



February 3, 2026

Mr. Matt Jones
Department of Natural Resource and Environmental Control
Division of Water
89 Kings Highway
Dover, DE 19901

**SUBJECT: Town of Bowers – North Bayshore Drive Drainage Improvements
 DNREC Wetlands and Subaqueous Lands Permit**

Dear Mr. Jones:

On behalf of our client, the Town of Bowers, Century Engineering, Inc. (Century) is resubmitting an updated permit application for the North Bayshore Drive Drainage Improvements project (project) located in Bowers, Kent County, Delaware.

This application package provides updated information in response to comments received from DNREC WSLs on August 19, 2025. Notably, we have: updated the adjacent landowner list, provided documentation for easements on private property where impacts are proposed, updated the application appendices and impacts to account for changes in State jurisdiction, and made edits on the project plans.

The project involves the installation of a storm drain network consisting of a combination of open and closed conveyances to intercept runoff from North Bayshore Drive and convey it to a pump station on the east side of North Flack Avenue, which will then pump the intercepted stormwater to the marsh area on the west side of the roadway. The Town of Bowers received authorization under an USACE Nationwide Permit 14 (NAP-2023-01185-TREC) for impacts resulting from proposed project activities (Attached). Water Quality Certification and Delaware Coastal Zone Federal Consistency is issued for NWP 14.

The proposed drainage network will consist of 12-inch diameter RCP pipes placed in both subaqueous lands and wetlands. The total length of pipes is approximately 1,030.75 feet. Grading/sloping with a 2:1/3:1 side slope is proposed between the pipes within subaqueous lands and wetlands. All material will be incorporated into the side slopes, and these areas will be restored to their existing conditions, making this impact temporary. Permanent impacts to subaqueous lands caused by driveway removal, gravel placement, and grass access over pipes are all within the Town of Bowers right of way.

Based on the Century wetland delineation and State Tidal Wetlands Maps, the proposed improvements will result in the DNREC WSLs impacts listed in the table below. The impacts listed in the table below have been grouped by construction activity. A more detailed list of impacts can be found in the design plan set within the environmental compliance section of the plan sheets (see Attachments). Permanent impacts to wetlands total 574.77 sq ft, permanent impacts to subaqueous lands total 686.14 sq ft, temporary impacts to wetlands total 13,949.92 sq ft, and temporary impacts to subaqueous lands total 411.46 sq ft.

IMPACT ID (PROJECT PLANS)	IMPACT ID (ENVIRONMENTAL COMPLIANCE PLAN)	STATE JURISDICTION	IMPACT TYPE	ACTIVITY	IMPACT AREA (SQ FT)	LOSS AREA (SQ FT)
P113, P112, P111, P107, P106, P105, P103, P102, P101, P100, P110, P104, P117, P115, P114	4, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 43, 51	SUBAQUEOUS LANDS	PERMANENT	STRUCTURES - PIPES - 1' DIAMETER	536.0	-
P110, P109, P108, P104, P117, P116, P115	3, 6, 8, 10, 44, 46, 48, 52	WETLANDS	PERMANENT	STRUCTURES - PIPES - 1' DIAMETER	494.75	494.75
P115/P114, P114/P113, P113/P112, P112/P111, P111/P107, P107/P106, P106/P105, P105/P104/P103, P103/P102, P102/P101, P101/P100, P100	12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34	SUBAQUEOUS LANDS	TEMPORARY	GRADING/SLOPING BETWEEN PIPES, 1' WIDTH WITH 2:1/3:1 SIDE SLOPE; ALL MATERIAL INCORPORATED INTO SIDE SLOPES (SEE SHEET C103)	411.46	-
P110/P109, P109/P108, P108, P104	45, 47, 49, 53	WETLANDS	TEMPORARY	GRADING/SLOPING BETWEEN PIPES, 1' WIDTH WITH 2:1/3:1 SIDE SLOPE; ALL MATERIAL INCORPORATED INTO SIDE SLOPES (SEE SHEET C103)	143.41	-
P113/P112, P112/P111, P111/P110	36, 38, 40	SUBAQUEOUS LANDS	PERMANENT	AREA OF EXISTING DRIVEWAY REMOVAL	57.16	-
P112, P111	37, 39	SUBAQUEOUS LANDS	PERMANENT	AREA OF GRAVEL PLACED ON PIPE (SEE SHEET C103)	48.68	-
P113, P107, P101	35, 41, 42	SUBAQUEOUS LANDS	PERMANENT	AREA OF GRASS ACCESSWAY ON PIPE (SEE SHEET C103)	44.30	-
EW1, EW2	1, 55	WETLANDS	PERMANENT	STRUCTURES - ENDWALL OUTFALLS	7.77	7.77
MH101, MH100	7, 9	WETLANDS	PERMANENT	STRUCTURES - MANHOLES	40.25	40.25
EW1, P115/MH100/P116/MH101/P117, P110/P109/P108, P104, EW2	2, 5, 50, 54, 56	WETLANDS	TEMPORARY	MATTING - PIPE INSTALLATION ACCESS AREA	13949.91	-
EW1, EW2	57, 58	WETLANDS	PERMANENT	RIPRAP AT OUTFALLS	32.00	32.00

The project was coordinated with the Office of Nature Preserves who raised no concerns. Federal and State Rare, Threatened, or Endangered Species were indicated to occur within the project limits. Several species of marsh nesting birds including clapper rail (*Rallus longirostris*), state-rare Coastal Plain swamp sparrow (*Melospiza georgiana nigrescens*), state-rare least bittern (*Ixobrychus exilis*), and marsh wren (*Cistothorus palustris*) occur in the high marsh habitat at this project site. Therefore, a time of year restriction of April 1st to July 31st will be enacted to avoid affecting these species during their breeding season and minimize disturbance to marsh habitat during construction. Federally protected red knot (*Calidris canutus*), may roost in marsh habitat behind the Delaware Bay shore beaches. Therefore, work will be avoided between April 15th and June 7th to mitigate disturbance to migratory shorebirds during their brief migration stopover in the Delaware Bay. There is no substantial tree clearing anticipated with this project. There are no historical or archeological concerns for this project.

The wetland on this property is mapped as Key Wildlife Habitat (KWH) in the Delaware Wildlife Action Plan (DEWAP) because it is part of a large wetland complex that can support an array of plant and animal species across the landscape. Impacts to KWH will be minimized to the greatest extent possible.

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

Sincerely,



Missy Kalb, CE
Senior Environmental Scientist

Attachments:

- WSLs Application w/ Signature Page
- Appendix F (Intake or Outfall Structures), Appendix M (Activities in State Wetlands), and Appendix P (Stormwater Management)
- Design plan sheets
- Vicinity, USGS, and aerial maps
- Impacts Map
- RTE Correspondence
- Historical/Archaeological Correspondence
- Photolog
- Copy of USACE Permit
- Easements

cc: Ada Puzzo, Town of Bowers
Alan Marteney, Century Engineering, LLC

Section 1: Applicant Identification

- | | |
|--|--|
| 1. Applicant's Name: <u>Ada Carter Puzzo</u>
Mailing Address: <u>3357 Main Street</u>
<u>Frederica, DE 19946</u> | Telephone #: <u>302-382-2501</u>
Fax #: _____
E-mail: <u>adaleecarter@comcast.net</u> |
| 2. Consultant's Name: <u>Missy Kalb</u>
Mailing Address: <u>550 S Bay Road</u>
<u>Dover, DE 19901</u> | Company Name: <u>Century Engineering</u>
Telephone #: <u>302-450-3419</u>
Fax #: _____
E-mail: <u>mkalb@kleinfelder.com</u> |
| 3. Contractor's Name: <u>TBD</u>
Mailing Address: _____

_____ | Company Name: _____
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):

To repair drainage network along North Bayshore Drive by replacing pipes under driveways, regrading the drainage ditch to provide positive flow to pumping station.

6. Check each Appendix that is enclosed with this application:

<input type="checkbox"/> A. Boat Docking Facilities	<input type="checkbox"/> G. Bulkheads	<input type="checkbox"/> N. Preliminary Marina Checklist
<input type="checkbox"/> B. Boat Ramps	<input type="checkbox"/> H. Fill	<input type="checkbox"/> O. Marinas
<input type="checkbox"/> C. Road Crossings	<input checked="" 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 checked="" type="checkbox"/> F. Intake or Outfall Structures	<input checked="" type="checkbox"/> M. Activities in State Wetlands	<input type="checkbox"/> S. New Dredging

Section 3: Project Location

7. Project Site Address: North Bayshore Drive
and Flack Avenue
39.063172, -75.399009
- County: N.C. Kent Sussex
 Site owner name (if different from applicant): _____
 Address of site owner: _____

8. Driving Directions: From Dover: Take US1 South, take exit 88 toward Bowers Beach/Magnolia, turn left onto Old Beach Rd., turn left onto Bowers Beach Rd/Rt. 18, continue onto Main St/Rt 18. Turn left onto N Bayshore Drive
 (Attach a vicinity map identifying road names and the project location)

9. Tax Parcel ID Number: see attached plans 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: unnamed marsh waterbody is a tributary to: St. Jones River

11. Is the waterbody: Tidal Non-tidal Waterbody width at mean low or ordinary high water the subaqueous lands are approx 12 inches wide drainage to marsh and then St. Jones River

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

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):

see attached

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):

see attached

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

Mike Yost, USACE

Matt Jones, DNREC

Julie Molina, 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): _____

*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: 1/29/2025

Type of Permit: NWP 14 Federal Permit or ID #: NAP-2023-01185-TREC

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

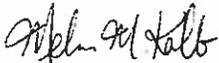
I wish to authorize an agent as indicated below

I, Ada Carter Puzzo, hereby designate and authorize Missy Kalb
 (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: Missy Kalb Telephone #: 302-450-3419
 Mailing Address: 550 S Bay Road Fax #: _____
Dover, DE 19901 E-mail: mkalb@kleinfelder.com

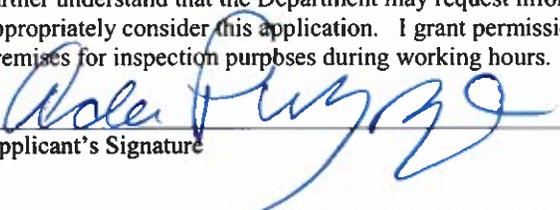
20. Agent's Signature:

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 2/2/2026

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.

Applicant's Signature  Date 2/2/26

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 _____

INTAKE OR OUTFALL STRUCTURES

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

1. How many feet will the intake or outfall structure(s) be placed channelward of the:

Tidal waters: mean high water line? _____ ft.
mean low water line? _____ ft.

Non-tidal waters: ordinary high water line? N/A ft.

There is minimal tidal difference at this location, the outfall structures will be the following distance from the state mapped wetland line/MHW/MLW:

EW1 = starting 3.75 ft from the line to 12.9 ft into the marsh, then 4 feet of riprap.

EW2 = starting 1.58 ft from the line to 10.83 ft into the marsh, then 4 feet of riprap.

2. What type of material(s) will be used to construct the intake or outfall structure(s)?

3. What is the appropriate median stream flow rate at the:

intake site N/A cfs outfall site N/A cfs unknown _____

Pre-cast concrete
(endwall detail on page C109 of plan set)

4. What will be the daily rate of withdrawal at the intake site? N/A gpd

5. What will be the intake velocity? N/A fps

6. What will be the mesh size of the screen used on the intake structure?

_____ inches N/A other (explain) **Open impeller trash pump, solids up to 2" permissible**

7. What will be the daily rate of return at the outfall site? up to gpd
260,000

8. Have you applied for the National Pollutant Discharge Elimination System (NPDES) permit for this project?
_____ Yes X No If your answer is "No", contact the Surface Water Discharges Section, DNREC.

Less than 1-AC of disturbance

9. Will a splash apron be employed at the outfall site? _____ Yes X No

If your answer is "Yes" complete Appendix I.

If your answer is "No", explain your proposed method of preventing erosion.

Precast concrete splash pad

10. How far will any associated structures for support or erosion control (e.g. wing walls, pile, bents, splash aprons, etc.) extend channelward of the: **N/A - no associated structures - endwall detail on page C108 of plan set**

Tidal waters: mean high water line? _____ ft. mean low water line? _____ ft.

Non-tidal waters: ordinary high water line? _____ ft.

11. How many square feet of any associated structures for support or erosion control will be located:

Channelward of mean high water? N/A sq. ft. In vegetated wetlands? N/A sq. ft.

12. Is there any dredging or fill associated with this project? X Yes _____ No

If yes, please complete the appropriate appendix.

ACTIVITIES IN STATE WETLANDS

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

1. Project description and explanation of need.

The project involves the installation of a storm drain network consisting of a combination of open and closed conveyances to intercept runoff from North Bayshore Drive and convey it to a pump station on the east side of North Flack Avenue, which will then pump the intercepted stormwater to the marsh area on the west side of the roadway. Since this area is under tidal influence, back flow preventers will be installed at the end of the outlet pipe to prevent water in the marsh area from reversing its direction and flowing back into the area of North Bayshore Drive. The purpose of the project is to alleviate flooding and drainage issues along properties on N. Bayshore Avenue.

2. What is area of impact for each activity in state wetlands?

494.75 linear feet of 12" diameter pipe placed in wetlands

Wetlands Walkways/Other Structures:

Length N/A ft. Width N/A ft.

Piles N/A Height N/A ft. over marsh

3. What is volume of fill or excavated material involved in this project?

Fill 0 cubic yards

Excavation _____ cubic yards ← 3.03 cubic yards of temporary impacts

4. Map number of state wetland map where project is located: DNR # 183**ENVIRONMENTAL SUMMARY - PLEASE SUBMIT AN EVALUATION OF IMPACT OF THE PROPOSED ACTIVITY (ATTACH ADDITIONAL SHEETS AS NEEDED):**

5. State reasons that structures cannot feasibly be located on lands other than wetlands.

State mapped wetlands surround the project. The previous access was developed into residential parcels. The only remaining land is within mapped marsh. Additionally, outfalls must discharge across the road, away from residences, into marsh.

6. Detail temporary and permanent changes which would be caused by the proposed project and the impact of these changes on the project area and adjacent areas.

Currently, storm water collects around homes and infrastructure which is hazardous to people and property. Project will provide effective drainage in a more improved network

7. Describe alternatives to the proposed action which would reduce or avoid environmental damage.

Alternatives include new ditching through private parcels which increases burden on landowners and through easement acquisition or by discharging onto private residential parcels which will not solve drainage issues. Water must find its way downstream which infrastructure (roads) currently prevents.

8. Describe all measures to be taken during and after the completion of the proposed project to reduce detrimental effects.

The project will be as-built surveyed to ensure the drainage infrastructure has been installed correctly. The pump system will be maintained and inspected by the town to ensure discharge does not cause erosion within the marsh.

9. Describe all permanent environmental impacts which cannot be avoided.

The locations of stabilized outfalls must be placed in the marsh to the south of N. Flack Ave so that water drains downstream to the St. Jones River. 1 ft and 1.25 ft-diameter pipes and manholes must be placed in the marsh to allow for drainage in the proposed drainage system.

10. Submit detailed evaluation of impact of the proposed project on the following:

a. Value of tidal ebb and flow

- i. Production Value: carrying organic matter to adjacent estuaries and coastal waters which serve as breeding areas for certain animal species (especially fish and shellfish).
- ii. Value as a natural protective system of absorption of storm wave energy, flood waters, and heavy rainfall, thereby decreasing flood and erosion damage.
- iii. The prevention of silting in certain harbors and inlets thereby reducing dredging.
- iv. Removal and recycling of inorganic nutrients.
- v. Effect on the estuarine waters.

i. Where the majority of impacts are occurring, the mapped marsh is generally cut off from ebb and flow by N. Flack Ave. Thus, production value is low.

ii. The adjacent dune system along Bowers will not be impacted. Attenuation of energy, waves, flood is low within the largest impact area.

iii. N/A

iv. The condition of the largest impacted wetland showed sparse vegetation caused by prolonged inundation or excessive salt soils from evapotranspiration. Removal/recycling of nutrients is low.

v. Since the major impacted marsh area is effectively isolated, effect on estuarine waters is low.

b. Habitat Value

- i. Habitat for resident species of wildlife including furbearers, invertebrates, finfish.
- ii. Habitat for migratory wildlife species including waterfowl, wading birds, shorebirds, shorebirds, passerines, finfish, shrimp.
- iii. Rearing area, nesting area, breeding grounds for various species.
- iv. Habitat for rare or endangered plants.
- v. Presence of plants or animals known to be rare generally, or unique to the particular location.
- vi. Presence of plants or animals near the limits of their territorial range.
- vii. Presence of unique geological or wetland features.

DNREC-SCRIP and USFWS indicates that red knot utilize beach, which the project does not impact. Eastern rail utilize high marsh, but is unlikely to use the project area. Other than common estuarine species, no other rare plants or animals are indicated. Given the development and fragmented habitat (by existing roads) habitat value is poor.

c. Aesthetic Effect - Consideration of the aesthetic effect may include:

- i. Presence of plants or animals of a high visual quality.
- ii. The presence of an associated water body.
- iii. Wetland type of topographic diversity.

The aesthetic effect is low given the existing development. The proposed outfall(s) are located just outside of existing telephone/power poles.

d. Impact of Supporting Facilities

The supporting facilities to be considered include any public or private construction, whether or not the construction occurs in the wetlands, which would be required for construction or operation of the proposed wetlands activity, such as roads, sewage disposal facilities, electric lines, water supply systems, and schools. Effects shall be separately determined for the lands neighboring such facilities. **Project is inclusive of all supporting features.**

e. Effect on Neighboring Land Uses

- i. The effects of the proposed wetland activity on neighboring land use are to be considered whether or not the neighboring lands are wetlands.
- ii. The environmental, aesthetic and economic effects of the proposed wetlands activity on land uses neighboring the lands on which supporting facilities will be located may be considered.

Project will not effect neighboring land use.

f. Federal, State, Regional, County and Municipal Comprehensive Plans.

Compliance of the proposed activities with the plans of the jurisdiction in which it is proposed to take place, and its impact on the plans of other affected jurisdictions.

Project has no effect on comprehensive plans.

g. Economic Impact

Economic Impact shall include a short and long-term evaluation of the following factors to the extent the effect is directly attributable to the proposed activity:

- i. Jobs created or lost and the net income effect of jobs.
- ii. Increases in revenues to or increases in expenditure by State, County and local governments (e.g., increased taxes from an increased tax base and increased expenditure for maintaining supporting facilities).
- iii. Increases or decreases in the value attributable to the wetland as a source of nutrients to finfish, crustacea and shellfish and as habitats of such species or other flora or fauna of significant actual or potential economic value.
- iv. Increases or decreases in the value of the land as a recreational area.
- v. Increases or decreases in the cost of flood control or expected flood damage which might be caused by the effect of the activity on the natural capacity of the wetland to reduce flood damage.
- vi. Increases or decreases the costs of maintaining navigable harbors and waterways which would result from altering the capacity of the wetlands to absorb silt.
- vii. The net economic effect, both public and private, or any contemplated supporting facilities.
- viii. The net economic effect, both public and private, of the proposed activity on neighboring land uses.

Economic benefit will come to individual landowners whose existing infrastructure will not be compromised by excessive standing water and therefore they will not need to invest in protective measures. Examples of measures that individual landowners have taken already include piping, berms, and bulkheads to protect their homes and driveways from soft soils caused by standing water. Additionally, the roadway infrastructure will be better protected. The project is likely to reduce "band-aid" maintenance operations from the town and reduce costs attributed to nuisance flooding. The impacts to wetlands will likely have no effect on species or fauna.

