



LETTER OF TRANSMITTAL

18072 Davidson Drive
Milton, DE 19968
Tel: 302 - 684 - 8030
Fax: 302 - 684 - 8054

TO: DNREC
WETLANDS AND SUBAQUEOUS LANDS SECTION
89 KINGS HIGHWAY
DOVER, DE 19901

DATE	09-14-23	JOB NO.	LRDEV22001
ATTENTION			
RE:	BROAD CREEK BULKHEAD IMPROVEMENT PROJECT		

WE ARE SENDING YOU Attached Under separate cover via _____ the following items:

Shop Drawings Prints Plans Samples Specifications
 Copy of Letter Change Order _____

LIST OF ITEMS TRANSMITTED			
COPIES	DATE	NO:	DESCRIPTION
3	09-14-23		LAUREL BULKHEAD PERMIT APPLICATION
3	09-14-12		EXISTING CONDITION PLAN
1	09-14-23		CHECK # 6155 \$225.00 (LAUREL REDEVELOPEMENT CORP.)
1	09-14-23		CHECK # 6156 \$85.00 (LAUREL REDEVELOPEMENT CORP.)

THESE ARE TRANSMITTED as checked below:

For approval Approved as submitted Resubmit _____ copies for approval
 For your use Approved as noted Submit _____ copies for distribution
 As requested Returned for corrections Return _____ corrected prints
 For review and comment _____
 FOR BIDS DUE _____ PRINTS RETURNED AFTER LOAN TO US

REMARKS Any questions please contact Michael Marra MMarra@pennoni.com 717-620-5991

COPY TO _____

SIGNED: FAY HECK

If enclosures are not as noted, kindly notify us at once.

September 7, 2023

LRDEV22001

**Department of Natural Resources and Environmental Control
Wetlands and Subaqueous Lands Section
89 Kings Highway
Dover, Delaware 19901**

RE: Broad Creek Bulkhead Improvement Project

To whom it may concern:

The Laurel Redevelopment Corporation has commissioned Pennoni to assist in the design and administer the construction of approximately 150 linear feet of bulkhead replacement in Venables Park along Broad Creek in the Town of Laurel, Delaware. The project will include the installation of a new steel sheet pile bulkhead to replace an existing, aged, and deteriorating timber bulkhead located on the south side of Broad Creek west of the Delaware Avenue Bridge. The project will consist of installing the new steel sheet pile bulkhead approximately one (1) foot waterside of the existing bulkhead. This will allow for removal of the existing deteriorating timber bulkhead, cut existing tiebacks, and excavate existing backfill as needed. Installation of new tiebacks (rods/anchors) will then be installed. Finally, the area between the existing and the new bulkhead will be backfilled with flowable fill or a clean sand. Potential for sediment and material entering the waterway will be minimized by installing the new steel sheet pile bulkhead prior to removing the existing. Approximately 150 linear feet by 1-foot of in-water work is anticipated. No wetlands are located within the project area; therefore, no wetland impacts are anticipated as a result of this project. It is understood that upon approval of this project, a Subaqueous Lands Lease fee of \$1.00/sq ft/year may be implemented for this project.

Please accept following DNREC Wetlands and Subaqueous Lands Permit Application along with the required appendices for Bulkheads and Fill. Enclosed are the following application package documents:

- A. DNREC Subaqueous Lands Permit Basic Application Form and Signature Page
- B. DNREC Subaqueous Lands Permit Applicable Appendices
 - g. Bulkheads
 - h. Fill
- C. Project Location Map
- D. Copy of Deed, Site Survey, and Design Plan
- E. Alternatives Analysis
- F. Site Photographs
- G. Wetland and Watercourse Investigation Report

In addition to the information listed above, coordination with the following agencies is occurring concurrently with the review of this permit: US Fish and Wildlife Service (USFWS); Delaware Natural Heritage; Delaware Division of Fish and Wildlife; Delaware Division of Historical and Cultural Affairs; and Delaware Natural Heritage Program. If you have questions during your review, please contact Michael Marra at (717) 620-5991 or mmarra@pennoni.com

Sincerely,

PENNONI



Michael Marra, PWS
Staff Environmental Scientist

APPENDIX A

DNREC Subaqueous Lands Basic Application Form and Signature Page

WETLANDS AND SUBAQUEOUS LANDS SECTION PERMIT APPLICATION FORM

**For Subaqueous Lands, Wetlands, Marina and
401 Water Quality Certification Projects**

**State of Delaware
Department of Natural Resources and Environmental Control
Division of Water**

Wetlands and Subaqueous Lands Section



**APPLICATION FOR APPROVAL OF
SUBAQUEOUS LANDS, WETLANDS, MARINA
AND WATER QUALITY CERTIFICATION PROJECTS**

PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY**Application Instructions:**

1. Complete each section of this basic application and appropriate appendices as thoroughly and accurately as possible. Incomplete or inaccurate applications will be returned.
2. All applications must be accompanied by a scaled plan view and cross-section view plans that show the location and design details for the proposed project. Full construction plans must be submitted for major projects.
3. All applications must have an original signature page and proof of ownership or permitted land use agreement.
4. Submit an original and two (2) additional copies of the application (total of 3) with the appropriate application fee and public notice fee* (prepared in separate checks) to:

**Department of Natural Resources and Environmental Control
Wetlands and Subaqueous Lands Section
89 Kings Highway
Dover, Delaware 19901**

*Application and public notice fees are non-refundable regardless of the Permit decision or application status.

5. No construction may begin at the project site before written approval has been received from this office.

Helpful Information:

1. Tax Parcel Information:

New Castle County	(302) 395-5400
Kent County	(302) 736-2010
Sussex County	(302) 855-7878
2. Recorder of Deeds:

New Castle County	(302) 571-7550
Kent County	(302) 744-2314
Sussex County	(302) 855-7785
3. A separate application and/or approval may be required through the Army Corps of Engineers. Applicants are strongly encouraged to contact the Corps for a determination of their permitting requirements. For more information, contact the Philadelphia District Regulator of the Day at (215) 656-6728 or visit their website at: <http://www.nap.usace.army.mil/Missions/Regulatory.aspx>.
4. For questions about this application or the Wetlands and Subaqueous Lands Section, contact us at (302) 739-9943 or visit our website at: <http://www.dnrec.delaware.gov/wr/Services/Pages/WetlandsAndSubaqueousLands.aspx>. Office hours are Monday through Friday 8:00 AM to 4:30 PM, except on State Holidays.

APPLICANT'S REVIEW BEFORE MAILING

DID YOU COMPLETE THE FOLLOWING?

<u> X </u>	Yes	BASIC APPLICATION
<u> X </u>	Yes	SIGNATURE PAGE (Page 3)
<u> X </u>	Yes	APPLICABLE APPENDICES
<u> X </u>	Yes	SCALED PLAN VIEW
<u> X </u>	Yes	SCALED CROSS-SECTION OR ELEVATION VIEW PLANS
<u> X </u>	Yes	VICINITY MAP
<u> X </u>	Yes	COPY OF THE PROPERTY DEED & SURVEY
<u> X </u>	Yes	THREE (3) COMPLETE COPIES OF THE APPLICATION PACKET
<u> X </u>	Yes	APPROPRIATE APPLICATION FEE & PUBLIC NOTICE FEE (Separate checks made payable to the State of Delaware)

Submit 3 complete copies of the application packet to:

**Department of Natural Resources and Environmental Control
Wetlands and Subaqueous Lands Section
89 Kings Highway
Dover, Delaware 19901**

Before signing and mailing your application packet, please read the following:

The Department requests that the contractor or party who will perform the construction of your proposed project, if other than the applicant, sign the application signature page along with the applicant in the spaces provided. When the application is signed by the contractor as well as the applicant, the Department will issue the Permit to both parties. For Leases, the contractor will receive a separate construction authorization that will make them subject to all of the terms and conditions of the Lease relating to the construction

Section 1: Applicant Identification

1. Applicant's Name: Laurel Redevelopment Corp. Telephone #: (302) 875-0601
 Mailing Address: Brian Shannon, Executive Director Fax #: _____
PO Box 333 E-mail: bgshannon@msn.com
Laurel, DE 19956
2. Consultant's Name: Alan Decktor, PE Company Name: Pennoni
 Mailing Address: 18072 Davidson Drive Telephone #: (302) 684- 6241
Milton, DE 19968 Fax #: (302) 684-8054
 E-mail: _____
3. Contractor's Name: _____ Company Name: _____
 Mailing Address: _____ Telephone #: _____
 _____ Fax #: _____
 _____ E-mail: _____

Section 2: Project Description

4. Check those that apply:
 New Project/addition to existing project? Repair/Replace existing structure? (If checked, must answer #16)
5. Project Purpose (attach additional sheets as necessary):
See Attachment A.
6. Check each Appendix that is enclosed with this application:

<input checked="" type="checkbox"/> A. Boat Docking Facilities	<input checked="" type="checkbox"/> G. Bulkheads	<input type="checkbox"/> N. Preliminary Marina Checklist
<input checked="" type="checkbox"/> B. Boat Ramps	<input type="checkbox"/> H. Fill	<input type="checkbox"/> O. Marinas
<input type="checkbox"/> C. Road Crossings	<input type="checkbox"/> I. Rip-Rap Sills and Revetments	<input type="checkbox"/> P. Stormwater Management
<input type="checkbox"/> D. Channel Modifications/Dams	<input type="checkbox"/> J. Vegetative Stabilization	<input type="checkbox"/> Q. Ponds and Impoundments
<input type="checkbox"/> E. Utility Crossings	<input type="checkbox"/> K. Jetties, Groins, Breakwaters	<input type="checkbox"/> R. Maintenance Dredging
<input type="checkbox"/> F. Intake or Outfall Structures	<input type="checkbox"/> M. Activities in State Wetlands	<input type="checkbox"/> S. New Dredging

Section 3: Project Location

7. Project Site Address: 38.558269, -75.570082 County: N.C. Kent Sussex
East Front Street and Delaware Ave Site owner name (if different from applicant): Town of Laurel
Laurel, Delaware 19956 Address of site owner: 201 Mechanic Street
Laurel, DE 19956
8. Driving Directions: From north on US-13, head south toward Road 466/Sycamore. Travel 0.8 miles then turn right onto East Front Street. The park will be on the right.
 (Attach a vicinity map identifying road names and the project location)
9. Tax Parcel ID Number: 332-1.07-153.00 Subdivision Name: _____

WSLS Use Only:		Permit #s: _____							
Type	SP <input type="checkbox"/>	SL <input type="checkbox"/>	SU <input type="checkbox"/>	WE <input type="checkbox"/>	WQ <input type="checkbox"/>	LA <input type="checkbox"/>	SA <input type="checkbox"/>	MP <input type="checkbox"/>	WA <input type="checkbox"/>
Corps Permit: SPGP 18 <input type="checkbox"/> 20 <input type="checkbox"/>		Nationwide Permit #: _____		Individual Permit # _____					
Received Date: _____		Project Scientist: _____							
Fee Received? Yes <input type="checkbox"/> No <input type="checkbox"/>		Amt: \$ _____		Receipt #: _____					
Public Notice #: _____		Public Notice Dates: ON _____ OFF _____							

Section 3: Project Location (Continued)

10. Name of waterbody at Project Location: Broad Creek waterbody is a tributary to: Nanticoke River
11. Is the waterbody: Tidal Non-tidal Waterbody width at mean low or ordinary high water 75 feet +/-
12. Is the project: On public subaqueous lands? On private subaqueous lands?*
- In State-regulated wetlands? In Federally-regulated wetlands?

*If the project is on private subaqueous lands, provide the name of the subaqueous lands owner:

(Written permission from the private subaqueous lands owner must be included with this application)

13. Present Zoning: Agricultural Residential Commercial Industrial Other M-R: Marine Resource District

Section 4: Miscellaneous

14. A. List the names and complete mailing addresses of the immediately adjoining property owners on all sides of the project (attach additional sheets as necessary):

Laurel Redevelopment Corp, PO Box 333, Laurel, DE 19956

- B. For wetlands and marina projects, list the names and complete mailing addresses of property owners within a 1,000 foot radius of the project (attach additional sheets as necessary):

N/A

15. Provide the names of DNREC and/or Army Corps of Engineers representatives whom you have discussed the project with:

Julie Molina (Wetlands and Waterways- DNREC)

Katie Esposito (Wetlands and Waterways- DNREC)

A. Have you had a State Jurisdictional Determination performed on the property? Yes No

B. Has the project been reviewed in a monthly Joint Permit Processing Meeting? Yes No

*If yes, what was the date of the meeting? _____

16. Are there existing structures or fill at the project site in subaqueous lands? Yes No

*If yes, provide the permit and/or lease number(s):

The project is replacing an existing bulkhead. Based on historic photos, it appears that the south side of Broad Creek has been retained with a bulkhead or other structure since prior to 1969.

