 - 20.00'	103.50	10.00
INF-2	15.36 - 20.00'	138.60	10.00
INF-3	15.30 - 20.00'	50.40	10.00
INF-4	15.15 - 20.00'	14.52	7.26

Table 2 - Recommended Design Infiltration Rates

Given that the depth to the seasonal high groundwater table is at least 7.5 feet deep and the rates were exceptionally high, infiltration facilities of a variety of depths and sizes may be suitable for stormwater maintenance on the site. It is not recommended for the depth of the facility to exceed the infiltration testing elevations at their respective locations. Due to the size, the facility required multiple infiltration rate, or an average, for all calculations. Impacts to surrounding infiltration facilities is not anticipated upon the installation of this facility. Likewise, infiltration practices are not anticipated to negatively impact any slopes associated with the final design. During construction of the facility, special care shall be taken to avoid undue compaction of the soils beneath the facility as this may have an adverse effect on the facilities ability to infiltrate within design parameters.

Appendix A



DATE RECEIVED: ______PROJECT NUMBER: _____

PROJECT NAME: _____

The items contained on this checklist are necessary to properly evaluate and determine the completeness of any Soil Investigation Report submitted under subsection 12.1 of the Delaware Sediment and Stormwater Regulations. Complete all items. It is understood not all items will be applicable to all projects and as such marking an item "N/A" is acceptable.

- I. X General Soil Investigation Reports. The following information, as applicable, should be submitted for all projects.
- 1) X The signature, seal and date of a professional engineer or professional geologist experienced in soils licensed in the State of Delaware.
- 2) X General description of the project, project elements, and project background.
- 3) X Project site surface conditions and current use.
- 4) X Regional and site geology. An initial screening of readily available data to determine feasibility of infiltration practices, if applicable, including:
 - a) X Site topography
 - b) X Soil characteristics as defined in the USDA NRCS Web Soil Survey
 - c) X Depth to groundwater and seasonal high water table
 - d) X Historical groundwater level data from the nearest Delaware Geological Survey (DGS) monitoring well or wells
- 5) X Minimum number of borings or test pits conducted in accordance with the following:
 - a) X Surface area BMPs:
 - i)_____ Two (2) borings or pits for the first 8,000 square feet
 - ii) \underline{X} Three (3) borings or pits for up to 16,000 square feet
 - iii) Four (4) borings or pits for up to 25,000 square feet
 - iv) ____ One (1) additional boring or pit for each additional 25,000 square feet beyond the first 25,000 square feet
 - v)____ Boring or pit locations distributed within the facility and sufficient to determine soil variability
 - b) _____ Linear BMPS:
 - i)____ Two (2) borings or pits up to 500 linear feet, and
 - ii) ____ One (1) additional boring or pit per additional 500 linear feet of trench
 - iii)_____ Boring or pit locations distributed and sufficient to determine soil variability

- 6) X Borings or test pits advanced to the depth of the limiting layer or a minimum of three (3) feet below bottom of the proposed facility, whichever is encountered first.
- 7) X Borehole or test pit logs including the following information:
 - a) X Project name
 - b) X Name of individual collecting the field data
 - c) X Date field data was collected
 - d) X Type of boring or test pit excavation method and equipment used
 - e) X Air temperature and precipitation, including significant precipitation prior to investigation
 - f) X Elevation of ground at boring location based on site benchmark
 - g) X Visual description of soil profile layers, and depths below grade encountered
 - h) N/A Sample numbers
 - i) <u>N/A</u> Depths to any indications of instability such as cave in, sloughing, flowing sands, or obstructions
 - j) <u>N/A</u> Blow counts if Standard Penetration Test (SPT) borings are performed
 - k) X Depth of seasonal high water table indicators such as mottling
 - I) X Depth of encountered free water during and after excavation
- m) <u>N/A</u> Depth to bedrock if encountered
- n) X General observations
- o) X Testing standards
- X Depth and type of field testing performed. A summary of the laboratory testing conducted, if applicable.
- 9) X Project soil and rock conditions including a description of the soil and rock units encountered, and how the units tie into the site geology.
- 10) X Description of groundwater conditions, including the identification of any of the following:
 - a) X Confined aquifers
 - b) X Artesian pressures
 - c) X Perched water tables
 - d) X Potential seasonal variations, if known
 - e) \mathbf{X} Any influences on the ground water levels observed
 - f) X Direction and gradient of groundwater, if known
- 11) <u>N/A</u> Discussion of rock structure, if applicable, including but not limited to:
 - a) _____ The results of any field structure mapping using photographs as needed,
 - b) _____ Joint condition

- c) _____ Rock strength
- d) _____ Potential for seepage.
- 12) <u>N/A</u> Summary of geological hazards identified and their impact on the project design, if any. Description of the location and extent of the geological hazard.
- 13) <u>N/A</u> For analysis of unstable slopes including existing settlement areas, cuts, and fills, include background regarding the analysis approach, assessment of failure mechanisms, and determination of design parameters. Include a description of any back-analyses conducted, the results of those analyses, comparison of those results to any laboratory test data obtained, and the conclusions made regarding the parameters to be used for final design.
- 14) <u>N/A</u> Geotechnical recommendations for structural earthwork including:
 - a) _____ Embankment design recommendations, as applicable, including but not limited to the following:
 - i)_____ Slope required for stability
 - ii) ____ Need and extent of removal of any unsuitable materials beneath the proposed fills
 - iii)_____ Any other measures that need to be taken to provide a stable embankment
 - iv) ____ Embankment settlement magnitude and rate
 - b) _____ Cut design recommendations, as applicable, including but not limited to the following:
 - i) _____ Slope required for stability
 - ii) ____ Seepage and piping control
 - iii) _____ Erosion control measures
 - iv) ____ Any special measures required to provide a stable slope
 - c) _____ Determination of adequacy of excavated material for use as structural fill or spoil
 - d) _____ Data for structural designs of BMP outlet works
- 15)<u>N/A</u> Long-term or construction monitoring needs, if applicable.
 - a) _____ Recommendation for types of instrumentation needed to evaluate long-term performance or to control construction
 - b) _____ Specify the reading schedule required
 - c) _____ Specify how the data should be used to control construction or to evaluate long-term performance
 - d) _____ Specify the zone of influence for each instrument.
- 16) _____ Address issues of construction staging, shoring needs and potential installation difficulties, temporary slopes, potential foundation installation problems, earthwork constructability issues, and dewatering, as applicable.
- 17) X Appendices to support geotechnical recommendations.

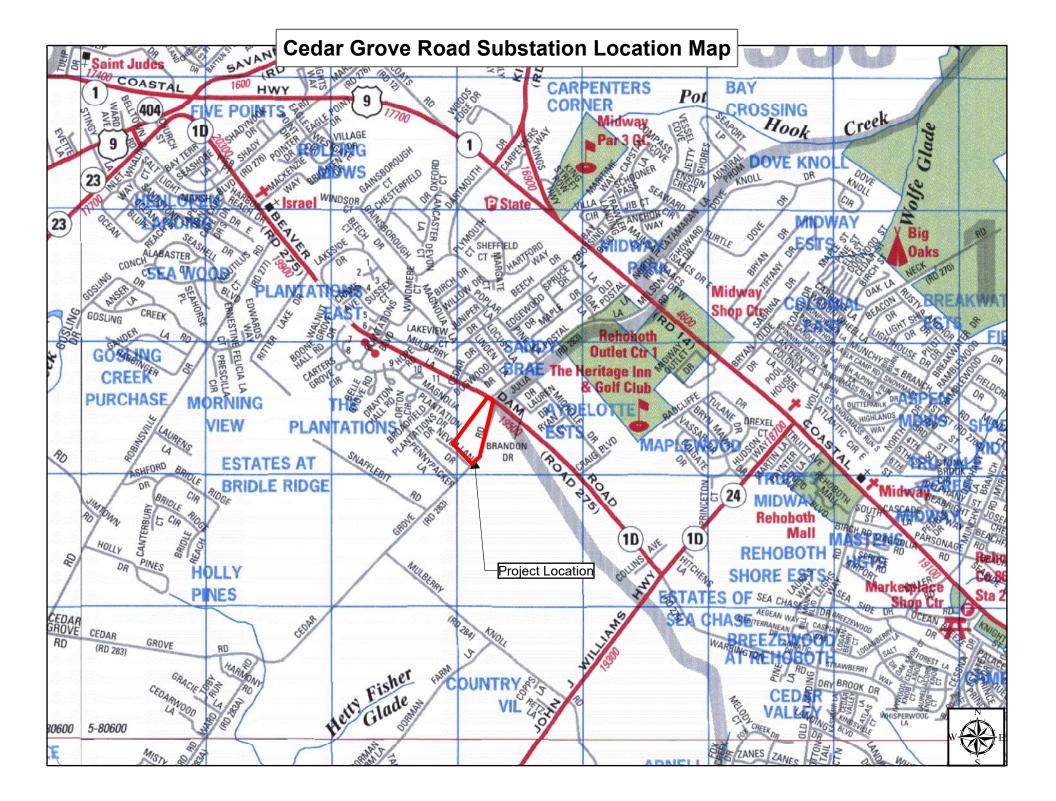
- II. X Infiltration Test Reports. The following information, as applicable, should be submitted for all stormwater management BMPs that rely upon infiltration.
- 18) X Description of approved infiltration testing method.
 - a) X Field Permeability Testing conducted in accordance with ASTM-D5126 "Comparison of Field Methods for Determining Hydraulic Conductivity in the Vadose Zone".
 - b) X Single Ring or Double Ring Infiltrometer test method
 - c) _____ Cased Borehole Permeameter test method
 - i)_____ Department or Delegated Agency approval granted prior to conducting the test
 - ii) ____ Minimum four (4) inch diameter casing used
 - d) $\underline{N/A}$ Any deviation from infiltration testing procedures approved by the Department or Delegated Agency noted in the report.
- 19) X Summary table of location of test, depth of test, elevation of test if available and field verified infiltration rate.
- 20) X The minimum number of field measured infiltration tests are based on the proposed facility's dimensions as follows:
 - a) _____ For an infiltration trench with less than 10,000 square feet of impervious drainage area:
 - i) One (1) test up to 500 linear feet, and
 - ii) ____ One (1) additional test per 250 linear feet of trench, and
 - iii) _____ Sufficient to determine variability.
 - b) _____ For an infiltration trench with greater than 10,000 square feet of impervious drainage area:
 - i)____ One (1) test up to 250 linear feet, and
 - ii) ____ One (1) additional test per 250 linear feet of trench, and
 - iii) _____ Sufficient to determine variability.
 - c) _____ For an infiltration trench used with roadway perforated pipe layouts:
 - i) One (1) test up to 500 linear feet, and
 - ii) ____ One (1) additional test per 500 linear feet of trench, and
 - iii) _____ Sufficient to determine variability.
 - d) _____ For an infiltrating bioretention system:
 - i) One (1) test for the first 8,000 square feet
 - ii) ____ Two (2) tests for up to 16,000 square feet
 - iii) Three (3) tests for up to 25,000 square feet
 - iv) ____ One (1) additional test for each additional 25,000 square feet beyond the first 25,000 square feet

- v)_____ Test locations distributed within the facility and sufficient to determine variability.
- e) X For a surface infiltration basin:
 - i)____ One (1) test for the first 8,000 square feet
 - ii) X Two (2) tests for up to 16,000 square feet
 - iii) _____ Three (3) tests for up to 25,000 square feet
 - iv) ____ One (1) additional test for each additional 25,000 square feet beyond the first 25,000 square feet.
 - v)_____ Test locations distributed within the facility and sufficient to determine variability.
- f) _____ For a subsurface infiltrating practice:
 - i)____ One (1) test per infiltration area
 - ii) ____ One (1) additional test for every 8,000 square feet of infiltration area
 - iii) _____ Test locations distributed within the facility and Sufficient to determine variability
- 21) X Infiltration test log, including:
 - a) X Name and license number of individual performing test. Individuals in responsible charge of infiltration testing possesses a Class D On-Site License issued by DNREC Division of Water Groundwater Discharges Section or be licensed in the State of Delaware as a Professional Engineer or Professional Geologist.
 - b) X Date test was performed
 - c) X Type of test method
 - d) \underline{X} Air temperature and precipitation
 - e) X Depth of test below ground surface and elevation. Separation to a limiting layer such as bedrock or groundwater of at least two (2) feet maintained.
 - f) _____ Diameters of boring and casing
 - g) _____ Depth of casing penetration
 - h) X Time and depth from reference point for each time increment.
 - i) X A saturation period of one hour or a drop of 12 inches or 30.5 centimeters achieved. Saturation period not used in determining field verified infiltration rate.
 - ii) X After the saturation period, a minimum of two (2) test periods completed or until at least two (2) consecutive test periods are consistent and achieve a stabilized infiltration rate. Each test period has a maximum reading interval of 15 minutes and meets one (1) of the following criteria:
 - (1) X A minimum of one hour as determined by the sum of the interval times
 - (2) X A drop of at least 12 inches in 15 minutes or less for a minimum of 30 minutes as determined by the sum of the interval times

- iii)_____ Stabilized infiltration rate met as defined as one of the following:
 - (1)_____ A difference of 0.25 inches or less of drop between the highest and lowest reading of four (4) consecutive readings for infiltration rates greater than two (2.0) inches per hour
 - (2)_____ A difference of 0.125 inches or less of drop between the highest and lowest reading of four (4) consecutive readings for infiltration rates equal to or less than two (2.0) inches per hour.
- iv) X When using the constant head test method, water level inside the casing maintained at a constant level or refilled to the starting level after each reading throughout the test period at no more than 15 minute intervals.
- v)____ When using the falling head test method each test period starts with the same initial head.
- 22) X Infiltration rate graph for each test charting the field verified infiltration rate versus elapsed time of test. Append to each graph a table of the testing results. The field verified infiltration rate is the final steady state reading of the test performed.
- 23) X Geotechnical recommendations for each stormwater management facility, including the following:
 - a) X Recommended design infiltration rate based on the following:
 - i) X Apply a minimum factor of safety of 2.0 to field results from Single Ring or Double Ring Infiltrometer testing
 - ii) _____ Apply a minimum factor of safety of 2.5 to field results from Cased Borehole Permeameter testing.
 - iii) X Provide an elevation range over which the recommended design rates are applicable.
 - iv) X The maximum design infiltration rate is less than or equal to 15 inches per hour.
 - b) X Impact of infiltration on adjacent facilities
 - c) X Effect of infiltration on slope stability
 - d) $\underline{N/A}$ If the facility is located on a slope, stability of slopes within the facility
 - e) $\underline{N/A}$ Foundation bearing resistance
 - f) X If steady state conditions for a given test are not achieved, provide an explanation as to why steady state could not be achieved and the professional's opinion regarding the use of the results for design purposes. If steady state is not achieved for a given test and a reasonable professional opinion is not provided, the Department or Delegated Agency may require additional testing.

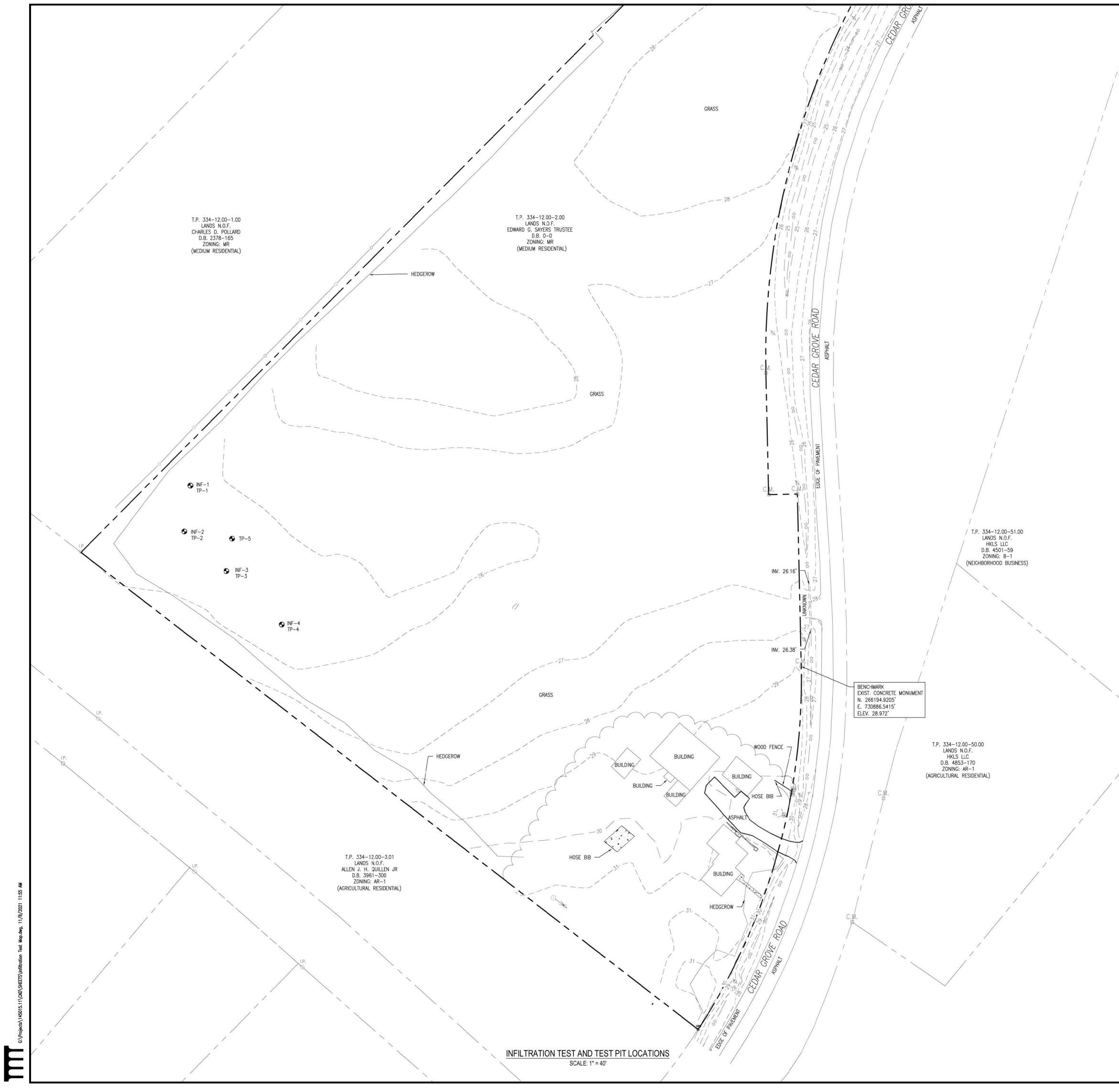
- III.<u>N/A</u> Geotechnical Reports for Embankments. The following information, as applicable, should be submitted for all stormwater management BMPs containing an embankment.
- 24)_____ The signature, seal and date of a professional engineer licensed in the State of Delaware.
- 25) _____ Subsurface Exploration
 - a) _____ Explorations every 200 feet on center along the length of the embankment.
 - b) _____ Unless bedrock is encountered at a shallower depth, explorations at a depth twice the proposed height from bottom of pond to top of embankment.
 - c) _____ If bedrock is encountered, a minimum five (5) foot rock core performed. If organic, plastic, or soils with an actual or estimated N-value less than four (4) are encountered, extended exploration to a depth of four (4) times the proposed embankment height.
 - d) _____ If there is a potential for a significant groundwater gradient beneath an embankment or surface water levels are significantly higher on one side of the embankment than the other, the effect of reduced soil strength caused by water seepage has been evaluated.
 - e) _____ Seepage effects considered when an embankment is placed on or near the top of a slope that has known or potential seepage through it.
- 26) Summary of design analyses, which provide the project description and basis of the design recommendations.
- 27) Summary of stability analyses, which provide the results of the stability analyses performed for the given embankment dimensions.
- 28) Summary of settlement analyses, including design assumptions and settlement results for abovegrade embankments.
- 29) _____ Design recommendations for embankment construction identifying the following actions:
 - a) _____ Construction procedures for placement of material in embankment widening areas
 - b) _____ Embankment cut-off and core trench materials for above-grade embankments
 - c) _____ Special notes for excavation of unsuitable material, with specific backfill requirements
 - d) _____ Specific measures required prior to placing embankment material
 - e) _____ Installation of appropriate erosion control and vegetative cover

Appendix B Project Location Map



Appendix C

Existing Conditions and Test Pit Locations Map



	This drawing is the property of <u>Century Engineering</u> and is prepared for the exclusive use of its clients at the location indicated. No other use is authorized or intended.
0' 40' 80' 120 SCALE: 1" = 40'	Interview of the second

Appendix D Background Information

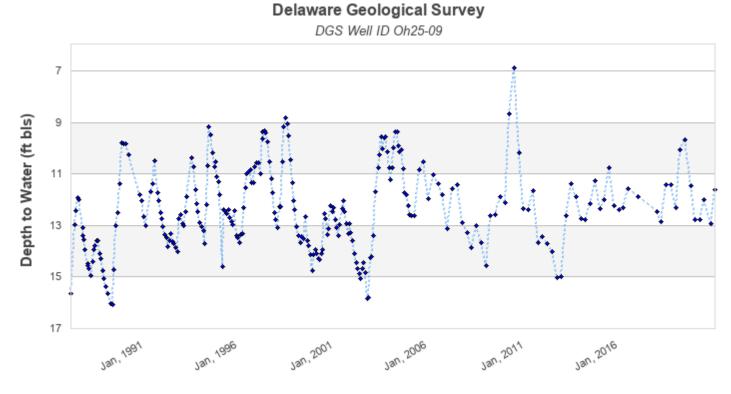
DGS Well ID Oh25-09

Location: Sussex County Easting/Northing: 485322.2, 4286883.6 Latitude/Longitude: 38.7305, -75.16887 Altitude: 29 ft

Drilled Date: 1986-10-23 Start Date: 1986-12-22 End Date: 2020-11-04 Number of Obs: 260

Print 🔿 Data Download 🔙

Screen Top: 43 ft Screen Bottom: 73 ft Aquifer: Columbia



Created on: March 24, 2021, 12:51 pm

Cedar Grove 2017 Land Use



Farms, Pasture and Cropland

Esri, HERE, IPC | USDA FSA, Maxar | USDA FSA, MA

Cedar Grove Soils



3/24/2021, 12:13:34 PM	1:4,514	
Soils Sussex County	0 0.04 0.09 0.17 mi	
Downer	0 0.05 0.1 0.2 km	
Greenwich	USDA FSA, GeoEye, Maxar, Esri, HERE, iPC	
Greenwich-Urban		

Esri, HERE, iPC | USDA FSA, Maxar | USDA FSA, MA

Cedar Grove Tax Parcels



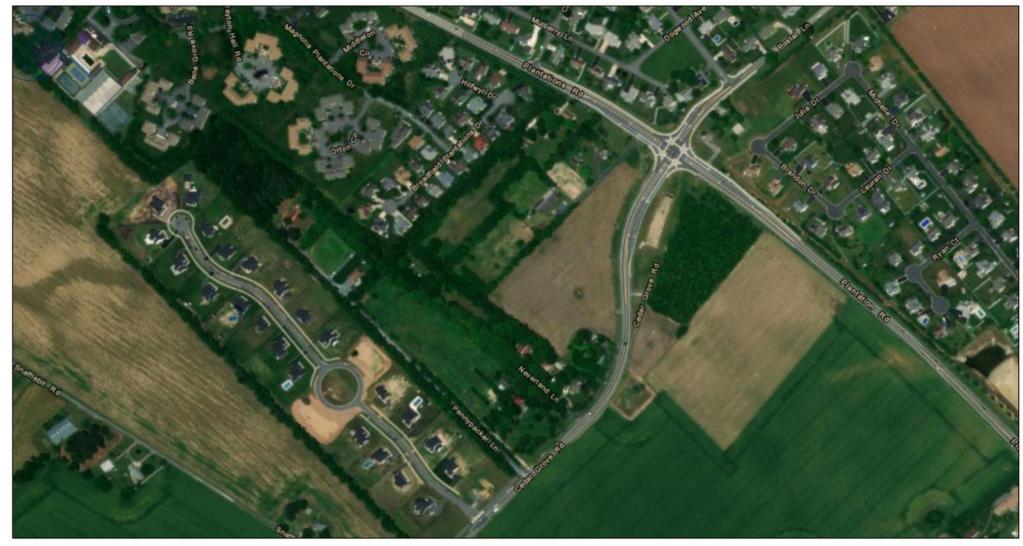
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Tax Parcels

			1:4,514	4	
0	0.04	4	0.09	e	0.17 mi
0	0.05	0.1		0.2 km	

USDA FSA, GeoEye, Maxar, Sussex County Government, Esri, HERE, iPC

Cedar Grove Wetlands & Well Head Protection

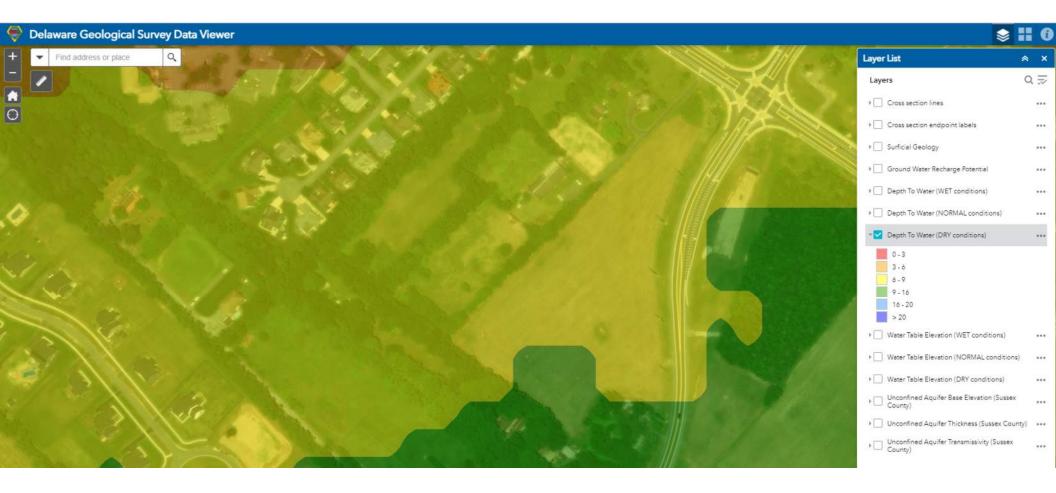


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0	0.04	4	0.09		0.17 mi
0	0.05	0.1	<u></u>	0.2 km	

Wetland mapping is supported with funding provided by the Environmental Protection Agency., USDA FSA, GeoEye, Maxar, Esri, HERE, iPC







Appendix E Boring Logs

				Т	EST	ľ BO	RIN	G]	LOG				BORING TP-1				
	N		TEN	I E E	U] ri	RY N G	/			PROJECT CLIENT CONTRAC	: CTOR :	Delaw	Cedar Grove Substation are Electric Cooperative ry Engineering, Inc.				
GROUI	NDW	ATER	D	EPTH ((ft) Of	F:		EC	UIPMENT	CASING	SAMPLER	CORE	CONTRACT NO.: 145015.11 SHEET NO. : 1 of 1				
Date	-	ſime	Water	Casi	ng	Но	ole	Ту	pe:		Hand Auge		NORTHING : EASTING :				
4-27-21	I D	rilling	Dry					Siz	e I.D.:				ELEVATION : 25.46 DATE START : 4-27-21				
4-27-21	I Con	npletion	Dry					На	mmer Wt.				DATE START 4-27-21 END : 4-27-21 DRILLER : A. Schmidt				
		Case	Sampler		80	mplo	Sam		mmer Fall Elev-				INSPECTOR : E. Chandler				
in C Feet			Blows	Sample Numbe	e De	epth inge	Reco ery (In))V-	ation/ Depth (ft)		FIELD C	CLASSI	FICATION AND REMARKS				
4	<u>. 14</u> <u>. 14</u> . <u>14</u> . <u>14</u> . <u>14</u>		_						24.0	Brown, sl Sar	ightly mo idy SILT,	moist, micaceous, medium to coarse-grained LT, some organics, some roots (Topsoil)					
- 5 -									1.5 1.5 1.5	Reddish Y and Pale Brow (SF	n, moist,		st, medium to coarse-grained, sub-angular ed SAND, trace small gravel (SP)				
10			-						16.5 9.0			Bottom	of Test Pit @ 9.0 Ft.				
- 10 -		- · · · ·															
BLOWS/			SITY	BLO		T.			TENCY	777	IDENTIFIC	ATION	SUMMARY				
0-5 6-10 11-30 31-50 51+) 0 0	Loo Medium De	Loose ose 1 Dense nse Dense	6 1	0-3 4-5 6-10 1-15 6-30		Ме	So dlun Sti	n Stiff - U - Undisturbed Plston Samples:								
110 21					<u>31+</u>			Ha	rd	🖂 - See	Remarks		BORING TP-1				

				5	ГES	т во	RIN	G	LOG				BORING TP-2 EC - Cedar Grove Substation				
Ę.	11		TEN NGIN	J E E	U RI	R}				PROJECT CLIENT CONTRAC	:	Delaw	Cedar Grove Substation are Electric Cooperative ry Engineering, Inc.				
GRO	UNDW	ATER	C	EPTH	(ft) C	DF:		EG		CASING	SAMPLER	CORE	CONTRACT NO.: 145015.11 SHEET NO. : 1 of 1				
Date	θ.	Time	Water	Cas	ing	Ho	ole	Ту	pe:		Hand Auger		NORTHING : EASTING :				
4-27-	21 0	rIlling	Dry					Siz	e I.D.:				ELEVATION : 25.64				
4-27-	21 Cor	npletion	Dry					На	mmer Wt.	:			DATE START : 4-27-21 END : 4-27-21				
									mmer Fall	:			DRILLER : A. Schmidt INSPECTOR : E. Chandler				
Depth in Feet	Strata Change	Case BPF (Drill) (min/ft)	Sampler Blows Per 6'' (RQD%)	Samp Numb	le D	epth ange	Samp Reco ery (in)	V-	Elev- ation/ Depth (ft)		FIELD (CLASSII	FICATION AND REMARKS				
	<u> <u>x 12</u> <u>x 12</u> <u>12 x 12</u> <u>x</u> <u>x 12 x 12</u> <u>x</u></u>								24.6	Brown, n and	noist, medi d organics	ium to co (Topsoi	parse-grained Sandy SILT, some roots l)				
		· · ·							1.0	Reddish SA	Yellow, m ND, trace	y, moist, medium to coarse-grained, poorly sorted ace small gravel (SP)					
-		· · ·					:										
_																	
- 5 -																	
_																	
				4					18.6								
									7.0	Pale Brov (SF	vn, moist, ')	fine to n	nedium-grained, poorly sorted SAND				
- 10 -									15.6								
10									10.0		Bottom of Test Pit @ 10.0 Ft.						
BLOW	S/FT.	DEN	ISITY	BLC	WS/	FT.	CONS	SIS	TENCY	SAMPLE	IDENTIFIC,	ATION	SUMMARY				
0- 6-1 11- 31-	10 30 50	Lo Mediun De	Loose ose n Dense nse	1	0-3 4-5 6-10 1-15		Мес	So diun Sti	n Stiff ff	S - S - Split Spoon Overburden:							
51	+	Very	Dense		6-30 31+			əry Hai	Stiff rd		ash Sample Remarks		BORING TP-2				

				T	EST BO	ORIN	ING LOG BORING TP-3 PROJECT DEC - Cedar Grove Substation								
1	Ţ		TEN NGIN		JR RING	ſ			PROJECT CLIENT CONTRAC	CTOR :	Delaw	Cedar Grove Substation are Electric Cooperative ry Engineering, Inc.			
GRO	UND	WATER	D	EPTH (f	t) OF:		EC		CASING	SAMPLER	CORE	CONTRACT NO.: 145015.11 SHEET NO. : 1 of 1			
Date	•	Time	Water	Casin	g H	ole	Ту	oe:		Hand Auger		NORTHING : EASTING :			
4-27-2	21	Drilling	Dry				Siz	e (.D.:				ELEVATION : 25.70			
4-27-2	21 C	Completion	Dry				На	mmer Wt.:				DATE START : 4-27-21 END : 4-27-21			
								mmer Fall:				DRILLER : A. Schmidt INSPECTOR : E. Chandler			
Depth In Feet		nge (Drill) (min/ft)	Per 6"	Sample Number	Sample Depth Range (ft)	e Sam Reco ery (in)	-V	Elev- ation/ Depth (ft)		FIELD (CLASSII	FICATION AND REMARKS			
	<u>, 17</u> 17 - <u>7 1</u> 17 - <u>7 1</u>	2.5						24.7	Brown, m (To	oist, medium to coarse Sandy SILT, some roots psoil)					
								1.0	4.7 1.0 Reddish Yellow, moist, medium to coarse-grained, poorly sorted SAND, trace small gravel (SP)						
_															
			-												
- 5 -		····	_												
-		· · · · · · · · · · · · · · · · · · ·	_					18.7 7.0				·····			
							i	7.0	Pale Brov (SF	vn, moist, ')	fine to n	nedium-grained, poorly sorted SAND			
		····	-					16.7 9.0			D //				
10											Bottom (of Test Pit @ 9.0 Ft.			
- 10 -															
_			-												
BLOW			NSITY		VS/FT.			TENCY			ATION	SUMMARY			
0- 6-1 11-	10 30	Lo Medlu	/ Loose bose m Dense	4 6-	-3 -5 10		So diur	n Stiff	Stiff J - T - Thin Wall Tube Rock:						
31- 51			ense ' Dense	16	-15 -30 1+	V	Sti ′ery Ha	Stiff	🖾 - w - wa	mond Core ash Sample Remarks		BORING TP-3			

	·· ., ·			Т	'ES'I	г во	RIN	GJ	LOG					BORING TP-4 • Cedar Grove Substation				
1	n		TEN	IEE IEE	J] R I	RY NG	/			CLI	DJECT ENT NTRAC	TOR :	Delawa	Cedar Grove Substation are Electric Cooperative y Engineering, Inc.				
GRO	UNDW	ATER	D	EPTH ((ft) O	F:		EC		г с	ASING	SAMPLER	CORE	CONTRACT NO.: 145015.11 SHEET NO. : 1 of 1				
Date	, .	Time	Water	Casi	ng	Но	le	Ту	be:			land Auge		NORTHING : EASTING :				
4-27-2	21 🗆	rilling	Dry					Siz	e I.D.:					ELEVATION : 25.85 DATE START : 4-27-21				
4-27-2	21 Cor	npletion	Dry					На	mmer Wt.	:				END : 4-27-21				
							1_		mmer Fall					DRILLER : A. Schmidt INSPECTOR : E. Chandler				
Depth in Feet	Strata Change		Per 6"	Sample Numbe	e De	epth ange	Samp Reco ery (in)	v-	Elev- ation/ Depth (ft)			FIELD C	CLASSIF	ICATION AND REMARKS				
_	<u>76 70</u> 7 77 7								24.9	Br	rown, m org	oist, med anics and	ium to co roots (Te	parse-grained Sandy SILT, some				
_		· · ·							1.0	Re	eddish Y SA	∕ellow, m ND (SP)	oist, mec	ium to coarse-grained, poorly sorted				
		· · ·																
- 5 -		•																
									18.9									
						i			7.0 18.4 7.5	Pa	le Brov (SP	yn, moist,	fine to n	nedium-grained, poorly sorted SAND				
_			-						1.5		<u></u>		Bottom o	of Test Pit @ 7.5 Ft.				
_			-															
- 10 -			-															
BLOW	S/FT.	DEN	NSITY	BLO	WS/I	FT.	CON	SIS	TENCY	5	SAMPLE	IDENTIFIC	ATION	SUMMARY				
0- 6-7 11- 31-	10 30	Lo Mediu	Loose oose n Dense onse	6	0-3 4-5 3-10 1-15			So	n Stiff		- U - Unc	t Spoon Wall Tube listurbed Pla mond Core		Overburden: Rock: Samples:				
51			Dense	1	6-30 31+				Stlff		- W - Wa	ish Sample Remarks		BORING TP-4				

				T	ES	ST BORING LOG BORING TP-5 PROJECT : DEC - Cedar Grove Substation											
	1		TEN	ITI IEE	IJ RI	R) N C			(PROJECT CLIENT CONTRAC	CTOR :	Delawa	Cedar Grove Substation are Electric Cooperative ry Engineering, Inc.				
GROL	JNDW	ATER	D	EPTH ((ft) O	F:		EC	UIPMENT	CASING	SAMPLER	CORE	CONTRACT NO.: 145015.11 SHEET NO. : 1 of 1				
Date		Time	Water	Casi	ng	Но	le	Ту	be:		Hand Auger		NORTHING :				
4-27-2	:1 C	Drilling	Dry					Siz	e I.D.:				EASTING : ELEVATION : 25.82				
4-27-2	1 Co	mpletion	Dry		-			На	mmer Wt.:				DATE START : 4-27-21 END : 4-27-21				
····									mmer Fall:				DRILLER : A. Schmidt INSPECTOR : E. Chandler				
in (Feet		e (Drill) (min/ft)	Sampler Blows Per 6" (RQD%)	Sample	e De	epth ange	Sam Reco ery (in)		Elev- ation/ Depth (ft)		FIELD (CLASSIF	FICATION AND REMARKS				
¥	<u>76 76</u> 7 74 74 74	<u>i</u>								Brown, moist, medium to coarse-grained Sandy SILT, some roots and organics (Topsoil)							
- 5 -									24.8 1.0	Reddish SA	Yellow, m ND, trace	rganics (Topsoil)					
									18.8 7.0 16.3 9.5	Pale Brov (SF		oist, fine to medium-grained, poorly sorted SAND					
- 10 -			-						9.5			Bottom o	of Test Pit @ 9.5 Ft.				
BLOW	S/FT.	DEN	ISITY	BLO	WS/	FT.	CON	ISIS	TENCY	()))	IDENTIFIC	ATION	SUMMARY				
0-8 6-1 11-3	0 30	Lo Mediur	Loose oose n Dense onse	e	0-3 4-5 3-10 1-15			So diur	n Stiff	t III - T - Thin Wali Tube Rock: Stiff III - U - Undisturbed Piston Samples:							
31-8 51-			Dense	1	1-15 6-30 31+		٧	Stl /ery <u>Ha</u>	Stiff	🖾 - W - Wa	mond Core ash Sample Remarks		BORING TP-5				

Appendix F Field Data

	And the second second second					TNUMBER	145015)],	DATE	4-27-21
	mm	ICE	NTU	RY	ALCONTRACT	INICIAN	AESte		TEMP.	70.80
		ENG	INFER	ING	All the sector states in the	NUMBER	16193		ELEV.	25.46
	Post of the local data in the	and the second diversion of the second se		A REAL PROPERTY AND INCOME.	WE	ATHER	Sunny			
			& TEST LOCA	Contraction of the second			EQUIPME			
	DEC S	ubstatic	on Cede	15	(J-ĐOUBLI		() SHOVE		() OTHER	
	Grove	Road	WF #	1	() SINGLE		() EXCAVA			
		and a state			() CASED I	the second s	DIAMETER	OF CASING		
	() CONST			() 5411	THE REAL PROPERTY AND A RE	METHOD				
		ANT HEAD	CAINED DV	No. of Concession, name	ING HEAD	1 1 4 4 4 4 4		SI CONSTAN	and the second se	()
	A reaction in the second second second	OF LIMITIN	TAINED BY:		OTTE TUBE	() MAN	UALLY	Contraction of the local division of the loc	TVALVE	() OTHER
		EPTH OF TE		Co. el Ler	ТҮРЕ	Unk.	DEDTU	ELEV.	Unk	
	REMARKS:		The second se		ELEV.	20	and the second sec	FCASING	6 "	
	REIVIARNS:	Depth	=0 whe	a sille	d 40	brim of	eing.			
NL.	SAMPLE	TIME		ΔΤΙΜΕ	INITIAL	FINAL DEPTH	Δ DEPTH		INFILTRA	TION RATE
Pr: 30% -	INTERVAL	START	TIME END	(MIN)	DEPTH (IN)		(IN)	DROP (IN)	A CONTRACTOR OF THE OWNER OF	I/HR)
Pr 30/	SAT.	5:19	5:21	2	. 59	1.08	0.49	5.88	18.36	"/4 min
N 42	1	5-21	5:23	2	0	1.04	1.04	12.48	1	
NG	2	5:23	5:27	4	0	1.09	1.09	13.08		
	3	5:27	5:34	7	.18	1.13	0.95	11.4		
	4	5:34	5:40	6	0	1.15	1.15	13.8		
	5	5:41	5:45	Ч.	.36	1.17	0.51	9.72		
	<u> </u>	5:45	5:52	8.	0	1.15	1.15	13.8		
	8	5.75	5:59	6	.24	1.14	.9	10.8		
	9									
	10									
	11									
	12									
	13									
	14			i i i						
	15									
	16									
	17									
	18									
	19									
	20									
	21									
	22									
	23									
	24									
	25 26				-					
	20									

				PROJEC	NUMBER	145015	5.11	DATE	4-27-21	
	CE	NTT	RY	TECH	NICIAN	AESEt	EMC	TEMP.	70'5- 80'5	
	ENIC	NTU	INC	LICENSE	NUMBER	16193	25243	ELEV.	25.64	
	ENG	INCER	ING	WE	ATHER	Sunni	1			
PROJE	CT NAME 8	K TEST LOCA	TION			EQUIPME	NT USED			
DEC S	sub stat	ion Ced	lar	(H) DOUBLE	ERING	() SHOVE		() OTHER		
Grove	Roca	INF the	7	() SINGLE		() EXCAVA				
				() CASED I	THE OWNER WATCHING THE PARTY OF	DIAMETER	OF CASING			
				and the second se	METHOD					
() CONST			and the second se	ING HEAD			SI CONSTAN	No. of Concession, Name of Street, or other Designation, Name of Street, October of Stree		
	VEL MAINT			OTTE TUBE	()-MAN	UALLY	() FLOAT VALVE () OT			
A STATE OF A STATE	OF LIMITIN		Unk.	ТҮРЕ	Unk.		ELEV.	Unk.		
pant do the second day of the second	EPTH OF TE	ST	5.64	ELEV.	20	DEPTH O	F CASING	6 "		
REMARKS:										
	-									
SAMPLE INTERVAL	TIME START	TIME END	Δ TIME (MIN)	INITIAL DEPTH (IN)	FINAL DEPTH (IN)	Δ DEPTH (IN)	DROP (IN)	A REAL PROPERTY AND A REAL PROPERTY AND A	TION RATE	
SAT.	3:06	3:08	2	. 35	1.02	0.67	8.04	> 111 -		
1	3.0%	3:10	2	.28	.78	0.5	6	714.0	174 min	
2	3:10	3:14	4	• \	1. //	1.0	12"	12"/4 r	nia	
3	3:15	3:18	3	0	1.0	0.1	12"	12" (3 +		
4	3:27	3:30	3	.31	1.\	0.79	9.48			
5	3:31	3:34	3	.15	1.2	1.05	12.6			
6	3:34	3:37	3.	.22	1.1	.88	10.56			
7	3:37	3:41	Ч	.23	1	.77	9.24		4	
8	3:41	3:44	3 .	.19	1	0.81	9.72			
9 10	3:44	3:48	y 3	.20	1.15	695	11.4			
10	5.78	2.21	3	.24	(Lab	0.86	10.32			
11										
13										
14										
15										
16							2			
17										
18										
19					Ŧ.					
20										
21										
22		-					1			
23										
24										
25										
26		1				1		1		

					PROJECT	NUMBER	145015	.11.	DATE	4-27-21
		CEI	TTT 1	PV	TECH	NICIAN	AES +		TEMP.	20'5- 80'5
			NTU	1/1	LICENSE	NUMBER	16193	25243	ELEV.	25.70
		ENGI	NEER	ING	WEA	ATHER	SURRY		Contra series of the power	
	PROJEC	CT NAME &	TEST LOCA	TION			EQUIPME	NT USED		
	DEL	Substal	tion Cr	edar	(d)-DOUBLE	RING	() SHOVEL		() OTHER	
				32	() SINGLE		(TEXCAVA			
	Chove.	Food	「これを	3		A DESCRIPTION OF THE OWNER OWNER OF THE OWNER OWNER OF THE OWNER OW	DIAMETER	OF CASING		
			and and a start			METHOD				
1.1	() CONSTA	Contract of the local data		and the second se	NG HEAD	()		SI CONSTAN	the subscription is a party of the subscription of the subscriptio	() 07450
			AINED BY:		OTTE TUBE	() MAN	JALLY	and the second se	TVALVE	() OTHER
	Life contractions in a set	OF LIMITING		Unk.	ТҮРЕ	Unk.	DEDTU	ELEV.	UNK.	
	REMARKS:	PTH OF TE		5.7	ELEV.	201		F CASING	6 *	
	REIVIARRS.	INC:140	ited 12	r" ir	15	minutes	twice. 7	fest stop	ped.	
y.				A TID 45			ADEDTU			
2 " Por Jack	SAMPLE INTERVAL	TIME START	TIME END	Δ TIME (MIN)	INITIAL DEPTH (IN)	FINAL DEPTH (IN)	Δ DEPTH (IN)	DROP (IN)	A CONTRACTOR OF STREET	TION RATE /HR)
i'ar	SAT.	1:15	1:-21	6	. 56	1.35	. 79	9.48	Read as	ster dry
1	1	1:22	1:25	3	.48	. 7	. 22	2.6	- Exceed	5 12"
15 min Z	2	1:25	1:32	4-15		1.03	.7	8.4 -	7-14.88	, 11/
15 (3	1:32	1:38		. 31	.85	.54	6.48	/	115 min
	4	1:38	1:48	10 715	.18	1.1(.93	11.16	715.36	11/
	5	1:48	1:53	5	.42	.77	. 35	4.2		(15 min
	7									
	8									
	9									
	10									
	11									
2	12									
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	14									
	15									
	16									
	17									
	18 19									
	20									
	20									
	22				-					-
	23									
	24									
	25									
	26							-		

				PROJECT	NUMBER	145015		DATE	4-27-21	
	CFI	TTT I	RY	TECH	NICIAN	AES +		TEMP.	70'5-80'	
	ENICI	NTU	INC	LICENSE	NUMBER	16193	25243	ELEV.	25.85	
	ENG	INCER	ING	WEA	THER	SURMY				
PROJEC	CT NAME &	TEST LOCA	TION	1.100	and the second	EQUIPMEN				
DECS	ubstatio	m Geda	e	() DOUBLE		() SHOVEL		() OTHE	R	
Grove	22. 11	y# zu		() SINGLE I		() EXCAVA				
				() CASED B		DIAMETER	OF CASING			
					METHOD	(.) 01144	CONCTAN	TUEAD		
() CONST/	CONTRACTOR OF THE OWNER.		17	ING HEAD	(.)	and the second se	SI CONSTAN	and the second se	() 0745	
		AINED BY:		OTTE TUBE	(a) MANU	JALLY			VALVE () OTHER	
	OF LIMITIN	10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Unker	ТҮРЕ	Unk.	DEDTU O	ELEV.	Unk.		
Street and the second street	EPTH OF TE	Contrast, and a second second second		ELEV.	20		FCASING	6"		
Caller dans store best deshid by		(occhior	100	parimeted	using	Aesial	CAD QI	spicids.		
	L IN C	O CL MAR		layer				INCUTO	ATION RATE	
SAMPLE INTERVAL	TIME START	TIME END	Δ TIME (MIN)	INITIAL DEPTH (IN)	FINAL DEPTH (IN)	Δ DEPTH (IN)	DROP (IN)	The second second	N/HR)	
SAT.	12:05	12.07	2	1.0	1.11	. 11	1.32			
_ 1	12:07	12:09	2	1.02	1.12	.10	1.2			
2	12:09	12:11	2	1.0	1.12	.12	1.44			
3	12:11	12:13	2	0./	1,15	. 15	1.8	Tutal		
4	12:13	12:15	2	1.0	1.15	.15	1.6 .	- 7.56	}	
5	12:15	12:18	3	.98	115	.17	2.04	- 7.56		
5 6	12:15	12:18	3 3		1.15	.17	2.04	- 11.16		
5 6 7	12:15 12:18 12:21	12:18 12:21 12:24	N N N	.98	1.12	.17 .13 .15	2.04	9.6		
5 6 7 8	12:15 12:18 12:21 12:24	12:18 12:21 12:24 12:24	N N N N	.98 .99 1.0 1.0	1.12 1.12 1.15	.17 .13 .15	2.04 1.56 1.8 1.8	- 11.16		
5 6 7 8 9	12:15 12:15 12:21 12:21 12:24 12:26	12:18 12:21 12:24 12:24 12:26 12:29	N N N N N	.98 .99 1.0 1.0	1.15 1.12 1.15 1.15	.17 .13 .15 .15	2.04	- 11.16		
5 6 7 8 9 10	12:15 12:15 12:21 12:24 12:24 12:26 12:29	12:18 12:21 12:24 12:24 12:26 12:29 12:32	N N N N N	.98 .99 1.0 1.0 1.0 1.0	1.15 1.12 1.15 1.15 1.15 1.15	.17 .13 .15 .15 .15 .15	2.04 1.56 1.8 1.8 1.8 2.28	- 11.16 - 12.96	-	
5 6 7 8 9 10 11	12:15 12:18 12:21 12:24 12:24 12:26 12:29 12:32	12:18 12:21 12:24 12:24 12:29 12:32 12:32	N N N N N N N	.98 .99 1.0 1.0 1.0 1.0 1.0 1.0 1.04	1.15 1.12 1.15 1.15 1.15 1.15 1.17 1.17	.17 .13 .15 .15 .15 .15 .15	2.04 1.56 1.8 1.8 1.8 2.28 1.56	- 11.16 - 12.96 - 7.44		
5 6 7 8 9 10 11	12:15 12:18 12:21 12:24 12:26 12:26 12:29 12:32 12:34	12:18 12:21 12:24 12:24 12:26 12:29 12:32 12:37	N N N N N N N N	.98 .99 1.0 1.0 1.0 1.0 1.0 1.04 1.04	1.15 1.12 1.15 1.15 1.15 1.15 1.17 1.17 1.17	.17 .13 .15 .15 .15 .15 .19 .19 .19	2.04 1.56 1.8 1.8 2.28 1.56 2.28	- 11.16 - 12.96 - 7.44 .9.72		
5 6 7 8 9 10 11 12 13	12:15 12:18 12:21 12:24 12:24 12:26 12:29 12:29 12:32 12:34 12:34	12:18 12:21 12:24 12:24 12:29 12:32 12:32 12:37 12:37 12:43	5 10 10 10 10 10 10 10 10 10 10 10 10 10	.98 .99 1.0 1.0 1.0 1.0 1.0 1.04 1.04 1.04	1.15 1.12 1.15 1.15 1.15 1.15 1.17 1.17 1.17 1.20 1.2	.17 .13 .15 .15 .15 .15 .19 .19 .19 .19 .19	2.04 1.56 1.8 1.8 2.28 1.56 2.28 2.64	- 11.16 - 12.96 - 7.44		
5 6 7 8 9 10 11 12 13 14	12:15 12:15 12:21 12:24 12:26 12:29 12:39 12:39 12:39 12:39 12:39	12:18 12:24 12:24 12:24 12:24 12:29 12:37 12:37 12:37 12:43	50 50 50 50 50 50 50 50 50 50 50 50 50 5	.98 .99 1.0 1.0 1.0 1.0 1.0 1.04 1.04 1.04 1.01 .98 1.00	1.15 1.12 1.15 1.15 1.15 1.15 1.17 1.17 1.17 1.17	.17 .13 .15 .15 .15 .19 .19 .19 .19 .19 .19 .19	2.04 1.56 1.8 1.8 2.28 1.56 2.28 2.54 1.56	- 12.96 - 12.96 - 7.44 - 9.72 - 12.3	6 in/	
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PRO. DEC Cedar DEPT DEPTH REMARKS: displays	ELECTION	Sector Sector	TION 4tion 4TP H1 9i UNK 9it loc	TECHN LICENSE WEA () SHOVEL () EXCAVA () HAND A TYPE	TOR UGER DEPTH TO UNK.	AES & E 1693 20 DUNNY EQUIPMENT U () OTHER	Me TEMP. 5243 ELEV. SED TER Unkno ELEV.	Unk.
TOP OF	BOTTOM	Mat ob 5		4 @ [l:	30			
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1.5	7.5	6'				Chranuel. 6		
7.5	Bolton	UNKNOWN		AND Ve Rale B		sorted. B	each sund.	813