STORMWATER MANAGEMENT

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

1. Is the stormwater practice required by local or state requirements?
 Yes No
2. Describe the proposed stormwater management control practice. What is the design criterion?
The project aims to reduce nuisance flooding in roadside drainages
3. Is the control practice: on-site off-site
4. Describe its sequence of construction. What practices will be used for sediment control?
Sequence of construction can be seen in plans. Erosion and Sediment control plan shows appropriate practices
5. Will the risk of downstream flooding be increased due to the construction of the stormwater practice or as a result of any change in land use? (during 100 year storm) Yes No
6. What is the drainage area draining to the stormwater practice? 4.5 acres
7. What are the before and after peak discharges to and from the stormwater practice for the 2, 10, and 100 year storms? **Unchanged**

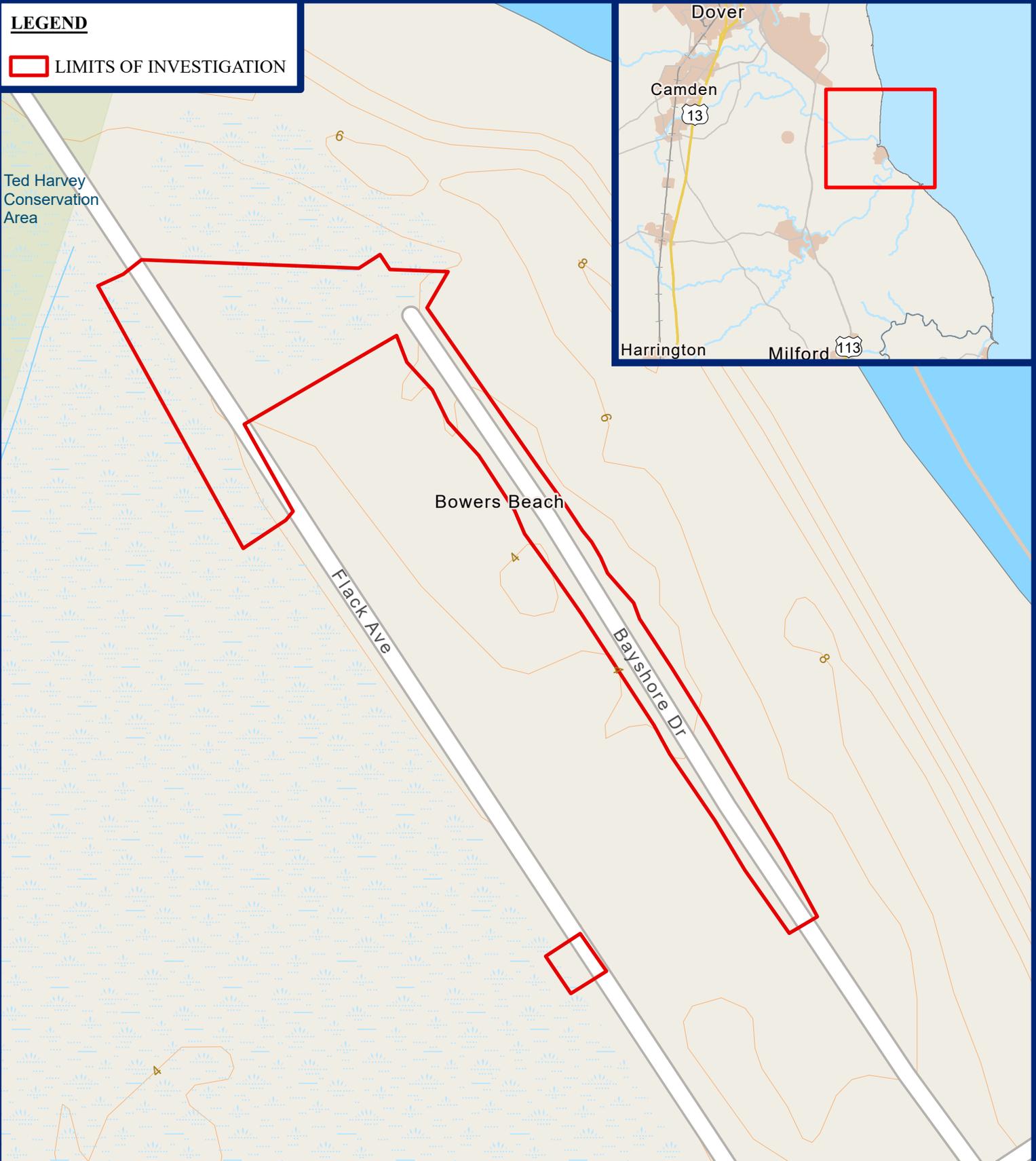
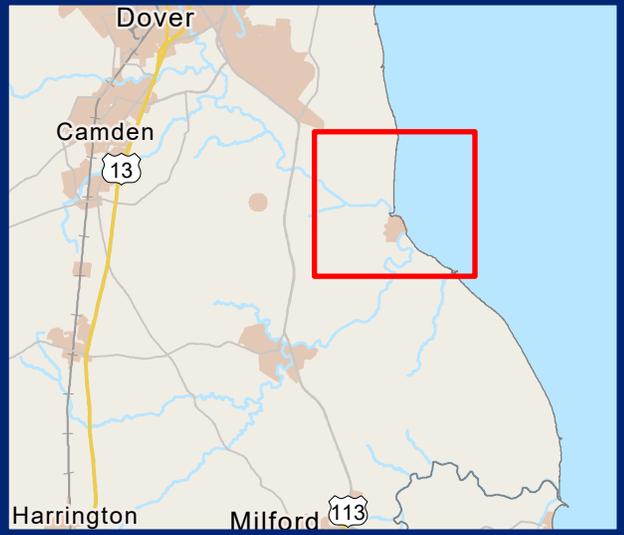
Discharges entering before	Discharge entering after	Discharge Leaving Pond
2 yr. _____ cfs	2 yr. _____ cfs	2 yr. _____ cfs
10 yr. _____ cfs	10 yr. _____ cfs	10 yr. _____ cfs
100 yr. _____ cfs	100 yr. _____ cfs	100 yr. _____ cfs

8. What water quality practices will be implemented to protect water quality in adjacent water bodies and minimize the off-site water quality impacts?
Ditch drainages will be regraded and seeded to provide stabilization, sediment capture before discharge, and provide positive flow
9. Is the stormwater pond (if used) designed for extended detention? If so, what detention time? N/A
 Is there a normal pool? Yes N/A No If so how deep? _____ ft.
 Will wetlands vegetation be incorporated in the pond design? Yes N/A No If "Yes", describe:
Given elevations, wetland vegetation is anticipated to reestablish.
10. Describe design aspects of the practice that will facilitate maintenance. Where will material removed from pond (sediments) be disposed of? **Sediments will be captured in the manhole/sump and maintained by the town.**
11. Who is responsible for maintenance?
Town of Bowers
12. Include maintenance schedules as applicable.
Monthly inspection of discharge pump and outfalls.

LEGEND

 LIMITS OF INVESTIGATION

Ted Harvey
Conservation
Area



 **CENTURY**
ENGINEERING
A Kleinfelder Company

550 Bay Road
Dover, DE 19901
P: 302.734.9188

VICINITY MAP
N. BAYSHORE
DRAINAGE IMPROVEMENTS
KENT COUNTY, DELAWARE

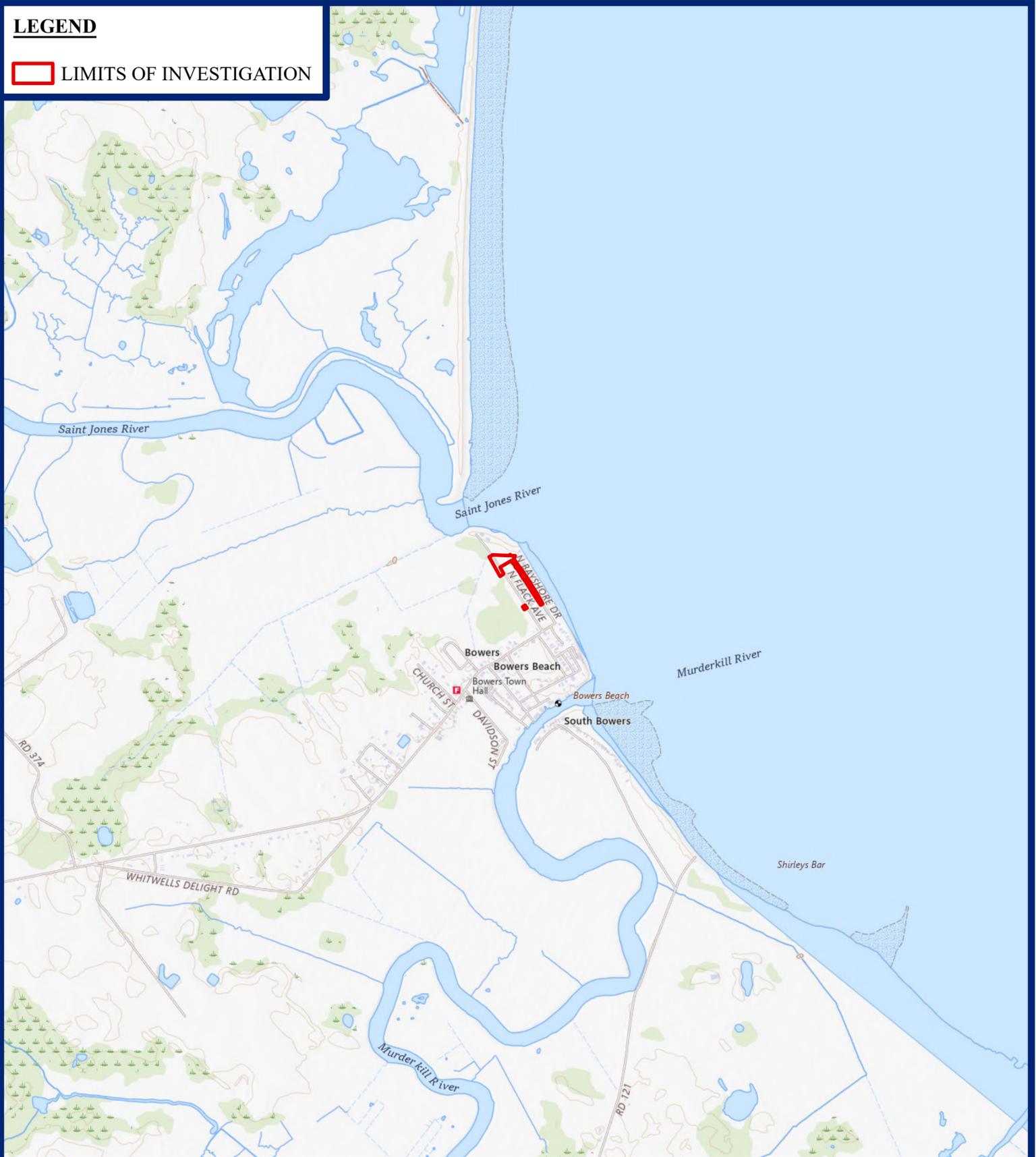
Basemap Source: FirstMap (2022)
ArcGIS Online



1 inch = 150 feet

LEGEND

 LIMITS OF INVESTIGATION



 **CENTURY**
ENGINEERING
A Kleinfelder Company

550 Bay Road
Dover, DE 19901
P: 302.734.9188

USGS TOPOGRAPHIC
QUADRANGLE MAP

N. BAYSHORE
DRAINAGE IMPROVEMENTS
KENT COUNTY, DELAWARE

USGS Topo Quads:
FREDERICA (DE)

Area: 2.42 +/- AC
Latitude: 39°03'49.9"N
Longitude: 75°23'58.5"W
Elevation: ~0-5 feet
Scale: 1:24,000



LEGEND

 LIMITS OF INVESTIGATION



 **CENTURY**
ENGINEERING
A Kleinfelder Company

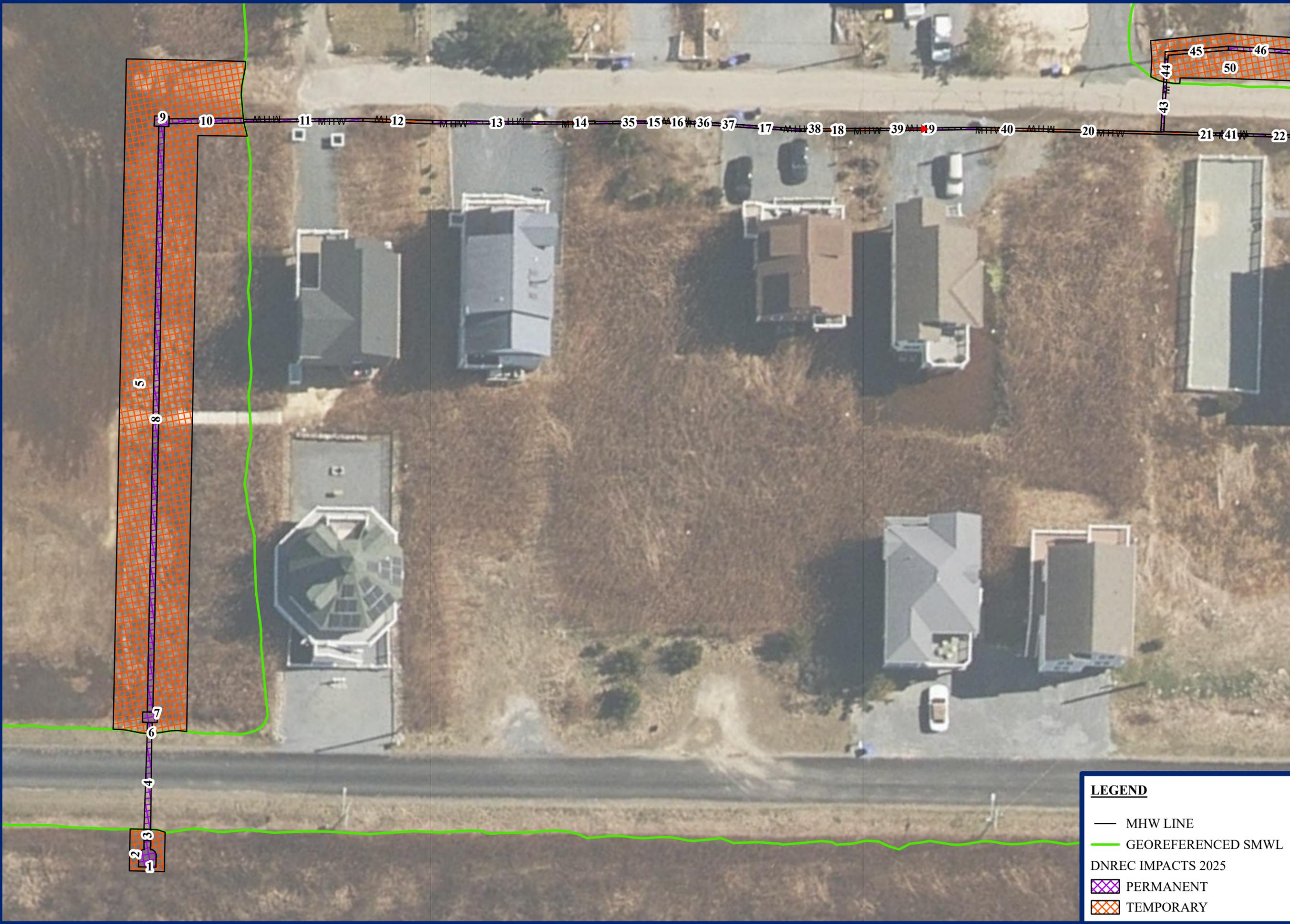
550 Bay Road
Dover, DE 19901
P: 302.734.9188

AERIAL IMAGERY
N. BAYSHORE
DRAINAGE IMPROVEMENTS
KENT COUNTY, DELAWARE

Aerial Imagery Source: FirstMap (2022)
ArcGIS Online



1 inch = 125 feet



LEGEND

- MHW LINE
- GEOREFERENCED SMWL
- DNREC IMPACTS 2025
- PERMANENT
- TEMPORARY

CENTURY
ENGINEERING
A Kleinfelder Company

550 Bay Road | Dover, DE 19901 | P: 302.734.9188

N. BAYSHORE
DRAINAGE IMPROVEMENTS
DNREC WSL IMPACTS
KENT COUNTY, DELAWARE

1 inch = 30 feet

Project Manager:	AS
Drawn:	RO/MK
Job Number:	00215015.000A
Revisions:	10.22.2025



LEGEND

- MHW LINE
- GEOREFERENCED SMWL
- DNREC IMPACTS 2025
- PERMANENT
- TEMPORARY

N. BAYSHORE
DRAINAGE IMPROVEMENTS
DNREC WSLS IMPACTS
KENT COUNTY, DELAWARE



1 inch = 19 feet

Project Manager:	AS
Drawn:	RO/MK
Job Number:	00215015.000A
Revisions:	10.22.2025



LEGEND

- MHW LINE
- GEOREFERENCED SMWL

DNREC IMPACTS 2025

- PERMANENT
- TEMPORARY

N. BAYSHORE
DRAINAGE IMPROVEMENTS
DNREC WSL IMPACTS
KENT COUNTY, DELAWARE

1 inch = 30 feet

Project Manager:	AS
Drawn:	RO/MK
Job Number:	00215015.000A
Revisions:	10.22.2025



STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

DIVISION OF FISH & WILDLIFE
 RICHARDSON & ROBBINS BUILDING
 89 KINGS HIGHWAY
 DOVER, DELAWARE 19901

DIRECTOR'S
 OFFICE

PHONE
 (302) 739-9910

January 6, 2023

Jesse Baird
 Century Engineering, LLC
 550 Bay Road
 Dover, DE 19901

Re: CENTURY 2022 Bowers Beach Drainage Improvements

Dear Jesse:

Thank you for contacting the Species Conservation and Research Program (SCRP) about information on rare, threatened and endangered species, unique natural communities, and other significant natural resources as they relate to the above referenced project.

State Natural Heritage Site

A review of our database indicates that the following state-rare or federally-listed plants, animals or natural communities occur at or adjacent to the project site:

Scientific Name	Common Name	Taxon	State Rank	State Status	SGCN Tier or Global Rank	Federal Status
<i>Ixobrychus exilis</i>	Least bittern	Bird	S1B		Tier 2	
<i>Melospiza georgiana nigrescens</i>	Coastal Plain swamp sparrow	Bird	S3B		Tier 1	

State Rank: **S1** – Extremely rare within the state (typically 5 or fewer occurrences); **S2** – Very rare within the state (6 to 20 occurrences); **S3** – Rare to uncommon in Delaware; **S4** – Apparently secure, at fairly low risk of extinction or extirpation due to an extensive range and/or many populations or occurrences, but with possible cause for some concern as a result of local recent declines, threats, or other factors; **S5** – Demonstrably secure, at very low risk of extinction or extirpation due to a very extensive range, abundant populations or occurrences, or little to no concern from declines or threats; **SX** – Extirpated or presumed extirpated from the state. All historical locations and/or potential habitat have been surveyed; **SH** – Historically known, but not verified for an extended period (usually 15+ years); there are expectations that the species may be rediscovered; **SE** – Non-native in the state (introduced through human influence); not a part of the native flora or fauna; **SNR** – Not yet ranked in Delaware; **SN** – Occurrences in DE of limited conservation value, **of concern due to a restricted range; **SU** – Status uncertain within the state. Usually, an uncommon species which is believed to be of conservation concern, but there is inadequate data to determine the degree of rarity; **B** – Breeding; **M** – Migratory; **N** – Nonbreeding.

State Status: **E** – Endangered, i.e., designated by the Delaware Division of Fish and Wildlife as seriously threatened with extinction in the state pursuant to State of Delaware Code (7 Del. §601 *et seq.*) and implementing regulation (Title 7, 3900, 16.0 Endangered Species); **NA** – Plants are not included in Title 7; **NL** – Not listed.