*If no, were structures and/or fill in place prior to 1969? Yes No

17. Have you applied for or obtained a Federal permit from the Army Corps of Engineers?

No Pending Issued Denied Date: _____

Type of Permit: SPGP-20 Federal Permit or ID #: _____

18. Have you applied for permits from other Sections within DNREC?

No Pending Issued Denied Date: _____ Permit or ID #: _____

Type of permit (circle all that apply): Septic Well NPDES Storm Water

Other: _____

Section 5: Signature Page

19. Agent Authorization:

If you choose to complete this section, all future correspondence to the Department may be signed by the duly authorized agent. In addition, the agent will become the primary point of contact for all correspondence from the Department.

I do not wish to authorize an agent to act on my behalf

I wish to authorize an agent as indicated below

I, **Brian Shannon & Laurel Redevelopment Corp.**, hereby designate and authorize **Alan Decktor & Pennoni Engineering**
 (Name of Applicant) (Name of Agent)
 to act on my behalf in the processing of this application and to furnish any additional information requested by the Department.

Authorized Agent's Name: Alan Decktor & Pennoni Engineering Telephone #: (302) 684-6241
 Mailing Address: 18072 Davidson Drive Milton, DE 19968 Fax #:
 E-mail: ADecktor@Pennoni.com

20. Agent's Signature:

I hereby certify that the information on this form and on the attached plans are true and accurate to the best of my knowledge. I further understand that the Department may request information in addition to that set forth herein if deemed necessary to appropriately consider this application.

 Agent's Signature

 Date

21. Applicant's Signature:

I hereby certify that the information on this form and on the attached plans are true and accurate to the best of my knowledge and that I am required to inform the Department of any changes or updates to the information provided in this application. I further understand that the Department may request information in addition to that set forth herein if deemed necessary to appropriately consider this application. I grant permission to authorized Department representatives to enter upon the premises for inspection purposes during working hours.

Brian G. Shannon
 Applicant's Signature

9-7-2023
 Date

Brian G Shannon
 Print Name

22. Contractor's Signature:

I hereby certify that the information on this form and on the attached plans are true and accurate to the best of my knowledge, and that I am required to inform the Department of any changes or updates to the information provided in this application. I further understand that the Department may request information in addition to that set forth herein if deemed necessary to appropriately consider this application.

 Contractor's Name

 Date

 Print Name

APPENDIX B

DNREC Subaqueous Lands Permit Applicable Appendices

g. Bulkheads

h. Fill

BULKHEADS

Please make sure answers to all of the questions in this appendix correspond to information on the application drawings.

1. Will the project be considered new construction or repair and replacement of an existing and currently serviceable bulkhead?

_____ New Construction
 Repair and Replacement

If repair and replacement, attach photos of entire length of project.

1. What is the current condition of the shoreline at the site of the proposed bulkhead?

The current shoreline is an existing, deteriorating timber bulkhead along the southern edge of Broad Creek. Venables Park is located directly adjacent to the bulkhead to the south. The park consists of maintained grass, landscaping and walkways.

2. Please attach an analysis of all alternatives to bulkheading as a shoreline stabilization method for this project. Please examine options using vegetation and/or non-vertical walled structures. Include a justification of need, based on the extent of erosion and the rate of erosion. This application will not be reviewed if this answer is not completed.

See Alternatives Analysis below.

3. If this is a repair or replacement,

Do you intend to step out in front of existing bulkhead? Yes _____ No

Is the current bulkhead creosote? Yes _____ No

Will the new bulkhead be placed on or off the applicant's property?

On _____ Off Please indicate property lines on attached plans as well as MHW/MLW.

The adjacent property is owned by Laurel Redevelopment Corp

4. How many linear feet of shoreline are to be bulkheaded? 150 ft.

5. What will be the overall length of the bulkhead (including return walls)? 150 ft.

6. How many ends of the bulkhead will be tied into existing bulkheads which are in good repair?

_____ None One _____ Two

7. Will the return walls be protected from out flanking with rip-rap?

_____ Yes No If your answer is "Yes", complete Appendix I.

8. Will the toe of your bulkhead be protected from undercutting with rip-rap?

_____ Yes No If your answer is "Yes" complete Appendix I.

9. What type of material(s) will be used for construction of the bulkhead (e.g. reinforced concrete, steel sheet pilings, treated tongue-and-groove timber, etc.)?

Coated steel z-shaped pilings

10. Will deadmen be utilized _____ Yes No If your answer is "Yes", indicate the type and location on your drawings/ If your answer is "No", explain the method to be used to anchor the bulkhead.

A 6" and approximately 30' long soil anchored tie rod will be embedded behind the bulk head.

11. Will wooden materials be: _____ Salt Treated _____ Other

N/A- No wooden materials will be used for this project.

12. Will all metal fittings, cables, or tie rods be galvanized? Yes _____ No

13. Will the bulkhead be backfilled? Yes _____ No If your answer is "Yes", complete Appendix H.

14. Will filter cloth be used? _____ Yes No If your answer is "No", explain the method to be used to control seepage of backfill from behind the bulkhead.

Removal of existing deteriorating bulkhead, removal of existing backfill and placement of clean sand and/or flowable fill will take place after installation of new bulkhead.

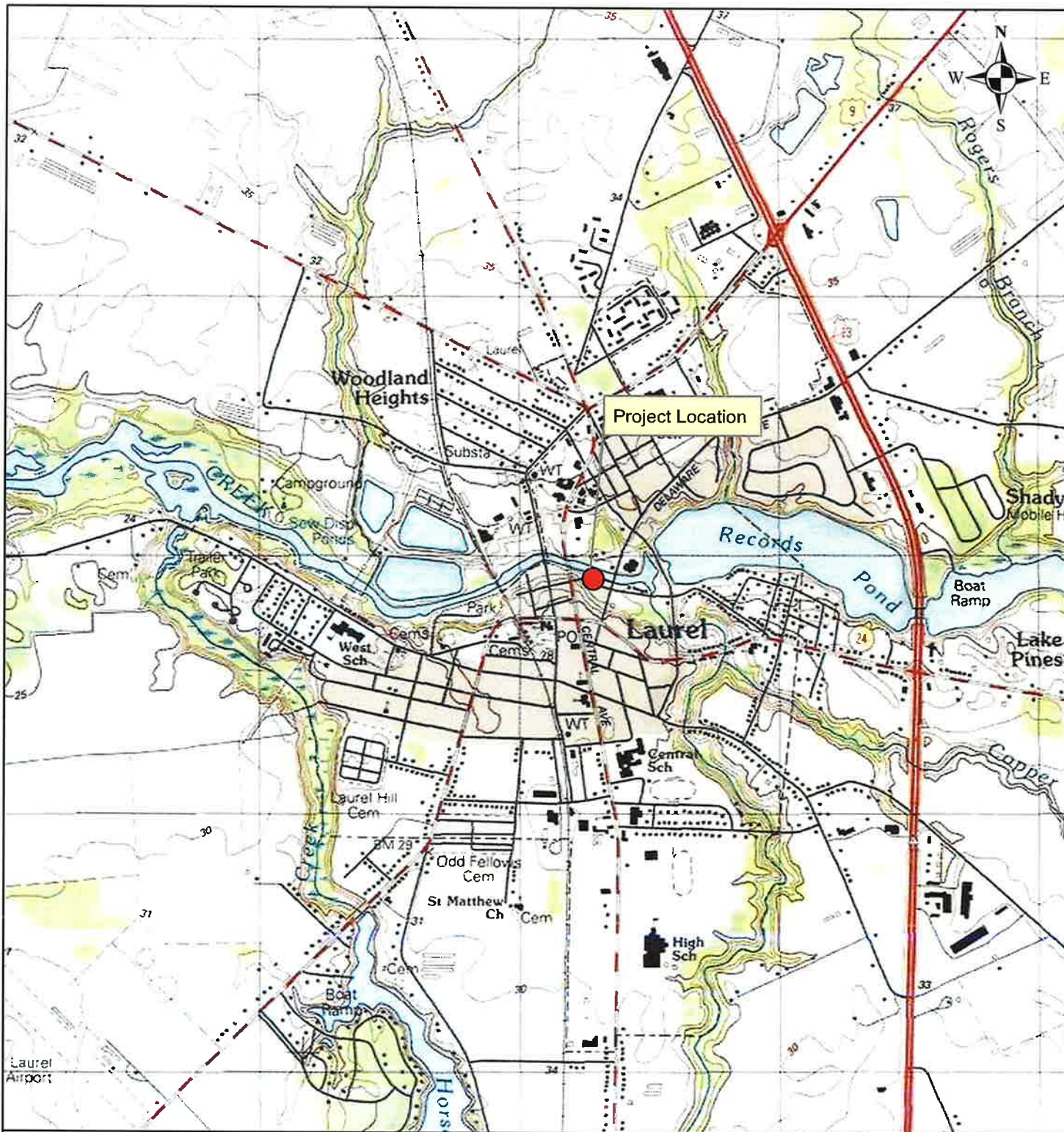
15. Have you consulted an engineer or other professional to assure that the design of your bulkhead will be adequate? Yes _____ No If your answer is "Yes", give the name and address of the party consulted.

Name:	GEOTECHNICAL ENGINEERING	STRUCTURAL ENGINEERING	CIVIL ENGINEERING
Address:	Geo-Technology Associates, Inc. Gregory Sauter, PE 21491 Baltimore Ave, Unit 1 Georgetown, DE 19947	Baker, Ingram and Associates, INC. A. Paynter Ingram, PE 1050 S. Sate Street Dover, DE 19947	Pennoni Associates, INC. Alan Decktor, PE 18072 Davidson Dr. Milton, DE 19968

Date:

APPENDIX C

Project Location Map



Legend




 Project Location

FIGURE 1
PROJECT LOCATION MAP
 Laurel Bulkhead Improvement Project
 38.558243, -75.570083
 Laurel, Sussex County, DE



1,000
 Feet

Sources: Basemap layer provided by ESRI Online; Pennoni job number LRDEV22001

APPENDIX D

Copy of Deed, Site Survey, and Design Plan

73758

02626 290

LRDEV22001
332-1.07-153.00 &
136.00
DB2626 PG290

11-29-01

Parcel #3-32 1.07 136.00 & 153.00

Prepared by:
Sergovic, Ellis & Shirey, P.A.
9 North Front Street
Georgetown, DE 19947-0875
File No. RE-2196

This Deed, made this 28th day of August, 2001,

BETWEEN Venables Brothers II, a Delaware general partnership, P.O. Box 693, Laurel, DE 19956 party of the first part,

- A N D -

Laurel Redevelopment Corp., a Delaware corporation, P.O. Box 333, Laurel, DE 19956 party of the second part,

WITNESSETH, that the said party of the first part, for and in consideration of the sum of TWO HUNDRED TWENTY FIVE THOUSAND DOLLARS and 00/100 (\$225,000.00), lawful money of the United States of America, the receipt whereof is hereby acknowledged, hereby grants and conveys unto the said party of the second part, her heirs and assigns,

TRACT NO. 1: (3-32 1.07 136.00)

ALL that certain tract, piece and parcel of land situate, lying and being in Little Creek Hundred, Sussex County and State of Delaware, lying on the Southerly side of Front Street and being more particularly described as follows, to wit:

BEGINNING at a pk nail set in sidewalk along the Southerly right-of-way line of Front Street, a corner for these lands and lands now or formerly of Ernest Murphy; thence from said point of beginning and running along and with the line of Front Street, the following four (4) courses and distances: (1) with a curve bearing to the right having a radius of 75.00 feet, an arc of 48.65 feet and a chord bearing South 68 degrees 28 minutes 28 seconds East 47.81 feet to a point; thence (2) South 41 degrees 29 minutes 50 seconds East 52.55 feet to a point; thence (3) South 42 degrees 41 minutes 00 seconds East 158.14 feet to a railroad spike set; thence (4) South 58 degrees 26 minutes 29 seconds East 98.93 feet to a mark in walk set in the Westerly right-of-way line of Delaware Avenue; thence turning and running with the line of Delaware Avenue, South 30 degrees 48 minutes 56 seconds West 81.66 feet to an iron stob found, a corner for these lands and lands now or formerly of James Jones; thence turning and running with the line of lands now or formerly of James Jones, the three (3) following courses and distances: (1) North 58 degrees 15 minutes 34 seconds West 145.54 feet to a concrete monument found; thence (2) South 28 degrees 09 minutes 16 seconds West 67.16 feet to a pipe found; thence (3) North 77 degrees 40 minutes 19 seconds West 144.75 feet to a pipe found in line of lands now or formerly of the Laurel Senior Center; thence turning and running North 00 degrees 13 minutes 25 seconds East 46.32 feet to a pipe found; thence with lands now or formerly of Mabel O'Neal, Alan Hastings and Delmar Feed Mills, North 02 degrees 54 minutes 36 seconds East 100.29 feet to a rebar rod set in line of lands now or formerly of Leroy Phillips; thence turning and running South 86 degrees 15 minutes 15 seconds East 6.25 feet to a rebar rod set in line of lands now or formerly of Ernest Murphy; thence with lands now or formerly of Ernest Murphy, the three (3) following courses and distances: (1) South 03 degrees 34 minutes 44 seconds West 9.00 feet to a rebar rod set; thence (2) North 86 degrees 57 minutes 08 seconds East 45.76 feet to e rebar

22

02626 291

rod set; thence (3) North 05 degrees 59 minutes 14 seconds East 107.85 feet to a pk nail set, the point and place of beginning, said to contain 1.1479 acres of land, be the same more or less, together with all of the improvements located thereon, as surveyed by Gene R. Littleton & Assoc., Gene R. Littleton, Professional Land Surveyor, December, 2000, a copy of said plot being filed for record in the Office of the Recorder of Deeds, in and for Sussex County at Georgetown, Delaware, in Plot Book 72, page 40.