	CF	NTTI	RY		NUMBER	145015.11 AES& EML	DATE TEMP.	4-27-21 70's
	ENG	NTU	ING	and the second sec	NUMBER	16193 25243	ELEV.	25.64
	down one of the science	& TEST LOCA		WEA	THER	SUNNY EQUIPMENT USED		
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and the second se	H OF EXCAV	Contraction of the local division of the loc	10'	<u> </u>		GROUNDWATER	Unknow	761
and the second second	OF LIMITIN	and the second second second	onk	ТҮРЕ	the second s		ELEV.	an silling
			Sit You	contions	34.963	ocepassionaded	Usino	f
	graptor		0					
Excaua	Her OO	(UD AM	NO CT	w not	ed. Some	Country obse	njed.	
Cround	swater r	104 obscr	ved.					
TOP OF	BOTTOM OF LAYER	THICKNESS OF LAYER	She allow		SOIL E	DESCRIPTION	2	
LATEN	OILATEN	OFLATER	TOPSOIL	M-C Sa	ndy SIL	T. Possibly so	ome clo	al not
0	ſ	I	PLISTIC.	913 Bruw	· Organ	nes present	well	soutes.
1	7	ŝ		-		o will have a		
7	Buttom	NUKRONSU	F. M.	SAND, Beach "	Very C Sund. 813	clean + ver b very Cale	y wel Brown	V
				6				
							4	

				PROJECT	NUMBER	14501	5.11	DATE	4-27-24
	CE	NTTI	RY	TECHN	NICIAN	AESt		TEMP.	70'5
	ENG	NTU	ING		NUMBER	and the second se	25243	ELEV.	25.70
-				WEA	THER	SURNY	ALC: NOT THE OWNER WATER OF THE OWNER OWNER OF THE OWNER OWNE		
alle the second s		& TEST LOCA	TION	() SHOVEL		EQUIPMEI		and a start of the second	
her or	ib start co	r		(-)-EXCAVA		()011121	n		
Gedar	Grove	Rovel TT	°#3	() HAND A					
DEPT	H OF EXCAV	ATION	C(1		DEPTH TO	GROUND	OWATER	Unkno	nave
DEPTH	OF LIMITIN	G LAYER	Unit	ТҮРЕ	A DESCRIPTION OF THE OWNER OWNER OF THE OWNER OWNER OF THE OWNER				Unk.
REMARKS:	Elevation	ons + te	st Pit	location	us abb	roximate	ld. From	evenial	ICAD
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	1	and.							
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\	7	(small	gravel.	Damp	616 Res	ddish 4	ellow.	
	(¢							
			F.M S	AND. CU	lean t	very	well.	Sorded	. Beach
7	D Stor	Juknown	Sand 8	513 very	Pale	Brow	n.		
1	DUI	~		0					
		<u>.</u>					2		
							2		
2					-				

	4			PROJECT	NUMBER	145015.	11	DATE	4-27-21
m	CE	NTU	RY	TECHN	ICIAN	Aes t	EME	TEMP.	703-80'
	ENG	NTU	ING				25243	ELEV.	28-85
			Contraction of the Contraction o	WEA	THER	EQUIPMENT	LICED		
PROJECT NAME & TEST LOCATION DEC Substration				() SHOVEL		() OTHER	USED	and Trees	
DEC ODDIERION				(C) EXCAVA		() OTTER			
Cedar	Grove	Road	TP #4						
DEPT	H OF EXCAV	ATION	7.5		DEPTH TO	GROUNDV	VATER	Unknow	sn.
	OF LIMITIN	and the second	Unk.		Unk			ELEV.	Unk.
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7	Battom	neronsul	F.M S Brach	Sand.	sols 1	un + v	eny c	vell s rown	orted.
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				(m)					

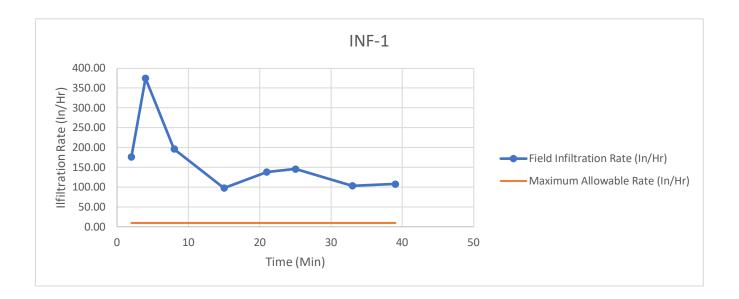
610 City 100				PROJECT	NUMBER	145015.11	DATE	4.27-21
m	CE	NTU	RY		NICIAN	AES + EMC 16193 25243	TEMP.	70.5- 2015
	ENG	INEER	ING	LICENSE	ELEV.	25.82		
PRO.	JECT NAME	& TEST LOCA	TION			SUNNY EQUIPMENT USED		
DEC SU	bstation			() SHOVEL		() OTHER		
Cal	6 - 0	20ad T	0 46	(2) EXCAVA				
	H OF EXCAV		9.5	() HAND A	personal second s	O GROUNDWATER	Unkno	
	OF LIMITIN	Resident and the second second	UNK	TYPE	NIA	GROONDWATER	ELEV.	
REMARKS:	Test Pit	- Eleverti	ons + la	ocation:	Eield Lo	cuted based		
Creantin	when loca	utions of	the	other tes	+ Pits.			
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V.	7	6	fore s	ry note	graver 6	16 Reddish 1	(ellow.	Tiger
7	Bolyon	Unknown				+ Very 1 & Pale Br		rted.
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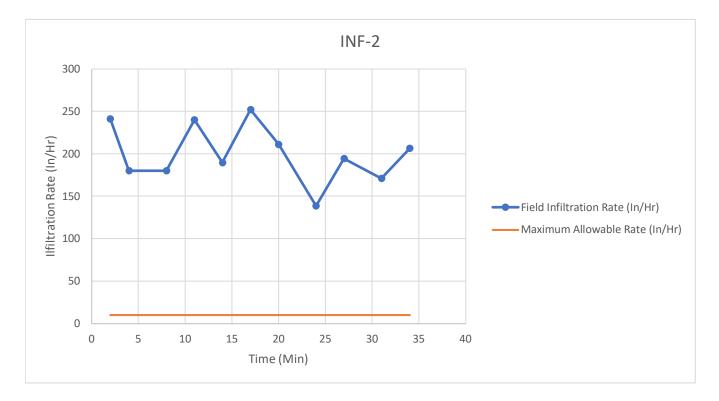
Appendix G

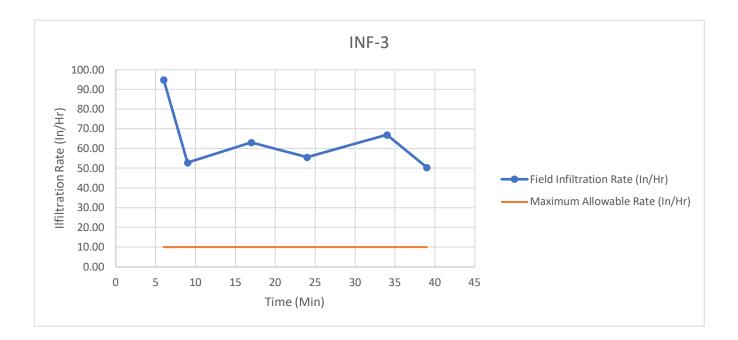
Infiltration Test Data and Results

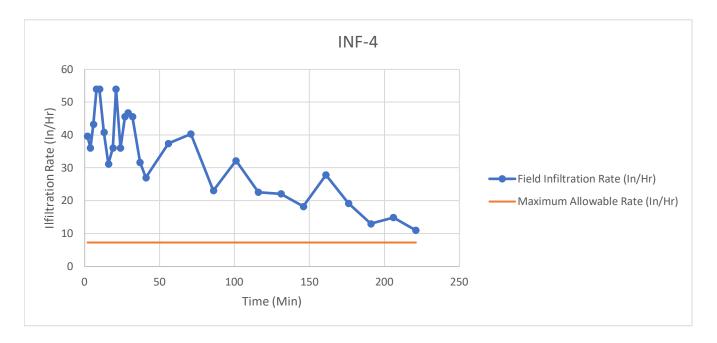
Cedar Grove Substation Infiltration Rate Calculations - April 202.

			Infiltration Test	#1					
Initial Depth (Ft)	Final Depth (Ft)	Change in Depth (tenths of a Foot)	Change in Depth (In)		Drop	Time (Min)		Rate (In/Hr)	
0.59	1.08	0.49		5.88			2	176.40	
0	1.04	1.04		12.48	-6.6		2	374.40	
0	1.09	1.09		13.08	-0.6		4	196.20	
0.18	1.13	0.95		11.4	1.68		7	97.71	
0	1.15	1.15		13.8	-2.4		6	138.00	
0.36	1.17	0.81		9.72	4.08		4	145.80	
0	1.15	1.15		13.8	-4.08		8		In/Hr) Design Rate (In/Hr)
0.24	1.14	0.9		10.8	3		6	108.00	103.50 51.75
0.24	1.14	0.5		10.0	5		0	100.00	105.50 51.75
			Infiltration Test	#2					
Initial Depth (Ft)	Final Depth (Ft)	Change in Depth (tenths of a Foot)	Change in Depth (In)		Drop	Time (Min)	1	Rate (In/Hr)	
0.35	1.02	0.67	5	8.04			2	241.2	
0.28	0.78	0.5		6	2.04		2	180	
0.10	1.10	1		12	-6		4	180	
0.10	1.00	1		12	-0		3	240	
0.31	1.10	0.79		9.48	2.52		3	189.6	
0.15	1.20	1.05		12.6	-3.12		3	252	
0.22	1.10	0.88		10.56	2.04		3	211.2	
0.23	1.00	0.77		9.24	1.32		4	138.6	
0.19	1.00	0.81		9.72	-0.48		3	194.4	
0.20	1.15	0.95		11.4	-1.68		4	171 Field Rate (In/Hr) Design Rate (In/Hr)
0.24	1.10	0.86		10.32	1.08		3	206.4	138.60 69.30
			Infiltration Test	#3					
Initial Depth (Ft)	Final Depth (Ft)	Change in Depth (tenths of a Foot)	Change in Depth (In)		Drop	Time (Min)	- 1	Rate (In/Hr)	
0.56	1.35	0.79		9.48			6	94.80	
0.48	0.7	0.22		2.64	6.84		3	52.80	
0.33	1.03	0.7		8.4	-5.76		8	63.00	
0.31	0.85	0.54		6.48	1.92		7	55.54	
0.18	1.11	0.93		11.16	-4.68		, 10		In/Hr) Design Rate (In/Hr)
0.42	0.77	0.35						50.40	50.40 25.20
		0.33		4.2	6.96		5	50.40	
		0.55		4.2	6.96		5	50.40	50.40
		0.55		4.2	6.96		5	50.40	50.40 25.20
		0.33	Infiltration Test		6.96		5	50.40	56.40 25.20
Initial Death (Et)			Infiltration Test : Change in Denth (In)			Time (Min)			50.40 25.20
Initial Depth (Ft)	Final Depth (Ft)	Change in Depth (tenths of a Foot)	Infiltration Test Change in Depth (In)	#4	Drop	Time (Min)	,	Rate (In/Hr)	50.40 25.20
1	Final Depth (Ft) 1.11	Change in Depth (tenths of a Foot) 0.11		#4 1.32	Drop	Time (Min)	2	Rate (In/Hr) 39.6	50.40 25.20
1 1.02	Final Depth (Ft) 1.11 1.12	Change in Depth (tenths of a Foot) 0.11 0.1		#4 1.32 1.2	Drop 0.12	Time (Min)	2 2	Rate (In/Hr) 39.6 36	50.40 25.20
1 1.02 1	Final Depth (Ft) 1.11 1.12 1.12	Change in Depth (tenths of a Foot) 0.11 0.1 0.12		#4 1.32 1.2 1.44	Drop 0.12 -0.24	Time (Min)	2 2 2	Rate (In/Hr) 39.6 36 43.2	50.00 25.20
1 1.02 1 1	Final Depth (Ft) 1.11 1.12 1.12 1.15	Change in Depth (tenths of a Foot) 0.11 0.1 0.12 0.15		# 4 1.32 1.2 1.44 1.8	Drop 0.12 -0.24 -0.36	Time (Min)	2 2 2 2 2	Rate (In/Hr) 39.6 36 43.2 54	50.00
1 1.02 1 1	Final Depth (Ft) 1.11 1.12 1.12 1.15 1.15	Change in Depth (tenths of a Foot) 0.11 0.1 0.12 0.15		#4 1.32 1.2 1.44 1.8 1.8	Drop 0.12 -0.24 -0.36 0	Time (Min)	2 2 2 2 2 2	Rate (In/Hr) 39.6 36 43.2 54 54	50.70 25.20
1 1.02 1 1 1 0.98	Final Depth (Ft) 1.11 1.12 1.12 1.15 1.15 1.15	Change in Depth (tenths of a Foot) 0.11 0.1 0.12 0.15 0.15 0.17		#4 1.32 1.2 1.44 1.8 1.8 2.04	Drop 0.12 -0.24 -0.36 0 -0.24	Time (Min)	2 2 2 2 2 3	Rate (In/Hr) 39.6 36 43.2 54 54 40.8	50.70 25.20
1 1.02 1 1 0.98 0.99	Final Depth (Ft) 1.11 1.12 1.12 1.15 1.15 1.15 1.15 1.12	Change in Depth (tenths of a Foot) 0.11 0.12 0.15 0.15 0.17 0.13		#4 1.32 1.2 1.44 1.8 1.8 2.04 1.56	Drop 0.12 -0.24 -0.36 0 -0.24 0.48	Time (Min)	2 2 2 2 3 3	Rate (In/Hr) 39.6 36 43.2 54 54 40.8 31.2	50.70 25.20
1 1.02 1 1 0.98 0.99 1	Final Depth (Ft) 1.11 1.12 1.15 1.15 1.15 1.15 1.12 1.12	Change in Depth (tenths of a Foot) 0.11 0.1 0.12 0.15 0.15 0.17 0.13 0.15		#4 1.32 1.2 1.44 1.8 1.8 2.04 1.56 1.8	Drop 0.12 -0.24 -0.36 0 -0.24 0.48 -0.24	Time (Min)	2 2 2 2 3 3 3	Rate (In/Hr) 39.6 36 43.2 54 54 40.8 31.2 36	50.70 25.20
1 1.02 1 1 1 0.98 0.99 1 1	Final Depth (Ft) 1.11 1.12 1.15 1.15 1.15 1.15 1.15 1.12 1.15 1.12	Change in Depth (tenths of a Foot) 0.11 0.12 0.15 0.15 0.17 0.13 0.15 0.15		#4 1.32 1.2 1.44 1.8 1.8 2.04 1.56 1.8 1.8	Drop 0.12 -0.24 -0.36 0 -0.24 0.48	Time (Min)	2 2 2 2 2 3 3 3 2	Rate (In/Hr) 39.6 36 43.2 54 54 54 40.8 31.2 36 54	50.70 25.20
1 1.02 1 1 1 0.98 0.99 1 1 1 1	Final Depth (Ft) 1.11 1.12 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15	Change in Depth (tenths of a Foot) 0.11 0.1 0.12 0.15 0.15 0.17 0.13 0.15 0.15 0.15		#4 1.32 1.2 1.44 1.8 2.04 1.56 1.8 1.8 1.8 1.8	Drop 0.12 -0.24 -0.36 0 -0.24 0.48 -0.24	Time (Min)	2 2 2 2 3 3 3 2 3 3 2 3	Rate (In/Hr) 39.6 36 43.2 54 40.8 31.2 36 54 36	50.70 25.20
1 1.02 1 1 1 0.98 0.99 1 1	Final Depth (Ft) 1.11 1.12 1.15 1.15 1.15 1.15 1.15 1.12 1.15 1.12	Change in Depth (tenths of a Foot) 0.11 0.12 0.15 0.15 0.17 0.13 0.15 0.15		#4 1.32 1.2 1.44 1.8 1.8 2.04 1.56 1.8 1.8	Drop 0.12 -0.24 -0.36 0 -0.24 0.48 -0.24	Time (Min)	2 2 2 2 2 3 3 3 2	Rate (In/Hr) 39.6 36 43.2 54 54 54 40.8 31.2 36 54	50.70
1 1.02 1 1 1 0.98 0.99 1 1 1 1	Final Depth (Ft) 1.11 1.12 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15	Change in Depth (tenths of a Foot) 0.11 0.1 0.12 0.15 0.15 0.17 0.13 0.15 0.15 0.15		#4 1.32 1.2 1.44 1.8 2.04 1.56 1.8 1.8 1.8 1.8	Drop 0.12 -0.24 -0.36 0 -0.24 0.48 -0.24	Time (Min)	2 2 2 2 3 3 3 2 3 3 2 3	Rate (In/Hr) 39.6 36 43.2 54 40.8 31.2 36 54 36	50.70
1 1.02 1 1 1 0.98 0.99 1 1 1 1 1 0.98	Final Depth (Ft) 1.11 1.12 1.15 1.17 1.17 1.17 1.15 1.17 1	Change in Depth (tenths of a Foot) 0.11 0.1 0.12 0.15 0.17 0.13 0.15 0.15 0.15 0.19		#4 1.32 1.2 1.44 1.8 1.8 2.04 1.56 1.8 1.8 1.8 1.8 2.28	Drop 0.12 -0.24 -0.36 0 -0.24 0.48 -0.24	Time (Min)	2 2 2 2 2 2 3 3 2 3 3 2 3 3 3 3 3 3 3 3	Rate (In/Hr) 39.6 36 43.2 54 54 40.8 31.2 36 54 36 45.6	50.70
1 1.02 1 1 1 1 0.98 0.99 1 1 1 1 0.98 1.04	Final Depth (Ft) 1.11 1.12 1.12 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.17	Change in Depth (tenths of a Foot) 0.11 0.1 0.12 0.15 0.15 0.17 0.13 0.15 0.15 0.15 0.15 0.15 0.19 0.13		#4 1.32 1.2 1.44 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8	Drop 0.12 -0.24 -0.36 0 -0.24 0.48 -0.24	Time (Min)	2 2 2 2 2 2 3 3 3 2 3 3 2 3 2 3 2 3 2 3	Rate (In/Hr) 39.6 36 43.2 54 54 40.8 31.2 36 54 36 54 36 45.6 45.6	50.70
1 1.02 1 1 1 0.98 0.99 1 1 1 1 1 0.98 1.04 1.01 0.98	Final Depth (Ft) 1.11 1.12 1.12 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.12 1.22 1.22 1.22 1.22 1.22 1.22 1.22 1.22 1.22 1.22 1.22 1.22 1.22 1.22 1.22 1.22 1.22 1.22 1.25 1.25 1.25 1.25 1.17 1.17 1.27 1.22	Change in Depth (tenths of a Foot) 0.11 0.1 0.12 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.19 0.13 0.19 0.19		#4 1.32 1.2 1.44 1.8 2.04 1.56 1.8 1.8 1.8 2.28 1.56 2.28 2.64	Drop 0.12 -0.24 -0.36 0 -0.24 0.48 -0.24	Time (Min)	2 2 2 2 2 2 2 3 3 2 3 3 2 3 3 2 3 3 2 3 3 2 3 3 2 3 3 2 3 3 2 3 3 2 3 3 2 3 3 3 3 2 3	Rate (In/Hr) 39.6 36 43.2 54 54 40.8 31.2 36 54 36 45.6 45.6 31.68	50.70
1 1.02 1 1 0.98 0.99 1 1 1 1 1 0.98 1.04 1.01 0.98 1.04 1.01	Final Depth (Ft) 1.11 1.12 1.12 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.17 1.2 1.2 1.15 1.5 1.	Change in Depth (tenths of a Foot) 0.11 0.12 0.15 0.15 0.17 0.13 0.15 0.15 0.15 0.15 0.19 0.13 0.19 0.13 0.19 0.22		#4 1.32 1.2 1.44 1.8 1.8 2.04 1.56 1.8 1.8 1.8 2.28 1.56 2.28	Drop 0.12 -0.24 -0.36 0 -0.24 0.48 -0.24		2 2 2 2 2 2 2 2 2 3 3 2 3 3 2 3 3 2 3 5 4	Rate (In/Hr) 39.6 36 43.2 54 54 40.8 31.2 36 54 36 45.6 45.6 46.8 45.6 31.68 27	50.70
1 1.02 1 1 0.98 0.99 1 1 1 1 1 0.98 1.04 1.01 0.98 1.04 1.01 0.98 1 0.37	Final Depth (Ft) 1.11 1.12 1.12 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.17 1.17 1.2 1.17 1.2 1.15 1.17 1.15 1.17 1.15 1.17 1.22 1.5 1.17 1.17 1.22 1.5 1.17 1.5 1.17 1.5 1.17 1.5 1.17 1.5 1.17 1.5 1.17 1.5 1.17 1.5 1.17 1.5 1.17 1.5 1.17 1.5 1.17 1.5 1.5 1.17 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5	Change in Depth (tenths of a Foot) 0.11 0.1 0.12 0.15 0.15 0.17 0.13 0.15 0.15 0.15 0.15 0.19 0.13 0.19 0.22 0.15	Change in Depth (In)	1.32 1.2 1.44 1.8 1.8 2.04 1.56 1.8 1.8 1.8 1.8 2.28 1.56 2.28 2.64 1.8 9.36	Drop 0.12 -0.24 -0.36 0 -0.24 0.48 -0.24		2 2 2 2 2 2 2 2 3 3 2 3 3 2 3 5 4 15	Rate (In/Hr) 39.6 36 43.2 54 54 40.8 31.2 36 54 45.6 45.6 45.6 31.68 27 37.44	5
1 1.02 1 1 1 1 0.98 0.99 1 1 1 1 1 0.98 1.04 1.01 0.98 1 0.37 0.35	Final Depth (Ft) 1.11 1.12 1.12 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.17 1.17 1.2 1.2 1.15 1.17 1.2 1.2 1.2 1.2 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5	Change in Depth (tenths of a Foot) 0.11 0.1 0.12 0.15 0.15 0.15 0.15 0.15 0.19 0.13 0.19 0.13 0.19 0.12 0.15 0.15 0.15 0.15 0.15 0.22 0.15 0.78 0.84	Change in Depth (In)	#4 1.32 1.44 1.8 1.8 1.8 2.04 1.56 1.8 1.8 1.8 2.28 1.56 2.28 2.64 1.8 9.36 10.08	Drop 0.12 -0.24 -0.36 0 -0.24 0.48 -0.24		2 2 2 2 2 2 2 3 3 2 3 2 3 5 4 15 15	Rate (In/Hr) 39.6 36 43.2 54 40.8 31.2 36 54 36 45.6 45.6 45.6 31.68 27 37.44 40.32	5
1 1.02 1 1 0.98 0.99 1 1 1 1 1 0.98 1.04 1.01 0.98 1.04 1.03 7 0.35 0.35	Final Depth (Ft) 1.11 1.12 1.12 1.15 1.15 1.15 1.15 1.15 1.15 1.17 1.2 1.2 1.15 1.15 1.15 1.15 1.17 1.2 1.2 1.2 1.5 1.15 1.5 1.	Change in Depth (tenths of a Foot) 0.11 0.1 0.12 0.15 0.15 0.17 0.13 0.15 0.15 0.15 0.19 0.13 0.19 0.13 0.19 0.13 0.19 0.13 0.19 0.22 0.15 0.78 0.84	Change in Depth (In)	#4 1.32 1.2 1.44 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8	Drop 0.12 -0.24 -0.36 0 -0.24 0.48 -0.24		2 2 2 2 2 2 2 3 3 2 3 2 3 5 4 15 15 15	Rate (In/Hr) 39.6 36 43.2 54 54 40.8 31.2 36 54 36 45.6 45.6 46.8 45.6 31.68 27 37.44 40.32 23.04	5
1 1.02 1 1 1 0.98 0.99 1 1 1 1 1 1 0.98 1.04 1.01 0.98 1.04 1.01 0.98 1.037 0.35 0.35 0.35	Final Depth (Ft) 1.11 1.12 1.12 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.17 1.17 1.2 1.15 1.17 1.17 1.2 1.15 1.19 0.83 1.09 0.83 1.09 0.83 1.09 0.83 1.09 0.83 1.09 0.83 0.95 0.	Change in Depth (tenths of a Foot) 0.11 0.1 0.12 0.15 0.15 0.17 0.13 0.15 0.15 0.15 0.19 0.13 0.19 0.22 0.15 0.19 0.22 0.78 0.78 0.84 0.43	Change in Depth (In)	#4 1.32 1.2 1.44 1.8 1.8 2.04 1.56 1.8 1.8 2.28 1.56 2.28 2.64 1.8 9.36 10.08 5.76 8.04	Drop 0.12 -0.24 -0.36 0 -0.24 0.48 -0.24		2 2 2 2 2 2 3 3 2 3 2 3 5 4 15 15 15 15	Rate (In/Hr) 39.6 36 43.2 54 54 40.8 31.2 36 54 45.6 45.6 45.6 31.68 27 37.44 40.32 23.04 32.16	5
1 1.02 1 1 1 0.98 0.99 1 1 1 1 1 0.98 1.04 1.01 0.98 1.04 1.01 0.98 1.037 0.35 0.35 0.35 0.35 0.36 0.33	Final Depth (Ft) 1.11 1.12 1.12 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.17 1.17 1.2 1.2 1.15 1.17 1.2 1.2 1.2 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5	Change in Depth (tenths of a Foot) 0.11 0.1 0.12 0.15 0.15 0.15 0.15 0.15 0.19 0.13 0.19 0.13 0.19 0.12 0.19 0.13 0.19 0.13 0.19 0.22 0.15 0.78 0.78 0.84 0.64 0.48 0.67	Change in Depth (In)	#4 1.32 1.2 1.44 1.8 2.04 1.56 1.8 1.8 1.8 1.8 1.8 2.28 2.64 1.56 2.28 2.64 1.8 9.36 10.08 5.76 8.04 5.64	Drop 0.12 -0.24 -0.36 0 -0.24 0.48 -0.24		2 2 2 2 2 2 2 3 3 2 3 2 3 5 4 15 15 15 15 15	Rate (In/Hr) 30.6 36 43.2 54 40.8 31.2 36 45.6 45.6 45.6 31.68 27 37.44 40.32 23.04 32.16 22.56	50.70
1 1.02 1 1 0.98 0.99 1 1 1 0.98 1.04 1.01 0.98 1.04 1.01 0.98 1.04 0.35 0.35 0.35 0.35 0.33 0.33 0.37	Final Depth (Ft) 1.11 1.12 1.12 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.17 1.17 1.2 1.2 1.15 1.05	Change in Depth (tenths of a Foot) 0.11 0.1 0.12 0.15 0.15 0.17 0.13 0.15 0.15 0.15 0.19 0.13 0.19 0.13 0.19 0.12 0.15 0.15 0.15 0.15 0.15 0.19 0.22 0.15 0.78 0.74 0.84 0.67 0.47	Change in Depth (In)	74 1.32 1.4 1.4 1.8 1.8 2.04 1.56 1.8 1.8 2.28 2.64 1.8 2.28 2.64 1.8 2.28 2.64 1.8 5.76 8.04 5.52	Drop 0.12 -0.24 -0.36 0 -0.24 0.48 -0.24		2 2 2 2 2 2 2 3 3 2 3 3 2 3 5 4 15 15 15 15 15 15	Rate (In/Hr) 39.6 36 43.2 54 54 40.8 31.2 36 45.6 45.6 45.6 45.6 31.68 27 37.44 40.32 23.04 32.16 22.56 22.08	5
1 1.02 1 1 1 0.98 0.99 1 1 1 1 1 0.98 1.04 1.01 0.98 1.04 1.037 0.35 0.35 0.35 0.35 0.35 0.35 0.35 0.37 0.37	Final Depth (Ft) 1.11 1.12 1.12 1.15 1.15 1.15 1.15 1.15	Change in Depth (tenths of a Foot) 0.11 0.1 0.12 0.15 0.15 0.17 0.13 0.15 0.15 0.15 0.19 0.22 0.15 0.19 0.22 0.15 0.78 0.44 0.67 0.47 0.46 0.38	Change in Depth (In)	** 1.32 1.44 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.2 2.04 1.56 2.28 1.56 2.28 1.56 2.28 1.56 2.28 1.56 2.28 1.56 2.28 1.56 2.28 1.56 2.28 1.56 2.28 1.56 2.28 1.56 2.28 1.56 2.28 1.56 2.28 1.56 2.28 1.56 2.28 1.56 2.28 1.56 2.28 1.56 2.28 1.56 2.28 1.56 2.28 1.56 2.28 1.56 2.28 1.56 2.28 1.56 2.28 1.57 3.64 3.8 3.8 3.8 3.9 3.6 3.9 3.6 3.9 3.6 3.9 3.6 3.9 3.6 3.9 3.6 3.8 3.8 3.8 3.8 3.8 3.8 3.8 3.8 3.8 3.9 3.6 3.9 3.6 3.9 3.6 3.9 3.6 3.6 3.6 3.6 3.6 3.6 3.6 3.6 3.6 3.6 3.6 3.6 3.6 3.6 3.6 3.6 3.6 3.6 3.6 3.6 3.6 3.6 3.6 3.6 3.6 3.6 3.76 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55	Drop 0.12 -0.24 -0.36 0 -0.24 0.48 -0.24		2 2 2 2 2 2 2 3 3 2 3 5 4 15 15 15 15 15 15 15	Rate (In/Hr) 39.6 36 43.2 54 54 40.8 31.2 36 54 45.6 45.6 45.6 31.68 27 37.44 40.32 23.04 32.16 22.56 22.08 18.24	5
1 1.02 1 1 0.98 0.99 1 1 1 1 0.98 1.04 1.01 0.98 1.04 0.98 1.04 0.35 0.35 0.35 0.35 0.35 0.35 0.35 0.33 0.37 0.42 0.42	Final Depth (Ft) 1.11 1.12 1.12 1.15 1.15 1.15 1.15 1.15	Change in Depth (tenths of a Foot) 0.11 0.1 0.12 0.15 0.15 0.15 0.15 0.15 0.19 0.13 0.19 0.22 0.15 0.78 0.78 0.78 0.78 0.78 0.78 0.74 0.74 0.74 0.74 0.45 0.47 0.47 0.46 0.38	Change in Depth (In)	#4 1.32 1.24 1.44 1.8 1.8 2.04 1.8 1.8 2.28 1.56 1.8 1.8 1.8 2.28 1.56 2.28 2.64 1.8 9.36 10.08 5.76 4.56 5.56 4.56 4.56 4.56 5.56 4.56 5.76 4.56 5.76 5	Drop 0.12 -0.24 -0.36 0 -0.24 0.48 -0.24		2 2 2 2 2 2 2 3 3 2 3 2 3 5 4 5 4 5 15 15 15 15 15 15 15	Rate (In/Hr) 39.6 36 43.2 54 40.8 31.2 36 45.6 45.6 45.6 31.68 27 37.44 40.32 23.04 32.16 22.56 22.08 18.24 27.84	
1 1.02 1 1 0.98 0.99 1 1 1 0.98 1.04 1.01 0.98 1.04 1.01 0.98 1.04 0.35 0.44 0.44 0.44 0.44 0.44 0.44 0.44 0.44 0.44 0.44 0.44 0.45 0	Final Depth (Ft) 1.11 1.12 1.12 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.17 1.17 1.2 1.2 1.15 1.15 1.15 1.17 1.2 1.2 1.15 1.05 1.05 1.05 1.05 1.05 1.05 1.05 1.05 1.05 1.08 0.08 0.08 0.88 0.88 0.88 0.88 0.88 0.88 0.88 0.88 0.88 0.88 0.88 0.88 0.88 0.88 0.88 0.88 0.88 0.88 0.88	Change in Depth (tenths of a Foot) 0.11 0.1 0.12 0.15 0.15 0.17 0.13 0.15 0.15 0.15 0.19 0.13 0.19 0.13 0.19 0.13 0.19 0.13 0.19 0.13 0.19 0.22 0.15 0.78 0.74 0.48 0.67 0.47 0.46 0.38 0.58	Change in Depth (In)	 ** 1.32 1.2 1.44 1.8 2.04 1.56 2.28 1.56 2.28 2.28 1.56 2.28 2.264 1.8 9.36 5.76 8.04 5.52 4.56 6.96 4.8 	Drop 0.12 -0.24 -0.36 0 -0.24 0.48 -0.24		2 2 2 2 2 2 2 3 3 3 2 3 3 2 3 5 4 15 15 15 15 15 15 15 15 15 15 15 15 15	Rate (In/Hr) 39.6 36 43.2 54 54 40.8 31.2 36 45.6 45.6 45.6 45.6 31.68 27 37.44 40.32 23.04 32.16 22.56 22.08 18.24 19.2	5
1 1.02 1 1 0.98 0.99 1 1 1 1 0.98 1.04 1.01 0.98 1.04 0.98 1.04 0.35 0.35 0.35 0.35 0.35 0.35 0.35 0.33 0.37 0.42 0.42	Final Depth (Ft) 1.11 1.12 1.12 1.15 1.15 1.15 1.15 1.15	Change in Depth (tenths of a Foot) 0.11 0.1 0.12 0.15 0.15 0.15 0.15 0.15 0.19 0.13 0.19 0.22 0.15 0.78 0.78 0.78 0.78 0.78 0.78 0.74 0.74 0.74 0.74 0.45 0.47 0.47 0.46 0.38	Change in Depth (In)	#4 1.32 1.24 1.44 1.8 1.8 2.04 1.8 1.8 2.28 1.56 1.8 1.8 1.8 2.28 1.56 2.28 2.64 1.8 9.36 10.08 5.76 4.56 5.56 4.56 4.56 4.56 5.56 4.56 5.76 4.56 5.76 5	Drop 0.12 -0.24 -0.36 0 -0.24 0.48 -0.24		2 2 2 2 2 2 2 3 3 2 3 2 3 5 4 5 4 5 15 15 15 15 15 15 15	Rate (In/Hr) 39.6 36 43.2 54 54 40.8 31.2 36 54 45.6 46.8 45.6 31.68 27 37.44 40.32 23.04 32.16 22.56 22.08 18.24 27.84 19.2 12.96	
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1 1.02 1 1 1 0.98 0.99 1 1 1 0.98 1.0 1 1 0.98 1.0 1 0.98 1.0 1 0.98 1.0 1 0.98 1.0 1 0.98 1.0 1 0.98 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	Final Depth (Ft) 1.11 1.12 1.12 1.15 1.15 1.15 1.15 1.15	Change in Depth (tenths of a Foot) 0.11 0.1 0.12 0.15 0.15 0.17 0.13 0.15 0.15 0.15 0.19 0.22 0.13 0.19 0.22 0.5 0.78 0.84 0.67 0.48 0.67 0.47 0.48 0.58 0.58 0.58	Change in Depth (In)	 ** 1.32 1.2 1.44 1.8 1.8 1.8 1.8 1.8 1.8 2.28 1.56 2.28 1.56 2.264 1.8 9.36 5.76 8.04 5.64 5.62 4.56 6.96 6.96 6.96 6.96 6.98 4.8 3.24 	Drop 0.12 -0.24 -0.36 0 -0.24 0.48 -0.24		2 2 2 2 2 2 3 3 3 2 3 3 2 3 5 4 15 15 15 15 15 15 15 15 15 15 15 15 15	Rate (In/Hr) 39.6 36 43.2 54 54 40.8 31.2 36 54 45.6 46.8 45.6 31.68 27 37.44 40.32 23.04 32.16 22.56 22.08 18.24 27.84 19.2 12.96	











OFFICE OF THE STATE FIRE MARSHAL Technical Services

22705 Park Avenue Georgetown, DE 19947



SFMO PERMIT – SHALL BE POSTED ON JOBSITE UNTIL FINAL INSPECTION

Plan Review Number: 2021-04-208507-MJS-01 Status: Approved as Submitted Tax Parcel Number: 334-12.00-2.00 Date: 10/25/2021

> Cedar Grove Road Lewes DE 19958

Project

Delaware Electric Co-op Cedar Grove Substation

Delaware Electric Co-op Property - Cedar Grove Road

Scope of Project

Number of Stories: Square Footage: Construction Class: Fire District: 82 - Lewes Fire Dept Inc

Occupant Load Inside: Occupancy Code: 9794

Applicant

John Sclesky 550 Bay Road Dover, DE 19901

This office has reviewed the plans and specifications of the above described project for compliance with the Delaware State Fire Prevention Regulations, in effect as of the date of this review.

A Review Status of "Approved as Submitted" or "Not Approved as Submitted" must comply with the provisions of the attached Plan Review Comments. Any Conditional Approval does not relieve the Applicant, Owner, Engineer, Contractor, nor their representatives from their responsibility to comply with the plan review comments and the applicable provisions of the Delaware State Fire Prevention Regulations in the construction, installation and/or completion of the project as reviewed by this Agency.

A final inspection is required.

This Plan Review Project was prepared by:

Jefferson Cerri Fire-Protection Splecialist II

Page 1 of 22

FIRE PROTECTION PLAN REVIEW COMMENTS

Plan Review Number: 2021-04-208507-MJS-01 Status: Approved as Submitted Tax Parcel Number: 334-12.00-2.00 Date: 10/25/2021

PROJECT COMMENTS

1002	This project has been reviewed under the provisions of the Delaware S Prevention Regulations (DSFPR) ADOPTED September 1, 2. The current Delaware State Fire Prevention Regulations are available on our websit www.statefiremarshal.delaware.gov. These plans were not reviewed for compliance with the Americans with Disabilities Act (ADA). These plans not reviewed for compliance with any Local, Municipal, nor County Bu Codes.	nt ite at or is were
1010	The following water for fire protection requirements apply: NONE. On- Proposed. this site meets Water Flow Table 1. therefore the provisions 1142 shall apply to this site (DSFPR Regulation 702, Chapter 6, Section wells are proposed for this site, no additional requirements will be man Agency for water for fire protection.	of NFPA 1 3).Since
1180	This report reflects site review only. It is the responsibility of the appli owner to forward copies of this review to any other agency as required agencies.	
1415	Fire Department access shall be provided to all otherwise inaccessible communities, subdivisions, developments, gated commercial properti property by any other name through the use of a system or device as in by theDelaware State Fire Prevention Regulations and approved by the the State Fire Marshal after consultation with the local Fire Chief. (DSF Regulation 705, Chapter 2, Section 2.6.2).Please provide specifications device. Include how the system works, where the device will be locate letter from the Fire Chief accepting the layout.	es or required e Office of PR s for the
	MENT BETWEEN DE ELECTRIC CO-OP (DEC) AND LOCAL FIRE COMPANE E FOR EMERGENCY RESPONSE ACTIONS	NY (82-15)

1501 A If there are any questions about the above referenced comments please feel free to contact the Fire Protection Specialist who reviewed this project. Please have the plan review number available when calling about a specific project. When changes orrevisions to the plans occur, plans are required to be submitted, reviewed, and approved.



April 01, 2022

Mr. Troy Dickerson Delaware Electric Cooperative 14198 Sussex Highway Greenwood, DE 19958 tdickerson@delaware.coop

RE: Delaware Electric Cedar Grove Substation

Dear Mr. Dickerson:

A Sediment and Stormwater Management Plan has been reviewed for compliance with the Sediment and Stormwater Regulations and is approved with conditions (see attached). Enclosed herein please find a copy of the approved application form and approved plan sets. Please retain a copy for your use, and provide the contractor with a copy to be retained onsite at all times. Failure to keep an approved plan onsite is a violation of the approved plan.

Approval of a Sediment and Stormwater Plan does not grant or imply a right to discharge stormwater runoff. The owner/developer is responsible for acquiring any and all agreements, easements, etc., necessary to comply with State drainage and other applicable laws.

This plan approval pertains to compliance with the Delaware Sediment and Stormwater Regulations. Please understand that the approval of this plan does not relieve you from complying with any and all federal, state, county, or municipal laws and regulations.

As of January 1, 2014, the Sussex Conservation District began collecting financial guarantees to ensure the construction of stormwater management practices is accomplished in accordance with the approved sediment and stormwater plan. Please refer to the SCD Policy on Bonds located on our website at Sussexconservation.org. If you have any questions concerning the aforementioned, please do not hesitate to call 302 856-7219.

Sincerely,

Jessica Watson

Jessica Watson Program Manager

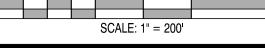
DATA COLUMN COUNTY TAX MAP: 334-12.00-2.00 ADDRESS OF SITE: 34139 CEDAR GROVE ROAD LEWES DE, 19958 MR (MEDIUM RESIDENTIAL) ZONING: TOTAL NUMBER OF DWELLING UNITS: 0 LOT AREA: 8.24± ACRES (359,009± S.F.) TOTAL NUMBER OF LOTS: 1 (NO NEW BUILDING LOTS OR DWELLINGS PROPOSED BY THIS PLAN) PROPOSED BUILDING SQUARE FOOTAGE: 0 S.F. RIGHT OF WAY DEDICATION: $0\pm$ ACRES ($0\pm$ S.F.) 9. NET DEVELOPMENT AREA: 5.18± ACRES (225,516± S.F.) 10. PERMANENT EASEMENT: $0\pm$ ACRES ($0\pm$ S.F.) 11. SOURCE OF TITLE: D.B. 0-0 12. EXISTING USE: RESIDUAL/AGRICULTURAL 13. PROPOSED USE: ELECTRICAL SUBSTATION 14. DATUM: VERTICAL – NAVD 88 HORIZONTAL – NAD 83 FRONT: 40' 15. SETBACK: SIDE: 10' REAR: 10' 16. SITE BENCHMARK: CONCRETE MONUMENT, SOUTHEAST SITE SIDE SEE SHEET C302 FOR LOCATION 17. FLOODPLAIN PER FEMA MAP NO. 10005C0332K, DATED MARCH 16, 2015, THE SUBJECT PARCEL IS DETERMINED TO NOT BE WITHIN A FLOODPLAIN. 18. TOPOGRAPHY TOPOGRAPHIC SURVEY SHOWN HEREON WAS PERFORMED BY CENTURY ENGINEERING, INC. ON NOVEMBER, 2020. 19. BOUNDARY SURVEY BOUNDARY SHOWN HEREON WAS PREPARED BY CENTURY ENGINEERING, INC. ON NOVEMBER, 2020. 20. WETLANDS NO STATE WETLANDS ARE PRESENT. A WETLAND DELINEATION WAS NOT COMPLETED. 21. SEWER: NO SEWER OR ON-SITE SEPTIC IS PROPOSED. 22. WATER: NO WATER CONNECTION OR ON-SITE WELL IS PROPOSED. 23. RECREATIONAL AREA: NO RECREATIONAL AREA IS PROPOSED BY THIS PLAN. 24. OPEN SPACE: NO DESIGNATED OPEN SPACE IS PROPOSED BY THIS PLAN. 25. CONSTRUCTION PHASING: PROPOSED CONSTRUCTION IS TO BE COMPLETED IN ONE (1) PHASE. 26. OWNER/DEVELOPER: DELAWARE ELECTRIC COOPERATIVE, INC. 14198 SUSSEX HIGHWAY GREENWOOD, DE 19950 TROY W. DICKERSON, P.E. EMAIL: TDICKERSON@DELAWARE.COOP PHONE: (302) 349-3125 FAX: (302) 349-5891 CIVIL ENGINEER: CENTURY ENGINEERING, INC. 550 BAY ROAD DOVER, DE 19901 ALEXANDER SCHMIDT, P.E. EMAIL: ASCHMIDT@CENTURYENG.COM PHONE: (302) 734–9188 FAX: (302) 734-4589 GENERAL NOTES CONDITIONS OF APPROVAL: 1. THE PERIMETER OF THE SUBSTATION WILL BE FENCED. 2. TWO (2) SIGNS SHALL BE PLACED AROUND THE PROPERTY TO IDENTIFY THE SITE AND EMERGENCY CONTACT INFORMATION. 3. ANY SECURITY LIGHTING SHALL BE SCREENED OR DIRECTED AWAY FROM NEIGHBORING PROPERTIES AND ROADS. 4. LANDSCAPING SHALL BE PROVIDED TO SCREEN FACILITY FROM ADJACENT PROPERTIES AND ROADWAYS. 5. THE FINAL SITE PLAN SHALL BE SUBJECT TO THE REVIEW AND APPROVAL OF THE PLANNING AND ZONING COMMISSION. 6. STORAGE OF MATERIALS OR EQUIPMENT ON SITE SHALL NOT EXCEED A PERIOD OF 30 DAYS. INDEX OF SHEETS C300 COVER SHEET C301 LEGEND SHEET C302 EXISTING CONDITIONS & DEMOLITION PLAN C303 SITE PLAN C304 SITE DETAILS C305 FENCE DETAILS C306 PIPE DETAILS C307 FIRE MARSHAL PLAN C308 LANDSCAPING PLAN

CONSTRUCTION PLANS DELAWARE ELECTRIC CO-OP CEDAR GROVE ROAD SUBSTATION



G:\Projects\145015.11\CAD\SHEFTS\CP\C300_CS.dwg, 3/9/2022

TAX PARCEL #: 334-12.00-2.00 SUSSEX COUNTY, DELAWARE



	This drawing is the property of Century Engineering and is prepared for
	the exclusive use of its clients at the location indicated. No
PLANTATION POSTAL AND REPORT	other use is authorized or intended.
PROJECT LOCATION	
LOCATION MAP SCALE: 1" = 2000'	
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	REVISIONS
	ADDENDUM
	DESCRIPTION DATE
	AT 958 , DEI
	SST SST SE 19 UNTY
	D S D S
	ROA FOR ELECT JUNTY, KED, SU
	CEDAR GROVE ROAD SUBSTATION FOR DELAWARE ELECTRIC CO-OP LEWES, SUSSEX COUNTY, DELAWARE 19958 MES & REHOBOTH HUNDRED, SUSSEX COUNTY, DELAWARE
	AV AV sus toth
	R (DEL wes Hob
	S RE
CERTIFICATION OF OWNER/DEVELOPER	PROJECT (
I, TROY DICKERSON, HEREBY CERTIFY THAT I AM THE DEVELOPER OF THE PROPERTY SHOWN ON THIS PLAN. THAT THE PLAN	SHEET TITLE
WAS MADE AT MY DIRECTION, THAT I ACKNOWLEDGE THE SAME TO BE IN MY ACT, AND DESIRE THE PLAN TO BE DEVELOPED AS SHOWN IN ACCORDANCE WITH APPLICABLE LAWS AND REGULATIONS.	
	COVER SHEET
TROY W. DICKERSON DATE DATE DATE DATE DATE DATE DATE DATE	
14198 SUSSEX HIGHWAY GREENWOOD, DE 19950 (302) 349–3125	
CERTIFICATION OF PLAN ACCURACY	CONSTRUCTION PLANS
I, ALEXANDER E. SCHMIDT, HEREBY CERTIFY THAT I AM A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF DELAWARE, THAT THE INFORMATION SHOWN HEREON HAS BEEN PREPARED UNDER MY SUPERVISION AND TO THE BEST OF MY KNOWLEDGE AND BELIEF REPRESENTS GOOD ENGINEERING PRACTICES AS REQUIRED BY THE APPLICABLE LAWS OF THE STATE OF DELAWARE.	FEBRUARY 2022 DRAWN CHK'D/DESIGNER
AND DELIER NETNESENTS GOOD ENGINEERING FRACTICES AS REQUIRED BY THE APPLICABLE LAWS OF THE STATE OF DELAWARE.	ECM AES
	SCALE SHEET NO.
ALEXANDER E. SCHMIDT, P.E., DE NO. 16139 DATE CENTURY ENGINEERING, INC.	AS NOTED C300
550 BAY ROAD	

MANMADE	ROADSIDE FEATURES		
FEATURE DESCRIPTION	EXISTING	PROPOSED	ID
BOLLARD – STEEL POLE	0	۲	
BOLLARD – WOOD POST			
CURB, TYPE 1 AND TYPE 3			
CURB, TYPE 2			
CURB & GUTTER, TYPE 1			$\begin{pmatrix} c \\ X \end{pmatrix}$
CURB & GUTTER, TYPE 2			
CURB & GUTTER, TYPE 3			
FENCE – CHAINLINK OR STRANDED	X	x	
FENCE – STOCKADE OR SPLIT RAIL	O	0	
FLAG POLE	FP ⊕	FP ●	
GUARDRAIL – STEEL BEAM, TYPE 1	· · · · · · · · · · · · ·		
LAMP AND POST	LAMP		
MAILBOX	MB	MB	
PAVEMENT			
PILLAR OR MISCELLANEOUS POST	0	•	
TRAFFIC SIGN AND POST		£	

DRAINAGE FEATURES						
FEATURE DESCRIPTION	EXISTING	PROPOSED	ID			
BIOFILTRATION SWALE		— ← BFS → X —				
DITCH OR STREAM CENTERLINE	00	—x —•-x —•				
DIRECTIONAL STREAM FLOW ARROW						
DRAINAGE INLET	C.B.					
DRAINAGE JUNCTION BOX	J.B.		JB X			
DRAINAGE MANHOLE	D	•	MH			
DRAINAGE PIPE AND FLOW ARROW	SIZE TYPE		P X			
FLARED END SECTION			FES X			
RIPRAP – AREA FEATURE	000000	202020	RR X			
SAFETY END SECTION			SES X			
UNDERDRAIN			UD X			
UNDERDRAIN OUTLET			UDO X			

UTILITY FEATURES				
FEATURE DESCRIPTION	EXISTING	PROPOSED		
CABLE TV DISTRIBUTION BOX				
COMMUNICATIONS - UNDERGROUND	СОММ	сомм		
ELECTRIC – UNDERGROUND	UG-E	UG-E		
ELECTRIC MANHOLE	E			
ELECTRIC METER	E.M.			
ELECTRIC TRANSFORMER	E.T.			
GAS – UNDERGROUND	UG-G	UG-G		
GAS MANHOLE	G			
GAS METER	G.M.			
GAS VALVE	G.V.			
GAS PUMP – SERVICE STATION	G.P.			
IRRIGATION - UNDERGROUND	IR IR	IR IR		
ITMS - UNDERGROUND	ITMS	ITMS		
LIGHTING - UNDERGROUND	LILI	—uu		
LUMINAIRE – POLE MOUNTED				
MANHOLE – UNDETERMINED OWNER	ŴĐ			
RAILROAD TRACKS				
SANITARY – UNDERGROUND	— s— s— s—	<u> s s s </u>		
SANITARY SEWER MANHOLE	S			
SANITARY SEWER VALVE	S.V.			
SANITARY SEWER CLEANOUT OR VENT	CO	CO		
SEPTIC DRAIN FIELD	S.D.F.			
SIGNALIZATION - UNDERGROUND	SIG	SIG		
SOIL BORING LOCATION	•			
TELEPHONE BOOTH	В			
TELEPHONE MANHOLE	Ū			
TELEPHONE TEST POINT	TTP			
TRAFFIC - CONDUIT JUNCTION WELL	J.W.			
TRAFFIC – LIGHT POLE AND BASE	0			
TRAFFIC – PEDESTRIAN POLE & BASE	Ō			
TRAFFIC – SIGNAL CABINET & BASE				
TRAFFIC – SIGNAL POLE AND BASE	8			
UTILITY BOX	UB			
UTILITY POLE GUY WIRE ANCHOR	0->	0 .>		
UTILITY POLE	Q	Ř		
UTILITY TEST HOLE LOCATION				
WATER – UNDERGROUND	w	—— w ——		
WATER – FIRE HYDRANT		¥		
WATER METER	W.M.	W.M.		
WATER VALVE	W.V.	W.V.		
WATER - FIRE DEPARTMENT CONNECTION	FDC O	R		
	WELL			