SGCN Tiers: **Tier 1** – Species of Greatest Conservation Need (SGCN) that are most in need of conservation action in order to sustain or restore their populations. They are the focus of the Delaware Wildlife Action Plan (DEWAP), which is based on analyzing threats to their populations and habitats, and on developing conservation actions to eliminate, minimize, or compensate for these threats; **Tier 2** – SGCN that are also in need of conservation action, although not with the urgency of Tier 1 species. Their distribution across the landscape will help determine where DEWAP conservation actions will be implemented on the ground; **Tier 3** – These species are for the most part still relatively common in Delaware, but are listed as SGCN for various reasons, including documented population declines, high responsibility of the Northeast region for the global population, or continued need for monitoring and/or management. This tier also includes non-breeding species that are uncommon in Delaware. **NA** – Plants are not addressed in DEWAP.

Federal Status: **E** – Endangered, i.e., designated by the U.S. Fish and Wildlife Service as being in danger of extinction throughout its range; **T** – Threatened, i.e., designated by USFWS as being likely to become endangered in the foreseeable future throughout all or a significant portion of its range; **C** – Candidate, i.e., taxa for which the U.S. Fish and Wildlife Service has on file enough substantial information on biological vulnerability and threat(s) to support proposals to list them as endangered or threatened species. NOAA Managed Candidate: **SC** – Species of Concern, i.e., species about which NOAA's National Marine Fisheries Service (NMFS) has some concerns regarding status and threats, but for which insufficient information is available to indicate a need to list the species under the ESA; **NL** – Not listed.

While one or more state-rare species were identified near the project location, at present, this project does not lie within a State Natural Heritage Site, nor does it lie within a Delaware National Estuarine Research Reserve, which are two criteria used to identify “Designated Critical Resource Waters” in the Army Corps of Engineers (ACOE) Nationwide Permit General Condition No. 22. A copy of this letter shall be included in any permit application or pre-construction notification submitted to the Army Corps of Engineers for activities on this property.

Marsh Nesting Birds

Prior records indicate that the clapper rail (*Rallus longirostris*), state-rare Coastal Plain swamp sparrow (*Melospiza georgiana nigrescens*), state-rare least bittern (*Ixobrychus exilis*), and marsh wren (*Cistothorus palustris*) occur in the high marsh habitat at this project site. We recommend a time of year restriction of **April 1st to July 31st** to avoid affecting these species during their breeding season and minimize disturbance to marsh habitat during construction.

Migratory Shorebirds (incl. Red Knot)

To date we have no records of migrating shorebirds using the wetlands at this site. However, prior research indicates federally protected red knot (*Calidris canutus*), may roost in marsh habitat behind the Delaware Bay shore beaches. We recommend avoiding work between **April 15th – June 7th** to mitigate disturbance to such species during their brief migration stopover in the Delaware Bay.

Key Wildlife Habitat

The wetland on this property is mapped as Key Wildlife Habitat (KWH) in the Delaware Wildlife Action Plan (DEWAP) because it is part of a large wetland complex that can support an array of plant and animal species across the landscape. Although designation as KWH is non-regulatory, these maps are intended to help guide site-specific conservation planning efforts. Impacts to KWH should be minimized to the greatest extent practicable.

The DEWAP is a comprehensive strategy for conserving the full array of native wildlife and habitats, common and uncommon, as vital components of the state’s natural resources. This document can be viewed via the [Division of Fish and Wildlife’s website](#).

Delaware Ecological Network

Habitat on this parcel has been identified as ecologically important by the Delaware Ecological Network (DEN) and is classified as a core area and hub. The DEN, although non-regulatory, is a statewide conservation network developed using GIS and field collected datasets that help to identify and prioritize ecologically important areas for natural resource protection. The DEN

includes ecologically important areas such as forests, wetlands, streams, habitat that supports rare species and areas of especially high quality. The DEN includes the following key elements: 1) Core areas – which contain relatively intact natural ecosystems, and provide high-quality habitat for native plants and animals, 2) Hubs – which are slightly fragmented aggregations of core areas with contiguous natural cover and 3) Corridors – which link core areas together, allowing wildlife movement and seed and pollen transfer between them. The DEN can be accessed through First Map: [Delaware Ecological Network 2.0 | Delaware Ecological Network 2.0 | State of Delaware \(arcgis.com\)](#). We recommend that this DEN designated area be protected to the fullest extent possible.

State Natural Area

The proposed project area occurs within Delaware's Natural Areas Inventory. State Natural Areas are composed of areas of land and/or water, whether in public or private ownership, which have retained or reestablished its natural character (although it need not be undisturbed), has unusual flora or fauna, or has biotic, geological, scenic, or archaeological features of scientific or educational value. If you require further information about this area for your planning, please contact Melanie Cucunato at 302-739-9039 or Melanie.Cucunato@delaware.gov.

Fisheries

After reviewing the project description, it does not appear that any waterways will be impacted; therefore, there are no fisheries concerns at present.

We are continually updating our records on Delaware's rare, threatened and endangered species, unique natural communities and other significant natural resources. If the start of the project is delayed more than a year past the date of this letter, please contact us again for the latest information.

Please feel free to contact me with any questions or if you require additional information.

Sincerely,



Danielle Ellis
Environmental Review Coordinator
Phone: (302) 223-2446
6180 Hay Point Landing Road
Smyrna, DE 19977

(See invoice on next page)

INVOICE - PAYMENT DUE

It is our policy to charge a fee for this environmental review service. This letter constitutes an invoice for \$70.00 (\$35.00/hour for a minimum of one hour). Please make your check payable to “Delaware Division of Fish and Wildlife” and submit to:

DE Division of Fish and Wildlife
97 Commerce Way
Suite 106
Dover, DE 19901
ATTN: DFW Fiscal

**In order for us to properly process your payment, you must reference
“CENTURY 2022 Bowers Beach Drainage Improvements” on your check.**

cc: Division of Fish and Wildlife Fiscal (dnrec_dfw_payroll@delaware.gov); Code to 72900



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Chesapeake Bay Ecological Services Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401-7307
Phone: (410) 573-4599 Fax: (410) 266-9127

In Reply Refer To:
Project Code: 2023-0024835
Project Name: Bowers Beach Drainage Improvements Project

December 13, 2022

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see <https://www.fws.gov/birds/policies-and-regulations.php>.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see <https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
 - USFWS National Wildlife Refuges and Fish Hatcheries
 - Wetlands
-

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Chesapeake Bay Ecological Services Field Office

177 Admiral Cochrane Drive

Annapolis, MD 21401-7307

(410) 573-4599

Project Summary

Project Code: 2023-0024835

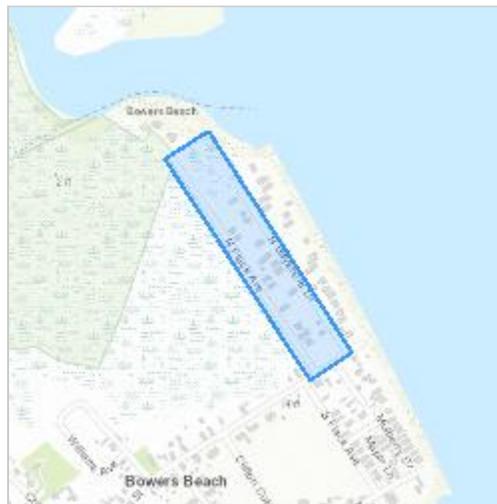
Project Name: Bowers Beach Drainage Improvements Project

Project Type: Stormwater Discharge

Project Description: The project involves installation of a storm drain network consisting of a combination of open and closed conveyances to intercept runoff from North Bayshore Drive and convey it to a pump station on the east side of North Flack Avenue, which will then pump the intercepted stormwater to the marsh area on the west side of the roadway. Since this area is under tidal influence, back flow preventers will be installed at the end of the outlet pipe to prevent water in the marsh area from reversing its direction and flowing back into the area of North Bayshore Drive.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@39.063319449999995,-75.39968152034592,14z>



Counties: Kent County, Delaware

Endangered Species Act Species

There is a total of 3 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 2 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Eastern Black Rail <i>Laterallus jamaicensis ssp. jamaicensis</i> No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: <ul style="list-style-type: none"> ▪ Potential habitat for Black Rail exists in this area. Species profile: https://ecos.fws.gov/ecp/species/10477	Threatened
Red Knot <i>Calidris canutus rufa</i> There is proposed critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened

Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: <ul style="list-style-type: none"> ▪ The monarch is a candidate species and not yet listed or proposed for listing. There are generally no section 7 requirements for candidate species (FAQ found here: https://www.fws.gov/savethemonarch/FAQ-Section7.html). Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Wetlands

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

ESTUARINE AND MARINE WETLAND

- [M2US2P](#)
 - [E2EM5Pd](#)
-

IPaC User Contact Information

Agency: Army Corps of Engineers

Name: Charles Baird

Address: 550 S Bay Road

City: Dover

State: DE

Zip: 19901

Email: jbaird@kleinfelder.com

Phone: 3022454374



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Chesapeake Bay Field Office
177 Admiral Cochrane Drive
Annapolis, Maryland 21401
<http://www.fws.gov/chesapeakebay>

February 21, 2023

Jesse Baird
U.S. Army Corps of Engineers
550 S. Bay Rd
Dover, DE 19901

RE: "Not Likely to Adversely Affect" determination for red knot and Eastern black rail for Bowers Beach Drainage Improvements Project in Kent County, Delaware

Dear Mr. Baird:

The U.S. Fish and Wildlife Service (Service) has reviewed your project information from the Service's Information for Planning and Consultation (IPaC) online system and your email sent January 9, 2023. The comments provided below are in accordance with Section 7 of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*).

The purpose of this proposed project is to install a storm drain network that will intercept runoff from North Bayshore Drive and convey it to a pump station east of North Flack Avenue. Stormwater will then be pumped to the marsh area on the west side of the roadway. The federally threatened red knot (*Calidris canutus rufa*) and Eastern black rail (*Laterallus jamaicensis jamaicensis*) may be present within the project area.

Red knots have been known to use the beach segment adjacent to the project area, and can sometimes be found foraging in the marsh habitat behind the beaches. In order to avoid disturbances to this species during migration, we recommend a time of year restriction on work between April 15 to June 7. While there is high marsh habitat within the project area, it is not likely to be suitable habitat that would be used by the Eastern black rail. The project area contains a small patch of marsh surrounded by open water, roads, and housing developments. The nearest record of the species is approximately 5 miles away from the project site. Based on these conditions, this project as proposed is "not likely to adversely affect" the red knot or Eastern black rail.

Except for occasional transient individuals, no other federally proposed or listed threatened or endangered species are known to exist within the project area. Should project plans change or if additional information on the distribution of listed or proposed species becomes available, this determination may be reconsidered.



We appreciate the opportunity to provide information relative to fish and wildlife issues. Thank you for your interest in these resources. If you have any questions or need further assistance, please contact Kathleen Cullen of my staff at 410/573-4579 or kathleen_cullen@fws.gov.

Sincerely,

Acting for
Genevieve LaRouche
Field Supervisor

EFH Mapper Report

EFH Data Notice

Essential Fish Habitat (EFH) is defined by textual descriptions contained in the fishery management plans developed by the regional fishery management councils. In most cases mapping data can not fully represent the complexity of the habitats that make up EFH. This report should be used for general interest queries only and should not be interpreted as a definitive evaluation of EFH at this location. A location-specific evaluation of EFH for any official purposes must be performed by a regional expert. Please refer to the following links for the appropriate regional resources.

[Greater Atlantic Regional Office](#)
[Atlantic Highly Migratory Species Management Division](#)

Query Results

Degrees, Minutes, Seconds: Latitude = 39° 3' 42" N, Longitude = 76° 36' 8" W
Decimal Degrees: Latitude = 39.062, Longitude = -75.398

The query location intersects with spatial data representing EFH and/or HAPCs for the following species/management units.

*** WARNING ***

Please note under "Life Stage(s) Found at Location" the category "ALL" indicates that all life stages of that species share the same map and are designated at the queried location.

EFH

Link	Data Caveats	Species/Management Unit	Lifestage(s) Found at Location	Management Council	FMP
		Little Skate	Juvenile Adult	New England	Amendment 2 to the Northeast Skate Complex FMP
		Atlantic Herring	Juvenile Adult	New England	Amendment 3 to the Atlantic Herring FMP
		Red Hake	Adult	New England	Amendment 14 to the Northeast Multispecies FMP
		Windowpane Flounder	Adult Juvenile	New England	Amendment 14 to the Northeast Multispecies FMP
		Winter Skate	Adult Juvenile	New England	Amendment 2 to the Northeast Skate Complex FMP
		Clearnose Skate	Adult Juvenile	New England	Amendment 2 to the Northeast Skate Complex FMP
		Sandbar Shark	Juvenile Neonate	Secretarial	Amendment 10 to the 2006 Consolidated HMS FMP:

Link	Data Caveats	Species/Management Unit	Lifestage(s) Found at Location	Management Council	FMP
					EFH
		Sand Tiger Shark	Neonate/Juvenile Adult	Secretarial	Amendment 10 to the 2006 Consolidated HMS FMP: EFH
		Longfin Inshore Squid	Eggs	Mid-Atlantic	Atlantic Mackerel, Squid,& Butterfish Amendment 11
		Bluefish	Adult Juvenile	Mid-Atlantic	Bluefish
		Atlantic Butterfish	Larvae Adult	Mid-Atlantic	Atlantic Mackerel, Squid,& Butterfish Amendment 11
		Scup	Juvenile Adult	Mid-Atlantic	Summer Flounder, Scup, Black Sea Bass
		Summer Flounder	Juvenile Adult	Mid-Atlantic	Summer Flounder, Scup, Black Sea Bass
		Black Sea Bass	Juvenile Adult	Mid-Atlantic	Summer Flounder, Scup, Black Sea Bass

Salmon EFH

No Pacific Salmon Essential Fish Habitat (EFH) were identified at the report location.

HAPCs

Link	Data Caveats	HAPC Name	Management Council
		Sandbar Shark	Secretarial
		Sand Tiger Shark (Delaware Bay)	Secretarial

EFH Areas Protected from Fishing

No EFH Areas Protected from Fishing (EFHA) were identified at the report location.

Spatial data does not currently exist for all the managed species in this area. The following is a list of species or management units for which there is no spatial data.

****For links to all EFH text descriptions see the complete data inventory: [open data inventory -->](#)**

All spatial data is currently available for the Mid-Atlantic and New England councils,

Secretarial EFH,

Bigeye Sand Tiger Shark,

Bigeye Sixgill Shark,

Caribbean Sharpnose Shark,

Galapagos Shark,

Narrowtooth Shark,

Sevengill Shark,

Sixgill Shark,

Smooth Hammerhead Shark,

Smalltail Shark



Drawn Action Area & Overlapping S7 Consultation Areas

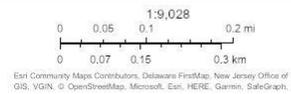
Area of Interest (AOI) Information

Area : 2,458.4 acres

Dec 13 2022 8:15:59 Eastern Standard Time



- Atlantic Sturgeon
- Sea Turtles
- Shortnose Sturgeon
- Atlantic Large Whales



Summary

Name	Count	Area(acres)	Length(mi)
Atlantic Sturgeon	3	3,193.97	N/A
Shortnose Sturgeon	1	1,064.66	N/A
Atlantic Salmon	0	0	N/A
Sea Turtles	4	4,115.24	N/A
Atlantic Large Whales	5	4,047.58	N/A
In or Near Critical Habitat	0	0	N/A

Atlantic Sturgeon

#	Feature ID	Species	Lifestage	Behavior	Zone	From	Until	From (2)	Until (2)	Area(acres)
1	ANS_DEB_ADU_MAF	Atlantic sturgeon	Adult	Migrating & Foraging	Delaware Bay	01/01	12/31	N/A	N/A	1,064.66
2	ANS_DEB_JUV_MAF	Atlantic sturgeon	Juvenile	Migrating & Foraging	Delaware Bay	01/01	12/31	N/A	N/A	1,064.66
3	ANS_DEB_SUB_MAF	Atlantic sturgeon	Subadult	Migrating & Foraging	Delaware Bay	01/01	12/31	N/A	N/A	1,064.66

Shortnose Sturgeon

#	Feature ID	Species	Life Stage	Behavior	Zone	From	Until	From (2)	Until (2)	Area(acres)
1	SNS_DEB_ADU_MAF	Shortnose sturgeon	Adult	Migrating & Foraging	Delaware Bay	04/01	11/30	N/A	N/A	1,064.66

Sea Turtles

#	Feature ID	Species	Life Stage	Behavior	Zone	From	Until	From (2)	Until (2)	Area(acres)
1	GRN_STS_AJV_MAF	Green sea turtle	Adults and juveniles	Migrating & Foraging	Massachusetts (S of Cape Cod) through Virginia	5/1	11/30	No Data	No Data	1,028.81
2	KMP_STS_AJV_MAF	Kemp's ridley sea turtle	Adults and juveniles	Migrating & Foraging	Massachusetts (S of Cape Cod) through Virginia	5/1	11/30	No Data	No Data	1,028.81
3	LTR_STS_AJV_MAF	Leatherback sea turtle	Adults and juveniles	Migrating & Foraging	Massachusetts (S of Cape Cod) through Virginia	5/1	11/30	No Data	No Data	1,028.81
4	LOG_STS_AJV_MAF	Loggerhead sea turtle	Adults and juveniles	Migrating & Foraging	Massachusetts (S of Cape Cod) through Virginia	5/1	11/30	No Data	No Data	1,028.81

Atlantic Large Whales

#	Feature ID	Species	Lifestage	Behavior	Zone	From	Until	From (2)	Until (2)	Area(acres)
1	RIT_WRS_AJV_MIG	North Atlantic right whale	Adults and juveniles	Migrating	Mid-Atlantic (Cape Cod, MA to VA)	1/1	12/31	No Data	No Data	809.52
2	FIN_WFS_AJV_MIG	Fin whale	Adults and juveniles	Migrating	Mid-Atlantic (Cape Cod, MA to VA)	1/1	12/31	No Data	No Data	809.52
3	FIN_WFS_AJV_WIN	Fin whale	Adults and juveniles	Overwintering	Mid-Atlantic (Cape Cod, MA to VA)	11/1	1/31	No Data	No Data	809.52
4	FIN_WFS_AJV_FOR	Fin whale	Adults and juveniles	Foraging	Mid-Atlantic (Cape Cod, MA to VA)	1/1	12/31	No Data	No Data	809.52
5	FIN_WFS_ADU_CLV	Fin whale	Adult	Calving	Mid-Atlantic (Cape Cod, MA to VA)	10/1	1/31			809.52

July 26, 2023

Ada Carter Puzzo
Town of Bowers
3357 Main Street
Federica, Delaware 19946

**Subject: Bowers Beach Drainage Improvements Project
SHPO Project No. 2023.01.05.02**

Dear Ms. Puzzo:

We understand from the letter that Century Engineering, LLC has been retained by the Town of Bowers for the proposed Bowers Beach Drainage Improvements project. The Town is proposing to install a storm drain network consisting of a combination of open and closed conveyances along North Bayshore Drive. The stormwater will then be conveyed to a pump station on the east side of North Flack Avenue. Because of the need for authorization from the US Army Corps of Engineers (USACOE), the project is subject to compliance with Section 106 of the National Historic Preservation Act of 1966 (as amended).

Our previous letter referenced the need for archaeological survey within the area of potential effects (APE). We have since been made aware of an archaeological survey completed in 2012 by KCI Technologies on behalf of the Town of Bowers Beach. This survey was completed ahead of a proposed storm drain and outfall improvements. The survey covers the entire APE for the current proposed undertaking, and no archaeological sites were found. This archaeological survey is sufficient for the current proposed drainage improvements project, and no further work is needed.

Our Office finds there to be No Historic Properties Affected by the proposed undertaking. Please feel free to contact me if you have any questions at (302) 736-7431 or sarah.carr@delaware.gov.