TRACT NO. 2: (3-32 1.07 153.00)

ALL that certain tract, piece and parcel of land situate, lying and being in Little Creek Hundred, Sussex County and State of Delaware, lying on the Northerly side of Front Street and being more particularly described as follows, to wit:

BEGINNING at a mark on curb along the Northerly right-of-way line of Front Street and the Westerly right-of-way line of Delaware Avenue; thence from said point of beginning and running along and with the line of Front Street, the five (5) following courses and distances: (1) North 67 degrees 00 minutes 10 seconds West 97.78 feet to a rebar found; thence (2) North 45 degrees 10 minutes 10 seconds West 152.72 feet to a point; thence (3) North 47 degrees 01 minutes 20 seconds West 54.76 feet to a point; thence (4) with a curve bearing to the left, having a radius of 70.0 feet, an arc of 55.86 feet and a chord bearing North 09 degrees 52 minutes 10 seconds West 54.39 feet to a point; thence (5) South 87 degrees 15 minutes 00 seconds West 52.68 feet to a concrete monument found, a corner for these lands and lands now or formerly of Laurel Redevelopment Corp.; thence turning and running North 01 degrees 13 minutes 00 seconds West 102.86 feet to a concrete monument found; thence continuing along the same course 2 feet, more or less to a point in bulkhead along Broad Creek; thence turning and running with the meanderings of the low water mark along bulkhead, having a tie line of South 62 degrees 19 minutes 56 seconds East 440.67 feet to a mark on walk at bridge wall in the Westerly right-of-way line of Delaware Avenue; thence turning and running with the line of Delaware Avenue, South 25 degrees 14 minutes 50 seconds West 107.90 feet to a mark on curb, the point and place of beginning, said to contain 36,738.89 square feet of land, be the same more or less, together with all of the improvements located thereon, as surveyed by Gene R. Littleton & Assoc., Gene R. Littleton, Professional Land Surveyor, December, 2000, a copy of said plot being filed for record in the Office of the Recorder of Deeds, in and for Sussex County at Georgetown, Delaware, in Plot Book 72, page 41.

BEING a part of the same lands conveyed unto Venable Brothers II, a Delaware general partnership, by a Deed of William B. Venables, Jr., Robert L. Venables, Sr. and Bruce W. Venables, dated August 31, 1998 and filed for record in the Office of the Recorder of Deeds in and for Sussex County at Georgetown, Delaware, in Deed Book 2317, page 81.

UNITED STATES BANKRUPTCY COURT
FOR THE DISTRICT OF DELAWARE

In re:

Robert L. Venables, Sr. and
Laura F. Venables, et al.,

Debtors.

Case Nos. 00-1593 (PJW)
through 00-1595 (PJW)
Chapter 11

(Jointly Administered)

ORDER

Upon the Motion of Robert Venables, Sr. and Bruce Venables for Authority to Approve Sale of Real Estate in their Capacity as Partners of Venables Brothers II, the Court having considered the relief requested in the Motion and any objections thereto; and the Court having determined from the Motion and the record, if any in this matter, that the relief requested in the Motion is appropriate;

IT IS ORDERED that:

1. The relief requested in the Motion is granted.

2. Robert L. Venables, Sr. and Bruce W. Venables are authorized in their capacity as partners of Venables Brothers II to consent to the sale of the Property and to execute such documents and to do such things as are normally associated with the sale of real property in Delaware.

Dated: Aug 7, 2001


Peter J. Walsh
Chief United States Bankruptcy Judge

AS A TRUE COPY:
ATTEST:

DAVID D. BIRD, CLERK
U.S. BANKRUPTCY COURT

BY: 
Deputy Clerk 8/23/01

County 00 State 3375.00 Total 3375.00
Date: 9/05/2001
Consideration: 225000.00

02626 293

IN WITNESS WHEREOF, the said party of the first part has hereunto set her hand and seal the day and year first hereinbefore written.

Signed, Sealed and Delivered in the presence of:

Venables Brothers II

By: William B. Venables, Jr. (SEAL)
William B. Venables, Jr., Partner

By: Robert L. Venables, Sr. (SEAL)
Robert L. Venables, Sr., Partner

By: Bruce W. Venables (SEAL)
Bruce W. Venables, Partner

State of Delaware)
 : S.S.
County of Sussex)

BE IT REMEMBERED, that on August 28, 2001, personally came before me, the Subscriber, Venables Brothers II, by and through its partners, William B. Venables, Jr., Robert L. Venables, Sr. and Bruce W. Venables parties of the first part to this Indenture, known to me personally to be such, and acknowledged this Indenture to be their act and deed.

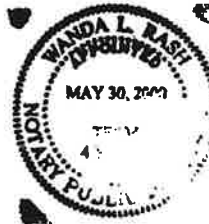
Given under my Hand and Seal of office the day and year aforesaid.

Received
SEP 06 2001

Wanda L. Rash
Printed Name Wanda L. Rash
Notary Public, Delaware
My Commission Expires: 5/30/2004

ASSESSMENT DIVISION
OF SUSSEX CTY.

Return to:
Laurel Redevelopment Corp.
P.O. Box 333
Laurel, DE 19956



01 SEP -5 PM 3:28
SUSSEX COUNTY
DOC. SURCHARGE PAID

TOWN OF LAUREL
REALTY TRANSFER TAX
TRANSFER : 59-01
CANCELL : 50
AMOUNT : TAX 3295 -
DATE RECEIVED 9/5/01

APPENDIX E
Alternatives Analysis

Laurel Bulkhead Replacement

Laurel, Sussex County, Delaware

Project Alternatives Analysis

The current shoreline is an existing, vertical, deteriorating timber bulkhead along the southern edge of Broad Creek. Venables Park is located adjacent to the bulkhead to the south. A new step-out bulkhead was constructed directly upstream of the proposed project during the emergency Delaware Department of Transportation (DelDOT) Delaware Avenue bridge replacement project. The proposed project would replace 150 linear feet of existing, deteriorating timber bulkhead along the southern bank of Broad Creek. The proposed bulkhead will start at the existing step-out bulkhead adjacent to the Delaware Avenue bridge and continue downstream. Three alternatives were analyzed for the replacement of the existing, deteriorating, timber bulkhead and include the following:

Option 1 (Preferred): Construct a steel sheet pile bulkhead placed in front of the exiting bulkhead and tying directly into exiting DelDOT bulkhead.

This option involves the installation of steel sheet piles and soil anchors to be located on the water side of the existing, timber bulkhead. The steel sheet piles, and soil anchors would be located as close as possible (approximately 1 foot channel-ward) of the existing, timber bulkhead.

This option will utilize durable steel sheet piles, will have a long serviceable life, and will closely match and align with the existing DelDOT bulkhead. This option will minimize the loss of soil and bulkhead debris from entering Broad Creek during construction. This option will also minimize the loss of soil, fill, and debris during the removal of the old bulkhead as the new bulkhead will act as a barricade.

Option 2: Construct the steel sheet pile bulkhead behind the existing bulkhead and tying in approximately behind the existing DelDOT bulkhead.

This option involves the installation of steel sheet piles and soil anchors to be located landward of the existing bulkhead (approximately 1-2 feet).

This option will utilize durable steel sheet piles, will have a long serviceable life, and will closely match the existing DelDOT bulkhead. This option will not align with the existing DelDOT bulkhead. Locating the new bulkhead behind (landward) the existing bulkhead complicates construction as it will interfere with existing tie backs. Containment of soil and debris from entering Broad Creek during the removal of the existing bulkhead is also improvised in this option. Furthermore, it is possible that remnants of the existing bulkhead will remain in the channel following completion of the project.

Option 3: Construct a new timber bulkhead within the same alignment as the existing timber bulkhead.

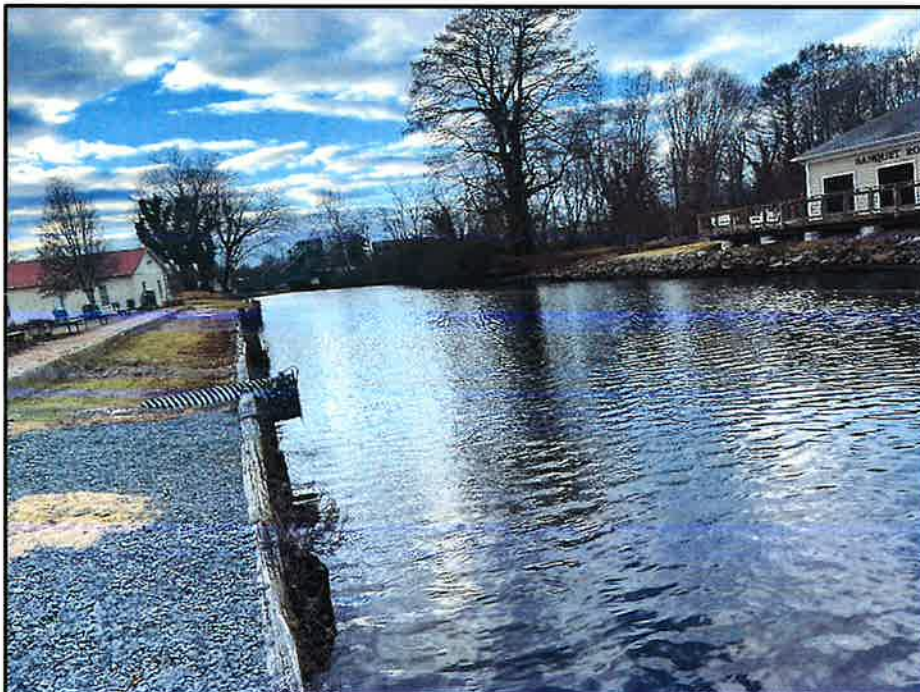
This option is the in-kind replacement of the existing, deteriorating timber bulkhead with a new timber bulkhead. The option would utilize steel tie rods and continuous concrete deadman for lateral support. As an alternative, composite sheet piles may be utilized in place of wood sheet piles.

This option will utilize less durable wood sheet piles compared to steel sheet piles; therefore, Option 3 is considered to have a shorter serviceable life compared to Option 1 and Option 2. Option 3 is considered more difficult to construct compared to Option 1 and Option 2 in that the existing bulkhead must be removed in whole or in sections prior to construction of the new bulkhead. This option also poses the high risk of sediment and erosion control issues. This Option would also require the longest construction schedule of the three options.

APPENDIX F
Site Photographs



Photograph 1: View along the existing bulkhead looking east/upstream toward Delaware Ave (January 2023).



Photograph 2: View along the existing bulkhead looking west/downstream (January 2023).



Photograph 3: View along the existing bulkhead looking west/downstream (January 2023).



Photograph 4: View of Venables park located adjacent to the existing bulkhead looking west (January 2023).