PAVEMENT SECTION(S)	
MILL AND OVERLAY – SEE TYPICAL SECTIONS FOR MATERIAL AND DEPTHS	
FULL DEPTH PAVEMENT	

E

NATURAL ROADSUE FEATURESFEATURE DESCRIPTIONEXISTINGPROPOSEDHEDGEROW OR THICKETMARSH BOUNDARY LINETRE - CONFEROUSTRE - DECIDUOUSTRE STUMPSHUBBERYWODS LINE BOUNDARY - DELINEATEDWODS LINE BOUNDARY						
HEDGEROW OR THICKET MARSH BOUNDARY LINE TREE - CONIFEROUS K TREE - DECIDUOUS SHRUBBERY WETLAND BOUNDARY - DELINEATED	NATURAL ROADSIDE FEATURES					
MARSH BOUNDARY LINE TREE - CONIFEROUS + TREE - DECIDUOUS + TREE STUMP + SHRUBBERY Image: Sector of the secto	FEATURE DESCRIPTION	EXISTING	PROPOSED			
TREE - CONIFEROUS ** TREE - DECIDUOUS ** TREE STUMP ** SHRUBBERY ** WETLAND BOUNDARY - DELINEATED	HEDGEROW OR THICKET					
TREE - DECIDUOUS TREE STUMP SHRUBBERY WETLAND BOUNDARY - DELINEATED	MARSH BOUNDARY LINE					
TREE STUMP Image: Constraint of the state of the stat	TREE – CONIFEROUS	×				
SHRUBBERY Image: Constraint of the second	TREE – DECIDUOUS	\bigcirc				
WETLAND BOUNDARY - DELINEATED	TREE STUMP	A				
	SHRUBBERY	¢3				
WOODS LINE BOUNDARY	WETLAND BOUNDARY – DELINEATED					
	WOODS LINE BOUNDARY					

RIGHT-OF-WAY FEATURES					
FEATURE DESCRIPTION	EXISTING	PROPOSED			
DENIAL OF ACCESS	DA	DA			
EASEMENT – OTHERS					
PERMANENT EASEMENT	PE	PE			
PROPERTY LINE					
PROPERTY MARKER – CONCRETE	CM	С.М. ■			
PROPERTY MARKER – IRON PIPE	I.P.	I.P. ●			
RIGHT-OF-WAY BASELINE	100+00	100+00			
RIGHT-OF-WAY LINE	RW	RW			
RIGHT-OF-WAY & DENIAL OF ACCESS	R/W-DA	R/W-DA			
RIGHT-TO-ENTER		RTE			
TEMPORARY CONSTRUCTION EASEMENT		TCE			
CLEAR ZONE		cz			
HORIZONTAL CLEARANCE		нс —			

SURVEY CONTROL & MONUMENTATION				
FEATURE DESCRIPTION	EXISTING			
SURVEY BENCHMARK LOCATION	B.M. ∳			
SURVEY TIE POINT LOCATION	T.P. +			
SURVEY TRAVERSE POINT				

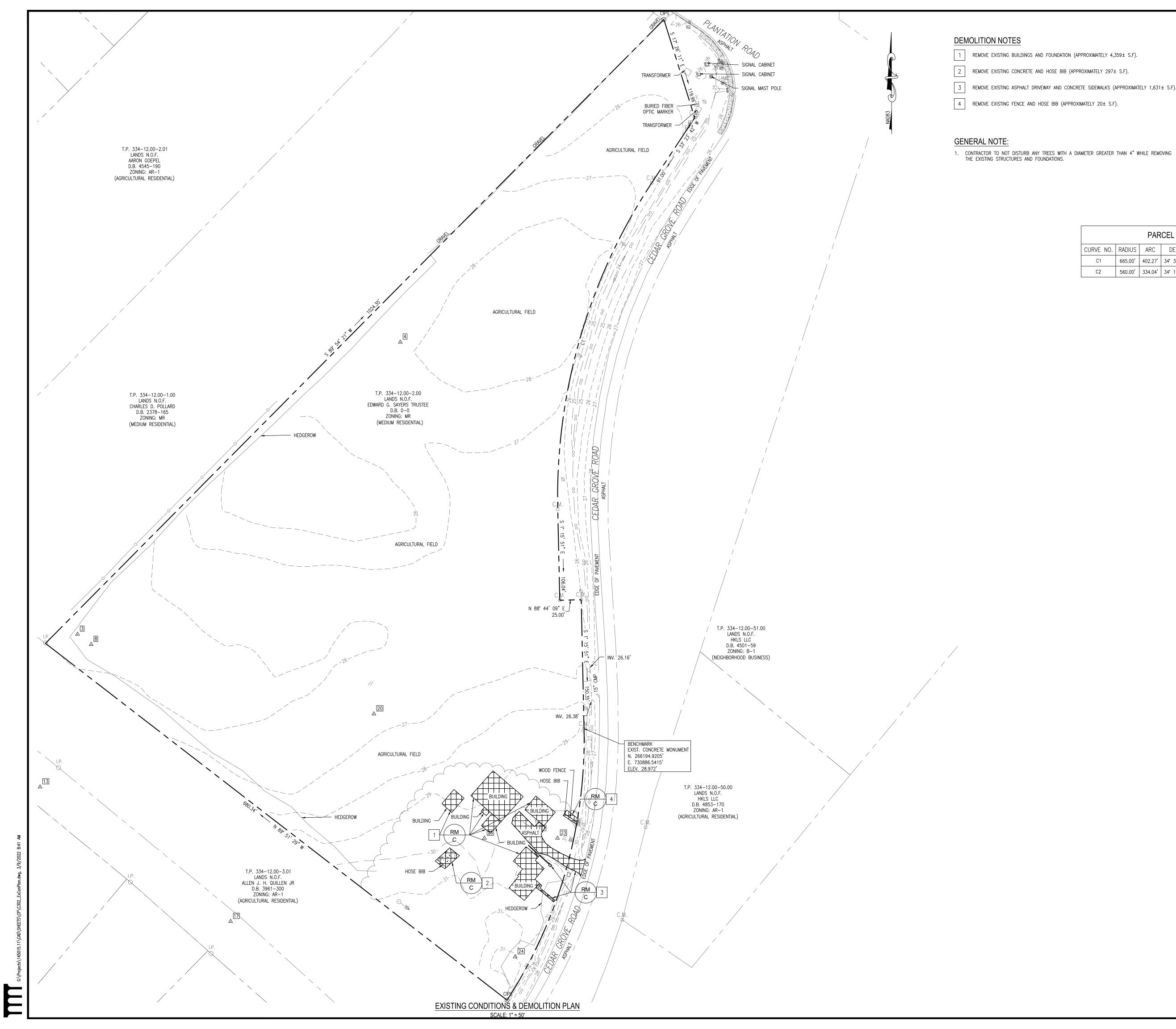
MISCELLANEOUS FEATURES				
FEATURE DESCRIPTION	PROPOSED			
BUTT JOINT				
CLEAR ZONE	CZ			
CONSTRUCTION BASELINE	100+00			
LIMIT OF CONSTRUCTION	LOC			
DEMOLITION				
P.C.C. SIDEWALK				
6" P.C.C. SIDEWALK				
PAVEMENT PATCH				

	IDENTIFIERS			
)	FEATURE DESCRIPTION	ID		
	ABANDON BY CONTRACTOR	AB C		
	ABANDON BY OTHERS	AB		
	ADJUST BY CONTRACTOR	AC		
	ADJUST BY OTHERS	A O		
	BEST MANAGEMENT PRACTICE	BMP		
	BUS STOP PAD / TYPE	BSP		
	BUS STOP WITH SHELTER PAD / TYPE	BSSP		
	CONCRETE SAFETY BARRIER	B		
	CONVERT TO JUNCTION BOX	CJB		
	CONVERT TO DRAINAGE MANHOLE	CDM		
	DO NOT DISTURB			
	ENERGY DISSIPATOR	ED		
	FILL WITH FLOWABLE FILL	FF C		
	LANDSCAPE PLANTINGS			
	PEDESTRIAN CONNECTION / TYPE	PC XX		
	RELOCATE BY CONTRACTOR	RL C		
	RELOCATE BY OTHERS	RL		
	RELOCATE BY PROPERTY OWNER	RL PO		
	REMOVE BY CONTRACTOR	RM C		
	REMOVE BY OTHERS	RM 0		
	REMOVE BY TRAFFIC CONTRACTOR	RM TC		
	RIGHT-OF-WAY MONUMENT	RM		

EROSION & SEDIMENT CONTROL FEATURES				
FEATURE DESCRIPTION	PROPOSED			
LIMIT OF DISTURBANCE	LOD			
PORTABLE SEDIMENT TANK	ST			
PUMPING PIT	(PP-2)			
SILT FENCE	SF			
COMPOST FILTER LOG	CFL			
CONSTRUCTION SITE FENCE	CSF			
STOCKPILE	SP			
STABILIZED CONSTRUCTION ENTRANCE	SE SCE K			
CONCRETE WASHOUT	С₩			
STABILIZATION MATTING – SLOPE	(SM-S)			
STABILIZATION MATTING – CHANNEL	(SM-C)			
RIPRAP OUTLET PROTECTON	ROP-)			
STORMWATER MAINTENANCE ACCESS ROAD				

NGI ILNGU		ENGINEERING	A Kleinfelder Company	1.
	AD	DENDUM	D	ATE
lion			LAWARE	
CEDAR GROVE ROAD SUBSTATION	FOR	DELAWARE ELECTRIC CO-OP	LEWES, SUSSEX COUNTY, DELAWARE 19958 LEWES & REHOBOTH HUNDRED, SUSSEX COUNTY, DELAWARE	
PROJECT SHEET TITLE	GEN	ID SH	IEET	

145015.11

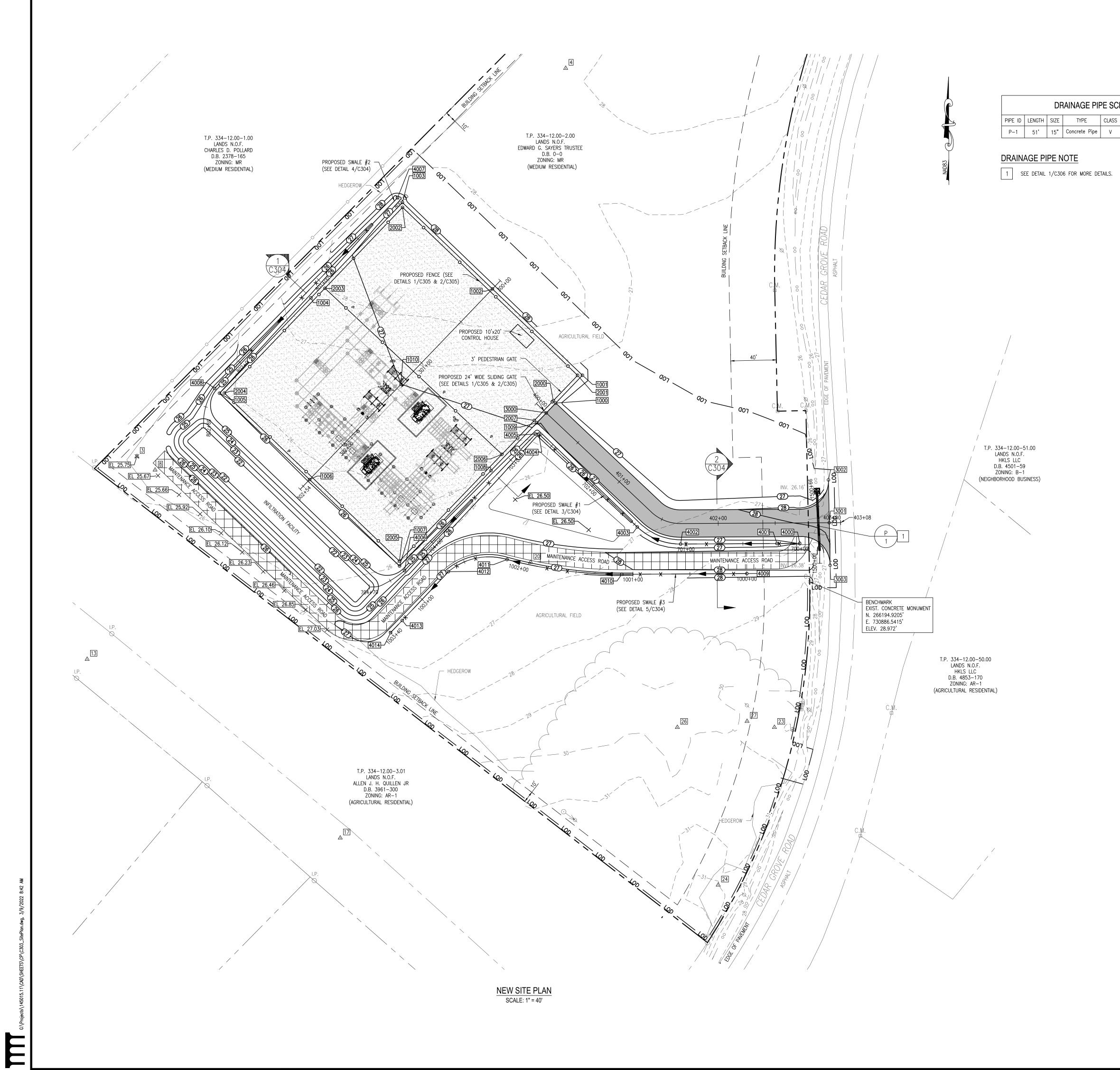


3 REMOVE EXISTING ASPHALT DRIVEWAY AND CONCRETE SIDEWALKS (APPROXIMATELY 1,631± S.F).

PARCEL CURVE DATA					
CURVE NO.	RADIUS	ARC	DELTA	CHORD BEARING	CHORD LENGTH
C1	665.00'	402.27 '	34° 39' 33"	S16 03 56"W	396.17'
C2	560.00'	334.04'	34°10'37"	S15°49'27"W	329.11'

	nginee xclusiv e locat	ring and e use of ion indic	f its clie cated.	bared for ents No
V G I I L V G C	IND INTO L	ENGINEERING		A KIEINTEIGEF COMPANY
	RE	EVISIONS		
		DENDUM		DATE
CEDAR GROVE ROAD SUBSTATION	FOR	DELAWARE ELECTRIC CO-OP	LEWES, SUSSEX COUNTY, DELAWARE 19958	LEWES & REHOBOTH HUNDRED, SUSSEX COUNTY, DELAWARE
CEDAR GROVE R		DELAWARE	LEWES, SUSSEX CC	LEWES & REHOBOTH HUND
SHEET TITLE EXIST			DITI	ONS

SCALE: 1" = 50'



Century Er the ex	nginee xclusiv e locat	e use of ion indic	is prep its clie ated.	bared for ents No
		ENGINEERING		A KIEINTEIGEL COMPANY
	AD	DENDUM		DATE
PROJECT CEDAR GROVE ROAD SUBSTATION	FOR	DELAWARE ELECTRIC CO-OP	LEWES, SUSSEX COUNTY, DELAWARE 19958	LEWES & REHOBOTH HUNDRED, SUSSEX COUNTY, DELAWARE
SHEET TITLE	TE P	PLAN		
CONST FEBRUARY 2 DRAWN ECN SCALE 1" = 40 PROJECT NO 145015	2022 //)'	СНК	N PL 'd/des AE et no. C3(igner S

SUBSTATION LAYOUT						
POINT NO.	NORTHING	EASTING	DESCRIPTION	ELEVATION		
1000	266351.7470	730663.6057	ASPHALT/GRAVEL	27.31		
1001	266376.1550	730687.0233	GRAVEL	27.67		
1002	266451.9661	730608.0059	GRAVEL	27.67		
1003	266527.7772	730528.9886	GRAVEL	27.67		
1004	266444.0932	730448.7001	GRAVEL	26.45		
1005	266360.4091	730368.4116	GRAVEL	26.00		
1006	266284.5980	730447.4290	GRAVEL	26.50		
1007	266208.7868	730526.4463	GRAVEL	26.00		
1008	266292.4709	730606.7348	GRAVEL	26.45		
1009	266334.4280	730646.9895	ASPHALT/GRAVEL	27.06		
1010	266368.2820	730527.7174	GRAVEL	27.00		

FENCELINE LAYOUT					
POINT NO.	NORTHING	EASTING			
2000	266353.8239	730661.4409			
2001	266376.0671	730682.7815			
2002	266523.5355	730529.0764			
2003	266452.5131	730460.9358			
2004	266360.4969	730372.6533			
2005	266213.0286	730526.3585			
2006	266306.8067	730616.3315			
2007	266336.5050	730644.8247			

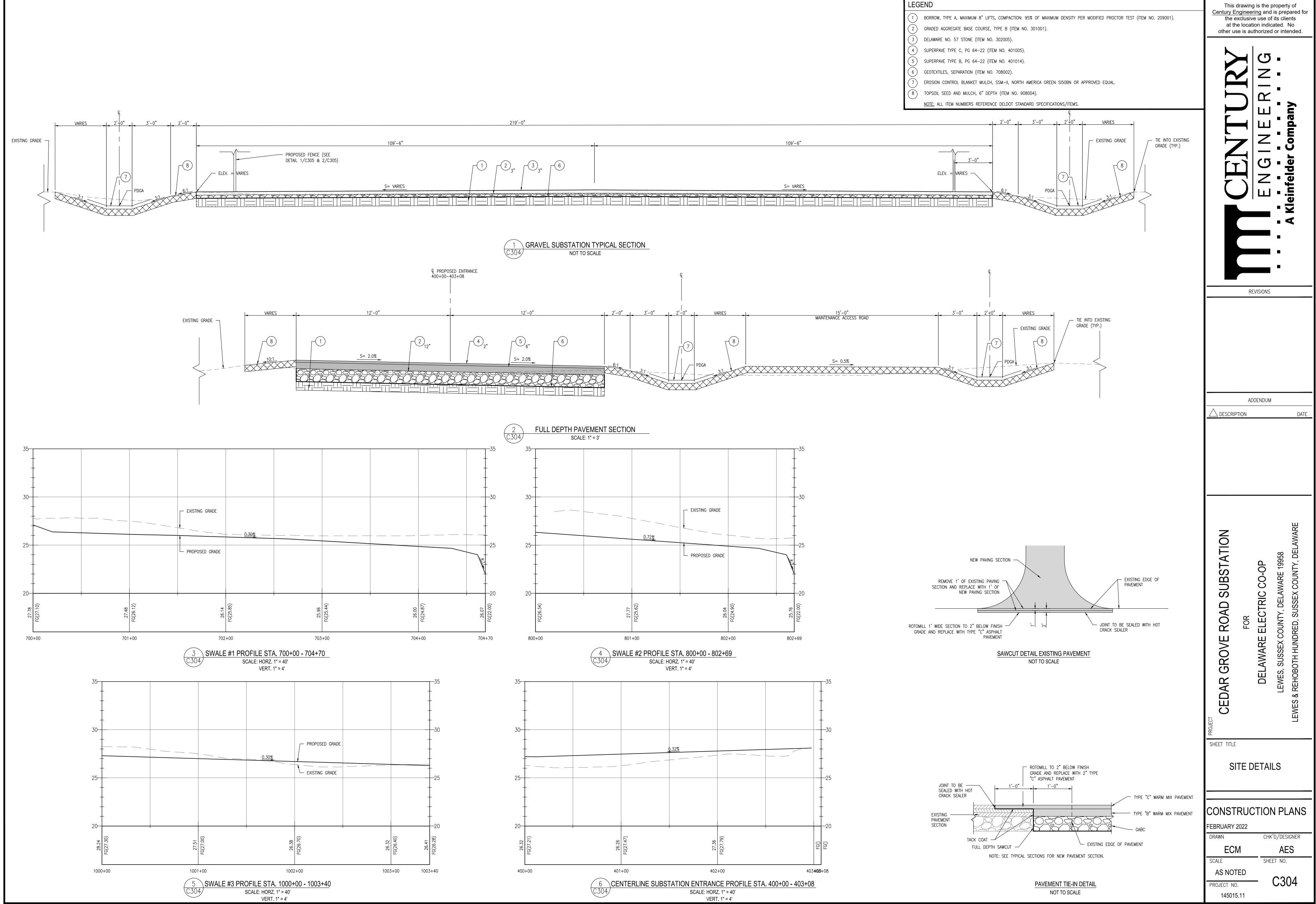
ROADWAY LAYOUT					
POINT NO.	NORTHING	EASTING	ELEVATION		
3000	266343.0875	730655.2976	27.19		
3001	266246.7099	730903.7493	28.10		
3002	266284.3196	730903.0165	27.76		
3003	266209.4251	730904.4758	27.89		

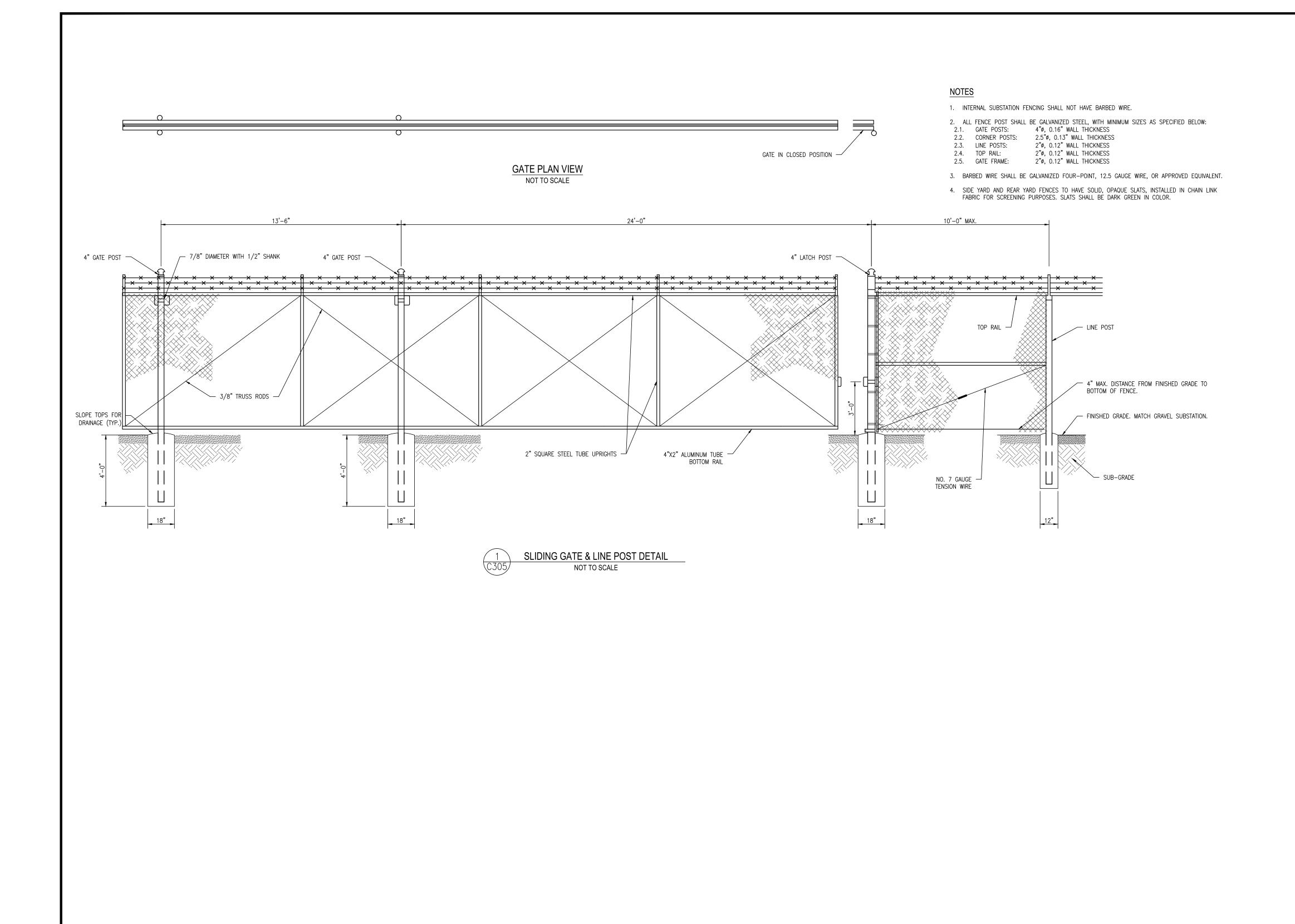
[
SWALE ALIGNMENT LAYOUT					
POINT NO.	NORTHING	EASTING	ELEVATION		
4000	266228.5730	730877.8152	27.10		
4001	266228.4677	730857.8155	26.38		
4002	266228.0219	730773.2129	26.11		
4003	266243.0070	730735.1889	26.02		
4004	266324.6213	730648.6433	25.64		
4005	266324.5509	730645.8280	25.64		
4006	266204.6330	730530.7759	24.67		
4007	266531.9298	730524.6603	26.34		
4008	266364.5630	730364.0820	24.67		
4009	266202.0677	730831.3248	27.30		
4010	266201.4894	730721.5686	26.97		
4011	266214.4282	730620.8517	26.67		
4012	266203.7668	730569.3580	26.50		
4013	266160.9401	730528.8089	26.32		
4014	266150.2691	730518.5707	26.28		

TRAVERSE POINT LAYOUT					
POINT NO.	DESCRIPTION	NORTHING	EASTING	ELEVATION	
3	REBAR	266304.9498	730295.8898	25.440	
4	REBAR	266645.6304	730672.3062	27.930	
7	REBAR	266405.7777	730145.1022	25.730	
8	РК	266293.0445	730311.8114	25.567	
10	REBAR	267248.8420	730769.8776	27.450	
13	N/A	266126.9153	730252.1635	26.235	
14	N/A	266424.1996	729883.4246	26.052	
15	N/A	266450.4885	729841.7632	26.484	
16	N/A	266535.5498	729931.2434	28.048	
17	N/A	265970.0493	730474.3865	30.452	
18	N/A	265765.0058	730695.5866	29.718	
20	N/A	266212.0608	730641.4630	26.408	
23	N/A	266067.1458	730855.5761	30.934	
24	N/A	265928.7513	730806.1937	31.262	
26	N/A	266067.1505	730770.3460	29.612	
27	N/A	266072.4831	730831.5388	30.179	

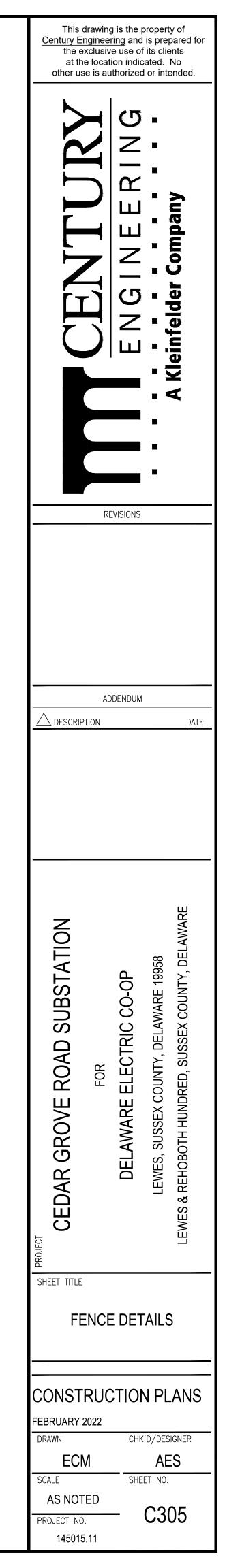
CHEDULE								
S	SLOPE	INLET INVERT	OUTLET					
	0.0030	26.21	26.06					

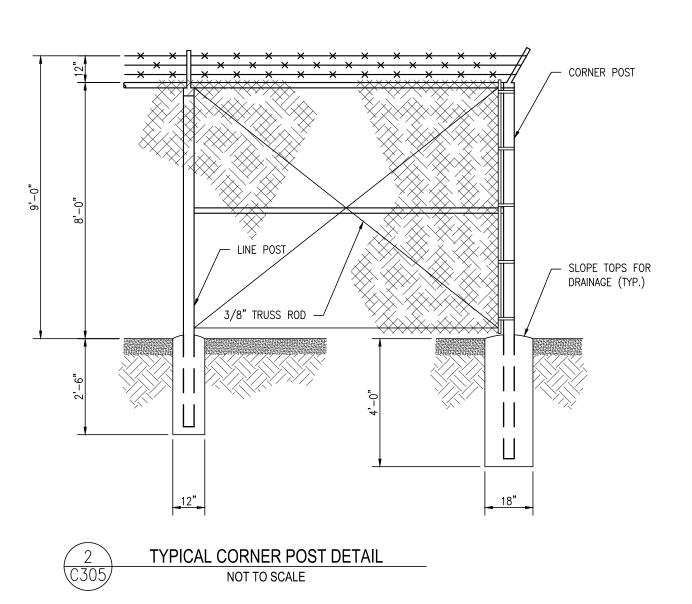
SCALE: 1" = 40'



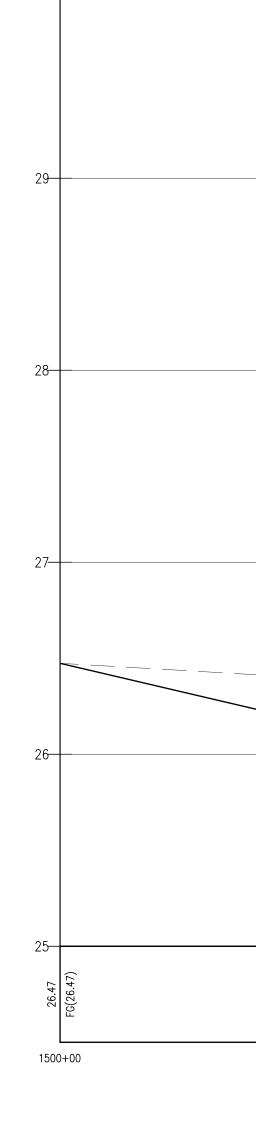




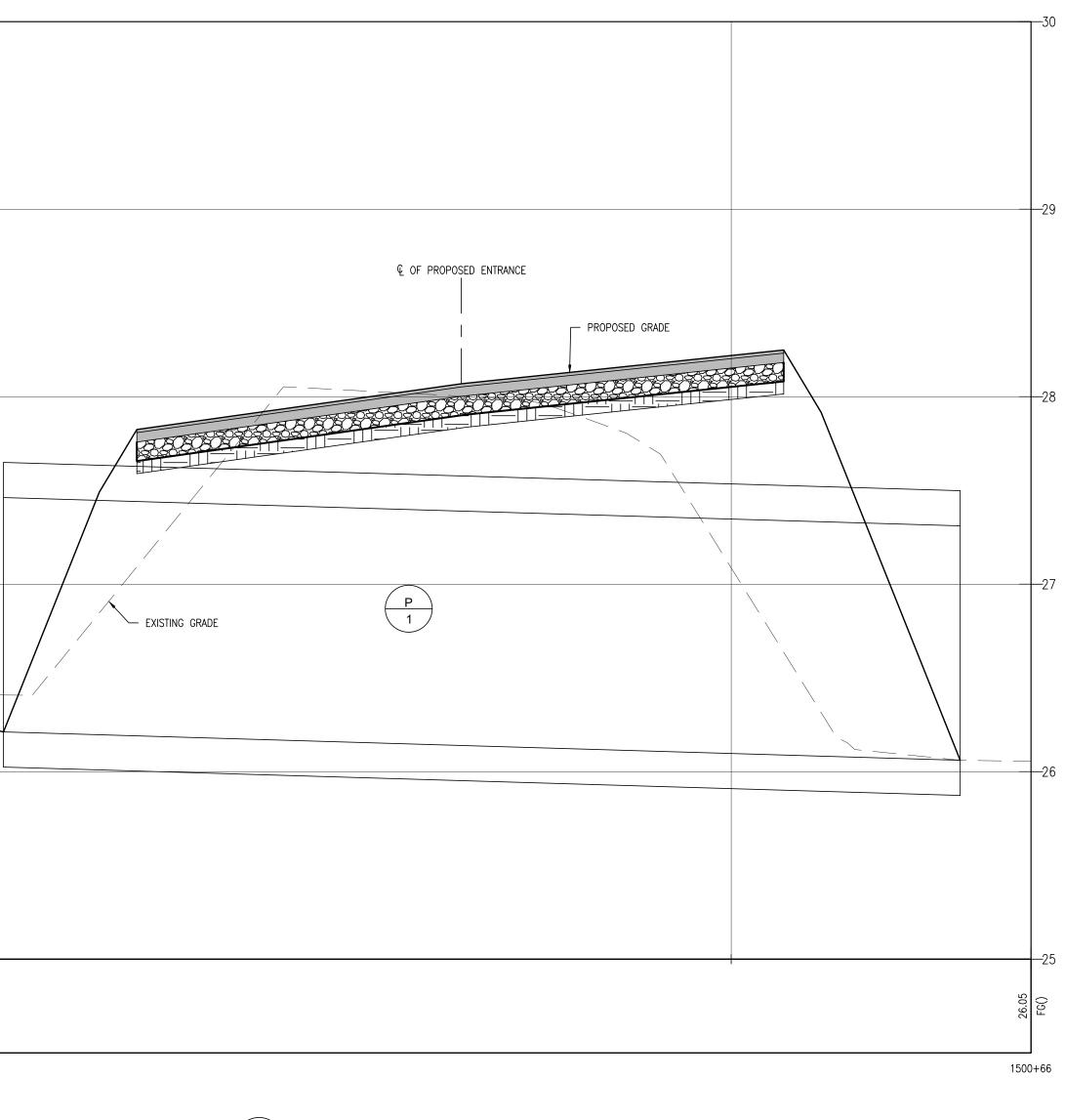






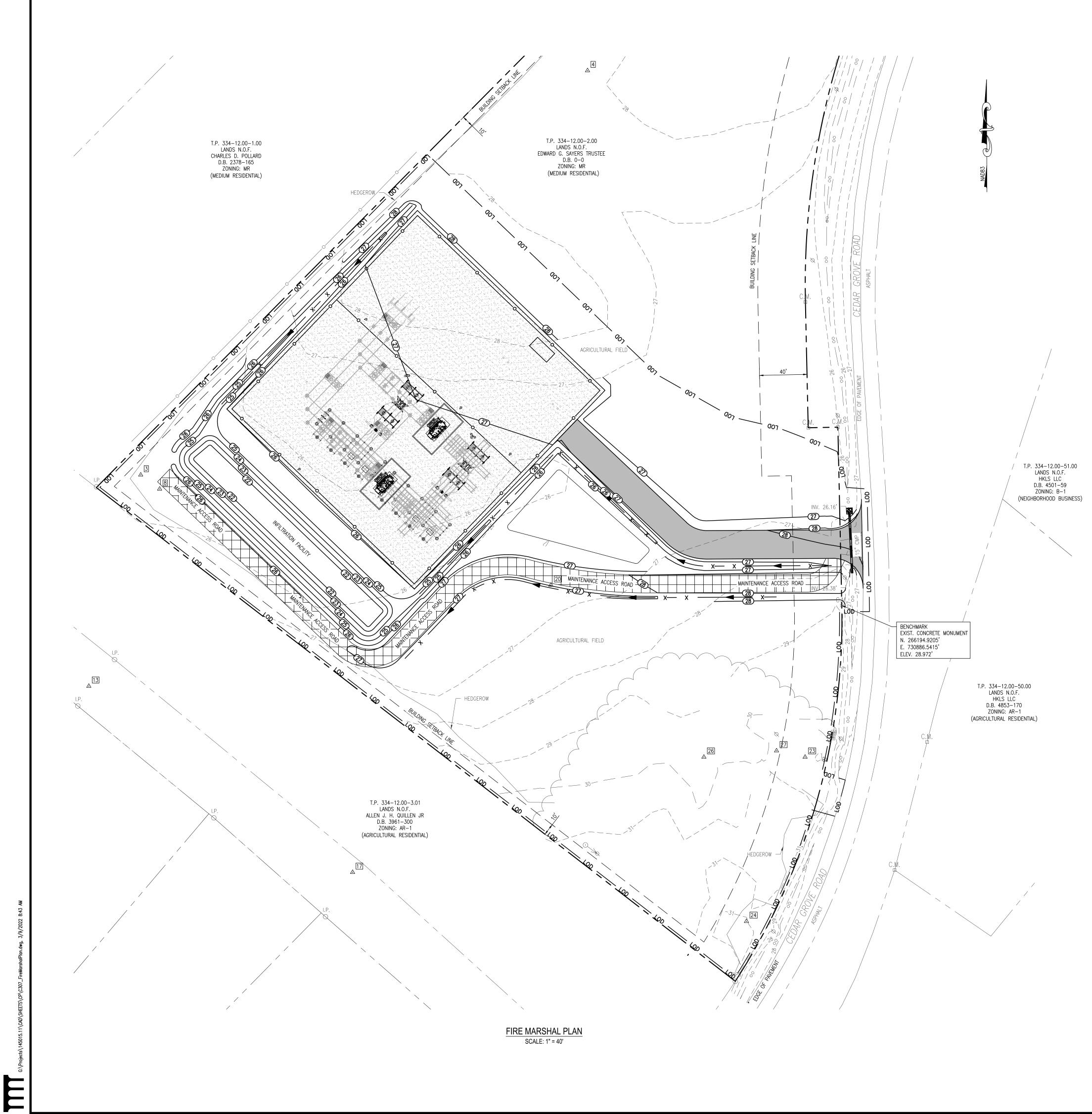


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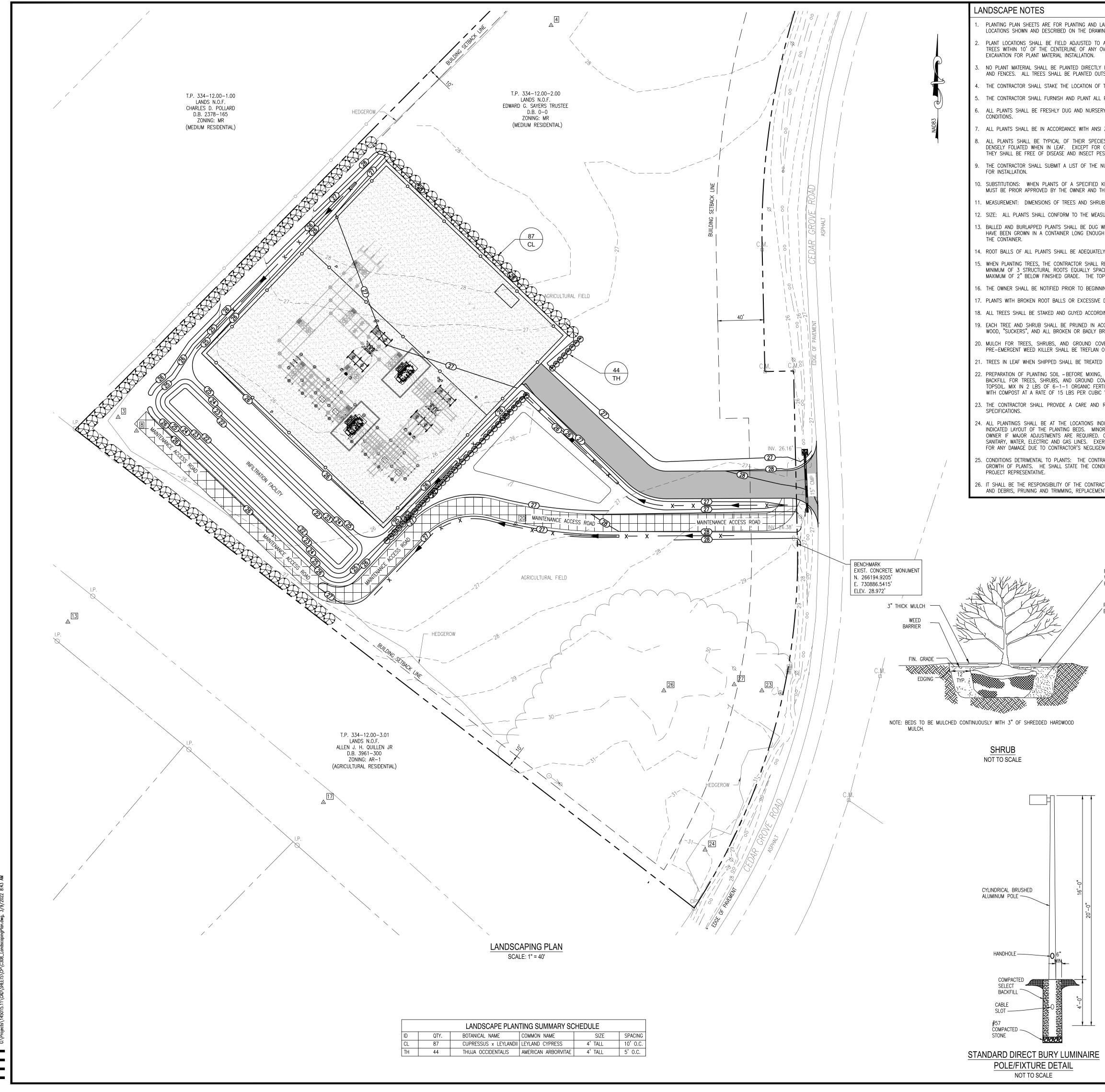


1 DRAINAGE PIPE PROFILE STA. 1500+00 - 1500+66 SCALE: HORZ. 1" = 5' VERT. 1" = 4'

<u>Century E</u> the e at th	nginee xclusiv e locat	ring and e use of ion indic	property of is prepare f its clients cated. No d or intende			
V G I I L U G C		ENGINEERING	A Kleinfelder Company			
		DENDUM				
	PTION			DATE		
PROJECT CEDAR GROVE ROAD SUBSTATION	FOR	DELAWARE ELECTRIC CO-OP	LEWES, SUSSEX COUNTY, DELAWARE 19958 LEWES & REHOBOTH HUNDRED. SUSSEX COUNTY. DELAWARE			
SHEET TITLE	PE C)ETAI	LS			
CONSTRUCTION PLANS FEBRUARY 2022 DRAWN CHK'D/DESIGNER ECM AES SCALE SHEET NO. AS NOTED PROJECT NO. 145015.11						



FIR 1.	E MARSHAL NOTES COUNTY TAX MAP:	334-12.00-2.00	This drawing is the property of <u>Century Engineering</u> and is prepared for
2.	FIRE MARSHAL REVIEW NUMBER:		the exclusive use of its clients at the location indicated. No other use is authorized or intended.
3. 4.	PLAN DATE: ADDRESS OF SITE:	OCTOBER, 2021 34139 CEDAR GROVE ROAD	
5.	NAME OF BUILDING:	LEWES DE, 19958 ELECTRICAL SUBSTATION	
6.	CITY OF LEWES PLANNING NUMBER:	N/A	
7.	ZONING:	MR (MEDIUM RESIDENTIAL)	
8.	LOT AREA:	PROPOSED: N/A 8.24± ACRES	
9.	SOURCE OF TITLE:	D.B. 0-0	
10.	BUILDING USE: WATER SUPPLIER:	N/A CITY OF LEWES	
11. 12.	PROPOSED BUILDING CONSTRUCTION:	N/A	
13.	PERIMETER ACCESS: REQUIRED:	N/A	
	PROVIDED:	N/A	
14.	FIRE LANE: REQUIRED: PROVIDED:	N/A N/A	
15.	SPRINKLERED: N/A		Kleinfe Kleinfe
16.	FIRE LANE NOTE:	RE DEPARTMENT CONNECTIONS SHALL BE MARKED IN	
17	ACCORDANCE WITH THE STATE FIRE PREV	/ENTION REGULATIONS.	
17.	OWNER/DEVELOPER: DELAWARE ELECTRIC COOPERATIVE, INC. 14198 SUSSEX HIGHWAY		
	GREENWOOD, DE 19950 STEVE PERRY PHONE: (302) 394–3131		
18	FAX: (302) 394-5891		
18.	ENGINEER: CENTURY ENGINEERING, INC. 550 BAY ROAD		REVISIONS
	DOVER, DE 19901 ALEXANDER SCHMIDT, P.E. PHONE: (302) 734–9188		
	FAX: (302) 734-4589		
			ADDENDUM
			VARE VARE
			TA ⁻ 9958 7, DI
			BS ⁻ ARE 1 DUNT
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			ROA FOR UNTY, ED, SU
			E EL EL COUI
			OVE ARE SEX (
			ECT CEDAR GROVE ROAD SUBSTATION FOR FOR DELAWARE ELECTRIC CO-OP LEWES, SUSSEX COUNTY, DELAWARE 19958 LEWES & REHOBOTH HUNDRED, SUSSEX COUNTY, DELAWARE
			A G DEL JEL
			JAF LEV
			CEI
			LEW
			LE
			SHEET TITLE
			FIRE MARSHAL PLAN
			CONSTRUCTION PLANS
			drawn chk'd/designer
			SCALE SHEET NO.
	0'	40' 80' 120'	1" = 40' PROJECT NO. C307
		SCALE: 1" = 40'	PROJECT NO. COU 145015.11
		········	



NGS, AND SHALL INFORM THE OW AVOID UTILITIES. DO NOT PLAN	AS-BUILT CONDITIONS MAY VARY. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND UTILITY NER OF ANY DISCREPANCIES OR POTENTIAL PROBLEMS PRIOR TO COMMENCING WORK. TREES OR SHRUBS WITHIN 5' OF THE CENTERLINE OF ANY UNDERGROUND UTILITY LINES. DO NOT PLAN JTILITY" 1–800–257–7777 MUST BE CONTACTED A MINIMUM OF 72 HOURS PRIOR TO PROCEEDING WITH ANY	at the location indicated. No other use is authorized or intended.
IN FRONT OF ROADWAY SIGHT LI ISIDE OF THE ROADWAY CLEAR ZO THE PROPOSED LANDSCAPING FO PLANTS SHOWN ON THE DRAWING	NES. ALL PLANT MATERIAL SHALL BE GREATER THAN 6' FROM CENTERLINE OF DITCHES, EDGE, OF PAVEMENT ONE. NO TREES SHALL BE PLANTED WITHIN 25' OF POND EMBANKMENTS. R APPROVAL BY THE OWNER PRIOR TO INSTALLATION. IS AS SPECIFIED AND IN QUANTITIES INDICATED ON THE PLANT LIST.	Z Z Z Z Z
Z60.1–2004. ES OR VARIETY AND SHALL HAVE CERTAIN PLANTS WITH UNUSUAL STS, EGGS, OR LARVAE. THEY SI	EN GROWN UNDER CLIMATIC CONDITIONS SIMILAR TO THOSE AT THE SITE OR PROPERLY ACCLIMATED TO LOCAL A NORMAL HABIT OF GROWTH. THEY SHALL BE SOUND, HEALTHY, AND VIGOROUS, WELL BRANCHED AND HABIT, THEY SHALL HAVE A STRAIGHT SINGLE CENTRAL LEADER. THE TRUCK SHALL HAVE ON FROST SPLITS HALL HAVE HEALTHY, WELL-DEVELOPED ROOT SYSTEMS.	T E E M D any
KIND OR SIZE ARE NOT AVAILABL HE REGULATING PLANNING REVIEW BS SHALL CONFORM TO ANSI Z60 SUREMENTS SPECIFIED ON THIS SH	.1–2004.	
H FOR THE ROOT SYSTEM TO HAV	RTH, OF DIAMETER AND DEPTH TO INCLUDE MOST OF THE FIBROUS ROOTS. CONTAINER GROWN STOCK SHALL Æ DEVELOPED SUFFICIENTLY TO HOLD ITS SOIL TOGETHER FIRM AND WHOLE. NO PLANTS SHALL BE LOOSE IN	
REMOVE EXCESS SOIL FROM THE CED AROUND THE ROOT BALL, O P OF THE STRUCTURAL ROOTS SH ING PLANTING OPERATIONS.	I SUN AND DRYING WINDS OR FROST. TOP OF THE ROOT BALL EXPOSING THE ROOT CROWN AND STRUCTURAL ROOTS. EACH TREE SHOULD HAVE A THERWISE IT SHOULD BE REJECTED AND SENT BACK TO NURSERY. THE ROOT CROWN MUST BE PLANTED A HALL BE NO GREATER THAN 5" BELOW FINISHED GRADE. THE REPLACED PRIOR TO PLANTING.	
CCORDANCE WITH THE ANSI Z60.1 RUISED BRANCHES SHALL BE REN VER SHALL BE FINELY SHREDDE	-2004 TO PRESERVE THE NATURAL CHARACTER OF THE PLANT. DO NOT PRUNE MAIN LEADERS. ALL DEAL IOVED. D OAK BARK, DARK BROWN IN COLOR, AGED AT LEAST ONE YEAR, AND CLEAN AND FREE OF WEEDS ED KILLER TO TOPSOIL PRIOR TO MULCHING BED PLANTING.	
OVER SHALL BE A MIXTURE BY TILIZER PER TREE OR SHRUB, WI YD. BEFORE ADDING TO PLANT E	ITS, STONES, CLAY LUMPS, AND OTHER EXTRANEOUS MATERIALS HARMFUL OR TOXIC TO PLANT GROWTH. SOIL VOLUME OF THE FOLLOWING MATERIALS IN QUANTITIES SPECIFIED: 25 PERCENT COMPOST AND 75 PERCENT IT BACKFILL MIX, UNDER AND AROUND THE ROOTBALLS OF TREES AND SHRUBS. OR MIX ORGANIC FERTILIZEF PACKFILL MIX. OTHER SOIL CONDITIONERS MAY BE REQUIRED PER SOIL TESTING OF FURNISHED TOPSOIL. ING AT LEAST TWO (2) GROWING SEASONS AFTER INITIAL PLANTING PER DNREC SEDIMENT & STORMWATEF	T R
IR ADJUSTMENTS TO TREE LOCATIO COORDINATE PLANT MATERIAL LO RCISE CARE WHEN DIGGING IN AR NCE AND SHALL REPLACE OR REF RACTOR SHALL NOTIFY THE OWNER	E CONTRACTOR SHALL BE RESPONSIBLE FOR PLANTING AT THE CORRECT GRADES, ALIGNMENT, AND TO THE ON MAY BE NECESSARY DUE TO FIELD CONDITIONS AND FINAL GRADING. THE CONTRACTOR SHALL NOTIFY THE CATIONS WITH SITE UTILITIES. SEE SITE LAYOUT, GRADING, LIGHTING, AND/OR UTILITY PLANS FOR STORM EAS OF POTENTIAL CONFLICT WITH UNDERGROUND OR OVERHEAD UTILITIES. THE CONTRACTOR IS RESPONSIBLE AIR ANY DAMAGE AT CONTRACTOR'S EXPENSE. IN WRITING OF ALL SOIL OR DRAINAGE CONDITIONS WHICH THE CONTRACTOR CONSIDERS DETRIMENTAL TO THE FOR CORRECTING THE CONDITIONS, INCLUDING ANY CHANGE IN COST FOR REVIEW AND ACCEPTANCE BY THE	E , E
CTOR TO ADEQUATELY AND PROPE	RLY MAINTAIN THE LANDSCAPED AREAS, WHICH RESPONSIBILITY SHALL INCLUDE WATERING, CLEANING OF WEEDS NGS AND FERTILIZING TO MAINTAIN HEALTHY GROWTH.	
PREVAILING WIND S FLOOD TWICE WITH WATER WITHIN 24 HRS.	DO NOT CUT LEADER BLACK RUBBER HOSES PLAN PLAN 2 STRANDS GALV. WIRE, TWISTED UNTIL TAUT 2" SQUARE HARDWOOD STAKES, MIN. 8' LONG; EXTEND STAKES TO FIRM BEARING AS NEEDED	
PLANTING SOIL BACKFILL MIX	The second state of the se	PROJECT CEDAR GROVE ROAD SUBSTATION FOR FOR DELAWARE LECTRIC CO-OP LEWES, SUSSEX COUNTY, DELAWARE LEWES & REHOBOTH HUNDRED, SUSSEX COUNTY, DELAWARE
		^o LANDSCAPING PLAN
	SCALE: 1" = 40'	
	THIS PLAN WAS PREPARED SOLEY FOR THE PARTY NOTED HEREON AND NO RESPONSIBILITY IS EXTENDED O ASSUMED BY THE PREPARER HEREON TO ANY FUTURE PARTIES. THIS PLAN AND COPIES HEREOF ARE NO VALID UNLESS AN ORIGINAL SEAL AND SIGNATURE ARE APPLIED.	
	MICHAEL J. PIERANUNZI, RLA, MD. # 1008 DATE CENTURY ENGINEERING, INC. 10710 GILROY ROAD HUNT VALLEY, MARYLAND 21031 (443) 589–2400	SCALE SHEET NO. 1" = 40' C308 PROJECT NO. C308 145015.11