Sincerely,



Sarah Carr

Cultural Preservation Specialist

cc: Gwen Davis, Deputy SHPO
Nicole Cooper-Minnichbach, USACOE
Jesse Baird, Century Engineering

Bowers Drainage Study Photo Log

View of Marsh at North end of N Flack Avenue



View of Marsh on eastern side of N Flack Avenue



View of inundated yard on N Bayshore Rd



Ditch on N Bayshore Rd impacted by salt water intrusion from flooding





DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, PHILADELPHIA DISTRICT
1650 ARCH STREET
PHILADELPHIA PA 19103-2004

January 29, 2025

Regulatory Branch

SUBJECT: Nationwide Permit 14 Verification NAP-2023-01185-TREC North
North Bayshore Drive Drainage Improvements KE
Central coordinates (39.063102°, -74.722454°)

Town of Bowers
C/O Ada Carter Puzzo
3357 Main Street
Frederica, DE 19946

Dear Ms. Carter Puzzo:

This letter is written in regard to your proposal to discharge dredged and/or fill material into waters of the United States associated with improvements to the drainage network along North Bayshore Drive by replacing pipes under driveways, regrading the drainage ditches to provide positive flow, installation of a pumping station, and installation of subsurface drainage to new outlets to the west of North Flack Avenue. Non-tidal wetlands would be dredged, topsoil would be placed to bring the ditches to final grade, and the areas would be seeded. Driveways would be installed to maintain access to platted parcels. This project is located in the Town of Bowers, Kent County, Delaware at latitude/longitude: 39.063102°, -74.722454°. Based upon our review of the information that has been provided, it has been determined that the proposed work is authorized by Department of the Army Nationwide Permit (NWP) 14 pursuant to Section 404 of the Clean Water Act (33 USC 1344).

The project activities would result in the temporary discharge of dredged and/or fill material into 0.008 acre of Palustrine Emergent (PEM) wetlands and 0.082 acre of Estuarine Emergent (EEM) wetlands, and the permanent discharge of dredged and/or fill material into 0.074 acres of PEM wetlands at six (6) single and complete linear project locations.

This verification of authorization under NWP 14, described in the Federal Register at 86 FR 2744 and 86 FR 73522, is based on your agreement to comply with the general conditions, regional conditions and project specific special conditions listed in this letter. Copies of the NWP descriptions, NWP general conditions and the NWP regional conditions for Delaware can be found at:

2021 NWP Descriptions:

<https://www.nap.usace.army.mil/Portals/39/docs/regulatory/nwp/2021/2021-52-NWPs-Descriptions.pdf>

2021 NWP General Conditions:

<https://www.nap.usace.army.mil/Portals/39/docs/regulatory/nwp/2021/2021%20Nationwide%20Permit%20General%20Conditions.pdf>

2021 Delaware Regional Conditions:

<https://www.nap.usace.army.mil/Portals/39/docs/regulatory/nwp/2021/2021-DE-Reg-Cond-Final.pdf>

Federal permits require determination from the State that the activities are consistent with the State's coastal zone management (CZM) program if the activity is located within the State's coastal zone. The entire State of Delaware has been designated as a Coastal Zone Management Area. Federal permits also require the State's certification of compliance with section 401 of the Clean Water Act through the receipt of a 401 Water Quality Certification (WQC) if the activity involves a Section 404 discharge. A general CZM consistency concurrence has been issued for this permit. A general water quality certification has been issued for this permit. Therefore, no further action is needed as part of the Federal review of your project, provided that you comply with all the terms and conditions of this NWP.

This verification of NWP authorization is valid until the 2021 Nationwide Permits expire on **March 14, 2026**, unless the NWP authorization is modified, suspended, or revoked prior to this date. In the event that the NWP authorization is modified during that time period, this expiration date will remain valid, provided the activity complies with any subsequent modification of the NWP authorization.

Activities which have commenced (i.e. are under construction) or are under contract to commence in reliance upon an NWP will remain authorized provided the activity is completed within twelve months of the date of an NWP's expiration, modification, or revocation, unless discretionary authority has been exercised on a case-by-case basis to modify, suspend, or revoke the authorization in accordance with 33 CFR 330.4(e) and 33 CFR 330.5 (c) or (d). Activities completed under the authorization of an NWP which was in effect at the time the activity was completed continue to be authorized by that NWP.

Special Conditions:

1. All work performed in association with the subject project shall be conducted in accordance with the **enclosed** project plans identified as N. Bayshore Drive Drainage Improvements WATERS OF THE U.S. IMPACTS KENT COUNTY, DELAWARE revised December 2, 2024, Sheet 1 of 1, prepared by Century Engineering.
2. Discharges of dredged and/or fill material associated with construction activities shall not result in more than 0.0874 acre of temporary discharges into wetlands, 0.0799

acre of permanent discharges into wetlands, and will not result in the loss of more than 0.0922 acre of wetlands.

3. Any deviation in construction methodology or project design from that shown on the enclosed project plans must be approved by this office, in writing, prior to performance of the work. All modifications to the enclosed project plans shall be approved, in writing, by this office. No work shall be performed prior to written approval of this office.
4. This office shall be notified prior to the commencement of authorized work by completing and signing the **enclosed** "Notification of Commencement" form. This office shall also be notified within 10 days of the completion of the authorized work by completing and signing the **enclosed** "Notification of Completion" form. Notification is required each time maintenance work is to be done under the terms of this Corps of Engineers permit.
5. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your general permit.
6. To ensure compliance with Regional Condition – 3 (G-3) to protect federally listed species pursuant to Section 7 of the Endangered Species Act (ESA) under the jurisdiction of the United States Fish and Wildlife Service (USFWS) the permittee shall: observe a time of year restriction on work between April 15 to June 7 to avoid affecting the migration of the Rufa red knot.
7. To ensure compliance with Regional Condition – 5b (G-5b) to protect Essential Fish Habitat (EFH) species, their prey species, and/or their habitats the following conditions shall be met:
 - a. To protect diadromous fish migrations and spawning, in-water work shall be avoided from **March 1 to June 30** in all waters. This time of year restriction is not applicable to waters of the United States located upstream of an obstruction that precludes fish passage. This condition does not apply to on-going Commercial Shellfish Mariculture Activities (NWP 48) activities where a PCN was submitted and verified by the Corps of Engineers.
 - b. Work within cofferdams that fully enclose and dewater the project area can proceed any time during the year provided that the cofferdams are installed or removed outside of the seasonal work restriction and do not preclude the free movement of migrating and spawning aquatic species to ensure compliance with NWP General Condition 2 and 3.

8. To ensure compliance with Regional Condition – 6 (G-6) to protect NOAA Trust Resources pursuant to the Fish and Wildlife Coordination Act, the following conditions shall be met:
 - a. In order to protect the American horseshoe crab (*Limulus polyphemus*), a NOAA Trust Resource, in-water work shall be avoided from River Mile Zero (RM 0) at the mouth of the Delaware Bay, extending to the Kent/New Castle County line along the Delaware Bay shoreline, and to include ALL tributary mouths within this reach, from **April 15 to August 30**. In-water work shall also be avoided in Rehoboth Bay and Indian River Bay within this time of year restriction. This condition does not apply to on-going Commercial Shellfish Mariculture Activities (NWP 48) activities where a PCN was submitted and verified by the Corps of Engineers.
 - b. For all activities requiring the use of poured concrete in waters of the United States, any discharge of poured concrete must be contained within watertight cells/forms or poured in the dry until the concrete has set.
9. The project is located within the range of the monarch butterfly (*Danaus Plexippus*), a proposed threatened species.

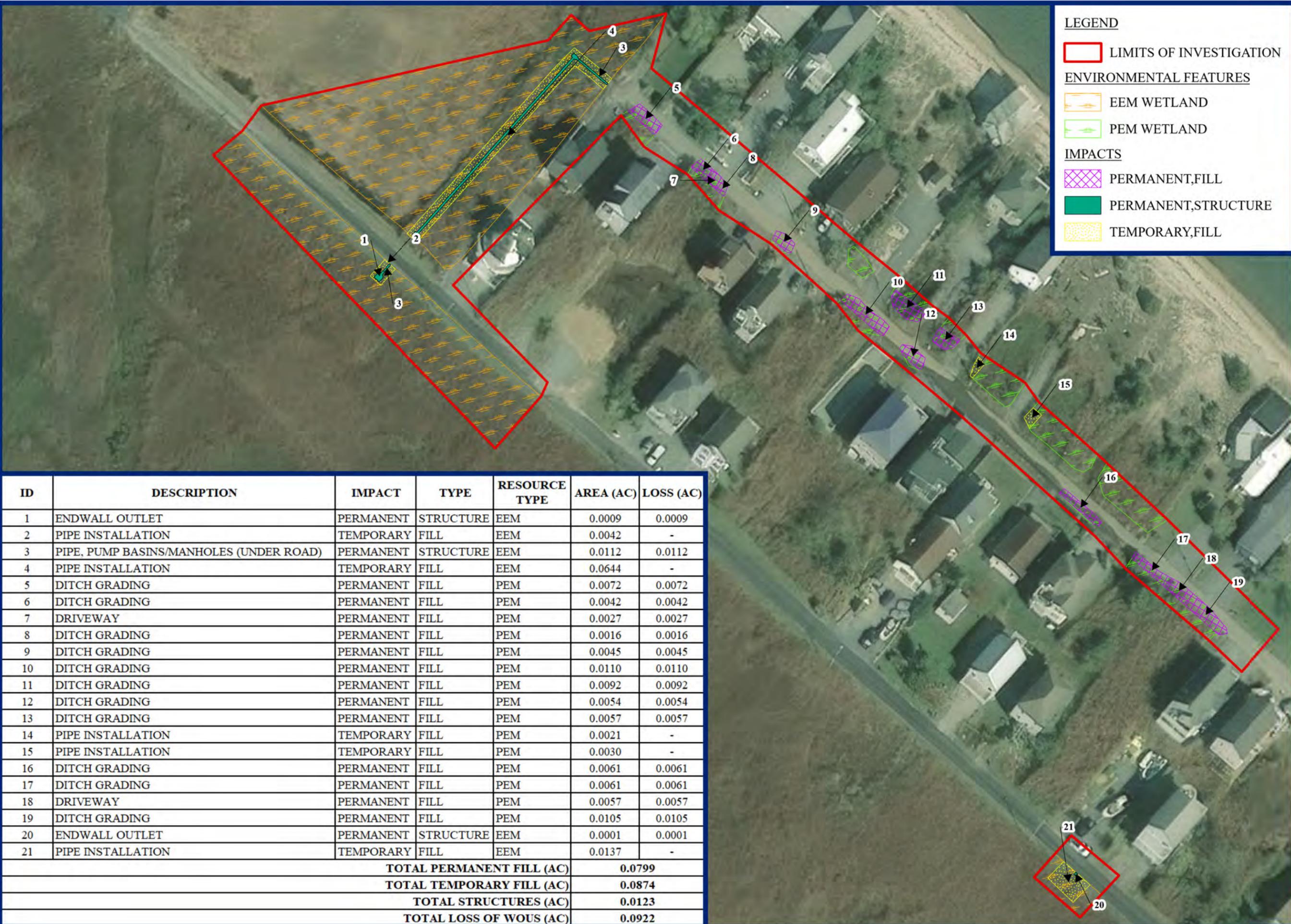
Also **enclosed** with this NWP verification letter is a form seeking any comments, positive or otherwise, on the procedures, timeliness, fairness, etc. of the permit process. You may forward your comments along with the signed "Notification of Commencement" form or "Notification of Completion" form, following the directions provided on the form. If you should have any questions or concerns, please contact Adam Fannin at 606-254-5128 or Adam.E.Fannin@usace.army.mil.

Sincerely,

Adam Fannin
Regulatory Project Manager

Enclosures

cc:
Missy Kalb, Century Engineering, LLC
Chesapeake Bay Field Office, USFWS



LEGEND

LIMITS OF INVESTIGATION

ENVIRONMENTAL FEATURES

EEM WETLAND

PEM WETLAND

IMPACTS

PERMANENT, FILL

PERMANENT, STRUCTURE

TEMPORARY, FILL

ID	DESCRIPTION	IMPACT	TYPE	RESOURCE TYPE	AREA (AC)	LOSS (AC)
1	ENDWALL OUTLET	PERMANENT	STRUCTURE	EEM	0.0009	0.0009
2	PIPE INSTALLATION	TEMPORARY	FILL	EEM	0.0042	-
3	PIPE, PUMP BASINS/MANHOLES (UNDER ROAD)	PERMANENT	STRUCTURE	EEM	0.0112	0.0112
4	PIPE INSTALLATION	TEMPORARY	FILL	EEM	0.0644	-
5	DITCH GRADING	PERMANENT	FILL	PEM	0.0072	0.0072
6	DITCH GRADING	PERMANENT	FILL	PEM	0.0042	0.0042
7	DRIVEWAY	PERMANENT	FILL	PEM	0.0027	0.0027
8	DITCH GRADING	PERMANENT	FILL	PEM	0.0016	0.0016
9	DITCH GRADING	PERMANENT	FILL	PEM	0.0045	0.0045
10	DITCH GRADING	PERMANENT	FILL	PEM	0.0110	0.0110
11	DITCH GRADING	PERMANENT	FILL	PEM	0.0092	0.0092
12	DITCH GRADING	PERMANENT	FILL	PEM	0.0054	0.0054
13	DITCH GRADING	PERMANENT	FILL	PEM	0.0057	0.0057
14	PIPE INSTALLATION	TEMPORARY	FILL	PEM	0.0021	-
15	PIPE INSTALLATION	TEMPORARY	FILL	PEM	0.0030	-
16	DITCH GRADING	PERMANENT	FILL	PEM	0.0061	0.0061
17	DITCH GRADING	PERMANENT	FILL	PEM	0.0061	0.0061
18	DRIVEWAY	PERMANENT	FILL	PEM	0.0057	0.0057
19	DITCH GRADING	PERMANENT	FILL	PEM	0.0105	0.0105
20	ENDWALL OUTLET	PERMANENT	STRUCTURE	EEM	0.0001	0.0001
21	PIPE INSTALLATION	TEMPORARY	FILL	EEM	0.0137	-
TOTAL PERMANENT FILL (AC)					0.0799	
TOTAL TEMPORARY FILL (AC)					0.0874	
TOTAL STRUCTURES (AC)					0.0123	
TOTAL LOSS OF WOUS (AC)					0.0922	

CENTURY ENGINEERING
A Kleinfelder Company

550 Bay Road | Dover, DE 19901 | P: 302.734.9188

N. BAYSHORE
DRAINAGE IMPROVEMENTS
WATERS OF THE U.S. IMPACTS
KENT COUNTY, DELAWARE


 1:900

Project Manager:	AS
Drawn:	TA
Job Number:	215015.00
Revisions:	MK - 1/27/2025



Kent County
Betty Lou McKenna
Recorder of Deeds
Dover, DE 19901

Instrument Number: 2011-189460

Recorded On: May 16, 2011

As-Miscellaneous Without Notation

Parties: DEL-HOMES INC

To BOWERS TOWN OF

of Pages: 5

Comment:

****DO NOT REMOVE-THIS PAGE IS PART OF THE RECORDED DOCUMENT****

Miscellaneous Without Notation	71.00
# of Pages	4
	0
Total:	71.00

I hereby certify that the within and foregoing was recorded in the Recorder's Office in Kent County,

****DO NOT REMOVE-THIS PAGE IS PART OF THE RECORDED DOCUMENT****

File Information:

Record and Return To:

Document Number: 2011-189460
Receipt Number: 290044
Recorded Date/Time: May 16, 2011 01:51:43P
Book-Vol/Pg: BK-RE VL-5811 PG-310
User / Station: C Yerkes - Cashier 4

HUDSON JONES JAYWORK AND FISHER
225 SOUTH STATE STREET
DOVER DE 19901



Betty Lou McKenna

4
\$71.-

Tax Map Parcel No.: Part of SM-01-115.13-01-03.00
Prepared by and Return to:
Hudson, Jones, Jaywork & Fisher (DBE)
225 South State Street
Dover, DE 19901

PUBLIC DRAINAGE AND RIGHT-OF-WAY EASEMENT

DEL-HOMES, INC.

TO: TOWN OF BOWERS, a municipal corporation of the State of Delaware

KNOW ALL MEN BY THESE PRESENTS that the undersigned grantor, DEL-HOMES, INC., being the owner of the lands hereinafter described, for and in consideration of the sum of One Dollar (\$1.00), the receipt of which is hereby acknowledged, and for other good and valuable consideration, does hereby grant and convey unto the TOWN OF BOWERS, a municipal corporation in the State of Delaware, (hereinafter "Town") its successors and assigns, for the purposes hereinafter stated, a perpetual easement and right-of-way on, over, through, across, and under lands of the undersigned located in the Town of Bowers, Kent County, State of Delaware, consisting of a strip of land twenty-five (25) feet in width across lands identified as lots 21A and 21B (as shown on Exhibit A attached hereto) and running the entire length of lands identified as lots 21A and 21B between County Road 18A (Flack Avenue) to the west, and County Road 18B (Bayshore Drive) to the east, more particularly described as follows:

BEGINNING at a point being located 1,229 feet from the intersection of the southwest line of County Road 18B (Bayshore Drive) with the northwest line of Main Street; thence running from said point of beginning South 65 degrees West, a distance of 200 feet to the northeast line of County Road 18A (Flack Avenue), thence turning and running with the northeast line of County Road 18A (Flack Avenue), North 25 degrees West, a distance of 25 feet to a point, thence turning and running North 65 degrees East, a distance of 200 feet to a point on the southwest line of County Road 18B (Bayshore Drive), thence turning and running South 25 degrees East, a distance of 25 feet to the point and place of beginning, and containing 5,000 square feet of land, be the same more or less; being a portion of the same land and premises conveyed unto Del-Homes, Inc. by Donald Bruce Noble and Rosemarie E. Noble by deed dated May 8, 1989 as recorded in Deed Book P46, Page 164 in the Kent County Recorder of Deeds Office.

PURPOSES:

- (a) To install, construct, reconstruct, operate, maintain, add to, extend, relocate, and remove public utility fixtures and equipment including aboveground and underground storm water drains, pipes, catch basins, and all related appurtenances;
- (b) To install, construct, reconstruct, operate, maintain, add to, extend, relocate, and remove a street or alley;
- (c) To allow pedestrian and/or vehicular travel across the easement;

and that his act of sealing, executing, acknowledging and delivering said Indenture was duly authorized by a resolution of the Board of Directors of said corporation.