APPENDIX G

Wetland and Watercourse Investigation Report

February 3, 2023

LRDEV22001Mr. Brian Shannon
Laurel Redevelopment Corporation
PO Box 333
Laurel, DE 19956**RE: WETLAND AND WATERCOURSE ABSENCE/PRESENCE INVESTIGATION
BROAD CREEK BULKHEAD IMPROVEMENT PROJECT
TOWN OF LAUREL, SUSSEX COUNTY, DELAWARE**

Dear Mr. Shannon,

On January 26, 2023, Pennoni conducted a wetland and watercourse absence/presence investigation to determine if wetlands and watercourses are present within the project study area located at the proposed Broad Creek Bulkhead Improvement Project in Venables Park, Town of Laurel, Sussex County, Delaware. The proposed project consists of replacing 150 linear feet of existing bulkhead along the south side of Broad Creek and west of Delaware Avenue. Pennoni investigated the existing conditions of the area surrounding the existing bulkhead for the presence/absence of wetlands and watercourses.

The center of the project study area is located at approximately 38.588258° north latitude and -75.570074° west longitude according to the Laurel, DE USGS 7.5' Quadrangle (**Figure 1 - Site Location Map**). Potential wetland and watercourse habitats located within the project area were reviewed through the combined use of existing published data and a field investigation. Existing published data included NRCS Web Soil Survey mapping (**Figure 2**); U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) mapping (**Figure 3**); the National Flood Hazard Layer mapping (FIRMette) (**Figure 4**); and Delaware Department of Natural Resources and Environmental Control (DNREC) FirstMap wetlands Mapping (**Figure 5**).

The NRCS Web Soil Survey website was reviewed to determine the soil types within the project area. **Figure 2- Soils Map** documents the soils within the project area. According to the website, the landward side of the project study area is within the Udorthents, 0 to 10 percent slopes (UzC) soils map unit. UzC soils are not identified as containing hydric soil components according to the Delaware USDA-NRCS Hydric Soils List. Hydric soils were observed during the field investigation using USACE Delineation Manual, Regional Supplement, and Field Indicators of Hydric Soils in the United States V-8.1 (USDA-NRCS, 2017) as guidance.

A review of the USFWS National Wetlands Inventory online database (**Figure 3 – National Wetland Inventory Map**) identified Broad Creek as a mapped riverine, tidal, unconsolidated bottom, permanently flooded-tidal (R1UBV) resource within the project study area. Based on

FEMA maps (**Figure 4- FEMA Maps**), the entire study area is within Flood zone AE, an area that will be inundated by the flood event having a 1-percent chance of being equaled or exceeded in any given year, also referred to as the 100-year flood.

During Pennoni's field investigation, the presence of wetland habitats and watercourses within the project study area were evaluated using the Routine Wetland Delineation Method for small areas described in the US Army Corps of Engineers (USACE) Wetland Delineation, Technical Report Y-87-1 (1987), and the Atlantic and Gulf Coastal Region (Version 2.0) Regional Supplement to the U.S. Army Corps of Engineers Wetland Delineation Manual (November 2010).

The multi-parameter approach outlined in the USACE Delineation Manuals was followed to perform this wetland and watercourse investigation. Under this approach, three (3) criteria for the classification of an area as a wetland must be met. The three (3) criteria are:

- Hydrophytic vegetation must be present, which has the ability to grow, effectively compete, reproduce, and/or persist in saturated soil conditions.
- Hydric soils must be present as defined by indicator characteristics of prolonged anaerobic and saturated conditions.
- Hydrology must be present which results in periodic inundation or prolonged saturation of the biologically active portion of the soil.

The presence of waters of the United States and watercourses was also evaluated during the field investigation. As codified in 40 CFR 230.3(s), consistent with the pre-2015 regulatory regime until further notice, a waters of the United States is defined as:

All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; all interstate waters including interstate wetlands; all other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters; all impoundments of waters otherwise defined as waters of the United States under this definition; tributaries of waters identified in paragraphs (s)(1) through (4) of this section; the territorial sea; and wetlands adjacent to waters (other than waters that are themselves wetlands) identified above.

Wetlands are regulated under the Federal Clean Water Act, Section 404 as waters of the United States of America. Delaware regulates all of its tidal wetlands and non-tidal wetlands that include 400 or more contiguous acres under the Delaware Wetlands Act (7 Del. Code, Chapter 66) and the Wetlands Regulations (7 DE Admin. Code 7502). Activities (dredging, draining, filling, construction of any kind, bulkheading, mining, drilling and excavation) in these

wetlands require a Wetlands and Subaqueous Lands Permit Application Form for Subaqueous Lands, Wetlands, Marina, and 401 Water Quality Certification Projects issued by the Delaware Department of Natural Resources and Environmental Control (DNREC). In addition, a US Army Corps of Engineers (USACE) Nationwide Permit would be required for any dredging or filling of federally regulated waters of the US including wetlands.

Findings

On-site field investigations conducted on January 26, 2023, identified Broad Creek within the project study area. No wetlands were identified within the project study area. The project study area consisted of Venables public park with maintained landscaping which includes a paved and brick walking path, a gazebo, and maintained grass. The ordinary high-water mark (OHWM) of the southern bank of Broad Creek within the project study area is defined by the existing deteriorating bulkhead and is shown on Figure 5 (Resources Map).

Broad Creek flows east to west through the project study area and is tidally influenced in this area. Approximately 0.1 mile upstream of the project study area, Broad Creek is dammed at Willow Street forming Records Ponds. Broad Creek is tidal from the dam at Willow Street to the confluence with the Nanticoke River. According to the Delaware Administrative Code, Title 7, Chapter 3.0 7401 Surface Water Quality Standards, the designated use for Broad Creek includes industrial water supply; primary contact recreation; secondary contact recreation; fish, aquatic life & wildlife; agricultural water supply, and waters of exceptional recreational or ecological significance. In addition, Broad Creek from the upstream-most limits of the Town of Laurel to the confluence with the Nanticoke River have special criteria in subsection 4.5 that are protective of open water fish and shellfish, shallow-water bay grass and migratory fish spawning and nurse designated uses consistent with the Maryland portion of the tidal Nanticoke River and as described in the U.S. Environmental Protection Agency (EPA) document Ambient Water Quality Criteria for Dissolved Oxygen, Water Clarity and Chlorophyll a for the Chesapeake Bay and its Tidal Tributaries (EPA 903-R-03-002). Attainment of the water quality criteria that apply to these waters will be determined following the guidelines documented within the same document and any future published addendums or modification to that original publication.

If you should have any questions concerning this report, or require additional information, please feel free to contact me at 717-620-5991 or mmarra@pennoni.com.