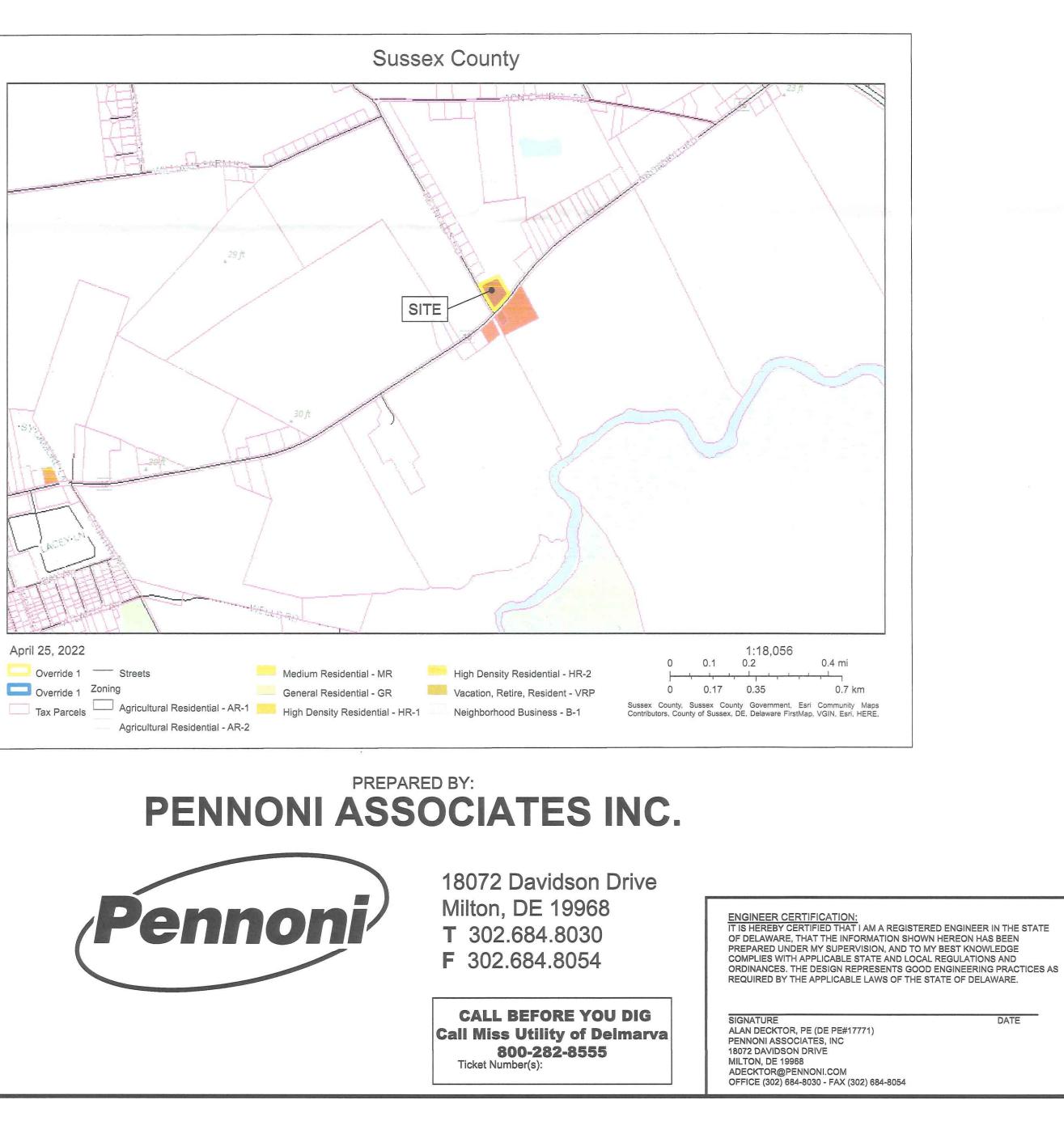
D	ATA CO	LUM	IN:					
1.	TAX MAP NUMBER:			235-15.00-7.01				
2.	DEED REFERENCE	:		D.B. 4950 PG. 113	1			
3.	OWNER NAME:			WATER'S EDGE A WESLEY 411 UNION STREET MILTON, DE 19968	AN CONCGEREGATI	ON		
4.	SITE ADDRESS:			13275 REYNOLDS ROAD				
				MILTON, DE 19968 BROADKILL HUNDRED, SUS	SSEX COUNTY			
5.	PRESENT ZONING:	. #5		CR-1 (COMMERCIAL RESID	ENTIAL)			
6.	PRESENT USE: REQUIRED SETBAC			CHURCH (115-83.8)			1	
7.	FRONT: SIDE:	JKO (B.K.L.).		60' *5' (20' WHEN ADJACENT TO				
CORI	REAR: NER: MINIMUM LOT WII	רד⊔י		*5' (30' WHEN ADJACENT T(15' 75'	O ZONE AR-1 DISTRI	CT)		
	MINIMUM LOT DEI MINIMUM AREA:			100' 10,000 SF				
	SETBACK PER BC (DATED APRIL 18,		L #12679					
FROM	NT:			23.48 FEET (VARIANCE OF	36.52)		<i>3</i> 1	
8.	BUILDING HEIGHT:			(115-83.8) 42' MAX. ALLOWED				
9.				ING, CODE SECTION 115-162):			
	(1 PER 4 SEATS X 1 REQUIRED PARKIN	30 SEATS =		PER PER 4 SEATS 33 SPACES				
	EXISTING PARKING PROPOSED ADDITI TOTAL PROPOSED	ONAL PARKI	NG:	51 SPACES (INCLUDING 6 F 29 SPACES 80 SPACES (INCLUDING 6 F				
10.	WATER SUPPLY:	PARKING.		PRIVATE - EXISTING ONSIT				
				WATER IS SUBJECT TO TH STATE DEPARTMENT OF N ENVIRONMENTAL CONTRO	ATURAL RESOURCE	IS AND		
				PUBLIC HEALTH				
	SECTION 89: SOURCE WATER	R PROTECTIO	ON:	A. SUBJECT PROPERTY IS	S WITHIN AN AREA C	F "FAIR" GROUND		
						WELLIEAD		
				 B. SUBJECT PROPERTY IS PROTECTION AREA. 	SNOT LOCATED IN A	WELLNEAD		
11.	SEWER SUPPLY:			PUBLIC - EXISTING ONSITE	SEPTIC			
12.	POSTED SPEED LIN REYNOLDS ROA			50 MPH				
13.	LATITUDE AND LON							
44	LONGITUDE: W -07		5"	LATITUDE: N 038° 47' 42.77	/07"			
	2019 FUTURE LAND			LOW DENSITY				
16.	PROPOSED DISCH	ARGE LOCAT	TION:	OVERLAND FLOW AND DEL	DOT DRAINAGE SYS	STEM		
	WATERSHED:			BEAVERDAM CREEK-BROA	DKILL RIVER			
17.	PROPOSED TOTAL DISTURBANCE PER LOCATION:		E	TBD				
18.	TOTAL AREA:			GROSS ACREAGE:	2.13 ± AC.			
	BUILDING:			EX: 0.29 ± AC. (13.6%)	PR: 0.23 ± AC.	(10.8%)		
	IMPERVIOUS: GRASS			EX: 0.80 ± AC. (37.6%) EX: 1.04 ± AC. (48.8%)	PR: 0.72 ± AC. (PR: 1.18 ± AC. (
40	TOTAL:			EX: 2.13 ± AC. HORIZONTAL = NAD83	PR: 2.13 ± AC.			
18.	DATUM:			VERTICAL = NAVD88				
24.	FLOOD ZONE:			THIS PROPERTY IS LOCAT RATE MAP NUMBER 100050	C0166K, MAP REVISE	ED MARCH 16, 2015. ARE	A	
25	NONTIDAL WETLAN			DESIGNATED AS FLOOD ZO	ONE "X" (UNSHADED)		
	NONTIDAL WETLAN		ACTED:	0.00 ± AC.				
	TID			NOT INCLUDED				
27.	LOCAL GOVERNME	ENT RESPON	SIBLE	SUSSEX COUNTY				
				SOILS		2		
		TYPE		DESCRIPTION	HYDROLOGIC			
		FhA		-HENLOPEN COMPLEX, 0 TC PERCENT SLOPES				
		HmA	HAMMO	NTON LOAMY SAND, 0 TO 2	В			
	l			PERCENT SLOPES				
	TRAFFIC (GENER	ATION	- REYNOLDS R	OAD (S233)	j'		
	(FULL MOVEMEN	Τ)						
			ш			ASSIFICATION - (SCR 23		OCAL
			ENTRANCE		POSTED SPEED AADT = 471 TRIF	LIMIT - 50 MPH (UNPOST PS (FROM 2019 DELDOT	TED) TRAFFIC SUMMARY)	
		<			10 YEAR PROJE	CTED AADT= 1.16 x 471 = CTED AADT + PR. SITE A RN GROUP = 7 (FROM 20	DT = 546 TRIPS	JMMARY)
		[0] (62) 6Z	80 (30) [0]		TRUCK VOLUME	'.82% x 546 TRIPS = 97 TF - 5.00% x LEFT TURN PE		
		 		79 (28) [0]				
	79	(27) [0]	224	273 273		FFIC DATA:	L 10TH EDITION	
	RE	YNOL	S ROA	D	CHURCH (ITE 56 14,850 SF - EX. C	0) HURCH (SUNDAY)		
				DIAGRAM	14.85 KSF - AVG.	RATE - 27.63 = 410 TRIPS		
	ADT PEAK HOUR (AM), ADT PE	AK HOUR [PN	N]	SUNDAY PEAK:	AVG. RATE - 9.99 = 148 T		2%] (71/ 77)
	¹ DIRECTIONAL DIS ² DIRECTIONAL DI	STRIBUTION STRIBUTION	PROVIDED B PROVIDED B	Y DELDOT IY ITE MANUAL	PROPOSED LANI CHURCH (ITE 56 11,462 SF - EX. C			
	DESIGN VEHICLE	- SU-30			11.46 KSF - AVG.	RATE - 27.63 = 317 TRIPS		
					SUNDAY PEAK:	ADJACENT STREET TRAF AVG. RATE - 9.99 = 114 T	RIPS (SUNDAY) [48% / 52	2%] (55/ 59)
					50% TO/FROM TH	STRIBUTION / ENTRANCE HE NORTH = 158 TRIPS, F	PEAK AM (27) ENT. & PEA	
					TOTAL SITE TRA	HE SOUTH = 159 TRIPS, F AFFIC = 317 TRIPS AFFIC = 16 TRIPS (5%)	בהת אועו (20) ENT. & PEA	NY YIN POLI EXIL
L						<i>I</i>		

WATER EDGE CHURCH

TM: 235-15.00-7.01

PRELIMINARY SITE PLAN

13275 REYNOLDS ROAD MILTON, DE 19968 BROADKILL HUNDRED, SUSSEX COUNTY, DELAWARE PREPARED FOR: **OWNER/DEVELOPER** WATER'S EDGE A. WESLEYAN CONGREGATION 411 UNION ST **MILTON, DE 10700**



MILTON, DE 19968 (302) 684-8030 SURVEYOR PENNONI ASSOCIATES, INC. SCHOOL DISTRICT FIRE DISTRICT MILTON FIRE DEPT. (85) POSTAL DISTRICT MILTON POST WATER UTILITY PRIVATE ONSITE WELL

SEWER UTILITY PRIVATE ONSITE SEPTIC

OWNER WATER'S EDGE A WESLEYAN CONGREGATION 411 UNION STREET MILTON, DE 19968 ENGINEER/ PLANNER PENNONI ASSOCIATES INC. 18072 DAVIDSON DRIVE

	LEGEND	
EXISTING	PROPOSED	DESCRIPTION
Contraction of the second		BUILDING
		FULL DEPTH PAVEMENT
		CURB
		EDGE OF PAVEMENT
		EDGE OF GRAVEL
constraints of a strangering of a constraints	++	EASEMENT
		FENCE
Ŋ	Ø	POWER, UTILITY POLE
		PROPERTY, LINE
		LEGAL RIGHT-OF-WAY
•	•	PROPERTY, CORNER FO
eministrative provincial dis an indiversity and		PROPERTY, ADJOINING
\square		SITE, MAIL BOX
-0-	<u> </u>	SITE, TRAFFIC SIGN
Will man been unter autor toots saver even		SOIL BOUNDARY
WaC		SOIL LABEL
		STORM SEWER, INLET
Ľ,	Ę	STORM SEWER, HEADWA
Ô	O	STORM SEWER, MANHO
<i>D</i>		STORM SEWER, UNDER
means there were some 101 with easies server .	101	MINOR CONTOUR
normal version communic segment 1000 compete segments communications	100	MAJOR CONTOUR
× 100.5	35.00	SPOT ELEVATION
		BUILDING RESTRICTION
	>	SWALE/DITCH
	w w	WATER, UNDERGROUND
		TREFINE

1	0		-0	
P	11	77	1	7

FULL DEPTH PAVEMENT

PROPERTY, CORNER FOUND

PROPERTY, ADJOINING LINED

0

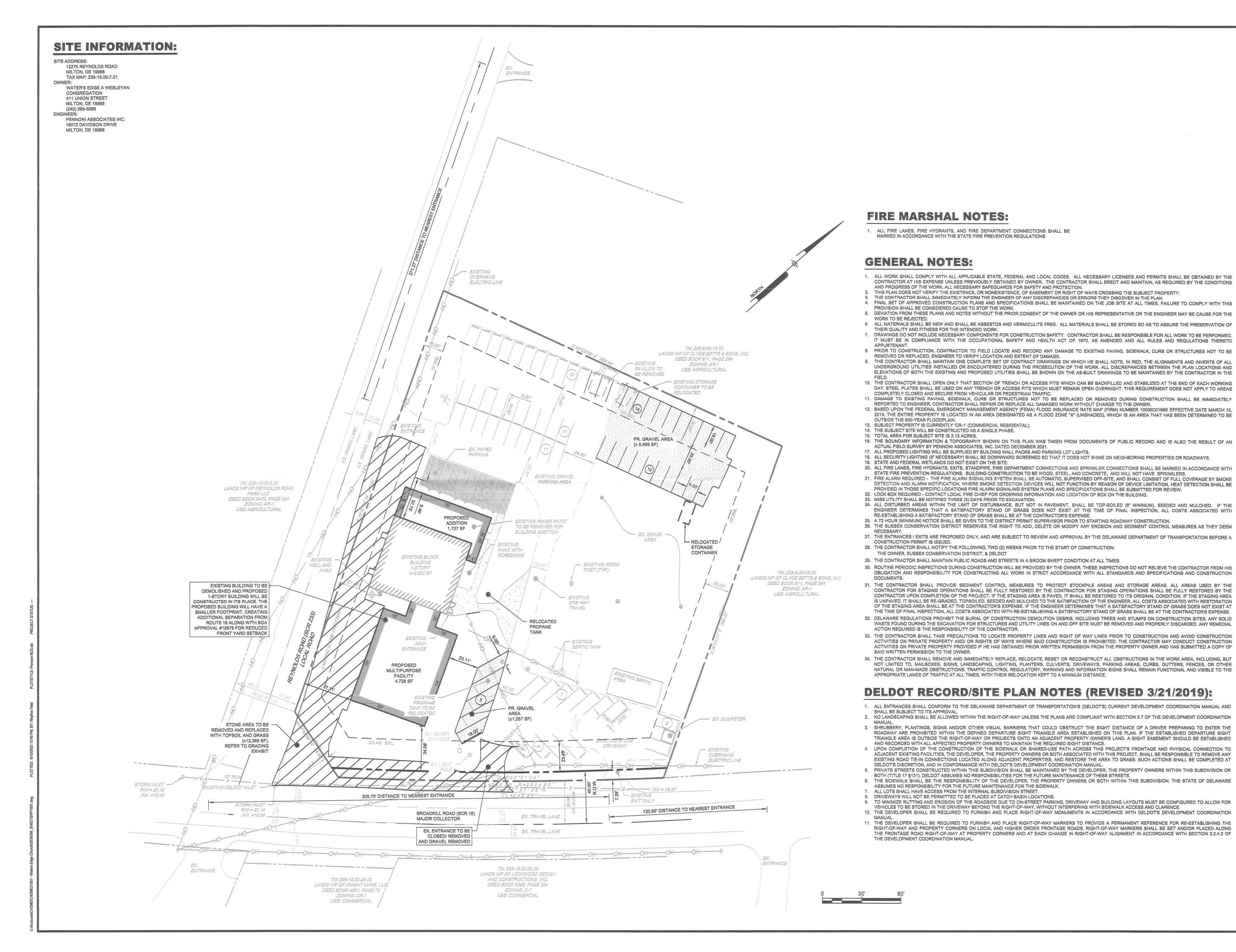
Revised Copy

	STORM SEWER, HEADWALL STORM SEWER, MANHOLE STORM SEWER, UNDERGROUND MINOR CONTOUR MAJOR CONTOUR SPOT ELEVATION BUILDING RESTRICTION LINE SWALE/DITCH		ALL DIMENSIONS MUST BE AND OWNER MUST F	DISCREPANCIES BEFORE						
	WATER, UNDERGROUND TREE LINE VEGETATION BRUSH LINE FENCE SIDEWALK STONE ARE TO BE REMOVED				1M: 235-15.00-7.01 13275 REYNOLDS ROAD	MILTON, DE 19968	PRELIMINARY COVER SHEET		VVATER'S EDGE A. WESLEYAN CONGREGATION	MILTON, DE 10700
									КРР	ВΥ
									REVISED LAOYOUT	REVISIONS
									-	NO.
									2022-06-10	DATE
			AR PRO TO B THE PRO OF SF EXPO	E INSTI JECT. J E SUITA E EXTEN JECT. A R ADAP PECIFIC SOLE I DSURE MNIFY A	MENTS P RUMENT THEY AR ABLE FO ISIONS C ISIONS C ISIONS C PURPOS RISK ANI TO PENN AND HOL CLAIMS, IG OUT C	S OF SE E NOT II R REUS OF THE F SE WITH SE INTEI O WITHO IONI AS D HARM DAMAG	RVICE II NTENDE E BY OW PROJECT HOUT WF IONI ASS NDED W DUT LIAB SOCIATE //LESS P ES, LOS	N RESPE D OR RE (NER OF F OR ON RITTEN N SOCIATE ILL BE A ULITY OF E; AND C ENNONI SES ANI	ECT OF PRESE OTHER ANY OT /ERIFIC/ S FOR T T OWNER R LEGAL WNER S ASSOC D EXPEN	THE NTED SSON THER ATION THE RS SHALL IATES ISES
Т	HE PROPERTY DESCRIBED AND		PROJ	ECT		С	Ю	ME2	2100)1
, 1	THAT I ACKNOWLEDGE THE SAME S SHOWN AND IN ACCORDANCE		DATE				2022-04-25			
				/ING SO	CALE			AS S	HOW	
				OVED	BY				AM	
	DATE			P	P	0	0)1	

SHEET 1 OF 2

OWNER'S CERTIFICATION: IT IS HEREBY CERTIFIED THAT I AM THE OWNER/DEVELOPER OF SHOWN ON THIS PLAN. THE PLAN WAS MADE AT MY DIRECTION, TO BE MY ACT. IT IS MY DESIRE TO HAVE THE PLAN RECORDED A WITH ALL APPLICABLE LAWS AND REGULATIONS.

WATER'S EDGE A. WESLEYAN CONGREGATION 411 UNION ST MILTON, DE 19968



1. ALL WORK SHALL COMPLY WITH ALL APPLICABLE STATE, FEDERAL AND LOCAL CODES. ALL NECESSARY LICENSES AND PERMITS SHALL BE OBTAINED BY THE CONTRACTOR AT HIS EXPENSE UNLESS PREVIOUSLY OBTAINED BY OWNER. THE CONTRACTOR SHALL ERECT AND MAINTAIN, AS REQUIRED BY THE CONDITIONS AND PROGRESS OF THE WORK, ALL NECESSARY SAFEGUARDS FOR SAFETY AND PROTECTION. THIS PLAN DOES NOT VERIFY THE EXISTENCE, OR NONEXISTENCE, OF EASEMENT OR RIGHT OF WAYS CROSSING THE SUBJECT PROPERTY.

. THE CONTRACTOR SHALL IMMEDIATELY INFORM THE ENGINEER OF ANY DISCREPANCIES OR ERRORS THEY DISCOVER IN THE PLAN. FINAL SET OF APPROVED CONSTRUCTION PLANS AND SPECIFICATIONS SHALL BE MAINTAINED ON THE JOB SITE AT ALL TIMES, FAILURE TO COMPLY WITH THIS 5. DEVIATION FROM THESE PLANS AND NOTES WITHOUT THE PRIOR CONSENT OF THE OWNER OR HIS REPRESENTATIVE OR THE ENGINEER MAY BE CAUSE FOR THE

6. ALL MATERIALS SHALL BE NEW AND SHALL BE ASBESTOS AND VERMICULITE FREE. ALL MATERIALS SHALL BE STORED SO AS TO ASSURE THE PRESERVATION OF DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY, CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK TO BE PERFORMED IT MUST BE IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970, AS AMENDED AND ALL RULES AND REGULATIONS THERETO

8. PRIOR TO CONSTRUCTION, CONTRACTOR TO FIELD LOCATE AND RECORD ANY DAMAGE TO EXISTING PAVING, SIDEWALK, CURB OR STRUCTURES NOT TO BE REMOVED OR REPLACED, ENGINEER TO VERIFY LOCATION AND EXTENT OF DAMAGE. 9. THE CONTRACTOR SHALL MAINTAIN ONE COMPLETE SET OF CONTRACT DRAWINGS ON WHICH HE SHALL NOTE, IN RED, THE ALIGNMENTS AND INVERTS OF ALL UNDERGROUND UTILITIES INSTALLED OR ENCOUNTERED DURING THE PROSECUTION OF THE WORK. ALL DISCREPANCIES BETWEEN THE PLAN LOCATIONS AND

10. THE CONTRACTOR SHALL OPEN ONLY THAT SECTION OF TRENCH OR ACCESS PITS WHICH CAN BE BACKFILLED AND STABILIZED AT THE END OF EACH WORKING DAY. STEEL PLATES SHALL BE USED ON ANY TRENCH OR ACCESS PITS WHICH MUST REMAIN OPEN OVERNIGHT. THIS REQUIREMENT DOES NOT APPLY TO AREAS 11. DAMAGE TO EXISTING PAVING, SIDEWALK, CURB OR STRUCTURES NOT TO BE REPLACED OR REMOVED DURING CONSTRUCTION SHALL BE IMMEDIATELY REPORTED TO ENGINEER, CONTRACTOR SHALL REPAIR OR REPLACE ALL DAMAGED WORK WITHOUT CHARGE TO THE OWNER.

12. BASED UPON THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM) NUMBER 10005C0166K EFFECTIVE DATE MARCH 15. 2015. THE ENTIRE PROPERTY IS LOCATED IN AN AREA DESIGNATED AS A FLOOD ZONE "X" (UNSHADED), WHICH IS AN AREA THAT HAS BEEN DETERMINED TO BE

16. THE BOUNDARY INFORMATION & TOPOGRAPHY SHOWN ON THIS PLAN WAS TAKEN FROM DOCUMENTS OF PUBLIC RECORD AND IS ALSO THE RESULT OF AN

18. ALL SECURITY LIGHTING (IF NECESSARY) SHALL BE DOWNWARD SCREENED SO THAT IT DOES NOT SHINE ON NEIGHBORING PROPERTIES OR ROADWAYS.

20. ALL FIRE LANES, FIRE HYDRANTS, EXITS, STANDPIPE, FIRE DEPARTMENT CONNECTIONS AND SPRINKLER CONNECTIONS SHALL BE MARKED IN ACCORDANCE WITH STATE FIRE PREVENTION REGULATIONS. BUILDING CONSTRUCTION TO BE WOOD, STEEL, AND CONCRETE, AND WILL NOT HAVE SPRINKLERS. 21. FIRE ALARM REQUIRED - THE FIRE ALARM SIGNALING SYSTEM SHALL BE AUTOMATIC, SUPERVISED OFF-SITE, AND SHALL CONSIST OF FULL COVERAGE BY SMOKE DETECTION AND ALARM NOTIFICATION. WHERE SMOKE DETECTION DEVICES WILL NOT FUNCTION BY REASON OF DEVICE LIMITATION, HEAT DETECTION SHALL BE PROVIDED IN THOSE SPECIFIC LOCATIONS FIRE ALARM SIGNALING SYSTEM PLANS AND SPECIFICATIONS SHALL BE SUBMITTED FOR REVIEW. 22. LOCK BOX REQUIRED - CONTACT LOCAL FIRE CHIEF FOR ORDERING INFORMATION AND LOCATION OF BOX ON THE BUILDING.

24. ALL DISTURBED AREAS WITHIN THE LIMIT OF DISTURBANCE, BUT NOT IN PAVEMENT, SHALL BE TOP-SOILED (6" MINIMUM), SEEDED AND MULCHED. IF THE ENGINEER DETERMINES THAT A SATISFACTORY STAND OF GRASS DOES NOT EXIST AT THE TIME OF FINAL INSPECTION, ALL COSTS ASSOCIATED WITH RE-ESTABLISHING A SATISFACTORY STAND OF GRASS SHALL BE AT THE CONTRACTOR'S EXPENSE

26. THE SUSSEX CONSERVATION DISTRICT RESERVES THE RIGHT TO ADD, DELETE OR MODIFY ANY EROSION AND SEDIMENT CONTROL MEASURES AS THEY DEEM 27. THE ENTRANCES / EXITS ARE PROPOSED ONLY, AND ARE SUBJECT TO REVIEW AND APPROVAL BY THE DELAWARE DEPARTMENT OF TRANSPORTATION BEFORE A

30. ROUTINE PERIODIC INSPECTIONS DURING CONSTRUCTION WILL BE PROVIDED BY THE OWNER. THESE INSPECTIONS DO NOT RELIEVE THE CONTRACTOR FROM HIS OBLIGATION AND RESPONSIBILITY FOR CONSTRUCTING ALL WORK IN STRICT ACCORDANCE WITH ALL STANDARDS AND SPECIFICATIONS AND CONSTRUCTION

31. THE CONTRACTOR SHALL PROVIDE SEDIMENT CONTROL MEASURES TO PROTECT STOCKPILE AREAS AND STORAGE AREAS. ALL AREAS USED BY THE CONTRACTOR FOR STAGING OPERATIONS SHALL BE FULLY RESTORED BY THE CONTRACTOR FOR STAGING OPERATIONS SHALL BE FULLY RESTORED BY THE CONTRACTOR UPON COMPLETION OF THE PROJECT. IF THE STAGING AREA IS PAVED, IT SHALL BE RESTORED TO ITS ORIGINAL CONDITION. IF THE STAGING AREA IS UNPAVED, IT SHALL BE RE-GRADED, TOPSOILED, SEEDED AND MULCHED TO THE SATISFACTION OF THE ENGINEER. ALL COSTS ASSOCIATED WITH RESTORATION OF THE STAGING AREA SHALL BE AT THE CONTRACTOR'S EXPENSE. IF THE ENGINEER DETERMINES THAT A SATISFACTORY STAND OF GRASS DOES NOT EXIST AT THE TIME OF FINAL INSPECTION, ALL COSTS ASSOCIATED WITH RE-ESTABLISHING A SATISFACTORY STAND OF GRASS SHALL BE AT THE CONTRACTOR'S EXPENSE. 32. DELAWARE REGULATIONS PROHIBIT THE BURIAL OF CONSTRUCTION DEMOLITION DEBRIS, INCLUDING TREES AND STUMPS ON CONSTRUCTION SITES. ANY SOLID WASTE FOUND DURING THE EXCAVATION FOR STRUCTURES AND UTILITY LINES ON AND OFF SITE MUST BE REMOVED AND PROPERLY DISCARDED. ANY REMEDIAL

33. THE CONTRACTOR SHALL TAKE PRECAUTIONS TO LOCATE PROPERTY LINES AND RIGHT OF WAY LINES PRIOR TO CONSTRUCTION AND AVOID CONSTRUCTION ACTIVITIES ON PRIVATE PROPERTY AND/ OR RIGHTS OF WAYS WHERE SAID CONSTRUCTION IS PROHIBITED. THE CONTRACTOR MAY CONDUCT CONSTRUCTION ACTIVITIES ON PRIVATE PROPERTY PROVIDED IF HE HAS OBTAINED PRIOR WRITTEN PERMISSION FROM THE PROPERTY OWNER AND HAS SUBMITTED A COPY OF

34. THE CONTRACTOR SHALL REMOVE AND IMMEDIATELY REPLACE, RELOCATE, RESET OR RECONSTRUCT ALL OBSTRUCTIONS IN THE WORK AREA, INCLUDING, BUT NOT LIMITED TO, MAILBOXES, SIGNS, LANDSCAPING, LIGHTING, PLANTERS, CULVERTS, DRIVEWAYS, PARKING AREAS, CURBS, GUTTERS, FENCES, OR OTHER NATURAL OR MAN-MADE OBSTRUCTIONS. TRAFFIC CONTROL REGULATORY, WARNING AND INFORMATION SIGNS SHALL REMAIN FUNCTIONAL AND VISIBLE TO THE APPROPRIATE LANES OF TRAFFIC AT ALL TIMES, WITH THEIR RELOCATION KEPT TO A MINIMUM DISTANCE.

DELDOT RECORD/SITE PLAN NOTES (REVISED 3/21/2019):

1. ALL ENTRANCES SHALL CONFORM TO THE DELAWARE DEPARTMENT OF TRANSPORTATION'S (DELDOT'S) CURRENT DEVELOPMENT COORDINATION MANUAL AND 2. NO LANDSCAPING SHALL BE ALLOWED WITHIN THE RIGHT-OF-WAY UNLESS THE PLANS ARE COMPLIANT WITH SECTION 3.7 OF THE DEVELOPMENT COORDINATION

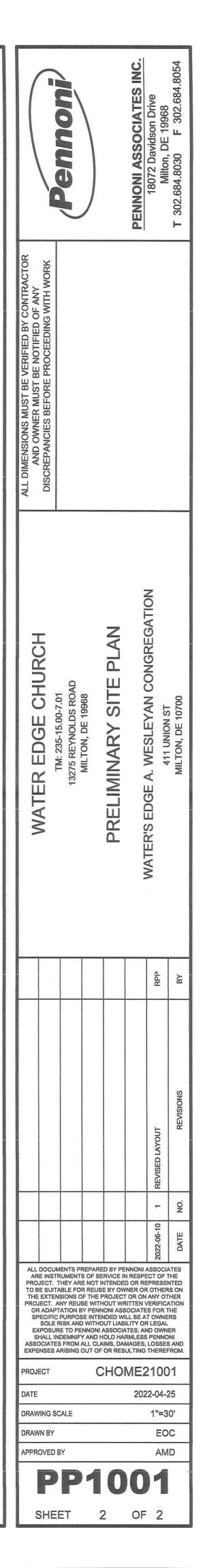
3. SHRUBBERY, PLANTINGS, SIGNS AND/OR OTHER VISUAL BARRIERS THAT COULD OBSTRUCT THE SIGHT DISTANCE OF A DRIVER PREPARING TO ENTER THE ROADWAY ARE PROHIBITED WITHIN THE DEFINED DEPARTURE SIGHT TRIANGLE AREA ESTABLISHED ON THIS PLAN. IF THE ESTABLISHED DEPARTURE SIGHT TRIANGLE AREA IS OUTSIDE THE RIGHT-OF-WAY 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. 4. UPON COMPLETION OF THE CONSTRUCTION OF THE SIDEWALK OR SHARED-USE PATH ACROSS THIS PROJECT'S FRONTAGE AND PHYSICAL CONNECTION TO

ADJACENT EXISTING FACILITIES, THE DEVELOPER, THE PROPERTY OWNERS OR BOTH ASSOCIATED WITH THIS PROJECT, SHALL BE RESPONSIBLE TO REMOVE ANY EXISTING ROAD TIE-IN CONNECTIONS LOCATED ALONG ADJACENT PROPERTIES, AND RESTORE THE AREA TO GRASS. SUCH ACTIONS SHALL BE COMPLETED AT DELDOT'S DISCRETION, AND IN CONFORMANCE WITH DELDOT'S DEVELOPMENT COORDINATION MANUAL. 5. PRIVATE STREETS CONSTRUCTED WITHIN THIS SUBDIVISION SHALL BE MAINTAINED BY THE DEVELOPER, THE PROPERTY OWNERS WITHIN THIS SUBDIVISION OR

BOTH (TITLE 17 §131). DELDOT ASSUMES NO RESPONSIBILITIES FOR THE FUTURE MAINTENANCE OF THESE STREETS. 6. THE SIDEWALK SHALL BE THE RESPONSIBILITY OF THE DEVELOPER, THE PROPERTY OWNERS OR BOTH WITHIN THIS SUBDIVISION. THE STATE OF DELAWARE

TO MINIMIZE RUTTING AND EROSION OF THE ROADSIDE DUE TO ON-STREET PARKING, DRIVEWAY AND BUILDING LAYOUTS MUST BE CONFIGURED TO ALLOW FOR VEHICLES TO BE STORED IN THE DRIVEWAY BEYOND THE RIGHT-OF-WAY, WITHOUT INTERFERING WITH SIDEWALK ACCESS AND CLARENCE. 10. THE DEVELOPER SHALL BE REQUIRED TO FURNISH AND PLACE RIGHT-OF-WAY MONUMENTS IN ACCORDANCE WITH DELDOT'S DEVELOPMENT COORDINATION

11. THE DEVELOPER SHALL BE REQUIRED TO FURNISH AND PLACE RIGHT-OF-WAY MARKERS TO PROVIDE A PERMANENT REFERENCE FOR RE-ESTABLISHING THE RIGHT-OF-WAY AND PROPERTY CORNERS ON LOCAL AND HIGHER ORDER FRONTAGE ROADS. RIGHT-OF-WAY MARKERS SHALL BE SET AND/OR PLACED ALONG THE FRONTAGE ROAD RIGHT-OF-WAY AT PROPERTY CORNERS AND AT EACH CHANGE IN RIGHT-OF-WAY ALIGNMENT IN ACCORDANCE WITH SECTION 3.2.4.2 OF





KAMM PROPERTIES LLC. 37425 Dale Earnhardt Blvd. Frankford, Delaware 19945 1-302-539-9123

May 20, 2022

Jamie Whitehouse Director, Sussex County Planning and Zoning PO Box 417 Georgetown Delaware 19947

We are writing to you to verify that the Property at 134-16.00-51.00 Know

as Assawoman Lakes, That all the Lots in Development are still Owned by KAMM Properties LLC..

Respectfully,

Maureen K. Justice CO-Owner KAMM Properties LLC

SHEET LIST TABLE					
Sheet Number	SHEET TITLE ORIGINAL F DATE		REVISION DATE		
RP-1	RECORD PLAN COVER SHEET	10-21-2020		5-3-2022	
RP-2	RECORD PLAN	10-21-2020		5-3-2022	
RP-3	RECORD PLAN	RECORD PLAN 10-21-2020		5-3-2022	
RP-4	NOTES, LINE, CURVE & EASEMENT TABLES	10-21-2020		5-3-2022	
RP-5	EXISTING & PROPOSED CONDITIONS EXHIBITS	10-21-2020		5-3-2022	
SHEET LIST TABLE					
SHEET NUMBER	SHEET TITLE	ORIGINAL DATE	REVISION DATE		
LP-1	LIGHTING AND AMENITY PLAN	11-15-2021	-15-2021 12-27-2021		
LS-1	LANDSCAPE PLAN	9-3-2021	12-27-2021		
LS-2	LANDSCAPE PLAN	9-3-2021		12-27-2021	
LS-3	LANDSCAPE DETAILS	9-3-2021	12-27-2021		

NOTES:

- FORESTED BUFFERS, STREETS, STORMWATER MANAGEMENT FACILITIES AND OTHER COMMON AREAS SHALL BE MAINTAINED BY THE DEVELOPER UNTIL SUCH TIME AS A HOMEOWNER'S ASSOCIATION CAN PROVIDE FOR REQUIRED MAINTENANCE. SUSSEX COUNTY AND THE STATE OF DELAWARE ASSUME NO RESPONSIBILITY FOR THE FUTURE MAINTENANCE OF THESE FACILITIES WITHIN THE SITE.
- ACCESS TO LOTS SHALL BE PROVIDED FROM THE SUBDIVISION STREETS PROPOSED WITH THIS PLAN. NO DIRECT ACCESS TO PUBLIC STREETS IS PROPOSED EXCEPT THE ENTRANCE SPECIFICALLY SHOWN ON THIS PLAN.
- BASED UPON FLOOD INSURANCE RATE MAP (FIRM) NUMBER 10005C0513K, DATED MARCH 16, 2015; THE ENTIRE PROPERTY IS LOCATED IN AN AREA DESIGNATED AS ZONE "X" (UNSHADED), WHICH IS AN AREA DETERMINED TO BE OUTSIDE THE 500-YEAR FLOODPLAIN
- THE BOUNDARY AND TOPOGRAPHIC INFORMATION SHOWN ON THIS PLAT WAS TAKEN FROM A FIELD SURVEY PREPARED BY AXIOM ENGINEERING, LLC IN JULY 2019. HORIZONTAL CONTROL IS REFERENCED TO NAD '83 STATE PLANE GRID, VERTICAL CONTROL IS REFERENCED TO NAVD '88.
- ALL SUBDIVISION LOTS SHALL HAVE FIVE-FOOT-WIDE EASEMENTS ALONG ALL LOT LINES FOR A TOTAL EASEMENT WIDTH OF AT LEAST TEN (10) FEET ALONG A LOT LINE COMMON TO TWO LOTS. EASEMENTS ALONG PERIMETER BOUNDARIES OF THE SUBDIVISION SHALL BE TEN (10) FEET IN WIDTH ON THE INTERIOR SIDE OF THE BOUNDARY. NO BUILDING, STRUCTURE OR OTHER PERMANENT OBSTRUCTION SHALL BE PLACED IN ANY EASEMENT.
- THIS PLAN DOES NOT VERIFY TO THE LOCATION AND/OR EXISTENCE OF EASEMENTS OR RIGHT-OF-WAYS CROSSING SUBJECT PROPERTY AS NO TITLE SEARCH WAS PROVIDED.
- ALL FIRE LANES, FIRE HYDRANTS, AND FIRE DEPARTMENT CONNECTIONS SHALL BE MARKED IN ACCORDANCE WITH THE STATE FIRE PREVENTION REGULATIONS.
- THE LANDSCAPE PLAN FOREST AND/OR LANDSCAPE BUFFER PLANS SHALL BE INSTALLED WITHIN 18 MONTHS FROM THE DATE SITE WORK IS AUTHORIZED TO COMMENCE. IF THE SUBDIVISION IS TO BE CONSTRUCTED IN PHASES, THE BUFFER FOR EACH PHASE MUST BE COMPLETED BEFORE COUNTY APPROVALS OR PERMITS WILL BE GRANTED TO CONSTRUCT THE NEXT PHASE.
- BUS STOPS SHALL BE LOCATED AT THE DISCRETION OF THE INDIAN RIVER SCHOOL DISCTICT

X. PROPERTY LINE

PROPOSED SUBDIVISION LINE

EX. 404 WETLANDS

EX. MINOR CONTOUR

EX. MAJOR CONTOUR

EX. ROAD CENTERLINE

EX. EASEMENT

EX. BUILDING

EX. SIDEWALK

EX. STORM SEWER

EX. SANITARY SEWER

EX. WOODS LINE

EX. WATER LINE

TRAFFIC SIGN

EX. ZONING BOUNDARY

EX. SPOT ELEVATION

RAINAGE DIVIDES

TIME OF CONCENTRATION

COMPOST LOG CHECK DAM

KIMMER DRAWDOWN DEVICE

EX. ELECTRIC LINES UTILITIES

EX. UTILITY POLES/LIGHT POLES

PR. DELDOT ENTRANCE PAVING

PR. ROTOMILL 1 1/4" & OVERLAY

EX. WELL

EX. FENCE

SOIL BORING

EST PIT

EX. STREAM

EX. SWALE

EX. CURB

EX. ADJACENT PROPERTY LINES

EX. BUILDING RESTRICTION LINES

10. THE U.S. ARMY CORPS OF ENGINEERS ISSUED JURISDICTIONAL DETERMINATION CENAP-OP-R-2020-189-23(NPR) ON MARCH 26, 2021, INDICATING THAT THE SUBJECT PROPERTY DOES NOT CONTAIN REGULATED WETLANDS.

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LEGEND

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_____ ___ 20 ____ ___ ___ ___ ___ ____ ____ ____ 25.5 _____

TM134-16.00-63.0 N/F JOHN T. OBER SR., LOT 12 PLANTATIO PARK BE RG 176

TM134-16.00-63.00 N/F CHRISTOPHER J. BUTTON LOT 11 PLANTATION PARK PB 8 PG 176

TM134-16.00-62.00 NJF JOHN R. BRAUE LOT 10 PLANTATION PARK PB B PG 176

TM134-16.00-52.02 N/F MICHAEL P. JUSTICL DISTER ZONE: C-1 LAND USE: COMMERCIA

TM134-16.00-61.00 N/F STEPHEN C. WARR LOT 9 PLANTATION PARK PB 8 PG 176

TM134-16.00-60.00 N/F ERIC A. FORRELL. LOT & PLANTATION PARK PB & PG 176

IRON PIPE FOUND IRON PIPE SET BENCHMARK – — · — FEMA FLOODPLAIN BOUNDARY STATE (TIDAL) WETLANDS PR. CONTOUR PR. BUILDING RESTRICTION LINES

CONCRETE MONUMENT FOUND

			PR. BUILDING RESTRICTION LINES
			PR. ROAD CENTERLINE
			PR. EASEMENT
EX. SHED	1		PR. BUILDING
	······································		PR. SWALE
			PR. SIDEWALK
			PR. CURB
EX. CATCH BASIN		PR. CATCH BASIN	PR. STORM SEWER CL
EX. SANITARY MANHOLE	5)PR. 54	ITTARY MANHOLE	PR. SANITARY SEWER
	$\tilde{\mathbf{v}}$		PR. WOODS LINE
EX. REDUCER	PR. REDUCER	PR. VALVE	CPR. WATER LINE
			PR. WELL
[©]	9 PERPENDICULAR	1 HANDICAP	PARKING SPACE COUNTS
	10' X 20'		
	9 DIAGONAL 9' X 18'		
· (1) (2)	_	 75	
0		0.00	PR. SPOT ELEVATION
X 25.21	TYPE 1 P-1	TYPE 2 [P-2]	PROPOSED DRAINAGE FLOW PR. INLET PROTECTION
			PRE INCEL PROFECTION
		(CIP)	PR. CULVERT INLET PROTECTION
SB-1	\frown	\times	
	TYPE 1 (ROP-1)	TYPE 2 (ROP-2)	ROCK OUTLET PROTECTION

ICWI

------LOD ------- LIMIT OF DISTURBANCE

PR. FOREBAY

CONSTRUCTION ENTRANCE

CONCRETE WASHOUT

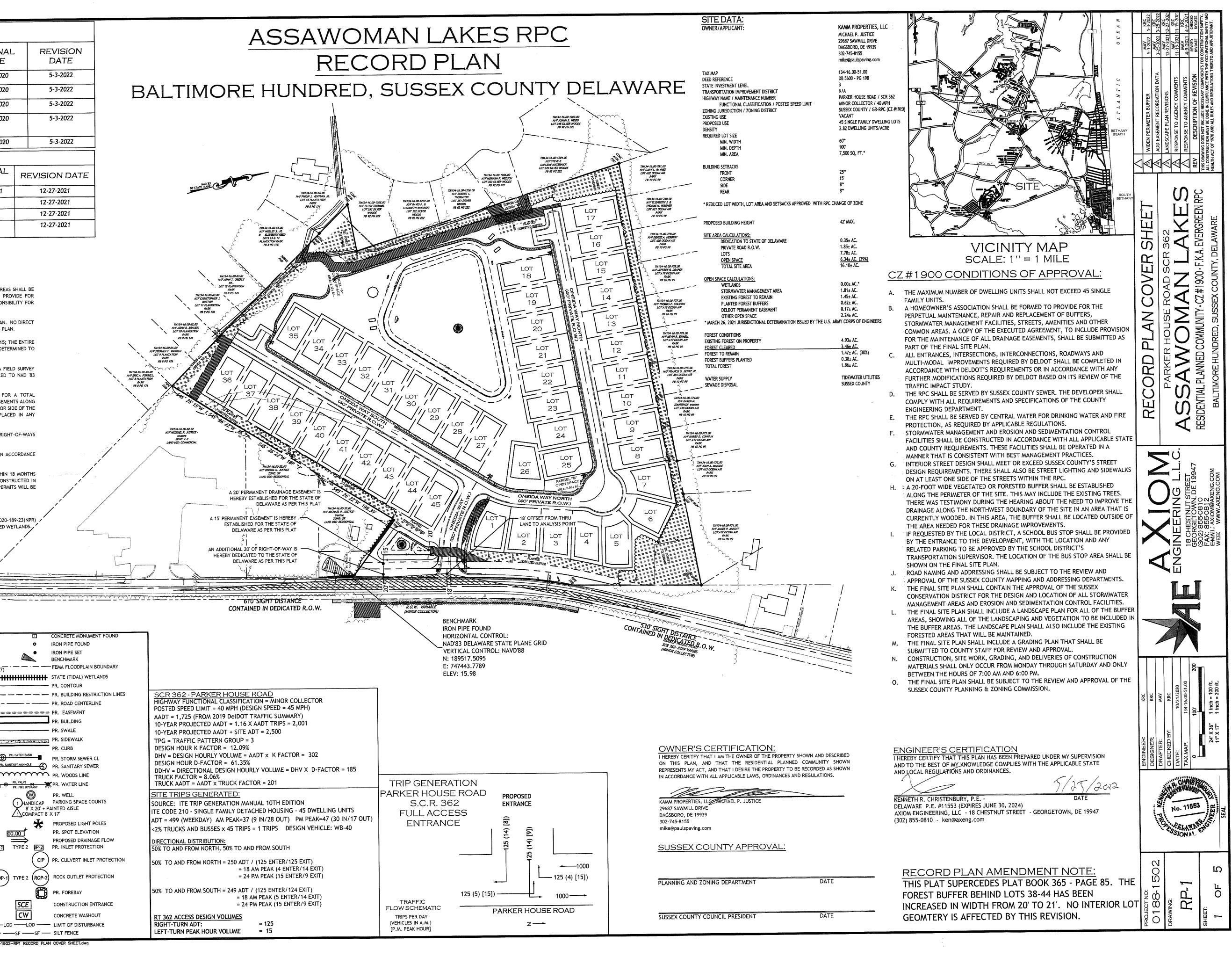
AADT = 1,725 (FROM 2019 DelDOT TRAFFI 10-YEAR PROJECTED AADT = 1.16 X AADT 10-YEAR PROJECTED AADT + SITE ADT = 2 TPG = TRAFFIC PATTERN GROUP = 3 DESIGN HOUR K FACTOR = 12.09% DHV = DESIGN HOURLY VOLUME = AADT × DESIGN HOUR D-FACTOR = 61.35% DDHV = DIRECTIONAL DESIGN HOURLY VO
TRUCK FACTOR = 8.06% TRUCK AADT = AADT × TRUCK FACTOR = 2
SITE TRIPS GENERATED:
SOURCE: ITE TRIP GENERATION MANUAL 1
ITE CODE 210 - SINGLE FAMILY DETACHED I
ADT = 499 (WEEKDAY) AM PEAK=37 (9 IN/2
<2% TRUCKS AND BUSSES x 45 TRIPS = 1 TR
DIRECTIONAL DISTRIBUTION:

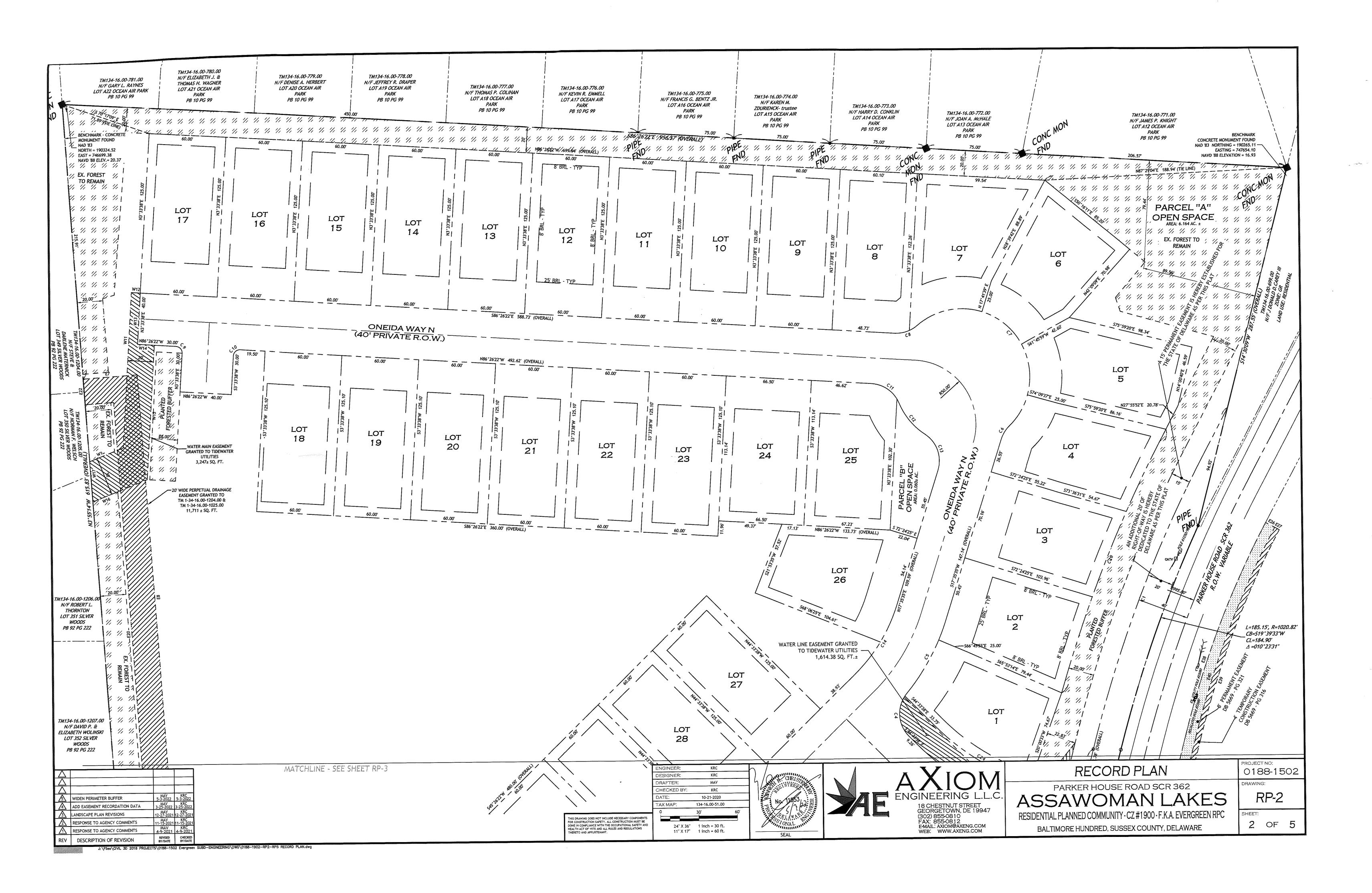
50% TO AND FROM NORTH, 50% TO AND FROM SOUTH 50% TO AND FROM NORTH = 250 ADT / (125 ENTER/125 EXIT)

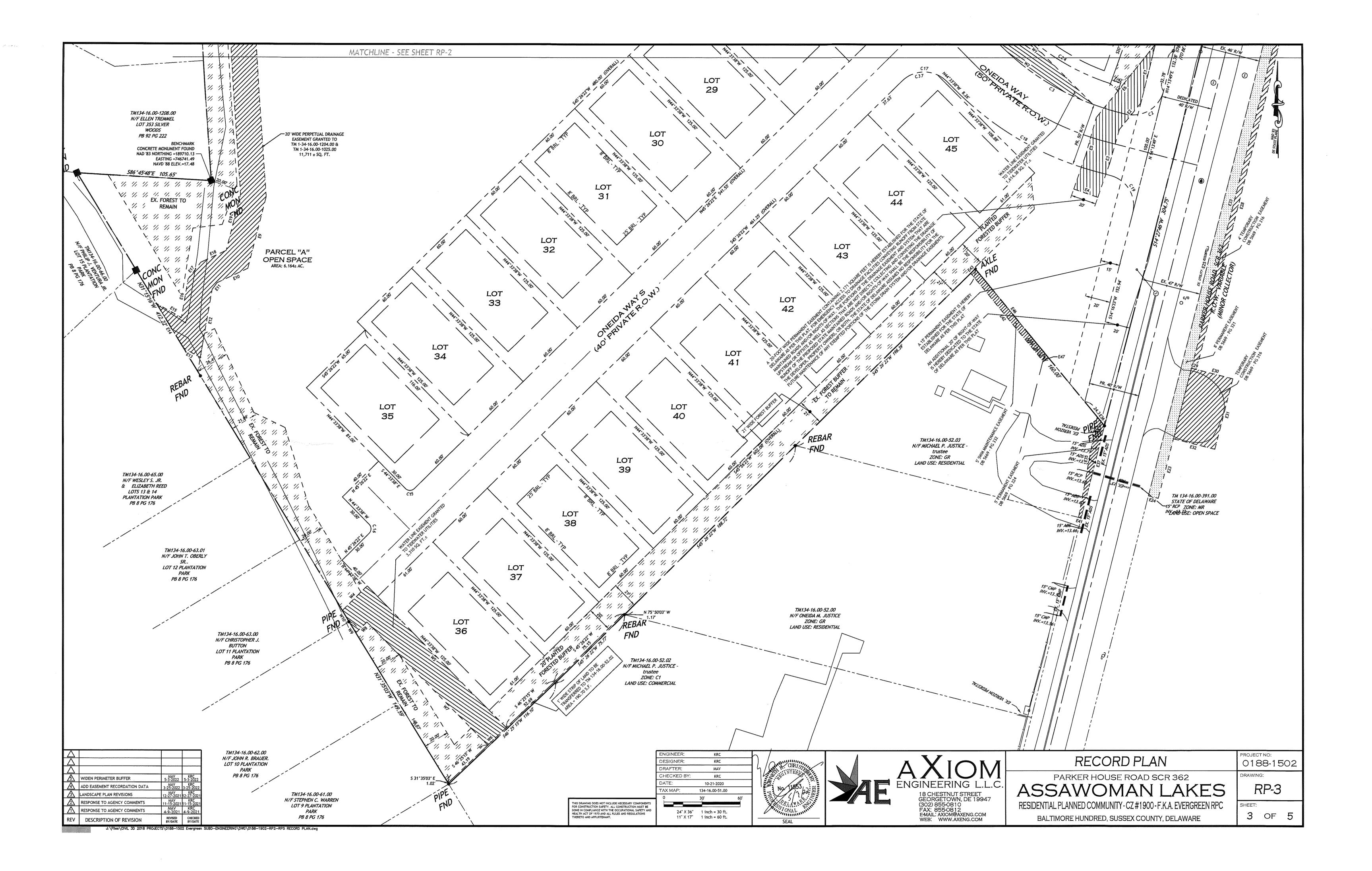
50% TO AND FROM SOUTH = 249 ADT / (125 ENTER/124 EXIT)

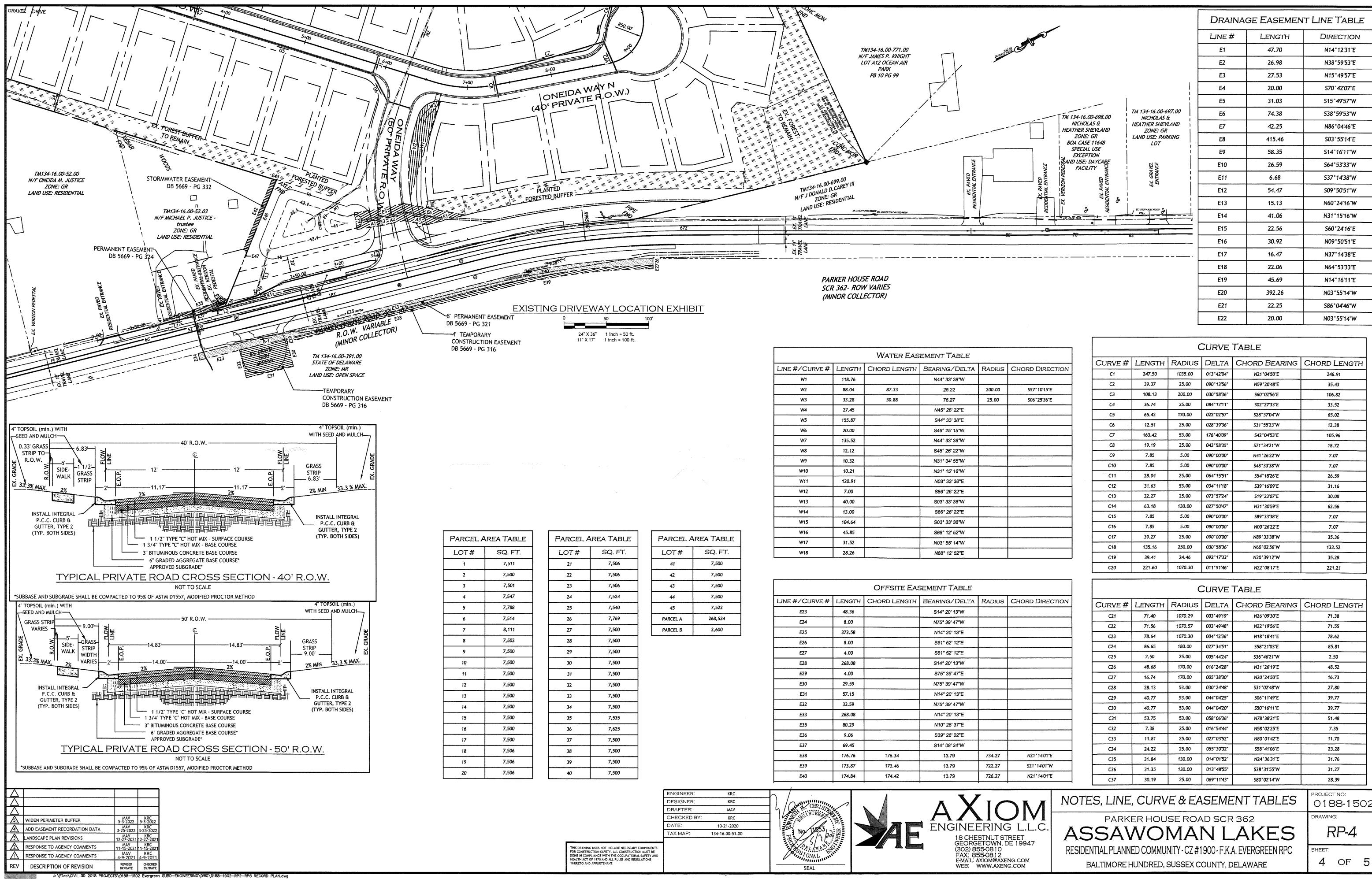
RT 362 ACCESS DESIGN VOLUMES = 125 **RIGHT-TURN ADT:** LEFT-TURN PEAK HOUR VOLUME = 15

Jt \Files \CIVIL 3D 2018 PROJECTS \0188-1502 Evergreen SUBD-ENGINEERING \DWG \0188-1902-RP1 RECORD PLAN COVER SHEET.dwg









		5
EASEMENT 6	24" X 36 11" X 17	

·* .				

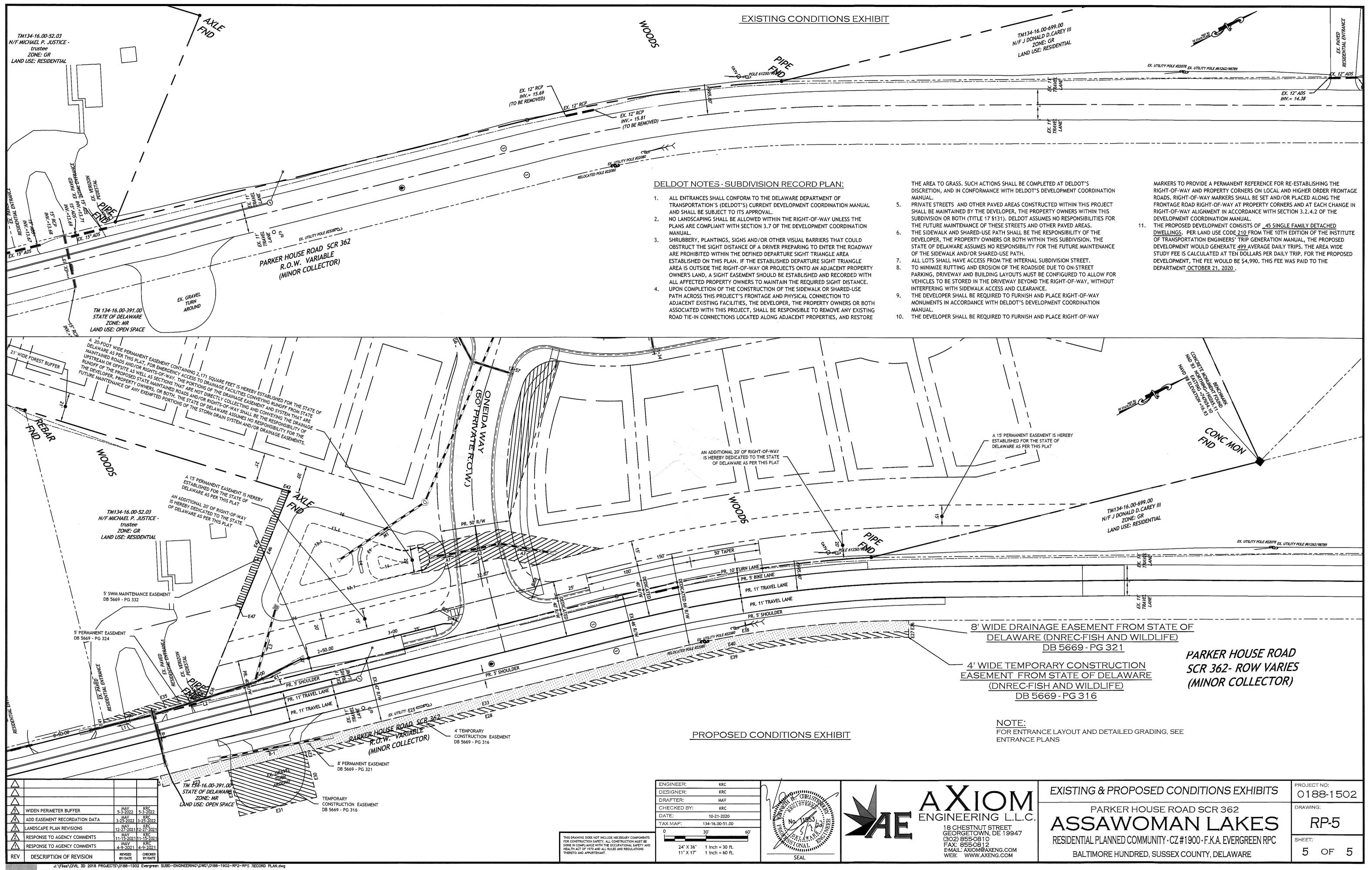
ea Table	
SQ. FT.	
7,511	
7,500	
7,501	
7,547	
7,788	
7,514	
8,111	
7,502	
7,500	
7,500	
7,500	
7,500	
7,500	
7,500	
7,500	
7,500	
7,500	
7,506	
7,506	

LOT #	SQ. FT.
21	7,506
22	7,506
23	7,506
24	7,524
25	7,540
26	7,769
27	7,500
28	7,500
29	7,500
30	7,500
31	7,500
32	7,500
33	7,500
34	7,500
35	7,535
36	7,625
37	7,500
38	7,500
39	7,500
······	

Parcel Area Table					
LOT #	SQ. FT.				
41	7,500				
42	7,500				
43	7,500				
44	7,500				
45	7,522				
PARCEL A	268,524				
PARCEL B	2,600				

W2	88.04	87.33	25.22	200.0
W3	33.28	30.88	76.27	25.0
W4	27.45		N45° 26' 22"E	
W5	155.87		S44° 33' 38"E	
W6	20.00		S46° 25' 15"W	
W7	135.52		N44° 33' 38"W	
W8	12.12		S45° 26' 22"W	
W9	10.32		N31° 34' 55"W	
W10	10.21		N31° 15' 16"W	
W11	120.91		N03° 33' 38"E	
W12	7.00		S86° 26' 22"E	:
W13	40.00		S03° 33' 38"W	
W14	13.00		S86° 26' 22"E	
W15	104.64	· · · · · · · · · · · · · · · · · · ·	S03° 33' 38"W	
W16	45.85		S68° 12' 52"W	
W17	31.52		N03° 55' 14"W	
14/4 0	20.24			

		OFFSITE EAS	sement Table		
LINE #/CURVE #	LENGTH	CHORD LENGTH	BEARING/DELTA	RADIUS	Сн
E23	48.36		S14° 20′ 13"W		
E24	8.00		N75° 39' 47"W		
E25	373.58		N14° 20' 13"E		
E26	8.00		S61° 52' 12"E		
E27	4.00		S61° 52' 12"E		
E28	268.08		S14° 20' 13"W		
E29	4.00		S75° 39' 47"E		
E30	29.59		N75° 39' 47"W		
E31	57.15		N14° 20' 13"E		
E32	33.59		N75° 39' 47"W		
E33	268.08		N14° 20' 13"E		
E35	80.29		N10° 28' 37 " E		
E36	9.06		S39° 26' 02"E		
E37	69.45		S14° 08' 24"W]
E38	176.76	176.34	13.79	734.27	
E39	173.87	173.46	13.79	722.27	
E40	174.84	174.42	13.79	726.27	
	1		<u>†</u>	1	1



STATE OF DELAWARE DEPARTMENT OF TRANSPORTATION 800 Bay Road P.O. Box 778 Dover, Delaware 19903

NICOLE MAJESKI SECRETARY

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October 07, 2021

Mr. Jamie Whitehouse, Director Sussex County Planning & Zoning Commission Sussex County Administration Building P.O. Box 417 Georgetown, Delaware 19947

SUBJECT: Letter of No Contention Approval Double E Lawncare Tax Parcel # 235-30.00-103.09 SCR 293 (Doddtown Road) BroadKill Hundred, Sussex

RECEIVED

DEC 0 8 2021 SUSSEX COUNTY PLANNING & ZONING

Dear Mr. Whitehouse:

The Delaware Department of Transportation (DelDOT) has reviewed a request, dated June 7, 2021, to obtain a Letter of No Contention (LONC) to use an existing commercial building and site entrance for the above referenced project, and has approved the request. This approval shall be valid for a period of <u>one (1) year</u>.

This determination is based on the project information as provided in the completed Permit Application, and verification of the requirements on the LONC approval checklist.

The following conditions are provided with this approval:

- 1) Site shall have access from the existing entrance located on Doddtown Road (SCR 293).
- 2) No entrance modifications or traffic pattern changes are proposed or authorized under this LONC approval.
- 3) DelDOT reserves the right to review, modify or revoke this LONC approval in the future if proposed activities create traffic conflicts, safety concerns or operational issues.
- 4) The property owner is responsible to:
 - a. Submit information to DelDOT, regarding any future operational or site changes, (including but not limited to: rezoning, site layout changes, changes in use, entrance modifications, expanded/additional uses, new uses, etc.). Changes of this nature may alter the flow and/or volume of traffic and could require a new LONC or formal review for Approvals and/or Permits.



Double E Lawncare Mr. Jamie Whitehouse Page 2 October 07, 2021

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- b. Establish and maintain clear sight lines at the entrance. There shall be no placement of structures, signs, objects, items for sale or parking of vehicles within State right-of-way or entrance limits. Shrubbery, Plantings, trees and/or other visual barriers that could obstruct the sight distance of a driver preparing to enter the roadway are prohibited.
- 5) The property owner and applicant are responsible to coordinate with DelDOT Outdoor Advertising & Roadside Control at (302) 853-1327, for information on obtaining specific permits for sign installation on private property. Permits for Utilities construction within State right-of-way require separate permit applications please contact DelDOT's South District at (302) 853-1345.

If the Department can be of any further assistance, please call me at (302) 760-2266.

Sincerely,

Hichard S.Y

R. Stephen McCabe Sussex County Review Coordinator, Development Coordination

cc: Thomas Engel, Double E. Lawncare Sussex County Planning & Zoning Matt Schlitter, South District Public Works Engineer Scott Rust, South District Public Works Manager James Argo, South District Project Reviewer William Kirsch, South District Entrance Permit Supervisor Wendy L. Polasko, P.E., Subdivision Engineer Brian Yates, Sussex County Reviewer



September 28, 2021

Mr. Thomas Engel 20104 Doddtown Road Harbeson, DE 19951

RE: Double E Lawncare No Objection to Conditional Use Permit TMP# 235-30.00-103.09

Dear Mr. Engel,

The Sussex Conservation District has reviewed your submittal on the above referenced project, and we have no objection to Sussex County issuing you a Conditional Use for the existing property.

If you have any questions or concerns, please contact the District at 302-856-2105.

Sincerely, Jessica I. Watson

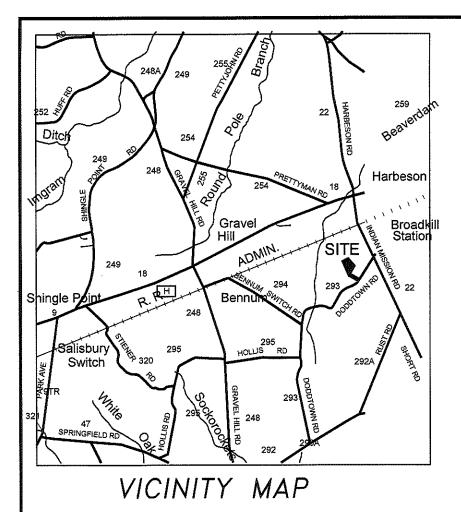
Jessica L. Watson Program Manager

RECEIVED

DEC 08 2021

SUSSEX COUNTY DEPENDENCE & ZONING

23818 SHORTLY ROAD, GEORGETOWN, DE office: 302-856-2105 fax: 302-856-0951 WWW.SUSSEXCONSERVATION.ORG



LANDS N.O.F. ALLEN HARIM FOODS, LLC DEED BOOK 3958, PAGE 136 ZONING: HI-1

CONDITIONAL USE (CU 2105) DOUBLE E LAWN CARE c/o THOMAS R. ENGLE & MARCI L. ENGLE TAX MAP 235-30.00-103.09 20104 DODDTOWN ROAD HARBESON, DE 199 LIST OF CONDITIONS

A. The use shall be limited to a landscaping business with vehicle and equipment storage. No other businesses shall be conducted on the site, and no vehicles associated with any other business shall be parked on the site. No retail sales shall be conducted from the site. B. There shall not be apy Conex-type metal storage containers, metal shipping containers, roll-off containers or dumpsters brought to the site or stored on the site, other than one dumpster

to be used for refuse associated with the business. C. No manufacturing shall occur on the site. This prohibition includes the chipping, shredding or grinding of any materials and also includes the dyeing of mulch or similar materials.

D. As stated by the Applicant, no sign shall be permitted. E. The hours of operation shall be limited to 6:30 a.m. through 5:00 p.m., Monday through

Saturday. F. Any security lighting shall be screened so that it does not shine on neighboring properties or

roadways. G. The Applicant shall comply with all DelDOT requirements, including any entrance or roadway

improvements. H. No trucks with more than two axles shall be permitted on the site for any use. This includes business vehicles, employee vehicles, and deliveries.

. All stormwater management facilities shall be subject to the review and approval of the Sussex Conservation District. The Final Site Plan shall December 5, 2017 - Page 15 M 633 17 (continued) Old Business/ CZ 1831 include the approval of the Sussex Conservation District for the design and location of the stormwater management areas. J. As stated by the Applicant, there shall be no dumping on the site, and the single dumpster

permitted on the site shall be screened from the view of neighboring properties and roadways. K. No more than 10 employee vehicles shall be permitted on the site at any one time, and no more than 12 commercial vehicles, including trailers, shall be permitted on the site at any one time. There shall be no more than 12 vehicles on the site at any time. A truck and trailer shall be counted as two vehicles. A trailer with a skid loader on it shall be counted as one vehicle. The Final Site Plan shall clearly show all areas for vehicle and equipment storage and parking, and these areas shall be clearly marked on the site itself. There shall not be any parking or storage within the property's setbacks.

L. All equipment and vehicle maintenance and repair shall occur indoors.

M. Visual screening in the form of fencing or landscaping shall be installed in any place where the roadway providing access to the conditional use area is within 20 feet of a neighboring property. These areas, along with the method of screening, shall be shown on the Final Site Plan. N. This Conditional Use is not permitted on the entire 25-acre parcel. It shall be limited to the cleared area immediately adjacent to the existing pole buildings and the roadway providing access to this area. The Final Site Plan shall contain boundaries clearly depicting the Conditional Use area for the review and approval of the Commission.

0. Failure to comply with any of these conditions shall be grounds for termination of the Conditional Use approval.

P. The Applicant shall be prohibited from widening the road leading to the back po1tion of the site. The Applicant shall only be permitted to widen the road toward the interior of the property. Q. The forested buffer shall not be altered. Clearcutting and thinning of the forested buffer shall be strictly prohibited.

R. This Conditional Use is limited in geographical scope and applies only to the back portion of the property as identified by Applicant comprising of that cleared area of ground adjacent to and surrounding the buildings. No additional trees are to be cut. The portion of the property subject to the Conditional Use shall be depicted on the Final Site Plan. S. The Final Site Plan shall be subject to the review and approval of the Sussex County Planning and Zoning Commission.

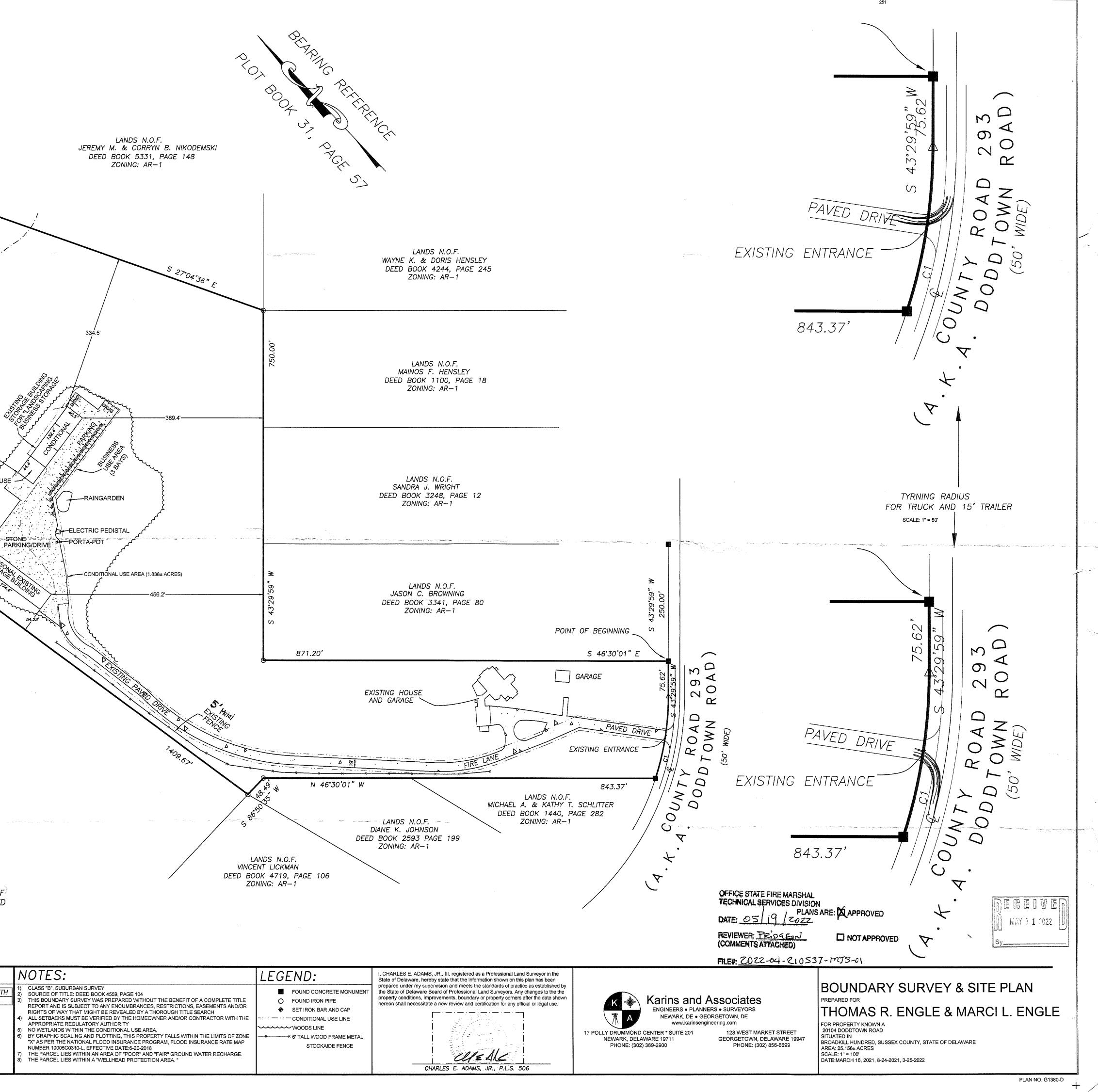


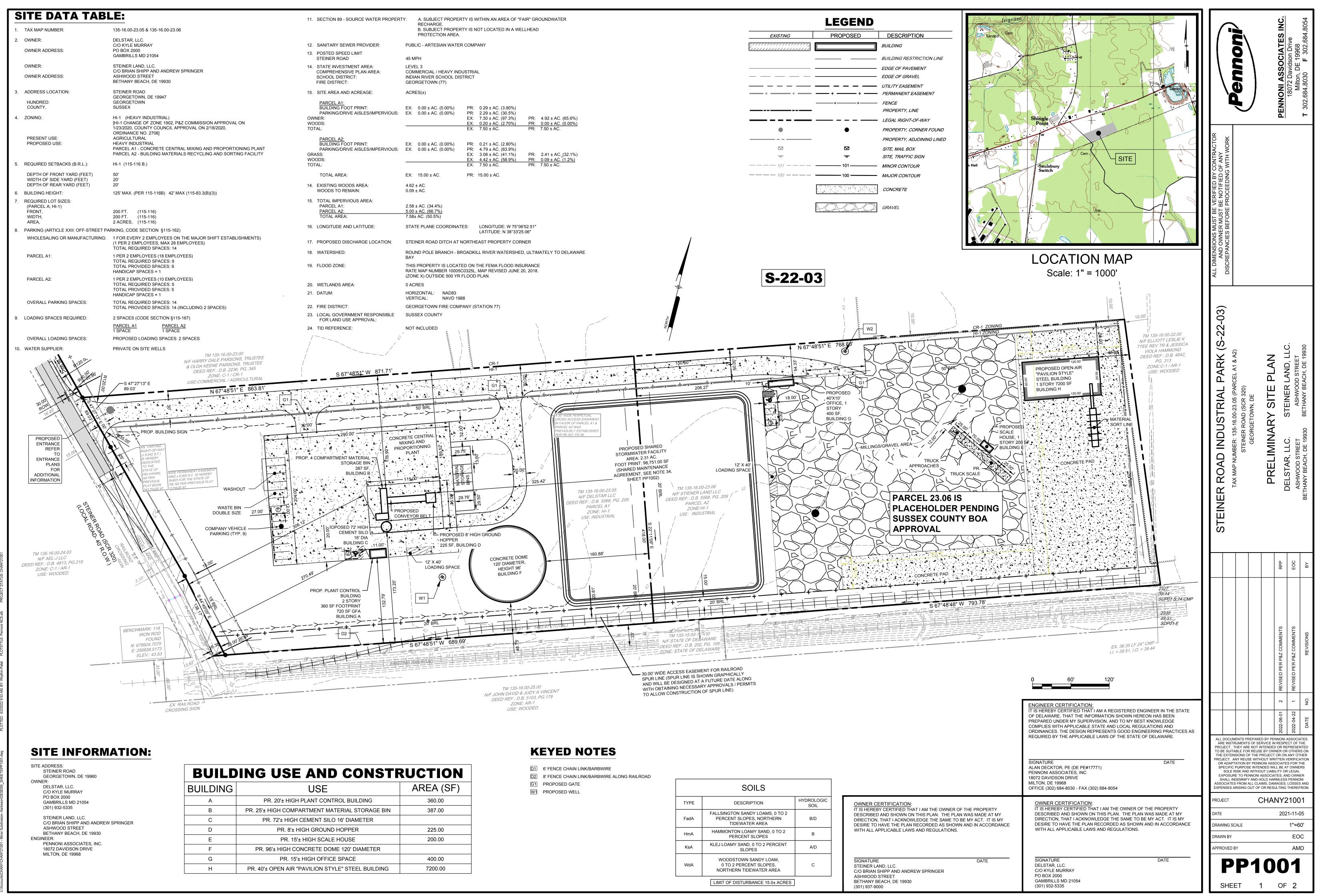
- 1) AREA: 25.156± ACRES
- 2) ZONING AR 1
- 3) EXISTING USE AR-1
- 4) PROPOSED USE AR 1 (WITH CONDITIONAL USE) LANDSCAPING
- 5) PROPOSED EQUIPEMENT AND STORAGE BUILDINGS, 132'X40'=5,280 SQ.FT. / 200= 27 PARKING SPACES REQUIRED

1st BAY IS PERSONAL USE

- 6) SEWER ON SITE SEPTIC
- 7) WATER ON SITE WELL
- 8) FIRE HYDRANTS NONE
- 9) WATER MAINS NONE
- 10) BUILDING HEIGHT 18.7'
- 11) CONSTRUCTION TYPE POLE BUILDING
- 12) WATER SPRINKLERS NONE
- 13) ALL FIRE LANES, FIRE HYDRANTS, AND FIRE DEPARTMENT CONNECTIONS SHALL BE MARKED IN ACCORDANCE WITH THE STATE FIRE PREVENTION REGULATIONS
- 14) NO ADDITIONAL TREES ARE TO BE CUT OUTSIDE OF THE AREA COMPRISED OF THE CURRENTLY CLEARED AREA ADJACENT TO AND SURROUNDING THE EXISTING POLE BUILDINGS AT THE BACK PORTION OF THE PROPERTY.

CURVE TABLE:						N
CURVE C1	ARC LENGTH	RADIUS 572.00'	DELTA ANGLE 17*56'42"	CHORD BEARING S 52*28'20" W	CHORD LENGTH 178.42'	1) (2) 55 3) T 4) // 5) M 6) E 7) T 8) T





BUILD	ING USE AND CONSTR	RUCT
BUILDING	USE	AREA
А	PR. 20'± HIGH PLANT CONTROL BUILDING	360
В	PR. 25'± HIGH COMPARTMENT MATERIAL STORAGE BIN	387
С	PR. 72'± HIGH CEMENT SILO 16' DIAMETER	
D	PR. 8'± HIGH GROUND HOPPER	22
E	PR. 15'± HIGH SCALE HOUSE	200
F	PR. 96'± HIGH CONCRETE DOME 120' DIAMETER	
G	PR. 15'± HIGH OFFICE SPACE	400
Н	PR. 40'± OPEN AIR "PAVILION STYLE" STEEL BUILDING	720
	BUILDING A B C D E F G	APR. 20'± HIGH PLANT CONTROL BUILDINGBPR. 25'± HIGH COMPARTMENT MATERIAL STORAGE BINCPR. 72'± HIGH CEMENT SILO 16' DIAMETERDPR. 8'± HIGH GROUND HOPPEREPR. 15'± HIGH SCALE HOUSEFPR. 96'± HIGH CONCRETE DOME 120' DIAMETERGPR. 15'± HIGH OFFICE SPACE

SOILS					
TYPE	TYPE DESCRIPTION				
FadA	FALLSINGTON SANDY LOAMS, 0 TO 2 PERCENT SLOPES, NORTHERN TIDEWATER AREA	B/D			
HmA	HAMMONTON LOAMY SAND, 0 TO 2 PERCENT SLOPES	В			
KsA	KLEJ LOAMY SAND, 0 TO 2 PERCENT SLOPES	A/D			
WdA	WOODSTOWN SANDY LOAM, 0 TO 2 PERCENT SLOPES, NORTHERN TIDEWATER AREA	С			
	LIMIT OF DISTURBANCE 15.0± ACRES				

GENERAL NOTES:

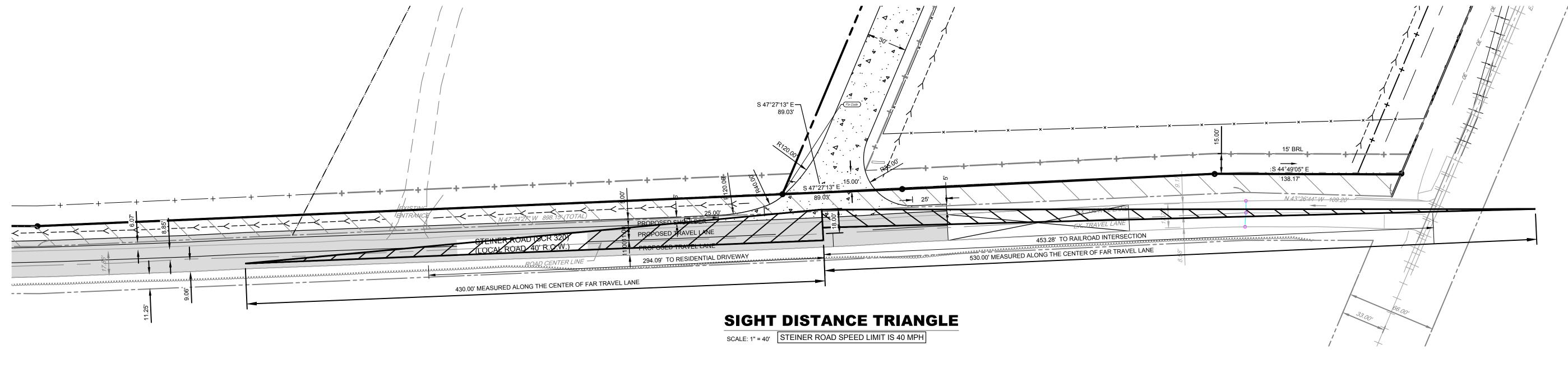
- 1. ALL WORK SHALL COMPLY WITH ALL APPLICABLE STATE, FEDERAL AND LOCAL CODES. ALL NECESSARY LICENSES AND PERMITS SHALL BE OBTAINED BY THE CONTRACTOR AT HIS EXPENSE UNLESS PREVIOUSLY OBTAINED BY OWNER. THE CONTRACTOR SHALL ERECT AND MAINTAIN, AS REQUIRED BY THE CONDITIONS AND PROGRESS OF THE WORK, ALL NECESSARY SAFEGUARDS FOR SAFETY AND PROTECTION
- 2. THE CONTRACTOR SHALL IMMEDIATELY INFORM THE ENGINEER OF ANY DISCREPANCIES OR ERRORS THEY DISCOVER IN THE PLAN.
- 3. DEVIATION FROM THESE PLANS AND NOTES WITHOUT THE PRIOR CONSENT OF THE OWNER OR HIS REPRESENTATIVE OR THE ENGINEER MAY BE CAUSE FOR THE WORK TO BE REJECTED. 4. ALL MATERIALS SHALL BE NEW AND SHALL BE ASBESTOS AND VERMICULITE FREE. ALL MATERIALS SHALL BE STORED SO AS TO
- ASSURE THE PRESERVATION OF THEIR QUALITY AND FITNESS FOR THE INTENDED WORK. DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK TO BE PERFORMED. IT MUST BE IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970, AS AMENDED AND ALL RULES AND REGULATIONS THERETO APPURTENANT.
- PRIOR TO CONSTRUCTION, CONTRACTOR TO FIELD LOCATE AND RECORD ANY DAMAGE TO EXISTING PAVING, SIDEWALK, CURB OR STRUCTURES NOT TO BE REMOVED OR REPLACED. ENGINEER TO VERIFY LOCATION AND EXTENT OF DAMAGE. THE CONTRACTOR SHALL MAINTAIN ONE COMPLETE SET OF CONTRACT DRAWINGS ON WHICH HE SHALL NOTE, IN RED, THE
- ALIGNMENTS AND INVERTS OF ALL UNDERGROUND UTILITIES INSTALLED OR ENCOUNTERED DURING THE PROSECUTION OF THE WORK. ALL DISCREPANCIES BETWEEN THE PLAN LOCATIONS AND ELEVATIONS OF BOTH THE EXISTING AND PROPOSED UTILITIES SHALL BE SHOWN ON THE AS-BUILT DRAWINGS TO BE MAINTAINED BY THE CONTRACTOR IN THE FIELD. . THE CONTRACTOR SHALL OPEN ONLY THAT SECTION OF TRENCH OR ACCESS PITS WHICH CAN BE BACKFILLED AND STABILIZED AT THE END OF EACH WORKING DAY. STEEL PLATES SHALL BE USED ON ANY TRENCH OR ACCESS PITS WHICH MUST REMAIN
- OPEN OVERNIGHT. THIS REQUIREMENT DOES NOT APPLY TO AREAS COMPLETELY CLOSED AND SECURE FROM VEHICULAR OR PEDESTRIAN TRAFFIC. DAMAGE TO EXISTING PAVING, SIDEWALK, CURB OR STRUCTURES NOT TO BE REPLACED OR REMOVED DURING CONSTRUCTION SHALL BE IMMEDIATELY REPORTED TO ENGINEER, CONTRACTOR SHALL REPAIR OR REPLACE ALL DAMAGED WORK WITHOUT
- CHARGE TO THE OWNER. 10. BASED UPON THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM) NUMBER 10005C0325L, EFFECTIVE DATE JUNE 20, 2018, THE PROPERTY IS LOCATED IN FLOOD ZONE "X" (UNSHADED), WHICH IS AN AREA THAT HAS BEEN DETERMINED TO BE OUTSIDE THE 500-YEAR FLOOD PLAN
- 11. SUBJECT PROPERTY IS CURRENTLY 'HI-1' (HEAVY INDUSTRIAL). 12. THE SUBJECT SITE WILL BE CONSTRUCTED AS A SINGLE PHASE
- 13. TOTAL AREA FOR SUBJECT SITE IS 15.00 ACRES±
- 14. THE BOUNDARY INFORMATION SHOWN ON THIS PLAT WAS COMPILED FROM DOCUMENTS OF PUBLIC RECORD AND A BOUNDARY SURVEY BY PENNONI, DATED FEBRUARY, 2020. ALL PROVIDED EASEMENTS ARE SHOWN ARE SHOWN ON THIS PLAN, HOWEVER, THIS PLAT AND SURVEY DOES NOT VERIFY THE EXISTENCE OR NON-EXISTENCE OF RIGHT-OF-WAYS OR EASEMENTS. 15. SURVEY DATUM: HORIZONTAL - NAD83. VERTICAL - NAVD88
- 16. DEED REFERENCE : DEED BOOK 5568, PAGE 209. PLAT REFERENCE : PLAT BOOK 343, PAGE 97
- 17. BUILDING LIGHTING TO BE PROVIDED WITH BUILDING PLANS. 18. ALL SECURITY LIGHTING (IF NECESSARY) SHALL BE DOWNWARD SCREENED SO THAT IT DOES NOT SHINE ON NEIGHBORING PROPERTIES OR ROADWAYS. 19. THERE ARE NO WETLANDS ON THIS PROPERTY PER THE DNREC ENVIRONMENTAL NAVIGATOR WEBSITE.
- 20. STORM WATER WILL BE HANDLED BY THE PROPOSED STORM WATER MANAGEMENT POND ON SITE. THE MAINTENANCE OF THE STORM WATER MANAGEMENT FACILITY WITHIN THIS SITE SHALL BE THE RESPONSIBILITY OF THE OWNER. 21. ALL FIRE LANES, EXITS, STANDPIPE AND SPRINKLER CONNECTIONS WILL BE MARKED IN ACCORDANCE WITH STATE FIRE
- PREVENTION REGULATIONS. ALL BUILDINGS WILL BE WOOD CONSTRUCTION AND HAVE SPRINKLERS. 22. LOCK BOX REQUIRED - CONTACT LOCAL FIRE CHIEF FOR ORDERING INFORMATION. LOCK BOXES WILL BE LOCATED ON THE RIGHT HAND SIDE OF THE DOOR.
- 23. MISS UTILITY SHALL BE NOTIFIED THREE (3) DAYS PRIOR TO EXCAVATION. 24. ALL DISTURBED AREAS WITHIN THE LIMIT OF DISTURBANCE, BUT NOT IN PAVEMENT, SHALL BE TOP-SOILED (6" MINIMUM). SEEDED AND MULCHED. IF THE ENGINEER DETERMINES THAT A SATISFACTORY STAND OF GRASS DOES NOT EXIST AT THE TIME OF FINAL INSPECTION, ALL COSTS ASSOCIATED WITH RE-ESTABLISHING A SATISFACTORY STAND OF GRASS SHALL BE AT THE CONTRACTOR'S EXPENSE
- 25. A 72 HOUR (MINIMUM) NOTICE SHALL BE GIVEN TO THE DISTRICT PERMIT SUPERVISOR PRIOR TO STARTING ROADWAY CONSTRUCTION.
- 26. ALL SIGNING FOR MAINTENANCE OF TRAFFIC IS THE CONTRACTORS RESPONSIBILITY, AND SHALL FOLLOW THE GUIDELINES SHOWN IN LATEST EDITION OF DELAWARE MUTCD.
- 27. DESIGN, FABRICATION AND INSTALLATION OF ALL PERMANENT SIGNING SHALL BE AS OUTLINED IN THE LATEST VERSION OF THE DE MUTCD. 28. DESIGN AND INSTALLATION OF ALL PAVEMENT MARKINGS AND STRIPING SHALL BE AS OUTLINED IN THE LATEST VERSION OF THE DE MUTCD. FOR FINAL PERMANENT PAVEMENT MARKINGS:
- a) EPOXY RESIN PAINT SHALL BE REQUIRED FOR LONG LINE STRIPING.
- b) THERMO PLASTIC (EXTRUDED OR PREFORMED MATERIAL) WILL BE REQUIRED ON ASPHALT SURFACES, FOR SHORT LINE STRIPING, I.E. SYMBOLS/LEGENDS. C) PERMANENT PAVEMENT MARKING TAPE (PER DELDOT APPROVED MATERIALS LIST) WILL BE REQUIRED ON CONCRETE
- SURFACES, FOR SHORT LINE STRIPING, I.E. SYMBOLS/LEGENDS. 29. BREAKAWAY POSTS SHALL BE USED WHEN INSTALLING ALL SIGNS. REFERENCE DELDOT STANDARD CONSTRUCTION DETAIL
- 30. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING, TWO (2) WEEKS PRIOR TO THE START OF CONSTRUCTION:
- -- THE OWNER
- -- SUSSEX CONSERVATION DISTRICT -- DELDOT
- 31. THE CONTRACTOR SHALL MAINTAIN PUBLIC ROADS AND STREETS IN A BROOM SWEPT CONDITION AT ALL TIMES.
- 32. THE CONTRACTOR SHALL REMOVE AND IMMEDIATELY REPLACE, RELOCATE, RESET OR RECONSTRUCT ALL OBSTRUCTIONS IN THE WORK AREA, INCLUDING, BUT NOT LIMITED TO, MAILBOXES, SIGNS, LANDSCAPING, LIGHTING, PLANTERS, CULVERTS, DRIVEWAYS, PARKING AREAS, CURBS, GUTTERS, FENCES, OR OTHER NATURAL OR MAN-MADE OBSTRUCTIONS. TRAFFIC CONTROL REGULATORY, WARNING AND INFORMATION SIGNS SHALL REMAIN FUNCTIONAL AND VISIBLE TO THE APPROPRIATE LANES OF TRAFFIC AT ALL TIMES, WITH THEIR RELOCATION KEPT TO A MINIMUM DISTANCE. 33. A SEPARATE SIGN PERMIT WILL BE REQUIRED FOR THE PROPOSED SIGN. ANY PROPOSED SIGN DETAILS WILL BE SUBMITTED
- SEPARATELY. 34. THE PROPOSED STORMWATER FACILITY IS LOCATED ON BOTH PROPERTIES AS SHOWN, A REQUIRED SHARED MAINTENANACE AGREEMENT IS WILL BE COMPLETED AND RECORDED TO HANDLE ACCESS AND MAINTENANCE OF BOTH PROPERTIES. THIS IS A REQUIREMENT BY SUSSEX CONSERVATION DISTRICT.

DELDOT RECORD/SITE PLAN NOTES (REVISED 3-21-2019):

- MANUAL AND SHALL BE SUBJECT TO ITS APPROVAL.
- COORDINATION MANUA

- 8. DRIVEWAYS WILL NOT BE PERMITTED TO BE PLACED AT CATCH BASIN LOCATIONS.
- COORDINATION MANUAL.
- WITH SECTION 3.2.4.2 OF THE DEVELOPMENT COORDINATION MANUAL.

(FULL MOVEMENT)



1. ALL ENTRANCES SHALL CONFORM TO THE DELAWARE DEPARTMENT OF TRANSPORTATION'S (DELDOT'S) CURRENT DEVELOPMENT COORDINATION NO LANDSCAPING SHALL BE ALLOWED WITHIN THE RIGHT-OF-WAY UNLESS THE PLANS ARE COMPLIANT WITH SECTION 3.7 OF THE DEVELOPMENT

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 ESTABLISHED ON THIS PLAN. 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.

UPON COMPLETION OF THE CONSTRUCTION OF THE SIDEWALK OR SHARED-USE PATH ACROSS THIS PROJECT'S FRONTAGE AND PHYSICAL CONNECTION TO ADJACENT EXISTING FACILITIES. THE DEVELOPER. THE PROPERTY OWNERS OR BOTH ASSOCIATED WITH THIS PROJECT. SHALL BE RESPONSIBLE TO REMOVE ANY EXISTING ROAD TIE-IN CONNECTIONS LOCATED ALONG ADJACENT PROPERTIES, AND RESTORE THE AREA TO GRASS. SUCH ACTIONS SHALL BE COMPLETED AT DELIDOT'S DISCRETION AND IN CONFORMANCE WITH DELIDOT'S DEVELOPMENT COORDINATION MANUAL

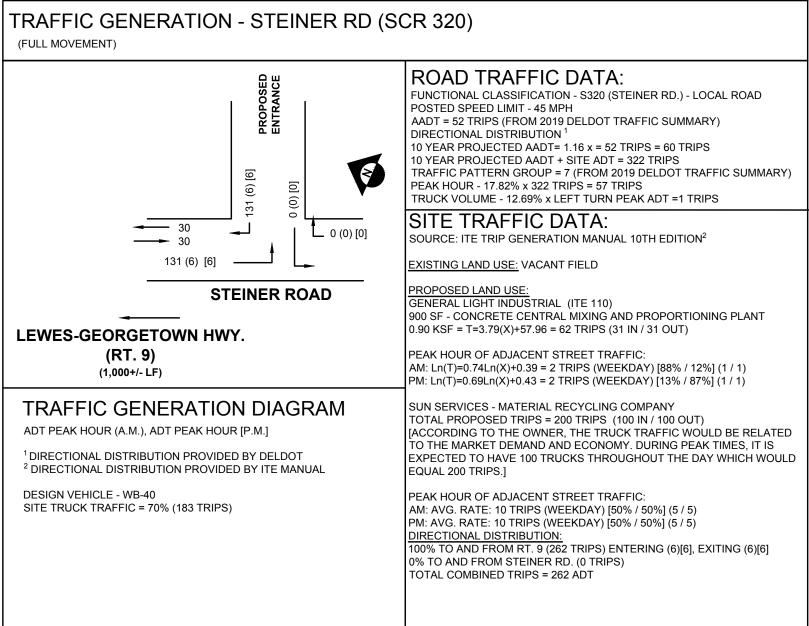
PRIVATE STREETS CONSTRUCTED WITHIN THIS PROPERTY SHALL BE MAINTAINED BY THE DEVELOPER, THE PROPERTY OWNERS WITHIN THIS SUBDIVISION OR BOTH (TITLE 17 §131). DELDOT ASSUMES NO RESPONSIBILITIES FOR THE FUTURE MAINTENANCE OF THESE STREETS. THE SHARED-USE PATH SHALL BE THE RESPONSIBILITY OF THE DEVELOPER, THE PROPERTY OWNERS OR BOTH WITHIN THIS SUBDIVISION. THE STATE OF

DELAWARE ASSUMES NO RESPONSIBILITY FOR THE FUTURE MAINTENANCE OF THE SHARED-USE PATH. 7. ALL LOTS SHALL HAVE ACCESS FROM THE INTERNAL SUBDIVISION STREET.