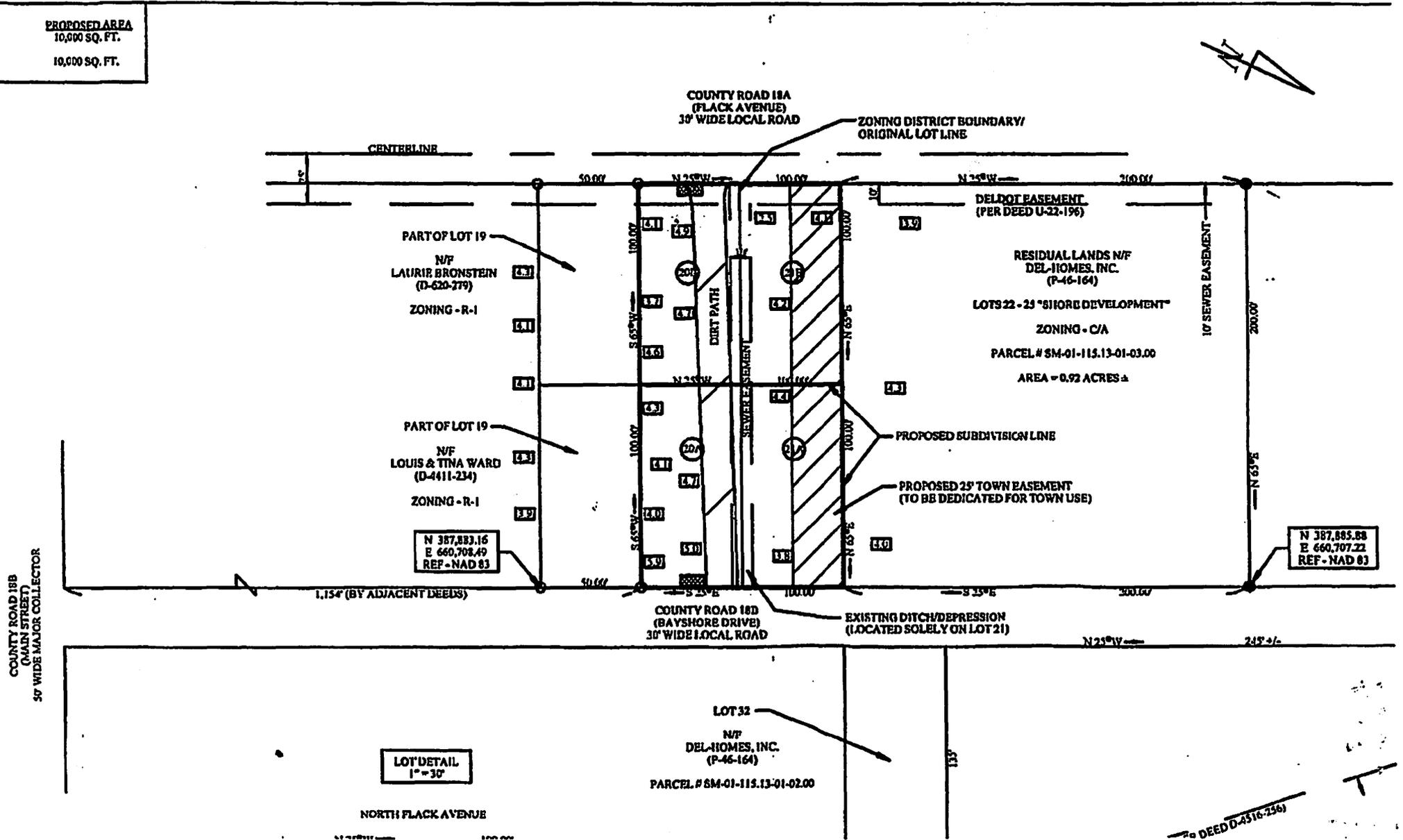
GIVEN under my hand and seal of office, the day and year aforesaid.

Notary Public Jacquelyn I. West

JACQUELYN I. WEST
NOTARY PUBLIC
STATE OF DELAWARE
COMMISSION EXPIRES 11-29-14

EXHIBIT A

PROPOSED AREA
10,000 SQ. FT.
10,000 SQ. FT.



TAX MAP PARCEL NO.: 8-01-11513-01-0704-000 &
8-01-11513-01-0701-000

Prepared by and return to:
Hudson, Jones, Jaywork, & Fisher (DBE)
225 South State Street
Dover, DE 19901

PERMANENT STORMWATER UTILITY EASEMENT AGREEMENT

THIS PERMANENT STORMWATER UTILITY EASEMENT AGREEMENT ("Agreement") is made by and between JAMES D. MARTIN and JUDITH E. MARTIN, hereinafter ("Grantors"), and the TOWN OF BOWERS, (hereinafter "Grantee").

WHEREAS, Grantors are the owners of certain lands situated within the municipal limits of the Town of Bowers; and

WHEREAS, Grantee desires to obtain a stormwater utility easement from Grantors in order to install, repair, and maintain stormwater drainage facilities across Grantors' property.

NOW THEREFORE, WITNESSETH that the said Grantors for and in consideration of the sum of One Dollar (\$1.00) lawful money of the United States of America and other good and valuable consideration, the receipt whereof is hereby acknowledged, do hereby grant, bargain, sell, transfer, and convey to Grantee, its successors, assigns, and agents, a perpetual and non-exclusive easement and right-of-way for the purpose of the construction, reconstruction, installation, maintenance, improvement, operation, inspection, repair, replacement, renewal, removal, and use of stormwater drainage lines, including all related appurtenances and facilities, as may be desired by Grantee, or its successors or assigns, for the distribution of stormwater runoff over, under, through, in, upon, and across the lands of the Grantors situated in Kent County, State of Delaware, said land and easement area being further described as follows:

Easement Area Across Tax Map Parcel No. 8-01-11513-01-0704-00001

ALL that certain lot, piece, or parcel of land situated in the Town of Bowers, Kent County, Delaware, said parcel being more particularly described in Deed Book 144, Page 266, as recorded on October 10, 1995 in the Office of the Recorder of Deeds, in and for Kent County, Delaware, said easement area being and consisting of a 15-foot wide strip of land running across the lands of Grantors, the easement area running parallel with and immediately adjacent to the easterly boarder of the North Bayshore ROW between the side property lines of Grantors.

Easement Area Across Tax Map Parcel No. 8-01-11513-01-0701-00001

ALL that certain lot, piece, or parcel of land situated in the Town of Bowers, Kent County, Delaware, said parcel being more particularly described in Deed Book 419, Page 140, as recorded on June 7, 2001 in the Office of the Recorder of Deeds, in and for Kent County, Delaware, said easement area being and consisting of a 15-foot wide strip of land running across the lands of

Grantors, the easement area running parallel with and immediately adjacent to the easterly boarder of the North Bayshore ROW between the side property lines of Grantors.

Together with the right from time to time to clear, trim, cut, and/or remove trees, vegetation, sheds, fences, or other obstructions from five (5) feet on either side of the stormwater drainage lines and fixtures more particularly described herein, as needed in order to construct, install, repair, replace, or maintain the stormwater drainage lines and fixtures, or as determined by Grantee may, in the judgment of Grantee, interfere with or endanger the aforesaid stormwater lines and/or facilities.

The foregoing grant of easement and right-of-way is further subject to the following conditions, covenants, and agreements of the parties hereto: (A) Grantee, or its assigns, shall use caution when performing any work contemplated herein on the property in order to prevent damage to Grantors' property and shall restore Grantors' property, where disturbed by Grantee's operations, to a condition as good as or better than its condition prior to Grantee's operations, at Grantee's sole cost and expense; and (B) Grantors do hereby covenant and agree that they will not erect or permit the erection of any building or structure or otherwise limit, interfere with, or obstruct Grantee's access to the said easement area as needed to exercise the rights hereby granted.

Grantee hereby agrees to indemnify and release Grantors and save Grantors harmless from and against any and all claims, actions, damages, liabilities and expenses in connection with loss of life, personal injury or damages to property arising out of, resulting from, or related to the use of the easement by Grantee, its successors, employees, agents, assigns or invitees, except to the extent that such injury or damage was caused by the acts, omissions or negligence of either of the Grantors, their agents, successors, employees, assigns or invitees. In the event that Grantors are made a party to any litigation against Grantee arising from the use of the easements by Grantee, its successors, employees, agents, assigns or invitees, Grantee shall protect and hold Grantors harmless and shall pay all costs and expenses, including reasonable attorneys' fees, incurred or paid by Grantors in connection with such litigation.

The grant and other provisions of this easement shall constitute a covenant running with the land for the benefit of the Grantee, its successors and assigns, which covenant shall be binding upon Grantors' successors and assigns.

All whereas clauses set forth above are incorporated herein by specific reference thereto and constitute part of this Agreement.

[INTENTIONALLY LEFT BLANK; SIGNATURE PAGES TO FOLLOW]

TAX MAP PARCEL NO.: 8-01-11513-01-0705-000

Prepared by and return to:

Hudson, Jones, Jaywork, & Fisher (DBE)

225 South State Street

Dover, DE 19901

PERMANENT STORMWATER UTILITY EASEMENT AGREEMENT

THIS PERMANENT STORMWATER UTILITY EASEMENT AGREEMENT ("Agreement") is made by and between BRADLEY JOHN SHELDON and DAVY LU SHELDON, hereinafter ("Grantors"), and the TOWN OF BOWERS, (hereinafter "Grantee").

WHEREAS, Grantors are the owners of certain lands situated within the municipal limits of the Town of Bowers; and

WHEREAS, Grantee desires to obtain a stormwater utility easement from Grantors in order to install, repair, and maintain stormwater drainage facilities across Grantors' property.

NOW THEREFORE, WITNESSETH that the said Grantors for and in consideration of the sum of One Dollar (\$1.00) lawful money of the United States of America and other good and valuable consideration, the receipt whereof is hereby acknowledged, do hereby grant, bargain, sell, transfer, and convey to Grantee, its successors, assigns, and agents, a perpetual and non-exclusive easement and right-of-way for the purpose of the construction, reconstruction, installation, maintenance, improvement, operation, inspection, repair, replacement, renewal, removal, and use of stormwater drainage lines, including all related appurtenances and facilities, as may be desired by Grantee, or its successors or assigns, for the distribution of stormwater runoff over, under, through, in, upon, and across the lands of the Grantors situated in Kent County, State of Delaware, said land and easement area being further described as follows:

ALL that certain lot, piece, or parcel of land situated in the Town of Bowers, Kent County, Delaware, said parcel being more particularly described in Deed Book 5990, Page 52, as recorded on November 2, 2011 in the Office of the Recorder of Deeds, in and for Kent County, Delaware, said easement area being and consisting of a 15-foot wide strip of land running across the lands of Grantors, the easement area running parallel with immediately adjacent to the easterly boarder of the North Bayshore ROW between the side property lines of Grantors.

Together with the right from time to time to clear, trim, cut, and/or remove trees, vegetation, sheds, fences, or other obstructions from five (5) feet on either side of the stormwater drainage lines and fixtures more particularly described herein, as needed in order to construct, install, repair, replace, or maintain the stormwater drainage lines and fixtures, or as determined by Grantee may, in the judgment of Grantee, interfere with or endanger the aforesaid stormwater lines and/or facilities.

The foregoing grant of easement and right-of-way is further subject to the following conditions, covenants, and agreements of the parties hereto: (A) Grantee, or its assigns, shall use caution when performing any work contemplated herein on the property in order to prevent damage

damage to Grantors' property and shall restore Grantors' property, where disturbed by Grantee's operations, to a condition as good as or better than its condition prior to Grantee's operations, at Grantee's sole cost and expense; and (B) Grantors do hereby covenant and agree that they will not erect or permit the erection of any building or structure or otherwise obstruct Grantee's access to the said easement area as needed to exercise the rights hereby granted.

Grantee hereby agrees to indemnify and release Grantors and save Grantors harmless from and against any and all claims, actions, damages, liabilities and expenses in connection with loss of life, personal injury or damages to property arising out of, resulting from, or related to the use of the easement by Grantee, its successors, employees, agents, assigns or invitees, except to the extent that such injury or damage was caused by the acts, omissions or negligence of either of the Grantors, their agents, successors, employees, assigns or invitees. In the event that Grantors are made a party to any litigation against Grantee arising from the use of the easements by Grantee, its successors, employees, agents, assigns or invitees, Grantee shall protect and hold Grantors harmless and shall pay all costs and expenses, including reasonable attorneys' fees, incurred or paid by Grantors in connection with such litigation.

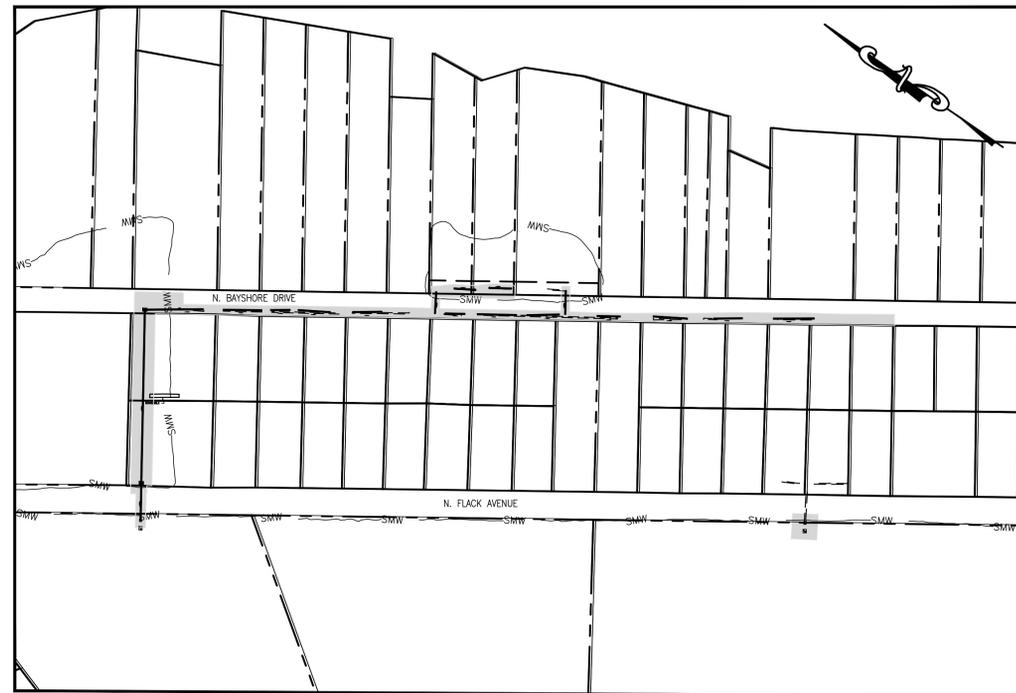
The grant and other provisions of this easement shall constitute a covenant running with the land for the benefit of the Grantee, its successors and assigns, which covenant shall be binding upon Grantors' successors and assigns.

All whereas clauses set forth above are incorporated herein by specific reference thereto and constitute part of this Agreement.

[INTENTIONALLY LEFT BLANK; SIGNATURE PAGES TO FOLLOW]

N. BAYSHORE DRAINAGE IMPROVEMENTS

FOR
TOWN OF BOWERS
08-01-115.13-01-04.00-00001
MURDERKILL HUNDRED
KENT COUNTY, DELAWARE



SITE MAP
SCALE: 1"=100'

LEGEND	EXISTING	PROPOSED
PROPERTY LINE	---	N/A
SURVEYED CONTOUR	--- 40 ---	--- 40 ---
LIMITS OF DISTURBANCE (LOD)	N/A	--- LOD ---
PERMANENT EASEMENT	--- PE ---	N/A
SILT FENCE	N/A	--- SF ---
SENSITIVE AREA PROTECTION	N/A	--- SAP ---
STABILIZED CONSTRUCTION ENTRANCE	N/A	--- SCE ---
STABILIZATION MATTING SLOPE	N/A	--- (SM-S) ---
RIPRAP OUTLET PROTECTION	N/A	--- (ROP) ---
RIPRAP STILLING BASIN	N/A	--- (RSB) ---
SWALE	--- oo ---	--- X< ---
STORMDRAIN PIPE	---	---
NEW/REDEVELOPED PAVEMENT	N/A	---
GRASS ACCESS	N/A	---
GRAVEL	N/A	---
DRIVEWAY REMOVAL	N/A	---
FORCE MAIN	--- FM ---	N/A
UNDERGROUND GAS	--- UG-G ---	N/A
UNDERGROUND FIBER	--- UG-F ---	N/A
UNDERGROUND ELECTRIC	--- UG-E ---	N/A
OVERHEAD UTILITY	--- OH ---	N/A
FENCE LINE	---	---
BUILDING	---	N/A
LANDSCAPING	---	N/A
SIGN	---	---
LAMP	---	N/A
MAILBOX	---	N/A
FIRE HYDRANT	---	N/A
POST	---	N/A
WATER VALVE	---	N/A
CONCRETE MONUMENT	---	N/A
ELECTRIC TRANSFORMER	---	N/A
UTILITY BOX - FIBER	---	N/A
LIGHT	---	N/A
ELECTRIC OUTLET	---	N/A
UTILITY POLE	---	N/A
MANHOLE	---	N/A
WATER LINE	---	N/A
SANITARY SEWER	---	N/A
FIRE DEPARTMENT CONNECTION	---	N/A
WOODSLINE	---	N/A
WETLANDS	---	N/A

INDEX OF SHEETS

SHEET NO.:	TITLE
C100	TITLE SHEET
C101	SITE PLAN
C102	PIPE PROFILES
C103	OUTFALL SECTIONS
C104	TYPICAL SECTIONS
C105	CONSTRUCTION DETAILS
C106	CONSTRUCTION DETAILS
C107	CONSTRUCTION DETAILS
C108	CONSTRUCTION DETAILS
C109	CONSTRUCTION DETAILS
C110	ENVIRONMENTAL IMPACT TABLE
C111	ENVIRONMENTAL COMPLIANCE FOR DNREC WSLs



LOCATION MAP SCALE: 1" = 500'

DATA COLUMN

- PROJECT TAX MAP: 08-01-115.13-01-04.00-00001
- TITLE SOURCE: D.B. 9520-297
- SITE ADDRESS: NORTH BAYSHORE DRIVE, FREDERICA, DE 19946
- ZONING: (SFR) SINGLE FAMILY RESIDENTIAL
- EXISTING SITE AREA: 4.67± ACRES
- PROPOSED SITE AREA: 4.67± ACRES
- PROPOSED CONDITION: N/A - NO NEW BUILDING STRUCTURES
- PROPOSED DISCHARGE: EXISTING WETLANDS ALONG NORTH FLACK AVENUE
- PROPOSED TOTAL LOD: 0.46 ACRES
- DATUM: VERTICAL - NAVD88, HORIZONTAL - NAD83
- BENCHMARK: TRAVERSE POINT 2, NEAR WEST PROPERTY CORNER AT 228 N. FLACK AVENUE, TOWN OF BOWERS, 3308 MAIN STREET, FREDERICA, DE 19946, NORTHING: 387585.5629, EASTING: 660633.5823, ELEVATION: 3.98'
- GROWTH ZONE: SUBJECT PARCEL DOES NOT LIE WITHIN THE DESIGNATED GROWTH ZONE.
- FLOODPLAIN: PER FEMA MAP NO. 10001C0259J, DATED JULY 7, 2014, THE SUBJECT PARCEL IS LOCATED WITHIN A FLOOD ZONE.
- WETLANDS: A WETLANDS DELINEATION WAS PERFORMED BY CENTURY ENGINEERING ON JUNE 2, 2022 AND WETLANDS ARE FOUND IN THE VICINITY OF THIS PROJECT.
- OWNER/DEVELOPER: ADA CARTER PUZZO, MAYOR, TOWN OF BOWERS, 3308 MAIN STREET, FREDERICA, DE 19946, PHONE: (302) 572-9000
- CIVIL ENGINEER: ALAN K. MARTENEY, P.E., CENTURY ENGINEERING, A KLEINFELDER COMPANY, 550 BAY ROAD, DOVER, DE 19901, PHONE: (302) 734-9188

OWNER/DEVELOPER CERTIFICATION

I, ADA CARTER PUZZO, CERTIFY THAT ALL LAND CLEARING, CONSTRUCTION AND DEVELOPMENT SHALL BE DONE PURSUANT TO THE APPROVED PLAN AND THAT RESPONSIBLE PERSONNEL (I.E. BLUE CARD HOLDER) INVOLVED IN THE LAND DISTURBANCE WILL HAVE A CERTIFICATION OF TRAINING PRIOR TO INITIATION OF THE PROJECT, AT A DNREC SPONSORED OR APPROVED TRAINING COURSE FOR THE CONTROL OF EROSION AND SEDIMENT DURING CONSTRUCTION. IN ADDITION, I GRANT THE DIRECT SEDIMENT AND STORMWATER PROGRAM AND/OR THE RELEVANT DELEGATED AGENCY THE RIGHT TO CONDUCT ON-SITE REVIEWS, AND I UNDERSTAND MY RESPONSIBILITIES UNDER THE NPDES CONSTRUCTION GENERAL PERMIT, AS REFERENCED ON THIS COVERSHEET.