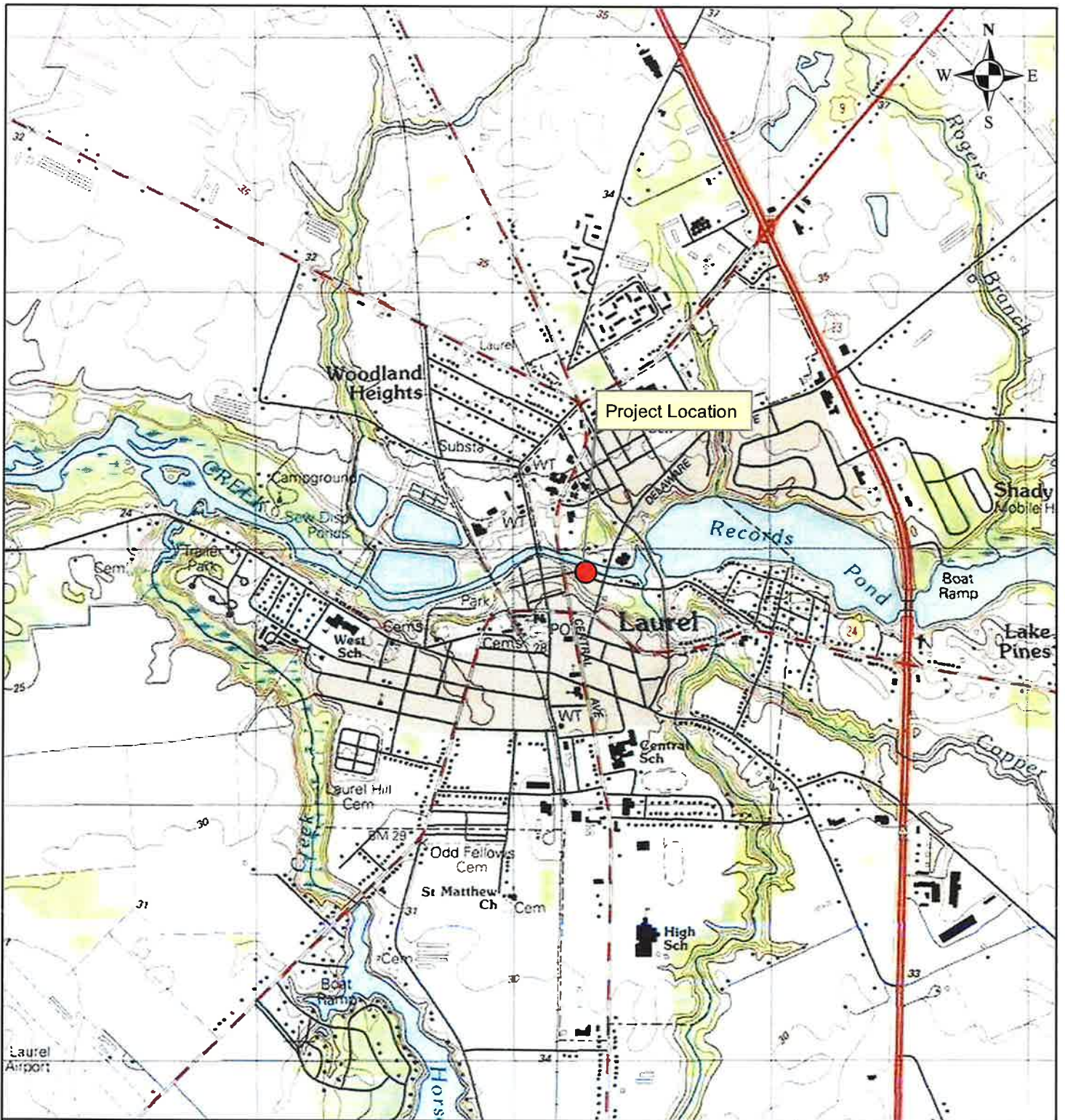
Sincerely,

PENNONI



Michael A. Marra, PWS (#3557)
Staff Environmental Scientist

FIGURES



Legend



 Project Location


FIGURE 1
PROJECT LOCATION MAP

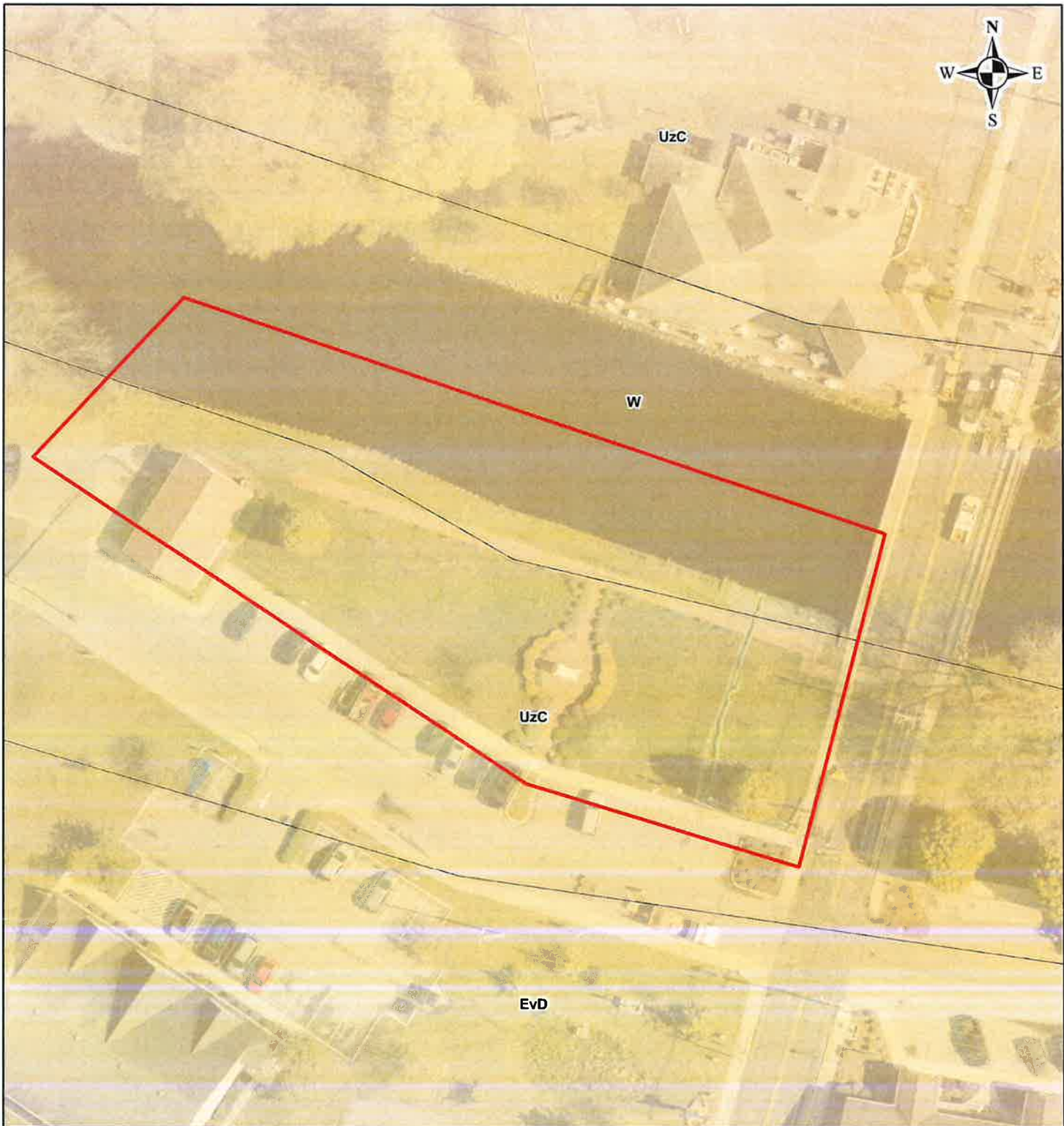
Laurel Bulkhead Improvement Project

38.558243, -75.570083

Laurel, Sussex County, DE



1,000
 Feet



Legend

- Project Study Area
- Soils

**FIGURE 2
SOILS MAP**

Laurel Bulkhead Improvement Project

38.558243, -75.570083

Laurel, Sussex County, DE



50

Feet



Legend

-  Project Study Area
-  Riverine

**FIGURE 3
NWI MAP**

Laurel Bulkhead Improvement Project

38.558243, -75.570083

Laurel, Sussex County, DE



50

 Feet



Legend

-  Project Study Area
-  Floodzone AE

FIGURE 4
FEMA MAP

Laurel Bulkhead Improvement Project

38.558243, -75.570083

Laurel, Sussex County, DE



50

 Feet



Legend

- Project Study Area
- Existing Bulkhead
- 2017 High Water Mark (not regulatory)
- 2017 High Marsh (not regulatory)
- 2017 Low Marsh (not regulatory)

FIGURE 5
DNREC MAP

Laurel Bulkhead Improvement Project

38.558243, -75.570083

Laurel, Sussex County, DE



50

Feet



Legend



-  Project Study Area
-  Existing Bulkhead

FIGURE 6
RESOURCES MAP

Laurel Bulkhead Improvement Project

38.558243, -75.570083

Laurel, Sussex County, DE



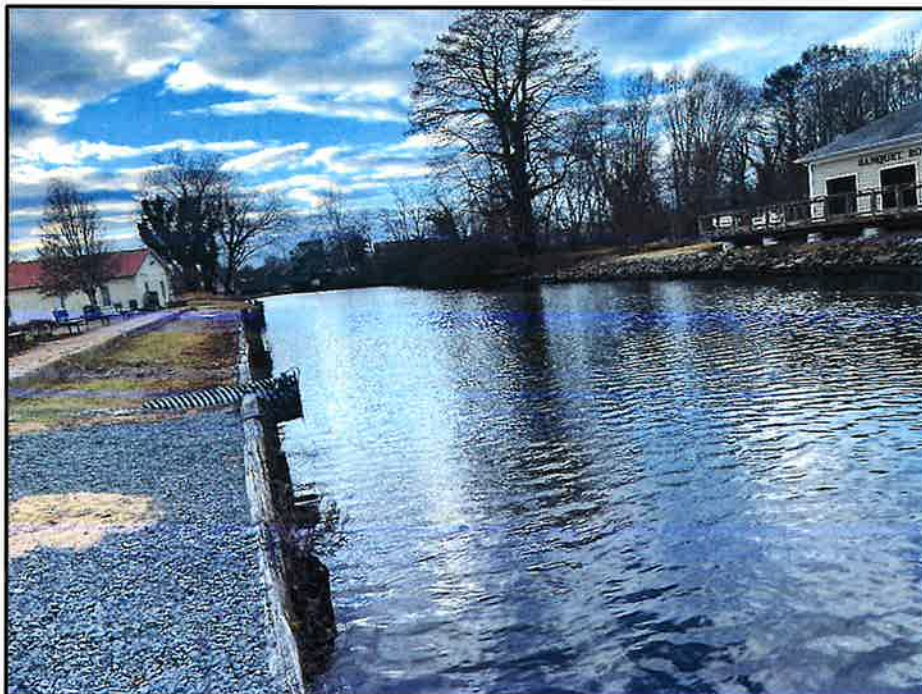
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 Feet

PHOTOGRAPHS



Photograph 1: View along the existing bulkhead looking east/upstream toward Delaware Ave (January 2023).



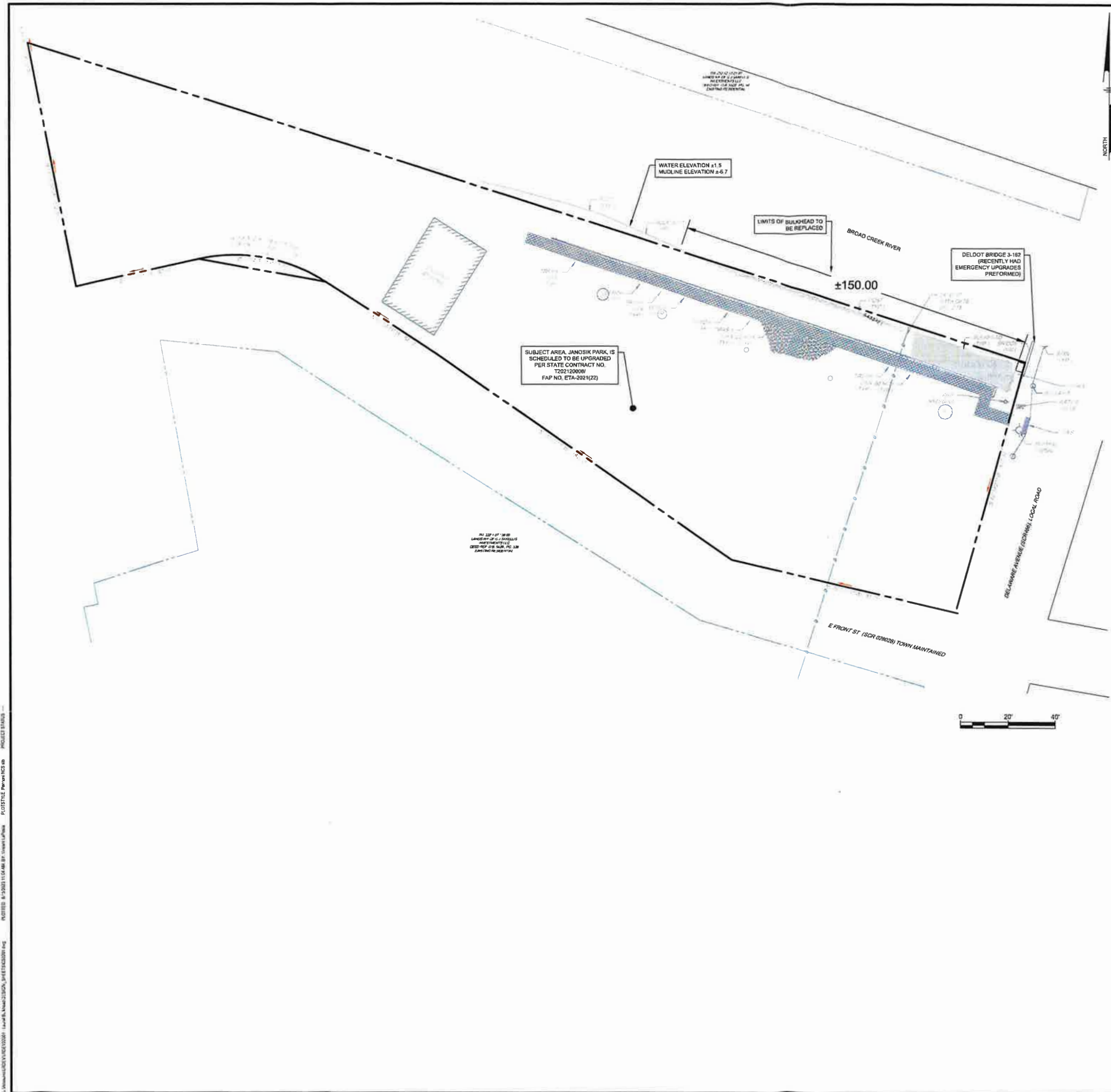
Photograph 2: View along the existing bulkhead looking west/downstream (January 2023).



Photograph 3: View along the existing bulkhead looking west/downstream (January 2023).



Photograph 4: View of Venables park located adjacent to the existing bulkhead looking west (January 2023).



VICINITY MAP
Scale: 1" = 400'

LEGEND

EXISTING	DESCRIPTION
[Symbol]	BUILDING
[Symbol]	CONCRETE PAVEMENT
[Symbol]	EDGE OF PAVEMENT
[Symbol]	PROPERTY LINE
[Symbol]	LEGAL RIGHT-OF-WAY
[Symbol]	PROPERTY, CORNER FOUND
[Symbol]	PROPERTY, ADJOINING LINED
[Symbol]	SPOT ELEVATION
[Symbol]	MINOR CONTOUR
[Symbol]	MAJOR CONTOUR
[Symbol]	BRICK SIDEWALK PATH
[Symbol]	CURB

EXISTING CONDITION NOTES:

- ELEVATIONS ARE BASED ON NAVD 88, AND DE STATE PLANE COORDINATE SYSTEM AND 83 HORIZONTAL DATUM.
 - UNLESS SPECIFICALLY STATED OR SHOWN HERETO, THIS SURVEY IS MADE SUBJECT TO AND DOES NOT LOCATE OR DELINEATE.
 - RIGHTS OR INTEREST OF THE UNITED STATES OF AMERICA OR STATE OF DELAWARE OVER LANDS NOW OR FORMERLY FLOWED BY TIDEWATER BUT NO LONGER VISIBLE OR PHYSICALLY EVIDENT, OR LANDS CONTAINING ANY ANIMAL, MARINE OR BOTANICAL SPECIES REGULATED BY OR UNDER THE JURISDICTION OF ANY FEDERAL, STATE OR LOCAL AGENCY.
 - BUILDING SETBACK LINES, ZONING REGULATIONS OR LINES ESTABLISHED BY ANY FEDERAL, STATE OR LOCAL AGENCY WHICH MAY AFFECT THE BUILDING OR DEVELOPMENT POTENTIAL OF THE SUBJECT PROPERTY.
 - ANY SUBSURFACE OR SUBTERRANEAN CONDITION, EASEMENTS OR RIGHTS, INCLUDING, BUT NOT LIMITED TO MINERAL OR MINING RIGHTS, OR THE LOCATION OF OR RIGHTS TO ANY SUBSURFACE STRUCTURES, CONTAINERS OR FACILITIES OR ANY OTHER NATURAL OR MAN-MADE SUBSURFACE CONDITION WHICH MAY OR MAY NOT AFFECT THE USE OR DEVELOPMENT POTENTIAL OF THE SUBJECT PROPERTY.
 - UTILITY NOTES
 - THE LOCATION OF THE EXISTING UNDERGROUND UTILITIES SHOWN ON THIS PLAN HAVE BEEN TAKEN FROM EXISTING UTILITY RECORDS AVAILABLE AT THE TIME THESE PLANS WERE PREPARED AND FROM SURFACE OBSERVATION OF THE SITE. LOCATIONS OF UTILITIES AS SHOWN AND MAY OR MAY NOT BE COMPLETE. THE NATURE AND EXACT LOCATION OF EXISTING UTILITIES SHOULD BE VERIFIED PRIOR TO INITIATING ANY ACTIVITY THAT MAY AFFECT THEIR USE OR LOCATION.
 - COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH OF UNDERGROUND UTILITIES AND STRUCTURES IS NOT GUARANTEED.
 - MISS UTILITY SHALL BE NOTIFIED THREE (3) DAYS PRIOR TO EXCAVATION.
 - THE CONTRACTORS SHALL VERIFY LOCATIONS AND DEPTHS OF ALL UNDERGROUND UTILITIES AND STRUCTURES BEFORE THE START OF WORK.
 - IF CONFLICTS ARE FOUND THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER AND DESIGN ENGINEER FOR INSTRUCTION BEFORE PROCEEDING WITH WORK.
 - THIS SITE IS ZONED M-2 MARINE RESOURCES USE.
 - EXISTING STORMWATER RUNOFF IS CONVEYED THROUGH THE SITE VIA OVERLAND FLOW AND PIPE CONVEYANCE TO BROAD CREEK RIVER.
- REFERENCE:
 6. TOPOGRAPHICAL SURVEY PERFORMED BY PENNONI ASSOCIATES INC. DEC 2022.
 FLOOD ZONE INFORMATION:
 7. BASED UPON THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM) NUMBER 15005C1012L, EFFECTIVE DATE MAY022018, THE PROPERTY IS LOCATED IN AN AREA DESIGNATED AS FLOOD ZONE AE 6.