TO MINIMIZE RUTTING AND EROSION OF THE ROADSIDE DUE TO ON-STREET PARKING, DRIVEWAY AND BUILDING LAYOUTS MUST BE CONFIGURED TO ALLOW FOR VEHICLES TO BE STORED IN THE DRIVEWAY BEYOND THE RIGHT-OF-WAY, WITHOUT INTERFERING WITH SIDEWALK ACCESS AND CLEARANCE. 10. THE DEVELOPER SHALL BE REQUIRED TO FURNISH AND PLACE RIGHT-OF-WAY MONUMENTS IN ACCORDANCE WITH DELDOT'S DEVELOPMENT

11. THE DEVELOPER SHALL BE REQUIRED TO FURNISH AND PLACE RIGHT-OF-WAY MARKERS TO PROVIDE A PERMANENT REFERENCE FOR RE-ESTABLISHING THE RIGHT-OF-WAY AND PROPERTY CORNERS ON LOCAL AND HIGHER ORDER FRONTAGE ROADS. RIGHT-OF-WAY MARKERS SHALL BE SET AND/OR PLACED ALONG THE FRONTAGE ROAD RIGHT-OF-WAY AT PROPERTY CORNERS AND AT EACH CHANGE IN RIGHT-OF-WAY ALIGNMENT IN ACCORDANCE

12. A PERPETUAL CROSS ACCESS INGRESS/EGRESS EASEMENT IS HEREBY ESTABLISHED AS SHOWN ON THIS PLAT, PER PB 343, PG 97.



	rennon			PENNONI ASSOCIATES INC.	18072 Davidson Drive Milton. DE 19968	T 302.684.8030 F 302.684.8054
ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR AND OWNER MUST BE NOTIFIED OF ANY DISCREPANCIES BEFORE PROCEEDING WITH WORK						
STEINER ROAD INDUSTRIAL PARK (S-22-03)	I AX MAP NUMBER: 135-16:00-23:05 (PARCEL A1 & AZ) STEINER ROAD (SCR 320)	GEORGETOWN, DE	PRELIMINARY SITE NOTES			BETHANY BEACH, DE 19930 BETHANY BEACH, DE 19930
					EOC	BΥ
					REVISED PER P&Z COMMENTS	REVISIONS
					1 122-04-22	DATE NO.
PROJECT. TO BE SUIT THE EXTER PROJECT. A OR ADAP SPECIFIC SOLE EXPOSU	RUMENTS THEY ARE ABLE FOF NSIONS O ANY REUS TATION B PURPOS RISK AND RE TO PEI NDEMNIFY S FROM A	S OF SE E NOT IN R REUSE F THE P SE WITH Y PENN E INTEN WITHO NNONI A Y AND H ALL CLA	RVICE IN ITENDE E BY OW ROJECT OUT WF ONI ASS IDED WI UT LIAB ASSOCIA OLD HAI IMS, DAI	N RESPE D OR RE NER OR OR ON NITTEN N OCIATE LL BE A ILITY OF NTES; AN RMLESS MAGES,	ASSOCIA PRESEI OTHER ANY OT /ERIFIC/ S FOR T T OWNE LEGAL ID OWN PENNO LOSSES	ATES FHE NTED IS ON HER ATION HE IRS ER NI S AND
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APPROVED	P	1			AM	D

FUQUA, WILLARD & 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@fwsdelaw.com

BLUE BUILDING
 105 W. 4TH STREET
 LEWES, DE 19958
 PHONE 302-856-9024
 FAX 302-856-6360

JAMES A. FUQUA, JR. WILLIAM SCHAB TIMOTHY G. WILLARD www.fwsdelaw.com

January 20, 2022

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

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

RECEIVED

JAN 21 2022

SUSSEX COUNTY

PLANNING & ZONING

Email & Hand Delivered

Jamie Whitehouse Director, Planning Commission 2 The Circle Georgetown, DE 19947

RE: Steiner Land, LLC – 33422 Steiner Road #135-16.00-23.05

Dear Jamie:

I represent Steiner Land LLC ("Steiner") and Sun Services LLC ("Sun"). Steiner owns 7.5 acres along the railroad tracks just east of Georgetown. Sun runs a construction recycling business in Maryland and is planning a similar operation for this parcel. You may already be familiar with this property and the proposed use.

The parcel is zoned Heavy Industrial ("HI-1"). I am writing to confirm that Sun's use is a Permitted Use consistent with §115-109C. The location for Sun's use fits well not only as HI-1 but also because the location is isolated, in a wooded area with little to no residential use nearby. Furthermore, DNREC, DSWA met with Sun, and indicated that this project meets the criteria for approval.

Specifically, §115-109C Permitted Uses states:

C. The following uses and any <u>similar industrial</u> uses which are not likely to create any more offensive noise, vibrations, dust, heat, smoke, odor, glares or other objectionable influences than the minimum amount normally resulting from other uses permitted and involving the manufacture, compounding, processing, packaging or <u>treatment of the following products</u> or similar products. Where any doubt exists as to the nature of a proposed use, product or process, the proposal shall be considered

January 20, 2022

Fuqua, Willard & Schab, P.A.

- 1 s

as a potentially hazardous use and referred to the Board of Adjustment for decision after a public hearing. <u>Concrete products or central mixing and proportioning plants</u> <u>Structural iron and steel fabrication</u> <u>Wallboard and plaster, building, insulation and</u> <u>composition flooring</u>

If confirmed, Sun will be treating, recycling, the listed products. Based on Sun's track record in MD and their specific plans for this parcel, Sun's use will reduce any objectional influences for such use or similar uses. In addition, this recycling operation environmentally addresses significant demand created by the housing market consistent with the Sussex County Comprehensive Plan.

In sum, the facility will receive, process and sort Construction and Demolition debris. Construction and Demolition debris is generally (but not exclusively) comprised of the following commodities: wood, concrete, brick, block, metals, wallboard, cardboard, paper, plastics and dirt. These materials will be processed using heavy equipment, screens, magnets and elevated sort lines with labor to sort and separate each commodity into clean groups that can be sold or reused. After the commodities are separated, they will be prepped and trucked off site. The remaining materials that have no value for reuse will be trucked off site as well to a permitted waste facility.

The heavy equipment that will be used on site will present minimal noise nuisance because they will utilize white noise back up alarms (not a loud beep) which prevents the noise from traveling off the property. Other equipment will be electrically driven so noise will be at a minimum. Any dust will be suppressed by wetting material down as needed as well as dust suppression (atomizing water into the air) to capture fugitive dust particles if they are created during the process. Odor is not anticipated to be an issue because this operation will accept only Construction and Demolition debris which do not contain the organic components that generally cause objectionable odors.

We would welcome a meeting at your convenience. Or, please email me with your thoughts. Thanks.

Very truly yours,

FUOUA, WILLARD, STEVENS & SCHAB By_

Timothy G. Willard

Pc: Sun Services LLC Penoni Engineers

FUQUA, WILLARD & 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@fwsdelaw.com

BLUE BUILDING
 105 W. 4TH STREET
 LEWES, DE 19958
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JAMES A. FUQUA, JR. WILLIAM SCHAB TIMOTHY G. WILLARD www.fwsdelaw.com

June 9, 2022

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

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

Emailed and Hand Delivered

Robert C. Wheatley, Chairman Planning and Zoning Commission Sussex County 2 The Circle Georgetown, DE 19947

RE: (S-22-03) Steiner Road Industrial Park Sun Shore Recycling Permitted Use Reconsideration

Dear Chairman Wheatley and Commission Members:

Please allow this letter to serve as a Request for Reconsideration /Clarification of the Commission's decision requiring the proposed Sun Shore Recycling Use to seek Board of Adjustment approval as a "potentially hazardous use".

On May 26, 2022, the Commission considered whether a construction materials recycling facility was a permitted use in a Heavy Industrial (HI-1) zone, since it is a "similar industrial" use as other uses permitted in the HI-1 Zoning District. The Applicant had submitted a power point presentation and a letter from the Delaware Solid Waste Authority in support of the use. After some deliberation, the Commission decided that the Applicant would need to file for a Special Use Exception for a "potentially hazardous use" with the Board of Adjustment. I am writing the Commission to request reconsideration or clarification of this determination since it appears to be based on inaccurate information.

Page 2 June 9, 2022

At the May 26th meeting the Planning Director explained the application as a request to determine whether the proposed use was similar to the listed "permitted" uses in the HI-1 zone. At minutes13:39-14:15 of the May 26th audio record, Commission Attorney Robertson summarized the similar permitted uses and listed all the materials that the applicant would be sorting.¹ At minute 13:32 he referred to "*stone products, but not crushing or grinding*". Commissioner Wingate then stated, at minute 14:17 "*it does say not crushing*". Commissioners Hoey and Wingate appear to mention crushing concrete and stone. Again, at minute 15:43, referring to potentially hazardous uses, Mr. Robertson refers to the line item describing "*grinding, crushing and processing minerals and earth*". Immediately thereafter, Commissioner Hoey makes a motion determining that the use is not similar to those permitted in HI-1. The basis of the decision appears to be in the HI-1 zone that the grinding and crushing of stone or minerals was expressly excluded.

However, Sun Shore's Recycling process <u>does not</u> involve <u>any crushing or</u> <u>grinding</u>. As was made clear in previous meetings and in correspondence, the process involves sorting the material and shipping it to others for use. Furthermore, there are noise and dust mitigation equipment and procedures that were not discussed.

Therefore, the Applicant respectfully requests the Commission reconsider it's May 26th decision and find that the construction materials recycling facility is a permitted use in the HI-1 Zoning District, since it is a "similar industrial" use as other uses permitted in the district. This determination could be made with the

Concrete products or central mixing and proportioning plants Structural iron and steel fabrication Wallboard and plaster, building, insulation and composition flooring

¹In my January 20th letter to the Commission, that analysis was presented in support of the permitted use as follows: The parcel is zoned Heavy Industrial ("HI-1"). 1 am writing to confirm that Sun's use is a Permitted Use

consistent with §115-109C. The location for Sun's use fits well not only as HI-1 but also because the location is isolated, in a wooded area with little to no residential use nearby. Furthermore, DNREC and DSWA met with Sun and indicated that this project meets the criteria for approval. Specifically, §115-109C Permitted Uses states:

C. The following uses and any similar industrial uses which are not likely to create any more offensive noise, vibrations, dust, heat, smoke, odor, glares or other objectionable influences than the minimum amount normally resulting from other uses permitted and involving the manufacture, compounding, processing, packaging or treatment of the following products or similar products. Where any doubt exists as to the nature of a proposed use, product or process, the proposal shall be considered as a potentially hazardous use and referred to the Board of Adjustment for decision after a public hearing.

Page 3 June 9, 2022

condition that "any grinding or crushing" of any materials is prohibited without the prior approval of a Special Use Exception by the Board of Adjustment.

Thank you for your consideration.

Respectfully submitted,

FUQUA, WILLARD & SCHAB, P.A.

By:_____ Timothy G. Willard

Pc: Jamie Whitehouse, Director Vince Robertson, Esquire Sun Shore Recycling



18072 Davidson Drive Milton, DE 19968 T: 302-684-8030 F: 302-684-8054

www.pennoni.com

April 22, 2022 CHANY21001

Mr. Michael Lowrey Sussex County Planning and Zoning 2 The Circle Georgetown, DE 19947

RE: Revised Preliminary Site Plan Submission (S-22-03) Steiner Land, LLC & Delstar, LLC Tax Map # 135-16.00-23.05 & 23.06 (Parcels A1 & A2) Georgetown Hundred Georgetown, DE 19947

Dear Mr. Lowrey,

On behalf of Steiner Land, LLC & Delstar, LLC., Pennoni Associates Inc. (Pennoni) is pleased to submit the revised Preliminary Site Plan for your consideration of review and approval. We have addressed the following comments per your letter received on March 16, 2022.

We have enclosed one (1) copies of the following documents for review and approval of the project.

<u>Item</u>	Description Last Revised				
Drawings Prepared by Pennoni Associates Inc.					
PP1001 & PP1002	Preliminary Site Plan & Details	04/22/2022			

Preliminary Site Plan Comments:

1. Please describe the "Cement Central Mixing and Proportioning" as well as the "Building Materials Recycling Operations" that the applicant proposes on the site. A detailed description of the use/process would be helpful to the Planning and Zoning Commission as it is not clear on the Preliminary Site Plan provided.

Pennoni Response (April 22, 2022): See attached detailed descriptions for each use.

- Staff notes that the applicant is required to provide the location and nature of all proposed construction, excavation or grading at the site (§115-220(5))
 Pennoni Response (April 22, 2022): Understood. The entire site will be disturbed for the proposed site improvements and to allow drainage to the centered stormwater facility. A bulk grading plan will be supplied as part of the final plan submission.
- 3. Staff notes that all the setbacks for the proposed building are not included in the applicant's submission. Please include the proposed setbacks for all proposed buildings in any revised plan (§115-220(8)).

Pennoni Response (April 22, 2022): We have dimensions between the buildings and property line to clearly show setback information.

- 4. Staff notes that building height is not provided for all the proposed structures. Specifically, proposed heights are not provided for the following proposed improvements designated as follows in the Plan's "Building Use and Construction" table:
 - Building B: "Compartment Material Storage Bin"
 - Building H: "Open Air Pavilion Style Steel Building" While the plan indicates "1 Story" for this structure, due to the unique nature of this improvement, staff request more specificity relating to the building and the proposed height.
 - The improvement designated solely as "Proposed Silo", drawn as a circle immediately adjacent to the south of "Building C" in the Plan.

Please include the height for all proposed buildings on any revised plan (§115-220(8)).

Pennoni Response (April 22, 2022): We have added the height of all structures and building, refer to the building use and construction table.

5. Please provide more detail regarding the "Open-Air Pavilion Style Steel" structure. Will this be a rack type or lean-to style building? Will there be any type of component, structural or otherwise, spanning the top of the structure?

Pennoni Response (April 22, 2022): The building will be a pavilion style building, basically a roof supported by post/columns around the perimeter with no side walls.

- 6. Staff notes the area labeled "Storage" on the Plan, immediately east of "Building D". Please provide more information clarifying the nature of the improvement in this area.
 Pennoni Response (April 22, 2022): The label has been revised to state Material Storage Bins, these bins will store the various materials and aggregate for the cement mixing process. Refer to the Chaney Site in Lincoln for additional information.
- 7. Staff notes that a total of seven (7) parking spaces are provided at two (2) locations in the plan. Staff requests that the applicant amend the Site Data column to include parking calculations or provide a parking table in the Plan indicating the calculations per the specific use of proposed structures as required under (§115-162).

Pennoni Response (April 22, 2022): The parking has been separated for each use and clearly identified on the plans.

- 8. Staff notes the parking area in the Plan adjacent to "Building A" designated as a (450) square foot "2 Story Plant Control Building." Staff notes that two (2) stories would imply (900) square feet in "Building A" which would impact the calculation of the total required parking at the site. Please clarify the total square footage to be included in the improvement designated "Building A." Additionally, please show the dimensions of the parking spaces provided at this parking area as well as the dimensions of the parking stalls at the area labeled "Company Vehicle Parking" in the plan. Pennoni Response (April 22, 2022): The parking is based on employees not square footage. We have updated the Building A label for total GFA along with parking dimensions as requested. The parking data has been separated and clearly references the required and proposed for each site.
- 9. Staff calculates approximately 15,507 square feet of industrial use as categorized under the table provided in (§115-167) and notes that two (2) Off-Street Loading spaces are required. Please indicate

where such required Off-Street loading areas will be provided in the plan. Additionally, staff notes the dimensional requirements for Off-Street loading areas as described in (§115-170).

Pennoni Response (April 22, 2022): We have added a designated loading space for each use, but as these are not typical commercial uses, the entire area is designed for loading and unloading operations as part of the intended use.

10. Staff notes that the zoning information referencing the neighboring property to the north (Tax Map # 135-16.00-23.00) is labeled as with C-1 General Commercial Zoning District and AR-1 Agricultural residential Zoning District. Staff notes that a portion of this parcel is also within the CR-1 Commercial Residential Zoning District.

Pennoni Response (April 22, 2022): The online map is wrong, the entire parcel is C-1 / CR-1.

- 11. Please show the required front yard setback of fifty (50) feet in the plan. (§115-220(8)) Pennoni Response (April 22, 2022): The 50' wide front setback is shown on the plans and follows the previous recorded plat as part of the minor subdivision. The front setback following the property line parallel with the access road. The setback along Steiner Road is 15' as this is a corner lot per the recorded minor subdivision plan.
- 12. Staff note that there is no landscaping proposed in the Plan and wish to inquire if any will be provided in addition to the fencing to minimize noise and/or dust associated with either the "Concrete Central Mixing and Proportioning" or "Building Materials Recycling and Sorting" operations proposed at the site.

Pennoni Response (April 22, 2022): The development is not proposing any landscaping at this time.

- 13. Please add a note to show the proposed interconnectivity to the neighboring property on Steiner Road in the Final Site Plan. (§115-220(16)).
 Pennoni Response (April 22, 2022): Interconnectivity is unlikely for these uses as they both will be surrounded with security fencing to protect the businesses and safety to the public.
- 14. Staff note that a bulk grading plan is required as part of the Final Plan submission. (115-221(B)(17)). Pennoni Response (April 22, 2022): Understood.
- 15. Please note that a Final Site Plan will require that the impervious cover area be shown as acreage and percentages in the Plan's data column. (115-221(B)(15)).
 Pennoni Response (April 12, 2022): We have provided this breakdown, refer to the site data table # 15.
- 16. Please note that a Final Site Plan will require that the plan show the location, character, size, height, and orientation of any proposed signs on the site and include a note that any sign will require a sign permit. (115-221(B)(11)).
 Pennoni Response (April 22, 2022): Understood.
- 17. Please note that a Final Site Plan will require that the plan show any proposed outdoor lighting systems on the site. (115-221(B)(5)).
 Pennoni Response (April 22, 2022): Understood.
- 18. Please note that any Final Site Plan shall be signed by the owner. Pennoni Response (April 22, 2022): Understood.

- 19. Prior to approval of the Final Site Plan, approval letters or letters of no objection from the following agencies shall be submitted to the Sussex County Planning and Zoning Office:
 - a. Delaware Department of Transportation (DelDOT)
 - b. Sussex Conservation District
 - c. State Fire Marshal
 - Pennoni Response (April 22, 2022): Understood.

If you have any comments or need additional information, please call us at (302) 684-8030.

Sincerely,

PENNONI ASSOCIATES INC.

alen

Alan Decktor, PE, ENV SP Senior Engineer

CC.

U:\Accounts\CHANY\CHANY21001 - Minor Subdivision- Harbeson\DELIVERABLES\PZ\2022-04-12 Revised Prelim\2022-04-12 Prelim Site Plan Sub.docx

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

July 26, 2019

Samantha Bulkilvish Sussex County Planning & Zoning Dept. 2 The Circle Georgetown, DE 19947

Re: Chaney Enterprises (S-19-26) Tax Parcel: 230-19.00-111.00

Dear Ms. Bulkilvish:

Please allow this letter to serve as a response to your comments number 1 and 2 of the staff review letter dated July 18th.

As a starting point, the proposed use is not a "cement operation", it is a "concrete mixing and proportioning plant". The terms "cement" and "concrete" are often incorrectly used interchangeably, but "cement" and "concrete" are distinctly separate products.

Cement is made from a closely controlled chemical combination of limestone, calcium, silicon, iron and aluminum, among other ingredients, that is heated in large kilns to about 2,700 degrees F to form a product known as clinkers, which roughly resemble marbles. These are ground into a powder and gypsum is added, creating the gray flour-like product known as cement.

Concrete, in contrast, is a mixture of cement, with fine and coarse aggregates (rocks, stones and sand). Cement makes up to 10% to 15% of the total mass of concrete, the exact proportions vary depending on the type of concrete being made. Water is added to the aggregate and cement mixture to form concrete. Concrete is malleable when newly mixed and can be poured into a mold, so that it will harden in a specific shape, block or slab and strong, and durable when hardened.

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 Page 2 July 26, 2019

The use proposed by Chaney Enterprises is a central concrete mixing and proportioning plant which is a permitted use in the HI-1, Heavy Industrial Zoning District. The "plant" consists of pieces of equipment that load, store, weigh and discharge the concrete ingredients directly into a concrete transport truck. Water is then added to the mixture in the truck which continuously mixes the ingredients at a set revolution during transportation to a job site. The principal pieces of equipment are raw material storage bins, a ground hopper, a stacker or conveyor, a four compartment material storage bin, a cement silo, dust collectors and a plant control building with computer controls to ensure accurate measurement of concrete ingredients.

The plant control building will be a small two story building with the control room on the first floor and a batch office on the second floor, the cement silo is stand alone with a height of seventy-two fee, the raw material storage bins are open and un-enclosed to allow access for loader, and the four compartment material storage bin associated with the plant will have a façade or wall on four sides, but no roof. Attached as Exhibit A is a photo of the equipment at a different site which is similar to how it will appear at the proposed site and attached as Exhibit B is a photo of a Chaney Enterprises concrete plant located in Lorton, Virginia.

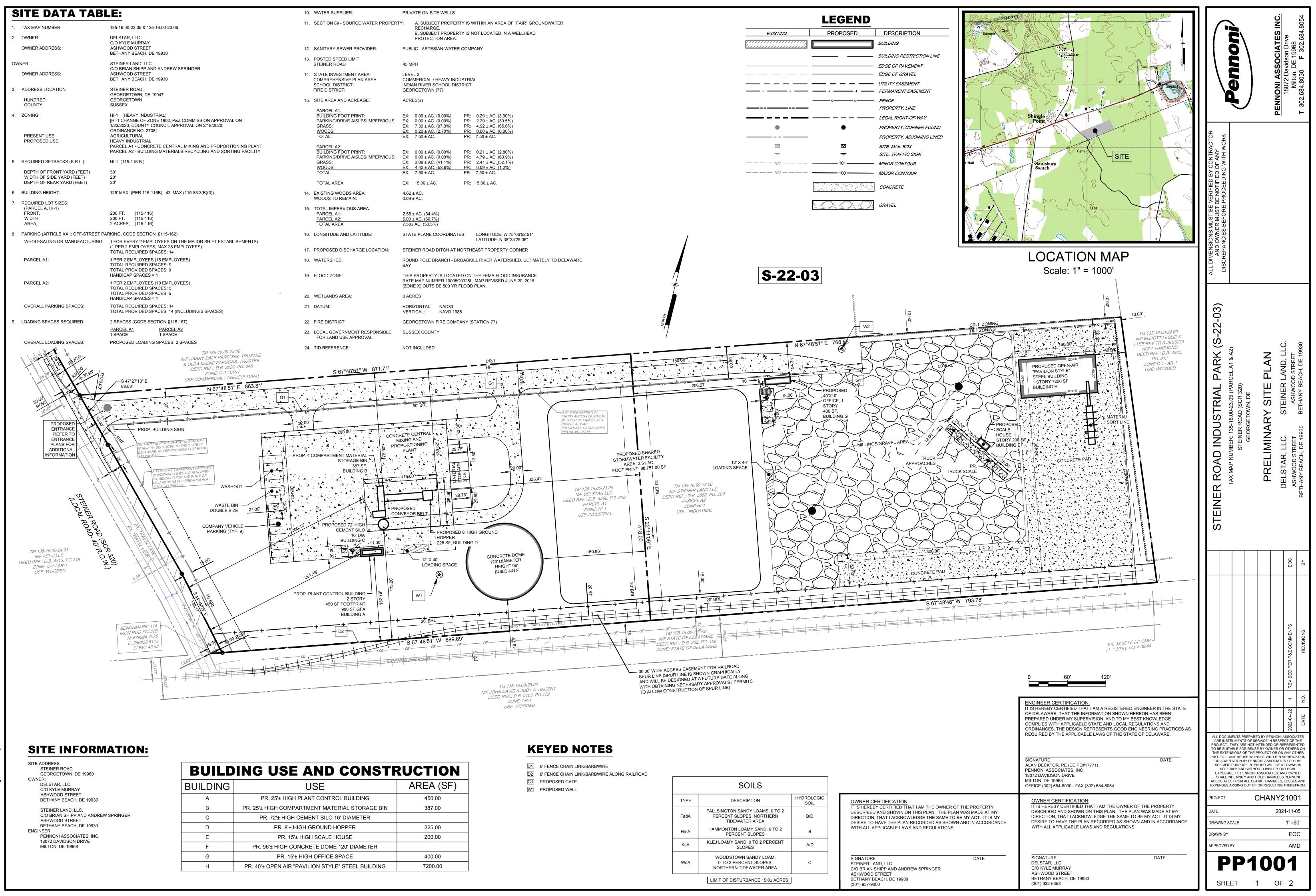
Chaney Enterprises was founded in 1962 and currently operates 28 concrete plans and sand and gravel facilities in Maryland, Virginia and the District of Columbia.

Please contact me if any additional information is needed. Per your letter it is my understanding that preliminary site plan review will be scheduled for the Commission's August 8th meeting.

Very truly yours,

FUQUA, WILLARD, STEVENS & SCHAB, P.A. By: 🦕 James A. Fuqua

JAF/jel



SHE ADDRESS.	
STEINER ROAD	
GEORGETOWN,	DE 19960
OWNER:	
DELSTAR, LLC.	
C/O KYLE MURR	2AY

BUILDING USE AND CONSTRUC				
BUILDING	USE	ARE		
А	PR. 25'± HIGH PLANT CONTROL BUILDING	45		
В	PR. 25'± HIGH COMPARTMENT MATERIAL STORAGE BIN	38		
С	PR. 72'± HIGH CEMENT SILO 16' DIAMETER			
D	PR. 8'± HIGH GROUND HOPPER	22		
E	PR. 15'± HIGH SCALE HOUSE	20		
F	PR. 96'± HIGH CONCRETE DOME 120' DIAMETER			
G	PR. 15'± HIGH OFFICE SPACE	40		
Н	PR. 40'± OPEN AIR "PAVILION STYLE" STEEL BUILDING	720		

	SOILS	
TYPE	DESCRIPTION	HYDROLOGIC SOIL
FadA	FALLSINGTON SANDY LOAMS, 0 TO 2 PERCENT SLOPES, NORTHERN TIDEWATER AREA	B/D
HmA	HAMMONTON LOAMY SAND, 0 TO 2 PERCENT SLOPES	В
KsA	KLEJ LOAMY SAND, 0 TO 2 PERCENT SLOPES	A/D
VdA	WOODSTOWN SANDY LOAM, 0 TO 2 PERCENT SLOPES, NORTHERN TIDEWATER AREA	с
	LIMIT OF DISTURBANCE 15.0± ACRES	

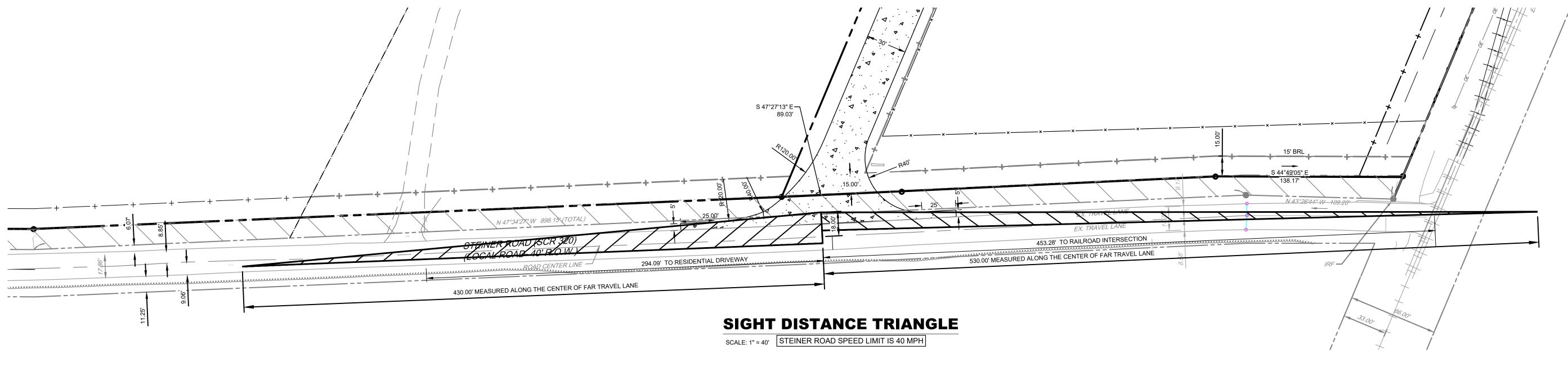
GENERAL NOTES:

- 1. ALL WORK SHALL COMPLY WITH ALL APPLICABLE STATE, FEDERAL AND LOCAL CODES. ALL NECESSARY LICENSES AND PERMITS SHALL BE OBTAINED BY THE CONTRACTOR AT HIS EXPENSE UNLESS PREVIOUSLY OBTAINED BY OWNER. THE CONTRACTOR SHALL ERECT AND MAINTAIN, AS REQUIRED BY THE CONDITIONS AND PROGRESS OF THE WORK, ALL NECESSARY SAFEGUARDS FOR SAFETY AND PROTECTION
- 2. THE CONTRACTOR SHALL IMMEDIATELY INFORM THE ENGINEER OF ANY DISCREPANCIES OR ERRORS THEY DISCOVER IN THE PLAN.
- 3. DEVIATION FROM THESE PLANS AND NOTES WITHOUT THE PRIOR CONSENT OF THE OWNER OR HIS REPRESENTATIVE OR THE ENGINEER MAY BE CAUSE FOR THE WORK TO BE REJECTED. 4. ALL MATERIALS SHALL BE NEW AND SHALL BE ASBESTOS AND VERMICULITE FREE. ALL MATERIALS SHALL BE STORED SO AS TO
- ASSURE THE PRESERVATION OF THEIR QUALITY AND FITNESS FOR THE INTENDED WORK. DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK TO BE PERFORMED. IT MUST BE IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970, AS AMENDED AND ALL RULES AND REGULATIONS THERETO APPURTENANT.
- PRIOR TO CONSTRUCTION, CONTRACTOR TO FIELD LOCATE AND RECORD ANY DAMAGE TO EXISTING PAVING, SIDEWALK, CURB OR STRUCTURES NOT TO BE REMOVED OR REPLACED. ENGINEER TO VERIFY LOCATION AND EXTENT OF DAMAGE.
- . THE CONTRACTOR SHALL MAINTAIN ONE COMPLETE SET OF CONTRACT DRAWINGS ON WHICH HE SHALL NOTE, IN RED, THE ALIGNMENTS AND INVERTS OF ALL UNDERGROUND UTILITIES INSTALLED OR ENCOUNTERED DURING THE PROSECUTION OF THE WORK. ALL DISCREPANCIES BETWEEN THE PLAN LOCATIONS AND ELEVATIONS OF BOTH THE EXISTING AND PROPOSED UTILITIES SHALL BE SHOWN ON THE AS-BUILT DRAWINGS TO BE MAINTAINED BY THE CONTRACTOR IN THE FIELD. THE CONTRACTOR SHALL OPEN ONLY THAT SECTION OF TRENCH OR ACCESS PITS WHICH CAN BE BACKFILLED AND STABILIZED AT THE END OF EACH WORKING DAY. STEEL PLATES SHALL BE USED ON ANY TRENCH OR ACCESS PITS WHICH MUST REMAIN
- OPEN OVERNIGHT. THIS REQUIREMENT DOES NOT APPLY TO AREAS COMPLETELY CLOSED AND SECURE FROM VEHICULAR OR PEDESTRIAN TRAFFIC. DAMAGE TO EXISTING PAVING, SIDEWALK, CURB OR STRUCTURES NOT TO BE REPLACED OR REMOVED DURING CONSTRUCTION SHALL BE IMMEDIATELY REPORTED TO ENGINEER, CONTRACTOR SHALL REPAIR OR REPLACE ALL DAMAGED WORK WITHOUT
- CHARGE TO THE OWNER. 10. BASED UPON THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM) NUMBER 10005C0325L, EFFECTIVE DATE JUNE 20, 2018, THE PROPERTY IS LOCATED IN FLOOD ZONE "X" (UNSHADED), WHICH IS AN AREA
- THAT HAS BEEN DETERMINED TO BE OUTSIDE THE 500-YEAR FLOOD PLAN 11. SUBJECT PROPERTY IS CURRENTLY 'HI-1' (HEAVY INDUSTRIAL).
- 12. THE SUBJECT SITE WILL BE CONSTRUCTED AS A SINGLE PHASE 13. TOTAL AREA FOR SUBJECT SITE IS 15.00 ACRES±
- 14. THE BOUNDARY INFORMATION SHOWN ON THIS PLAT WAS COMPILED FROM DOCUMENTS OF PUBLIC RECORD AND A BOUNDARY SURVEY BY PENNONI, DATED FEBRUARY, 2020. ALL PROVIDED EASEMENTS ARE SHOWN ARE SHOWN ON THIS PLAN, HOWEVER, THIS PLAT AND SURVEY DOES NOT VERIFY THE EXISTENCE OR NON-EXISTENCE OF RIGHT-OF-WAYS OR EASEMENTS. 15. SURVEY DATUM: HORIZONTAL - NAD83. VERTICAL - NAVD88
- 16. DEED REFERENCE : DEED BOOK 5568, PAGE 209. PLAT REFERENCE : PLAT BOOK 343, PAGE 97
- 17. BUILDING LIGHTING TO BE PROVIDED WITH BUILDING PLANS. 18. ALL SECURITY LIGHTING (IF NECESSARY) SHALL BE DOWNWARD SCREENED SO THAT IT DOES NOT SHINE ON NEIGHBORING PROPERTIES OR ROADWAYS. 19. THERE ARE NO WETLANDS ON THIS PROPERTY PER THE DNREC ENVIRONMENTAL NAVIGATOR WEBSITE.
- 20. STORM WATER WILL BE HANDLED BY THE PROPOSED STORM WATER MANAGEMENT POND ON SITE. THE MAINTENANCE OF THE STORM WATER MANAGEMENT FACILITY WITHIN THIS SITE SHALL BE THE RESPONSIBILITY OF THE OWNER. 21. ALL FIRE LANES, EXITS, STANDPIPE AND SPRINKLER CONNECTIONS WILL BE MARKED IN ACCORDANCE WITH STATE FIRE
- PREVENTION REGULATIONS. ALL BUILDINGS WILL BE WOOD CONSTRUCTION AND HAVE SPRINKLERS. 22. LOCK BOX REQUIRED - CONTACT LOCAL FIRE CHIEF FOR ORDERING INFORMATION. LOCK BOXES WILL BE LOCATED ON THE RIGHT HAND SIDE OF THE DOOR.
- 23. MISS UTILITY SHALL BE NOTIFIED THREE (3) DAYS PRIOR TO EXCAVATION. 24. ALL DISTURBED AREAS WITHIN THE LIMIT OF DISTURBANCE, BUT NOT IN PAVEMENT, SHALL BE TOP-SOILED (6" MINIMUM). SEEDED AND MULCHED. IF THE ENGINEER DETERMINES THAT A SATISFACTORY STAND OF GRASS DOES NOT EXIST AT THE TIME OF FINAL INSPECTION, ALL COSTS ASSOCIATED WITH RE-ESTABLISHING A SATISFACTORY STAND OF GRASS SHALL BE AT THE CONTRACTOR'S EXPENSE
- 25. A 72 HOUR (MINIMUM) NOTICE SHALL BE GIVEN TO THE DISTRICT PERMIT SUPERVISOR PRIOR TO STARTING ROADWAY CONSTRUCTION.
- 26. ALL SIGNING FOR MAINTENANCE OF TRAFFIC IS THE CONTRACTORS RESPONSIBILITY, AND SHALL FOLLOW THE GUIDELINES SHOWN IN LATEST EDITION OF DELAWARE MUTCD. 27. DESIGN, FABRICATION AND INSTALLATION OF ALL PERMANENT SIGNING SHALL BE AS OUTLINED IN THE LATEST VERSION OF THE
- DE MUTCD. 28. DESIGN AND INSTALLATION OF ALL PAVEMENT MARKINGS AND STRIPING SHALL BE AS OUTLINED IN THE LATEST VERSION OF THE DE MUTCD. FOR FINAL PERMANENT PAVEMENT MARKINGS:
- a) EPOXY RESIN PAINT SHALL BE REQUIRED FOR LONG LINE STRIPING. b) THERMO PLASTIC (EXTRUDED OR PREFORMED MATERIAL) WILL BE REQUIRED ON ASPHALT SURFACES, FOR SHORT LINE STRIPING, I.E. SYMBOLS/LEGENDS.
- c) PERMANENT PAVEMENT MARKING TAPE (PER DELDOT APPROVED MATERIALS LIST) WILL BE REQUIRED ON CONCRETE SURFACES, FOR SHORT LINE STRIPING, I.E. SYMBOLS/LEGENDS. 29. BREAKAWAY POSTS SHALL BE USED WHEN INSTALLING ALL SIGNS. REFERENCE DELDOT STANDARD CONSTRUCTION DETAIL
- 30. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING, TWO (2) WEEKS PRIOR TO THE START OF CONSTRUCTION:
- -- THE OWNER
- -- SUSSEX CONSERVATION DISTRICT
- -- DELDOT 31. THE CONTRACTOR SHALL MAINTAIN PUBLIC ROADS AND STREETS IN A BROOM SWEPT CONDITION AT ALL TIMES.
- 32. THE CONTRACTOR SHALL REMOVE AND IMMEDIATELY REPLACE, RELOCATE, RESET OR RECONSTRUCT ALL OBSTRUCTIONS IN THE WORK AREA, INCLUDING, BUT NOT LIMITED TO, MAILBOXES, SIGNS, LANDSCAPING, LIGHTING, PLANTERS, CULVERTS, DRIVEWAYS, PARKING AREAS, CURBS, GUTTERS, FENCES, OR OTHER NATURAL OR MAN-MADE OBSTRUCTIONS. TRAFFIC CONTROL REGULATORY, WARNING AND INFORMATION SIGNS SHALL REMAIN FUNCTIONAL AND VISIBLE TO THE APPROPRIATE LANES OF TRAFFIC AT ALL TIMES, WITH THEIR RELOCATION KEPT TO A MINIMUM DISTANCE.
- 33. A SEPARATE SIGN PERMIT WILL BE REQUIRED FOR THE PROPOSED SIGN. ANY PROPOSED SIGN DETAILS WILL BE SUBMITTED SEPARATELY.

DELDOT RECORD/SITE PLAN NOTES (REVISED 3-21-2019):

- MANUAL AND SHALL BE SUBJECT TO ITS APPROVAL.
- COORDINATION MANUA

- DELAWARE ASSUMES NO RESPONSIBILITY FOR THE FUTURE MAINTENANCE OF THE SHARED-USE PATH.
- 8. DRIVEWAYS WILL NOT BE PERMITTED TO BE PLACED AT CATCH BASIN LOCATIONS.
- COORDINATION MANUAL.
- WITH SECTION 3.2.4.2 OF THE DEVELOPMENT COORDINATION MANUAL.





ALL ENTRANCES SHALL CONFORM TO THE DELAWARE DEPARTMENT OF TRANSPORTATION'S (DELDOT'S) CURRENT DEVELOPMENT COORDINATION NO LANDSCAPING SHALL BE ALLOWED WITHIN THE RIGHT-OF-WAY UNLESS THE PLANS ARE COMPLIANT WITH SECTION 3.7 OF THE DEVELOPMENT

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 ESTABLISHED ON THIS PLAN. 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.

UPON COMPLETION OF THE CONSTRUCTION OF THE SIDEWALK OR SHARED-USE PATH ACROSS THIS PROJECT'S FRONTAGE AND PHYSICAL CONNECTION TO ADJACENT EXISTING FACILITIES, THE DEVELOPER, THE PROPERTY OWNERS OR BOTH ASSOCIATED WITH THIS PROJECT, SHALL BE RESPONSIBLE TO REMOVE ANY EXISTING ROAD TIE-IN CONNECTIONS LOCATED ALONG ADJACENT PROPERTIES, AND RESTORE THE AREA TO GRASS. SUCH ACTIONS SHALL BE COMPLETED AT DELIDOT'S DISCRETION AND IN CONFORMANCE WITH DELIDOT'S DEVELOPMENT COORDINATION MANUAL

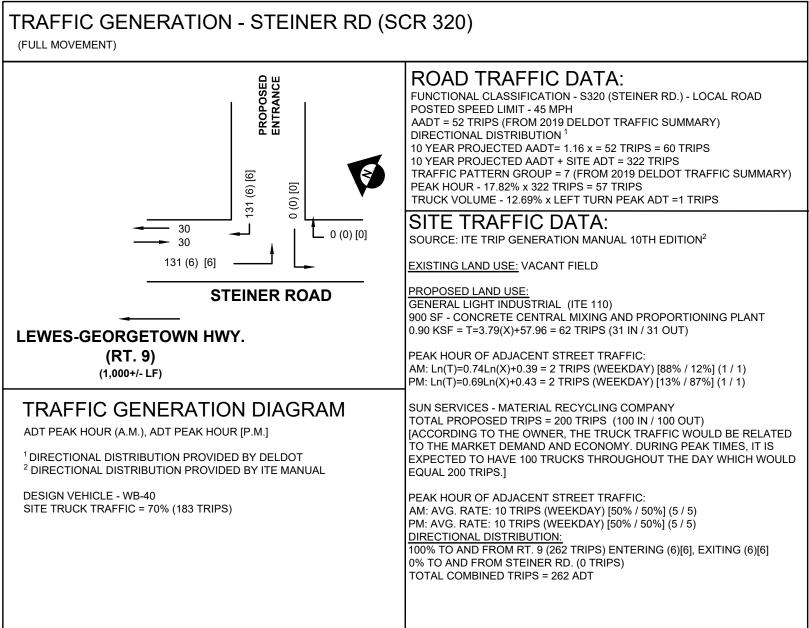
PRIVATE STREETS CONSTRUCTED WITHIN THIS PROPERTY SHALL BE MAINTAINED BY THE DEVELOPER, THE PROPERTY OWNERS WITHIN THIS SUBDIVISION OR BOTH (TITLE 17 §131). DELDOT ASSUMES NO RESPONSIBILITIES FOR THE FUTURE MAINTENANCE OF THESE STREETS. THE SHARED-USE PATH SHALL BE THE RESPONSIBILITY OF THE DEVELOPER, THE PROPERTY OWNERS OR BOTH WITHIN THIS SUBDIVISION. THE STATE OF

7. ALL LOTS SHALL HAVE ACCESS FROM THE INTERNAL SUBDIVISION STREET.

TO MINIMIZE RUTTING AND EROSION OF THE ROADSIDE DUE TO ON-STREET PARKING, DRIVEWAY AND BUILDING LAYOUTS MUST BE CONFIGURED TO ALLOW FOR VEHICLES TO BE STORED IN THE DRIVEWAY BEYOND THE RIGHT-OF-WAY, WITHOUT INTERFERING WITH SIDEWALK ACCESS AND CLEARANCE. 10. THE DEVELOPER SHALL BE REQUIRED TO FURNISH AND PLACE RIGHT-OF-WAY MONUMENTS IN ACCORDANCE WITH DELDOT'S DEVELOPMENT

11. THE DEVELOPER SHALL BE REQUIRED TO FURNISH AND PLACE RIGHT-OF-WAY MARKERS TO PROVIDE A PERMANENT REFERENCE FOR RE-ESTABLISHING THE RIGHT-OF-WAY AND PROPERTY CORNERS ON LOCAL AND HIGHER ORDER FRONTAGE ROADS. RIGHT-OF-WAY MARKERS SHALL BE SET AND/OR PLACED ALONG THE FRONTAGE ROAD RIGHT-OF-WAY AT PROPERTY CORNERS AND AT EACH CHANGE IN RIGHT-OF-WAY ALIGNMENT IN ACCORDANCE

12. A PERPETUAL CROSS ACCESS INGRESS/EGRESS EASEMENT IS HEREBY ESTABLISHED AS SHOWN ON THIS PLAT, PER PB 343, PG 97.



	Pennoni			PENNONI ASSOCIATES INC.	18072 Davidson Drive Milton. DE 19968	T 302.684.8030 F 302.684.8054
ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR AND OWNER MUST BE NOTIFIED OF ANY DISCREPANCIES BEFORE PROCEEDING WITH WORK						
STEINER ROAD INDUSTRIAL PARK (S-22-03)	TAX MAP NUMBER: 135-16.00-23.05 (PARCEL A1 & A2) STEINER ROAD (SCR 320)	GEORGETOWN, DE	PRELIMINARY SITE NOTES			BETHANY BEACH, DE 19930 BETHANY BEACH, DE 19930
					EOC	BΥ
					1 REVISED PER P&Z COMMENTS	NO.
					2022-04-22	DATE
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PROJECT DATE		0	CHA		2 10 C	
DRAWING S				AS S	HOW EO	
APPROVED	Ρ	1	_	O F		

FUQUA, WILLARD & SCHAB, P.A.

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

BLUE BUILDING
 105 W. 4TH STREET
 LEWES, DE 19958
 PHONE 302-856-9024
 FAX 302-856-6360

JAMES A. FUQUA, JR. WILLIAM SCHAB TIMOTHY G. WILLARD www.fwsdelaw.com

January 20, 2022

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

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

Email & Hand Delivered

Jamie Whitehouse Director, Planning Commission 2 The Circle Georgetown, DE 19947

RE: Steiner Land, LLC – 33422 Steiner Road #135-16.00-23.05

Dear Jamie:

I represent Steiner Land LLC ("Steiner") and Sun Services LLC ("Sun"). Steiner owns 7.5 acres along the railroad tracks just east of Georgetown. Sun runs a construction recycling business in Maryland and is planning a similar operation for this parcel. You may already be familiar with this property and the proposed use.

The parcel is zoned Heavy Industrial ("HI-1"). I am writing to confirm that Sun's use is a Permitted Use consistent with §115-109C. The location for Sun's use fits well not only as HI-1 but also because the location is isolated, in a wooded area with little to no residential use nearby. Furthermore, DNREC, DSWA met with Sun, and indicated that this project meets the criteria for approval.

Specifically, §115-109C Permitted Uses states:

C. The following uses and any <u>similar industrial</u> uses which are not likely to create any more offensive noise, vibrations, dust, heat, smoke, odor, glares or other objectionable influences than the minimum amount normally resulting from other uses permitted and involving the manufacture, compounding, processing, packaging or <u>treatment of the following products</u> or similar products. Where any doubt exists as to the nature of a proposed use, product or process, the proposal shall be considered

January 20, 2022

Fuqua, Willard & Schab, P.A.

as a potentially hazardous use and referred to the Board of Adjustment for decision after a public hearing. <u>Concrete products or central mixing and proportioning plants</u> <u>Structural iron and steel fabrication</u> <u>Wallboard and plaster, building, insulation and</u> <u>composition flooring</u>

If confirmed, Sun will be treating, recycling, the listed products. Based on Sun's track record in MD and their specific plans for this parcel, Sun's use will reduce any objectional influences for such use or similar uses. In addition, this recycling operation environmentally addresses significant demand created by the housing market consistent with the Sussex County Comprehensive Plan.

In sum, the facility will receive, process and sort Construction and Demolition debris. Construction and Demolition debris is generally (but not exclusively) comprised of the following commodities: wood, concrete, brick, block, metals, wallboard, cardboard, paper, plastics and dirt. These materials will be processed using heavy equipment, screens, magnets and elevated sort lines with labor to sort and separate each commodity into clean groups that can be sold or reused. After the commodities are separated, they will be prepped and trucked off site. The remaining materials that have no value for reuse will be trucked off site as well to a permitted waste facility.

The heavy equipment that will be used on site will present minimal noise nuisance because they will utilize white noise back up alarms (not a loud beep) which prevents the noise from traveling off the property. Other equipment will be electrically driven so noise will be at a minimum. Any dust will be suppressed by wetting material down as needed as well as dust suppression (atomizing water into the air) to capture fugitive dust particles if they are created during the process. Odor is not anticipated to be an issue because this operation will accept only Construction and Demolition debris which do not contain the organic components that generally cause objectionable odors.

We would welcome a meeting at your convenience. Or, please email me with your thoughts. Thanks.

Very truly yours,

FUQUA, WILLARD, STEVENS & SCHAB

By Timothy G. Willard

Pc: Sun Services LLC Penoni Engineers



Richard P. Watson, P.E., BCEE Chief Executive Officer

Robin M. Roddy, P.E., BCEE Chief Operating Officer Board of Directors Gerard L. Esposito *Chairman* Timothy P. Sheldon *Vice Chairman* Tonda L. Parks Norman D. Griffiths Michael R. Paraskewich, Jr., Ph.D., P.E. A. Temple Carter, III William J. Riddle

February 15, 2021

Sussex County Planning and Zoning Commission PO Box 417 Georgetown, DE 19947

Dear Commissioners,

Subject: Letter of support for Sun Recycling's application to build a C&D recycling facility in Sussex County

This letter is to express the support of Delaware Solid Waste Authority (DSWA) in the above-mentioned construction and demolition recycling facility being proposed by Sun Recycling LLC. DSWA is a nationally recognized organization for its management of Delaware's solid waste materials and has expertise in the process of C&D recycling. Members of DSWA toured Sun Recycling's C&D facility which is located in Beltsville Maryland. The staff was extremely impressed with the efficiency and cleanliness of their facility. I personally have visited dozens of C&D recycling facilities throughout the United States and their facility is among the very best of all the facilities I have visited.

DSWA has partnered with recycling leader Revolution Recovery, to operate a C&D recycling facility in New Castle, Delaware which has been operating for over 10 years. This facility has recycled thousands of tons of material every year and is utilized by every major builder and developer in New Castle County. DSWA believes Sun Recycling LLC., will be able to provide a similar service to Sussex County. Please feel free to contact me directly we any questions or concerns about this proposed site.

Sincerely,

Michael Parkowski Chief of Business and Governmental Services Delaware Solid Waste Authority

1128 S. Bradford Street, Dover, Delaware 19904 Phone: (302) 739-5361 Fax: (302) 739-4287

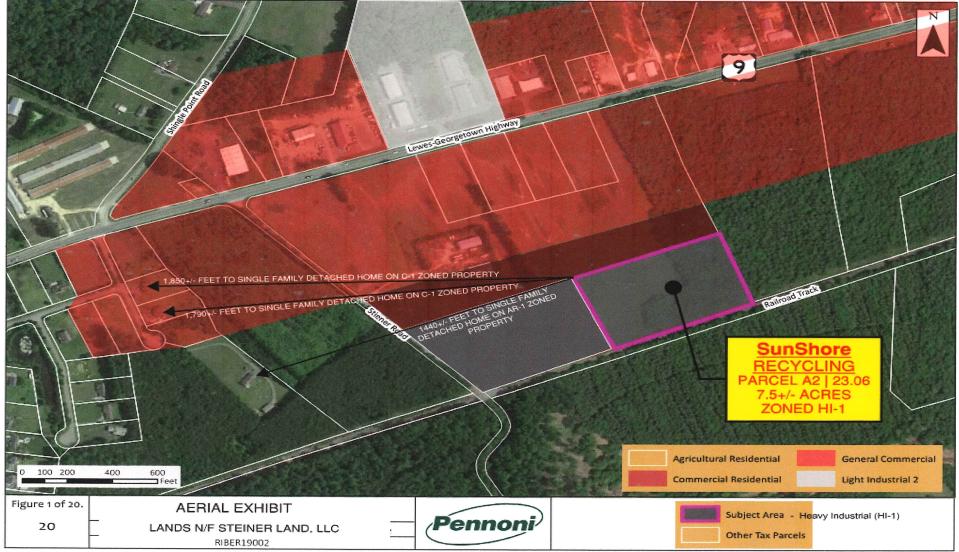
CITIZENS' RESPONSE LINE: 1-800-404-7080

www.dswa.com

Printed on Recycled Paper



A Demolition & Construction Debris Recycling Company



Date: 12/6/2019 Document Path: C/Users//MWalls/(Documents/GIS Projects/SIBER19002/01 2018 Aerial Image med

Mission / Purpose

- To create an alternative for D & C debris in Sussex County to be recycled instead of landfilled
 - Extends life of county landfill
 - Removes drywall from material stream preventing hazardous/nuisance H2S gas at county landfill

• Residual material can be used as fuel for WTE instead of landfilling (if necessary) Supported by Delaware Solid Waste Authority

Consistent with Sussex Comprehensive Plan

Materials Accepted :

- Wood
- Concrete
- Carboard
- Metals
- Drywall
- Green Waste
- Plastics
- Brick/Block/Asphalt
- Dirt
- SunShore will NOT accept any hazardous materials

How it works....

- Exclusion of prohibited material is posted at entrance; staff is trained to exclude it, if any.
- Accepted material is pre-screened and sized with a large excavator
- Material is then fed through a large sorting system consisting of a series of conveyor belts, screens, magnets, air separators, and long slide belts for hand picking.
- This process sorts materials into segregated commodities that will then be reused by various end markets and industries.

How it works, in detail...

Commercial/Roll off truck is weighed and inspected



Truck dumps on concrete pad for more inspection and bulky item sorting begins



Mechanized Separation

 Material is sorted and sized before loading into system Material travels across screen for sizing





Hand Sorting



"Overs material" (more than 6") from screen on slide belt for hand picking commodities

Magnetic Separation

The "unders" material (less than 2") passes by magnet to pull all ferrous metal

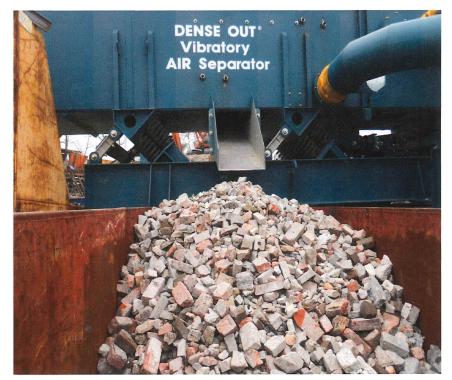


material then enters a screen to remove 3/8 minus fines(dirt)

Air Separation

Overs of this screen then enter air separation that removes all of the "heavies" (stone/brick/block/small non-ferrous metal





Sorted/Separated Commodities



Brick & Block



Concrete



Cardboard



Wood



Drywall / Gypsum

Metals

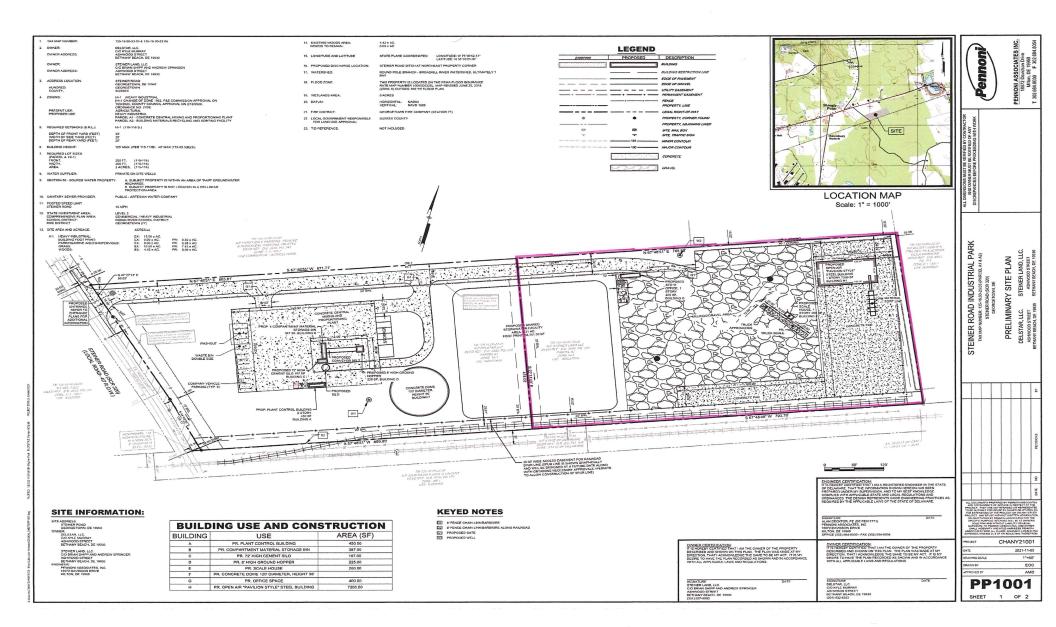
Residual Material

What is left from the sorting process?

-A lightweight material stream that contains almost no inert heavies, metals or drywall
-This material has no value or sustainable end market to make it worthy of being separated during the sorting process.

-If landfilled it has very high compaction rates similar to MSW.

-Material can be accepted at WTE facilities to create renewable energy (if necessary).





ARCHITECTS ENGINEERS SURVEYORS

Michael R. Wigley, AIA, LEED AP W. Zachary Crouch, P.E. Michael E. Wheedleton, AIA Jason P. Loar, P.E. Ring W. Lardner, P.E. Jamie L. Sechler, P.E.

June 10, 2022

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

Attn: Ms. Lauren DeVore

RE: Village at Red Mill Pond South Tax Parcel No.: 3-34-5.00-170.00 DBF #1443E001

Dear Ms. DeVore:

On behalf of our client, K. Hovnanian Homes, we would like to request a revision to the Conditions of Approval on The Village at Red Mill Pond-South plans. Condition #11 states, "All Amenities and recreational facilities shall be constructed and open for use by the residents of the development within 2 years of the issuance of the first building permit." Based on location of Amenity area and project phasing, this requirement was not met. The developer met with residents of the community to discuss the build date and revisions/enhancement to the amenity area. Current residents of the community have agreed and signed the attached petition.

If you could please place the Red Mill South Amenity plans back on the next available Planning and Zoning Agenda. Once approved K. Hovanian will begin construction of the Amenity Area.

If you have any questions or need additional information, please call me at (302) 424-1441.

Sincerely, Davis, Bowen & Friedel, Inc.

Jamie Sechler P.E. Principal

PLANNING & ZONING COMMISSION

ROBERT C. WHEATLEY, CHAIRMAN KIM HOEY STEVENSON, VICE-CHAIRMAN R. KELLER HOPKINS HOLLY J. WINGATE



Sussex County

DELAWARE sussexcountyde.gov 302-855-7878 T 302-854-5079 F JANELLE CORNWELL, AICP DIRECTOR

January 25, 2019

Mr. Jamie Sechler Davis, Bowen & Friedel, Inc. 1 Park Avenue Milford, DE 19963 By email to: jls@dbfinc.com

Re: Notice of Decision Letter for Approval of the Revised Subdivision Plan for the Villages at Red Mill South Subdivision Tax Parcel: 334-5.00-170.00 & 334-4.00-54.00

Dear Mr. Sechler,

At their meeting on **Thursday, January 24, 2019** the Planning & Zoning Commission **approved** the **Revised Subdivision Plan** for the **Villages at Red Mill Pond – South (2004-17)** for a major subdivision of 177 singlefamily lots with private roads and open space with Final approval to be made by staff. The subdivision will be located off Lewes-Georgetown Highway (Route 9) and west of Minos Conoway Road and lies within the Agricultural Residential (AR-1) Zoning District as well as the Environmentally Sensitive Development District Overlay Zone (ESDDOZ). The plan was revised due to the placement of a utility pole in the location of one of the proposed entrances and, as a result, the entrance plan was revised accordingly.

Please submit a minimum of three (3) signed and sealed paper copies of the Final Subdivision Plan that address all comments made in the Department's letter dated January 10, 2019 to the Planning and Zoning Office for approval. The Planning and Zoning Office will retain two of these copies and any additional copies will be stamped as approved and returned to you. Additional copies of the Final Subdivision Plan may be submitted for endorsement by staff.

Please note that the Final Subdivision Plan, once approved, must be recorded with the Recorder of Deeds Office within a period of 60 days after the Final Subdivision Plans have been approved.

Please feel free to contact me with any questions during business hours 8:30am - 4:30pm Monday through Friday at 302-855-7878.

Sincerely,

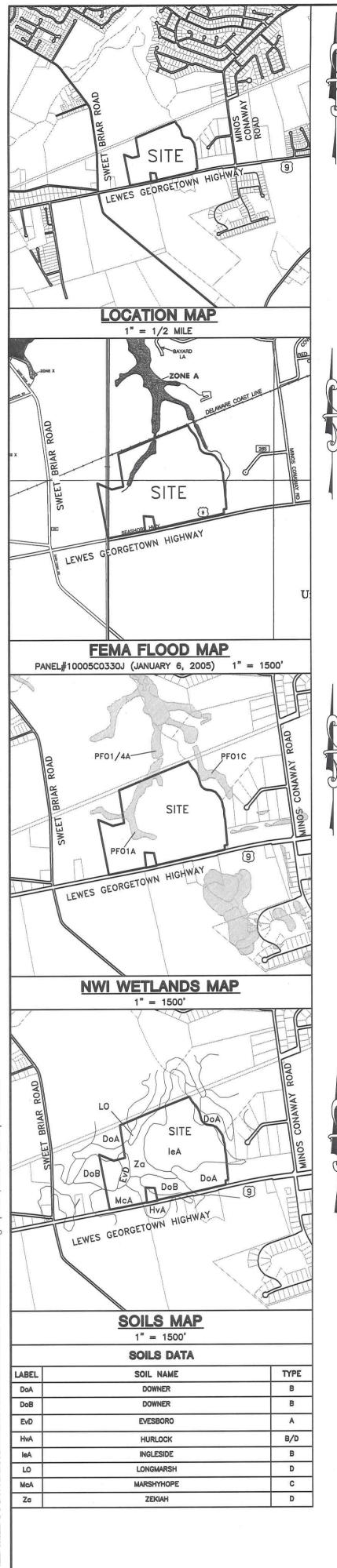
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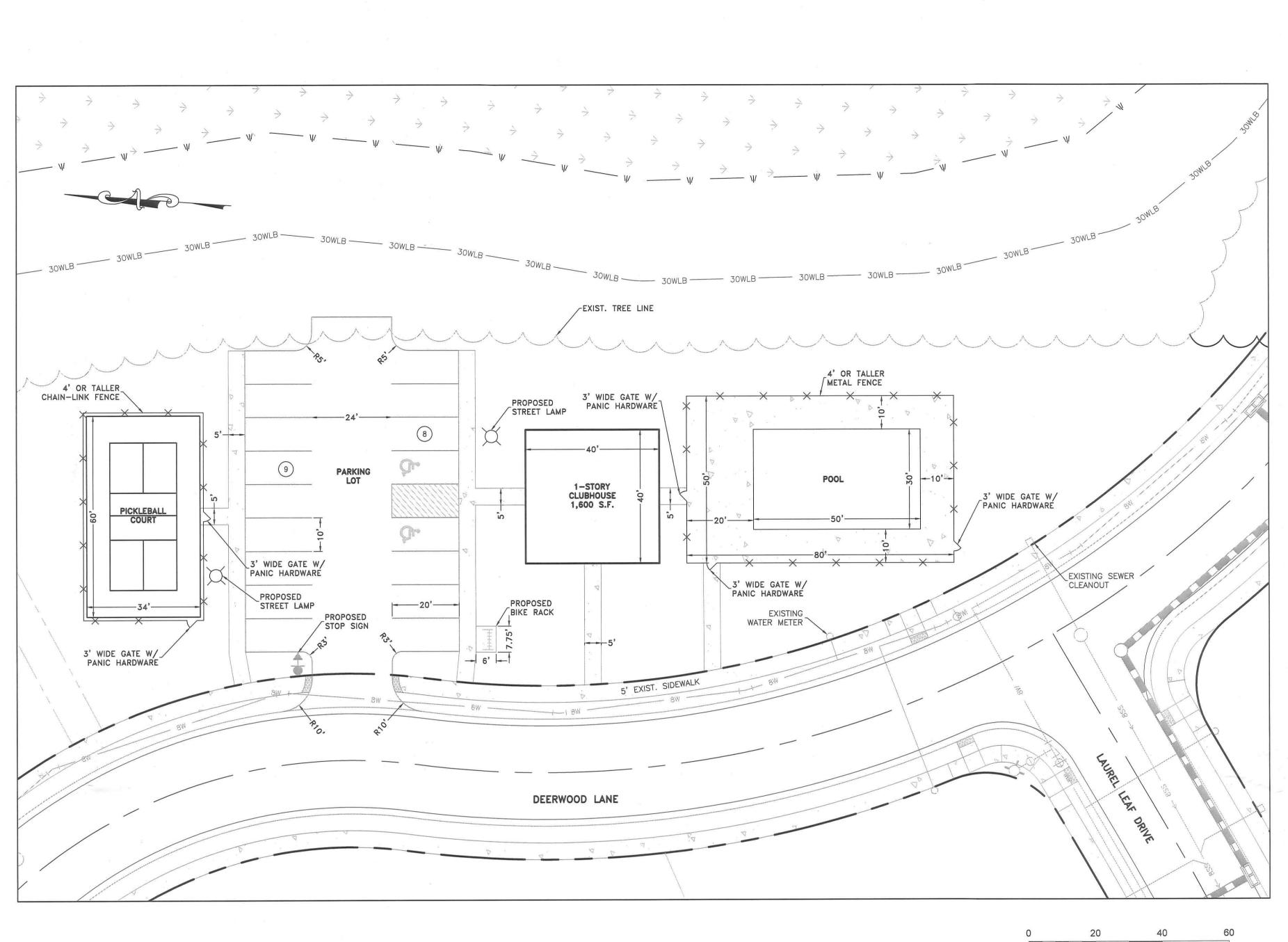
Ms. Lauren DeVore Planner III

CC. Andy Wright, Chief of Building Code - Building Code Mike Brady, Director of Public Works – Engineering John Ashman, Director of Utility Planning - Engineering



COUNTY ADMINISTRATIVE OFFICES 2 THE CIRCLE | PO BOX 417 GEORGETOWN, DELAWARE 19947





LEGEND		
EXISTING CONTOUR		
PROPOSED CONTOUR		
RIGHT-OF-WAY / PROPERTY LINE		
BUILDING SETBACK LINE		
CATCH BASIN, STORM PIPE, STORM MANHOLE		
SANITARY SEWER MANHOLE, PIPE, FLOW ARROW	8SS →	
SANITARY SEWER LATERAL	∖□	
WATER MAIN, TEE W/ VALVES, PIPE SIZE	\$1_1\$ \$1_1\$ 	
WATER LATERAL	2WO	
FIRE HYDRANT ASSEMBLY	<u> </u> +	
FENCE	- <u>x x x x x x</u>	
PAVEMENT / FULL DEPTH		
SIDEWALK		
PROPOSED SPOT GRADES	V12.00 TC 12.50 BC 12.00	
EXISTING SPOT GRADES	12.00 TC 12.50 BC 12.00	

FIRE PROTECTION NOTES

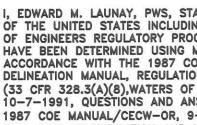
- 1. ALL FIRE LANES, HYDRANTS, EXITS, AND FIRE DEPARTMENT CONNECTIONS SHALL BE MARKED IN ACCORDANCE WITH THE DELAWARE STATE FIRE PREVENTION REGULATIONS (DSFPR, 705, CHAPTER 5).
- 2. WATER PROVIDER: TIDEWATER UTILITIES, INC.
- 3. PROPOSED BUILDING CONSTRUCTION: TYPE V (000)
- 4. INTENDED USE: CLUB HOUSE, POOL AND POOL DECK ASSEMBLY
- 5. PROPOSED BUILDING HEIGHT: < 42 FEET

STRUCTURE.

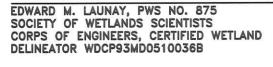
- 6. PROPOSED BUILDING SQUARE FOOTAGE: 1,600 ± S.F.
- 7. SITE WILL BE SERVED BY AN UNDERGROUND CLOSED PIPE
- NATURAL GAS OR PROPANE SYSTEM. 8. AUTOMATIC FIRE SPRINKLERS ARE NOT PROPOSED FOR THIS

GENERAL NOTES:

- 1. CONTRACTOR TO INSTALL TRACER WIRE ON SERVICE LINE FOR THE
- POOL HOUSE. 2. THE DESIGNATED HOMEOWNERS ASSOCIATION ASSUMES
- RESPONSIBILITY FOR THE AMENITIES WITHIN RED MILL POND SOUTH. 3. RECREATIONAL AMENITIES TO SERVE THE RESIDENTS OF RED MILL
- POND SOUTH.
- 4. HANDICAP CURB RAMPS SHALL CONFORM TO ADA STANDARDS AND SPECIFICATIONS.
- 5. OUTDOOR LIGHTING SHALL BE SHIELDED AND DOWNWARD SCREENED.



I, EDWARD M. LAUNAY, PWS, STATE THAT THE BOUNDARIES OF WATERS OF THE UNITED STATES INCLUDING WETLANDS SUBJECT TO THE CORPS OF ENGINEERS REGULATORY PROGRAM DELINEATED UPON THIS PLAN HAVE BEEN DETERMINED USING MY PROFESSIONAL JUDGMENT IN ACCORDANCE WITH THE 1987 CORPS OF ENGINEERS WETLANDS DELINEATION MANUAL, REGULATIONS AND SUPPLEMENTAL GUIDANCE (33 CFR 328.3(A)(8), WATERS OF THE U.S. DEFINITION/CECW-OR, 10-7-1991, QUESTIONS AND ANSWERS ON THE 1987 COE MANUAL/CECW-OR, 9-26-1990, RGL 90-7/CECW-OR, 3-6-1992, CLARIFICATION AND INTERPRETATION OF THE 1987 MANUAL). THIS DELINEATION HAS NOT BEEN CONDUCTED FOR USDA PROGRAM OR AGRICULTURAL PURPOSES. IN ACCORDANCE WITH DNREC TIDAL WETLAND MAPS, THERE ARE NO STATE REGULATED WETLANDS ON THE SITE.



DATA COLUMN

3-34-5.00-170.00

AR-1 AGRICULTURAL

RESIDENTIAL DISTRICT

AR-1 AGRICULTURAL RESIDENTIAL DISTRICT

NAD 83 (DE STATE PLANE)

THE SITE IS LOCATED ON THE

 $\frac{4 \text{ SPACES}}{\text{TOTAL}} = 11 \text{ SPACES REQUIRED}$

NAVD 88

AREA

AREA.

WETLAND MAPS.

83.384 AC.

17 SPACES

36.996 ACRES

11.804 ACRES

34.416 ACRES

0.073 ACRES

0.095 ACRES

83.384 ACRES

36.996 ACRES

0.618 AC.±

23.84 AC.

10.54 AC.

10 FT.

10 FT.

60 FT.

100 FT.

20 FT.

7,500 SF.

9,105 SF. (0.21 AC.)

TIDEWATER UTILITIES

42 FT. (3-1/2 STORIES)

WOOD CONSTRUCTION

22.21 AC. (93%)

30% 41%

TAX MAP ID: DATUM: VERTICAL HORIZONTAL

EXISTING ZONING: PROPOSED ZONING:

COASTAL AREA: SOURCE WATER PROTECTION:

FLOOD HAZARD MAP:

WETLANDS:

TOTAL: PARKING REQUIREMENTS:

PARKING PROVIDED: LAND USE AREAS SINGLE FAMILY LOTS: RIGHT-OF-WAY: OPEN SPACE: PUMPSTATION: RIGHT-OF-WAY DEDICATION: TOTAL SITE AREA:

NET DEVELOPMENT AREA:

REQUIRED OPEN SPACE: PROPOSED OPEN SPACE: LOD AREA:

EXISTING WOODED AREA: PROPOSED WOODED AREA: EXISTING WETLANDS AREA:

AR-1 MINIMUM ZONING REQUIREMENTS FRONT YARD SETBACK:

SIDE YARD SETBACK: REAR YARD SETBACK: MIN. LOT AREA: AVG. LOT AREA: WIDTH OF LOT: MIN. LOT DEPTH: VOLUNTARY NON-TIDAL WETLANDS BUFFER: 30 FT.

SANITARY SEWER:

WATER SUPPLY:

PROPOSED MAXIMUM BUILDING HEIGHT: PROPOSED BUILDING HEIGHT: PROPOSED BUILDING CONSTRUCTION:

PROJECT IS LOCATED IN THE HENLOPEN TRANSPORTATION IMPROVEMENT DISTRICT.

ENGINEER'S STATEMENT

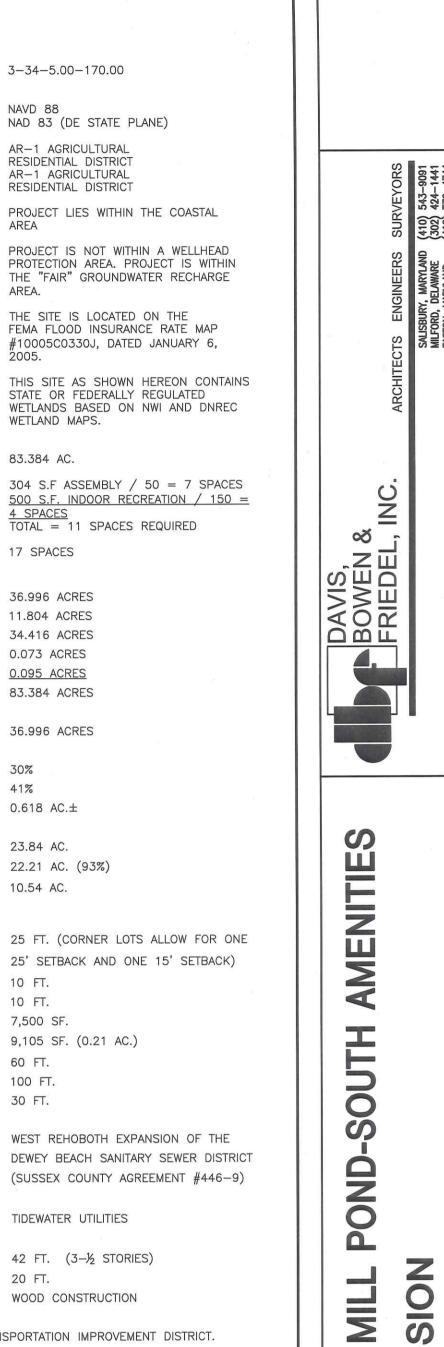
I, JAMIE L. SECHLER, P.E., HEREBY STATE THAT I AM A REGISTERED ENGINEER IN THE STATE OF DELAWARE, THAT THE INFORMATION SHOWN HEREON HAS BEEN PREPARED UNDER MY SUPERVISION AND TO MY BEST KNOWLEDGE AND BELIEF REPRESENTS GOOD ENGINEERING PRACTICES AS REQUIRED BY THE APPLICABLE LAWS OF THE STATE OF DELAWARE.

by JAMIE L. SECHLER, P.E. DAVIS, BOWEN & FRIEDEL, INC. 1 PARK AVE. MILFORD, DELAWARE, 19963

OWNER/DEVELOPER STATEMENT

I, THE UNDERSIGNED, HEREBY STATE THAT I AM THE OWNER OF THE PROPERTY DESCRIBED AND SHOWN ON THIS PLAN, THE PLAN WAS MADE AT MY DIRECTION, I ACKNOWLEDGE THE SAME TO BE MY ACT AND DESIRE THE PLAN BE RECORDED ACCORDING TO LAW.

K. HOVNANIAN HOMES OF DELAWARE I, LLC 2499 SOUTH DUPONT HWY. SUITE G SMYRNA, DE 1997



SITE

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Revisions	31	
Date:	JANUARY	2022
Scale:	1"=2	0°
Dwn.By:	RPK	а 1
Proj.No.:	1443G	001
Dwg.No.:		
	01	

WETLANDS STATEMENT

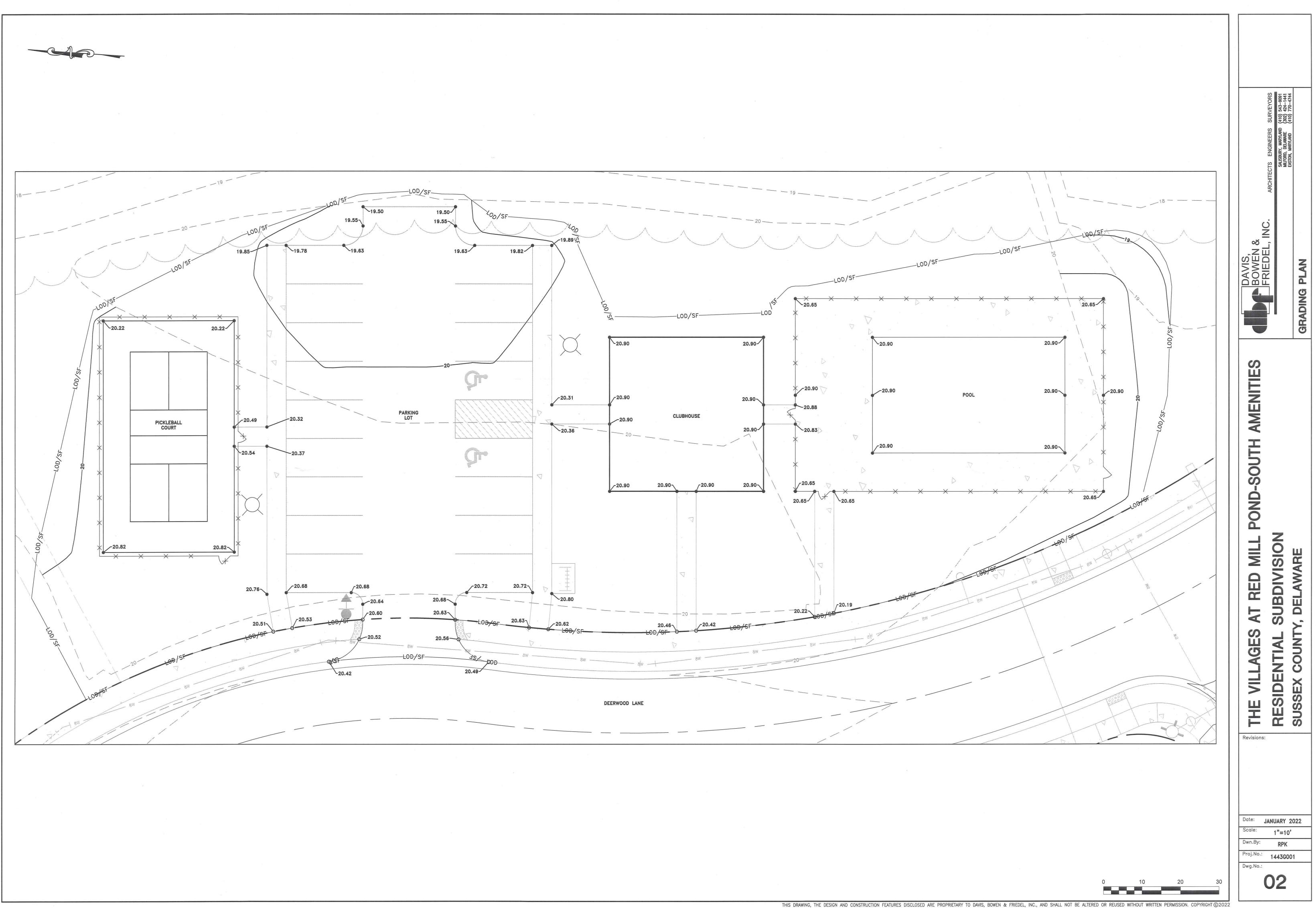
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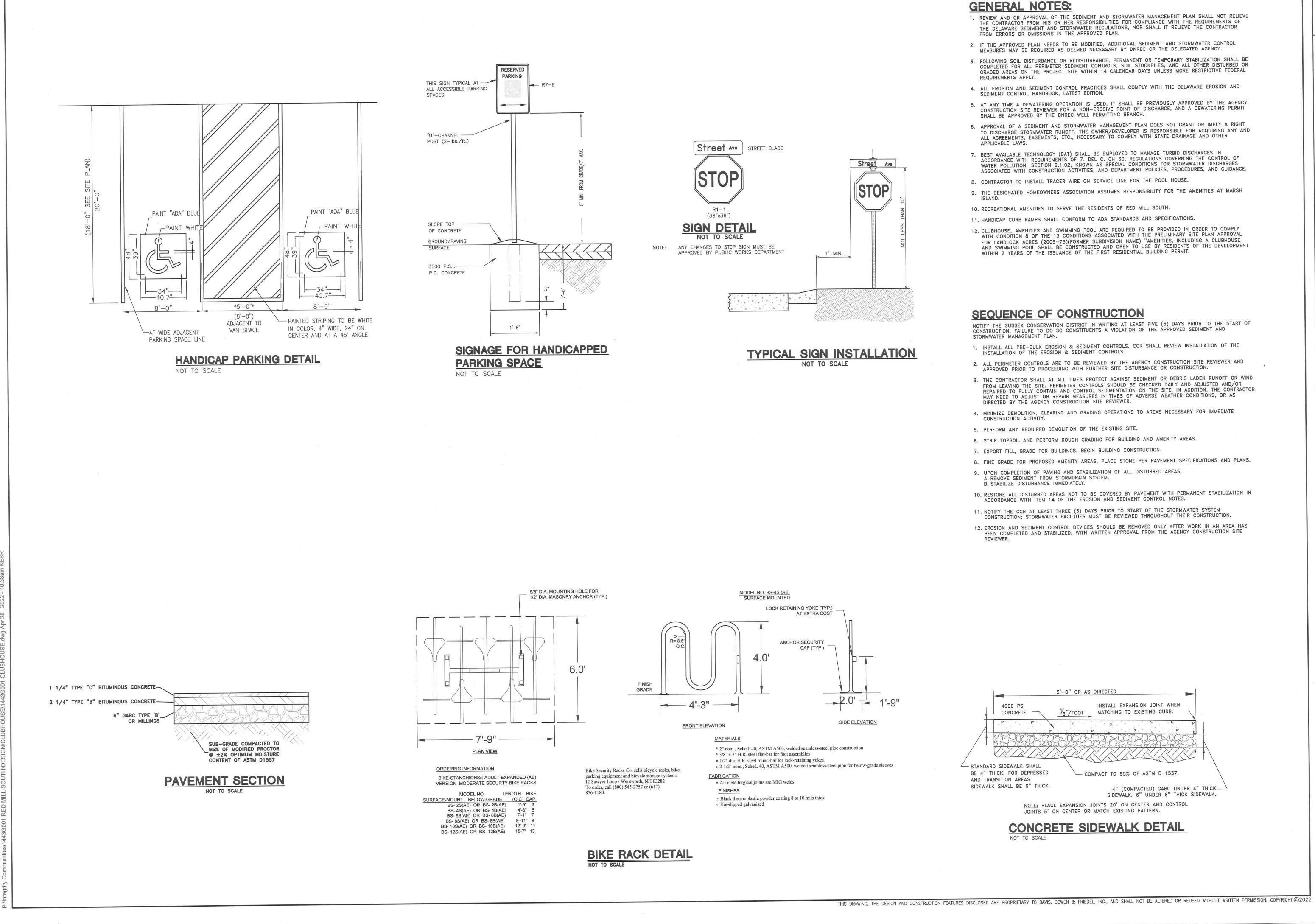
NOI# 6469

SCD APPROVAL BOX

DATE

DATE





-

ENERAL NOTES: REVIEW AND OR APPROVAL OF THE SEDIMENT AND STORMWATER MANAGEMENT PLAN SHALL NOT RELIEVE THE CONTRACTOR FROM HIS OR HER RESPONSIBILITIES FOR COMPLIANCE WITH THE REQUIREMENTS OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS, NOR SHALL IT RELIEVE THE CONTRACTOR FROM ERRORS OR OMISSIONS IN THE APPROVED PLAN.	
IF THE APPROVED PLAN NEEDS TO BE MODIFIED, ADDITIONAL SEDIMENT AND STORMWATER CONTROL MEASURES MAY BE REQUIRED AS DEEMED NECESSARY BY DNREC OR THE DELEGATED AGENCY.	YORS 5-9091 1-4744
FOLLOWING SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED FOR ALL PERIMETER SEDIMENT CONTROLS, SOIL STOCKPILES, AND ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE WITHIN 14 CALENDAR DAYS UNLESS MORE RESTRICTIVE FEDERAL REQUIREMENTS APPLY. ALL EROSION AND SEDIMENT CONTROL PRACTICES SHALL COMPLY WITH THE DELAWARE EROSION AND	ERS SURVEYORS IAND (410) 543-9091 ARE (302) 424-1441 ND (410) 770-4744
SEDIMENT CONTROL HANDBOOK, LATEST EDITION.	TS ENGINEERS SALISBURY, MARYLAND MILFORD, DELAWARE EASTON, MARYLAND
CONSTRUCTION SITE REVIEWER FOR A NON-EROSIVE POINT OF DISCHARGE, AND A DEWATERING PERMIT SHALL BE APPROVED BY THE DNREC WELL PERMITTING BRANCH.	SALISB MILFOR EASTON
APPROVAL OF A SEDIMENT AND STORMWATER MANAGEMENT PLAN DOES NOT GRANT OR IMPLY A RIGHT TO DISCHARGE STORMWATER RUNOFF. THE OWNER/DEVELOPER IS RESPONSIBLE FOR ACQUIRING ANY AND ALL AGREEMENTS, EASEMENTS, ETC., NECESSARY TO COMPLY WITH STATE DRAINAGE AND OTHER APPLICABLE LAWS.	ARCHITECTS
BEST AVAILABLE TECHNOLOGY (BAT) SHALL BE EMPLOYED TO MANAGE TURBID DISCHARGES IN ACCORDANCE WITH REQUIREMENTS OF 7. DEL C. CH 60, REGULATIONS GOVERNING THE CONTROL OF WATER POLLUTION, SECTION 9.1.02, KNOWN AS SPECIAL CONDITIONS FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES, AND DEPARTMENT POLICIES, PROCEDURES, AND GUIDANCE. CONTRACTOR TO INSTALL TRACER WIRE ON SERVICE LINE FOR THE POOL HOUSE.	
THE DESIGNATED HOMEOWNERS ASSOCIATION ASSUMES RESPONSIBILITY FOR THE AMENITIES AT MARSH ISLAND.	Ĭ Ž
RECREATIONAL AMENITIES TO SERVE THE RESIDENTS OF RED MILL SOUTH.	
HANDICAP CURB RAMPS SHALL CONFORM TO ADA STANDARDS AND SPECIFICATIONS. CLUBHOUSE, AMENITIES AND SWIMMING POOL ARE REQUIRED TO BE PROVIDED IN ORDER TO COMPLY WITH CONDITION 8 OF THE 13 CONDITIONS ASSOCIATED WITH THE PRELIMINARY SITE PLAN APPROVAL FOR LANDLOCK ACRES (2005–73)(FORMER SUBDIVISION NAME) "AMENITIES, INCLUDING A CLUBHOUSE AND SWIMMING POOL SHALL BE CONSTRUCTED AND OPEN TO USE BY RESIDENTS OF THE DEVELOPMENT WITHIN 2 YEARS OF THE ISSUANCE OF THE FIRST RESIDENTIAL BUILDING PERMIT.	AILS
EQUENCE OF CONSTRUCTION TIFY THE SUSSEX CONSERVATION DISTRICT IN WRITING AT LEAST FIVE (5) DAYS PRIOR TO THE START OF INSTRUCTION. FAILURE TO DO SO CONSTITUENTS A VIOLATION OF THE APPROVED SEDIMENT AND DRMWATER MANAGEMENT PLAN.	S B
INSTALL ALL PRE-BULK EROSION & SEDIMENT CONTROLS. CCR SHALL REVIEW INSTALLATION OF THE INSTALLATION OF THE EROSION & SEDIMENT CONTROLS.	I E
ALL PERIMETER CONTROLS ARE TO BE REVIEWED BY THE AGENCY CONSTRUCTION SITE REVIEWER AND APPROVED PRIOR TO PROCEEDING WITH FURTHER SITE DISTURBANCE OR CONSTRUCTION.	AMENITIE
FROM LEAVING THE SITE. PERIMETER CONTROLS SHOULD BE CHECKED DAILY AND ADJUSTED AND/OR REPAIRED TO FULLY CONTAIN AND CONTROL SEDIMENTATION ON THE SITE. IN ADDITION, THE CONTRACTOR MAY NEED TO ADJUST OR REPAIR MEASURES IN TIMES OF ADVERSE WEATHER CONDITIONS, OR AS	
DIRECTED BY THE AGENCY CONSTRUCTION SITE REVIEWER. MINIMIZE DEMOLITION, CLEARING AND GRADING OPERATIONS TO AREAS NECESSARY FOR IMMEDIATE	
CONSTRUCTION ACTIVITY. PERFORM ANY REQUIRED DEMOLITION OF THE EXISTING SITE.	OUTH
STRIP TOPSOIL AND PERFORM ROUGH GRADING FOR BUILDING AND AMENITY AREAS. EXPORT FILL, GRADE FOR BUILDINGS. BEGIN BUILDING CONSTRUCTION.	SO SO
FINE GRADE FOR PROPOSED AMENITY AREAS, PLACE STONE PER PAVEMENT SPECIFICATIONS AND PLANS. UPON COMPLETION OF PAVING AND STABILIZATION OF ALL DISTURBED AREAS,	
A. REMOVE SEDIMENT FROM STORMDRAIN SYSTEM. B. STABILIZE DISTURBANCE IMMEDIATELY.	NO
. RESTORE ALL DISTURBED AREAS NOT TO BE COVERED BY PAVEMENT WITH PERMANENT STABILIZATION IN ACCORDANCE WITH ITEM 14 OF THE EROSION AND SEDIMENT CONTROL NOTES.	Ă N
 NOTIFY THE CCR AT LEAST THREE (3) DAYS PRIOR TO START OF THE STORMWATER SYSTEM CONSTRUCTION; STORMWATER FACILITIES MUST BE REVIEWED THROUGHOUT THEIR CONSTRUCTION. EROSION AND SEDIMENT CONTROL DEVICES SHOULD BE REMOVED ONLY AFTER WORK IN AN AREA HAS BEEN COMPLETED AND STABILIZED, WITH WRITTEN APPROVAL FROM THE AGENCY CONSTRUCTION SITE REVIEWER. 	MILL ISION ARE
	ED IVI
	SL A
	AGE OUN
5'-0" OR AS DIRECTED	H ESI SSU
4000 PSI CONCRETE	
	Revisions:
NDARD SIDEWALK SHALL	
4" THICK. FOR DEPRESSED COMPACT TO 95% OF ASTM D 1557. TRANSITION AREAS EWALK SHALL BE 6" THICK. 4" (COMPACTED) GABC UNDER 4" THICK	
SIDEWALK. 6" UNDER 6" THICK SIDEWALK. NOTE: PLACE EXPANSION JOINTS 20' ON CENTER AND CONTROL	Date: JANUARY 2022
JOINTS 5' ON CENTER OR MATCH EXISTING PATTERN.	Scale: 1"=10'
NOT TO SCALE	Dwn.By: RPK Proj.No.: 14430001
	Dwg.No.:
	03

Document# 201900006886 BK: 279 PG: 54 Recorder of Deeds, Scott Dailey On 3/1/2019 at 11:07:05 AM Sussex County, DE **Doc Surcharge Paid**

AMENDED AND RESTATED PLAT OF THE VILLAGES AT RED MILL POND-SOUTH

RECORD PLAN

RESIDENTIAL PLANNED COMMUNITY

LEWES-REHOBOTH HUNDRED.

SUSSEX COUNTY, DELAWARE DBF PROJECT NO. 1443E001 AUGUST, 2018 REVISED: 10-8-2018

PARCE 170.00

CONDITIONS OF PRELIMINARY PLAN APPROVAL

- INDITIONS OF PRELIMINART FLAN AFFRONAL THE APPLICANT SHALL CAUSE TO BE FORMED A HOMEOWNERS' ASSOCIATION TO BE RESPONSIBLE FOR THE MAINTENANCE OF THE STREETS, ROADS, ANY BUFFE STORWWATER MANAGEMENT FACILITIES, AND OTHER COMMON AREAS. THE APPLICANT SHALL MAINTAIN AS MANY EXISTING TREES AS POSSIBLE. THE UNDISTURBED FORESTED AREAS SHALL BE SHOWN ON THE FINAL RECORD PLAN. THE DEVELOPMENT SHALL MAINTAIN AS MANY EXISTING TREES AS POSSIBLE. THE UNDISTURBED FORESTED AREAS SHALL BE SHOWN ON THE FINAL RECORD PLAN. THE DEVELOPMENT SHALL MAINTAIN AS MANY EXISTING TREES AS POSSIBLE. THE UNDISTURBED FORESTED AREAS SHALL BE SHOWN ON THE FINAL RECORD PLAN. THE DEVELOPMENT SHALL ME SERVED BY CENTRAL WATER AND BY THE SUSSEX COUNTY SEWER SYSTEM. THE STORMWATER MANAGEMENT SYSTEM SHALL MEET OR EXCEED THE REQUIREMENTS OF THE STATE AND COUNTY.

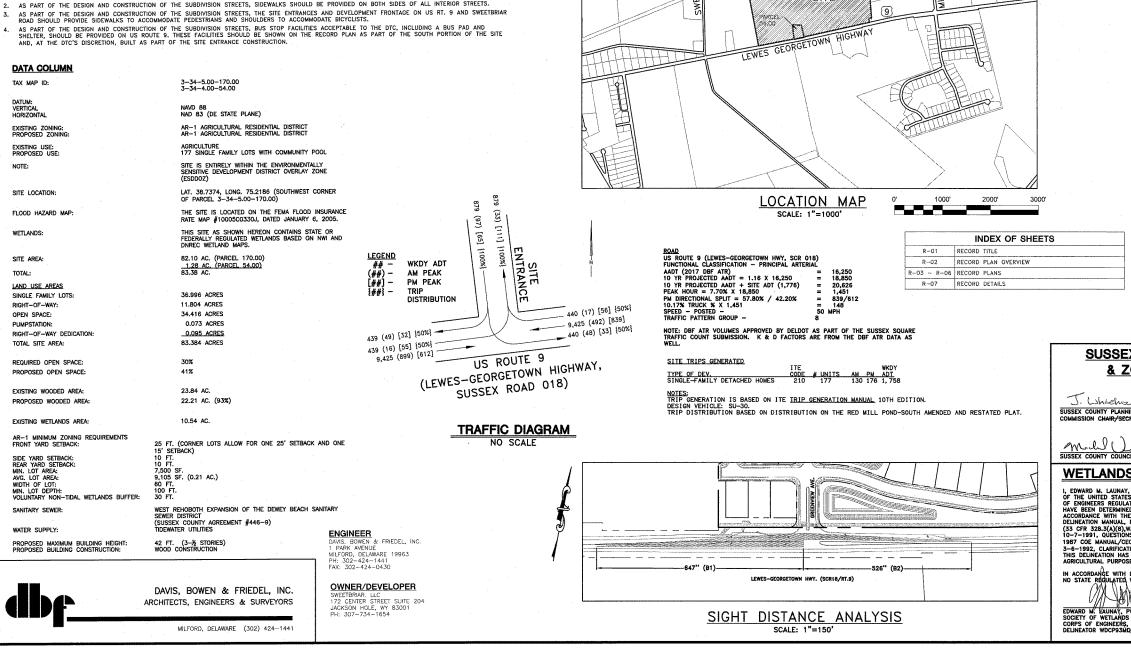
- ENVIRONMENTAL BUFFERS, AS SHOWN IN FIGURE B.A OF THE APPLICANT'S EXHIBIT BOOK SHALL BE SHOWN ON THE FINAL RECORD PLAN. THIS INCLUDES A BUFFER OF A LEAST 100-FEET FROM RED MILL POND AND 25-FOOT BUFFERS FROM ALL NON-TIDAL WETLANDS. NO WETLANDS SHALL BE INCLUDED WITHIN ANY LOT LINES.
- ALL ENTRANCES AND READED THINK ANT LOC LINES. ALL ENTRANCES AND ROADWAY IMPROVENTS SHALL BE CONSTRUCTED OR FUNDED IN ACCORDANCE WITH ALL OF DeIDOT'S REQUIREMENTS. IN ADDITION, THE DEVELOPER SHALL COMPLY WITH ANY ADDITIONAL OR FUTURE DeIDOT REQUIREMENTS CONCERNING THE PROJECT. THIS INCLUDES ANY REQUIREMENTS CONCERNING THE RAILROAD TRACK THAT RUNS THROUGH THE PROJECT.
- 8. A SYSTEM OF STREET LIGHTING SHALL BE PROVIDED THROUGHOUT THE PROJECT. THE LOCATION OF ALL STREETLIGHTS SHALL BE SHOWN ON THE FINAL RECORD
- PLAI.
 THE NETWORK OF SIDEWALKS, NATURE TRAILS, AND WALKWAYS SHOWN ON THIS RECORD PLAN SUPERSEDES FIGURE 9.1 OF THE PRELIMINARY EXHIBIT BOOK AND SATISFIES CONDITION 9 OF THE PRELIMINARY APPROVAL DATED JUNE, 11 2004.
 THE USE OF RED MILL POND FROM THIS PROJECT SHALL BE LIMITED TO NON-MOTORIZED BOATS, SUCH AS CANCES AND KAYAKS, WITH THE EXCEPTION OF THE EXISTING HOPKINS HOMESITE AND NO MORE THAN B ELECTRIC BOATS OWNED AND OPERATED BY THE DEVELOPER OF THE HOMEOWNER'S ASSOCIATION.
 ALL AMENTIES AND RECREATIONAL FACILITIES SHALL BE CONSTRUCTED AND OPEN FOR USE BY THE RESIDENTS OF THE DEVELOPMENT WITHIN 2 YEARS OF THE ISSUANCE OF THE FIRST BUILDING PERMIT.
- 12. AS REQUESTED BY THE LEWES FIRE DEPARTMENT, THE AREAS OF THE PROJECT SEPARATED BY THE RAILROAD SHALL BE GIVEN NAMES THAT IDENTIFY EACH AREA TO AVOID EMERGENCY RESPONSE DELAYS, ALSO, EACH HOUSE SHALL HAVE ADDRESS NUMBERS AT LEAST 3 INCHES IN SIZE.
- THE FINAL RECORD PLAN SHALL SHOW ALL REQUIRED BUFFERS FROM NEIGHBORING LANDS USED FOR AGRICULTURAL PURPOSES. THE AGRICULTURAL USE PROTECTION NOTICE SHALL ALSO BE INCLUDED IN THE RESTRICTIONS AND IN EVERY DEED TO LOTS WITHIN THE DEVELOPMENT. 14. THE "FLAG LOTS" SHOWN ON THE PRELIMINARY PLAN MUST BE RECONFIGURED SO THAT THEY HAVE A MORE CONVENTIONAL SHAPE CONSISTENT WITH THE OTHER LOTS IN THE SUBDIVISION.

GENERAL NOTES

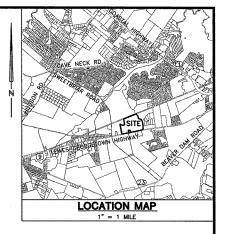
- FOR THIS AND ALL FUTURE PROJECTS, ANY LOTS, SUBSTATIONS, AND/OR WASTEWATER FACILITIES ARE REQUIRED TO HAVE ACCESS FROM THE INTERNAL SUBDIVISION STREET WITH NO DIRECT ACCESS TO THE STATE MAINTAINED HIGHWAY.
- FOR THIS AND ALL FUTURE PROJECTS, A 20' WIDE BUFFER IS REQUIRED FROM EDGE OF THE STORMWATER MANAGEMENT POND TO THE ULTIMATE RIGHT-OF-WAY OF THE COUNTY ROAD. THE ULTIMATE RIGHT-OF-WAY LINE IS BASED ON THE FUNCTIONAL CLASSIFICATION OF THE ROAD.
 ALL SUBDIVISION DORS FOR DWATE THE LINEAR DOLL THE STORMWATER MANAGEMENT POND TO THE ULTIMATE RIGHT-OF-WAY ALL SUBDIVISION ROADS ARE PRIVATE. ALL LANGE THE TO BASED OF THE TOTATIONE CLASSIFICATION OF THE RUAD.
 ALL SUBDIVISION ROADS ARE PRIVATE. ALL LANGEARE ISLANDS SHALL BE OWNED AND MAINTAINED BY THE HOMCOWNERS' ASSOCIATION. THE SAID HOMCOWNERS' ASSOCIATION SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL STREETS, ROAD, BUFFERS, STORMWATER MANAGEMENT FACILITIES, AND OTHER COMMON
- ALL LOTS SHALL HAVE A 10 FOOT UTILITY EASEMENT ADJOINING RIGHT-OF-WAY.
- ALL LOTS SHALL HAVE A 10 FOOT UTILITY EASEMENT ADJOINING RIGHT-OF-WAY. FOR ANY LOTS WITHIN THREE HUNDRED (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 OF DWELLING UNIT THE POLLOWING NOTICE: "THIS PROPERTY IS LOCATED IN THE VICINITY OF LAND USED PRIMARILY FOR AGRICULTURAL PURPOSES ON WHICH NORMAL AGRICULTUR USED AND ACTIVITIES HAVE BEEN AFFORED THE HIGHEST PRIORITY USE STATUS. IT CAN BE ANTICIPATED THAT SUCH AGRICULTURAL AND MORTAL AGRICULTURAL UNIT THE FUTURE INVOLVE NOISE, DUST, MANIRE, AND OTHER DORORS, THE USE OF AGRICULTURAL CHEVICLAS AND UNGHTIME FARM OFERATIONS. T USE AND ENJOYMENT OF THIS PROPERTY IS EXPRESSLY CONDITIONED ON ACCEPTANCE OF ANY ANNOYANCE OR INCONVENIENCE WHICH MAY RESULT FROM NORMAL AGRICULTURAL USES AND ACTIVITES."

TIS REQUIREMENTS

- THE PLAN FOR THE SOUTH PORTION SHOULD PROVIDE AT LEAST ONE MAJOR COLLECTOR STUB STREET TO THE WEST FOR FUTURE USE IN CONNECTING THAT PORTION OF THE PROJECT TO SWEETBRIAR ROAD. AS PART OF THE DESIGN AND CONSTRUCTION OF THE SUBDIVISION STREETS, SIDEWALKS SHOULD BE PROVIDED ON BOTH SIDES OF ALL INTERIOR STREETS.







Document # 201900006886 BK: 279 PG: 54 On 3/1/2019 at 11:07:05 AM RECORDER OF DEEDS Scott Dailey Sussex County ion: \$0.00

THIS PLAT SUPERSEDES IN IT'S ENTIRETY THE PLAT PREVIOUSLY RECORDED IN PLAT BOOK 174, PAGE 32 IN THE OFFICE OF THE RECORDER OF DEEDS FOR SUSSEX COUNTY, DELAWARE. THE PURPOSE OF PLAT - TO RECONFIGURE ROAD AND LOT

DELDOT RECORD NOTES

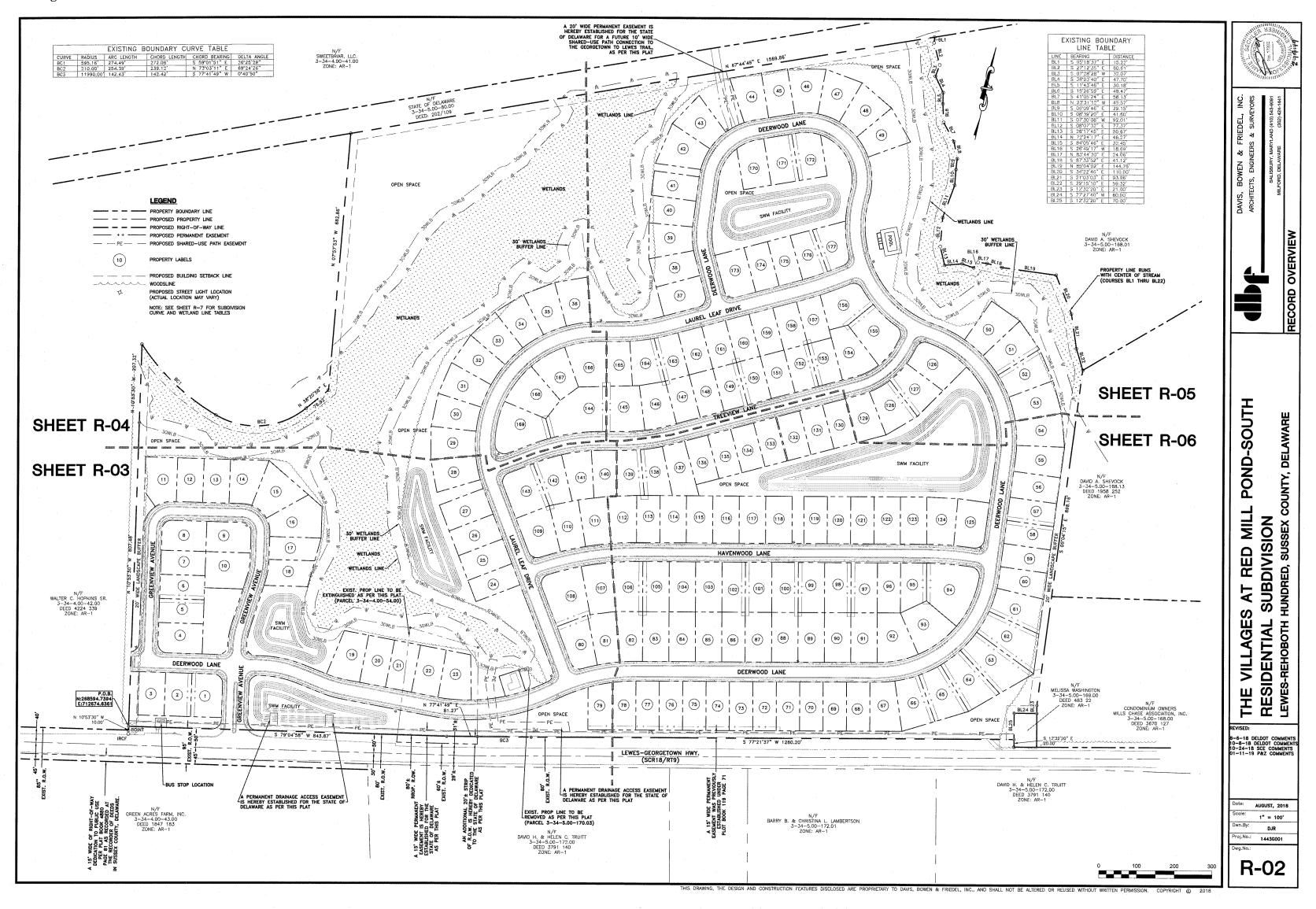
- NO LANDSCAPING SHALL BE ALLOWED WITHIN R/W UNLESS THE PLANS ARE COMPLIANT WITH SECTION 3.7 OF THE DEVELOPMENT COORDINATION MANUAL (DCM).
- 2. ALL ENTRANCES SHALL CONFORM TO THE DELAWARE DEPARTMENT OF TRANSPORTATION'S (DELDOT'S) CURREN DEVELOPMENT COORDINATION MANUAL (DCM) AND SHALL BE SUBJECT TO ITS APPROVAL.
- . 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 TRIANCLE AREA ESTABLISHED ON THIS PLAN. IF THE ESTABLISHED DEPARTURE SIGHT TRIANCLE AREA IS OUTSIDE THE RICHT-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.
- THE REQUIRED SIGHT DISTANCE. UPON COMPLETION OF THE CONSTRUCTION OF THE SIDEWALK OR SHARED-USE PATH ACROSS THIS PROJECT'S FRONTAGE AND PHYSICAL CONNECTION TO ADJACENT EXISTING FACILITIES, THE DEVELOPER, THE PROPERTY OWNERS OR BOTH ASSOCIATED WITH THIS PROJECT, SHALL BE RESPONSIBLE TO REMOVE ANY EXISTING ROAD TIE-IN CONNECTIONS LOCATED ALONG ADJACENT PROPERTIES, AND RESTORE THE AREA TO GRASS. SUARED-USE PATH AND/OR SIDEWALK TERMINATION POLICY.
- SUBDIVISION STREETS CONSTRUCTED WITHIN THE LIMITS OF THE RIGHT-OF-WAY ARE PRIVATE AS SHOWN ON THIS PLAN AND ARE TO BE MAINTAINED BY THE DEVELOPER, PROPERTY OWNERS OR BOTH. THE STATE OF DELAWARE ASSUMES NO MAINTENANCE RESPONSIBILITIES FOR THE FUTURE MAINTENANCE OF THESE STREETS.
- THE SHARED-USE PATH SHALL BE THE RESPONSIBILITY OF THE DEVELOPER, THE PROPERTY OWNERS OR BOTH WITHIN THIS SUBDIVISION. THE STATE OF DELAWARE ASSUMES NO RESPONSIBILITY FOR THE FUTURE MAINTENANCE OF THE SHARED-USE PATH. ALL LOTS SHALL HAVE ACCESS FROM THE INTERNAL SUBDIVISION STREET.
- 8. DRIVEWAYS WILL NOT BE PERMITTED TO BE PLACED AT CATCH BASIN LOCATIONS
- TO MINIMIZE RUTTING AND EROSION OF THE ROADSIDE DUE TO ON-STREET PARKING, DRIVEWAY AND BUILDING LAYOUTS MUST BE CONFIGURED TO ALLOW FOR VEHICLES TO BE STORED IN THE DRIVEWAY BEYOND THE RIGHT-OF-WAY, WITHOUT INTERFENING WITH SIDEWALK ACCESS AND CLEARANCE.
- 10. THE DEVELOPER SHALL BE REQUIRED TO FURNISH AND PLACE RIGHT-OF-WAY MARKERS TO PROVIDE A PERMANENT REFERENCE FOR RE-ESTABLISHING THE RIGHT-OF-WAY AND PROPERTY CORRERS ON LOCAL AND HIGHER ORDER FRONTAGE ROADS. RIGHT-OF-WAY MARKERS SHALL BE SET AND/OR PLACED ALONG THE FRONTAGE ROAD RIGHT-OF-WAY AT PROPERTY CORNERS AND AT EACH CHANGE IN RIGHT-OF-WAY ALIGNMENT IN ACCORDANCE WITH SECTION 32.42.40 FTHE DEVELOPMENT CORDINATION MANUAL.
- 11. A PERPETUAL CROSS ACCESS INGRESS/EGRESS EASEMENT HEREBY ESTABLISHED AS SHOWN ON THIS PLAT.
- 12. AN ENTRANCE PERMIT SHALL NOT BE ISSUED UNTIL SUCH TIME ALL THE REQUIRED RIGHTS-OF-WAY/EASEMENTS HAVE BEEN ACQUIRED AND THE ACQUISITION DEEDS RECORDED IN THE SUSSED COUNTY RECORDER OF DEEDS OFFICE.

GEORGETOWN TO LEWES TRAIL NOTES

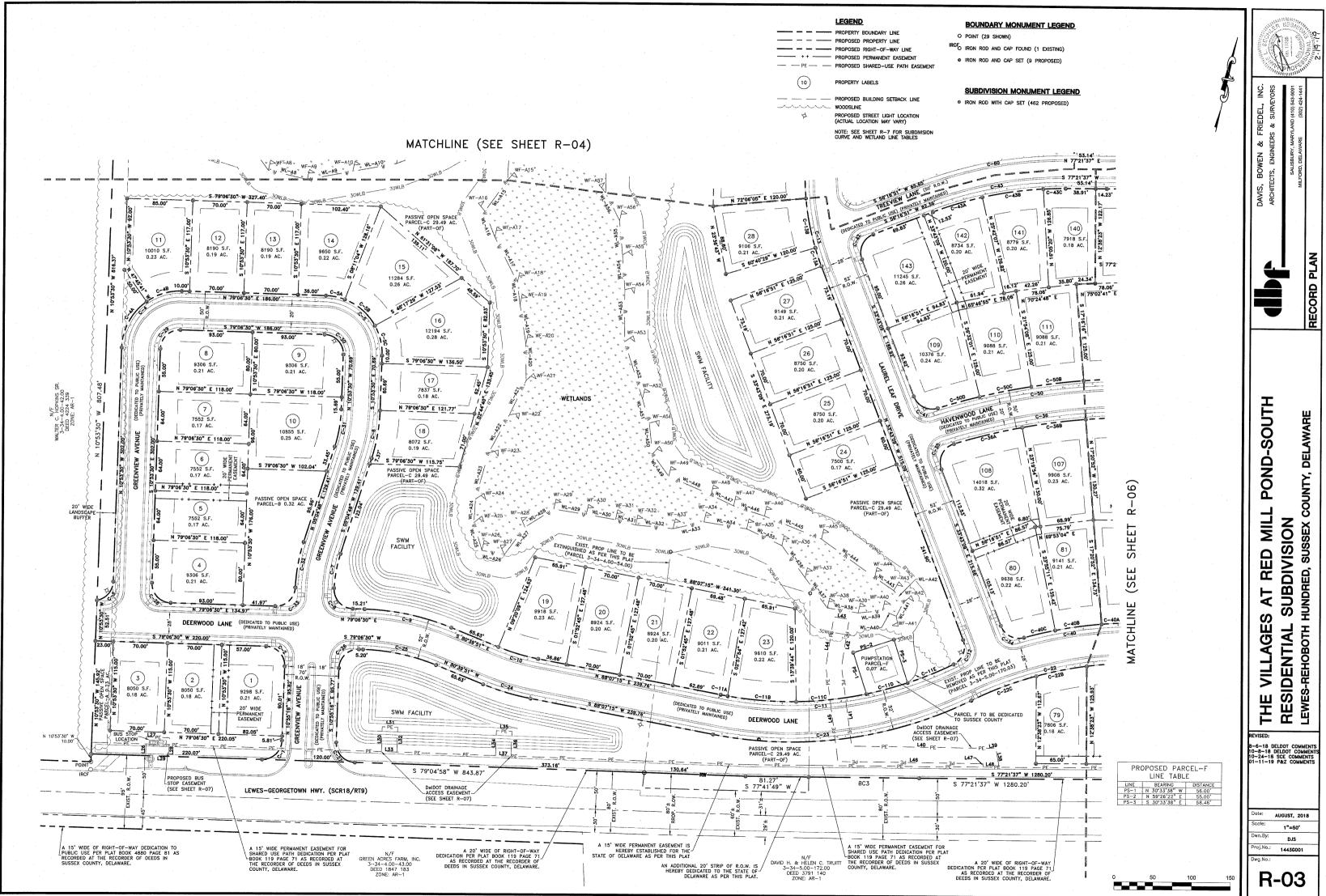
- THERE IS A PLANNED GEORGETOWN TO LEWES TRAIL ALONG THIS DEVELOPMENT IN WHICH A CONNECTION TO THE TRAIL SHALL BE INSTALLED BY THE DEVELOPER.
- 2. IF THE DoIDOT TRAIL PROJECT IS CONSTRUCTED PRIOR TO RED MILL POND SOUTH, THEN THE DEVELOPER SHALL INSTALL THE CONNECTION TO THE TRAIL.
- IF RED MILL POND SOUTH IS CONSTRUCTED PRIOR TO THE DolDOT TRAIL PROJECT, THEN THE C THE TRAIL SHALL BE INSTALLED BY THE DEVELOPER WITHIN 6-MONTHS AFTER CONSTRUCTION, I INSPECTION AND ACCEPTANCE OF THE TRAIL BY DOIDOT. SUSSEX COUNTY PLANNING & ZONING, DEVELOPER AND/OR HOA SHALL BE NOTIFIED WHEN THE TRAIL IS ACCEPTED BY DOIDOT.
- THE MAINTENANCE OF THE TRAIL CONNECTION FROM DEERWOOD LANE TO THE GEORGETOWN TO LEWES TRAIL SHALL BE THE SOLE RESPONSIBILITY OF THE DEVELOPER/OWNER, HOA OR BOTH. THE STATE ASSUMES NO MAINTENANCE RESPONSIBILITY OF THE TRAIL CONNECTION.

REALED FRANCE	SUSSEX CONSERVATION DISTRICT
EX COUNTY PLANNING CONING APPROVAL	
NING DATE Cretary	OWNER'S STATEMENT
CIL PRESIDENT <u>J_6/19</u> Date S STATEMENT Y, PWS, STATE THAT THE BOUNDARIES OF WATERS S INCLUDING WETLANDS SUBJECT TO THE CORPS	I, THE UNDERSIGNED, HEREBY STATE THAT I AM THE OWNER OF THE PROPERTY DESCRIBED AND SHOWN ON THIS PLAN, THE PLAN WAS MADE AT MY DIRECTION, I ACKNOWLEDGE THE SAME TO BE MY ACT AND DESIRE THE PLAN BE RECORDED ACCORDING TO LAW. COLBY COX, MANAGER SWEETBRIAR, LLC 172 CORTHER STREET SUITE 204
ATORY PROGRAM DELINEATED UPON THIS PLAN ED USING MY PROFESSIONAL JUDGMENT IN 1e 1987 Corps of Engineers Wetlands Regulations and Supplemental Guidance	JACKSON HOLE, WY 83001 PH: 307-734-1654
WATERS OF THE U.S. DEFINITION/CECW-OR, NS AND ANSVERS ON THE ECW-OR, 9-26-1990, RGL 90-7/CECW-OR, ITON AND INTERPRETATION OF THE 1997 MANUAL). S NOT BEEN CONDUCTED FOR USDA PROGRAM OR SES. DIREC TIDAL WETLAND MAPS, THERE ARE WETLANDS ON THE SITE. WHO, 875 S SQUENTISTS , OCRUTES , OCRUT	LAME L. SECHLER, P.E., HEREBY STATE 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 RELIFER PREPARED UNDER MY SUPERVISION AND TO MY BEST KNOWLEDGE AND RELIFF REPRESENTS GOOD ENGINEERING PRACTICES AS REQUIRED BY THE APPLICABLE LAWS OF THE STATE OF DELAWARE by JAME LE STOHLER, P.E.S. DATE DATE DATE DATE DATE

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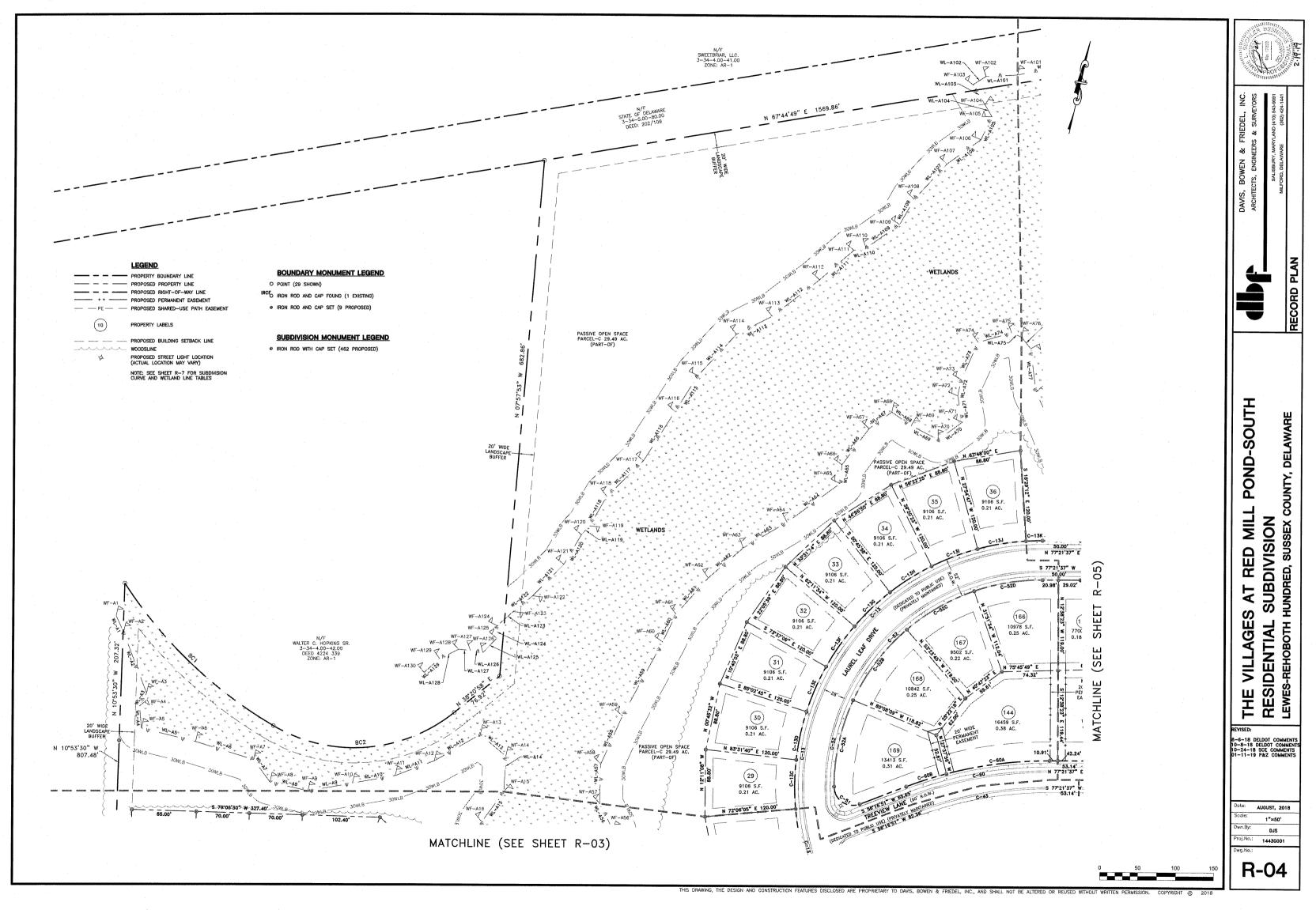
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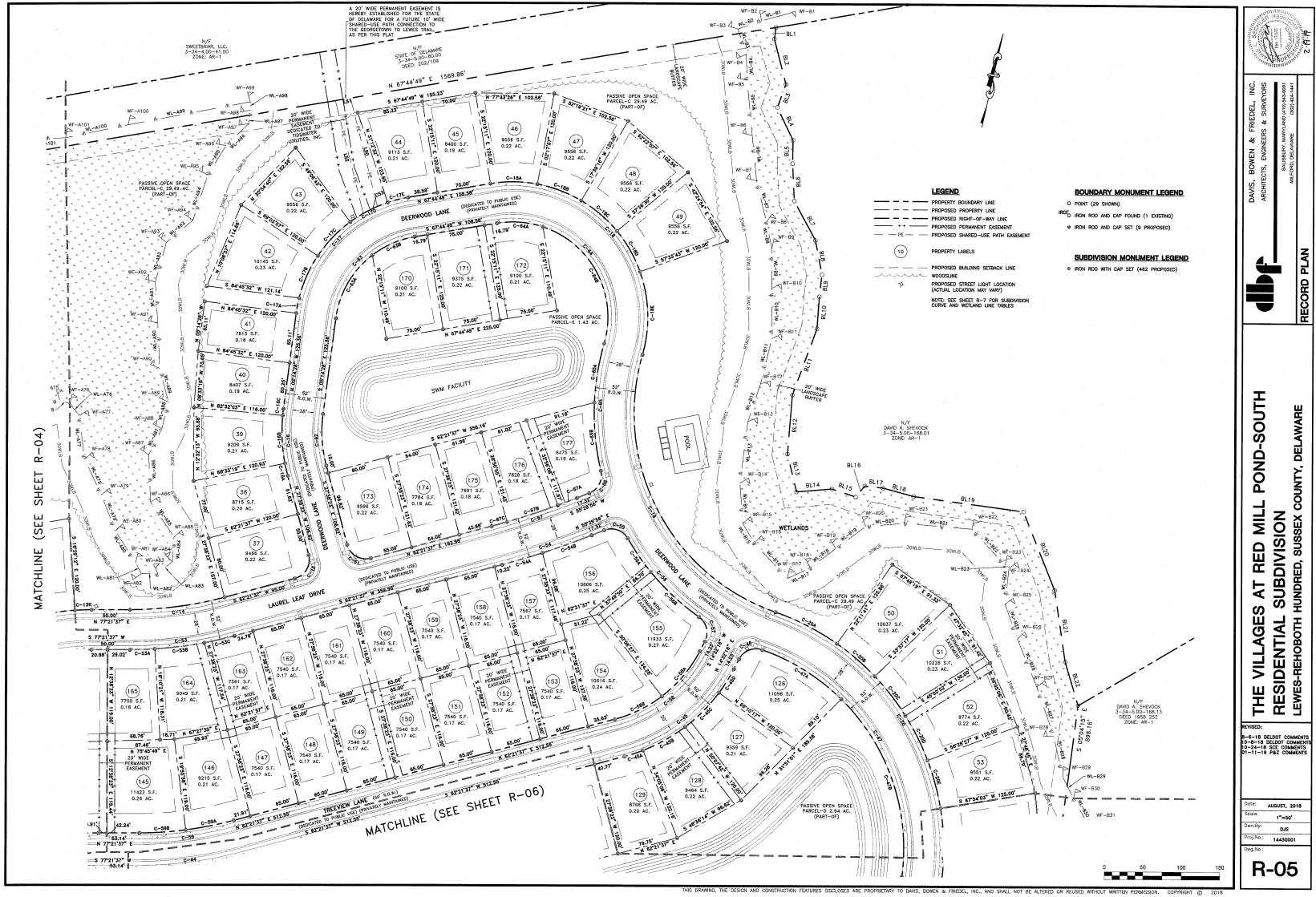
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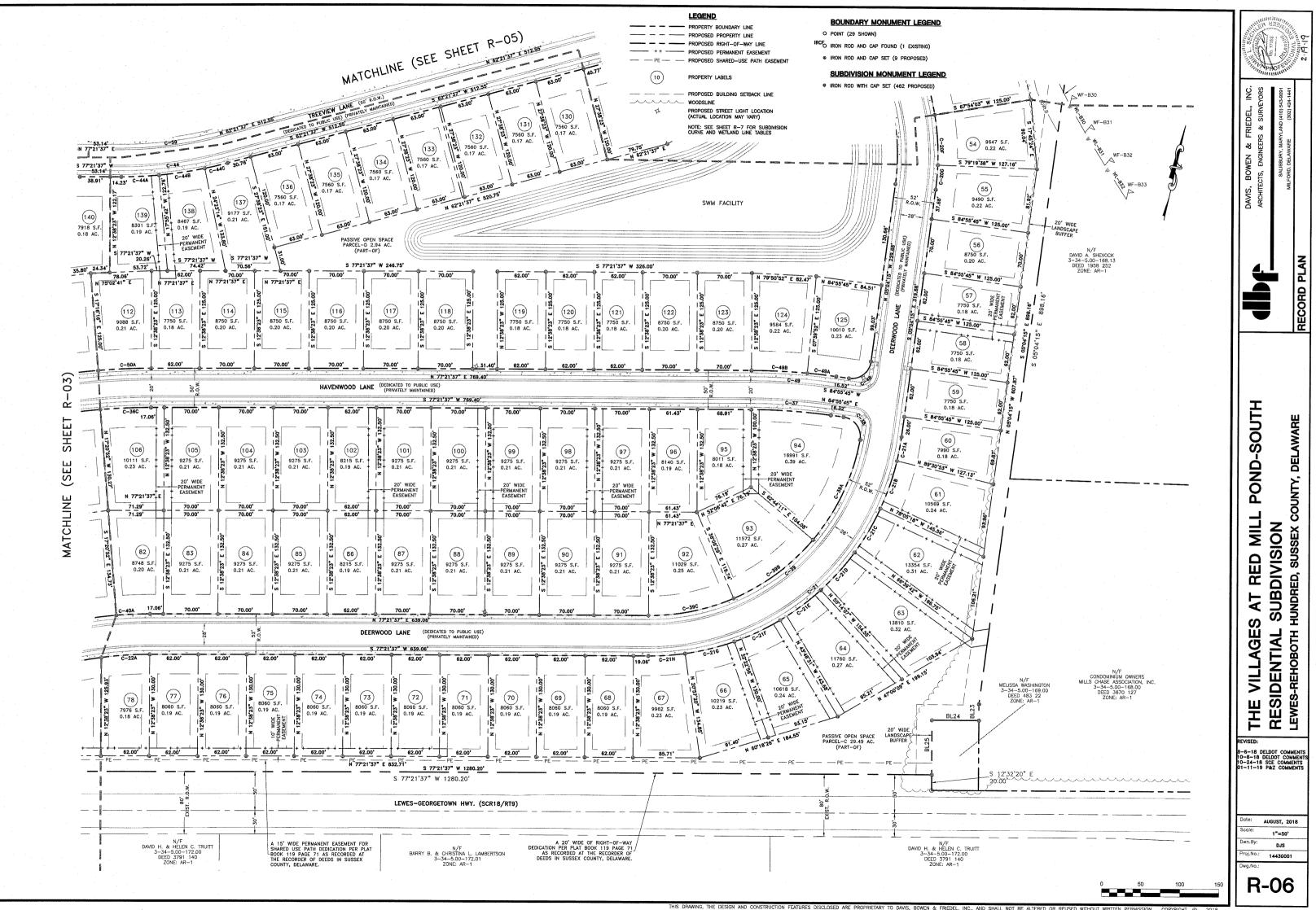
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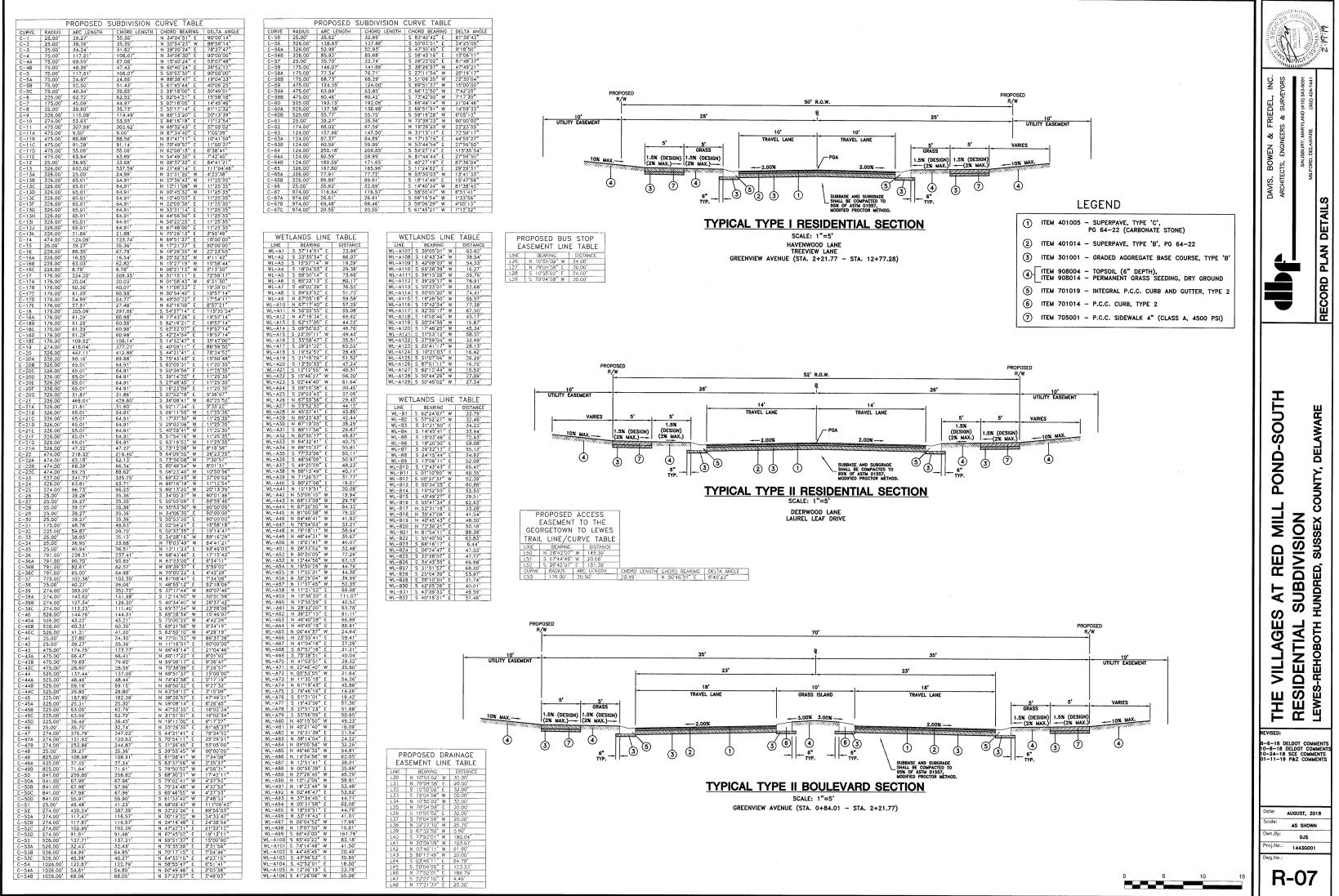


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June 15, 2022

VIA EMAIL ONLY Department of Planning and Zoning Attn: Director Jamie Whitehouse 2 The Circle P.O. Box 417 Georgetown, DE 19947

RE: Request to amend Conditions of Approval for Autumndale (2021-04); Turnberry (2021-05); Lightship Cove (2021-11); Miralon (2021-12)

Dear Commissioners:

The Commission did not address all of Developer's requests to amend Conditions of Approval regarding Autumndale (2021-04); Turnberry (2021-05); Lightship Cove (2021-11); and Miralon (2021-12). The purpose of this letter is to summarize the outstanding requests.

Open Space Conditions

Autumndale (Condition B)

Condition B states, "The Final Site Plan shall confirm that at least 50 acres of the site remains as open space, with existing woodlands being preserved as "Non-Disturbance Areas."

The Applicant respectfully requests amendment of Condition B to read as follows:

The Final Site Plan shall confirm that 50 acres, more or less, of the site remains as open space subject to final engineering.

As the Commissioners are aware, the County Code requires the Developer to meet the 30% open space requirement. Review procedures for cluster development, as outlined in Section 115-25F(3)(a)[3], further require open space: (1) to meet the official definition of acceptable open space as per Section 115-4 of the Code; (2) to locate 30% of the required open space on one contiguous tract; and (3) to be located adjacent to any existing parks, preserved easement areas, ecologically sensitive areas, existing farmland or woodlands, and the like. The Autumdale Preliminary Site Plan complies with the open space requirements of the Code. Notably, the Code does not appear to require open space in excess of the 30% open space

requirement, but the Developer acknowledges that the Comprehensive Plan encourages preservation of significant common open space in the Low Density Area future land use classification.

The Preliminary Site Plan includes a notation that the open space percentage is subject to change with inclusion of the more or less symbol (+/-) and the notation under the woodlands areas that states, "SUBJECT TO FINAL ENGINEERING." Further, the Developer requests this amendment because the amount of open space provided may result in less open space as a result of final engineering, as contemplated through the notations included on the Autumndale Preliminary Site Pan.

The Developer understands that the Commissioners likely imposed Condition B to address its concern with some developers presenting significant amount of open space as consideration for preliminary site plan approval, and then only meeting the 30% open space requirement during final site plan review.

To be clear, it is not the Developer's intention to present a Final Site Plan that proposes 30% open space. Conversely, the Developer intends to provide significant amounts of open space in excess of the 30% open space requirement, and as near as possible to providing 50 acres of open space, because its customers have expressed appreciation of and preference for large tracts of open space.

For all these reasons, the Developer respectfully requests that the Commission amend Condition B to allow for variations in the amount of open space provided subject to final engineering.

Turnberry (Condition B)

Condition B states, "The Final Site Plan shall confirm that at least 65% of the site remains as open space."

The Applicant respectfully requests amendment of Condition B to read as follows:

The Final Site Plan shall confirm that 65%, more or less, of the site remains as open space subject to final engineering.

The Developer intends to provide 65% open space; however, the amount of open space provided may decrease as a result of final engineering. As the Commissioners are aware, Section 115-25B(2) requires cluster developments to provide 30% Open Space. Review procedures for cluster development, as outlined in Section 115-25F(3)(a)[3], further require open space: (1) to meet the official definition of acceptable open space as per Section 115-4 of the Code; (2) to provide for 30% of the required open space be located on one contiguous tract; and (3) to be located adjacent to any existing parks, preserved easement areas, ecologically sensitive areas, existing farmland or woodlands, and the like. The Turnberry

Preliminary Plan complies with the open space requirements of the Code. Notably, the Code does not appear to require open space in excess of 30%, although the Developer acknowledges that the Comprehensive Plan encourages preservation of significant common open space in the Low Density Area future land use classification.

Significantly, the Preliminary Site Plan includes a notation that the open space percentage is subject to change with inclusion of the more or less symbol (+/-) and the notation under the woodlands areas that states, "SUBJECT TO FINAL ENGINEERING." Further, the Developer requests this amendment because the amount of open space provided may result in less open space as a result of final engineering, as contemplated through the notations included on the Turnberry Preliminary Site Pan.

The Developer understands that the Commissioners likely imposed Condition B to address its concern with some developers presenting significant amount of open space as consideration for preliminary site plan approval, and then only meeting the 30% open space requirement during final site plan review.

To be clear, it is not the Developer's intention to present a Final Site Plan that proposes 30% open space. Conversely, the Developer intends to provide significant amounts of open space in excess of the 30% open space requirement, and as near as possible to providing 65% acres of open space, because its customers have expressed appreciation of and preference for large tracts of open space. Moreover, the Developer's design proposes 65% acres of open space, and the Developer intends to provide significant amounts of open space that open space directly benefits future residents of Turnberry.

For all these reasons, the Developer respectfully requests that the Commission amend Condition B to allow for variations in the amount of open space provided subject to final engineering.

Lightship Cove (Condition B)

Condition B states, "The Final Site Plan shall confirm that at least 54% of the site remains as open space and that 7.5 acres of existing woodlands are preserved as 'Non-Disturbance Areas."

The Applicant respectfully requests amendment of Condition B to read as follows:

The Final Site Plan shall confirm that 54%, more or less, of the site remains as open space, with 7.5 acres, more or less, of existing woodlands, subject to final engineering.

As the Commissioners are aware, the County Code requires the Developer to meet the 30% open space requirement. Review procedures for cluster development, as outlined in Section 115-25F(3)(a)[3], further require open space: (1) to meet the official definition of

acceptable open space as per Section 115-4 of the Code; (2) to locate 30% of the required open space on one contiguous tract; and (3) to be located adjacent to any existing parks, preserved easement areas, ecologically sensitive areas, existing farmland or woodlands, and the like. The Lightship Cove Preliminary Plan complies with the open space requirements of the Code. Notably, the Code does not appear to require open space in excess of the 30%, but the Developer acknowledges that the Comprehensive Plan encourages preservation of significant common open space in the Low Density Area future land use classification.

The Preliminary Site Plan includes a notation that the open space percentage is subject to change with inclusion of the more or less symbol (+/-) and the notation under the woodlands areas that states, "SUBJECT TO FINAL ENGINEERING." Further, the Developer requests this amendment because the amount of open space provided may result in less open space as a result of final engineering, as contemplated through the notations included on the Lightship Cove Preliminary Site Pan.

The Developer understands that the Commissioners likely imposed Condition B to address its concern with some developers presenting significant amount of open space as consideration for preliminary site plan approval, and then only meeting the 30% open space requirement during final site plan review.

To be clear, it is not the Developer's intention to present a Final Site Plan that proposes 30% open space. Conversely, the Developer intends to provide significant amounts of open space in excess of the 30% open space requirement, and as near as possible to providing 54% acres of open space, because its customers have expressed appreciation of and preference for large tracts of open space.

For all these reasons, the Developer respectfully requests that the Commission amend Condition B to allow for variations in the amount of open space provided subject to final engineering.

Miralon (Condition B)

Condition B states, "The Final Site Plan shall confirm that at least 50% of the site remains as open space."

The Applicant respectfully requests amendment of Condition B to read as follows:

The Final Site Plan shall confirm that 50%, more or less, of the site remains as open space subject to final engineering.

The Developer intends to provide 50% open space; however, the amount of open space provided may decrease as a result of final engineering of the Site. As the Commissioners are aware, Section 115-25B(2) requires cluster developments to provide 30% Open Space. Review procedures for cluster development, as outlined in Section 115-25F(3)(a)[3], further require

open space to: (1) meet the official definition of acceptable open space as per Section 115-4 of the Code; (2) provide for 30% of the required open space be located on one contiguous tract; and (3) be located adjacent to any existing parks, preserved easement areas, ecologically sensitive areas, existing farmland or woodlands, and the like. The Miralon Preliminary Plan complies with the open space requirements of the Code. Notably, the Code does not appear to require open space in excess of the 30%, but the Developer acknowledges that the Comprehensive Plan encourages preservation of significant common open space in the Low Density Area future land use classification.

The Preliminary Site Plan includes a notation that the open space percentage is subject to change with inclusion of the more or less symbol (+/-) and the notation under the woodlands areas that states, "SUBJECT TO FINAL ENGINEERING." Further, the Developer requests this amendment because the amount of open space provided may result in less open space as a result of final engineering, as contemplated through the notations included on the Miralon Preliminary Site Pan.

The Developer understands that the Commissioners likely imposed Condition B to address its concern with some developers presenting significant amount of open space as consideration for preliminary site plan approval, and then only meeting the 30% open space requirement during final site plan review.

To be clear, it is not the Developer's intention to present a Final Site Plan that proposes 30% open space. Conversely, the Developer intends to provide significant amounts of open space in excess of the 30% open space requirement, and as near as possible to providing 50% open space, because its customers have expressed appreciation of and preference for large tracts of open space.

For all these reasons, the Developer respectfully requests that the Commission amend Condition B to allow for variations in the amount of open space provided subject to final engineering.

Remaining Miralon Requests to Amend Conditions

Miralon (Condition E – Forest Assessment)

Condition E states:

As requested by D.N.R.E.C., a forest assessment shall be conducted to determine if mature forest areas exist on the site and to identify any mature trees. The results of this assessment shall be provided with the Final Site Plan to confirm that the identified areas are preserved within the buffers and open space areas as much as possible, in furtherance of the design requirements contained in Section 115-25F(3)(a)[8].

Section 115-25F(3)(a)[8] requires the applicant for a cluster development to: (1) identify lands that should be preserved; (2) identify developable areas; (3) locate roads and trails; and (4) locate lot lines. The Applicant complied with these Section 115-25F(3)(a)[8] requirements. Significantly, Section 115-25F(a)(3)[8] does not require a forest assessment, questioning the Commission's authority to require a forest assessment altogether.

It is true that D.N.R.E.C. recommended performance of forest assessment, but the Department of Agriculture's letter confirms that Miralon' s Preliminary Site Plan meets the Sussex County Planning and Zoning Buffer Ordinance, adding that the Delaware Forest Service recommends following best management practices for newly installed tress and planting of a 70/30 mix of hardwood and evergreen tree species.

In addition to there being concern about the Commission's authority to require a forest assessment, the ambiguity of Condition E's "much as possible" language invites many different interpretations and does not clearly define a means of compliance with Condition E.

For these reasons, the Developer respectfully requests that Condition E be deleted in its entirety or amended as follows:

As recommended by D.N.R.E.C., a forest assessment shall be conducted to determine if mature forest areas exist on site and to identify any mature trees.

Miralon (Condition J – Amenities)

Condition J requires amenities, including a pool and pool house to be constructed and open for use by residents of Miralon on or before the issuance of the 35th residential building permit.

The Developer has received preliminary approval for several other cluster subdivisions, requiring amenities to be built by approximately 60% buildout. For example, Lightship Cove requires amenities to be available for use by residents on or before issuance of the 60th residential building permit; Autumdale requires the same on or before issuance of the 120th residential building permit; and Turnberry requires the same on or before the issuance of the 65th residential building permit.

For consistency with the Developer's other communities, the Applicant requests that Condition J be amended to read as follows:

Amenities including a pool and pool house shall be constructed and open to use by residents of this development on or before the issuance of the 71st residential building permit. The Final Site Plan shall contain details as to the size and location of these amenities.

Page 7

Thank you for your consideration of the Developer's requests to amend and/or delete these Conditions of Approval imposed on Autumndale, Turnberry, Lightship Cove, and Miralon.

Sincerely,

/s/ Mackenzie M Peet

Mackenzie M. Peet, Esq.

Cc: Jon Horner, Esquire Tim Green Jason Palkewicz, PE Jim Eriksen, PE



STATE OF DELAWARE DEPARTMENT OF TRANSPORTATION 800 Bay Road P.O. Box 778 Dover, Delaware 19903

NICOLE MAJESKI SECRETARY

April 19, 2022

Mr. Jamie Whitehouse, Director Sussex County Planning & Zoning Commission Sussex County Administration Building P.O. Box 417 Georgetown, Delaware 19947

SUBJECT:Minor Subdivision - Letter of No Objection to Recordation
ETHAN KNEPP
Tax Parcel # 532-22.00-38.01
SCR00455A-BAKER ROAD
Little Creek (Sussex) Hundred, Sussex County

Dear Mr. Whitehouse:

The Department of Transportation has reviewed the Minor Subdivision Plan dated January 5, 2022 (last revised March 30, 2022), for the above referenced site, and has no objection to its recordation as shown on the enclosed drawing. This "No Objection to Recordation" approval shall be valid for a period of <u>five (5) years</u>. If the Minor Subdivision Plan is not recorded and/or an entrance permit is not issued for the lot(s) prior to the expiration of the "No Objection to Recordation", then the plan must be updated to meet current requirements and resubmitted for review and approval.

Entrances(s) must be installed prior to the sale of the lot(s). All entrances shall conform to DelDOT's <u>Development Coordination Manual</u> and shall be subject to its approval. This letter does not authorize the commencement of entrance construction.

This "No Objection to Recordation" letter is <u>not</u> a DelDOT endorsement of the project discussed above. Rather, it is a recitation of the transportation improvements, which the applicant may be required to make as a pre-condition to recordation steps and deed restrictions as required by the respective county/municipality in which the project is located. If transportation investments are necessary, they are based on an analysis of the proposed project, its location, and its estimated impact on traffic movements and densities. The required improvements conform to DelDOT's published rules, regulations and standards. Ultimate responsibility for the approval of any project rests with the local government in which the land use decisions are authorized. There may be other



ETHAN KNEPP Mr. Jamie Whitehouse Page 2 April 19, 2022

reasons (environmental, historic, neighborhood composition, etc.) which compel that jurisdiction to modify or reject this proposed plan even though DelDOT has established that these enumerated transportation improvements are acceptable.

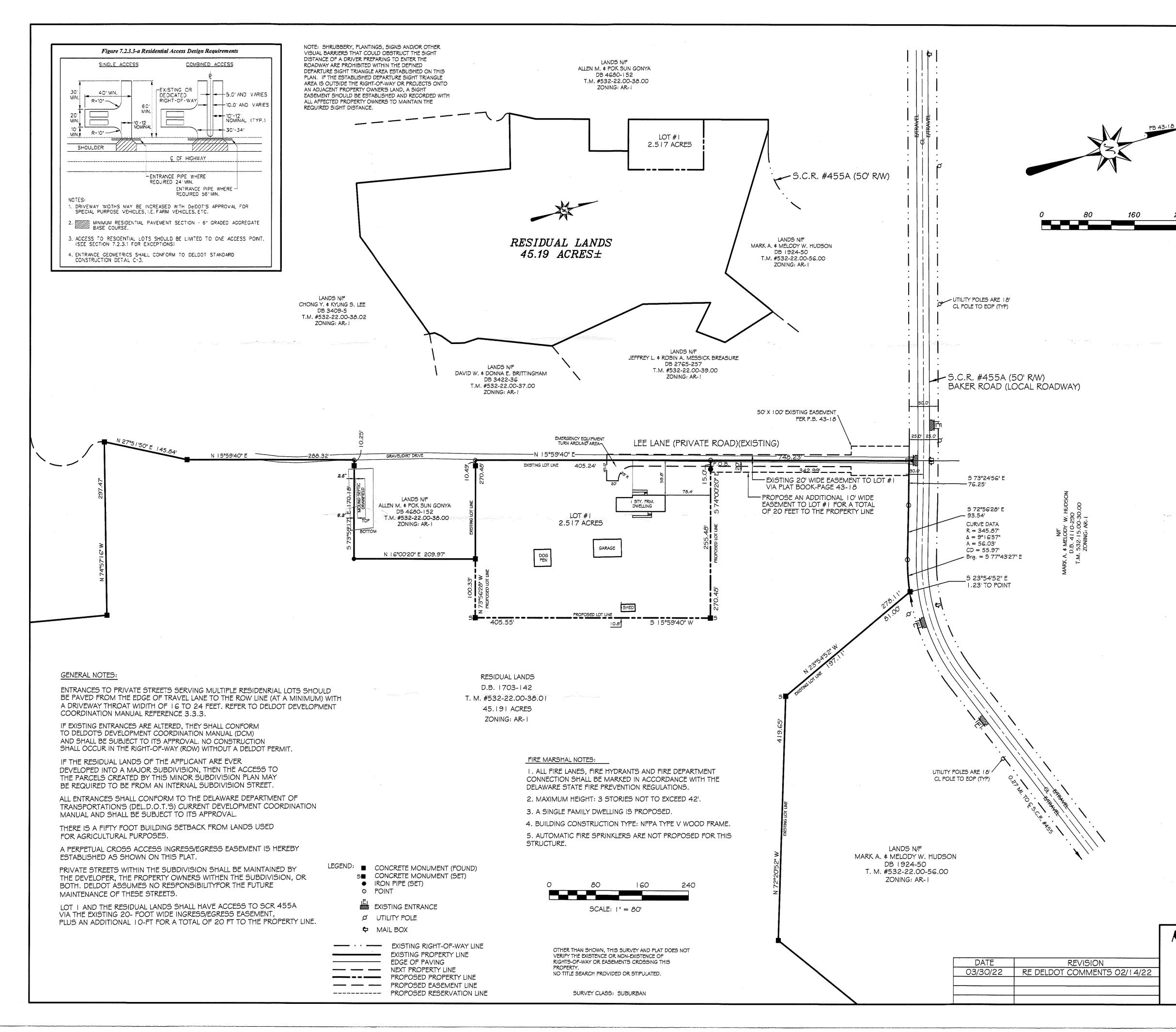
The owner shall be responsible to submit a copy of the <u>recorded Minor Subdivision Plan</u> showing all appropriate signatures, seals, plot book and page number to the South District Public Works office (302) 853-1341 in order to obtain the entrance permit(s) for the proposed minor subdivision.

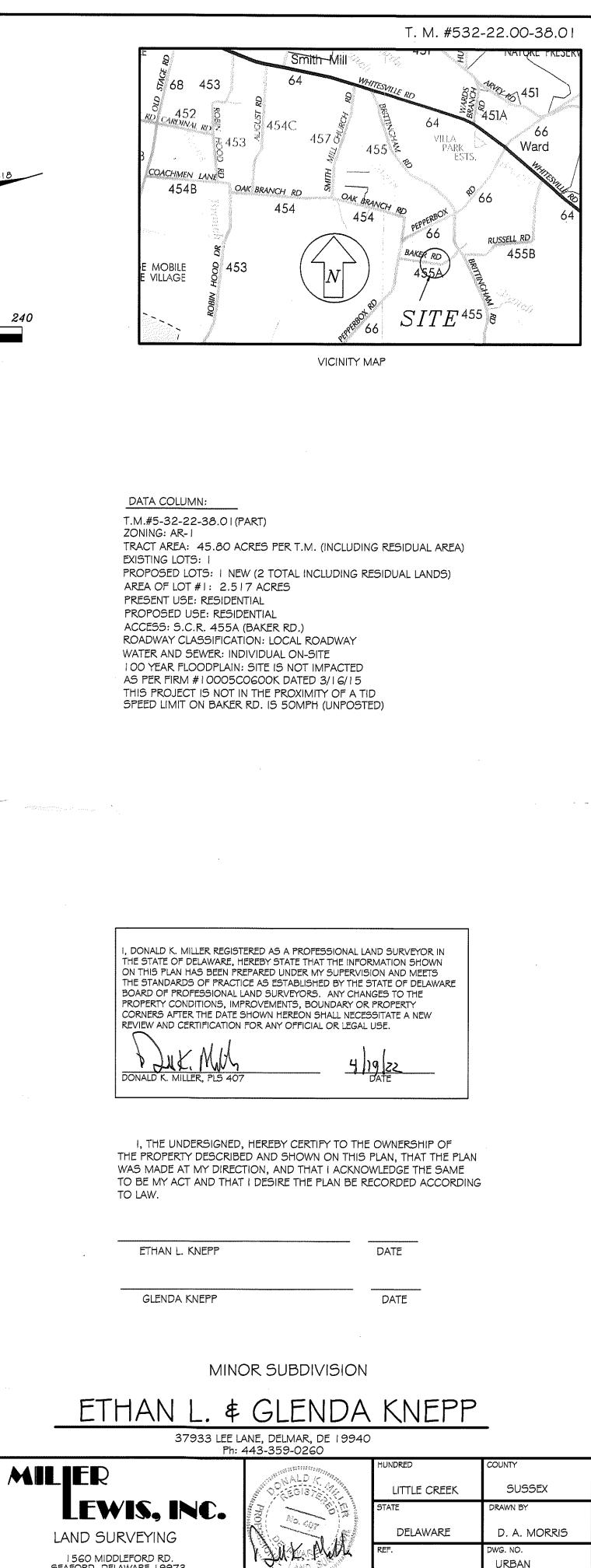
Sincerely,

Richard S. M.Cali

R. Stephen McCabe Sussex County Review Coordinator Development Coordination

cc: Stephen Sellers, Miller Lewis
 Sussex County Planning & Zoning
 Jessica L. Watson, Sussex Conservation District
 Matt Schlitter, South District Public Works Engineer
 James Argo, South District Project Reviewer
 James Smith, South District Entrance Permit Supervisor
 Shannon Anderson, South District Public Work Admin Specialist
 Wendy L. Polasko, P.E., Subdivision Engineer
 John Andrescavage, Sussex County Reviewer





DB 4675-70

JANUARY 5, 2022

SEAFORD, DELAWARE 19973 PH: 302-629-9895 FAX: 302-629-2391

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