ADA CARTER PUZZO
MAYOR, TOWN OF BOWERS
3308 MAIN STREET
FREDERICA, DE 19946

2/03/2026

CERTIFICATION OF PLAN ACCURACY

I, ALAN K. MARTENEY, HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED UNDER MY SUPERVISION AND TO THE BEST OF MY KNOWLEDGE COMPLIES WITH THE APPLICABLE STATE AND LOCAL REGULATIONS AND ORDINANCES.

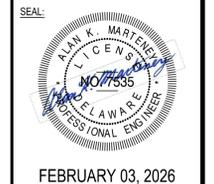
Alan K. Marteney

ALAN K. MARTENEY, P.E., DE NO. 7535
CENTURY ENGINEERING, LLC
550 BAY ROAD
DOVER, DELAWARE 19901
PHONE: (302) 734-9188 / FAX: (302) 734-4589

2/03/2026

REVISIONS:	DATE:	DESCRIPTION:	BY:

N. BAYSHORE DRIVE
DRAINAGE IMPROVEMENTS
COVER SHEET



CENTURY ENGINEERING
A Kleinfelder Company

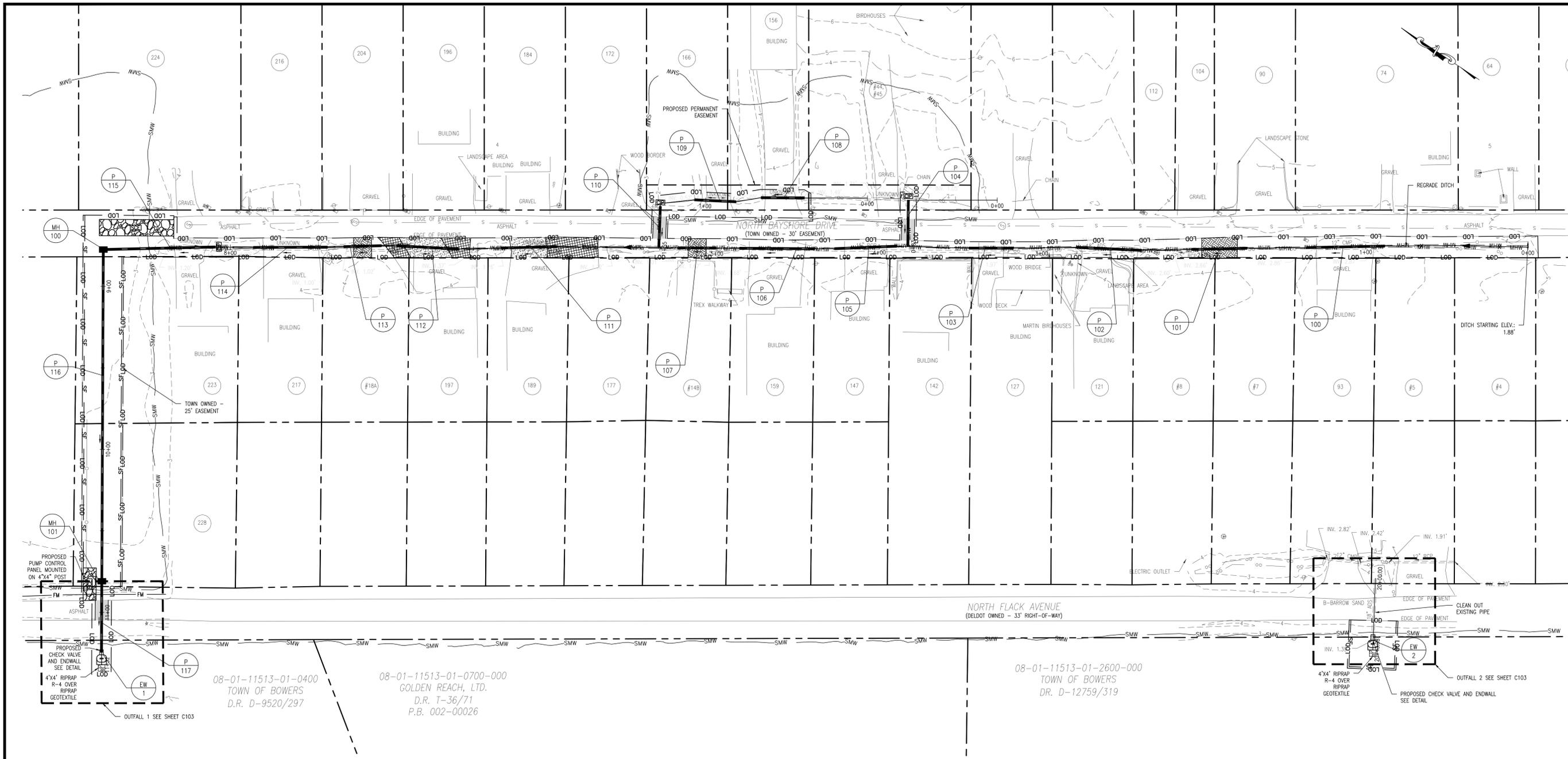
CEI CONTRACT NO.: 215015.00



DESIGNED BY: EAM
DRAWN BY: EAM
CHECKED BY: AKM

DATE: FEBRUARY 03, 2026
SCALE: AS NOTED
SHEET NO.: C100
CONTRACT NO.: 215015.00

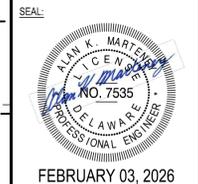
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REVISIONS:

DATE:	DESCRIPTION:	BY:

**N. BAYSHORE DRIVE
DRAINAGE IMPROVEMENTS
DRAINAGE IMPROVEMENTS SITE PLAN**



FEBRUARY 03, 2026
CIVIL ENGINEER



CEI CONTRACT NO.: 215015.00



DESIGNED BY:
EAM

DRAWN BY:
EAM

CHECKED BY:
AKM

DATE:
FEBRUARY 03, 2026

SCALE:
1" = 30'

SHEET NO.:
C101

CONTRACT NO.:
215015.00



DRAINAGE PIPE SCHEDULE							
PIPE ID	LENGTH	SIZE	TYPE	CLASS	SLOPE	INLET INVERT	OUTLET INVERT
P-100	49'	12"	RCP	IV	0.0010	1.79	1.74
P-101	34'	12"	RCP	IV	0.0010	1.71	1.67
P-102	40'	12"	RCP	IV	0.0010	1.64	1.60
P-103	28'	12"	RCP	IV	0.0010	1.56	1.53
P-104	28'	12"	RCP	IV	0.0010	1.52	1.50
P-105	39'	12"	RCP	IV	0.0010	1.49	1.45
P-106	47'	12"	RCP	IV	0.0010	1.44	1.39
P-107	23'	12"	RCP	IV	0.0010	1.38	1.36
P-108	27'	12"	RCP	IV	0.0010	1.46	1.44
P-109	26'	12"	RCP	IV	0.0010	1.42	1.39
P-110	25'	12"	RCP	IV	0.0010	1.37	1.34
P-111	35'	12"	RCP	IV	0.0010	1.28	1.25
P-112	38'	12"	RCP	IV	0.0010	1.22	1.18
P-113	24'	12"	RCP	IV	0.0010	1.17	1.15
P-114	46'	12"	RCP	IV	0.0010	1.14	1.09
P-115	67'	12"	RCP	IV	0.0048	1.07	0.75
P-116	201'	12"	RCP	IV	0.0022	0.75	0.30
P-117	43'	12"	RCP	IV	0.0010	2.04	2.00

MANHOLE SCHEDULE			
MH NO.	BOX SIZE	TOP ELEV.	INV. ELEV.
MH-100	48"x30"	3.00	0.75
MH-101*	66"x66"	4.31	*

*SEE CONSTRUCTION DETAILS

PROPERTY OWNER INFORMATION		
ADDRESS	PARCEL NUMBER	OWNER
65 N. BAYSHORE DR.	8-01-11513-01-2004-00001	VARCO INVESTMENTS LLC
81 N. BAYSHORE DR.	8-01-11513-01-1901-00001	ORAPPELO, BRIAN & FEIGENBUTZ-ORAPPELO, ERICA
93 N. BAYSHORE DR.	8-01-11513-01-1900-00001	CLACK, JAMES S. & LIPFORD, FAITH T.
101 N. BAYSHORE DR.	8-01-11513-01-1600-00001	MOORE, STREET & DAWSON, AMY
(#8) N. BAYSHORE DR.	8-01-11513-01-1501-00001	DAVID, SANDRA L.
121 N. BAYSHORE DR.	8-01-11513-01-1101-00001	MCDONALD, JARED W & GROSS, LEAH M.
127 N. BAYSHORE DR.	8-01-11513-01-0800-00001	TETROCK, JENNIFER
142 N. FLACK AVE.	8-01-11513-01-0703-00001	FEAGUE, SHERRY & DAVID
147 N. BAYSHORE DR.	8-01-11513-01-0711-00001	SHULER, TAMEKA M.
159 N. BAYSHORE DR.	8-01-11513-01-0710-00001	SHUCK, DOUGLAS S. & LEIGH N.
(#148) N. BAYSHORE DR.	8-01-11513-01-0706-00001	SHUCK, DOUGLAS S. & LEIGH N.
177 N. BAYSHORE DR.	8-01-11513-01-0404-00001	BACHTLE, DANIEL A.
189 N. BAYSHORE DR.	8-01-11513-01-0403-00001	FRY, JENNIFER L.
197 N. BAYSHORE DR.	8-01-11513-01-0401-00001	EDWARDS, SUSAN V.
201 N. BAYSHORE DR.	8-01-11513-01-0407-00001	SMITH, DWIGHT DAVID & JUSTIS-SMITH, JULIANNE M.
217 N. BAYSHORE DR.	8-01-11513-01-0501-00001	PADEL, SHILPA NATVARBHAI & SIMMONS, HEROLIN
223 N. BAYSHORE DR.	8-01-11513-01-0301-00001	MORATAYA, SANTIAGO ANTHONY & MIRIAM A.
228 N. FLACK AVE.	8-01-11513-01-0302-00001	SUMMERALL, NORMAN & RENEE
(#44.55) N. BAYSHORE DR.	8-01-11513-01-0701-00001	MARTIN, JUDITH E. & JAMES D.
156 N. BAYSHORE DR.	8-01-11513-01-0704-00001	MARTIN, JUDITH E. & JAMES D.
166 N. BAYSHORE DR.	8-01-11513-01-0705-00001	SHIELDON, DAVY LU & BRADLEY JOHN

NOTE: PROPERTY OWNER INFORMATION LISTED FOR PROPERTIES ADJACENT TO LDD
- LOT NUMBER

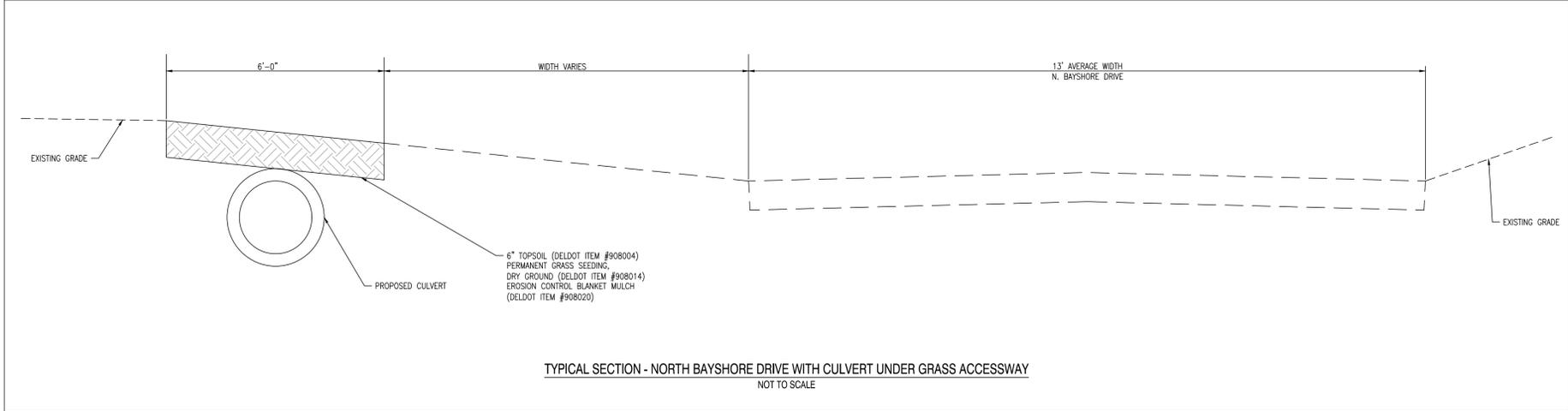
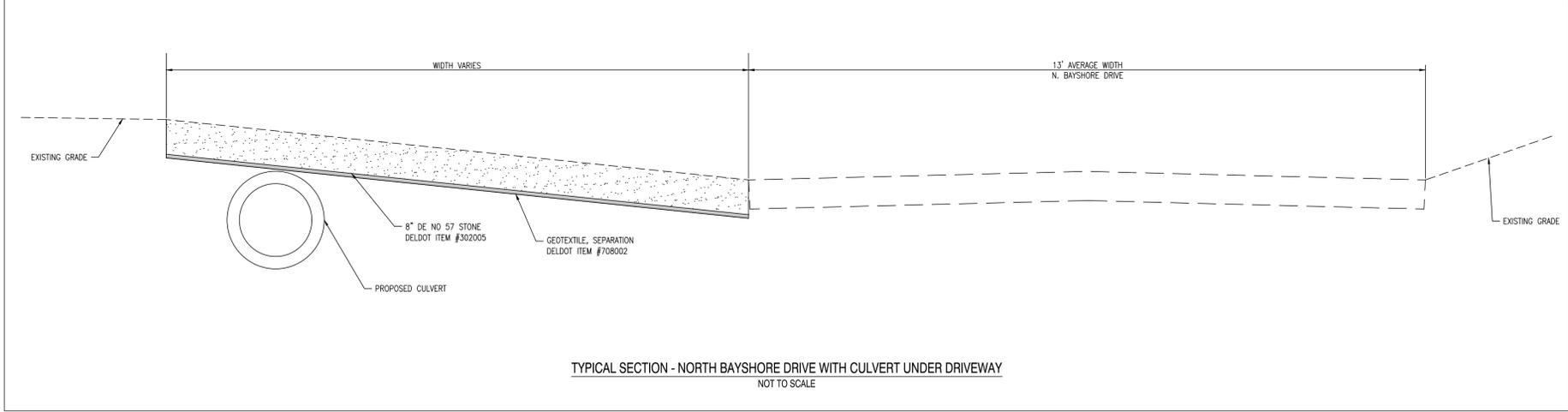
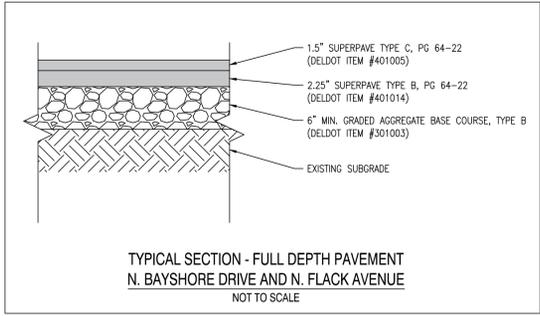
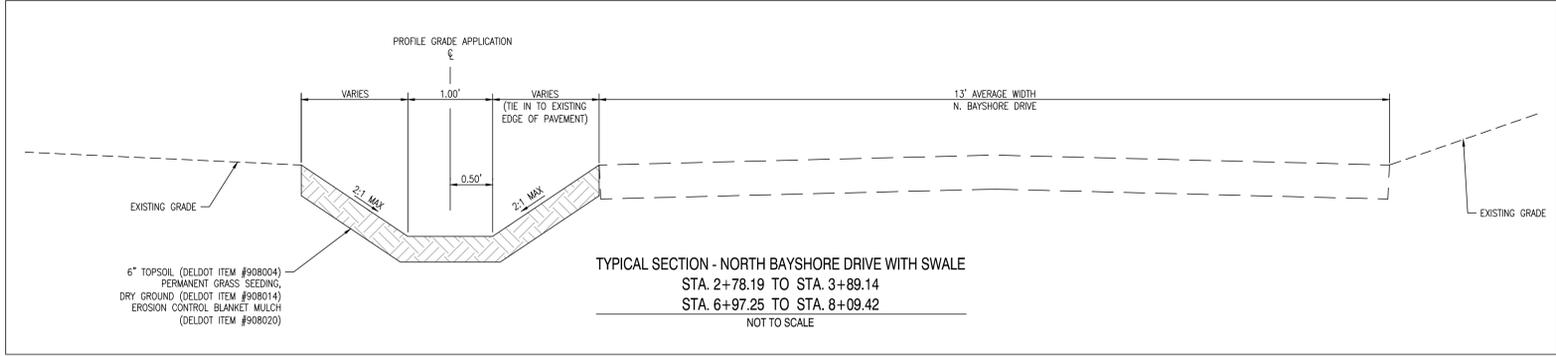
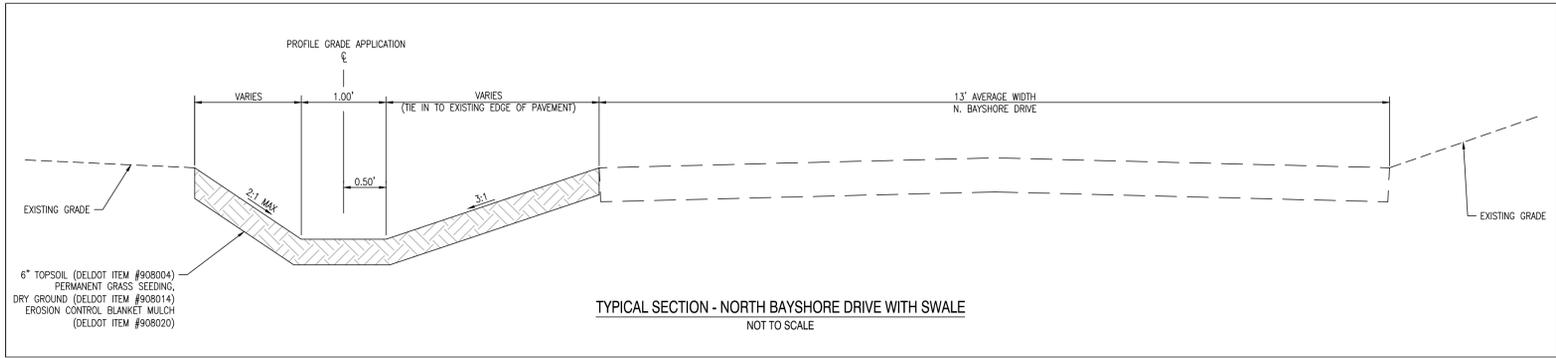
PIPE COORDINATES			
PIPE ID	INVERT	NORTHING	EASTING
100	START	387054.74	661264.73
	END	387094.30	661237.80
101	START	387124.72	661216.44
	END	387152.58	661197.44
102	START	387178.22	661179.85
	END	387212.56	661159.33
103	START	387244.88	661137.32
	END	387267.61	661122.27
104	START	387315.02	661126.16
	END	387299.88	661102.71
105	START	387305.47	661098.63
	END	387336.44	661076.32
106	START	387346.66	661069.46
	END	387385.38	661044.17
107	START	387397.76	661036.18
	END	387416.99	661023.58
108	START	387369.23	661091.94
	END	387391.50	661077.38
109	START	387403.02	661066.71
	END	387424.99	661053.63

PIPE COORDINATES (CONT.)			
PIPE ID	INVERT	NORTHING	EASTING
110	START	387440.32	661038.54
	END	387427.43	661017.34
111	START	387479.86	660982.87
	END	387507.97	660963.23
112	START	387529.80	660948.08
	END	387562.32	660928.83
113	START	387570.43	660923.58
	END	387589.34	660910.33
114	START	387597.72	660904.44
	END	387635.53	660879.19
115	START	387655.46	660866.34
	END	387710.34	660828.11
116	START	387711.33	660825.96
	END	387601.13	660657.88
117	START	387599.76	660655.79
	END	387576.58	660620.38

CONTRACT/PROJECT NOTES

- THE TOWN OF BOWERS SHALL OBTAIN PERMISSION FROM PROPERTY OWNERS FOR ALL WORK OUTSIDE OF THE RIGHT-OF-WAY.
- THE PROPERTY OWNERS OF ANY IMPACTED PROPERTY SHALL BE NOTIFIED IN WRITING 5 DAYS PRIOR TO COMMENCING WITH CONSTRUCTION.
- ACCESS COORDINATION SHALL BE BY TOWN OF BOWERS.
- CONTRACTOR IS RESPONSIBLE FOR ENSURING COMPLIANCE WITH ALL ELEMENTS OF DELAWARE MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL TEMPORARY TRAFFIC IMPACTS SHALL FOLLOW THE DELAWARE MUTCD. CONTRACTOR SHALL SUBMIT TRAFFIC CONTROL PLANS FOR EACH LOCATION TO THE ENGINEER FOR APPROVAL PRIOR TO MOBILIZATION.
- ALL WORK UNDER CONTRACT SHALL FOLLOW STATE OF DELAWARE DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS.
- THE CONTRACTOR SHALL PROVIDE NECESSARY FACILITIES, INCLUDING, BUT NOT LIMITED TO, RESTROOMS DURING CONSTRUCTION. TOWN FACILITIES SHALL NOT BE USED. EQUIPMENT PARKING AND MATERIAL STAGING SHALL BE LIMITED TO DESIGNATED STAGING AND STOCKPILE AREAS. THE CONTRACTOR SHALL IDENTIFY STOCKPILE AND STAGING AREAS AND SUBMIT TO THE ENGINEER FOR APPROVAL.
- THE CONTRACTOR SHALL NOTE THAT IN CASE OF DISCREPANCY BETWEEN SCALED AND THE FIGURED DIMENSIONS SHOWN ON THE PLANS, THE FIGURED DIMENSIONS SHALL GOVERN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMING ALL DIMENSIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR BRINGING ANY DIMENSIONAL DISCREPANCIES TO THE ATTENTION OF THE ENGINEER FOR CLARIFICATION.
- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR OBTAINING OFF-SITE SPOIL AREAS FOR LEGAL DISPOSAL OF ANY EXCESS MATERIAL NOT ACCEPTED BY THE TOWN AND/OR UNSUITABLE MATERIALS AS NECESSARY IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REQUIREMENTS. ALL COST FOR RECYCLING, TRANSPORTING TO, PROCURING AND UTILIZING THE OFF-SITE SPOIL AREAS ARE TO BE INCIDENTAL TO THE CONTRACT.
- IN CASE OF CONFLICT BETWEEN THE "MANUFACTURER'S RECOMMENDATIONS" FOR APPROVED MATERIAL AND THE GOVERNING "CONTRACT SPECIFICATIONS" FOR THE MATERIAL, THE MORE RESTRICTIVE OF THE TWO SHALL PREVAIL, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- THESE DRAWINGS DO NOT INCLUDE NECESSARY ELEMENTS OF CONSTRUCTION SAFETY. ALL CONSTRUCTION, INCLUDING EXCAVATION, MUST BE COMPLETED IN ACCORDANCE WITH THE REQUIREMENTS OF THE OCCUPATIONS SAFETY AND HEALTH ACT, CFR 1926.625(b)(2), AND ALL FEDERAL, STATE, AND LOCAL REQUIREMENTS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL SITE SAFETY.
- NO DEBRIS SHALL BE BURIED OR BURNED ON THE SITE UNLESS SPECIFICALLY NOTED WITHIN THESE PLANS OR SPECIFICATIONS.
- THE CONTRACTOR SHALL MAINTAIN A CLEAN SET OF AS-BUILT PLANS THAT SHALL ACCURATELY ILLUSTRATE ALL FIELD CHANGES NEATLY DRAWN AND LABELED IN RED INK. FINAL AS-BUILT PLANS SHALL BE DATED AND SIGNED BY THE CONTRACTOR AND SUBMITTED TO THE OWNER AT THE END OF THE PROJECT FOR RECORDED.
- THE CONTRACTOR SHALL PROVIDE A MINIMUM OF 48 HOURS NOTICE IN ADVANCE FOR ANY UTILITY DISRUPTION FOR APPROVAL BY THE ENGINEER.
- PARCEL AND BOUNDARY LINES REFERENCED FROM GIS INFORMATION. NO BOUNDARY SURVEY WAS REQUESTED OR PERFORMED FOR THIS PROJECT.
- EXISTING UTILITIES SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE AT THE TIME THIS PLAN WAS DEVELOPED. COMPLETENESS OR CORRECTNESS OF THE UTILITIES SHOWN THEREON IS NOT GUARANTEED. THE CONTRACTOR IS RESPONSIBLE FOR EMPLOYING AN UNDERGROUND UTILITY LOCATOR TO LOCATE AND MARK EXISTING UTILITIES WITHIN THE LIMIT OF DISTURBANCE PRIOR TO BEGINNING CONSTRUCTION. ALL EXISTING UTILITIES SHALL BE PROTECTED AND TEMPORARILY SUPPORTED OR RELOCATED AS NECESSARY TO COMPLETE THE WORK IN ACCORDANCE WITH THE PERTINENT OWNER/UTILITY COMPANY REQUIREMENTS. ANY UTILITIES DAMAGED BY THE CONTRACTOR SHALL BE PROMPTLY AND FULLY RESTORED TO THE SATISFACTION OF THE OWNER.
- FEATURES NOT SPECIFICALLY DESIGNATED FOR DEMOLITION OR REMOVAL THAT ARE DAMAGED BY THE CONTRACTOR OR THE CONTRACTOR'S SUBCONTRACTORS SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE TOWN.
- IN ANY LOCATION WHERE STRIPING IS REMOVED OR DAMAGED AS A RESULT OF CONSTRUCTION SHALL BE REPLACED IN KIND.

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REVISIONS:

DATE:	DESCRIPTION:	BY:

**N. BAYSHORE DRIVE
DRAINAGE IMPROVEMENTS
TYPICAL SECTIONS**

SEAL:

ALAN K. MARTINI
LICENSE NO. 7535
DELAWARE
PROFESSIONAL ENGINEER

FEBRUARY 03, 2026
CIVIL ENGINEER

CENTURY
ENGINEERING
A Kiewit Company

CEI CONTRACT NO.: 215015.00

T. J. BOWERS & SONS, INC.
DELAWARE

DESIGNED BY:
EAM

DRAWN BY:
EAM

CHECKED BY:
AKM

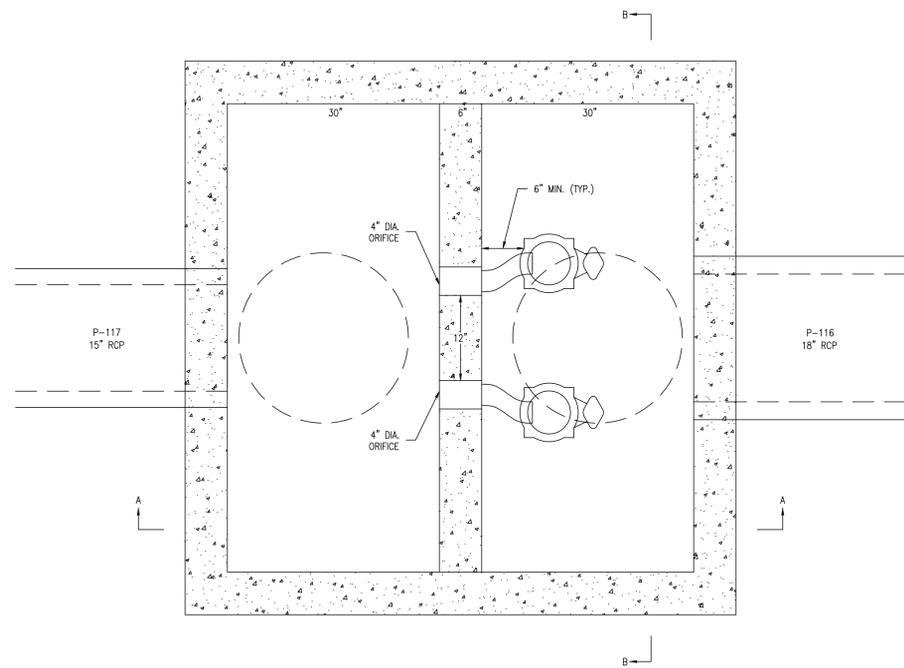
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FEBRUARY 03, 2026

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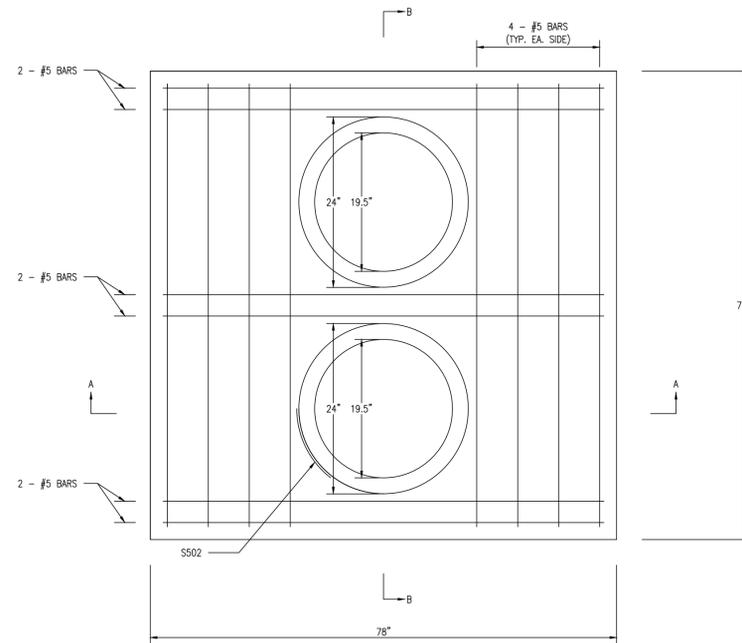
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C104

CONTRACT NO.:
215015.00

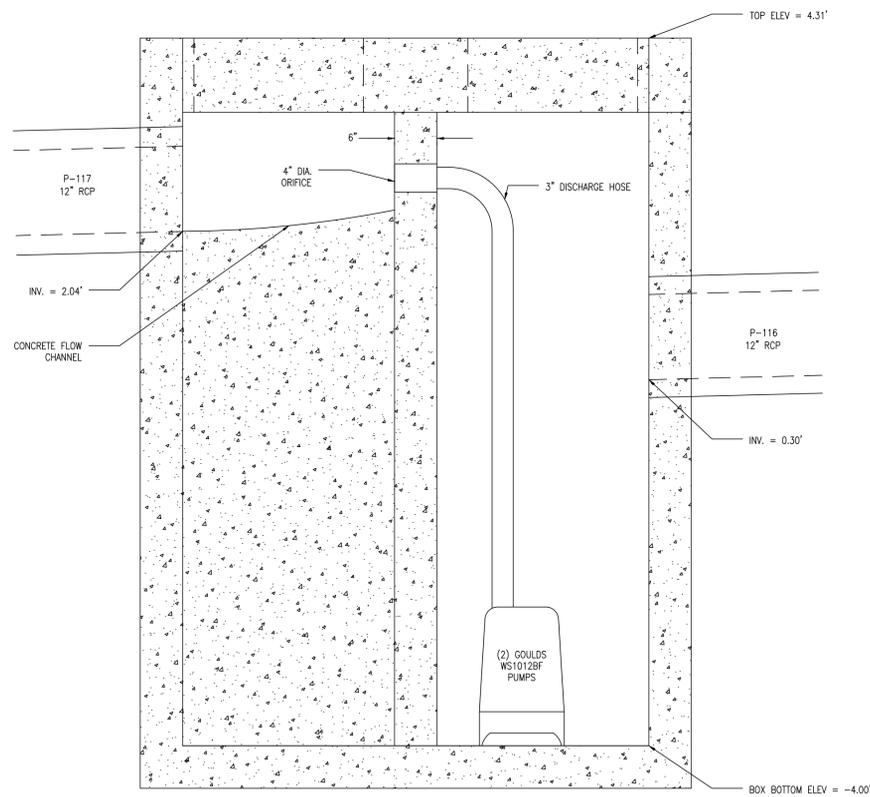
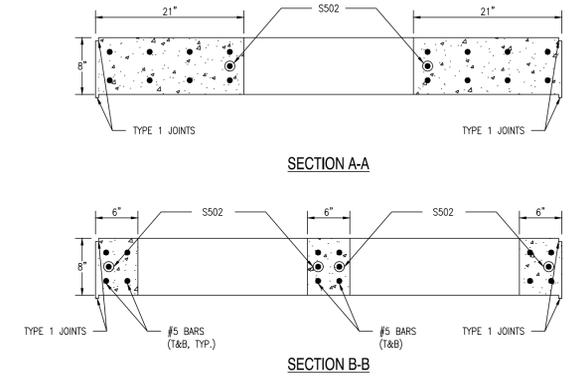
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(MH-101) 66" x 66" DELDOT MANHOLE WITH PUMP STATION PLAN DETAIL
NOT TO SCALE

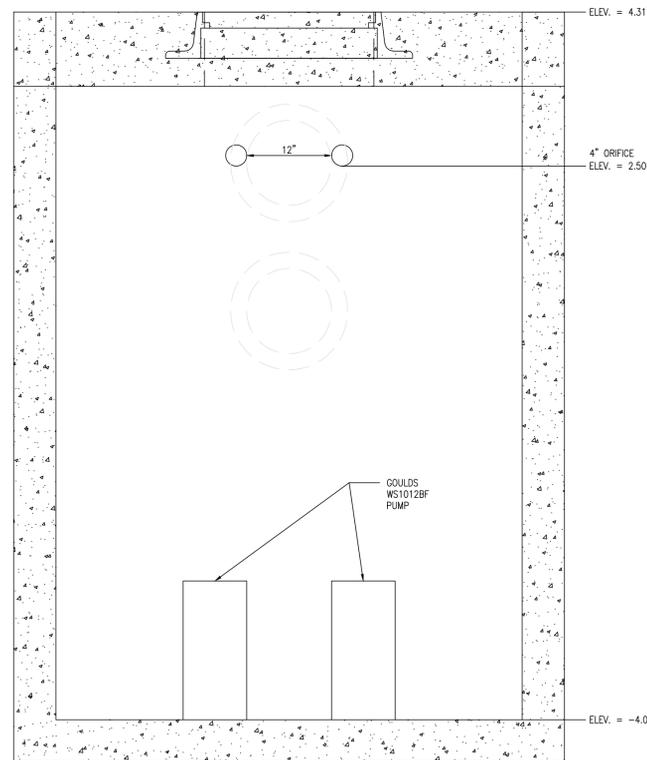


(MH-101) 66" x 66" DELDOT MANHOLE WITH PUMP STATION TOP UNIT DETAIL
NOT TO SCALE

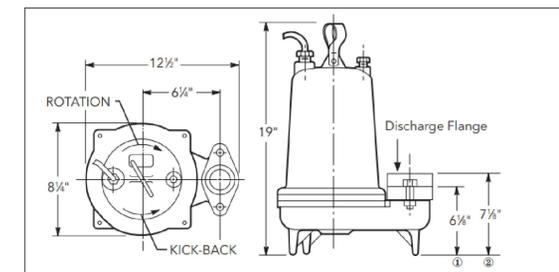


(MH-101) 66" x 66" DELDOT MANHOLE MODIFIED WITH PUMP STATION SECTION A-A DETAIL
NOT TO SCALE

NOTE: PLACE CONDUITS IN OUTER WALL OF MANHOLE FOR ELECTRIC SERVICE FEEDS TO PUMPS.



(MH-101) 66" x 66" DELDOT MANHOLE WITH PUMP STATION SECTION B-B DETAIL
NOT TO SCALE

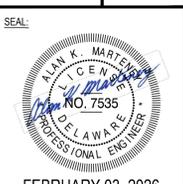


DISCHARGE ELEV.:	2.50'
HIGH-HIGH ALARM ELEV.:	0.50'
LAG PUMP ON ELEV.:	0.00'
LEAD PUMP ON ELEV.:	-0.50'
PUMPS OFF ELEV.:	-2.50'
END SUCTION PIPE ELEV.:	-3.50'
BOTTOM ELEV.:	-4.00'

GOULD PUMP DETAIL
NOT TO SCALE

REVISIONS:	DATE:	DESCRIPTION:
BY:		

N. BAYSHORE DRIVE
DRAINAGE IMPROVEMENTS
CONSTRUCTION DETAILS



FEBRUARY 03, 2026
CIVIL ENGINEER



CEI CONTRACT NO.: 215015.00



DESIGNED BY:
EAM

DRAWN BY:
EAM

CHECKED BY:
AKM

DATE:
FEBRUARY 03, 2026

SCALE:
N.T.S

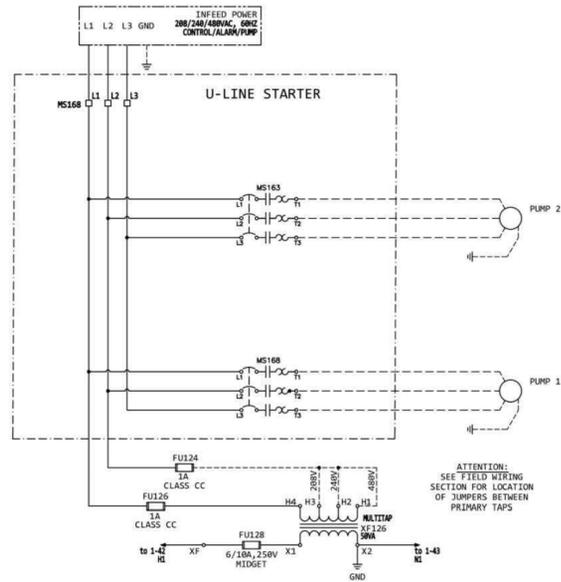
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C107

CONTRACT NO.:
215015.00

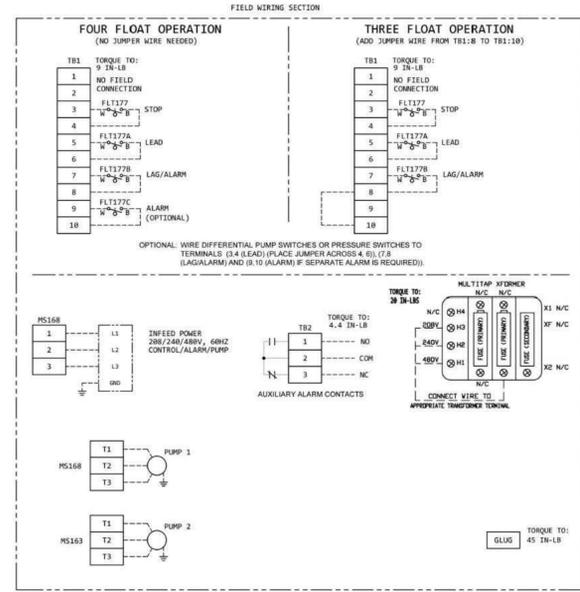
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DUPLEX THREE PHASE PANEL
 KD31255WF (1.25 - 5 AMPS) • KD34518WF (4.5 - 18 AMPS) • KD38032WF (8 - 32 AMPS)

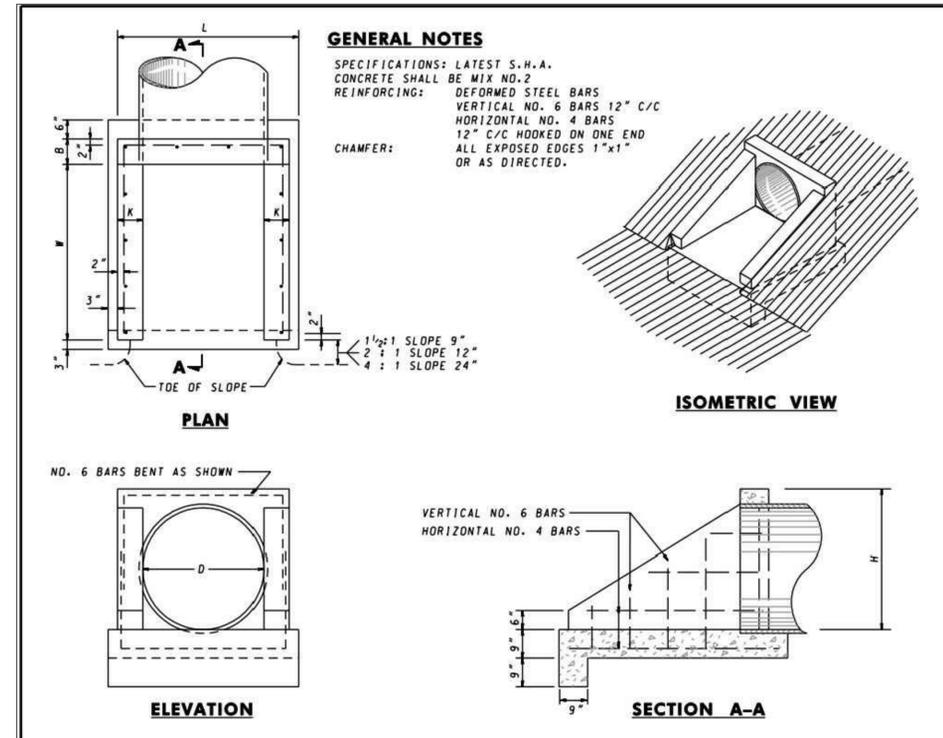


ATTENTION:
SEE FIELD WIRING
SECTION FOR LOCATION
OF JUMPERS BETWEEN
PRIMARY TAPS

DUPLEX THREE PHASE PANEL
 KD31255WF (1.25 - 5 AMPS) • KD34518WF (4.5 - 18 AMPS) • KD38032WF (8 - 32 AMPS)



- NOTES:
1. FIELD WIRING IS SHOWN
 2. TEMPERATURE RATING OF FIELD INSTALLED CONDUCTORS MUST BE AT LEAST 140° F. (60° C.).
 3. FIELD WIRING WILL ACCEPT COPPER CONDUCTORS ONLY.
 4. CONNECT GROUND LNK IN PANEL TO A SECURE EARTH GROUND.
 5. INSTALL IN ACCORDANCE WITH ARTICLE 409 OF THE NATIONAL ELECTRIC CODE.
 6. MAIN DISCONNECT AND OVERCURRENT PROTECTION OF INCOMING FEEDER CIRCUIT PROVIDED BY OTHERS AND MUST BE SIZED ACCORDING TO PUMP/MOTOR MANUFACTURING SPECIFICATIONS.



GENERAL NOTES
 SPECIFICATIONS: LATEST S.H.A.
 CONCRETE SHALL BE MIX NO. 2
 REINFORCING: DEFORMED STEEL BARS
 VERTICAL NO. 6 BARS 12" C/C
 HORIZONTAL NO. 4 BARS
 12" C/C HOOKED ON ONE END
 ALL EXPOSED EDGES 1"x1"
 OR AS DIRECTED.

STRUCTURE ID	PIPE DIA. D	DIMENSIONS					TIDEFLEX CHECK VALVE SIZE
		L	B	H	W	K	
EW-1	12"	2' - 0"	9"	2' - 0"	1' - 5"	6"	12"
EW-2	18"	2' - 6"	9"	2' - 3"	1' - 10"	6"	18"

EW-1 & EW-2 ENDWALL DETAIL
 NOT TO SCALE

REVISIONS:

DATE:	DESCRIPTION:

N. BAYSHORE DRIVE
 DRAINAGE IMPROVEMENTS
 CONSTRUCTION DETAILS

SEAL:

FEBRUARY 03, 2026
 CIVIL ENGINEER

CENTURY ENGINEERING
 A Kleinfelder Company

CEI CONTRACT NO.: 215015.00

DESIGNED BY:
 EAM

DRAWN BY:
 EAM

CHECKED BY:
 AKM

DATE:
 FEBRUARY 03, 2026

SCALE:
 N.T.S

SHEET NO.:
 C109

CONTRACT NO.:
 215015.00

IMPACT ID (C101)	IMPACT ID (C111)	STATE JURISDICTION	IMPACT TYPE	ACTIVITY	IMPACT AREA LENGTH (FT)	IMPACT AREA WIDTH (FT)	IMPACT AREA DEPTH (FT)	IMPACT VOL (CU FT)	IMPACT AREA (SQ FT)	LOSS AREA (SQ FT)
EW1	1	WETLANDS	PERMANENT	STRUCTURE - ENDWALL OUTFALL	2.25	1.42	2.00	6.39	3.20	3.20
EW1	2	WETLANDS	TEMPORARY	PIPE INSTALLATION - TIMBER MATTING	13.45	12.03	-	-	161.80	-
P117	3	WETLANDS	PERMANENT	STRUCTURE - PIPE	5.00	1.00	1.00	5.00	5.00	5.00
P117	4	SUBAQUEOUS	PERMANENT	STRUCTURE - PIPE	34.00	1.00	1.00	34.00	34.00	-
P115/MH100/P116/MH101/P117	5	WETLANDS	TEMPORARY	PIPE INSTALLATION - TIMBER MATTING	229.15	41.81	-	-	9580.76	-
P117	6	WETLANDS	PERMANENT	STRUCTURE - PIPE	4.00	1.00	1.00	4.00	4.00	4.00
MH101	7	WETLANDS	PERMANENT	MANHOLE	5.50	5.50	2.27	68.67	30.25	30.25
P116	8	WETLANDS	PERMANENT	STRUCTURE - PIPE	201.00	1.00	1.00	201.00	201.00	201.00
MH100	9	WETLANDS	PERMANENT	MANHOLE	2.50	4.00	8.31	83.10	10.00	10.00
P115	10	WETLANDS	PERMANENT	STRUCTURE - PIPE	210.75	1.00	1.00	210.75	210.75	210.75
P115	11	SUBAQUEOUS	PERMANENT	STRUCTURE - PIPE	67.00	1.00	1.00	67.00	67.00	-
P115/P114	12	SUBAQUEOUS	TEMPORARY	GRADING/SLOPING*	23.90	1.00	1.23	29.40	23.90	-
P114	13	SUBAQUEOUS	PERMANENT	STRUCTURE - PIPE	46.00	1.00	1.00	46.00	46.00	-
P114/P113	14	SUBAQUEOUS	TEMPORARY	GRADING/SLOPING*	10.34	1.00	1.27	13.13	10.34	-
P113	15	SUBAQUEOUS	PERMANENT	STRUCTURE - PIPE	24.00	1.00	1.00	24.00	24.00	-
P113/P112	16	SUBAQUEOUS	TEMPORARY	GRADING/SLOPING*	9.72	1.00	2.46	23.91	9.72	-
P112	17	SUBAQUEOUS	PERMANENT	STRUCTURE - PIPE	38.00	1.00	1.00	38.00	38.00	-
P112/P111	18	SUBAQUEOUS	TEMPORARY	GRADING/SLOPING*	26.51	1.00	1.57	41.62	26.51	-
P111	19	SUBAQUEOUS	PERMANENT	STRUCTURE - PIPE	35.00	1.00	1.00	35.00	35.00	-
P111/P107	20	SUBAQUEOUS	TEMPORARY	GRADING/SLOPING*	74.87	1.00	1.75	131.02	74.87	-
P107	21	SUBAQUEOUS	PERMANENT	STRUCTURE - PIPE	23.00	1.00	1.00	23.00	23.00	-
P107/P106	22	SUBAQUEOUS	TEMPORARY	GRADING/SLOPING*	14.65	1.00	1.26	18.46	14.65	-
P106	23	SUBAQUEOUS	PERMANENT	STRUCTURE - PIPE	47.00	1.00	1.00	47.00	47.00	-
P106/P105	24	SUBAQUEOUS	TEMPORARY	GRADING/SLOPING*	12.32	1.00	1.81	22.30	12.32	-
P105	25	SUBAQUEOUS	PERMANENT	STRUCTURE - PIPE	39.00	1.00	1.00	39.00	39.00	-
P105/P104/P103	26	SUBAQUEOUS	TEMPORARY	GRADING/SLOPING*	44.61	1.00	1.89	84.31	44.61	-
P103	27	SUBAQUEOUS	PERMANENT	STRUCTURE - PIPE	28.00	1.00	1.00	28.00	28.00	-
P103/P102	28	SUBAQUEOUS	TEMPORARY	GRADING/SLOPING*	38.93	1.00	1.64	63.85	38.93	-
P102	29	SUBAQUEOUS	PERMANENT	STRUCTURE - PIPE	40.00	1.00	1.00	40.00	40.00	-
P102/P101	30	SUBAQUEOUS	TEMPORARY	GRADING/SLOPING*	31.13	1.00	1.71	53.23	31.13	-
P101	31	SUBAQUEOUS	PERMANENT	STRUCTURE - PIPE	34.00	1.00	1.00	34.00	34.00	-
P101/P100	32	SUBAQUEOUS	TEMPORARY	GRADING/SLOPING*	36.69	1.00	1.63	59.80	36.69	-
P100	33	SUBAQUEOUS	PERMANENT	STRUCTURE - PIPE	49.00	1.00	1.00	49.00	49.00	-
P100	34	SUBAQUEOUS	TEMPORARY	GRADING/SLOPING*	87.79	1.00	1.67	146.61	87.79	-
P113	35	SUBAQUEOUS	PERMANENT	GRASS ACCESS	11.00	1.00	0.50	5.50	11.00	-
P113/P112	36	SUBAQUEOUS	PERMANENT	DRIVEWAY REMOVAL	11.78	1.00	0.50	5.89	11.78	-
P112	37	SUBAQUEOUS	PERMANENT	GRAVEL	26.47	1.00	0.50	13.24	26.47	-
P112/P111	38	SUBAQUEOUS	PERMANENT	DRIVEWAY REMOVAL	13.94	1.00	0.50	6.97	13.94	-
P111	39	SUBAQUEOUS	PERMANENT	GRAVEL	22.21	1.00	0.50	11.11	22.21	-
P111/P110	40	SUBAQUEOUS	PERMANENT	DRIVEWAY REMOVAL	31.44	1.00	0.50	15.72	31.44	-
P107	41	SUBAQUEOUS	PERMANENT	GRASS ACCESS	11.24	1.00	0.50	5.62	11.24	-
P101	42	SUBAQUEOUS	PERMANENT	GRASS ACCESS	22.06	1.00	0.50	11.03	22.06	-
P110	43	SUBAQUEOUS	PERMANENT	STRUCTURE - PIPE	17.00	1.00	1.00	17.00	17.00	-
P110	44	WETLANDS	PERMANENT	STRUCTURE - PIPE	8.00	1.00	1.00	8.00	8.00	8.00
P110/P109	45	WETLANDS	TEMPORARY	GRADING/SLOPING*	21.74	1.00	0.10	2.17	21.74	-
P109	46	WETLANDS	PERMANENT	STRUCTURE - PIPE	26.00	1.00	1.00	26.00	26.00	26.00
P109/P108	47	WETLANDS	TEMPORARY	GRADING/SLOPING*	15.70	1.00	0.55	8.64	15.70	-
P108	48	WETLANDS	PERMANENT	STRUCTURE - PIPE	27.00	1.00	1.00	27.00	27.00	27.00
P108	49	WETLANDS	TEMPORARY	GRADING/SLOPING*	38.84	1.00	0.10	3.88	38.84	-
P110/P109/P108	50	WETLANDS	TEMPORARY	PIPE INSTALLATION - TIMBER MATTING	144.55	18.66	-	-	2697.30	-
P104	51	SUBAQUEOUS	PERMANENT	STRUCTURE - PIPE	15.00	1.00	1.00	15.00	15.00	-
P104	52	WETLANDS	PERMANENT	STRUCTURE - PIPE	13.00	1.00	1.00	13.00	13.00	13.00
P104	53	WETLANDS	TEMPORARY	GRADING/SLOPING*	43.03	1.56	1.00	67.13	67.13	-
P104	54	WETLANDS	TEMPORARY	PIPE INSTALLATION - TIMBER MATTING	48.19	17.21	-	-	829.35	-
EW2	55	WETLANDS	PERMANENT	STRUCTURE - ENDWALL OUTFALL	2.50	1.83	2.23	10.20	4.58	4.58
EW2	56	WETLANDS	TEMPORARY	PIPE INSTALLATION - TIMBER MATTING	22.69	30.00	-	-	680.70	-
EW1	57	WETLANDS	PERMANENT	RIPRAP AT OUTFALL	4.00	4.00	1.17	18.72	16.00	16.0000
EW2	58	WETLANDS	PERMANENT	RIPRAP AT OUTFALL	4.00	4.00	1.17	18.72	16.00	16.0000
TOTAL PERMANENT WETLANDS IMPACTS (SQ FT)										574.77
TOTAL PERMANENT SUBAQUEOUS IMPACTS (SQ FT)										686.14
TOTAL TEMPORARY WETLANDS IMPACTS (SQ FT)										13949.92
TOTAL TEMPORARY SUBAQUEOUS IMPACTS (SQ FT)										411.46
TOTAL WETLANDS LOSS (SQ FT)										574.77

*GRADING/SLOPING BETWEEN PIPES, 1' WIDTH WITH 2:1/3:1 SIDE SLOPE; ALL MATERIAL INCORPORATED INTO SIDE SLOPES (SEE SHEET C104)

REVISIONS:	BY:	
DATE:	DESCRIPTION:	

**N. BAYSHORE DRIVE
DRAINAGE IMPROVEMENTS
ENVIRONMENTAL COMPLIANCE IMPACT TABLE**



FEBRUARY 03, 2026

CIVIL ENGINEER



CEI CONTRACT NO.: 215015.00



DESIGNED BY:
EAM

DRAWN BY:
EAM

CHECKED BY:
AKM

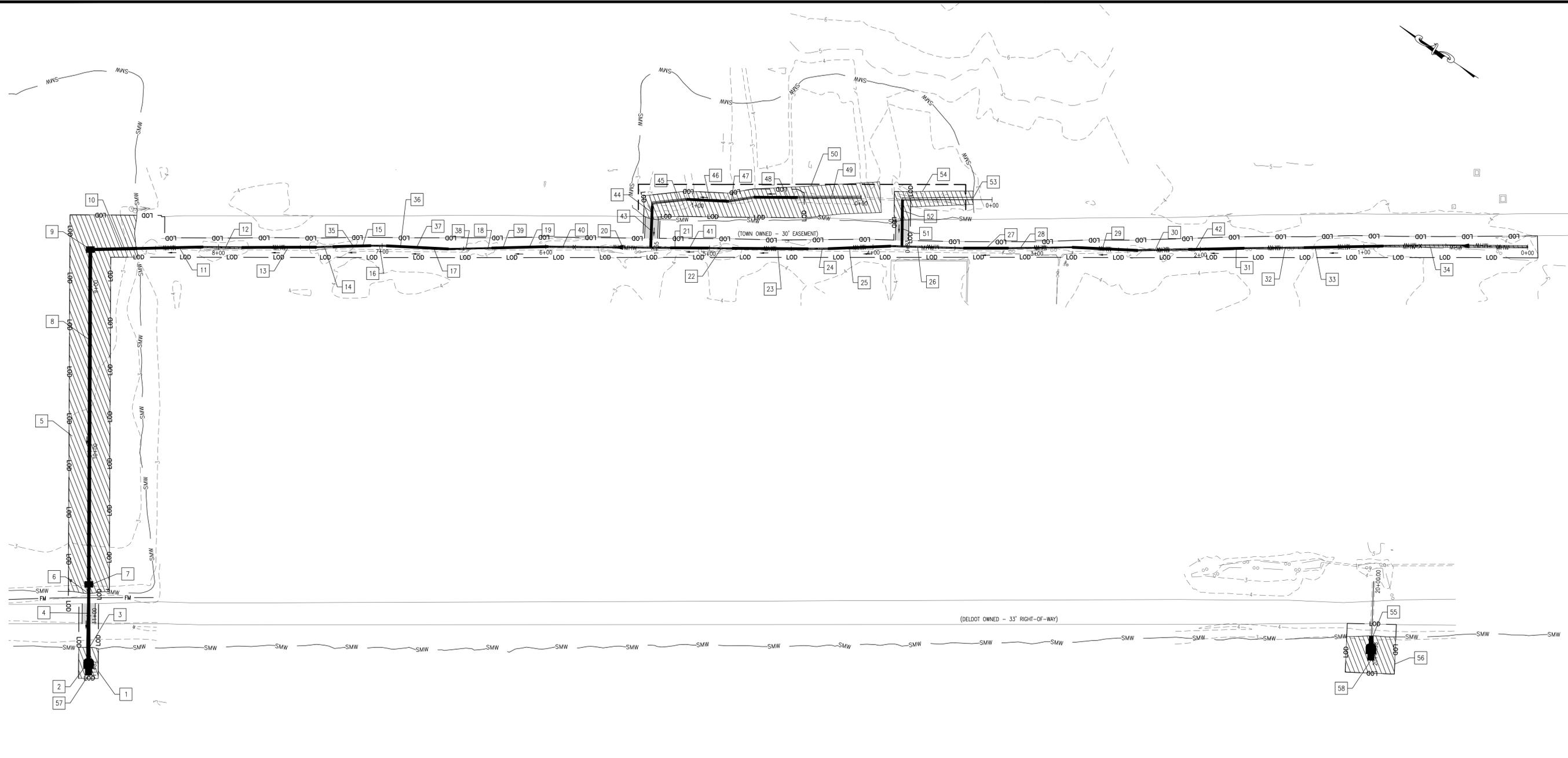
DATE:
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SHEET NO.:
C110

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GENERAL NOTES:
 1. TIME OF YEAR RESTRICTION FROM APRIL 1ST TO JULY 31ST FOR FEDERALLY AND STATE-LISTED SPECIES

LEGEND:

- LIMIT OF DISTURBANCE — LOD — LOD —
- EXISTING SUBAQUEOUS, MEAN HIGH WATER (INSIGNIFICANT TIDAL INFLUENCE) — MHW — MHW —
- EXISTING STATE MAPPED WETLAND (INSIGNIFICANT TIDAL INFLUENCE, MHW = MLW) — SMW —
- PERMANENT IMPACTS [Solid black box]
- TEMPORARY IMPACTS [Hatched box]



REVISIONS:

DATE:	DESCRIPTION:	BY:

**N. BAYSHORE DRIVE
 DRAINAGE IMPROVEMENTS
 ENVIRONMENTAL COMPLIANCE
 FOR DNREC WSLs**

SEAL:

ALAN K. MARTINI
 LICENSE NO. 7535
 DELAWARE
 PROFESSIONAL ENGINEER

FEBRUARY 03, 2026
 CIVIL ENGINEER

CENTURY ENGINEERING
 A Kleinfelder Company

CEI CONTRACT NO.: 215015.00

DESIGNED BY:
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AKM

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FEBRUARY 03, 2026

SCALE:
1"=30'

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C111

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