Pennonni
 PENNONI ASSOCIATES INC.
 18072 Davidson Drive
 Millon, 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

BROAD CREEK BULKHEAD REPLACEMENT PROJECT

TAX MAP ID: 332-1.07-153 00
 TOWN OF LAUREL
EXISTING CONDITION PLAN
 LAUREL REDEVELOPMENT CORP
 PO BOX 333
 LAUREL, DE, 19958

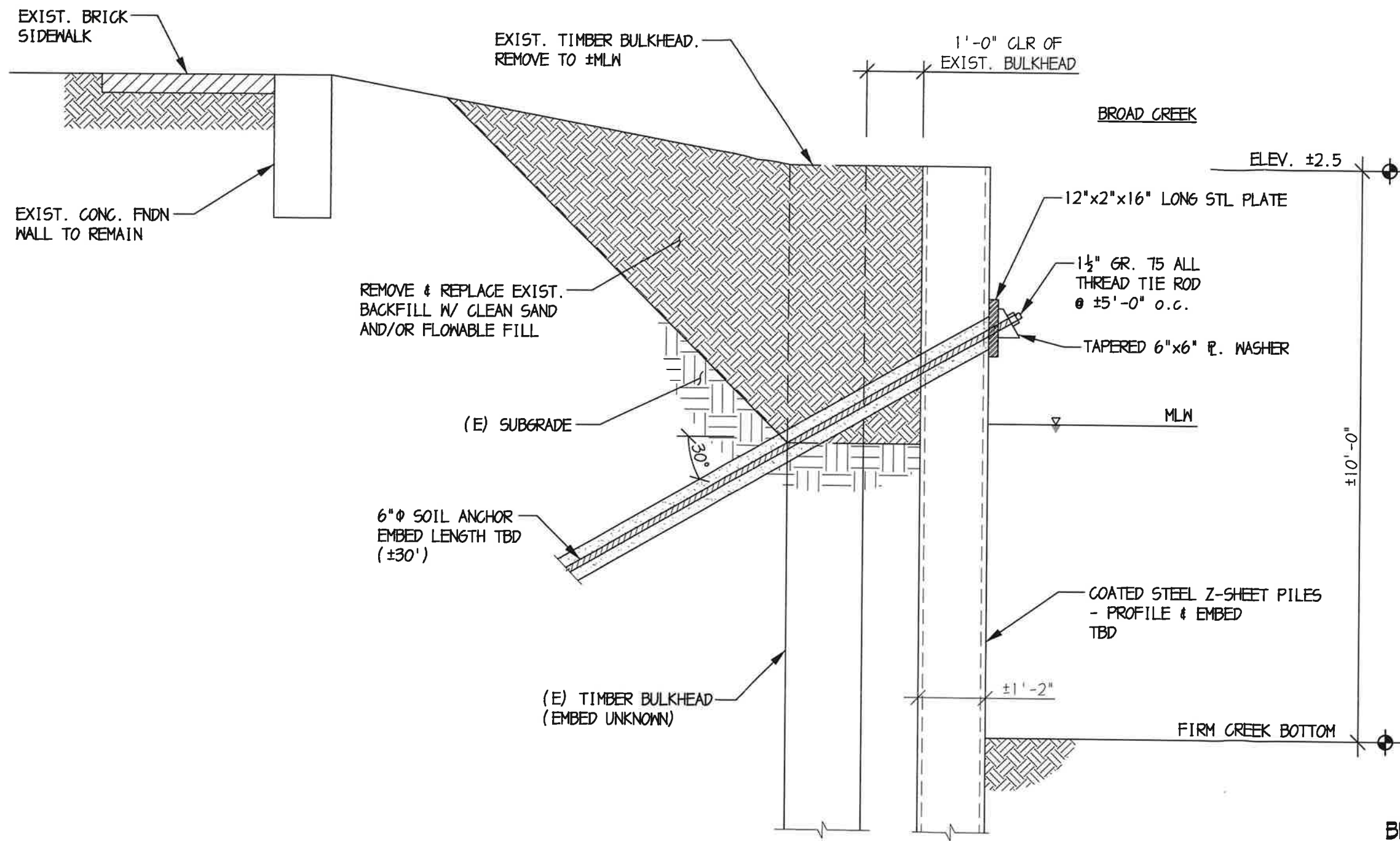
NO.	DATE	NO.	BY

ALL DOCUMENTS PREPARED BY PENNONI ASSOCIATES ARE INSTRUMENTS OF SERVICE IN RESPECT OF THE PROJECT. THEY ARE NOT PRESENTED OR REPRESENTED TO BE PLANS FOR REUSE BY OTHERS OR OTHERS ON THE EXTENSION OF THE PROJECT OR ON ANY OTHER PROJECT. ANY REUSE WITHOUT WRITTEN PERMISSION OR ADAPTATION BY PENNONI ASSOCIATES FOR THE SPECIFIC PURPOSES INTENDED WILL BE AT OWNERS RISK AND WITHOUT LIABILITY ON LEGAL EXPENSE TO PENNONI ASSOCIATES. AND OWNER SHALL NOTIFY AND HOLD HARMLESS PENNONI ASSOCIATES FROM ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES ARISING OUT OF OR RESULTING THEREFROM.

PROJECT: LRDEV22001
 DATE: 2023-8-9
 DRAWING SCALE: 1"=20'
 DRAWN BY: VPL
 APPROVED BY: AMD

CS0201
 SHEET 1 OF 1

PROJECT STATUS: PLOTTED BY: Pennoni Associates Inc. DATE: 8/9/2023 11:04 AM BY: [Name]



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SK1

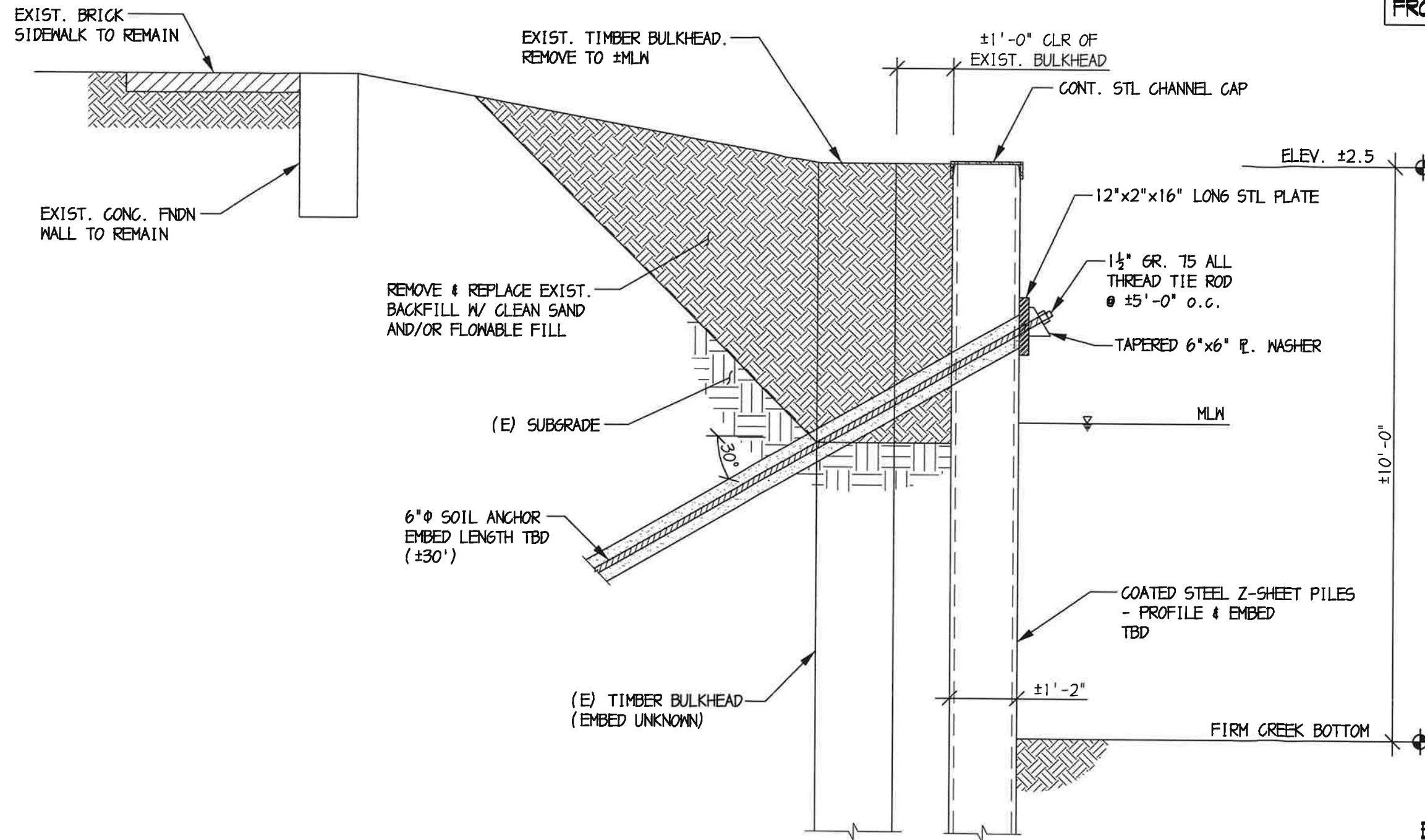
SECTION
1/2" = 1'-0"

**BROADCREEK BULKHEAD
REPLACEMENT
LAUREL, DELAWARE**

BAKER, INGRAM, & ASSOCIATES
STRUCTURAL ENGINEERS
1050 South State Street, Dover, DE 19901
Lancaster, Pennsylvania Project Number D14589
Dover, Delaware 302.734.7400 Ph
Newark, Delaware 302.734.7592 Fax
Haddon Heights, New Jersey mail@bakeringram.com
Annapolis, Maryland

DESIGNED BY: API	DATE: 05-05-23
DRAWN BY: AJC	SCALE: AS NOTED
CHECKED BY: API	W.O.: D14589
DRAWING NO.: SK1	SHEET: 1 OF 1

**OPTION I
STEEL BULKHEAD ±1' IN
FRONT OF EXIST. BULKHEAD**



1
SK1

SECTION

1/2" = 1'-0"

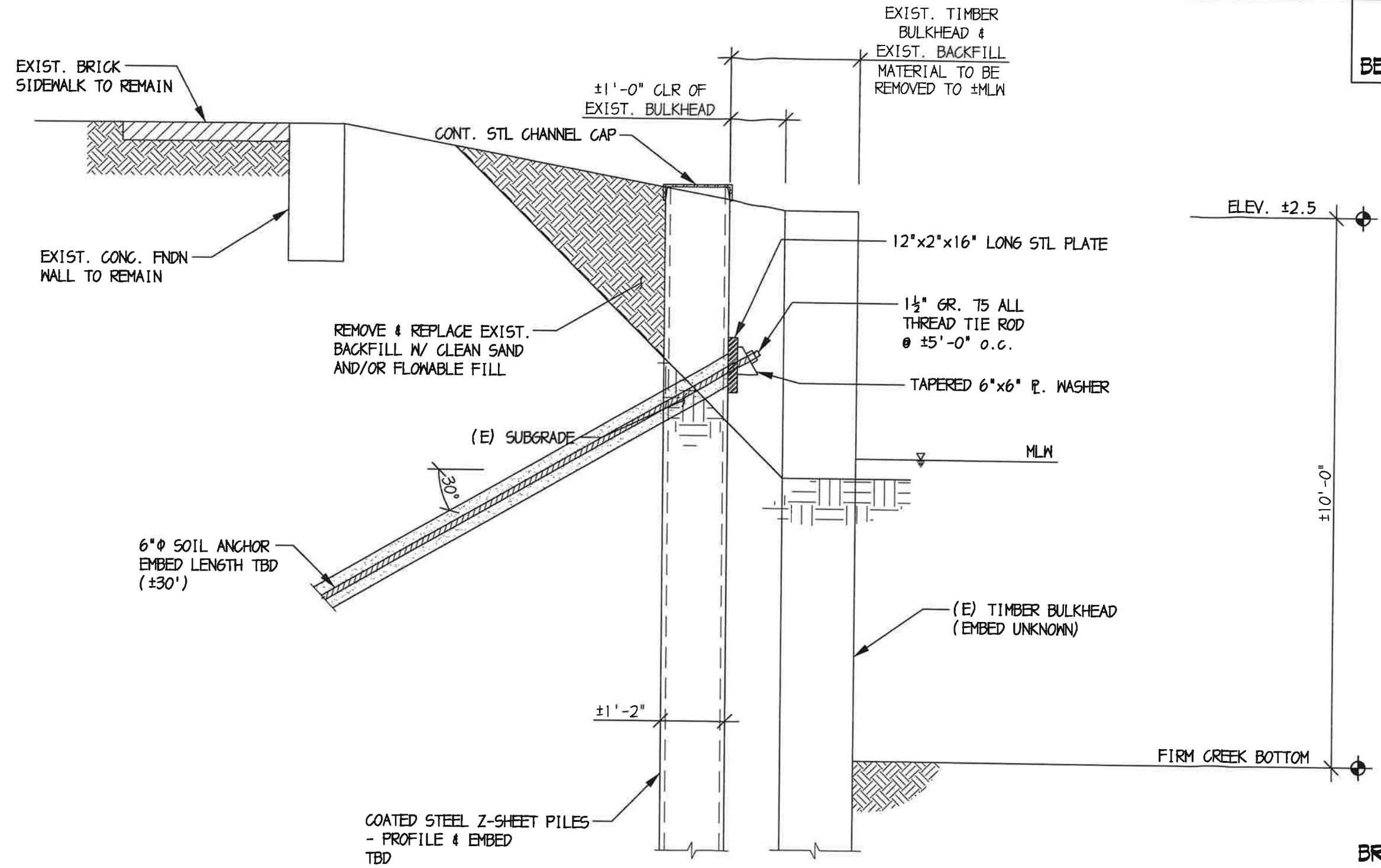
**OPTION I
BROADCREEK BULKHEAD
REPLACEMENT
LAUREL, DELAWARE**

**BAKER, INGRAM, & ASSOCIATES
STRUCTURAL ENGINEERS**
1050 South State Street, Dover, DE 19901
Lancaster, Pennsylvania Project Number D14589
Dover, Delaware
Newark, Delaware 302.734.7400 fh
Haddon Heights, New Jersey 302.734.7592 Fax
Annapolis, Maryland mail@bakeringram.com

**CONCEPT SKETCH -
NOT FOR CONSTRUCTION**

DESIGNED BY: API	DATE: 06-23-23
DRAWN BY: AJC	SCALE: AS NOTED
CHECKED BY: API	W.O.: D14589
DRAWING NO.: SK1	SHEET: 1 OF 3

**OPTION II
STEEL BULKHEAD ±1'
BEHIND EXIST. BULKHEAD**



SECTION
1 / SK2
1/2" = 1'-0"

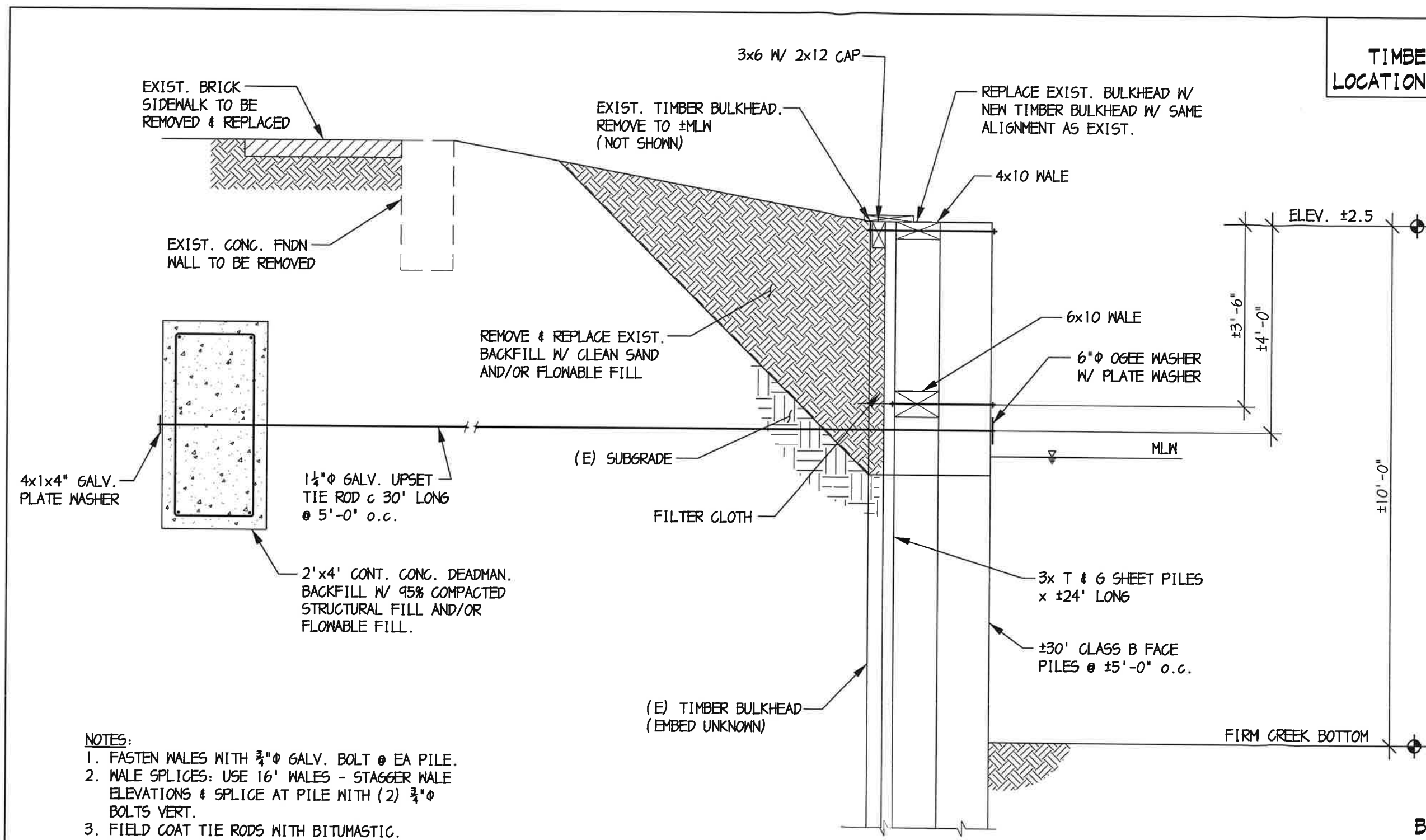
**OPTION II
BROADCREEK BULKHEAD
REPLACEMENT
LAUREL, DELAWARE**

**BAKER, INGRAM, & ASSOCIATES
STRUCTURAL ENGINEERS**
1050 South State Street, Dover, DE 19901
Lancaster, Pennsylvania Project Number D14589
Dover, Delaware 302.734.7400 Ph
Newark, Delaware 302.734.7592 Fax
Haddon Heights, New Jersey mail@bakeringram.com
Annapolis, Maryland

DESIGNED BY: API	DATE: 06-23-23
DRAWN BY: AJC	SCALE: AS NOTED
CHECKED BY: API	W.O.: D14589
DRAWING NO.: SK2	SHEET: 2 OF 3

**CONCEPT SKETCH -
NOT FOR CONSTRUCTION**

**OPTION III
TIMBER BULKHEAD IN SAME
LOCATION AS EXISTING BULKHEAD**




BROAD CREEK

FIRM CREEK BOTTOM

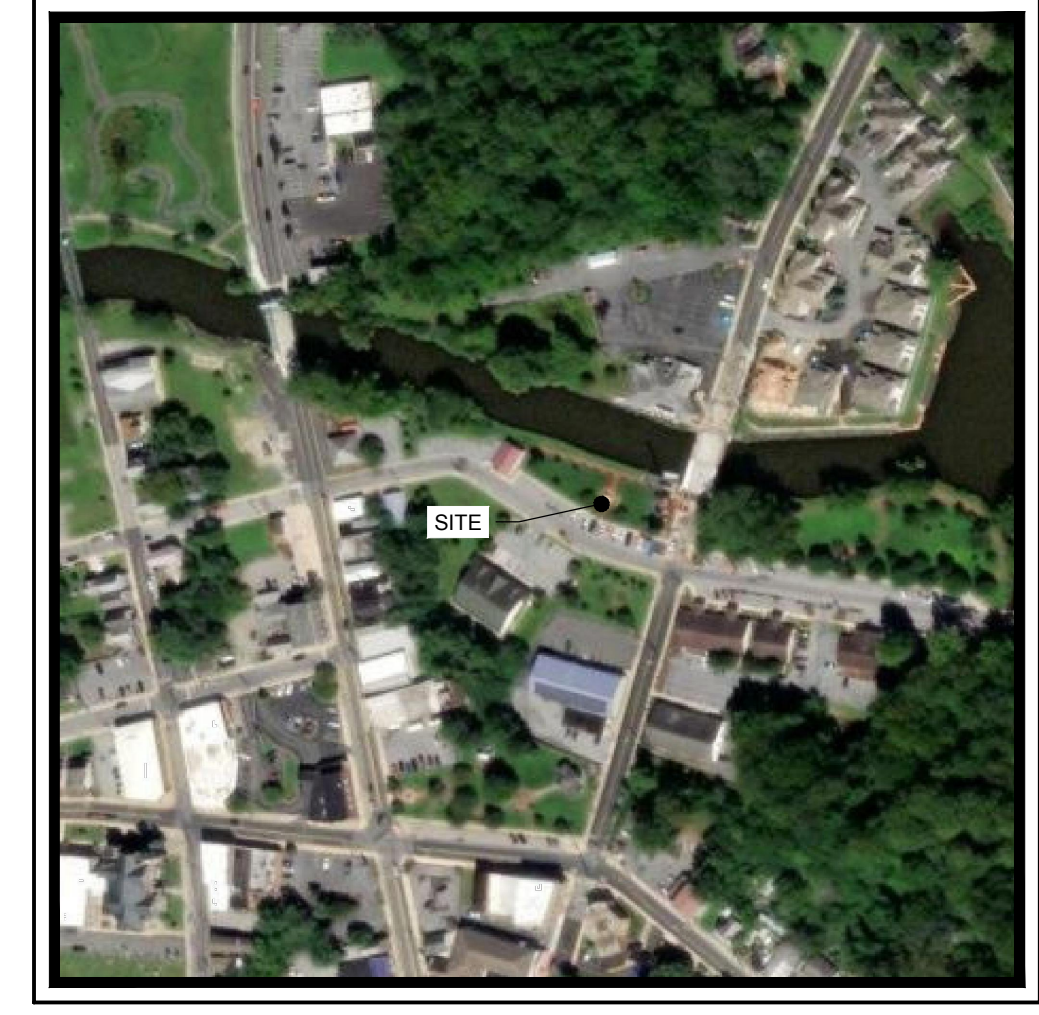
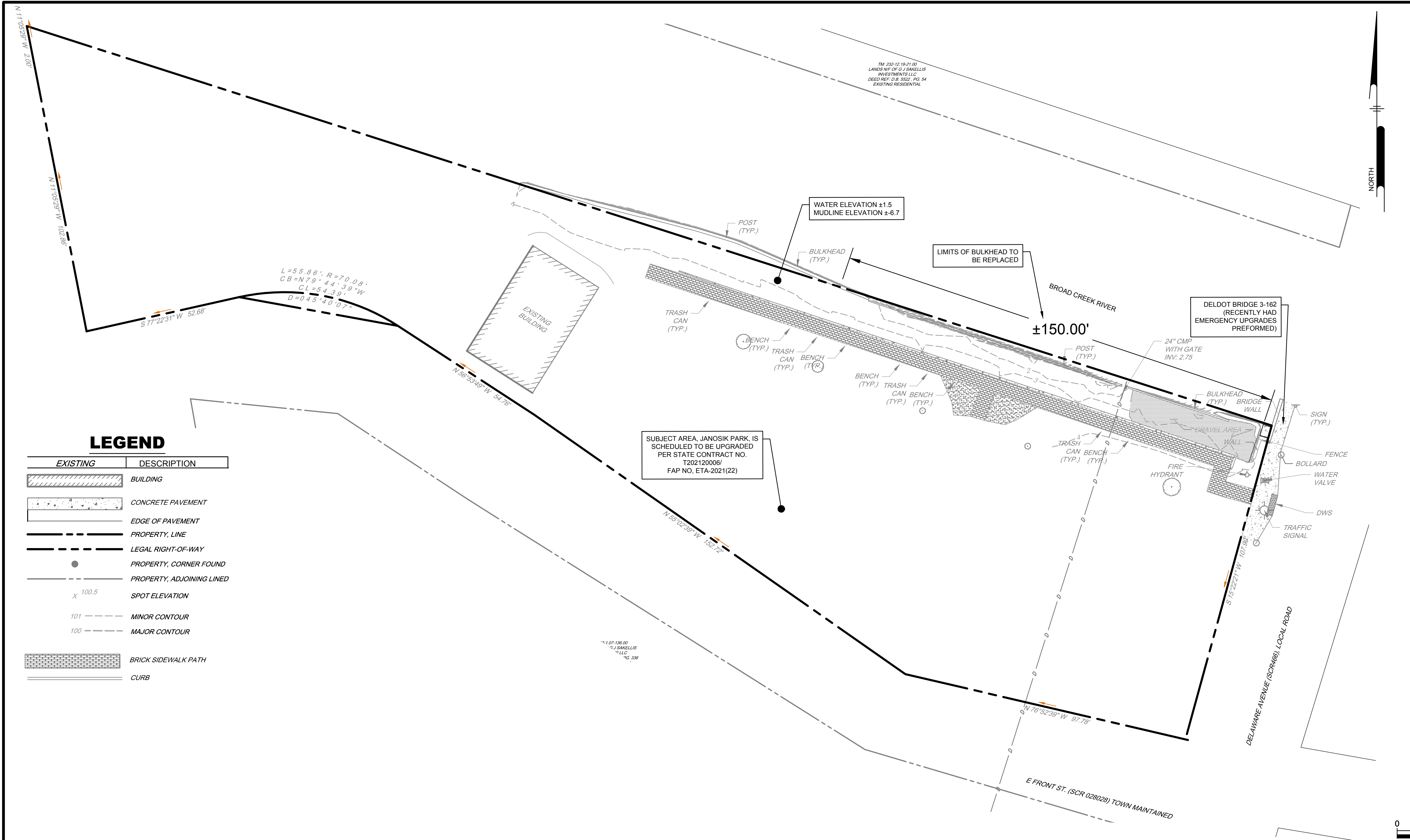
- NOTES:**
1. FASTEN WALES WITH 3/4" Ø GALV. BOLT @ EA PILE.
 2. WALE SPLICES: USE 16' WALES - STAGGER WALE ELEVATIONS & SPLICE AT PILE WITH (2) 3/4" Ø BOLTS VERT.
 3. FIELD COAT TIE RODS WITH BITUMASTIC.
 4. TREAT END GRAIN OF WALES WITH EPOXY.

SECTION
1 / SK3
1/2" = 1'-0"

**OPTION III
BROADCREEK BULKHEAD
REPLACEMENT
LAUREL, DELAWARE**

 BAKER, INGRAM, & ASSOCIATES STRUCTURAL ENGINEERS <small>1050 South State Street, Dover, DE 19901 Lancaster, Pennsylvania Dover, Delaware Newark, Delaware Haddon Heights, New Jersey Annapolis, Maryland</small>	
<small>Project Number D14589 302.734.7400 Ph 302.734.7592 Fax mail@bakeringram.com</small>	
DESIGNED BY: API	DATE: 06-23-23
DRAWN BY: AJC	SCALE: AS NOTED
CHECKED BY: API	W.O.: D14589
DRAWING NO.: SK3	SHEET: 3 OF 3

**CONCEPT SKETCH -
NOT FOR CONSTRUCTION**



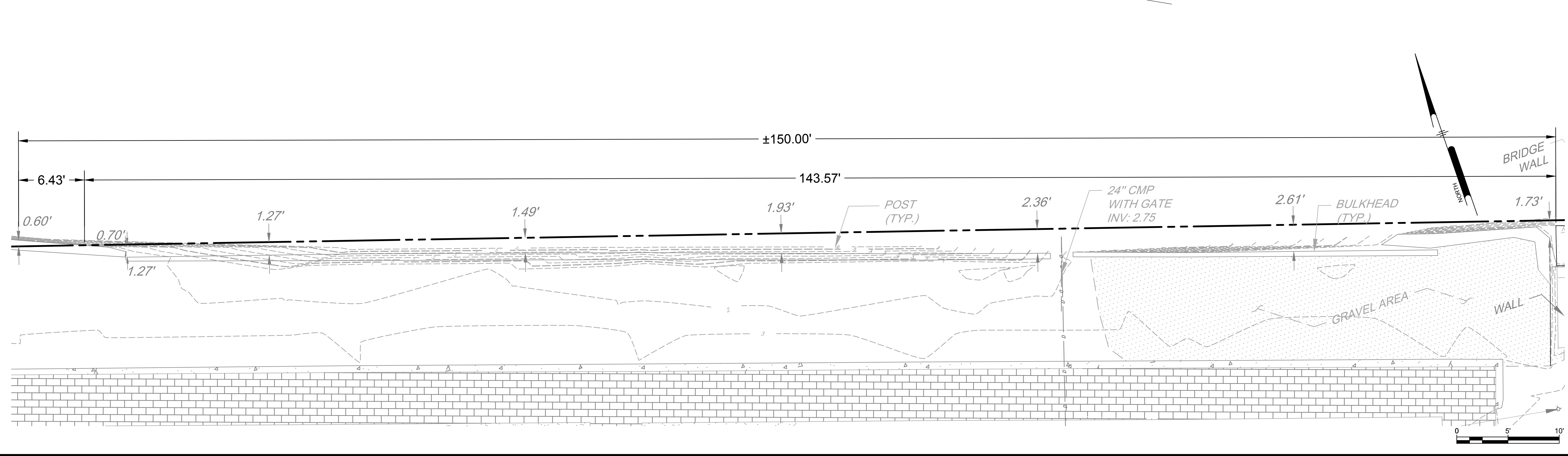
VICINITY MAP
Scale: 1" = 400'

EXISTING CONDITION NOTES:

- ELEVATIONS ARE BASED ON NAVD 88, AND DE STATE PLANE COORDINATE SYSTEM NAD 83 HORIZONTAL DATUM.
 - DEED REFERENCE: DEED BOOK 4113, PG. 202.
 - DEED REFERENCE: DEED BOOK 5445, PG. 119.
 - UNLESS SPECIFICALLY STATED OR SHOWN HEREON TO THE CONTRARY, THIS SURVEY IS MADE SUBJECT TO AND DOES NOT LOCATE OR DELINEATE ANY RIGHTS OR INTEREST OF THE UNITED STATES OF AMERICA OR STATE OF DELAWARE OVER LANDS NOW OR FORMERLY FLOWED BY TIDEWATER, BUT NO LONGER VISIBLE OR PHYSICALLY EVIDENT, OR LANDS CONTAINING ANY ANIMAL, MARINE OR BOTANICAL SPECIES REGULATED BY OR UNDER THE JURISDICTION OR ANY FEDERAL, STATE, OR LOCAL AGENCY.
 - BUILDING SETBACK LINES, ZONING REGULATIONS OR LINES ESTABLISHED BY ANY FEDERAL, STATE OR LOCAL AGENCY WHICH MAY AFFECT THE BUILDING OR DEVELOPMENT POTENTIAL OF THE SUBJECT PROPERTY.
 - ANY SUBSURFACE OR SUBTERRANEAN CONDITION, EASEMENTS OR RIGHTS, INCLUDING, BUT NOT LIMITED TO MINERAL OR MINING RIGHTS, OR THE LOCATION OF OR RIGHTS TO ANY SUBSURFACE STRUCTURES, CONTAINERS OR FACILITIES OR ANY OTHER NATURAL OR MAN-MADE SUBSURFACE CONDITION WHICH MAY OR MAY NOT AFFECT THE USE OR DEVELOPMENT POTENTIAL OF THE SUBJECT PROPERTY.
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 - IF CONFLICTS ARE FOUND THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER AND DESIGN ENGINEER FOR INSTRUCTION BEFORE PROCEEDING WITH WORK.
 - THIS SITE IS ZONED R-2.
 - EXISTING STORMWATER RUNOFF IS CONVEYED THROUGH THE SITE VIA OVERLAND FLOW TO LEWES REHOBOTH CANAL.
- REFERENCE:
 6. TOPOGRAPHICAL SURVEY PERFORMED BY PENNONI ASSOCIATES INC. APRIL 2021.
- FLOOD ZONE INFORMATION:
 7. BASED UPON THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM) NUMBER 10050C0191K, EFFECTIVE DATE MARCH 16, 2015. THE PROPERTY IS LOCATED IN AN AREAS DESIGNATED AS FLOOD ZONE "X" (UNSHADED), AND FLOOD ZONE AE 8.

LEGEND

EXISTING	DESCRIPTION
[Hatched Box]	BUILDING
[Dotted Box]	CONCRETE PAVEMENT
[Dashed Line]	EDGE OF PAVEMENT
[Solid Line]	PROPERTY LINE
[Dashed Line]	LEGAL RIGHT-OF-WAY
[Circle]	PROPERTY CORNER FOUND
[Dashed Line]	PROPERTY ADJOINING LINED
[Symbol]	SPOT ELEVATION
[Symbol]	MINOR CONTOUR
[Symbol]	MAJOR CONTOUR
[Hatched Box]	BRICK SIDEWALK PATH
[Line]	CURB



Pennonni

PENNONI ASSOCIATES INC.
 18072 Davidson Drive
 Milton, DE 19968
 T 302.684.9030 F 302.684.8054

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR AND OWNER MUST BE NOTIFIED OF ANY DISCREPANCIES BEFORE PROCEEDING WITH WORK

BROAD CREEK BULKHEAD REPLACEMENT PROJECT
 TAX MAP ID: 332-1-07-153.00
 TOWN OF LAUREL

EXISTING CONDITION PLAN
 LAUREL REDEVELOPMENT CORP
 PO BOX 333
 LAUREL, DE, 19956

NO.	DATE	REVISIONS	BY

ALL DOCUMENTS PREPARED BY PENNONI ASSOCIATES ARE INSTRUMENTS OF SERVICE IN RESPECT OF THE PROJECT. THEY ARE NOT INTENDED OR REPRESENTED TO BE SUITABLE FOR REUSE BY OWNER OR OTHERS ON THE EXTENSIONS OF THE PROJECT OR ON ANY OTHER PROJECT. ANY REUSE WITHOUT WRITTEN VERIFICATION OR ADAPTATION BY PENNONI ASSOCIATES FOR THE SPECIFIC PURPOSE INTENDED WILL BE AT OWNERS SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO PENNONI ASSOCIATES AND OWNER SHALL INDemnIFY AND HOLD HARMLESS PENNONI ASSOCIATES FROM ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES ARISING OUT OF OR RESULTING THEREFROM.

PROJECT: LRDEV22001
 DATE: 2023-11-3
 DRAWING SCALE: AS SHOWN
 DRAWN BY: VPL
 APPROVED BY: AMD

CS0201

SHEET 1 OF 1

U:\Admin\LRDEV\LRDEV22001 - Laurel Bulkhead Replacement_SKEETS\CS0201.dwg
 PLOT STYLE: Pennonni_Vis.dwt
 PROJECT STATUS: