Thursday, June 26, 2025

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

SUBJECT: **Campground and Recreational Facility Improvements: Killens Pond State Park**
DNREC Wetlands and Subaqueous Lands Permit

Dear Mr. Jones:

On behalf of our client, DNREC Division of Parks and Recreation (Parks), Century Engineering, LLC. (Century) is pleased to inform the Wetlands and Subaqueous Lands Section (WSLS) about the Campground and Recreational Facility Improvements projects. Parks received an Economic Development Administration (EDA) Grant and is proposing campground improvements throughout the state. This permit request is for the proposed improvements at Killens Pond State Park (project) located at Killens Pond in Felton, Delaware in Kent County (38.980724, -75.529300).

The limit of investigation (LOI) for the Project is comprised of seven (7) areas that total approximately 33 acres. The LOI areas are composed of existing state park facilities, forest, and the shoreline of Killens Pond. The Project is completely within the boundary of Killens Pond State Park which is surrounded by agricultural and natural lands. Proposed improvements at Killens Pond State Park include seven (7) upgraded/new docks with accessible launches, a new dump station, and a new camp store. Docks will consist of an aluminum kayak launch dock, aluminum gangway, graded aggregate base course, timber abutment, kayak chute, and concrete sidewalk. Structures will be supported by piles and there will be no fill in subaqueous lands. Given the location and nature of the project, complete avoidance of adverse environmental impacts is impractical however, anticipated impacts are minimal. The proposed action does not include dredging or fill. In total, the proposed docks will create 0.1130 acres of permanent shading over subaqueous lands. This application package provides the documentation supporting a request for a Wetlands and Subaqueous Lands Permit.

The waters and wetlands within the project area are not jurisdictional to the U.S. Army Corps of Engineers, therefore no federal permits are required.

Based on the Century wetland delineation, the proposed improvements will have the following impacts (refer to Attachments, Impacts Map):

DNREC IMPACT ID	TYPE	IMPACT DESCRIPTION	RESOURCE	IMPACT AREA (AC)	LOSS (AC)
1	PERMANENT	SHADING FROM DOCK	SUBAQUEOUS LAND	0.0072	0.0000
2	PERMANENT	SHADING FROM DOCK	SUBAQUEOUS LAND	0.0168	0.0000
3	PERMANENT	SHADING FROM DOCK	SUBAQUEOUS LAND	0.0104	0.0000
4	PERMANENT	SHADING FROM DOCK	SUBAQUEOUS LAND	0.0432	0.0000
5	PERMANENT	SHADING FROM DOCK	SUBAQUEOUS LAND	0.0119	0.0000
6	PERMANENT	SHADING FROM DOCK	SUBAQUEOUS LAND	0.0123	0.0000
7	PERMANENT	SHADING FROM DOCK	SUBAQUEOUS LAND	0.0113	0.0000
			DNREC TOTAL PERMANENT IMPACTS	0.1130-AC	
			DNREC TOTAL TEMPORARY IMPACTS	0.0000-AC	
			DNREC TOTAL LOSS	0.0000-AC	

Consultation with USFWS indicated the presence of the proposed endangered tricolored bat (*Perimyotis subflavus*) and the proposed threatened monarch butterfly (*Danaus plexippus*). Proposed project activities are unlikely to adversely affect federally listed rare, threatened, or endangered species. Tree trimming and removal will be avoided from May 15th to July 31st to minimize potential impacts to the tricolored bat. There were no species listed on the NOAA Essential Fish Habitats (EFH) mapper or the NOAA Fisheries Section 7 mapper.

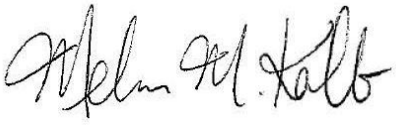
In a letter dated February 27th, 2025, DNREC DFW Species Conservation and Research Program (SCRP) indicated that the project area does not lie within a State natural Heritage site or a Delaware National Estuarine Research Reserve. The swamp-pink (*Helonias bullata*) and tricolored bat (*Perimyotis subflavus*) are Species of Greatest Conservation Need (SGCN) in the Delaware Wildlife Action Plan (DEWAP) that were found within the project limits. In-water work will be prohibited from April 1st to June 30th to avoid impacts to the sunfish and largemouth bass. Bald Cypress removal will be avoided as much as possible. Recommended forested wetland guidance is not necessary because there are no wetland impacts. Mature forests within the project area will be conserved; tree-trimming will only occur on the edge of forested areas. The project was identified as being within a State Natural Area. Further correspondence with DNREC Parks and Recreation, dated June 5th, 2025, indicated that DNREC prefers the docks be built from the water.

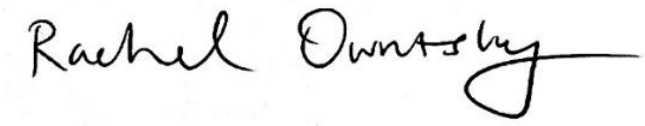
The Delaware State Historic Preservation office (SHPO) was notified of the project on February 27, 2025. SHPO sent a letter to DNREC on May 14, 2025 indicating that there are no known historic structures within the area of potential effect (APE) but there are at least five pre-Contact archaeological sites within or immediately adjacent to the APE. A Phase I archaeological survey was recommended and is currently in

the planning stages. Project activities will not commence until the survey is complete and SHPO issues an approval to proceed.

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

Sincerely,





Missy Kalb, CE
Senior Environmental Scientist

Rachel Owrutsky
Environmental Scientist

CENTURY ENGINEERING, LLC, A KLEINFELDER COMPANY

Attachments:

- DNREC WSLS Application Form
- DNREC WSLS Appendix A – Boat Docking Facilities
- Vicinity, USGS, Aerial Maps
- State Regulated Wetlands Impacts Map
- Design plan sheets
- RTE Correspondence
- Historical/Archaeological Correspondence
- Photolog

cc: William Miller III, DNREC
Elizabeth Chandler, Century Engineering, LLC
Alex Schmidt, Century Engineering, LLC

WETLANDS AND SUBAQUEOUS LANDS SECTION PERMIT APPLICATION FORM

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

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

Wetlands and Subaqueous Lands Section

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

Last Revised on: March 28, 2017

PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY

Application Instructions:

1. Complete each section of this basic application and appropriate appendices as thoroughly and accurately as possible. Incomplete or inaccurate applications will be returned.

2. All applications must be accompanied by a scaled plan view and cross-section view plans that show the location and design details for the proposed project. Full construction plans must be submitted for major projects.

3. All applications must have an original signature page and proof of ownership or permitted land use agreement.

4. Submit an original and two (2) additional copies of the application (total of 3) with the appropriate application fee and public notice fee* (prepared in separate checks) to:

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

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

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

Helpful Information:

1.	Tax Parcel Information:	New Castle County	(302) 395-5400
		Kent County	(302) 736-2010
		Sussex County	(302) 855-7878
2.	Recorder of Deeds:	New Castle County	(302) 571-7550
		Kent County	(302) 744-2314
		Sussex County	(302) 855-7785

3. A separate application and/or approval may be required through the Army Corps of Engineers. Applicants are strongly encouraged to contact the Corps for a determination of their permitting requirements. For more information, contact the Philadelphia District Regulator of the Day at (215) 656-6728 or visit their website at: http://www.nap.usace.army.mil/Missions/Regulatory.aspx.

4. For questions about this application or the Wetlands and Subaqueous Lands Section, contact us at (302) 739-9943 or visit our website at: http://www.dnrec.delaware.gov/wr/Services/Pages/WetlandsAndSubaqueousLands.aspx. Office hours are Monday through Friday 8:00 AM to 4:30 PM, except on State Holidays.

APPLICANT'S REVIEW BEFORE MAILING

DID YOU COMPLETE THE FOLLOWING?

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

Submit 3 complete copies of the application packet to:

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

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

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

Section 1: Applicant Identification

1. Applicant's Name: William Miller III
   Mailing Address: Capital Program Administrator
   DNREC Division of Parks and Recreation
   89 Kings Hwy
   Dover, DE 19901
   Telephone #: 302-739-9240
   Fax #: _____
   E-mail: bill.miller@delaware.gov

2. Consultant's Name: Missy Kalb
   Mailing Address: 550 S Bay Road
   Dover, DE 19901
   Company Name: Century Engineering, LLC
   Telephone #: 302.450.3419
   Fax #: _____
   E-mail: MKalb@kleinfelder.com

3. Contractor's Name: TBD
   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):

The purpose of this project is to make campground improvements at Killens Pond State Park. Improvements at Killens Pond State Park include 7 upgraded/new docks with accessible launches, a new dump station, and a new camp store.

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

Section 3: Project Location

7. Project Site Address: 39.0863269°N, 75.5684970°W
Killens Pond Rd, Felton, DE 19943
County: ☐ N.C. ☑ Kent ☐ Sussex
Site owner name (if different from applicant): _____
Address of site owner: _____

8. Driving Directions: Going south on DE-1 from Dover, exit onto Frederica rd. Turn right onto Front St. Turn left onto Scrap Tavern Rd. Turn right on Killens Pond Rd. Destination is on the left.
(Attach a vicinity map identifying road names and the project location)

9. Tax Parcel ID Number: 8 00 14900 01 0700 000
Subdivision Name: _____

WSLS Use Only: **Permit #s:** _____ _____ _____ _____

Type **SP** ☐ **SL** ☐ **SU** ☐ **WE** ☐ **WQ** ☐ **LA** ☐ **SA** ☐ **MP** ☐ **WA** ☐

Corps Permit: SPGP 18 ☐ **20** ☐ **Nationwide Permit #:** _____ **Individual Permit #**_____
Received Date: _____ **Project Scientist:** _____
Fee Received? Yes ☐ **No** ☐ **Amt: $**_____ **Receipt #:** _____
Public Notice #: _____ **Public Notice Dates: ON** _____ **OFF**_____

Section 3: Project Location (Continued)

10. Name of waterbody at Project Location: Killens Pond waterbody is a tributary to: N/A

11. Is the waterbody: ☐ Tidal ☑ Non-tidal Waterbody width at mean low or ordinary high water ~1000 ft across at widest width.

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):
All immediately adjoining property is owned by the State of Delaware.

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 table.

15. Provide the names of DNREC and/or Army Corps of Engineers representatives whom you have discussed the project with:
Bill Miller (DNREC PM)
Jamie Colligan (USACE)

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):
None found

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

17. Have you applied for or obtained a Federal permit from the Army Corps of Engineers?
☑ No ☐ Pending ☐ Issued ☐ Denied Date: _____

Type of Permit: _____ Federal Permit or ID #: _____

18. Have you applied for permits from other Sections within DNREC?
☑ No ☐ Pending ☐ Issued ☐ Denied Date: _____ Permit or ID #: _____

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

Other: _____

Section 5: Signature Page

19. Agent Authorization:

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

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

I wish to authorize an agent as indicated below ☐

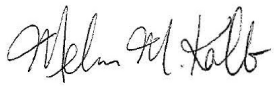
I, William Miller III, hereby designate and authorize Missy Kalb
(Name of Applicant) (Name of Agent)
to act on my behalf in the processing of this application and to furnish any additional information requested by the Department.

Authorized Agent's Name: Missy Kalb
Mailing Address: 550 S Bay Road
Dover, DE 19901

Telephone #: 302.450.3419
Fax #:
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 6/25/2025

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 6/26/25

William Miller III
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.

TBD
Contractor's Name Date

Print Name

BOAT DOCKING FACILITIES

Any boat docking facility for more than four (4) vessels is considered a marina facility (see definitions and explanations section) and requires the applicant to complete Appendices N and O, and make application to the U. S. Army Corps of Engineers for approval.

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

1. Briefly describe the project. (Attach additional sheets as necessary.)

   This project involves making campground improvements at Killens Pond State Park. Improvements at Killens Pond State Park include 7 upgraded/new docks with accessible launches, a new dump station, and a new camp store.

2. Please provide numbers and dimensions as follows: Please see attached table.

Structure Type	Number of Support Pilings	Dimensions (Channelward of MHW or OHW)		Dimensions (Channelward of MLW- n/a for non-tidal water)		New, repair or maintain
Dock, Pier, Lift, gangway		Width ____ ft.	Length ___ ft.	Width ____ ft.	Length ___ ft.	
Freestanding Pilings	Number					

Mooring Buoy: How many moorings will be installed? _____
What will be used for the anchor(s)? _____
Anchor/Mooring Block Weight _____
Anchor Line Scope (Length or Ratio) _____
Water Depth at Mooring Location _____

N/A

3. Approximately how wide is the waterway at this project site? _____ ft. (measured from MLW to MLW)

   Non-tidal pond is ~1000 ft across at widest width.

4. What will be the mean low water depth at the most channelward end of the mooring facility? _____ ft.

   N/A, non-tidal

5. What type of material(s) will be used for construction of the mooring facility (e.g. salt treated wood, aluminum, fiberglass floats, etc.) Use of creosote-treated wood is prohibited.

Aluminum decking, timber abutments, vinyl bumpers will be used to make the docks/kayak launches.

6. Circle any of the following items that are proposed over subaqueous lands:
   Fish Cleaning Stations/Benches/Ladders/Water Lines/ Satellite/Electric Lines/ Handrails/Other (Describe)

   If any of the items are circled above, include their dimensions and location on the application drawings.

7. What will be the distance from the most channelward end of the docking facility to the edge of any natural or man-made channel? _____ ft. All docks are within 2000 ft from any channel (Murderkill River or connection to Coursey Pond)

8. Describe the vessels that will be berthed at the docking facility. Please draw proposed vessel locations on plans and drawings. "Vessels" are kayaks and canoes.

   Make/model_____ length _____ width _____ draft _____
   Make/model_____ length _____ width _____ draft _____
   Make/model_____ length _____ width _____ draft _____
   Make/model_____ length _____ width _____ draft _____

9. Please provide a copy of the current state registration or Coast Guard Certificate of Documentation for each motorized vessel listed above. N/A

10. Give the number and type of each Marine Sanitation Device (e.g. MSD III, Portable toilet) that will be used on vessels to be docked at the facility. N/A.

11. Is there currently a residence on the property? _____ Yes ___✓___ No

12. Do you plan to reach the boat docking facility from your own upland property? _____ Yes ___✓___ No If "No", explain your proposed means of access and provide documentation of easement or documentation authorizing access if you intend to cross someone else's property. Docks on State of DE property

13. Will any portion of the structure be located in privately owned underwater land (such as a pond or lagoon) owned by someone other than the applicant? ____Yes ___✓___No.
    If yes, written permission of the underwater land owner must be provided with this application.

14. What is the width of the waterfront property frontage adjacent to subaqueous lands? _____ft.
    Will any portion of the structure or any vessel be placed within 10 feet of your neighbor's property line? _____ Yes ___✓___ No
    If yes, a letter of no objection from the adjacent property owner must be included with this application.

Docks on State of DE property

SCRAP TAVERN ROAD

T.P. 8-00-14900-01-1400-00001
LANDS N.O.F.
STATE OF DELAWARE
D.B. E-0025-0121
ZONE: AC

T.P. 8-00-14900-01-1700-00001
LANDS N.O.F.
KILLEN ROY L.
DILL MATTHEW
KILLEN CODY
KILLEN ELEANOR
KILLEN ROBIN DEE
KILLEN WILLIAM E.
ZONE: AC

T.P. 8-00-14900-01-1200-00001
LANDS N.O.F.
STATE OF DELAWARE
D.B. Z-0023-0536
ZONE: AC

Site #2

C412
C413
C418

T.P. 8-00-14900-01-1500-00001
LANDS N.O.F.

Site #3&4

T.P. 8-00-14900-01-1600-00001
LANDS N.O.F.
STATE OF DELAWARE
D.B. E-0025-0121
ZONE: AC

KILLENS POND

C410
C411
C419

Site #1

C414
C415
C417

T.P. 8-00-14900-01-0700-00001
LANDS N.O.F.
STATE OF DELAWARE
D.B. Z-0023-0536
ZONE: AC

T.P. 8-00-14900-01-1300-00001
LANDS N.O.F.
STATE OF DELAWARE
D.B. Z-0023-0536
ZONE: AC

KILLENS POND ROAD

T.P. 6-00-14900-01-4400-00001
LANDS N.O.F.
STATE OF DELAWARE
ZONE: AC

Site #5

C408
C409
C420

Site #7

C404
C405
C422

KILLENS POND

Site #6

C406
C407
C421

KILLENS POND

T.P. 6-00-14900-01-1900-00001
LANDS N.O.F.
STATE OF DELAWARE
D.B. B-0023-0536
ZONE: AC

T.P. 6-00-14900-01-1600-00001
LANDS N.O.F.
STATE OF DELAWARE
D.B. C-0024-0131
ZONE: AC

T.P. 6-00-14900-01-1800-00001
LANDS N.O.F.
STATE OF DELAWARE
D.B. B-0024-0272
ZONE: AC

TRANSFORMER

0' 200' 400' 600'
SCALE: 1"=200'

L:\State of Delaware\25000286.001A-DNREC Components\Working\Killens Pond\CAD\Killens Boat Dock Plan Set\Sheets\C403_OverallSitePlan.dwg, 6/18/2025 10:57 AM

REVISIONS:

DATE:	DESCRIPTION:	BY:

KILLENS POND STATE PARK
KILLENS POND BOAT DOCKS

INDEX PLAN

SEAL:

ALEXANDER E. SCHMIDT
LICENSE
NO. 16139
PROFESSIONAL ENGINEER
DELAWARE

06-20-2025

CIVIL ENGINEER:

CENTURY ENGINEERING
A Kleinfelder Company

CEI CONTRACT NO.: 25000286.001A

DELAWARE
DIVISION OF PARKS AND RECREATION

DESIGNED BY: EMC

DRAWN BY: ZTP

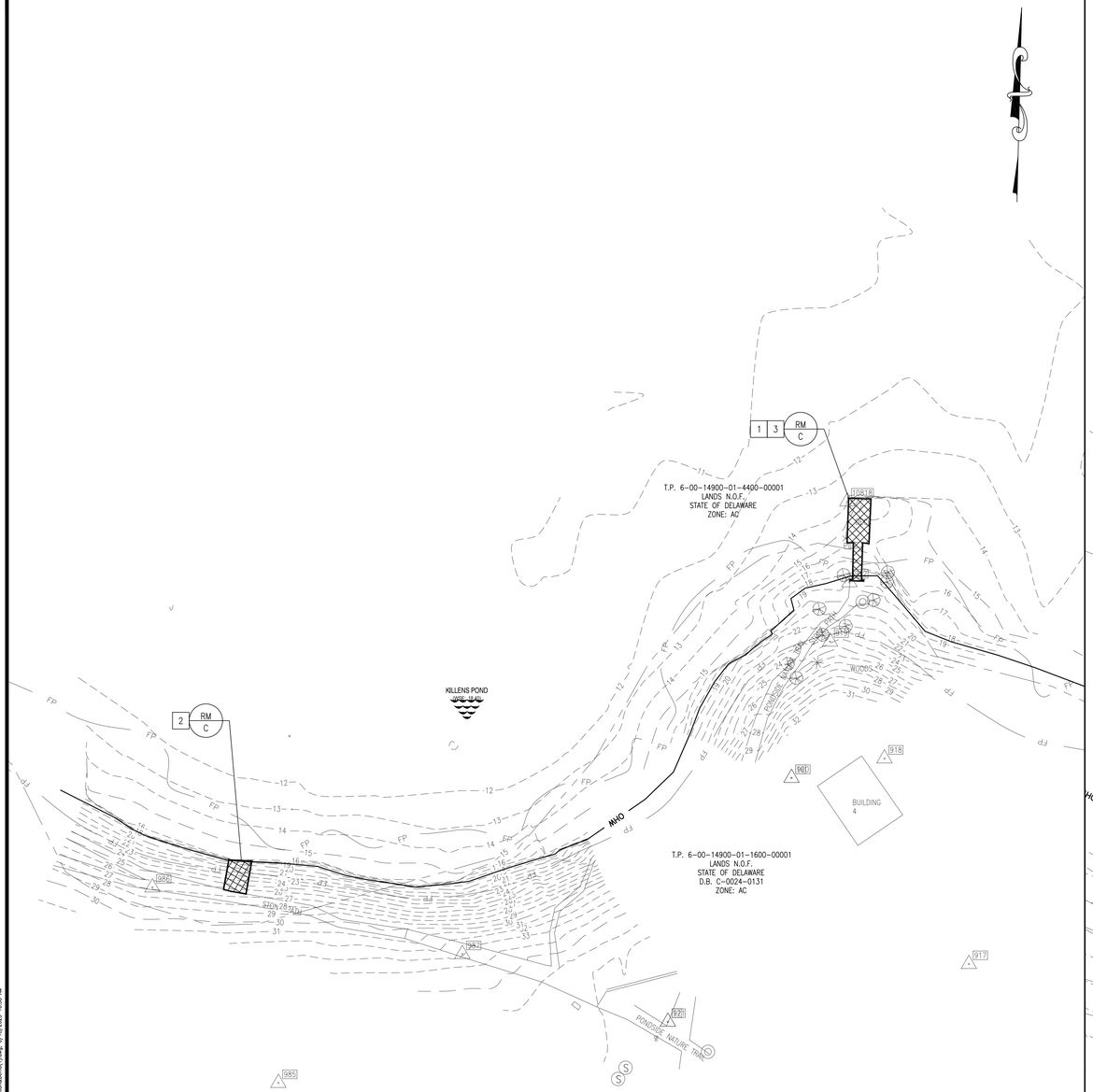
CHECKED BY: AES

DATE: JUNE 2025

SCALE: 1"=200'

SHEET NO.: C403

CONTRACT NO.: —



CABIN BOAT DOCK EXISTING CONDITIONS AND DEMOLITION PLAN

SCALE: 1" = 30'

DEMOLITION NOTES

1. CONTRACTOR TO REMOVE EXISTING BOAT DOCK, PILES, AND FOUNDATIONS.
2. CONTRACTOR TO CLEAR AND GRUB.
3. SEED AND STABILIZE ALL DISTURBED SOILS.

NOTES:

1. CONTRACTOR SHALL NOT DISTURB ANY UTILITY LINE UNLESS SPECIFICALLY NOTED.
2. CONTRACTOR SHALL FLAG ALL TREES GREATER THAN 8" DIAMETER AT BREAST HEIGHT. OWNER SHALL REVIEW AND APPROVE ALL FLAGGED TREES PRIOR TO REMOVAL.
3. CONTRACTOR SHALL NOT DISTURB EXISTING PATH. ANY PORTION OF EXISTING PATH THAT IS DISTURBED SHALL BE RESTORED USING THE STONE TRAIL SECTION.
4. CONTRACTOR ACCESS ROUTE SHALL BE APPROVED BY THE OWNER PRIOR TO SITE ACCESS.
5. EXISTING POND WATER SURFACE ELEVATION = 18.40' BASED UPON SURVEY PERFORMED BY CENTURY ENGINEERING ON AUGUST 2024. OHW LINE REFLECTS DETERMINED WATER LINE AS OF THE SAME DATE.
6. PORTIONS OF THE SITE ARE WITHIN A MAPPED 100 YEAR FLOODPLAIN. 100 YEAR FLOOD ELEVATION VARIES BETWEEN 17.00' AND 18.00'.

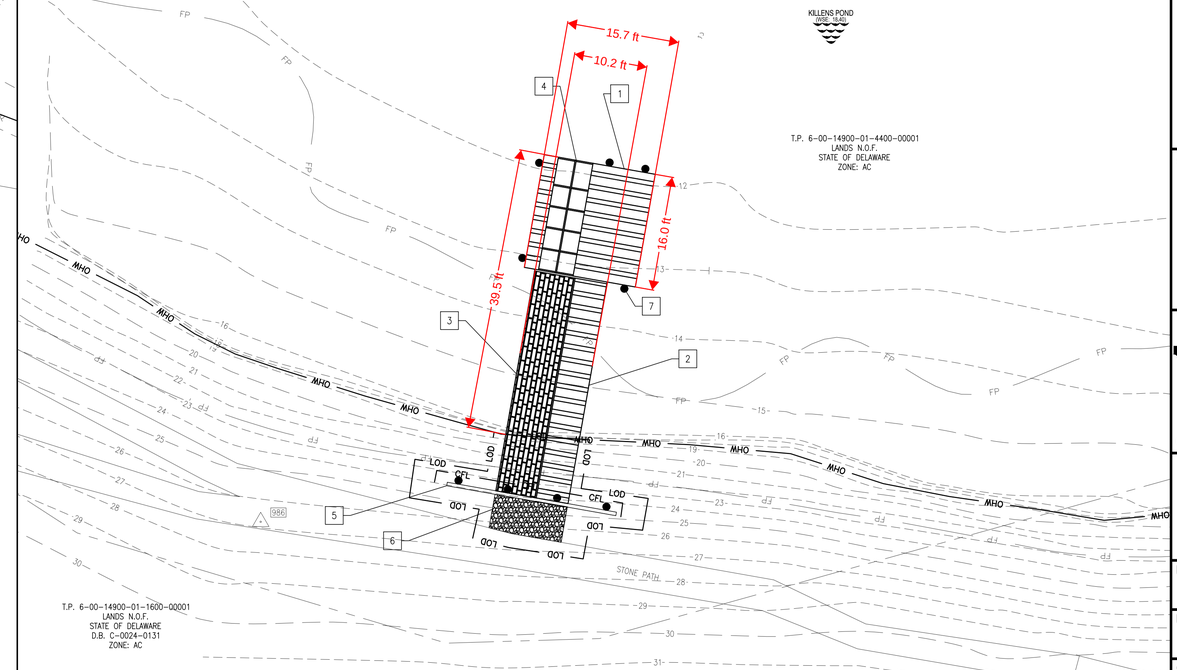
TRAVERSE POINT LAYOUT

POINT NO.	DESCRIPTION	NORTHING	EASTING	ELEVATION
917	CAPPED IRON PIN	356863.7774	622034.0662	40.877
918	CAPPED IRON PIN	356956.0108	621996.1688	37.930
919	CAPPED IRON PIN	357008.4718	621971.7748	23.240
920	CAPPED IRON PIN	356947.3019	621954.4434	37.225
921	CAPPED IRON PIN	356837.8172	621898.9738	37.541
985	TP985 CIP	356810.3588	621724.1999	33.897
986	TP986 CIP	356898.1091	621667.6387	26.532
987	TP987 CIP	356868.2502	621806.7357	32.943
10818	TP818 AVG	357071.3804	621979.4785	23.999

0' 30' 60' 90'

SCALE: 1"=30'

Site #7:
Pier = 23.5' long, 10.2' wide
Dock = 16' long, 15.7' wide



CABIN BOAT DOCK NEW SITE PLAN

SCALE: 1" = 10'

GENERAL NOTES

1. PROPOSED ALUMINUM KAYAK LAUNCH DOCK.
2. PROPOSED ALUMINUM GANGWAY.
3. PROPOSED KAYAK CHUTE.
4. PROPOSED KAYAK LAUNCH.
5. TIMBER ABUTMENT.
6. PROPOSED DELAWARE NO. 10 STONE OVER GRADED AGGREGATE BASE COURSE (DELDOT SPECIFICATION 301 AND 302). SEE DETAIL 4/C424.
7. PROPOSED TIMBER PILE (DELDOT SPECIFICATION 605).

0' 10' 20' 30'

SCALE: 1"=10'

REVISIONS:

DATE:	DESCRIPTION:	BY:

KILLENS POND STATE PARK
KILLENS POND BOAT DOCKS

CABIN DOCK SITE PLAN

SEAL:

ALEXANDER E. SCHMIDT
LICENSED
NO. 16139
PROFESSIONAL ENGINEER
DELAWARE

06-20-2025

CIVIL ENGINEER:

CENTURY ENGINEERING
A Kleinfelder Company

CEI CONTRACT NO.: 25000286.001A

DELAWARE
DIVISION OF PARKS AND RECREATION

DESIGNED BY: EMC

DRAWN BY: ZTP

CHECKED BY: AES

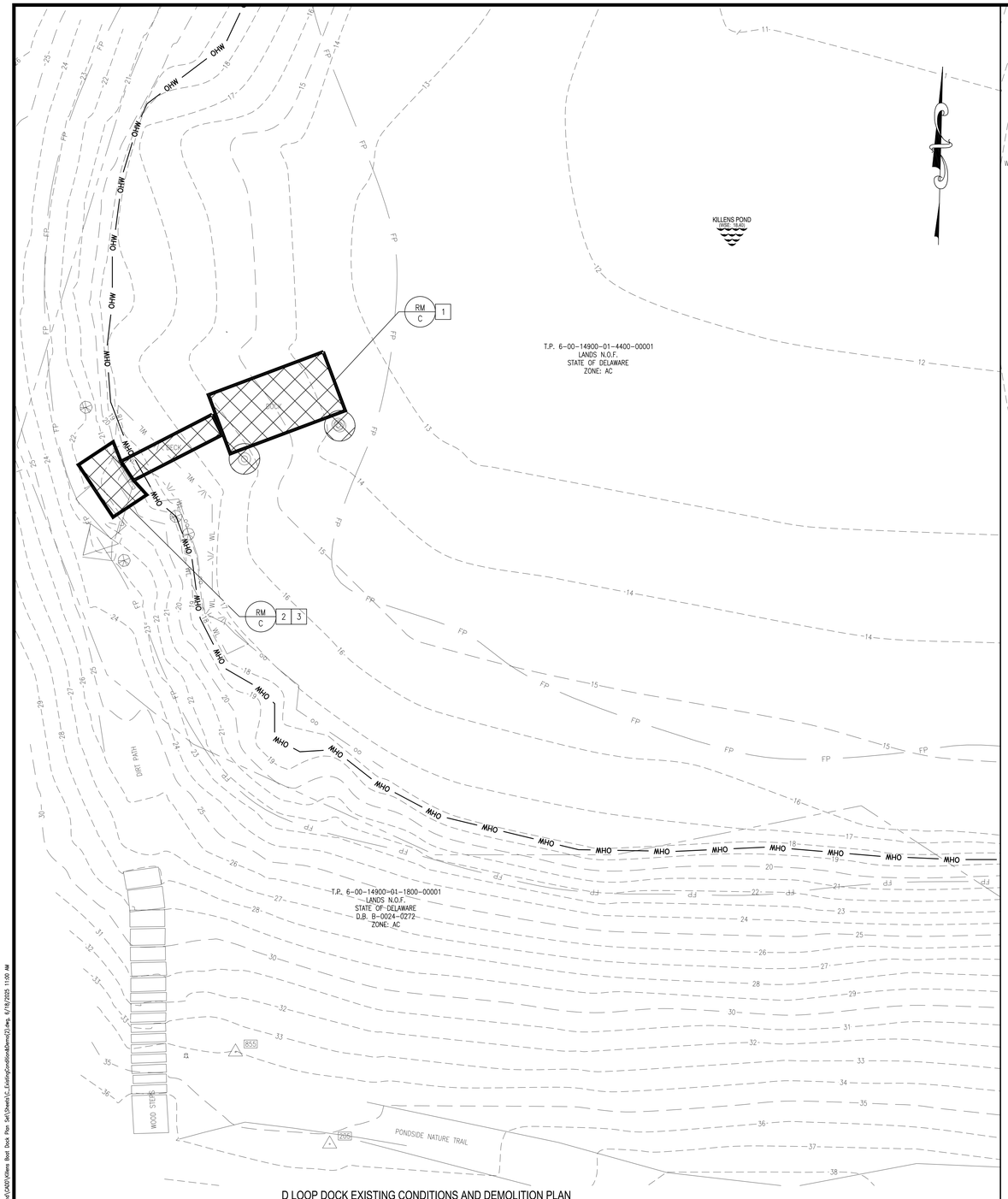
DATE: JUNE 2025

SCALE: AS NOTED

SHEET NO.: C404

CONTRACT NO.: —

L:\State of Delaware\25000286.001A-DNREC Campgrounds\Working\Killens Pond\CADD\Killens Boat Dock Plan Set\Sheets\C_ExistingConditionsBoatDocks(1).dwg, 6/18/2025 10:58 AM



D LOOP DOCK EXISTING CONDITIONS AND DEMOLITION PLAN

SCALE: 1" = 10'

DEMOLITION NOTES

1. CONTRACTOR TO REMOVE EXISTING BOAT DOCK, PILES, AND FOUNDATIONS.
2. CONTRACTOR TO CLEAR AND GRUB.
3. SEED AND STABILIZE ALL DISTURBED SOILS.

NOTES:

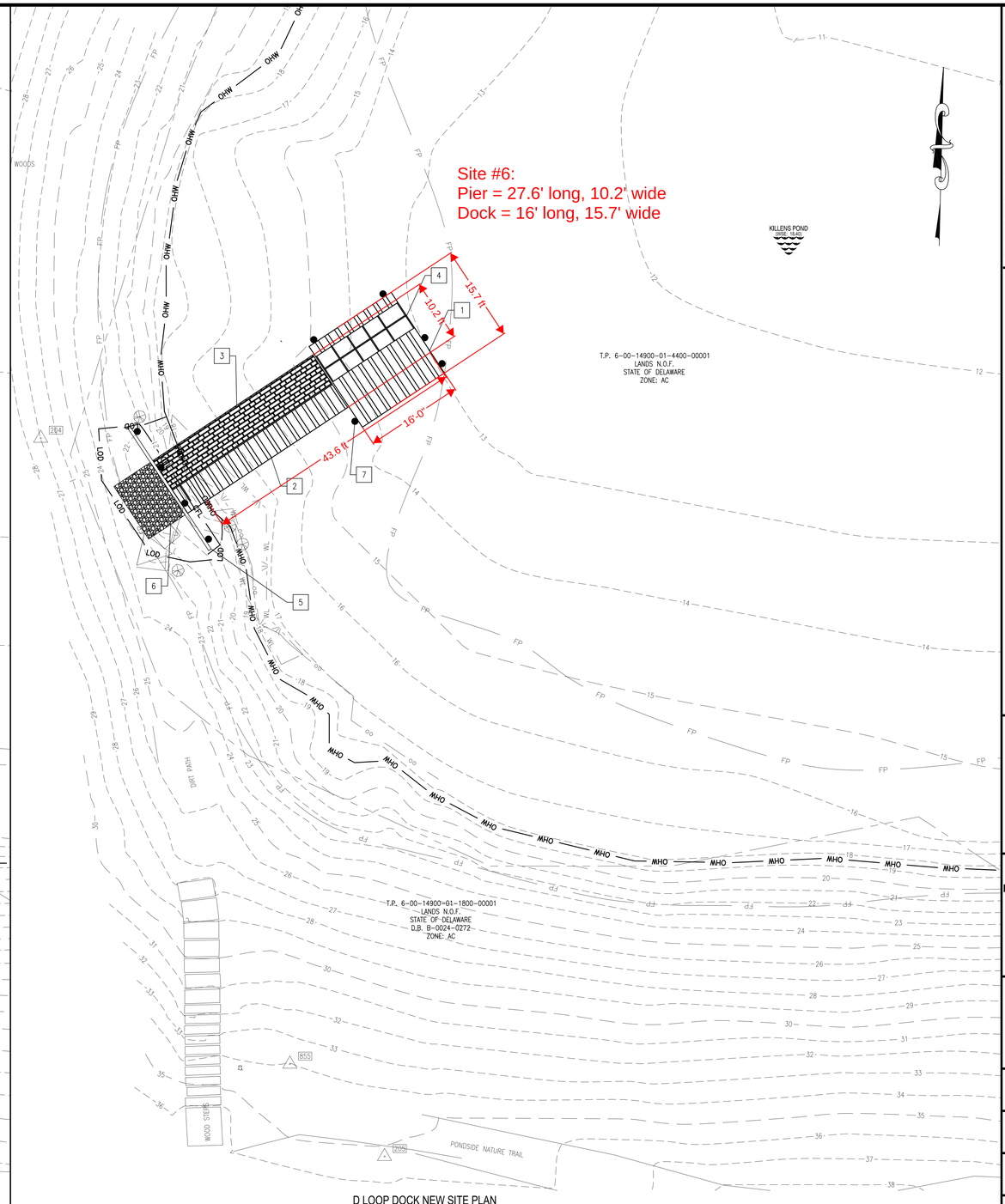
1. CONTRACTOR SHALL NOT DISTURB ANY UTILITY LINE UNLESS SPECIFICALLY NOTED.
2. CONTRACTOR SHALL FLAG ALL TREES GREATER THAN 8" DIAMETER AT BREAST HEIGHT. OWNER SHALL REVIEW AND APPROVE ALL FLAGGED TREES PRIOR TO REMOVAL.
3. CONTRACTOR SHALL NOT DISTURB EXISTING PATH. ANY PORTION OF EXISTING PATH THAT IS DISTURBED SHALL BE RESTORED USING THE STONE TRAIL SECTION.
4. CONTRACTOR ACCESS ROUTE SHALL BE APPROVED BY THE OWNER PRIOR TO SITE ACCESS.
5. EXISTING POND WATER SURFACE ELEVATION = 18.40' BASED UPON SURVEY PERFORMED BY CENTURY ENGINEERING ON AUGUST 2024. OHW LINE REFLECTS DETERMINED WATER LINE AS OF THE SAME DATE.
6. PORTIONS OF THE SITE ARE WITHIN A MAPPED 100 YEAR FLOODPLAIN. 100 YEAR FLOOD ELEVATION VARIES BETWEEN 17.00' AND 18.00'.

TRAVERSE POINT LAYOUT

POINT NO.	DESCRIPTION	NORTHING	EASTING	ELEVATION
203	TP203 CIP KW	357070.0850	623176.1350	31.825
204	TP204 CIP KW	356881.1050	623138.8720	26.972
205	TP205 CIP KW	356764.1900	623194.8040	35.274
858	TP858 CIP SE	357052.8317	623026.6070	38.539

0' 10' 20' 30'

SCALE: 1"=10'



D LOOP DOCK NEW SITE PLAN

SCALE: 1" = 10'

GENERAL NOTES

1. PROPOSED ALUMINUM KAYAK LAUNCH DOCK.
2. PROPOSED ALUMINUM GANGWAY.
3. PROPOSED KAYAK CHUTE.
4. PROPOSED KAYAK LAUNCH.
5. TIMBER ABUTMENT.
6. PROPOSED DELAWARE NO. 10 STONE OVER GRADED AGGREGATE BASE COURSE (DELDOT SPECIFICATION 301 AND 302). SEE DETAIL 4/C424.
7. PROPOSED TIMBER PILE (DELDOT SPECIFICATION 605).

0' 10' 20' 30'

SCALE: 1"=10'

REVISIONS:

DATE:	DESCRIPTION:	BY:

KILLENS POND STATE PARK
KILLENS POND BOAT DOCKS

D LOOP DOCK SITE PLAN

SEAL:

ALEXANDER E. SCHMIDT
LICENSED
NO. 16139
PROFESSIONAL ENGINEER
DELAWARE

06-20-2025

CIVIL ENGINEER:

CENTURY ENGINEERING
A Kleinfelder Company

CEI CONTRACT NO.: 25000286.001A

DELAWARE
DIVISION OF PARKS AND RECREATION

DESIGNED BY: EMC

DRAWN BY: ZTP

CHECKED BY: AES

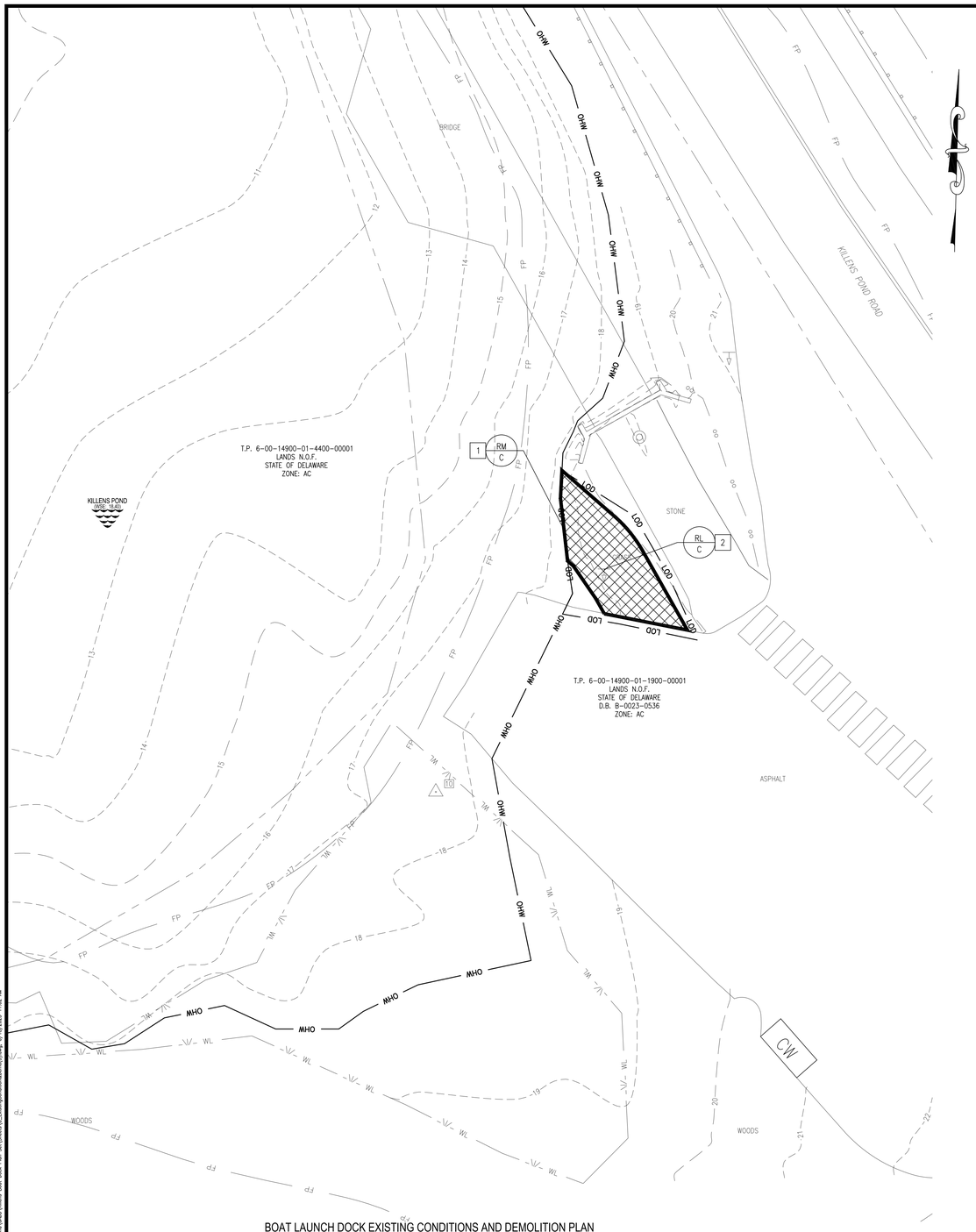
DATE: JUNE 2025

SCALE: 1" = 10'

SHEET NO.: C406

CONTRACT NO.: —

L:\State of Delaware\25000286.001A-DNREC Campgrounds\Wershing's\Killens Pond\CAD\Killens Boat Dock Plan Set\Sheets\C_ExistingConditionsAndDemo(22).dwg, 6/18/2025 11:00 AM



BOAT LAUNCH DOCK EXISTING CONDITIONS AND DEMOLITION PLAN

SCALE: 1" = 10'

DEMOLITION NOTES

1	CONTRACTOR TO CLEAR AND GRUB.
2	CONTRACTOR RELOCATE EXISTING SIGN.

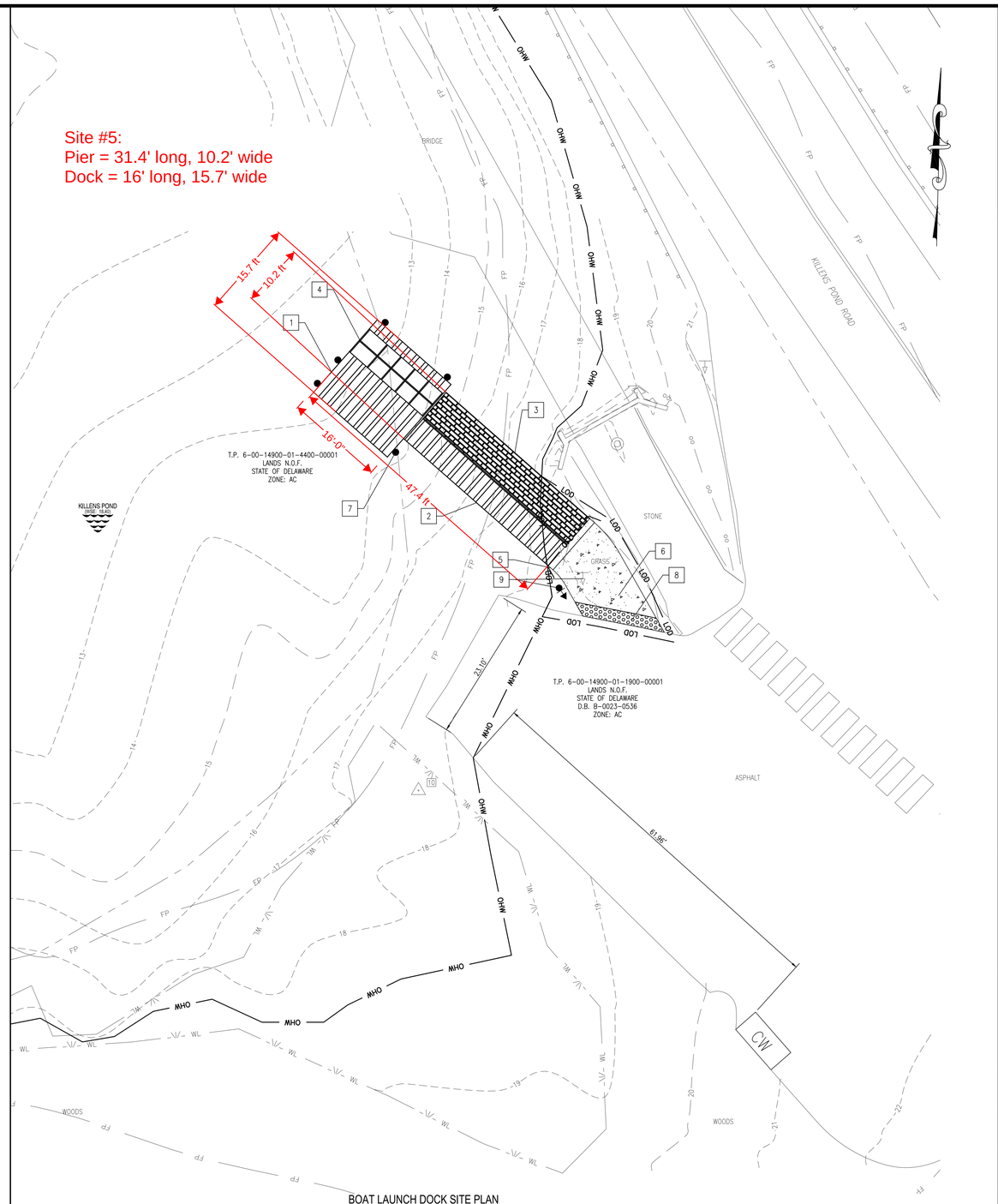
NOTES:

1. CONTRACTOR SHALL NOT DISTURB ANY UTILITY LINE UNLESS SPECIFICALLY NOTED.
2. CONTRACTOR SHALL FLAG ALL TREES GREATER THAN 8" DIAMETER AT BREAST HEIGHT. OWNER SHALL REVIEW AND APPROVE ALL FLAGGED TREES PRIOR TO REMOVAL.
3. EXISTING PAVEMENT SHALL NOT BE DISTURBED.
4. CONTRACTOR ACCESS ROUTE SHALL BE APPROVED BY THE OWNER PRIOR TO SITE ACCESS.
5. EXISTING POND WATER SURFACE ELEVATION = 18.40' BASED UPON SURVEY PERFORMED BY CENTURY ENGINEERING ON AUGUST 2024. OHW LINE REFLECTS DETERMINED WATER LINE AS OF THE SAME DATE.
6. PORTIONS OF THE SITE ARE WITHIN A MAPPED 100 YEAR FLOODPLAIN. 100 YEAR FLOOD ELEVATION VARIES BETWEEN 17.00' AND 18.00'.

TRAVERSE POINT LAYOUT

POINT NO.	DESCRIPTION	NORTHING	EASTING	ELEVATION
3	TP3	357138.2971	624237.8550	22.610
10	TP10	357153.5356	624130.4107	17.984

Site #5:
Pier = 31.4' long, 10.2' wide
Dock = 16' long, 15.7' wide



BOAT LAUNCH DOCK SITE PLAN

SCALE: 1" = 10'

GENERAL NOTES

1	PROPOSED ALUMINUM KAYAK LAUNCH DOCK.
2	PROPOSED ALUMINUM GANGWAY.
3	PROPOSED KAYAK CHUTE.
4	PROPOSED KAYAK LAUNCH.
5	REINFORCED CONCRETE ABUTMENT.
6	PROPOSED 6" CONCRETE SIDEWALK (DELDOT SPECIFICATION 501) SEE DETAIL 7/C424.
7	PROPOSED TIMBER PILE (DELDOT SPECIFICATION 605).
8	PROPOSED TRUNCATED DOME.
9	RELOCATION OF EXISTING SIGN.

0' 10' 20' 30'

SCALE: 1"=10'

REVISIONS:

DATE:	DESCRIPTION:	BY:

KILLENS POND STATE PARK
KILLENS POND BOAT DOCKS

BOAT LAUNCH DOCK SITE PLAN

SEAL:

ALEXANDER E. SCHMIDT
LICENSED
NO. 16139
DELAWARE
PROFESSIONAL ENGINEER

06-20-2025

CIVIL ENGINEER:

CENTURY ENGINEERING
A Kleinfelder Company

CEI CONTRACT NO.: 25000286.001A

DELAWARE
DIVISION OF PARKS AND RECREATION

DESIGNED BY: EMC

DRAWN BY: ZTP

CHECKED BY: AES

DATE: JUNE 2025

SCALE: 1" = 10'

SHEET NO.: C408

CONTRACT NO.: —

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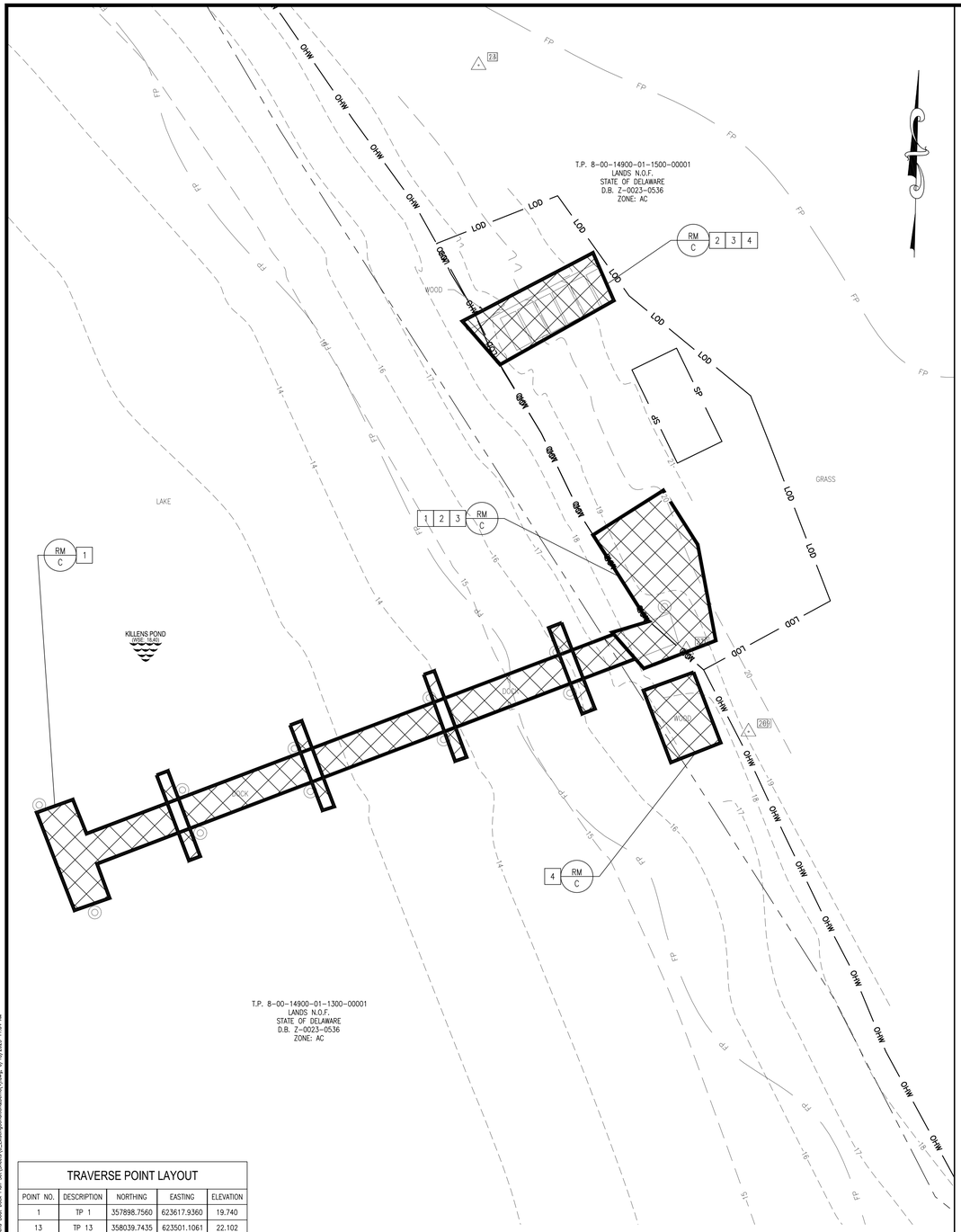

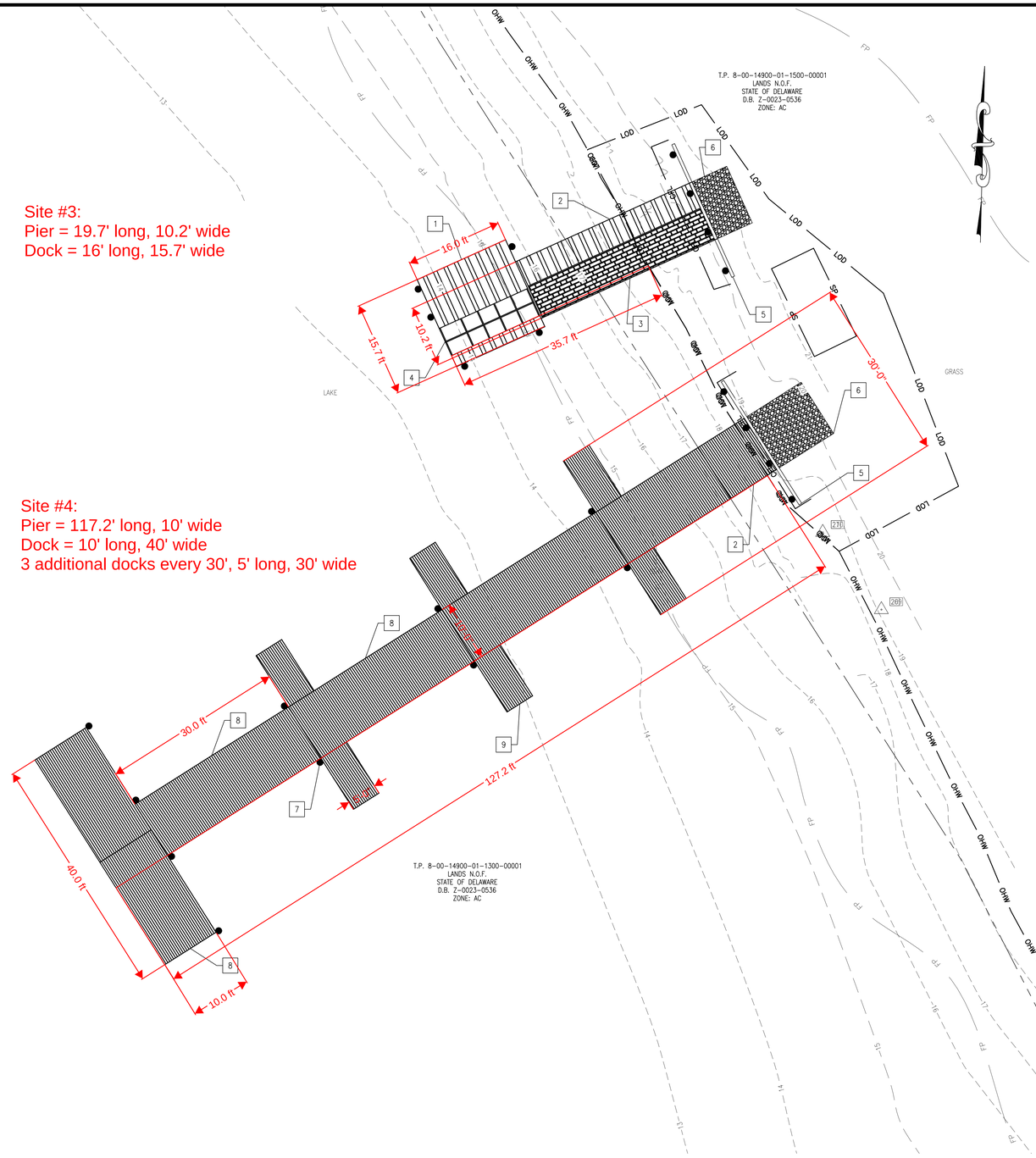

TRAVERSE POINT LAYOUT				
POINT NO.	DESCRIPTION	NORTHING	EASTING	ELEVATION
1	TP 1	357898.7560	623617.9360	19.740
13	TP 13	358039.7435	623501.1061	22.102
209	TP209R	357936.1514	623543.0627	19.853
210	TP210R	357948.8925	623533.3845	20.081
211	TP211R	357881.0225	623661.9806	18.213

DEMOLITION NOTES

1. CONTRACTOR TO REMOVE EXISTING BOAT DOCK, PILES, AND FOUNDATIONS.
2. CONTRACTOR TO CLEAR AND GRUB.
3. CONTRACTOR TO SEED AND STABILIZE ALL DISTURBED SOILS.
4. CONTRACTOR TO REMOVE WOODEN STRUCTURE

BOAT LAUNCH DOCK EXISTING CONDITIONS AND DEMOLITION PLAN

SCALE: 1" = 10'

NOTES:

1. CONTRACTOR SHALL NOT DISTURB ANY UTILITY LINE UNLESS SPECIFICALLY NOTED.
2. CONTRACTOR SHALL FLAG ALL TREES GREATER THAN 8" DIAMETER AT BREAST HEIGHT. OWNER SHALL REVIEW AND APPROVE ALL FLAGGED TREES PRIOR TO REMOVAL.
3. CONTRACTOR SHALL NOT DISTURB EXISTING PATH. ANY PORTION OF EXISTING PATH THAT IS DISTURBED SHALL BE RESTORED USING THE STONE TRAIL SECTION.
4. CONTRACTOR ACCESS ROUTE SHALL BE APPROVED BY THE OWNER PRIOR TO SITE ACCESS.
5. EXISTING POND WATER SURFACE ELEVATION = 18.40' BASED UPON SURVEY PERFORMED BY CENTURY ENGINEERING ON AUGUST 2024. OHW LINE REFLECTS DETERMINED WATER LINE AS OF THE SAME DATE.
6. PORTIONS OF THE SITE ARE WITHIN A MAPPED 100 YEAR FLOODPLAIN. 100 YEAR FLOOD ELEVATION VARIES BETWEEN 17.00' AND 18.00'.

GENERAL NOTES

1. PROPOSED ALUMINUM KAYAK LAUNCH DOCK.
2. PROPOSED ALUMINUM GANGWAY.
3. PROPOSED KAYAK CHUTE.
4. PROPOSED KAYAK LAUNCH.
5. TIMBER ABUTMENT.
6. PROPOSED DELAWARE NO. 10 STONE OVER GRADED AGGREGATE BASE COURSE (DELDOT SPECIFICATION 301 AND 302). SEE DETAIL 4/C424.
7. PROPOSED TIMBER PILE (DELDOT SPECIFICATION 605).
8. PROPOSED ALUMINUM FLOATING DOCK.
9. PROPOSED ALUMINUM FINGER PIERS.

BOAT LAUNCH DOCK SITE PLAN

SCALE: 1" = 10'

0' 10' 20' 30'
SCALE: 1" = 10'

REVISIONS:

DATE:	DESCRIPTION:	BY:

KILLENS POND STATE PARK
KILLENS POND BOAT DOCKS

BOAT RENTAL DOCK SITE PLAN

SEAL:

ALEXANDER E. SCHMIDT
LICENSE
NO. 16139
DELAWARE
PROFESSIONAL ENGINEER

06-20-2025

CIVIL ENGINEER:

CENTURY ENGINEERING
A Kleinfelder Company

CEI CONTRACT NO.: 25000286.001A

DELAWARE
DIVISION OF PARKS AND RECREATION

DESIGNED BY: EMC

DRAWN BY: ZTP

CHECKED BY: AES

DATE: JUNE 2025

SCALE: 1" = 10'

SHEET NO.: C410

CONTRACT NO.: —

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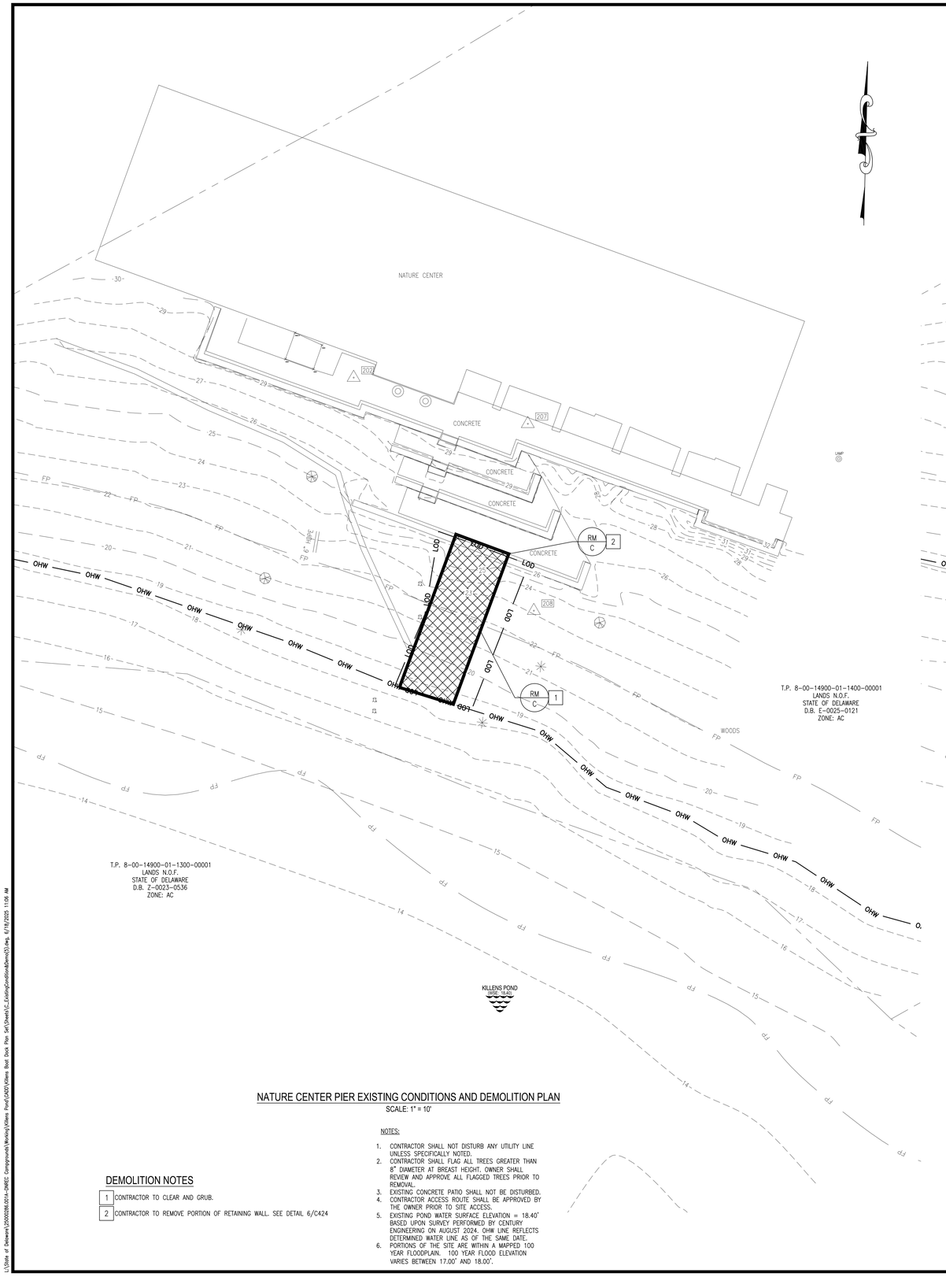


NATURE CENTER PIER EXISTING CONDITIONS AND DEMOLITION PLAN

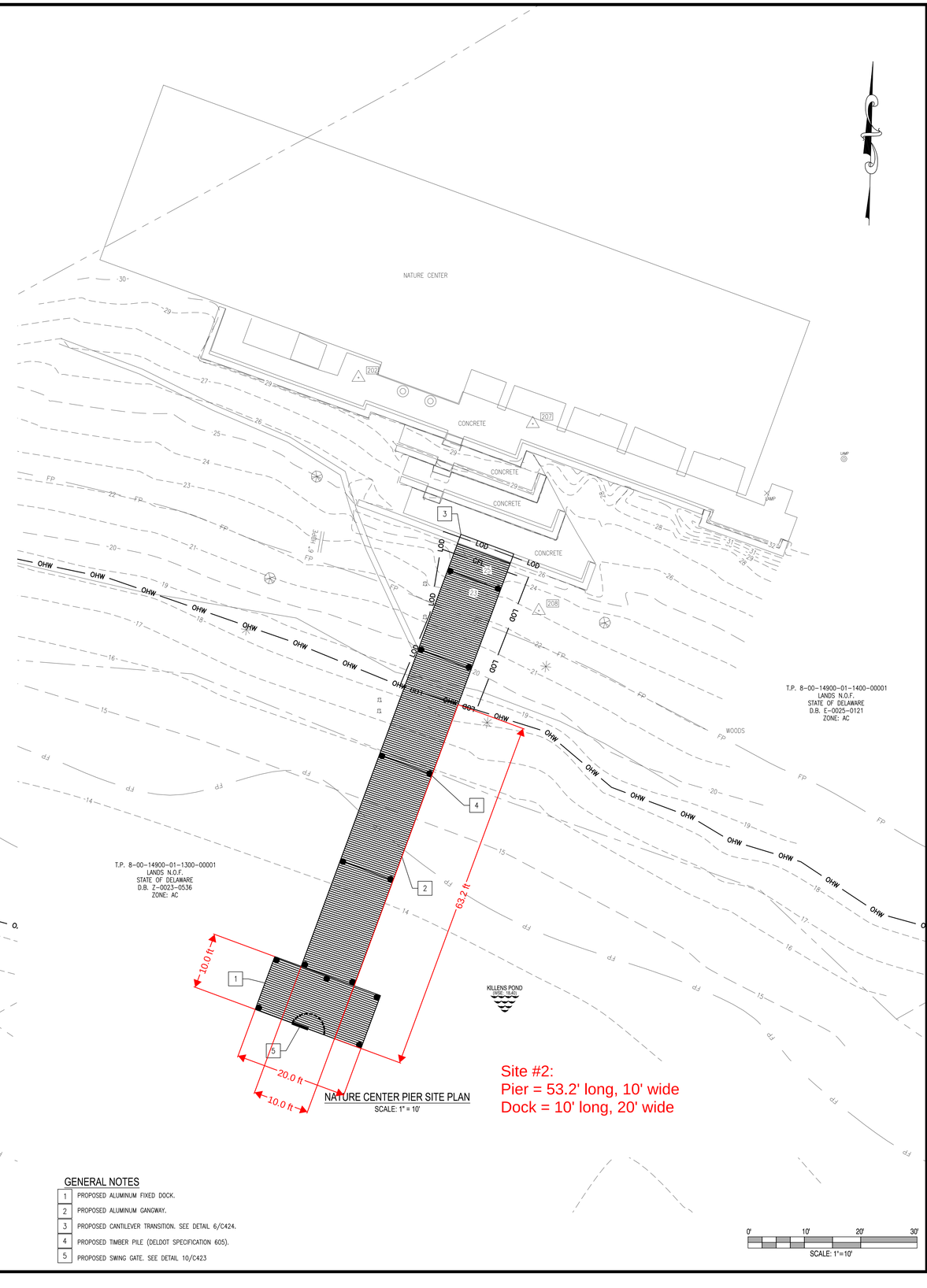
SCALE: 1" = 10'

DEMOLITION NOTES

1. CONTRACTOR TO CLEAR AND GRUB.
2. CONTRACTOR TO REMOVE PORTION OF RETAINING WALL. SEE DETAIL 6/C424

NOTES:

1. CONTRACTOR SHALL NOT DISTURB ANY UTILITY LINE UNLESS SPECIFICALLY NOTED.
2. CONTRACTOR SHALL FLAG ALL TREES GREATER THAN 8" DIAMETER AT BREAST HEIGHT. OWNER SHALL REVIEW AND APPROVE ALL FLAGGED TREES PRIOR TO REMOVAL.
3. EXISTING CONCRETE PATIO SHALL NOT BE DISTURBED.
4. CONTRACTOR ACCESS ROUTE SHALL BE APPROVED BY THE OWNER PRIOR TO SITE ACCESS.
5. EXISTING POND WATER SURFACE ELEVATION = 18.40' BASED UPON SURVEY PERFORMED BY CENTURY ENGINEERING ON AUGUST 2024. OHW LINE REFLECTS DETERMINED WATER LINE AS OF THE SAME DATE.
6. PORTIONS OF THE SITE ARE WITHIN A MAPPED 100 YEAR FLOODPLAIN. 100 YEAR FLOOD ELEVATION VARIES BETWEEN 17.00' AND 18.00'.



NATURE CENTER PIER SITE PLAN

SCALE: 1" = 10'

Site #2:
Pier = 53.2' long, 10' wide
Dock = 10' long, 20' wide

GENERAL NOTES

1. PROPOSED ALUMINUM FIXED DOCK.
2. PROPOSED ALUMINUM GANGWAY.
3. PROPOSED CANTILEVER TRANSITION. SEE DETAIL 6/C424.
4. PROPOSED TIMBER PILE (DELDOT SPECIFICATION 605).
5. PROPOSED SWING GATE. SEE DETAIL 10/C423

0' 10' 20' 30'

SCALE: 1"=10'

REVISIONS:

DATE:	DESCRIPTION:	BY:

KILLENS POND STATE PARK
KILLENS POND BOAT DOCKS

NATURE CENTER PIER DOCK SITE PLAN

SEAL:

ALEXANDER E. SCHMIDT
LICENSE
NO. 16139
PROFESSIONAL ENGINEER
DELAWARE

06-20-2025

CIVIL ENGINEER:

CENTURY ENGINEERING
A Kleinfelder Company

CEI CONTRACT NO.: 25000286.001A

DELAWARE
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
DIVISION OF PARKS AND RECREATION

DESIGNED BY: EMC

DRAWN BY: ZTP

CHECKED BY: AES

DATE: JUNE 2025

SCALE: 1" = 10'

SHEET NO.: C412

CONTRACT NO.: —

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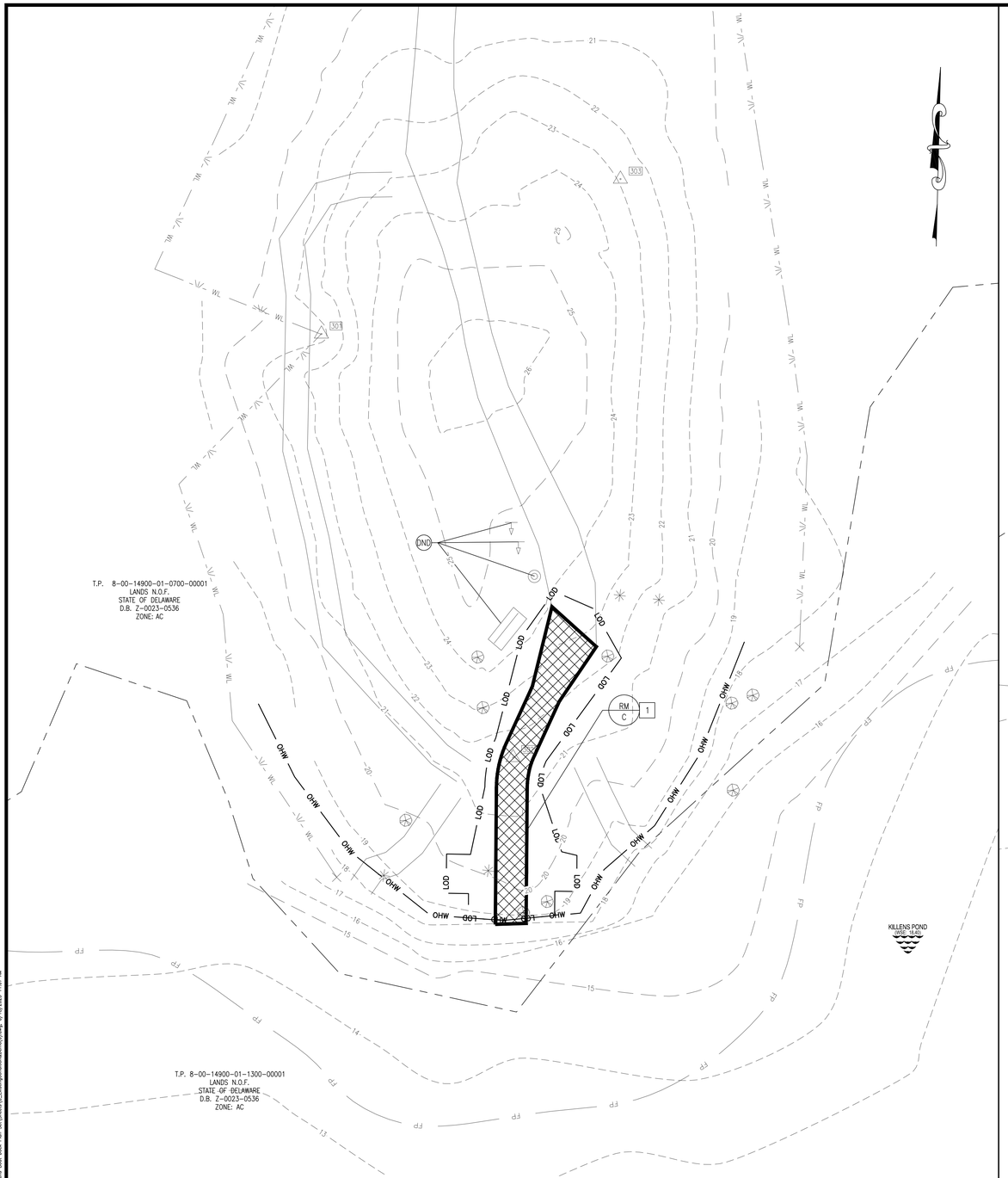


MARKER 18 DOCK EXISTING CONDITIONS AND DEMOLITION PLAN

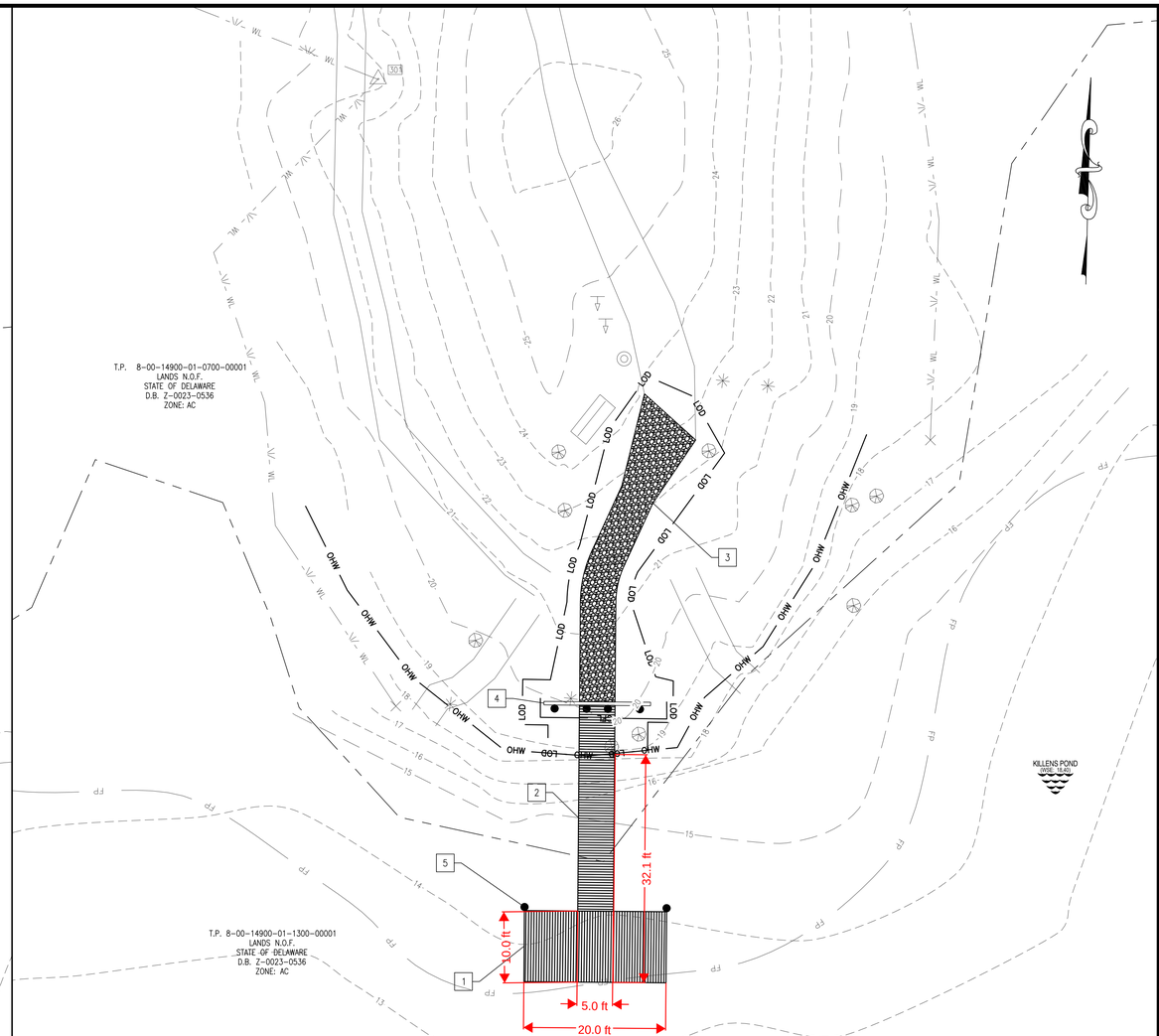
SCALE: 1" = 10'

DEMOLITION NOTES

1. CONTRACTOR TO CLEAR AND GRUB.

NOTES:

1. CONTRACTOR SHALL NOT DISTURB ANY UTILITY LINE UNLESS SPECIFICALLY NOTED.
2. CONTRACTOR SHALL FLAG ALL TREES GREATER THAN 8" DIAMETER AT BREAST HEIGHT. OWNER SHALL REVIEW AND APPROVE ALL FLAGGED TREES PRIOR TO REMOVAL.
3. EXISTING PAVEMENT SHALL NOT BE DISTURBED.
4. CONTRACTOR ACCESS ROUTE SHALL BE APPROVED BY THE OWNER PRIOR TO SITE ACCESS.
5. EXISTING POND WATER SURFACE ELEVATION = 18.40' BASED UPON SURVEY PERFORMED BY CENTURY ENGINEERING ON AUGUST 2024. OHW LINE REFLECTS DETERMINED WATER LINE AS OF THE SAME DATE.
6. PORTIONS OF THE SITE ARE WITHIN A MAPPED 100 YEAR FLOODPLAIN. 100 YEAR FLOOD ELEVATION VARIES BETWEEN 17.00' AND 18.00'.



Site #1:
Pier = 22.1' long, 5' wide
Dock = 10' long, 20' wide

MARKER 18 DOCK SITE PLAN

SCALE: 1" = 10'

GENERAL NOTES

1. PROPOSED ALUMINUM FLOATING DOCK.
2. PROPOSED ALUMINUM GANGWAY.
3. PROPOSED DELAWARE NO. 10 STONE OVER GRADED AGGREGATE BASE COURSE (DELDOT SPECIFICATION 301 AND 302). SEE DETAIL 4/C424.
4. TIMBER ABUTMENT.
5. PROPOSED TIMBER PILE (DELDOT SPECIFICATION 605).

TRAVERSE POINT LAYOUT

POINT NO.	DESCRIPTION	NORTHING	EASTING	ELEVATION
301	TP301 CIP KW	357885.9474	620905.5868	22.273
302	TP302 CIP KW	357817.1566	620936.7207	21.590
303	TP303 CIP KW	357911.1147	620954.1611	22.920

0' 10' 20' 30'
SCALE: 1"=10'

REVISIONS:

DATE:	DESCRIPTION:	BY:

KILLENS POND STATE PARK
KILLENS POND BOAT DOCKS

MARKER 18 DOCK SITE PLAN

SEAL:

ALEXANDER E. SCHMID
LICENSE
NO. 16139
PROFESSIONAL ENGINEER
STATE OF DELAWARE

06-20-2025

CIVIL ENGINEER:

CENTURY ENGINEERING
A Kleinfelder Company

CEI CONTRACT NO.: 25000286.001A

DELAWARE
DIVISION OF PARKS AND RECREATION

DESIGNED BY: EMC

DRAWN BY: ZTP

CHECKED BY: AES

DATE: JUNE 2025

SCALE: 1" = 10'

SHEET NO.: C414

CONTRACT NO.: —

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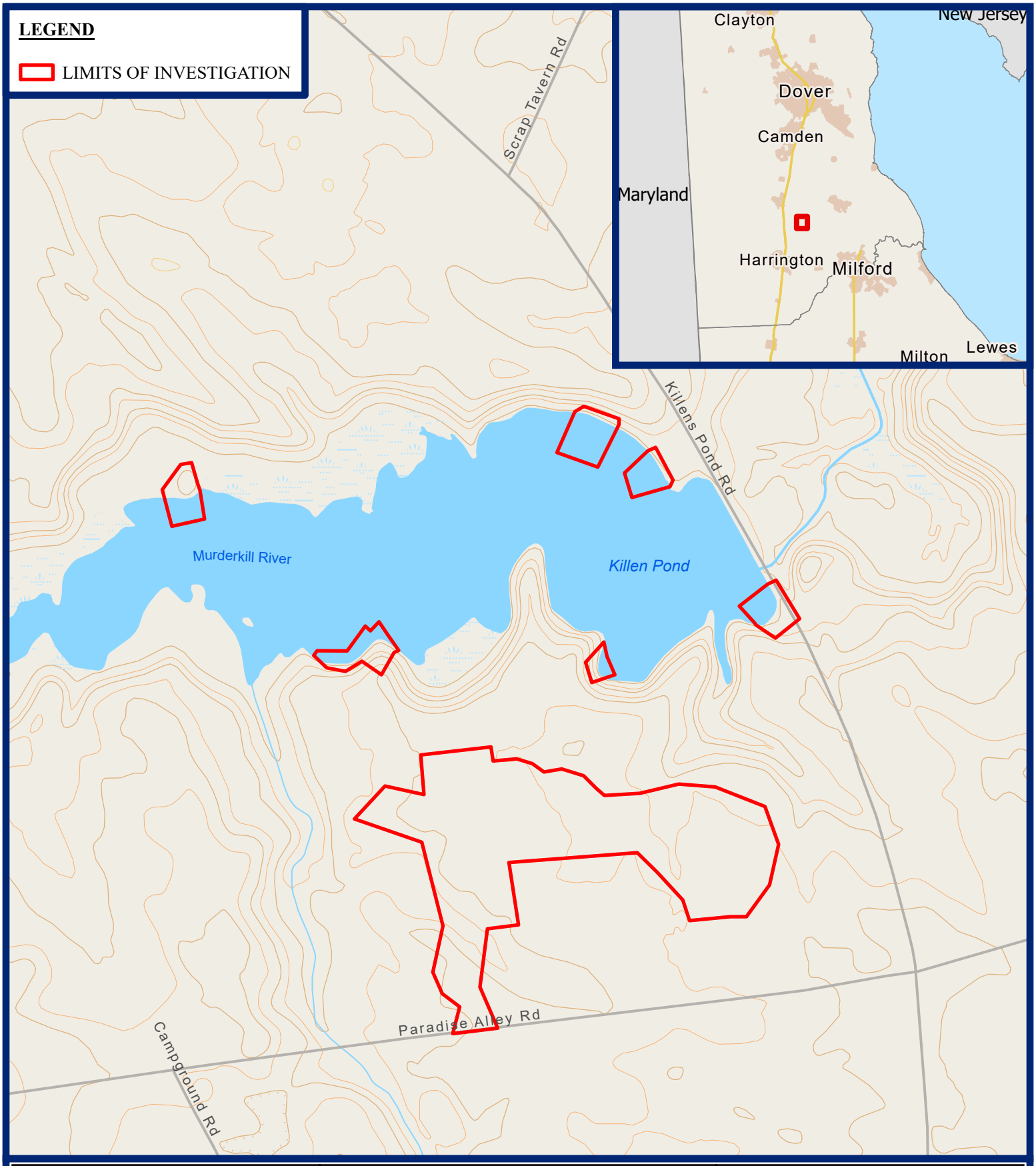
Site	Structure Type	# of Support Pilings Channelward of OHW	Dimensions Channelward of OHW		New, repair, or maintain
			Width (ft)	Length (ft)	
Site 1	Hinged Gangway/Pier	2	5	22.1	New
	Floating Dock		20	10	
Site 2	Fixed Gangway/Pier	6	10	53.2	New
	Fixed Dock	5	20	10	
Site 3	Hinged Gangway/Pier	5	4.5	19.7	Repair/Replace
	Floating Dock		15.7	16	
	Hinged Kayak Chute		5.5	19.3	
Site 4	Floating Gangway/Pier	8	10	117.2	Repair/Replace
	Floating Dock	2	40	10	
	Size (6) floating finger piers/docks	0	5 (30' total)	10 (60' total)	
Site 5	Hinged Gangway/Pier	5	4.5	31.4	New
	Floating Dock		15.7	16	
	Hinged Kayak Chute		5.5	22.1	
Site 6	Floating Gangway/Pier	0	4.5	27.6	Repair/Replace
	Hinged Kayak Chute	0	5.5	26.9	
	Floating Dock	5	15.7	16	
Site 7	Floating Gangway/Pier	0	4.5	22.4	Repair/Replace
	Hinged Kayak Chute	0	5.5	22.8	
	Floating Dock	5	15.7	16	
Freestanding Pilings	43				



CENTURY ENGINEERING
A Kleinfelder Company
550 Bay Road
Dover, DE 19901
P: 302.734.9188

VICINITY MAP

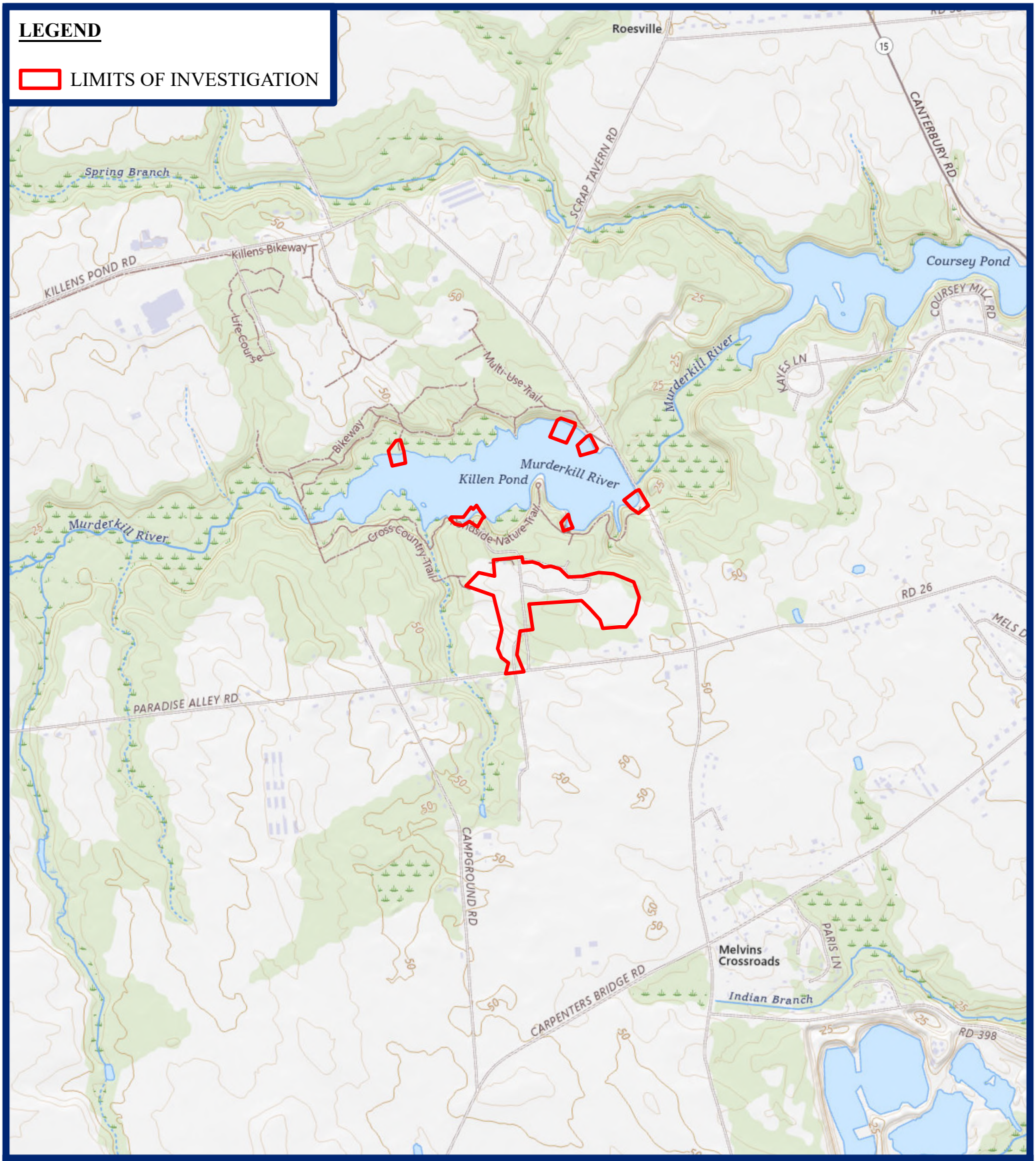
CAMPGROUND AND RECREATIONAL FACILITY IMPROVEMENTS
KILLENS POND STATE PARK

KENT COUNTY, DELAWARE

Basemap Source: FirstMap (2022)
ArcGIS Online

N

1 inch = 700 feet



CENTURY ENGINEERING
A Kleinfelder Company
550 Bay Road
Dover, DE 19901
P: 302.734.9188

USGS TOPOGRAPHIC
QUADRANGLE MAP

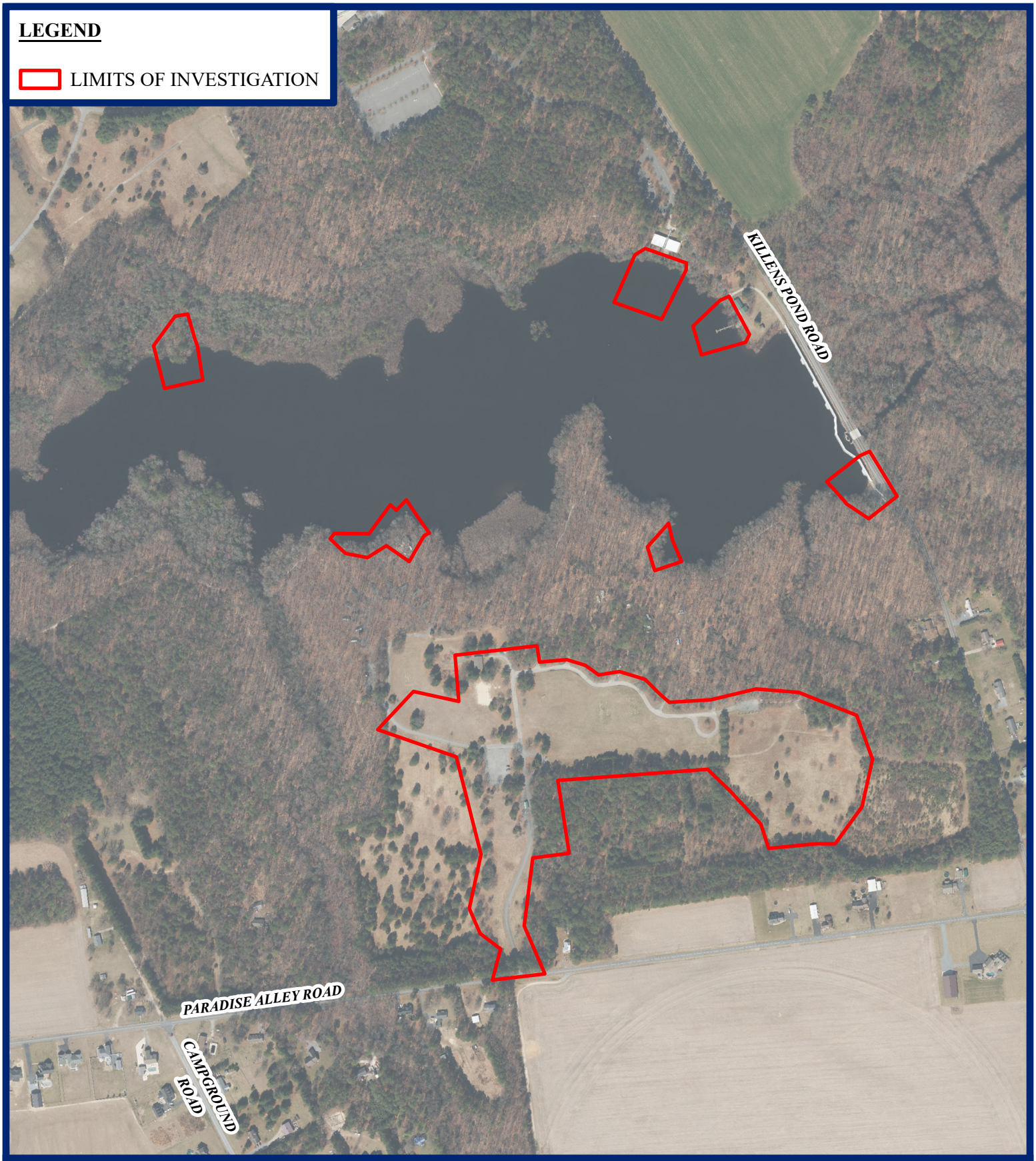
CAMPGROUND AND RECREATIONAL
FACILITY IMPROVEMENTS
KILLENS POND STATE PARK

KENT COUNTY, DELAWARE

USGS Topo Quads:
HARRINGTON (DE)

Area: 38.6501 +/- AC
Latitude: 39.0863269°N
Longitude: 75.5684970°W
Elevation: ~10-50 feet
Scale: 1:24,000

N
W E
S



CENTURY ENGINEERING
A Kleinfelder Company
550 Bay Road
Dover, DE 19901
P: 302.734.9188

AERIAL IMAGERY

CAMPGROUND AND RECREATIONAL
FACILITY IMPROVEMENTS
KILLENS POND STATE PARK

KENT COUNTY, DELAWARE

Aerial Imagery Source: FirstMap (2022)
ArcGIS Online

N

1 inch = 600 feet

Killens Pond State Park Campground Improvements - Photos

Above: Existing “cabin boat dock” to be removed. (Plan sheets C404 and C405)

Below: Existing “D loop” dock to be improved. (Plan sheets C406 and C407)

Killens Pond State Park Campground Improvements - Photos

Above: Location of new dock at the existing boat launch. (Plan sheets C408 and C409)

Below: Location of new dock at the existing nature center. (Plan sheets C412 and C413)

Killens Pond State Park Campground Improvements - Photos

Above: Location of improved dock at existing boat rental. (Plan sheets C410 and C411)

Below: Location of new kayak launch. (Plan sheets C410 and C411)

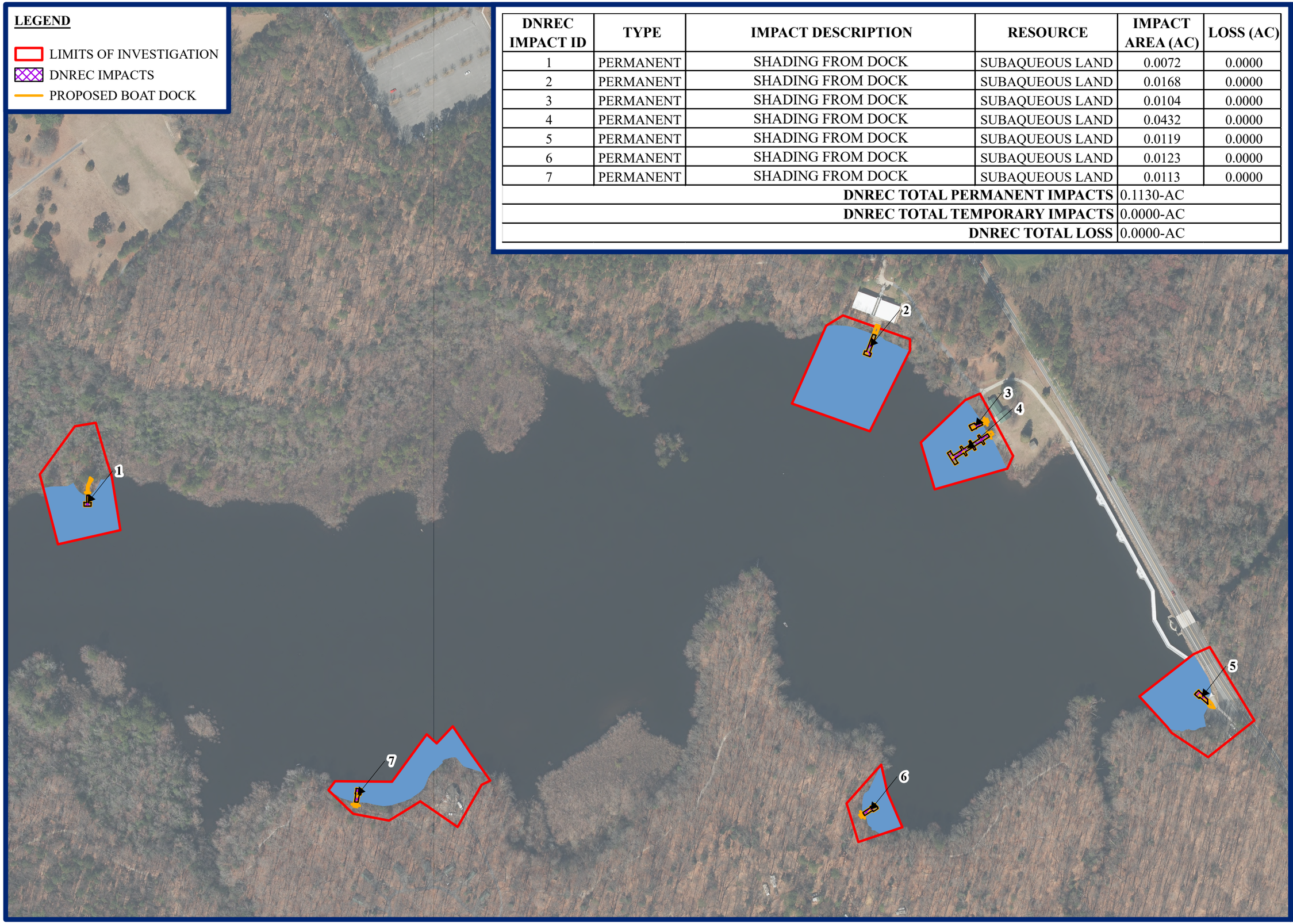
Killens Pond State Park Campground Improvements - Photos

Above: Location of new dock at Marker 18. (Plan sheets C414 and C415)

LEGEND

- LIMITS OF INVESTIGATION
- DNREC IMPACTS
- PROPOSED BOAT DOCK

DNREC IMPACT ID	TYPE	IMPACT DESCRIPTION	RESOURCE	IMPACT AREA (AC)	LOSS (AC)
1	PERMANENT	SHADING FROM DOCK	SUBAQUEOUS LAND	0.0072	0.0000
2	PERMANENT	SHADING FROM DOCK	SUBAQUEOUS LAND	0.0168	0.0000
3	PERMANENT	SHADING FROM DOCK	SUBAQUEOUS LAND	0.0104	0.0000
4	PERMANENT	SHADING FROM DOCK	SUBAQUEOUS LAND	0.0432	0.0000
5	PERMANENT	SHADING FROM DOCK	SUBAQUEOUS LAND	0.0119	0.0000
6	PERMANENT	SHADING FROM DOCK	SUBAQUEOUS LAND	0.0123	0.0000
7	PERMANENT	SHADING FROM DOCK	SUBAQUEOUS LAND	0.0113	0.0000
			DNREC TOTAL PERMANENT IMPACTS	0.1130-AC	
			DNREC TOTAL TEMPORARY IMPACTS	0.0000-AC	
			DNREC TOTAL LOSS	0.0000-AC	



CENTURY ENGINEERING
A Kleinfelder Company
550 Bay Road | Dover, DE 19901 | P: 302.734.9188

CAMPGROUND AND RECREATIONAL FACILITY IMPROVEMENTS
KILLENS POND STATE PARK
DNREC WSLS IMPACTS
KENT COUNTY, DELAWARE

N
W E
S

1 inch = 250 feet

Project Manager: AS
Drawn: TA
Job Number: 20233502.008A
Revisions:
OHW line averaged to 18.4'.

LEGEND

- LIMITS OF INVESTIGATION
- L1UBH WATERS
- DNREC IMPACTS
- PROPOSED BOAT DOCK

1

CENTURY ENGINEERING
A Kleinfelder Company

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

CAMPGROUND AND RECREATIONAL
FACILITY IMPROVEMENTS
KILLENS POND STATE PARK

DNREC WSLS IMPACTS

KENT COUNTY, DELAWARE

N
W E
S

1 inch = 40 feet

Project Manager:	AS
Drawn:	RO
Job Number:	25000286.001A
Revisions:	NONE

LEGEND

- LIMITS OF INVESTIGATION
- L1UBH WATERS
- DNREC IMPACTS
- PROPOSED BOAT DOCK

CENTURY ENGINEERING
A Kleinfelder Company
550 Bay Road | Dover, DE 19901 | P: 302.734.9188

CAMPGROUND AND RECREATIONAL FACILITY IMPROVEMENTS
KILLENS POND STATE PARK
DNREC WSLS IMPACTS
KENT COUNTY, DELAWARE

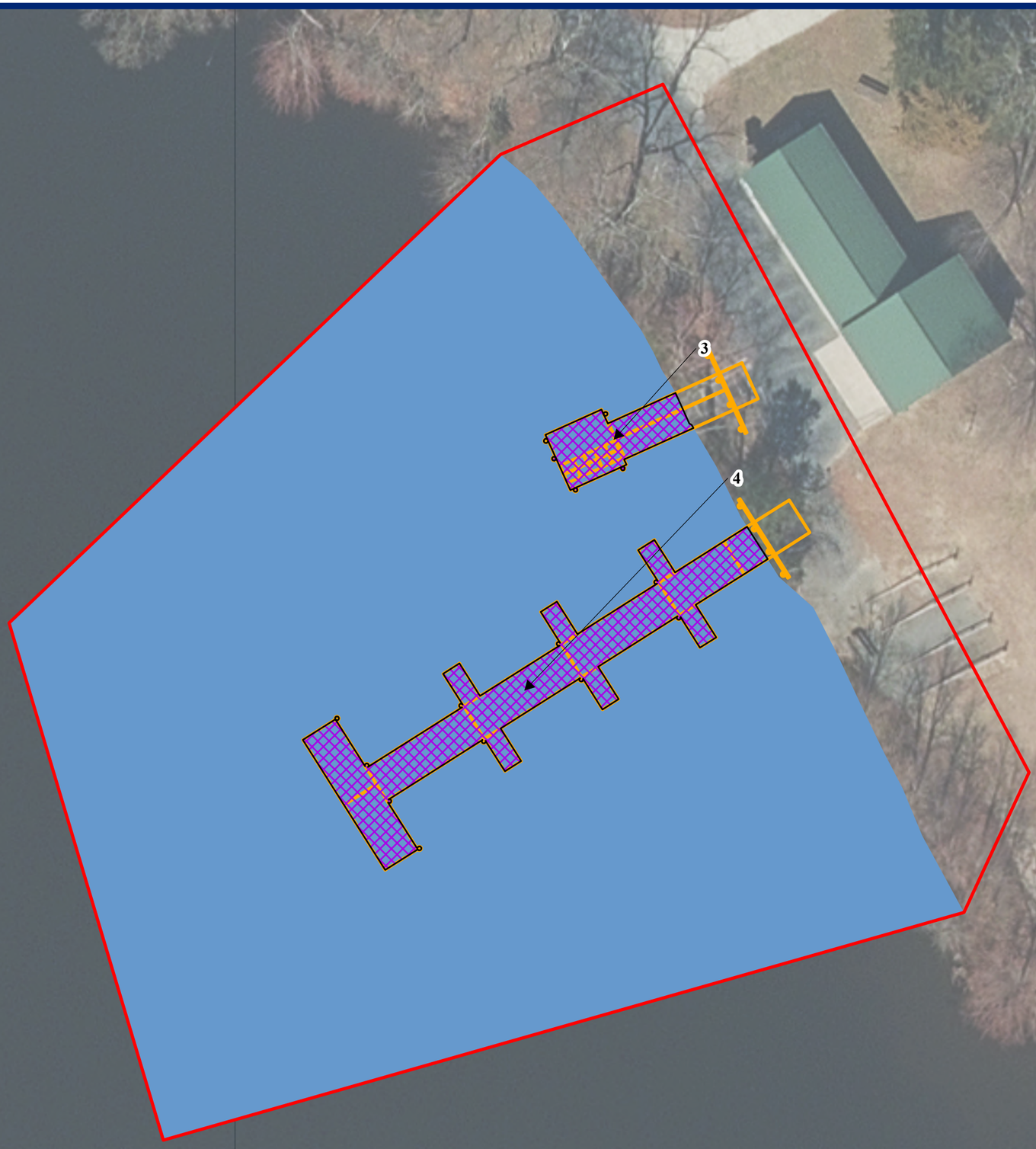
N
W E
S

1 inch = 40 feet

Project Manager:	AS
Drawn:	RO
Job Number:	25000286.001A
Revisions:	NONE

LEGEND

- LIMITS OF INVESTIGATION
- L1UBH WATERS
- DNREC IMPACTS
- PROPOSED BOAT DOCK



CENTURY ENGINEERING
A Kleinfelder Company
550 Bay Road | Dover, DE 19901 | P: 302.734.9188

CAMPGROUND AND RECREATIONAL FACILITY IMPROVEMENTS
KILLENS POND STATE PARK

DNREC WSLS IMPACTS

KENT COUNTY, DELAWARE

N
W E
S

1 inch = 30 feet

Project Manager:	AS
Drawn:	RO
Job Number:	25000286.001A
Revisions:	NONE

LEGEND

- LIMITS OF INVESTIGATION
- L1UBH WATERS
- DNREC IMPACTS
- PROPOSED BOAT DOCK

5

CENTURY ENGINEERING
A Kleinfelder Company
550 Bay Road | Dover, DE 19901 | P: 302.734.9188

CAMPGROUND AND RECREATIONAL FACILITY IMPROVEMENTS
KILLENS POND STATE PARK
DNREC WSLS IMPACTS
KENT COUNTY, DELAWARE

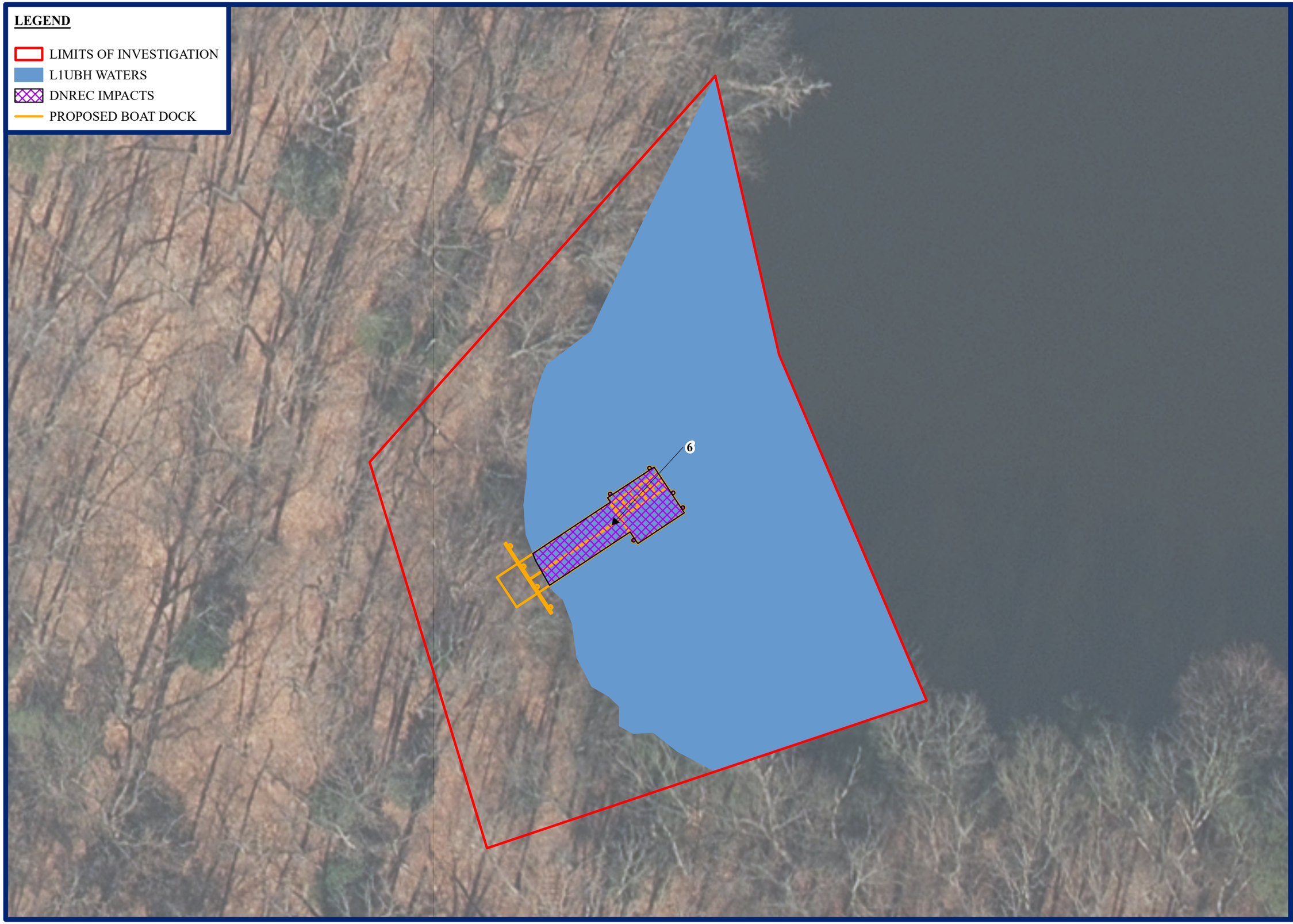
N
W E
S

1 inch = 40 feet

Project Manager:	AS
Drawn:	RO
Job Number:	25000286.001A
Revisions:	NONE

LEGEND

- LIMITS OF INVESTIGATION
- L1UBH WATERS
- DNREC IMPACTS
- PROPOSED BOAT DOCK



CENTURY ENGINEERING
A Kleinfelder Company

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CAMPGROUND AND RECREATIONAL FACILITY IMPROVEMENTS
KILLENS POND STATE PARK

DNREC WSLS IMPACTS

KENT COUNTY, DELAWARE

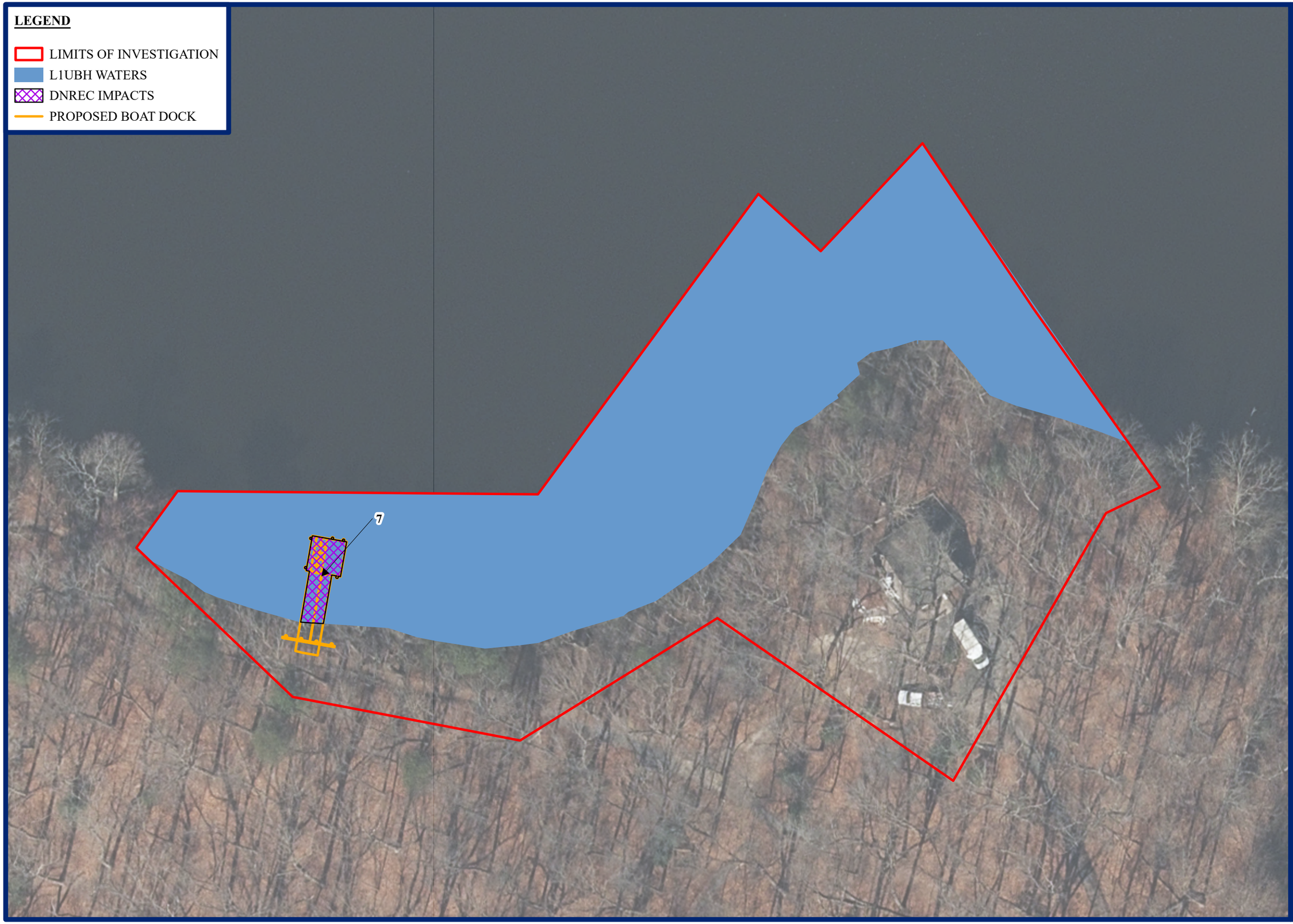
N
W E
S

1 inch = 25 feet

Project Manager:	AS
Drawn:	RO
Job Number:	25000286.001A
Revisions:	NONE

LEGEND

- LIMITS OF INVESTIGATION
- L1UBH WATERS
- DNREC IMPACTS
- PROPOSED BOAT DOCK



CENTURY ENGINEERING
A Kleinfelder Company
550 Bay Road | Dover, DE 19901 | P: 302.734.9188

CAMPGROUND AND RECREATIONAL FACILITY IMPROVEMENTS
KILLENS POND STATE PARK
DNREC WSLS IMPACTS
KENT COUNTY, DELAWARE

N
W E
S

1 inch = 40 feet

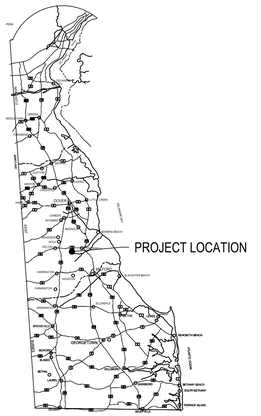
Project Manager:	AS
Drawn:	RO
Job Number:	25000286.001A
Revisions:	NONE

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
DIVISION OF PARKS AND RECREATION

KILLENS POND STATE PARK

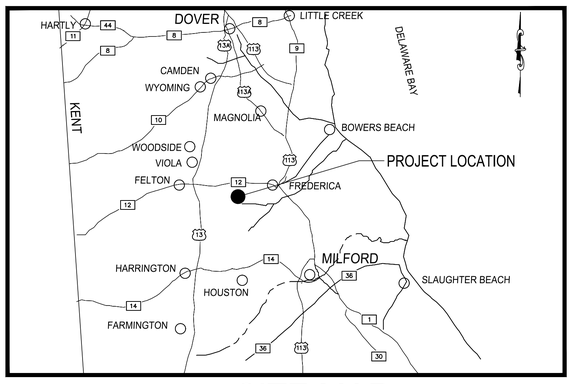
KILLENS POND BOAT DOCKS

CONTRACT NO. NAT23836-EDAGRANT
JUNE 2025
99% DFM SUBMISSION DOCUMENTS



STATE OF DELAWARE

LOCATION MAP



SITE MAP

INDEX OF SHEETS

C400	COVER SHEET
C401	LEGEND
C402	NOTES
C403	INDEX PLAN
C404	CABIN DOCK SITE PLAN
C405	CABIN DOCK SITE LAYOUT AND PROFILE
C406	D LOOP DOCK SITE PLAN
C407	D LOOP DOCK SITE LAYOUT AND PROFILE
C408	BOAT LAUNCH DOCK SITE PLAN
C409	BOAT LAUNCH DOCK SITE LAYOUT AND PROFILE
C410	BOAT RENTAL DOCK SITE PLAN
C411	BOAT RENTAL DOCK SITE LAYOUT AND PROFILE
C412	NATURE CENTER PIER DOCK SITE PLAN
C413	NATURE CENTER PIER SITE LAYOUT AND PROFILE
C414	MARKER 18 DOCK SITE PLAN
C415	MARKER 18 DOCK SITE LAYOUT AND PROFILE
C416	ENVIRONMENTAL COMPLIANCE SUMMARY PLAN
C417	MARKER 18 DOCK ENVIRONMENTAL COMPLIANCE
C418	NATURE CENTER PIER ENVIRONMENTAL COMPLIANCE
C419	BOAT RENTAL DOCK ENVIRONMENTAL COMPLIANCE
C420	BOAT LAUNCH DOCK ENVIRONMENTAL COMPLIANCE
C421	D LOOP DOCK ENVIRONMENTAL COMPLIANCE
C422	CABIN DOCK ENVIRONMENTAL COMPLIANCE
C423	CONSTRUCTION DETAILS
C424	CONSTRUCTION DETAILS
C425	CONSTRUCTION DETAILS
C426	CONSTRUCTION DETAILS
C427	EROSION & SEDIMENT CONTROL DETAILS
C428	EROSION & SEDIMENT CONTROL DETAILS
C429	EROSION & SEDIMENT CONTROL DETAILS
EX-01	OVERALL SITE PLAN

CIVIL ENGINEER

PREPARED BY:

CENTURY ENGINEERING
A Kleinfelder Company

SIGNATURE

06-20-2025
DATE

Seal

ALEXANDER E. SCHMIDT
LICENSE
NO. 16139
DELAWARE
PROFESSIONAL ENGINEER

OWNER

OFFICE OF DESIGN & DEVELOPMENT
DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
89 KINGS HIGHWAY
DOVER, DELAWARE 19901
(302) 739-9231
(302) 739-7026 (FAX)

SIGNATURE

DATE

REVISIONS:

DATE:	DESCRIPTION:	BY:

KILLENS POND STATE PARK
KILLENS POND BOAT DOCKS

COVER SHEET

SEAL:

ALEXANDER E. SCHMIDT
LICENSE
NO. 16139
DELAWARE
PROFESSIONAL ENGINEER

06-20-2025

CIVIL ENGINEER:

CENTURY ENGINEERING
A Kleinfelder Company

CEI CONTRACT NO.: 25000286.001A

DESIGNED BY: EMC
DRAWN BY: ZTP
CHECKED BY: AES
DATE: JUNE 2025
SCALE: NOT TO SCALE
SHEET NO.: C400
CONTRACT NO.:

L:\State of Delaware\25000286.001A-DNREC Campgrounds\Working\Boat Docks Proj\CAD\Killens Boat Dock Plan Set\Sheets\C400_CoverSheet.dwg, 6/18/2025 10:56 AM

MANMADE ROADSIDE FEATURES

FEATURE DESCRIPTION	EXISTING	PROPOSED	ID
BOLLARD – STEEL POLE			
BOLLARD – WOOD POST			
CURB, TYPE 1 AND TYPE 3			C X
CURB, TYPE 2			
CURB & GUTTER, TYPE 1			
CURB & GUTTER, TYPE 2			
CURB & GUTTER, TYPE 3			
FENCE – CHAINLINK OR STRANDED	X	X	
FENCE – STOCKADE OR SPLIT RAIL			
FLAG POLE	FP	FP	
GUARDRAIL – STEEL BEAM, TYPE 1			
LAMP AND POST	LAMP		
MAILBOX	MB	MB	
PAVEMENT			
PILLAR OR MISCELLANEOUS POST			
TRAFFIC SIGN AND POST			

DRAINAGE FEATURES

FEATURE DESCRIPTION	EXISTING	PROPOSED	ID
BIOFILTRATION SWALE		BFS X	
DITCH OR STREAM CENTERLINE		X X	
DIRECTIONAL STREAM FLOW ARROW			
DRAINAGE INLET	C.B.		DI X
DRAINAGE JUNCTION BOX	J.B.		JB X
DRAINAGE MANHOLE	D		MH X
DRAINAGE PIPE AND FLOW ARROW	SIZE TYPE		P X
FLARED END SECTION			FES X
RIPRAP – AREA FEATURE			RR X
SAFETY END SECTION			SES X
UNDERDRAIN			UD X
UNDERDRAIN OUTLET			UDO X

GRADING

FEATURE DESCRIPTION	EXISTING	PROPOSED
CONTOUR		
SPOT ELEVATIONS	XX.XX	XX.XX

UTILITY FEATURES

FEATURE DESCRIPTION	EXISTING	PROPOSED
CABLE TV DISTRIBUTION BOX	TV	
COMMUNICATIONS – UNDERGROUND	COMM	COMM
ELECTRIC – UNDERGROUND	UG–E	UG–E
ELECTRIC MANHOLE	E	
ELECTRIC METER	E.M.	
ELECTRIC TRANSFORMER	E.T.	
GAS – UNDERGROUND	UG–G	UG–G
GAS MANHOLE	G	
GAS METER	G.M.	
GAS VALVE	G.V.	
GAS PUMP – SERVICE STATION	G.P.	
IRRIGATION – UNDERGROUND	IR IR	IR IR
ITMS – UNDERGROUND	ITMS	ITMS
KNOX BOX		
LIGHTING – UNDERGROUND	LI LI	LI LI
LUMINAIRE – POLE MOUNTED		
MANHOLE – UNDETERMINED OWNER	UM	
RAILROAD TRACKS		
SANITARY – UNDERGROUND	S S S	S S S
SANITARY SEWER MANHOLE	S	
SANITARY SEWER VALVE	S.V.	S.V.
SANITARY SEWER CLEANOUT OR VENT	CO	CO
SEPTIC DRAIN FIELD	S.D.F.	
SIGNALIZATION – UNDERGROUND	SIG	SIG
SOIL BORING LOCATION		
TELEPHONE BOOTH	B	
TELEPHONE MANHOLE	T	
TELEPHONE TEST POINT	TTP	
TRAFFIC – CONDUIT JUNCTION WELL	J.W.	
TRAFFIC – LIGHT POLE AND BASE		
TRAFFIC – PEDESTRIAN POLE & BASE		
TRAFFIC – SIGNAL CABINET & BASE		
TRAFFIC – SIGNAL POLE AND BASE		
UNKNOWN UTILITY – UNDERGROUND	UG–UK	
UTILITY BOX	UB	
UTILITY POLE GUY WIRE ANCHOR		
UTILITY POLE		
UTILITY TEST HOLE LOCATION		
WALL PACK – LIGHTING		W.P.
WATER – UNDERGROUND	W	W
WATER – FIRE HYDRANT		
WATER METER	W.M.	W.M.
WATER VALVE	W.V.	W.V.
WATER – FIRE DEPARTMENT CONNECTION	FDC	
WELL HEAD	WELL	WELL

PAVEMENT SECTION(S)

MILL AND OVERLAY – SEE TYPICAL SECTIONS FOR MATERIAL AND DEPTHS	
FULL DEPTH PAVEMENT	
SHARED USE PATH	
GRAVEL	
CONCRETE	

NATURAL ROADSIDE FEATURES

FEATURE DESCRIPTION	EXISTING	PROPOSED
HEDGEROW OR THICKET		
MARSH BOUNDARY LINE		
TREE – CONIFEROUS		
TREE – DECIDUOUS		
TREE STUMP		
SHRUBBERY		
WETLAND BOUNDARY – DELINEATED	WL	
WOODS LINE BOUNDARY		
FLOODPLAIN	FP	

RIGHT-OF-WAY FEATURES

FEATURE DESCRIPTION	EXISTING	PROPOSED
DENIAL OF ACCESS	DA	DA
EASEMENT – OTHERS		
PERMANENT EASEMENT	PE	PE
PROPERTY LINE		
PROPERTY MARKER – CONCRETE	CM	C.M.
PROPERTY MARKER – IRON PIPE	I.P.	I.P.
RIGHT-OF-WAY BASELINE	100+00	100+00
RIGHT-OF-WAY LINE	RW	RW
RIGHT-OF-WAY & DENIAL OF ACCESS	R/W–DA	R/W–DA
RIGHT-TO-ENTER		RTE
TEMPORARY CONSTRUCTION EASEMENT		TCE
CLEAR ZONE		CZ
HORIZONTAL CLEARANCE		HC

SURVEY CONTROL & MONUMENTATION

FEATURE DESCRIPTION	EXISTING
SURVEY BENCHMARK LOCATION	B.M.
SURVEY TIE POINT LOCATION	T.P.
SURVEY TRAVERSE POINT	

MISCELLANEOUS FEATURES

FEATURE DESCRIPTION	PROPOSED
BUTT JOINT	
CLEAR ZONE	CZ
CONSTRUCTION BASELINE	100+00
LIMIT OF CONSTRUCTION	LOC
DEMOLITION	
P.C.C. SIDEWALK	
6" P.C.C. SIDEWALK	
PAVEMENT PATCH	
ACCESSIBLE RAMP	
SAW CUT	SAW

EROSION & SEDIMENT CONTROL FEATURES

FEATURE DESCRIPTION	PROPOSED
LIMIT OF DISTURBANCE	LOD
PORTABLE SEDIMENT TANK	ST
PUMPING PIT	PP–2
SILT FENCE	SF
COMPOST FILTER LOG	CFL
SENSITIVE AREA PROTECTION	SAP

IDENTIFIERS

FEATURE DESCRIPTION	ID
ABANDON BY CONTRACTOR	AB C
ABANDON BY OTHERS	AB O
ADJUST BY CONTRACTOR	A C
ADJUST BY OTHERS	A O
BEST MANAGEMENT PRACTICE	BMP XX
BUS STOP PAD / TYPE	BSP XX
BUS STOP WITH SHELTER PAD / TYPE	BSSP XX
CONCRETE SAFETY BARRIER	B XX
CONVERT TO JUNCTION BOX	CJB XX
CONVERT TO DRAINAGE MANHOLE	CDM XX
DO NOT DISTURB	DND
ENERGY DISSIPATOR	ED XX
FILL WITH FLOWABLE FILL	FF C
LANDSCAPE PLANTINGS	LS XX
PEDESTRIAN CONNECTION / TYPE	PC XX
RELOCATE BY CONTRACTOR	RL C
RELOCATE BY OTHERS	RL O
RELOCATE BY PROPERTY OWNER	RL PO
REMOVE BY CONTRACTOR	RM C
REMOVE BY OTHERS	RM O
REMOVE BY TRAFFIC CONTRACTOR	RM TC
RIGHT-OF-WAY MONUMENT	RM XX

ABBREVIATION SCHEDULE

ABBREVIATION	DEFINITION
ADA	AMERICANS WITH DISABILITIES ACT
ALLOW.	ALLOWABLE
ASD	ALLOWABLE STRESS DESIGN
ALUM	ALUMINUM
BL	BASE LINE
BOTT	BOTTOM
BRG	BEARING
CAP	CAPACITY
CJ	CONTROL JOINT
CL	CENTER LINE
CLR	CLEAR
CONC	CONCRETE
CONN	CONNECTION
CORR	CORRUGATED
CSJ	CONSTRUCTION JOINT
DFM	DIVISION OF FACILITIES MANAGEMENT
DIAG	DIAGONAL
DL	DEAD LOAD
DNREC	DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
DOL	DEPARTMENT OF LABOR
DOT	DEPARTMENT OF TRANSPORTATION
E.F.	EACH FACE
EL., ELEV	ELEVATION
EQU.	EQUAL
EX., EXIST.	EXISTING
F.F.	FAR FACE
F'c	COMPRESSIVE STRENGH OF CONCRETE
FIN. FL.	FINISHED FLOOR
FIN. GR.	FINISHED GRADE
FND	FOUNDATION
FTG	FOOTING
Fy	YIELD STRENGTH OF STEEL
GABC	GRADED AGGREGATE BASE COURSE
GALV	GALVANIZED
HORIZ	HORIZONTAL
JT	JOINT
KSI	KIPS PER SQUARE INCH
LL	LIVE LOAD
LLV	LONG LEG VERTICAL
LLH	LONG LEG HORIZONTAL
LLBB	LONG LEG BACK TO BACK
LOC	LIMIT OF CONSTRUCTION
LOD	LIMIT OF DISTURBANCE
LRFD	LOAD RESISTANCE FACTORED DESIGN
MHW	MEAN HIGH WATER
MTL	METAL
NO	NUMBER
NOM	NOMINAL
N.F.	NEAR FACE
O.C.	ON CENTER
OHW	ORDINARY HIGH WATER
OPP	OPPOSITE
P.L.	PROPERTY LINE
PL	PLATE
PSI	POUNDS PER SQUARE INCH
PT	PRESSURE TREATED
REBAR	REINFORCING BAR
ROW, RW, R/W	RIGHT OF WAY
SF	SILT FENCE
SIM	SIMILAR
SLBB	SHORT LEG BACK TO BACK
SS	STAINLESS STEEL
STA	STATION
STD	STANDARD
STL	STEEL
STR	STRAIGHT
T&B	TOP AND BOTTOM
TYP	TYPICAL
UHMW	ULTRA HIGH MOLECULAR WEIGHT
UNIF	UNIFORM
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
WSE	WATER SURFACE ELEVATION
WWF	WELDED WIRE FABRIC

NOTE: NOT ALL ABBREVIATIONS INCLUDED IN THESE PLANS

GENERAL NOTE:

ALL ITEMS SHOWN MAY NOT BE PRESENT ON ALL SHEETS, OR PART OF THIS PROJECT.

REVISIONS:

DATE:	DESCRIPTION:	BY:

KILLENS POND STATE PARK
KILLENS POND BOAT DOCKS

LEGEND

SEAL:

ALEXANDER E. SCHMID — LICENSE — NO. 16139 — PROFESSIONAL ENGINEER

06-20-2025

CIVIL ENGINEER:

CENTURY ENGINEERING
A Kleinfelder Company

CEI CONTRACT NO.: 25000286.001A

DELAWARE — DIVISION OF PARKS AND RECREATION

DESIGNED BY: EMC

DRAWN BY: ZTP

CHECKED BY: AES

DATE: JUNE 2025

SCALE: NOT TO SCALE

SHEET NO.: C401

CONTRACT NO.: —

L:\State of Delaware\25000286.001A–DNREC Campgrounds\Working\Killens Pond\CADD\Killens Boat Dock Plan Set\Sheets\C401_LegendLines_ 6/19/2025 10:56 AM

SITE NOTES

1. ON-SITE WORK SHALL ONLY BE ALLOWED DURING THE MONTHS OF OCTOBER THROUGH FEBRUARY. NO WORK WILL BE ALLOWED DURING THE PERIOD OF MARCH 1 THROUGH SEPTEMBER 30.
2. THE BASE SURVEY, INCLUDING ALL CONTOURS AND ELEVATIONS, IS BASED ON CONVENTIONAL SURVEY TAKEN IN THE FIELD BY CENTURY ENGINEERING. A BOUNDARY SURVEY WAS NOT PERFORMED. ANY PROPERTY LINES SHOWN ON PLAN WERE TAKEN FROM THE KENT COUNTY GIS MAP VIEWER WEBSITE. CONTROL POINTS FOR THE CONVENTIONAL SURVEY HAVE BEEN INCLUDED IN THESE PLANS. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL ADDITIONAL PHYSICAL CONTROL AND LAYOUT, INCLUDING BUT NOT LIMITED TO BASELINES AND WORKING POINTS, AS REQUIRED TO COMPLETE THE WORK AS INCIDENTAL TO THE WORK.
3. EXISTING UTILITIES ARE SHOWN IN ACCORDANCE WITH THE BEST AVAILABLE INFORMATION. COMPLETENESS OR CORRECTNESS THEREOF IS NOT GUARANTEED. THE CONTRACTOR SHALL VERIFY EXACT LOCATIONS OF ALL EXISTING UTILITIES IN THE FIELD. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE UTILITY OWNERS INVOLVED TO SECURE THE MOST ACCURATE INFORMATION AVAILABLE AS TO UTILITY LOCATION AND ELEVATION. ALL COSTS OF UTILITY LOCATING SHALL BE INCIDENTAL TO THE CONTRACT.
4. TO LOCATE EXISTING UTILITIES IN THE FIELD PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT A LOCATE REQUEST TO MISS UTILITY OF DELMARVA (EASTERN SHORE MARYLAND AND DELAWARE). NO EXCAVATION WORK SHALL BEGIN UNTIL ALL UTILITIES AS IDENTIFIED THROUGH THE MISS UTILITY LOCATE REQUEST HAVE EITHER BEEN CLEARED OR MARKED IN THE FIELD. TO LOCATE PRIVATELY OWNED UTILITIES THE CONTRACTOR EMPLOY A PRIVATE UTILITY LOCATOR, TO MARK THE PRIVATE UTILITIES IN THE FIELD.
5. NO CONSTRUCTION AROUND OR ADJACENT TO UTILITIES SHALL BEGIN WITHOUT NOTIFYING THEIR OWNERS AT LEAST 48-HOURS IN ADVANCE. THE CONTRACTOR SHALL TAKE THE NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE TO THE MAXIMUM EXTENT POSSIBLE. ALL EXISTING UTILITIES SHALL BE PROTECTED AND TEMPORARILY SUPPORTED OR RELOCATED AS NECESSARY TO COMPLETE THE WORK IN ACCORDANCE WITH THE PERTINENT UTILITY COMPANY OR UTILITY OWNER REQUIREMENTS. ANY DAMAGE DONE TO EXISTING UTILITIES DUE TO CONTRACTOR'S NEGLIGENCE SHALL BE IMMEDIATELY AND COMPLETELY REPAIRED TO THE SATISFACTION OF THE UTILITY OWNER AT THE CONTRACTOR'S EXPENSE.
6. THE CONTRACTOR SHALL PROVIDE THE OWNER A MINIMUM TWO WORKING DAY ADVANCE NOTICE OF ANY PROPOSED UTILITY DISRUPTION OR OUTAGE FOR APPROVAL.
7. THE CONTRACTOR SHALL ONLY WORK WITHIN THE DESIGNATED LIMIT OF DISTURBANCE (LOD). ALL RUTS AND DEPRESSIONS CAUSED BY CONSTRUCTION ACTIVITY SHALL BE FILLED, TOPSOILED, SEEDED AND MULCHED TO MATCH THE ADJACENT AREA. WORK OUTSIDE OF THE LIMIT OF DISTURBANCE IS STRICTLY PROHIBITED.
8. THE CONTRACTOR SHALL REMOVE ALL EXISTING TREES AND VEGETATION INSIDE THE LIMIT OF DISTURBANCE (LOD) WHETHER OR NOT SPECIFICALLY SHOWN ON THE DRAWINGS, UNLESS SPECIFICALLY DIRECTED OTHERWISE.
9. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE OWNER PRIOR TO REMOVAL OF ANY BALD CYPRESS TREES DURING CONSTRUCTION.
10. THE AREAS OF SITE WORK ARE GENERALLY SHOWN. HOWEVER, THE EXTENT OF RESTORATION IS NOT NECESSARILY LIMITED TO THESE AREAS. THE CONTRACTOR SHALL RESTORE ALL PAVING, SIDEWALKS, OR NON-PAVED AREAS AFFECTED BY THE CONSTRUCTION TO A CONDITION COMPARABLE TO THAT EXISTING PRIOR TO CONSTRUCTION, AND TO THE SATISFACTION OF DNREC.
11. THE CONTRACTOR SHALL REGRADE AND RESTORE ALL AREAS DISTURBED BY THE CONSTRUCTION AS NECESSARY TO PROVIDE A UNIFORM, GRADUAL TRANSITION BETWEEN NEW FINISHED GRADES AND EXISTING GRADES, TO CREATE A NATURAL APPEARANCE AND TO PROVIDE POSITIVE DRAINAGE AWAY FROM PAVED AREAS AND BUILDINGS. SUCH GRADING AND RESTORATION SHALL BE DONE TO THE SATISFACTION OF DNREC. THE COST FOR SITE RESTORATION SHALL BE INCIDENTAL TO THE CONTRACT.
12. ALL EXISTING SOILS, CONSTRUCTION MATERIALS, DEBRIS, CONCRETE, MASONRY, CONDUIT, PIPE, ETC. REMOVED DURING CONSTRUCTION, SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE LEGALLY DISPOSED OF OFF SITE.
13. NO DEMOLISHED MATERIAL OR STORED MATERIALS SHALL BE SOLD ON SITE.
14. DEMOLITION SHALL INCLUDE THE REMOVAL, TRANSPORTATION, AND LEGAL DISPOSAL OF ALL MATERIALS AS INDICATED ON THE DRAWINGS, INCLUDING ALL RELATED DEBRIS, ETC.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISPOSING OF ALL EXCESS MATERIAL OFF SITE AND/OR PROVIDING ADDITIONAL FILL MATERIAL AS REQUIRED. THIS PROJECT IS ANTICIPATED TO GENERATE EXCESS MATERIAL.
16. NO DEBRIS SHALL BE BURIED OR BURNED ON THE SITE.
17. BLASTING SHALL NOT BE ALLOWED.
18. THERE ARE NO KNOWN HAZARDOUS MATERIALS WITHIN AREAS TO BE EXCAVATED ON THE SITE. IN THE EVENT THAT ANY HAZARDOUS MATERIALS MAY BE ENCOUNTERED WITHIN EXCAVATIONS, THE CONTRACTOR SHALL IMMEDIATELY STOP WORK AND CONTACT DNREC.
19. THE CONTRACTOR'S MATERIAL STAGING AND STOCKPILE AREA IS SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL REMOVE ALL EXCAVATED MATERIALS FROM THE PROJECT SITE BY THE END OF CONSTRUCTION. THE CONTRACTOR SHALL RESTORE THE MATERIAL STAGING AND STOCKPILE AREA TO ITS ORIGINAL CONDITION BY THE END OF CONSTRUCTION.
20. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR OBTAINING OFF-SITE SPOIL AREAS FOR LEGAL DISPOSAL OF EXCESS AND/OR UNSUITABLE EXCAVATED MATERIALS AS NECESSARY IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REQUIREMENTS. ALL COSTS FOR TRANSPORTING TO, PROCURING AND UTILIZING THE OFF-SITE SPOIL AREAS ARE INCIDENTAL TO THE CONTRACT.
21. IF THE CONTRACTOR INTENDS TO STAGE OR STORE MATERIALS OFF-SITE IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY FOR OBTAINING ALL THE PROPER SEDIMENT AND STORMWATER APPROVALS AND/OR PERMITS THROUGH THE DESIGNATED DELEGATED AGENCY WHICH WILL BE DETERMINED BY THE LOCATION OF THE OFF-SITE MATERIAL STOCKPILE AREA. ALL COSTS ASSOCIATED WITH OFF-SITE STOCKPILE AREAS SHALL BE INCIDENTAL TO THE WORK.
22. CONTRACTOR EMPLOYEE PARKING SHALL BE LIMITED TO THE EXISTING GRAVEL PAVED AREAS WITHIN THE PROJECT SITE UNLESS APPROVED BY THE ENGINEER. VEHICLE PARKING SHALL NOT BE ALLOWED ON TURFED OR NON-PAVED AREAS WITHIN THE PROJECT SITE.
23. THE CONTRACTOR SHALL NOTIFY THE ENGINEER TO INSPECT AND APPROVE THE WORK AT THE FOLLOWING MILESTONES:
    1.) INSTALLATION OF FIRST TIMBER PILE FOR EACH SITE.
    2.) PLACEMENT OF REBAR AND FORMWORK FOR CONCRETE ELEMENTS.
    3.) PLACEMENT OF CONCRETE.

GENERAL NOTES

1. THE WORK TO BE PERFORMED WILL BE ADJACENT TO AREAS WHICH WILL REMAIN OPEN TO RECREATIONAL ACCESS BY THE GENERAL PUBLIC DURING THE CONSTRUCTION PERIOD. THE ENTRANCE ROADWAY MUST REMAIN OPEN TO THE GENERAL PUBLIC AND ADJACENT PROPERTY OWNERS DURING THE CONSTRUCTION PERIOD. THE CONTRACTOR WILL HAVE PRIMARY ACCESS AND CONTROL OF ITS CONSTRUCTION AREAS DURING THE CONSTRUCTION PERIOD.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING THE CONSTRUCTION SITE FROM ACCESS BY THE RECREATIONAL PUBLIC AND ADJACENT PROPERTY OWNERS DURING THE CONSTRUCTION PERIOD. THE CONTRACTOR'S PROCEDURES AND METHODS FOR LIMITING ACCESS TO ITS CONSTRUCTION AREAS SHALL BE SUBMITTED TO AND APPROVED BY DNREC PRIOR TO THE START OF WORK. THE COST TO INSTALL, RELOCATE, AND MAINTAIN SITE SECURITY SHALL BE INCIDENTAL TO THE CONTRACT.
3. THE CONTRACTOR SHALL PROVIDE CONSTRUCTION BARRICADES AROUND ITS CONSTRUCTION AREAS. AS A MINIMUM, CONSTRUCTION BARRICADES SHALL CONSIST OF ORANGE CONSTRUCTION SAFETY FENCE SECURELY HELD IN PLACE BY STEEL FENCE POSTS. TRAFFIC DRUMS SHALL BE PLACED ON THE ACCESS ROADWAY IMMEDIATELY ADJACENT TO THE CONSTRUCTION AREAS. NOTIFICATION SIGNAGE SHALL BE PLACED IN ADVANCE OF CONSTRUCTION BARRICADES OF THE CLOSURE AHEAD.
4. ALL TRAFFIC CONTROL DEVICES SHALL BE IN NEW OR REFURBISHED CONDITION AND SHALL BE IN COMPLIANCE WITH THE NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM (NCHRP) 350.
5. THE CONTRACTOR SHALL KEEP THE ENTRANCE ROADWAY SERVING THE SITE CLEAR AND AVAILABLE TO DNREC EMPLOYEES, ADJACENT PROPERTY OWNERS, AND EMERGENCY VEHICLES AT ALL TIMES, TO THE MAXIMUM EXTENT POSSIBLE. DNREC WILL CONTINUE TO HAVE ACCESS TO THE SITE AND ADJACENT PROPERTY OWNERS WILL CONTINUE TO HAVE ACCESS TO THE ENTRANCE ROADWAY DURING THE ENTIRE CONSTRUCTION PERIOD. THE CONTRACTOR SHALL ALLOW SITE ACCESS TO DNREC PERSONNEL FOR GENERAL MAINTENANCE AND OWNERSHIP ACTIVITIES. ALL WORK ASSOCIATED WITH THE CLOSURE OF CONSTRUCTION AREAS SHALL BE PERFORMED IN A MANNER THAT WILL PROVIDE THE LEAST PRACTICABLE OBSTRUCTION TO ACCESS TO THE ROADWAY BY THE GENERAL PUBLIC, DNREC AND THE ADJACENT PROPERTY OWNERS, INCLUDING VEHICULAR, PEDESTRIAN, AND BICYCLE TRAFFIC ALONG THE ENTRANCE ROADWAY IN ADVANCE OF AND AROUND THE CONSTRUCTION AREAS.
6. THE CONTRACTOR SHALL PROVIDE AND PLACE A MINIMUM OF TWO SIGNS INFORMING THE PUBLIC OF UPCOMING CONSTRUCTION ACTIVITIES AND AREA CLOSURES. THE SIGNS SHALL BE A MINIMUM OF 8.5' X 11' LAMINATED PAPER AND SHALL CONTAIN THE FOLLOWING STATEMENT:

   "NOTICE TO THE PUBLIC: THIS AREA WILL BE CLOSED FROM (INSERT DATE) TO (INSERT DATE) DUE TO CONSTRUCTION ACTIVITIES. PLEASE CALL THE DIVISION OF PARKS AND RECREATION SECTION AT 302-739-9220 WITH ANY QUESTIONS".

   SIGNS SHALL BE POSTED FOR A MINIMUM OF TWO WEEKS BEFORE THE CONSTRUCTION CLOSURE. THE CONTRACTOR SHALL COORDINATE WITH DNREC PARKS DIVISION PROJECT MANAGER AT 302-739-9220 FOR SIGN LOCATIONS AND CLOSURE DATES.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING AND MAKING NECESSARY REPAIRS TO THE EXISTING ENTRANCE ROADWAY RESULTING FROM THE CONTRACTOR'S CONSTRUCTION VEHICLE ACTIVITY. THE REPAIRS MAY INCLUDE REPAIR OF RUTTING AND REGRADING THE GRAVEL ROADWAY SURFACE INCLUDING THE PLACEMENT OF ADDITIONAL GRAVEL AS DIRECTED BY THE ENGINEER. IN ADDITION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ANY OVERHEAD TREE BRANCHES WHICH MAY RESTRICT CONSTRUCTION VEHICLE TRAFFIC.
8. THE CONTRACTOR SHALL NOT UNREASONABLY ENCUMBER THE SITE WITH MATERIALS OR EQUIPMENT. THE CONTRACTOR SHALL LIMIT THE USE OF THE PREMISES TO WORK IN AREAS INDICATED. OPERATIONS SHALL BE CONFINED TO AREAS WITHIN CONTRACT LIMITS. THE CONTRACTOR SHALL NOT DISTURB PORTIONS OF THE SITE BEYOND THE AREAS IN WHICH THE WORK IS INDICATED.
9. THE CONTRACTOR SHALL CONDUCT THE WORK WITH CONSIDERATION GIVEN TO THE EXISTING CONDITIONS AND FEATURES AT THE SITE. THE CONTRACTOR SHALL PROTECT ALL FEATURES NOT DESIGNATED TO BE REMOVED. FEATURES NOT SPECIFICALLY DESIGNATED FOR DEMOLITION OR REMOVAL THAT ARE DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR TO THE SATISFACTION OF AND AT NO ADDITIONAL COST TO DNREC.
10. THE CONTRACTOR SHALL PROVIDE ITS OWN FACILITIES AS NECESSARY DURING CONSTRUCTION INCLUDING, BUT NOT LIMITED TO, STORAGE FACILITIES, AND PORTABLE RESTROOMS. THE CONTRACTOR SHALL NOT USE THE STATE PROVIDED PORTABLE RESTROOMS.
11. THE CONTRACTOR SHALL HOLD A PRE-CONSTRUCTION MEETING WITH THE OWNER, ENGINEER AND ANY OTHER ATTENDEES REQUESTED BY THE OWNER A MINIMUM OF 1 WEEK IN ADVANCE OF MOBILIZATION TO THE SITE.
12. THE CONTRACTOR SHALL CONTACT THE OWNER AND THE ENGINEER AT LEAST 48 HOURS PRIOR TO PILE INSTALLATION AND ALL MEETINGS, INCLUDING PRE-CONSTRUCTION MEETINGS, AS REQUIRED IN THE CONSTRUCTION SPECIFICATIONS.
13. THE CONTRACTOR SHALL NOTE THAT IN CASE OF DISCREPANCY BETWEEN THE SCALED AND THE FIGURED DIMENSIONS SHOWN ON THE PLANS, THE FIGURED DIMENSIONS SHALL GOVERN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMING ALL DIMENSIONS NECESSARY FOR THE WORK.
14. IN CASE OF CONFLICT BETWEEN THE "MANUFACTURER'S RECOMMENDATIONS" FOR AN APPROVED MATERIAL AND THE GOVERNING "CONTRACT SPECIFICATIONS" FOR THE MATERIAL, THE MORE RESTRICTIVE OF THE TWO SHALL PREVAIL UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
15. THE CONTRACTOR SHALL FOLLOW ALL APPLICABLE FEDERAL, STATE AND MUNICIPAL REGULATIONS, INCLUDING THE FEDERAL DEPARTMENT OF LABOR OCCUPATIONAL SAFETY AND HEALTH ACT.
16. THESE DRAWINGS DO NOT INCLUDE NECESSARY ELEMENTS OF CONSTRUCTION SAFETY. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL SITE SAFETY. ALL CONSTRUCTION, INCLUDING EXCAVATION, BACKFILLING, DEMOLITION, AND INSTALLATION, MUST BE COMPLETED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ACT, CFR §1926.652(B)(2), AND ALL FEDERAL, STATE AND LOCAL REQUIREMENTS. THE CONTRACTOR SHALL DESIGNATE A PERSON WHO SHALL BE RESPONSIBLE FOR CONSTRUCTION SITE AND WORKER SAFETY.
17. THE TERM "ENGINEER", "STATE", AND/OR "ARCHITECT" NOTED THROUGHOUT THE CONTRACT PLANS AND SPECIFICATIONS SHALL REFER TO DNREC PARKS AND RECREATION, OR THEIR APPOINTED REPRESENTATIVE.
18. THE CONTRACTOR SHALL MAINTAIN ON SITE AT ALL TIMES DURING CONSTRUCTION ACTIVITIES A CLEAN SET OF NEATLY DRAWN "AS-BUILT" DRAWINGS LABELED IN RED INK THAT ACCURATELY ILLUSTRATE ALL FIELD CHANGES. FINAL "AS-BUILT" DRAWINGS SHALL BE DATED AND SIGNED BY THE CONTRACTOR AND SUBMITTED TO THE OWNER AT THE END OF THE PROJECT FOR RECORDATION.
19. PORTIONS OF THE WORK ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE DELAWARE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (STANDARD SPECIFICATIONS) REVISION # 3 DATED JANUARY 2024 INCLUDING ALL REVISIONS UP TO ADVERTISEMENT OF THIS PROJECT, UNLESS NOTED OTHERWISE IN THESE PLANS OR THE SPECIFICATIONS.
20. THIS PROJECT IS SUBJECT TO THE BUILD AMERICA, BUY AMERICA ACT (BABA), ENACTED AS PART OF THE BIPARTISAN INFRASTRUCTURE LAW (BIL) REQUIRES IRON, STEEL, MANUFACTURED PRODUCTS, AND CONSTRUCTION MATERIALS USED IN INFRASTRUCTURE PROJECTS FUNDED BY FEDERAL FINANCIAL ASSISTANCE TO BE PRODUCED IN THE UNITED STATES. ALL MATERIALS THAT WILL BE PERMANENTLY INCORPORATED INTO THIS PROJECT WILL MEET THE BABA MATERIAL REQUIREMENTS. THE CONTRACTOR IS REQUIRED TO CERTIFY AND PROVIDE DOCUMENTATION THAT CONSTRUCTION MATERIALS ARE COMPLIANT WITH BABA REQUIREMENTS. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
21. THE LIMIT OF DISTURBANCE AND LIMITS OF CLEARING AND GRUBBING SHOWN ARE FOR LAND AREAS ONLY. CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL VEGETATION, TREES, AND OBSTRUCTION AS NEEDED TO INSTALL THE IMPROVEMENTS SHOWN ON THIS PLAN, INCLUDING ITEMS IN THE WATER.

DATA COLUMN

1. TAX PARCEL NUMBER:	6-00-14900-01-1600-00001	6-00-14900-01-1800-00001	6-00-14900-01-1900-00001	6-00-14900-01-4400-00001	8-00-14900-01-0700-00001	8-00-14900-01-1300-00001	8-00-14900-01-1400-00001	8-00-14900-01-1500-00001
2. DNREC PROJECT NUMBER:	----------							
3. ADDRESS OF SITE:	3043 PARADISE ALLEY ROAD FELTON DE, 19943	3015 PARADISE ALLEY ROAD FELTON DE, 19943	KILLENS POND ROAD HARRINGTON DE, 19952	KILLENS POND ROAD HARRINGTON DE, 19952	5025 KILLENS POND ROAD FELTON DE, 19943	KILLENS POND ROAD FELTON DE, 19943	5013 KILLENS POND ROAD FELTON DE, 19943	KILLENS POND ROAD FELTON DE, 19943
4. ZONING:	AGRICULTURAL CONSERVATION	AGRICULTURAL CONSERVATION	AGRICULTURAL CONSERVATION	AGRICULTURAL CONSERVATION	AGRICULTURAL CONSERVATION	AGRICULTURAL CONSERVATION	AGRICULTURAL CONSERVATION	AGRICULTURAL CONSERVATION
5. SOURCE OF TITLE:	D.B. C-0024-0131	D.B. B-0024-0272	D.B. Z-0023-0536	----------	D.B. Z-0023-0536	D.B. Z-0023-0536	D.B. E-0025-0121	D.B. Z-0023-0536
6. NUMBER OF LOTS:	1	1	1	1	1	1	1	1
7. LOT AREA: (BASED ON KENT COUNTY GIS MAPPING)	49.23± ACRES	25.75± ACRES	8.08± ACRES	51.69± ACRES	159.75± ACRES	37.68± ACRES	1.63± ACRES	2.57± ACRES

8. TOTAL NUMBER OF LOTS: 7 (NO NEW BUILDING LOTS OR DWELLINGS PROPOSED BY THIS PLAN)
9. MONUMENTS:
   EXISTING: 0 (MONUMENT)
   PROPOSED: 0 (MONUMENT)
10. FLOODPLAIN:
    PER FEMA MAP NO. 10001C0335J, DATED JULY 7, 2021, THE SITE LIES WITHIN ZONE AE. THE BASE FLOOD ELEVATION HAS BEEN DETERMINED TO BE BETWEEN 17.00 FEET AND 18.00 FEET
11. BOUNDARY:
    NO BOUNDARY SURVEY HAS BEEN COMPLETED. BOUNDARY SHOWN IS FROM KENT COUNTY GIS MAPPING.
12. TOPOGRAPHY:
    TOPOGRAPHY SHOWN FROM A SURVEY PERFORMED BY CENTURY ENGINEERING, LLC. IN AUGUST 2024.
13. DATUM: NAD83 NAVD88
14. PROJECT BENCHMARK:

TP987, CAPPED IRON PIN	TP204, CAPPED IRON PIN	TP10	TP302, CAPPED IRON PIN	TP208, CAPPED IRON PIN	TP210
ELEVATION: 32.94'	ELEVATION: 26.97'	ELEVATION: 17.98'	ELEVATION: 21.59'	ELEVATION: 23.15'	ELEVATION: 20.08'
NORTHING: 356868.2502	NORTHING: 356881.1050	NORTHING: 357153.5356	NORTHING: 357817.1566	NORTHING: 358265.7696	NORTHING: 357948.8925
EASTING: 621806.7357	EASTING: 623138.8720	EASTING: 624130.4107	EASTING: 620936.7207	EASTING: 623213.2613	EASTING: 623533.3845

15. LIMIT OF DISTURBANCE: 0.10 ±ACRES
16. OWNER/APPLICANT:
    STATE OF DELAWARE
    DELAWARE STATE PARKS
    89 KINGS HIGHWAY
    DOVER, DE 19901
    BILL MILLER
    BILL.MILLER@DELAWARE.GOV
    (302) 739-9240
17. ENGINEER:
    CENTURY ENGINEERING, LLC.
    550 BAY ROAD
    DOVER, DE 19901
    ALEXANDER E. SCHMIDT, P.E.
    ASCHMIDT@KLEINFELDER.COM
    PHONE: (302) 734-9188
    FAX: (302) 734-4589

PROJECT SPECIFICATION HIERARCHY

ELEMENTS UNDER THIS CONTRACT SHALL BE CONSTRUCTED UTILIZING THE FOLLOWING INFORMATION IN THE HIERARCHY LISTED BELOW:

1. CONTRACT AGREEMENT BETWEEN OWNER AND CONTRACTOR.
2. APPROVED PLANS.
3. PROJECT MANUAL AND ENCLOSED TECHNICAL SPECIFICATIONS.
4. STATE OF DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL EROSION AND SEDIMENT CONTROL HANDBOOK, JULY 2023 OR MOST CURRENT AT DATE OF ADVERTISEMENT.
5. DELAWARE DEPARTMENT OF TRANSPORTATION STANDARD CONSTRUCTION DETAILS, 2022, OR MOST CURRENT AT ADVERTISEMENT.
6. DELAWARE DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS FOR BRIDGE AND ROAD CONSTRUCTION, JANUARY 2024, OR MOST CURRENT AT DATE OF ADVERTISEMENT.

ALUMINUM PIER NOTES

1. NEW FIXED ALUMINUM FISHING PIERS
1.1. THE GATOR DOCK COMPONENTS OF THE NEW FIXED ALUMINUM FISHING PIERS SHOWN ON THESE PLANS ARE FOR GENERAL INFORMATION ONLY.
1.2. THE OWNER WILL PROVIDE, AND THE CONTRACTOR SHALL SCHEDULE THE DELIVERY OF, HANDLE, STORE, AND INSTALL, ALL NEW FIXED ALUMINUM FISHING PIER COMPONENTS MANUFACTURED BY GATOR DOCK, INCLUDING DECKS, FISHING RAILS, RAMPS, RAILINGS, HEADERS, AND MISCELLANEOUS COMPONENTS AS INDICATED ON THE GATOR DOCK SHOP DRAWINGS SEPARATELY PROVIDED BY OWNER FOR THIS PROJECT.

2. NEW KAYAK LAUNCH BOAT DOCKS
2.1. THE NEW KAYAK LAUNCH BOAT DOCKS DETAILS SHOWN ON THESE PLANS ARE FOR GENERAL INFORMATION ONLY.
2.2. THE CONTRACTOR SHALL PROVIDE AND INSTALL THE NEW ALUMINUM RAILINGS AND MISCELLANEOUS COMPONENTS. THE NEW ALUMINUM RAILINGS AND MISCELLANEOUS COMPONENTS FOR THE NEW KAYAK LAUNCH BOAT DOCKS SHALL BE AS MANUFACTURED BY GATOR DOCK OR APPROVED EQUAL.
2.3. THE CONTRACTOR SHALL DETERMINE ALL FIELD MEASUREMENTS AS REQUIRED BY THE ALUMINUM RAILINGS MANUFACTURER FOR THE PREPARATION OF MANUFACTURER'S SHOP DRAWINGS. THE CONTRACTOR SHALL SUBMIT MANUFACTURER'S SHOP DRAWINGS FOR THE NEW ALUMINUM RAILINGS AND MISCELLANEOUS COMPONENTS TO OWNER FOR APPROVAL PRIOR TO FABRICATION.

3. NEW FLOATING DOCKS
3.1. THE NEW FLOATING DOCKS DETAILS SHOWN ON THESE PLANS ARE FOR GENERAL INFORMATION ONLY.
3.2. THE CONTRACTOR SHALL PROVIDE AND INSTALL THE NEW ALUMINUM RAILINGS AND MISCELLANEOUS COMPONENTS. THE NEW ALUMINUM RAILINGS AND MISCELLANEOUS COMPONENTS FOR THE NEW FLOATING DOCKS SHALL BE AS MANUFACTURED BY GATOR DOCK OR APPROVED EQUAL.
3.3. THE CONTRACTOR SHALL DETERMINE ALL FIELD MEASUREMENTS AS REQUIRED BY THE ALUMINUM RAILINGS MANUFACTURER FOR THE PREPARATION OF MANUFACTURER'S SHOP DRAWINGS. THE CONTRACTOR SHALL SUBMIT MANUFACTURER'S SHOP DRAWINGS FOR THE NEW ALUMINUM RAILINGS AND MISCELLANEOUS COMPONENTS TO OWNER FOR APPROVAL PRIOR TO FABRICATION.

4. GENERAL
4.1. THE CONTRACTOR SHALL SCHEDULE WITH THE MANUFACTURER FOR THE SITE DELIVERY OF ALL MATERIALS FOR THE FIXED ALUMINUM FISHING PIER, THE KAYAK LAUNCH BOAT DOCKS, AND FLOATING DOCKS. THE CONTRACTOR SHALL OFF-LOAD, INSPECT, PROVIDE SECURE STORAGE, AND INSTALL THE MATERIALS AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFE HANDLING AND INSPECTION OF THE MATERIALS UPON DELIVERY TO THE SITE.
4.2. THE CONTRACTOR SHALL OFF-LOAD, STORE, AND INSTALL THE MATERIALS IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND INSTRUCTIONS.
4.3. THE CONTRACTOR SHALL COORDINATE ALL CONSTRUCTION WITH THE APPROVED MANUFACTURER'S SHOP DRAWINGS.

DNREC SEDIMENT & STORMWATER NOTES

1. THE DNREC SEDIMENT AND STORMWATER PROGRAM (OR DELEGATED AGENCY) SHALL BE NOTIFIED IN WRITING 5 DAYS PRIOR TO COMMENCING WITH CONSTRUCTION. FAILURE TO DO SO CONSTITUTES A VIOLATION OF THE APPROVED SEDIMENT AND STORMWATER MANAGEMENT PLAN.
2. REVIEW AND/OR APPROVAL OF THE SEDIMENT AND STORMWATER MANAGEMENT PLAN SHALL NOT RELIEVE THE CONTRACTOR FROM HIS OR HER RESPONSIBILITIES FOR COMPLIANCE WITH THE REQUIREMENTS OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS, NOR SHALL IT RELIEVE THE CONTRACTOR FROM ERRORS OR MISSIONS IN THE APPROVED PLAN.
3. IF THE APPROVED PLAN NEEDS TO BE MODIFIED, ADDITIONAL SEDIMENT AND STORMWATER CONTROL MEASURES MAY BE REQUIRED AS DEEMED NECESSARY BY DNREC OR THE DELEGATED AGENCY.
4. FOLLOWING SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED FOR ALL PERIMETER SEDIMENT CONTROLS, SOIL STOCKPILES, AND ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE WITHIN 14 CALENDAR DAYS UNLESS MORE RESTRICTIVE FEDERAL REQUIREMENTS APPLY.
5. ALL EROSION AND SEDIMENT CONTROL PRACTICES SHALL COMPLY WITH THE DELAWARE EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.
6. AT ANY TIME A DEWATERING OPERATION IS USED, IT SHALL BE PREVIOUSLY APPROVED BY THE AGENCY CONSTRUCTION SITE REVIEWER FOR A NON-EROSIVE POINT OF DISCHARGE, AND A DEWATERING PERMIT SHOULD BE APPROVED BY THE DNREC WELL PERMITTING BRANCH.
7. APPROVAL OF A SEDIMENT AND STORMWATER MANAGEMENT PLAN DOES NOT GRANT OR IMPLY A RIGHT TO DISCHARGE STORMWATER RUNOFF. THE OWNER/DEVELOPER IS RESPONSIBLE FOR ACQUIRING ANY AND ALL AGREEMENTS, EASEMENTS, ETC., NECESSARY TO COMPLY WITH STATE DRAINAGE AND OTHER APPLICABLE LAWS.
8. THE CONTRACTOR SHALL AT ALL TIMES PROTECT AGAINST SEDIMENT OR DEBRIS LADEN RUNOFF OR WIND FROM LEAVING THE SITE. PERIMETER CONTROLS SHALL BE CHECKED DAILY AND ADJUSTED OR REPAIRED TO FULLY CONTAIN AND CONTROL SEDIMENT FROM LEAVING THE SITE. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT HAS REACHED HALF OF THE EFFECTIVE CAPACITY OF THE CONTROL. IN ADDITION, THE CONTRACTOR MAY NEED TO ADJUST OR ALTER MEASURES IN TIMES OF ADVERSE WEATHER CONDITIONS, OR AS DIRECTED BY THE AGENCY CONSTRUCTION SITE REVIEWER.
9. BEST AVAILABLE TECHNOLOGY (BAT) SHALL BE EMPLOYED TO MANAGE TURBID DISCHARGES IN ACCORDANCE WITH REQUIREMENTS OF 7. DEL C. CH 60, REGULATIONS GOVERNING THE CONTROL OF WATER POLLUTION, SECTION 9.1.02, KNOWN AS SPECIAL CONDITIONS FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES, AND DNREC POLICIES, PROCEDURES, AND GUIDANCE.
10. THERE IS NO CONTRACTOR STOCKPILE OR STAGING AREAS AVAILABLE WITHIN THE LIMITS OF CONSTRUCTION FOR THE PROJECT SITE. THE CONTRACTOR SHALL REMOVE ALL EXCAVATED MATERIALS FROM THE PROJECT SITE. IF THE CONTRACTOR INTENDS TO STAGE OR STORE MATERIALS OFF-SITE IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY FOR OBTAINING ALL THE PROPER SEDIMENT AND STORMWATER APPROVALS AND/OR PERMITS THROUGH THE DESIGNATED DELEGATED AGENCY WHICH WILL BE DETERMINED BY THE LOCATION OF THE OFF-SITE MATERIAL STOCKPILE OR STAGING AREAS. ALL COSTS ASSOCIATED WITH OFF-SITE STOCKPILE OR STAGING AREAS SHALL BE INCIDENTAL TO THE WORK.

SEQUENCE OF CONSTRUCTION

1. PRIOR TO ANY CLEARING, INSTALLATION OF SEDIMENT CONTROL MEASURES, OR GRADING, A PRE-CONSTRUCTION MEETING MUST BE SCHEDULED AND CONDUCTED. THE LANDOWNER/DEVELOPER AND CONTRACTOR ARE REQUIRED TO BE IN ATTENDANCE AT THE PRE-CONSTRUCTION MEETING; THE DESIGNER IS RECOMMENDED TO ATTEND.
2. THE CONTRACTOR SHALL AT ALL TIMES PROTECT AGAINST SEDIMENT OR DEBRIS LADEN RUNOFF OR WIND FROM LEAVING THE SITE, PERIMETER CONTROLS SHOULD BE CHECKED DAILY AND ADJUSTED AND/OR REPAIRED TO FULLY CONTAIN AND CONTROL SEDIMENTATION ON THE SITE. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT HAS REACHED HALF OF THE EFFECTIVE CAPACITY OF THE CONTROL. IN ADDITION, THE CONTRACTOR MAY NEED TO ADJUST OR REPAIR

SCRAP TAVERN ROAD

KILLENS POND ROAD

T.P. 8-00-14900-01-1400-00001
LANDS N.O.F.
STATE OF DELAWARE
D.B. E-0025-0121
ZONE: AC

T.P. 8-00-14900-01-1700-00001
LANDS N.O.F.
KILLEN ROY L.
DILL MATTHEW
KILLEN CODY
KILLEN ELEANOR
KILLEN ROBIN DEE
KILLEN WILLIAM E.
ZONE: AC

T.P. 8-00-14900-01-1200-00001
LANDS N.O.F.
STATE OF DELAWARE
D.B. Z-0023-0536
ZONE: AC

C412
C413
C418

T.P. 8-00-14900-01-1500-00001
LANDS N.O.F.
STATE OF DELAWARE
D.B. Z-0023-0536
ZONE: AC

T.P. 8-00-14900-01-1600-00001
LANDS N.O.F.
STATE OF DELAWARE
D.B. E-0025-0121
ZONE: AC

T.P. 8-00-14900-01-0700-00001
LANDS N.O.F.
STATE OF DELAWARE
D.B. Z-0023-0536
ZONE: AC

C414
C415
C417

KILLENS POND

C410
C411
C419

T.P. 8-00-14900-01-1300-00001
LANDS N.O.F.
STATE OF DELAWARE
D.B. Z-0023-0536
ZONE: AC

T.P. 6-00-14900-01-4400-00001
LANDS N.O.F.
STATE OF DELAWARE
ZONE: AC

T.P. 5-00-15000-01-0101-00001
LANDS N.O.F.
STATE OF DELAWARE
ZONE: AC

KILLENS POND

KILLENS POND

C404
C405
C422

C406
C407
C421

C408
C409
C420

T.P. 6-00-14900-01-1900-00001
LANDS N.O.F.
STATE OF DELAWARE
D.B. B-0023-0536
ZONE: AC

T.P. 6-00-14900-01-1600-00001
LANDS N.O.F.
STATE OF DELAWARE
D.B. C-0024-0131
ZONE: AC

T.P. 6-00-14900-01-1800-00001
LANDS N.O.F.
STATE OF DELAWARE
D.B. B-0024-0272
ZONE: AC

E.T.
U.P.
S.S.
U.B.
TRANSFORMER
OVERHEAD WIRE

0' 200' 400' 600'
SCALE: 1"=200'

L:\State of Delaware\25000286.001A-JMMEC Campgrounds\Working\Killens Pond\CADD\Killens Boat Dock Plan Set\Sheets\CAD_Overall\Plan\Plan.dwg, 6/18/2025 10:57 AM

REVISIONS:

DATE:	DESCRIPTION:	BY:

KILLENS POND STATE PARK
KILLENS POND BOAT DOCKS

INDEX PLAN

SEAL:

ALEXANDER E. SCHMID
LICENSE
NO. 16139
PROFESSIONAL ENGINEER
DELAWARE

06-20-2025

CIVIL ENGINEER:

CENTURY ENGINEERING
A Kleinfelder Company

CEI CONTRACT NO.: 25000286.001A

DELAWARE
DIVISION OF PARKS AND RECREATION

DESIGNED BY: EMC

DRAWN BY: ZTP

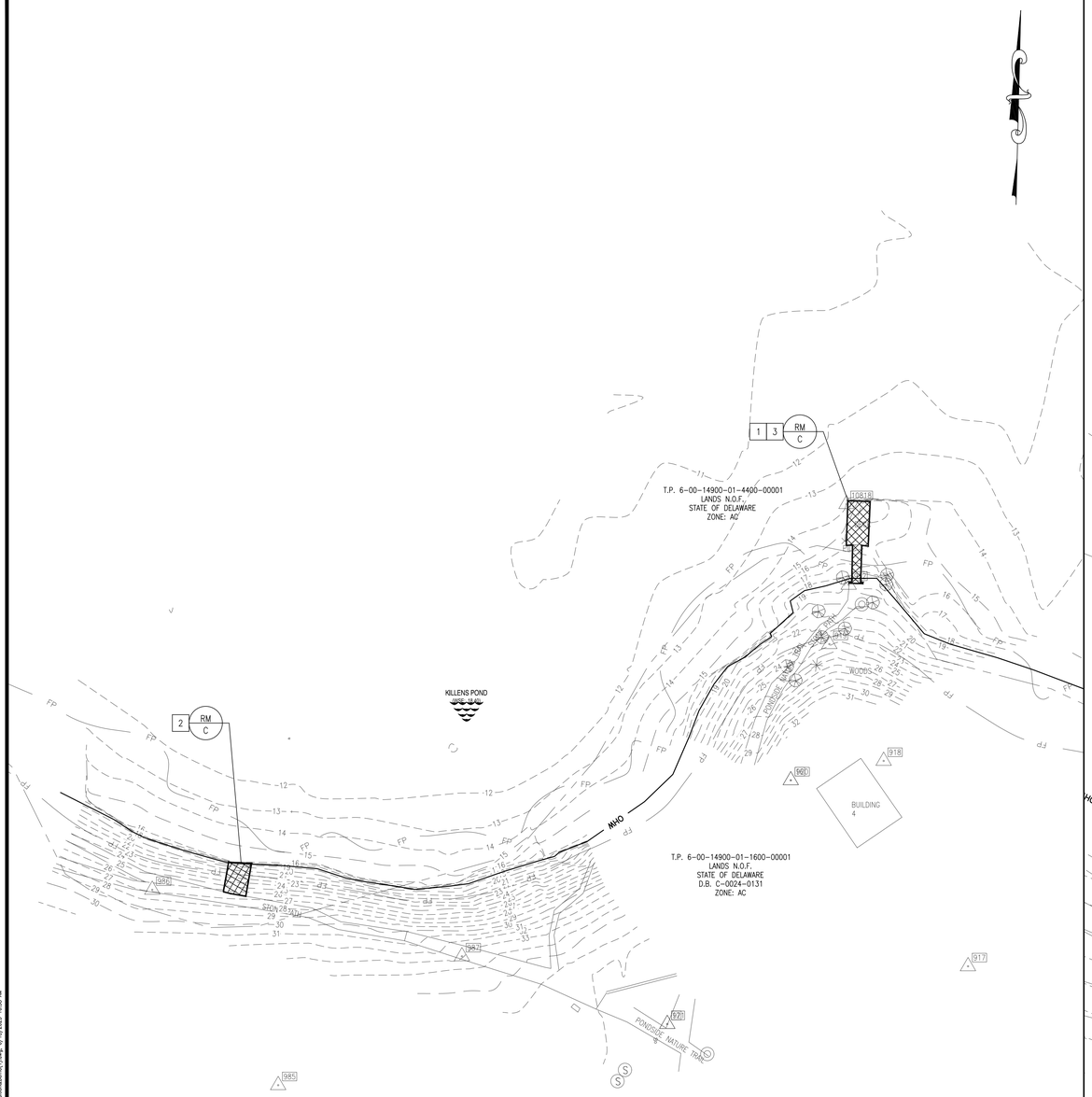
CHECKED BY: AES

DATE: JUNE 2025

SCALE: 1"=200'

SHEET NO.: C403

CONTRACT NO.: —



CABIN BOAT DOCK EXISTING CONDITIONS AND DEMOLITION PLAN

SCALE: 1" = 30'

DEMOLITION NOTES

1. CONTRACTOR TO REMOVE EXISTING BOAT DOCK, PILES, AND FOUNDATIONS.
2. CONTRACTOR TO CLEAR AND GRUB.
3. SEED AND STABILIZE ALL DISTURBED SOILS.

NOTES:

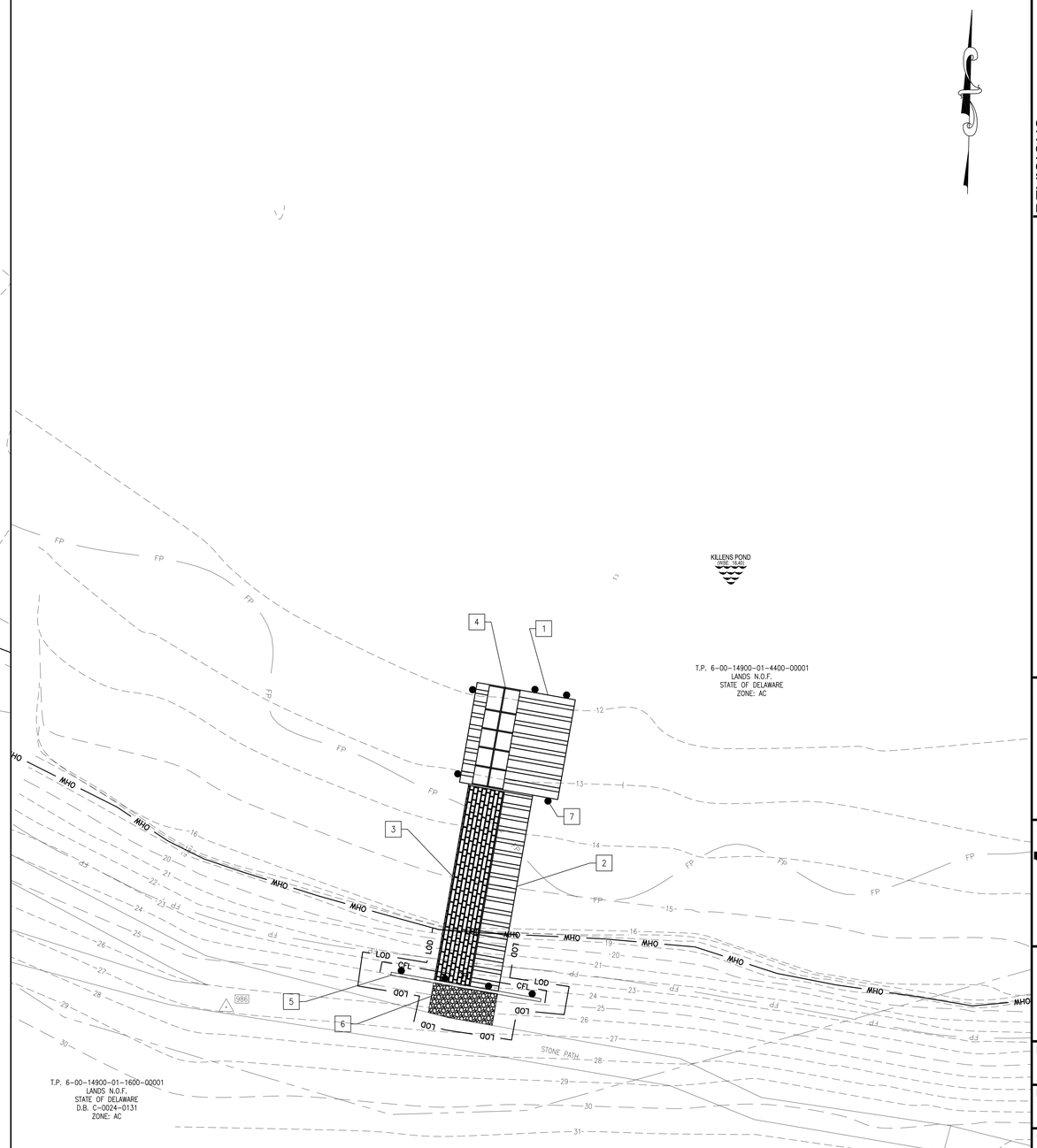
1. CONTRACTOR SHALL NOT DISTURB ANY UTILITY LINE UNLESS SPECIFICALLY NOTED.
2. CONTRACTOR SHALL FLAG ALL TREES GREATER THAN 8" DIAMETER AT BREAST HEIGHT. OWNER SHALL REVIEW AND APPROVE ALL FLAGGED TREES PRIOR TO REMOVAL.
3. CONTRACTOR SHALL NOT DISTURB EXISTING PATH. ANY PORTION OF EXISTING PATH THAT IS DISTURBED SHALL BE RESTORED USING THE STONE TRAIL SECTION.
4. CONTRACTOR ACCESS ROUTE SHALL BE APPROVED BY THE OWNER PRIOR TO SITE ACCESS.
5. EXISTING POND WATER SURFACE ELEVATION = 18.40' BASED UPON SURVEY PERFORMED BY CENTURY ENGINEERING ON AUGUST 2024. OHW LINE REFLECTS DETERMINED WATER LINE AS OF THE SAME DATE.
6. PORTIONS OF THE SITE ARE WITHIN A MAPPED 100 YEAR FLOODPLAIN. 100 YEAR FLOOD ELEVATION VARIES BETWEEN 17.00' AND 18.00'.

TRAVERSE POINT LAYOUT

POINT NO.	DESCRIPTION	NORTHING	EASTING	ELEVATION
917	CAPPED IRON PIN	356863.7774	622034.0662	40.877
918	CAPPED IRON PIN	356956.0108	621996.1688	37.930
919	CAPPED IRON PIN	357008.4718	621971.7748	23.240
920	CAPPED IRON PIN	356947.3019	621954.4434	37.225
921	CAPPED IRON PIN	356837.8172	621898.9738	37.541
985	TP985 CIP	356810.3588	621724.1999	33.897
986	TP986 CIP	356898.1091	621667.6387	26.532
987	TP987 CIP	356868.2502	621806.7357	32.943
10818	TP818 AVG	357071.3804	621979.4785	23.999

0' 30' 60' 90'

SCALE: 1"=30'



CABIN BOAT DOCK NEW SITE PLAN

SCALE: 1" = 10'

GENERAL NOTES

1. PROPOSED ALUMINUM KAYAK LAUNCH DOCK.
2. PROPOSED ALUMINUM GANGWAY.
3. PROPOSED KAYAK CHUTE.
4. PROPOSED KAYAK LAUNCH.
5. TIMBER ABUTMENT.
6. PROPOSED DELAWARE NO. 10 STONE OVER GRADED AGGREGATE BASE COURSE (DELDOT SPECIFICATION 301 AND 302). SEE DETAIL 4/C424.
7. PROPOSED TIMBER PILE (DELDOT SPECIFICATION 605).

0' 10' 20' 30'

SCALE: 1"=10'

REVISIONS:

DATE:	DESCRIPTION:	BY:

KILLENS POND STATE PARK
KILLENS POND BOAT DOCKS

CABIN DOCK SITE PLAN

SEAL:

ALEXANDER E. SCHMIDT
LICENSED
DELAWARE
PROFESSIONAL ENGINEER
NO. 16139

06-20-2025

CIVIL ENGINEER:

CENTURY ENGINEERING
A Kleinfelder Company

CEI CONTRACT NO.: 25000286.001A

DELAWARE
DIVISION OF PARKS AND RECREATION

DESIGNED BY: EMC

DRAWN BY: ZTP

CHECKED BY: AES

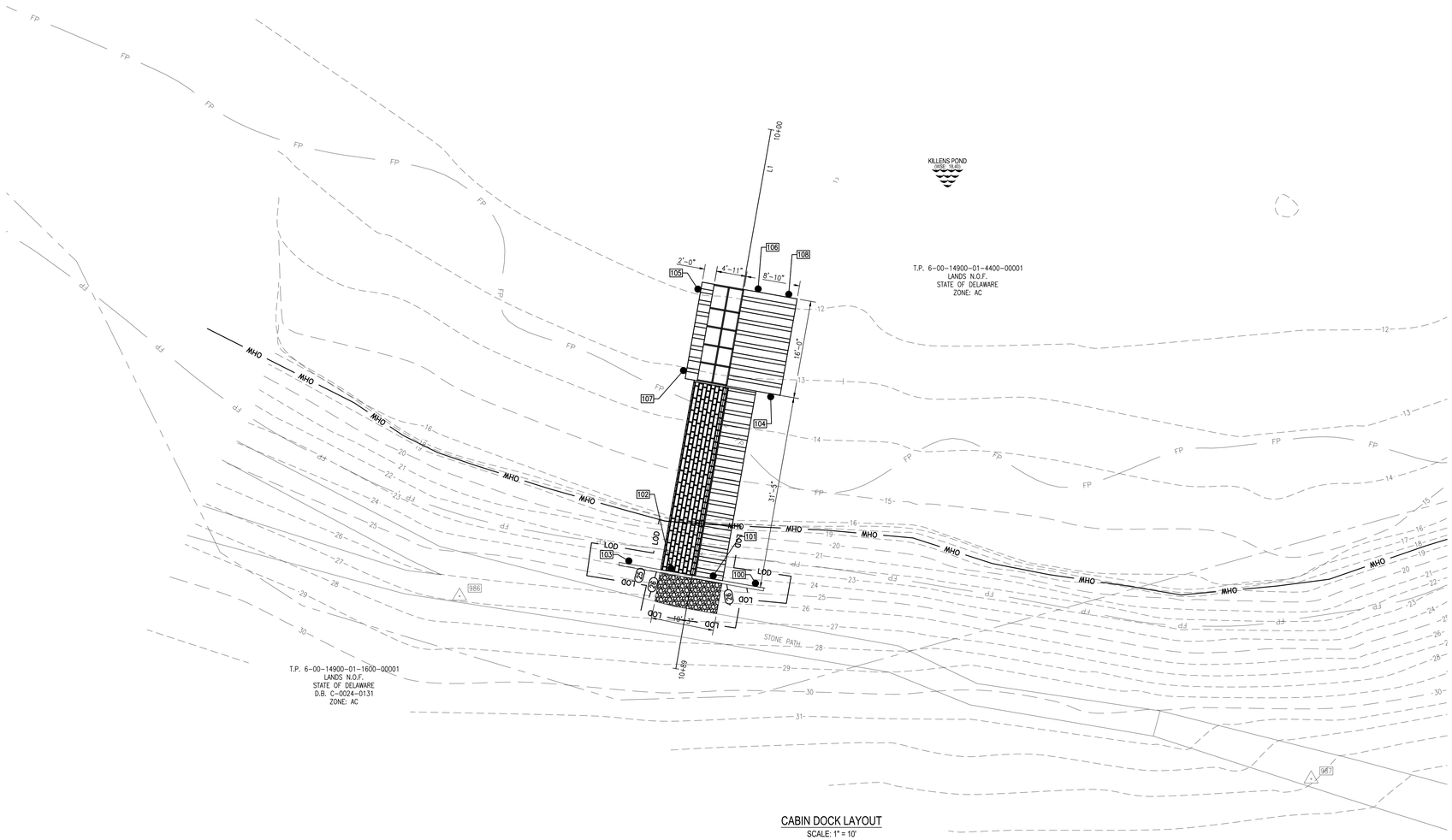
DATE: JUNE 2025

SCALE: AS NOTED

SHEET NO.: C404

CONTRACT NO.: —

L:\State of Delaware\25000286.001A-DNREC Campgrounds\Working\Killens Pond\CAD\Killens Boat Dock Plan Set\Sheets\C_Existing\DockBoatDemo(1).dwg, 6/18/2025 10:58 AM



TRAVERSE POINT LAYOUT

POINT NO.	DESCRIPTION	NORTHING	EASTING	ELEVATION
917	CAPPED IRON PIN	356863.7774	622034.0662	40.877
918	CAPPED IRON PIN	356956.0108	621996.1688	37.930
919	CAPPED IRON PIN	357008.4718	621971.7748	23.240
920	CAPPED IRON PIN	356947.3019	621954.4434	37.225
921	CAPPED IRON PIN	356837.8172	621898.9738	37.541
985	TP985 CIP	356810.3588	621724.1999	33.897
986	TP986 CIP	356898.1091	621667.6387	26.532
987	TP987 CIP	356868.2502	621806.7357	32.943
10818	TP818 AVG	357071.3804	621979.4785	23.999

CABIN DOCK ALIGNMENT

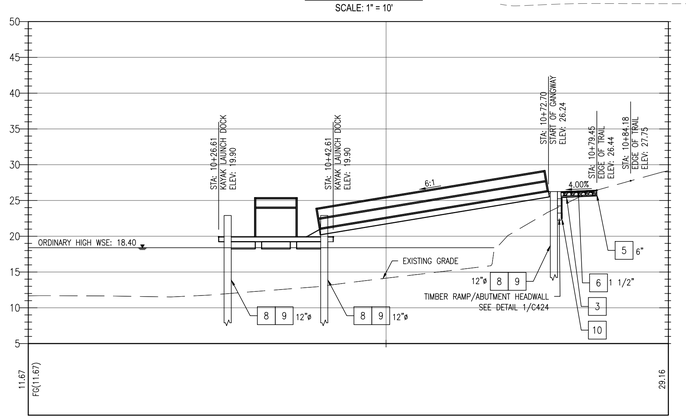
NUMBER	LENGTH	START STA.	END STA.	LINE/CHORD DIRECTION	START NORTHING	START EASTING	END NORTHING	END EASTING
L1	89.45	10+00.00	10+89.45	S10° 01' 24.39"W	356974.3455	621718.5334	356886.2628	621702.9649

CABIN DOCK PILE LAYOUT

POINT NO.	NORTHING	EASTING	TOP ELEV.	TIP ELEV.
100	356900.2128	621715.9665	26.24	9.76
101	356901.4312	621709.0733	26.24	9.76
102	356902.6495	621702.1802	26.24	9.76
103	356903.8679	621695.2870	26.24	9.76
104	356930.6920	621718.4598	22.90	-2.02
105	356948.2808	621706.5646	22.90	-2.02
106	356948.3189	621716.4036	22.90	-2.02
107	356934.9869	621704.2149	22.90	-2.02
108	356947.4351	621721.4042	22.90	-2.02

CABIN DOCK LAYOUT

SCALE: 1" = 10'



CABIN DOCK PROFILE

HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 1'

REFERENCED DELDOT ITEMS

PLAN CALLOUT	DELDOT SPECIFICATION SECTION	DESCRIPTION
1	201	CLEARING AND GRUBBING
2	202	EXCAVATION AND EMBANKMENT
3	209	BORROW, TYPE F
4	211	REMOVAL OF STRUCTURES AND OBSTRUCTIONS
5	301	GRADED AGGREGATE BASE COURSE, TYPE B
6	302	DELAWARE NO. 10 STONE
7	501	PCC PAVEMENT
8	605	PROVIDE TIMBER PILES – TREATED 12"
9	605	INSTALL TIMBER PILES – 12"
10	708	GEOTEXTILES SEPERATION
11	908	TOPSOIL, 6" DEPTH

0' 10' 20' 30'
SCALE: 1"=10'

REVISIONS:

DATE:	DESCRIPTION:	BY:

KILLENS POND STATE PARK
KILLENS POND BOAT DOCKS

CABIN DOCK SITE LAYOUT AND PROFILE

SEAL:

ALEXANDER E. SCHMIDT
LICENSE
NO. 16139
DELAWARE
PROFESSIONAL ENGINEER

06-20-2025

CIVIL ENGINEER:

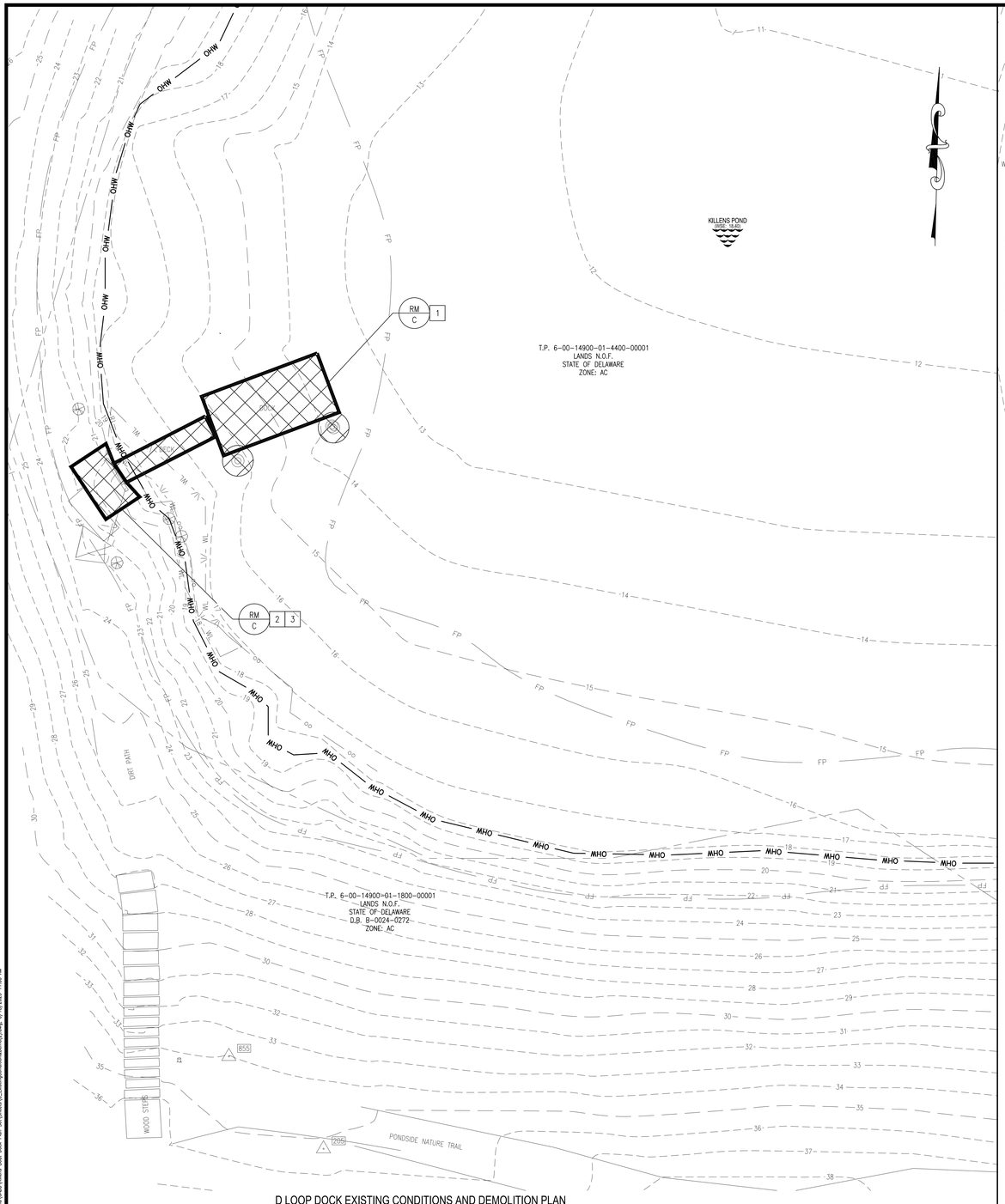
CENTURY ENGINEERING
A Kleinfelder Company

CEI CONTRACT NO.: 25000286.001A

DELAWARE
DIVISION OF PARKS AND RECREATION

DESIGNED BY: EMC
DRAWN BY: ZTP
CHECKED BY: AES
DATE: JUNE 2025
SCALE: 1" = 10'
SHEET NO.: C405
CONTRACT NO.: —

L:\State of Delaware\25000286.001A-DNREC Campgrounds\Working\Killens Pond\CADD\Killens Boat Dock Plan Set\Sheets\C_CabPlan(1).dwg, 6/18/2025 10:59 AM



D LOOP DOCK EXISTING CONDITIONS AND DEMOLITION PLAN

SCALE: 1" = 10'

DEMOLITION NOTES

1. CONTRACTOR TO REMOVE EXISTING BOAT DOCK, PILES, AND FOUNDATIONS.
2. CONTRACTOR TO CLEAR AND GRUB.
3. SEED AND STABILIZE ALL DISTURBED SOILS.

NOTES:

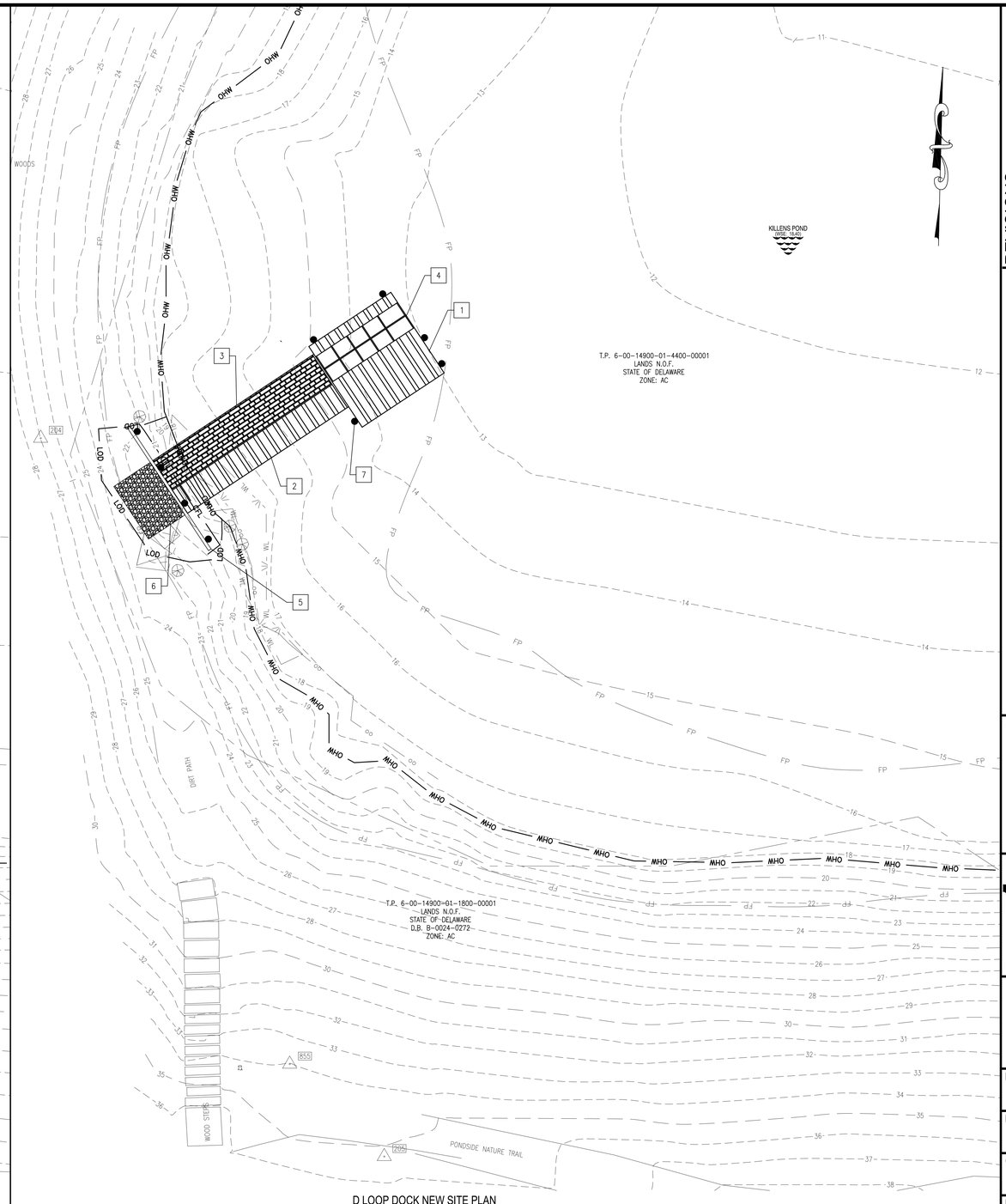
1. CONTRACTOR SHALL NOT DISTURB ANY UTILITY LINE UNLESS SPECIFICALLY NOTED.
2. CONTRACTOR SHALL FLAG ALL TREES GREATER THAN 8" DIAMETER AT BREAST HEIGHT. OWNER SHALL REVIEW AND APPROVE ALL FLAGGED TREES PRIOR TO REMOVAL.
3. CONTRACTOR SHALL NOT DISTURB EXISTING PATH. ANY PORTION OF EXISTING PATH THAT IS DISTURBED SHALL BE RESTORED USING THE STONE TRAIL SECTION.
4. CONTRACTOR ACCESS ROUTE SHALL BE APPROVED BY THE OWNER PRIOR TO SITE ACCESS.
5. EXISTING POND WATER SURFACE ELEVATION = 18.40' BASED UPON SURVEY PERFORMED BY CENTURY ENGINEERING ON AUGUST 2024. OHW LINE REFLECTS DETERMINED WATER LINE AS OF THE SAME DATE.
6. PORTIONS OF THE SITE ARE WITHIN A MAPPED 100 YEAR FLOODPLAIN. 100 YEAR FLOOD ELEVATION VARIES BETWEEN 17.00' AND 18.00'.

TRAVERSE POINT LAYOUT

POINT NO.	DESCRIPTION	NORTHING	EASTING	ELEVATION
203	TP203 CIP KW	357070.0850	623176.1350	31.825
204	TP204 CIP KW	356881.1050	623138.8720	26.972
205	TP205 CIP KW	356764.1900	623194.8040	35.274
858	TP858 CIP SE	357052.8317	623026.6070	38.539

0' 10' 20' 30'

SCALE: 1"=10'



D LOOP DOCK NEW SITE PLAN

SCALE: 1" = 10'

GENERAL NOTES

1. PROPOSED ALUMINUM KAYAK LAUNCH DOCK.
2. PROPOSED ALUMINUM GANGWAY.
3. PROPOSED KAYAK CHUTE.
4. PROPOSED KAYAK LAUNCH.
5. TIMBER ABUTMENT.
6. PROPOSED DELAWARE NO. 10 STONE OVER GRADED AGGREGATE BASE COURSE (DELDOT SPECIFICATION 301 AND 302). SEE DETAIL 4/C424.
7. PROPOSED TIMBER PILE (DELDOT SPECIFICATION 605).

0' 10' 20' 30'

SCALE: 1"=10'

REVISIONS:

DATE:	DESCRIPTION:	BY:

KILLENS POND STATE PARK
KILLENS POND BOAT DOCKS

D LOOP DOCK SITE PLAN

SEAL:

ALEXANDER E. SCHMIDT LICENSE NO. 16139 PROFESSIONAL ENGINEER

06-20-2025

CIVIL ENGINEER:

CENTURY ENGINEERING
A Kleinfelder Company

CEI CONTRACT NO.: 25000286.001A

DELAWARE DIVISION OF PARKS AND RECREATION

DESIGNED BY: EMC

DRAWN BY: ZTP

CHECKED BY: AES

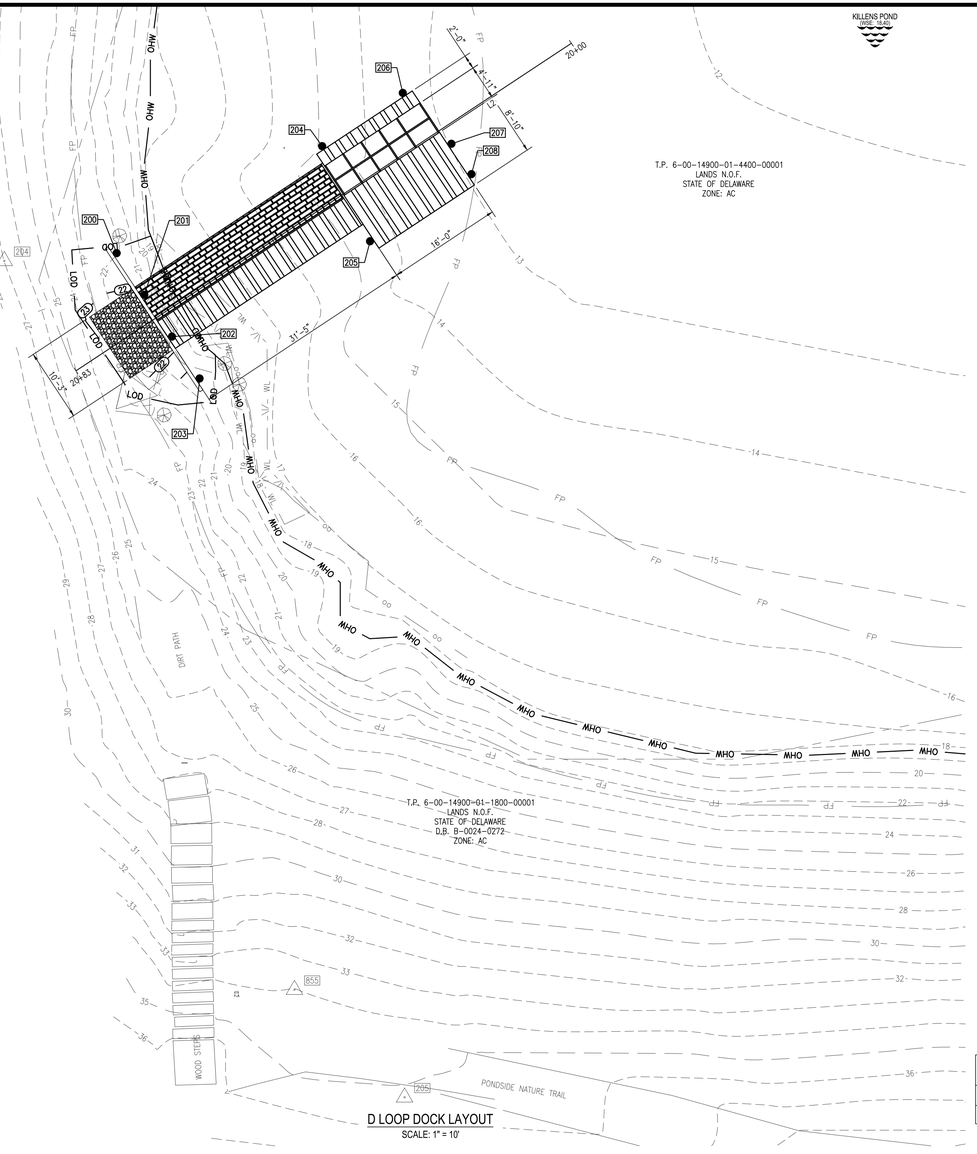
DATE: JUNE 2025

SCALE: 1" = 10'

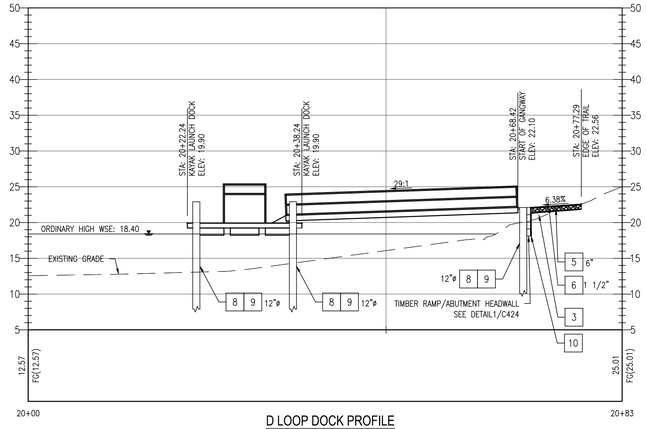
SHEET NO.: C406

CONTRACT NO.: —

L:\State of Delaware\25000286.001A-DNREC Campgrounds\Wershing's\Killens Pond\CAD\Killens Boat Dock Plan Set\Sheets\C_ExistingConditionsAndDemo(22).dwg, 6/18/2025 11:00 AM



D LOOP DOCK LAYOUT
SCALE: 1" = 10'



D LOOP DOCK PROFILE
HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 1'

TRAVERSE POINT LAYOUT

POINT NO.	DESCRIPTION	NORTHING	EASTING	ELEVATION
203	TP203 CIP KW	357070.0850	623176.1350	31.825
204	TP204 CIP KW	356881.1050	623138.8720	26.972
205	TP205 CIP KW	356764.1900	623194.8040	35.274
858	TP858 CIP SE	357052.8317	623026.6070	38.539

D LOOP DOCK PILE LAYOUT

POINT NO.	NORTHING	EASTING	TOP ELEV.	TIP ELEV.
200	356882.1932	623154.5761	22.10	6.09
201	356876.3565	623158.4363	22.10	6.09
202	356870.5197	623162.3006	22.10	6.09
203	356864.7461	623166.1996	22.10	6.09
204	356897.1368	623183.2952	22.90	-0.94
205	356883.8471	623189.9848	22.90	-0.94
206	356904.5828	623194.5561	22.90	-0.94
207	356897.4718	623201.3561	22.90	-0.94
208	356893.2359	623204.1570	22.90	-0.94

D LOOP DOCK ALIGNMENT

NUMBER	LENGTH	START STA.	END STA.	LINE/CHORD DIRECTION	START NORTHING	START EASTING	END NORTHING	END EASTING
L2	83.00	20+00.00	20+83.00	S56° 31' 33.40"W	356911.5211	623218.1174	356865.7417	623148.8841

REFERENCED DELDOT ITEMS

PLAN CALLOUT	DELDOT SPECIFICATION SECTION	DESCRIPTION
1	201	CLEARING AND GRUBBING
2	202	EXCAVATION AND EMBANKMENT
3	209	BORROW, TYPE F
4	211	REMOVAL OF STRUCTURES AND OBSTRUCTIONS
5	301	GRADED AGGREGATE BASE COURSE, TYPE B
6	302	DELAWARE NO. 10 STONE
7	501	PCC PAVEMENT
8	605	PROVIDE TIMBER PILES – TREATED 12"
9	605	INSTALL TIMBER PILES – 12"
10	708	GEOTEXTILES SEPERATION
11	908	TOPSOIL, 6" DEPTH

0' 10' 20' 30'
SCALE: 1"=10'

REVISIONS:
DATE: DESCRIPTION: BY:

KILLENS POND STATE PARK
KILLENS POND BOAT DOCKS

D LOOP DOCK SITE LAYOUT AND PROFILE

SEAL:
ALEXANDER E. SCHMIDT
LICENSE
NO. 16139
DELAWARE
PROFESSIONAL ENGINEER
06-20-2025

CIVIL ENGINEER:
CENTURY ENGINEERING
A Kleinfelder Company

CEI CONTRACT NO.: 25000286.001A

DELAWARE
DIVISION OF PARKS AND RECREATION

DESIGNED BY: EMC
DRAWN BY: ZTP
CHECKED BY: AES
DATE: JUNE 2025
SCALE: 1"=10'
SHEET NO.: C407
CONTRACT NO.: —

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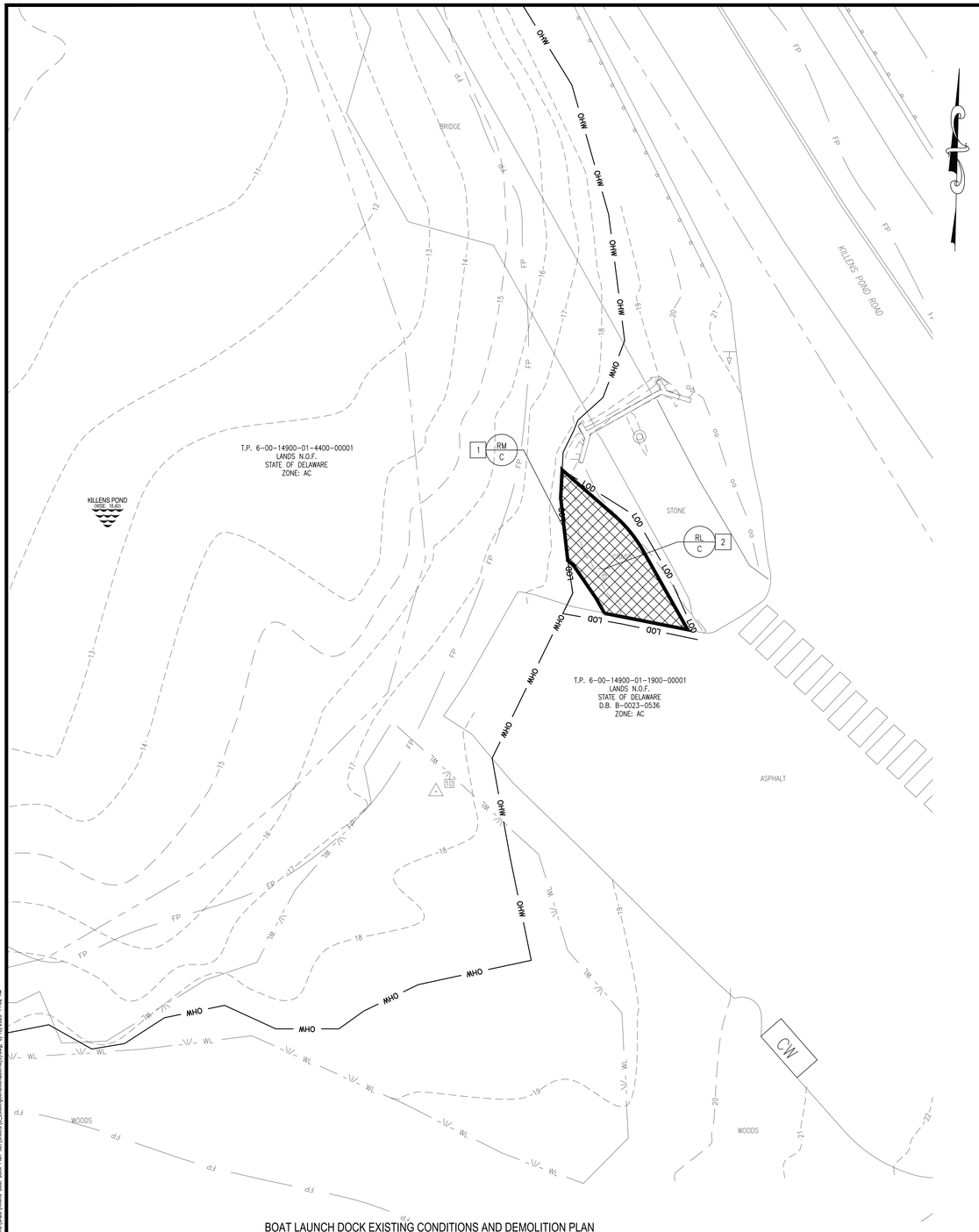


BOAT LAUNCH DOCK EXISTING CONDITIONS AND DEMOLITION PLAN

SCALE: 1" = 10'

DEMOLITION NOTES

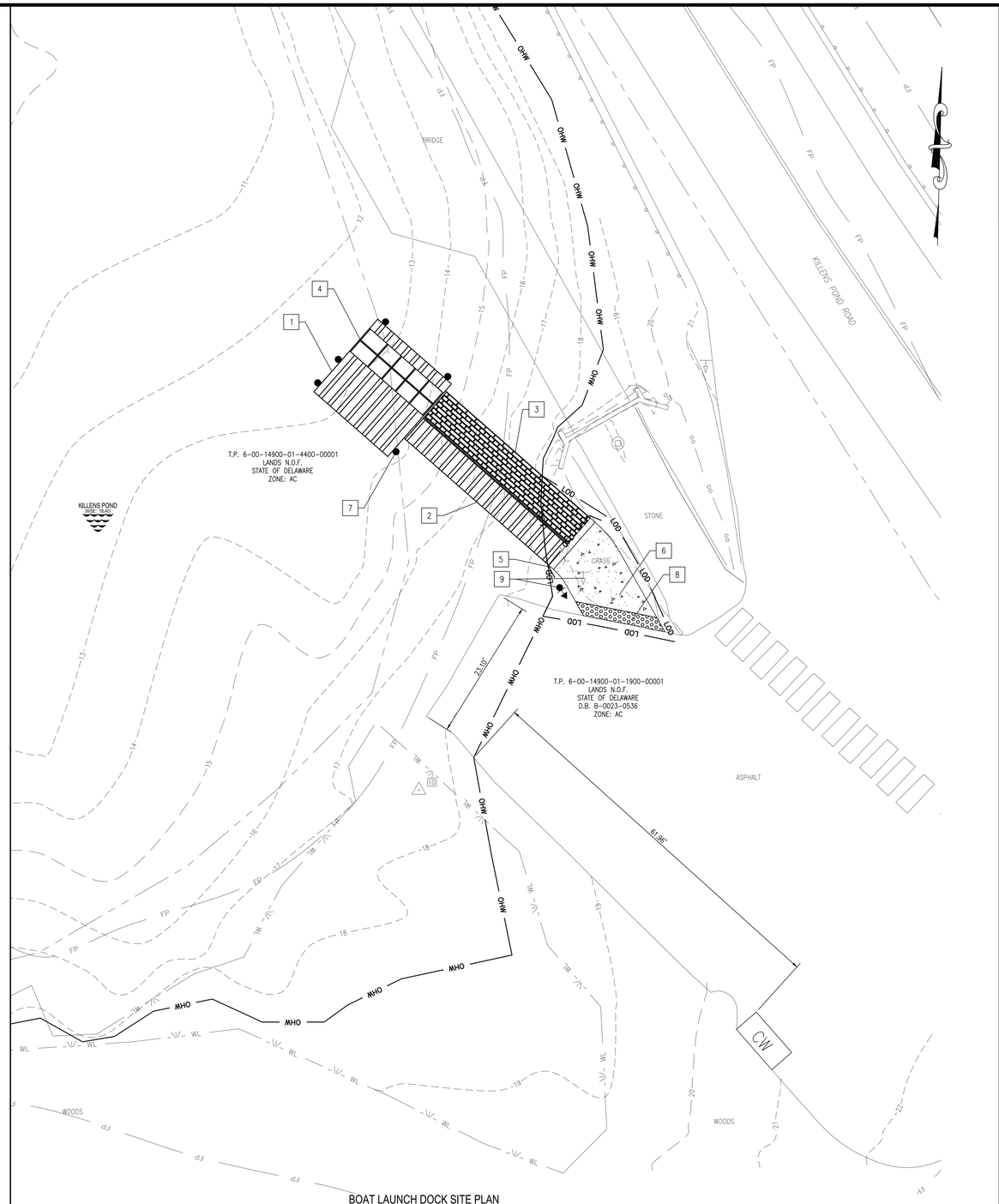
1	CONTRACTOR TO CLEAR AND GRUB.
2	CONTRACTOR RELOCATE EXISTING SIGN.

NOTES:

1. CONTRACTOR SHALL NOT DISTURB ANY UTILITY LINE UNLESS SPECIFICALLY NOTED.
2. CONTRACTOR SHALL FLAG ALL TREES GREATER THAN 8" DIAMETER AT BREAST HEIGHT. OWNER SHALL REVIEW AND APPROVE ALL FLAGGED TREES PRIOR TO REMOVAL.
3. EXISTING PAVEMENT SHALL NOT BE DISTURBED.
4. CONTRACTOR ACCESS ROUTE SHALL BE APPROVED BY THE OWNER PRIOR TO SITE ACCESS.
5. EXISTING POND WATER SURFACE ELEVATION = 18.40' BASED UPON SURVEY PERFORMED BY CENTURY ENGINEERING ON AUGUST 2024. OHW LINE REFLECTS DETERMINED WATER LINE AS OF THE SAME DATE.
6. PORTIONS OF THE SITE ARE WITHIN A MAPPED 100 YEAR FLOODPLAIN. 100 YEAR FLOOD ELEVATION VARIES BETWEEN 17.00' AND 18.00'.

TRAVERSE POINT LAYOUT

POINT NO.	DESCRIPTION	NORTHING	EASTING	ELEVATION
3	TP3	357138.2971	624237.8550	22.610
10	TP10	357153.5356	624130.4107	17.984



BOAT LAUNCH DOCK SITE PLAN

SCALE: 1" = 10'

GENERAL NOTES

1	PROPOSED ALUMINUM KAYAK LAUNCH DOCK.
2	PROPOSED ALUMINUM GANGWAY.
3	PROPOSED KAYAK CHUTE.
4	PROPOSED KAYAK LAUNCH.
5	REINFORCED CONCRETE ABUTMENT.
6	PROPOSED 6" CONCRETE SIDEWALK (DELDOT SPECIFICATION 501) SEE DETAIL 7/C424.
7	PROPOSED TIMBER PILE (DELDOT SPECIFICATION 605).
8	PROPOSED TRUNCATED DOME.
9	RELOCATION OF EXISTING SIGN.

0' 10' 20' 30'

SCALE: 1"=10'

REVISIONS:

DATE:	DESCRIPTION:	BY:

KILLENS POND STATE PARK
KILLENS POND BOAT DOCKS

BOAT LAUNCH DOCK SITE PLAN

SEAL:

ALEXANDER E. SCHMIDT — LICENSED — NO. 16139 — PROFESSIONAL ENGINEER — STATE OF DELAWARE

06-20-2025

CIVIL ENGINEER:

CENTURY ENGINEERING
A Kleinfelder Company

CEI CONTRACT NO.: 25000286.001A

DELAWARE — DIVISION OF PARKS AND RECREATION

DESIGNED BY: EMC

DRAWN BY: ZTP

CHECKED BY: AES

DATE: JUNE 2025

SCALE: 1" = 10'

SHEET NO.: C408

CONTRACT NO.: —

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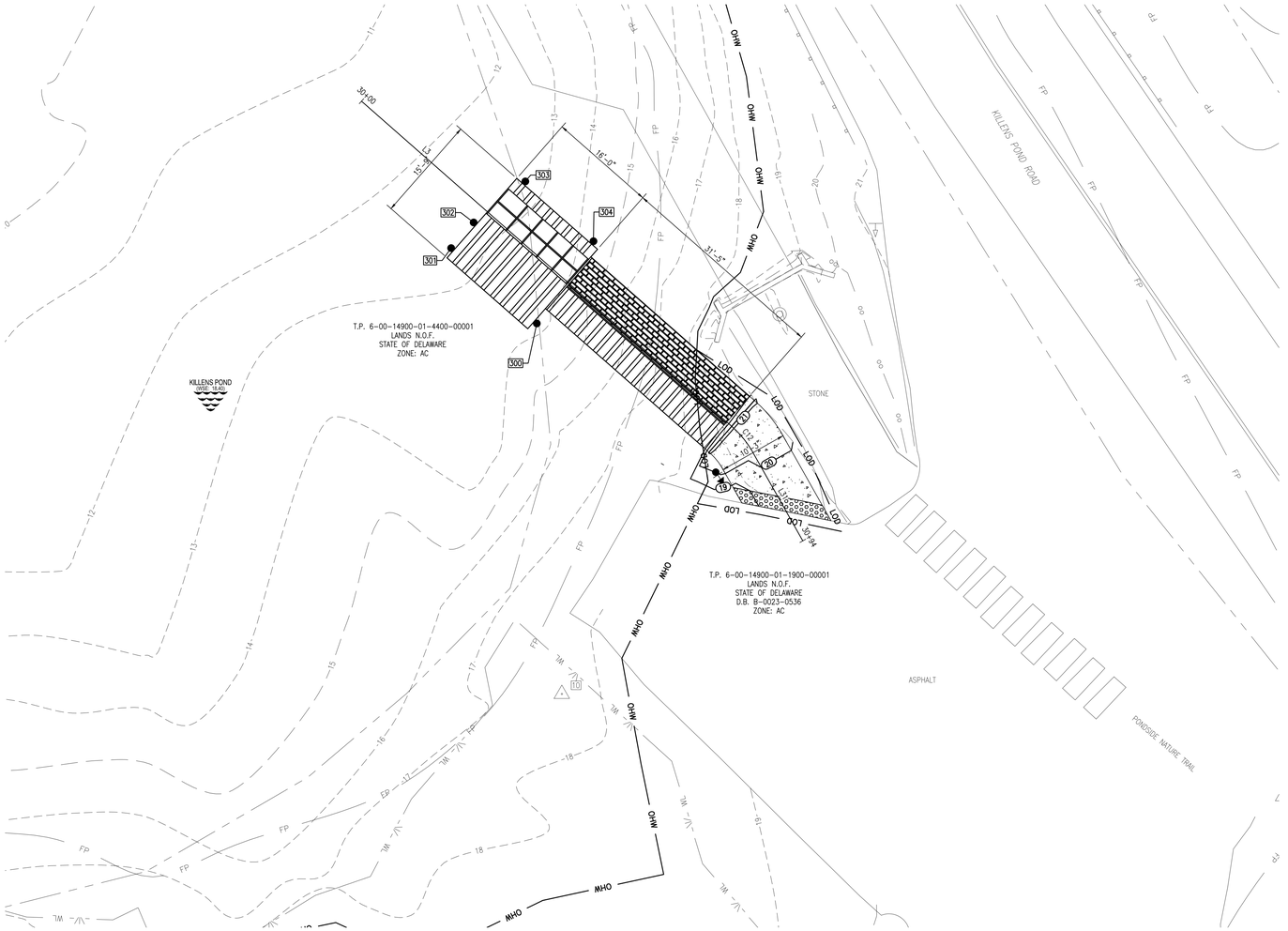
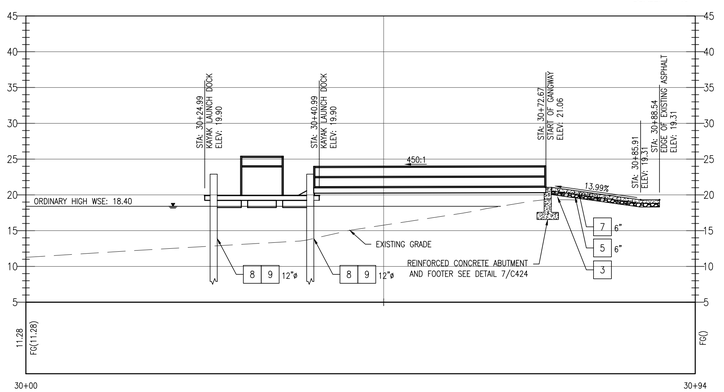
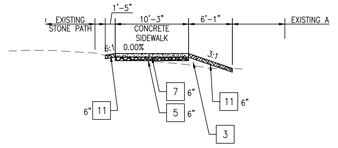


BOAT LAUNCH DOCK LAYOUT
SCALE: 1" = 10'



BOAT LAUNCH DOCK PROFILE
HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 1'



BOAT LAUNCH SIDEWALK TYPICAL SECTION
SCALE: 1" = 10'

TRAVERSE POINT LAYOUT

POINT NO.	DESCRIPTION	NORTHING	EASTING	ELEVATION
3	TP3	357138.2971	624237.8550	22.610
10	TP10	357153.5356	624130.4107	17.984

BOAT LAUNCH GANGWAY ALIGNMENT

NUMBER	LENGTH	START STA.	END STA.	LINE/CHORD DIRECTION	START NORTHING	START EASTING	END NORTHING	END EASTING
L3	73.42	30+00.00	30+73.42	S48° 42' 37.33"E	357241.8245	624100.5712	357193.3796	624155.7350
C12	4.999	30+73.42	30+78.41	S39° 05' 12.24"E	357193.3796	624155.7350	357189.5179	624158.8718
L31	15.13	30+78.41	30+93.54	S29° 27' 47.16"E	357189.5179	624158.8718	357176.3459	624166.3130

BOAT LAUNCH DOCK PILE LAYOUT

POINT NO.	NORTHING	EASTING	TOP ELEV.	TIP ELEV.
300	357208.7120	624126.6823	22.90	−1.15
301	357219.9408	624113.9185	22.90	−1.15
302	357223.7564	624117.2693	22.90	−1.15
303	357229.8767	624124.9732	22.90	−1.15
304	357220.9685	624135.1169	22.90	−1.15

REFERENCED DELDOT ITEMS

PLAN CALLOUT	DELDOT SPECIFICATION SECTION	DESCRIPTION
1	201	CLEARING AND GRUBBING
2	202	EXCAVATION AND EMBANKMENT
3	209	BORROW, TYPE F
4	211	REMOVAL OF STRUCTURES AND OBSTRUCTIONS
5	301	GRADED AGGREGATE BASE COURSE, TYPE B
6	302	DELAWARE NO. 10 STONE
7	501	PCC PAVEMENT
8	605	PROVIDE TIMBER PILES – TREATED 12"
9	605	INSTALL TIMBER PILES – 12"
10	708	GEOTEXTILES SEPERATION
11	908	TOPSOIL, 6" DEPTH

0' 10' 20' 30'
SCALE: 1"=10'

REVISIONS:

DATE:	DESCRIPTION:	BY:

KILLENS POND STATE PARK
KILLENS POND BOAT DOCKS

BOAT LAUNCH DOCK SITE LAYOUT AND PROFILE

SEAL:
ALEXANDER E. SCHMIDT
LICENSED
NO. 16139
PROFESSIONAL ENGINEER
06-20-2025

CIVIL ENGINEER:
CENTURY ENGINEERING
A Kleinfelder Company

CEI CONTRACT NO.: 25000286.001A

DELAWARE
DIVISION OF PARKS AND RECREATION

DESIGNED BY: EMC
DRAWN BY: ZTP
CHECKED BY: AES
DATE: JUNE 2025
SCALE: 1" = 10'
SHEET NO.: C409
CONTRACT NO.: —

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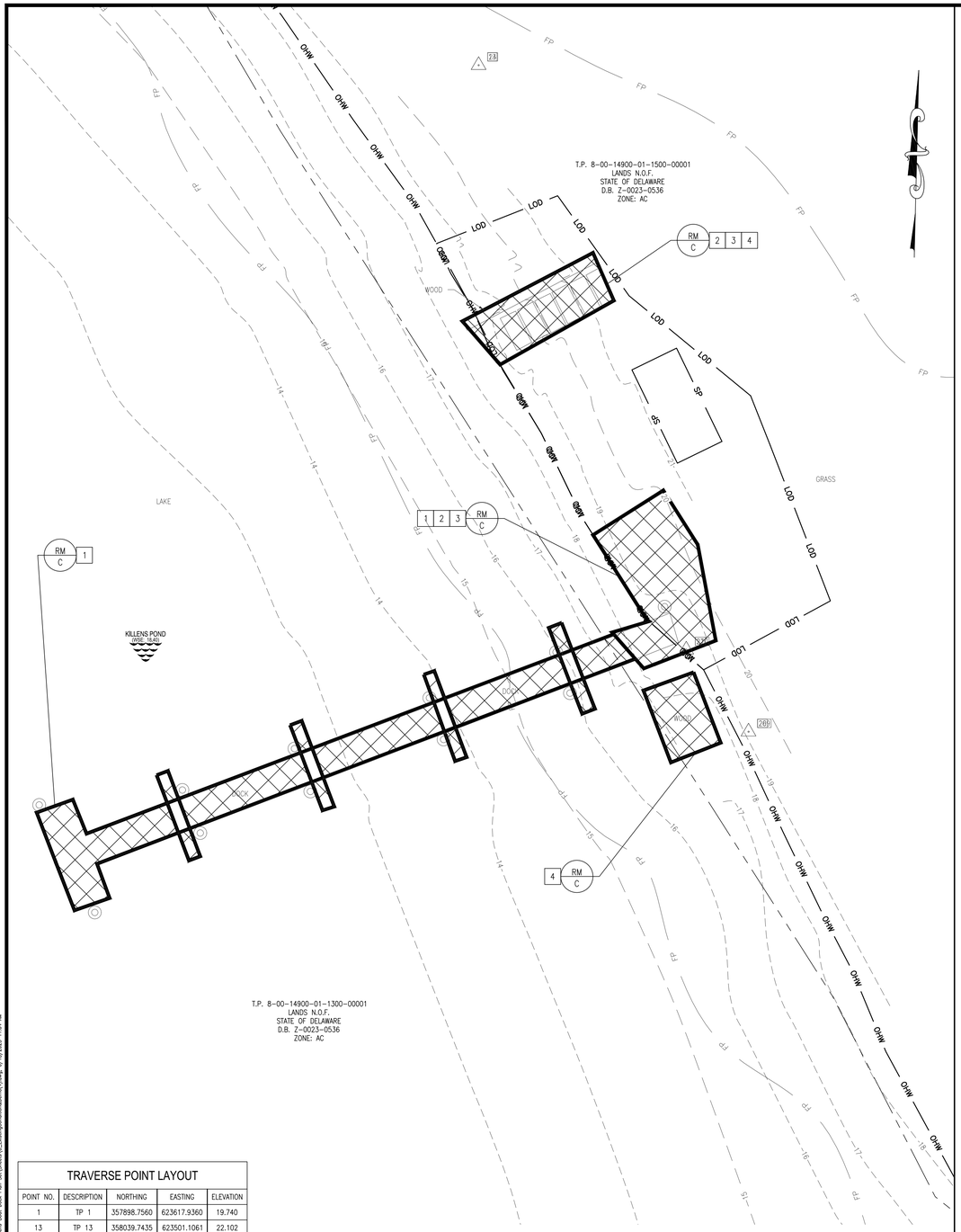


TRAVERSE POINT LAYOUT

POINT NO.	DESCRIPTION	NORTHING	EASTING	ELEVATION
1	TP 1	357898.7560	623617.9360	19.740
13	TP 13	358039.7435	623501.1061	22.102
209	TP209R	357936.1514	623543.0627	19.853
210	TP210R	357948.8925	623533.3845	20.081
211	TP211R	357881.0225	623661.9806	18.213

DEMOLITION NOTES

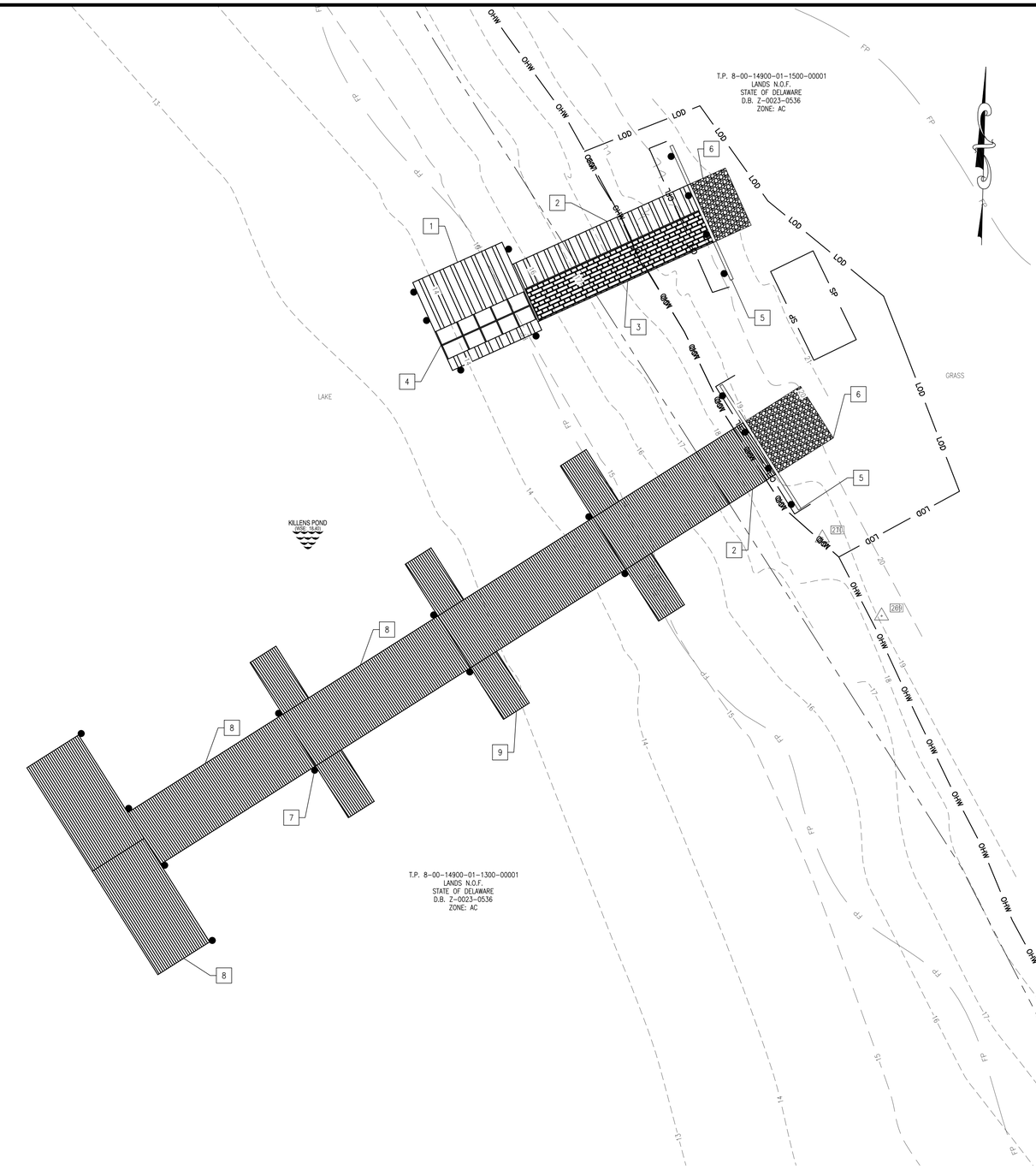
1. CONTRACTOR TO REMOVE EXISTING BOAT DOCK, PILES, AND FOUNDATIONS.
2. CONTRACTOR TO CLEAR AND GRUB.
3. CONTRACTOR TO SEED AND STABILIZE ALL DISTURBED SOILS.
4. CONTRACTOR TO REMOVE WOODEN STRUCTURE

BOAT LAUNCH DOCK EXISTING CONDITIONS AND DEMOLITION PLAN

SCALE: 1" = 10'

NOTES:

1. CONTRACTOR SHALL NOT DISTURB ANY UTILITY LINE UNLESS SPECIFICALLY NOTED.
2. CONTRACTOR SHALL FLAG ALL TREES GREATER THAN 8" DIAMETER AT BREAST HEIGHT. OWNER SHALL REVIEW AND APPROVE ALL FLAGGED TREES PRIOR TO REMOVAL.
3. CONTRACTOR SHALL NOT DISTURB EXISTING PATH. ANY PORTION OF EXISTING PATH THAT IS DISTURBED SHALL BE RESTORED USING THE STONE TRAIL SECTION.
4. CONTRACTOR ACCESS ROUTE SHALL BE APPROVED BY THE OWNER PRIOR TO SITE ACCESS.
5. EXISTING POND WATER SURFACE ELEVATION = 18.40' BASED UPON SURVEY PERFORMED BY CENTURY ENGINEERING ON AUGUST 2024. OHW LINE REFLECTS DETERMINED WATER LINE AS OF THE SAME DATE.
6. PORTIONS OF THE SITE ARE WITHIN A MAPPED 100 YEAR FLOODPLAIN. 100 YEAR FLOOD ELEVATION VARIES BETWEEN 17.00' AND 18.00'.



GENERAL NOTES

1. PROPOSED ALUMINUM KAYAK LAUNCH DOCK.
2. PROPOSED ALUMINUM GANGWAY.
3. PROPOSED KAYAK CHUTE.
4. PROPOSED KAYAK LAUNCH.
5. TIMBER ABUTMENT.
6. PROPOSED DELAWARE NO. 10 STONE OVER GRADED AGGREGATE BASE COURSE (DELDOT SPECIFICATION 301 AND 302). SEE DETAIL 4/C424.
7. PROPOSED TIMBER PILE (DELDOT SPECIFICATION 605).
8. PROPOSED ALUMINUM FLOATING DOCK.
9. PROPOSED ALUMINUM FINGER PIERS.

BOAT LAUNCH DOCK SITE PLAN

SCALE: 1" = 10'

0' 10' 20' 30'

SCALE: 1"= 10'

REVISIONS:

DATE:	DESCRIPTION:	BY:

KILLENS POND STATE PARK
KILLENS POND BOAT DOCKS

BOAT RENTAL DOCK SITE PLAN

SEAL:

ALEXANDER E. SCHMIDT
LICENSE
NO. 16139
DELAWARE
PROFESSIONAL ENGINEER

06-20-2025

CIVIL ENGINEER:

CENTURY ENGINEERING
A Kleinfelder Company

CEI CONTRACT NO.: 25000286.001A

DELAWARE
DIVISION OF PARKS AND RECREATION

DESIGNED BY: EMC

DRAWN BY: ZTP

CHECKED BY: AES

DATE: JUNE 2025

SCALE: 1"= 10'

SHEET NO.: C410

CONTRACT NO.: —

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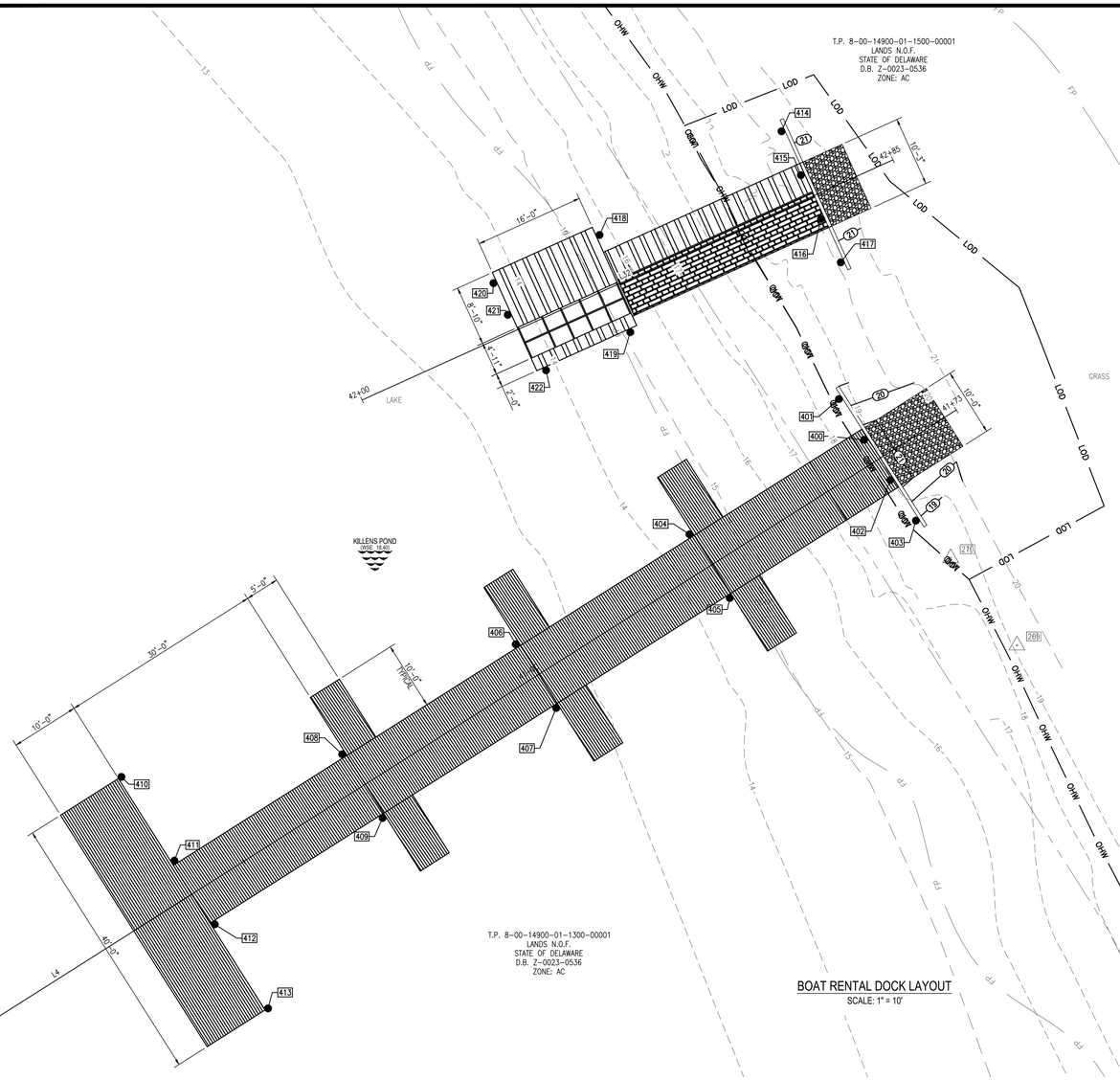

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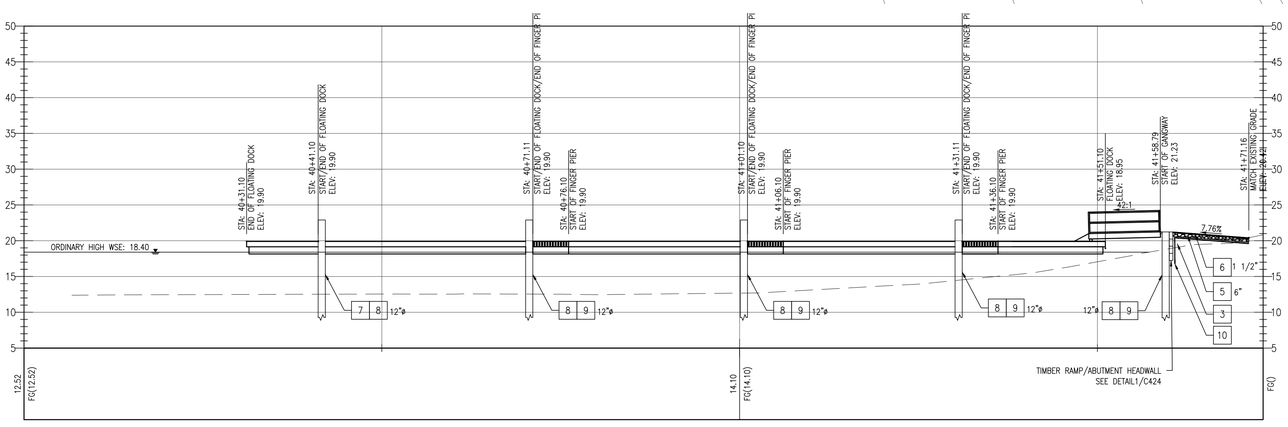
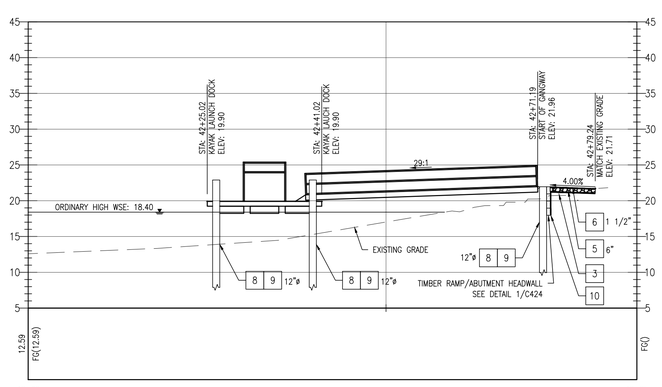
LANDS N.O.F.
STATE OF DELAWARE
D.B. Z-0023-0536
ZONE: AC

BOAT RENTAL DOCK LAYOUT
SCALE: 1" = 10'



BOAT RENTAL DOCK PROFILE
HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 1'



BOAT RENTAL KAYAK LAUNCH DOCK PROFILE
HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 1'

BOAT RENTAL DOCK ALIGNMENT								
NUMBER	LENGTH	START STA.	END STA.	LINE/CHORD DIRECTION	START NORTHING	START EASTING	END NORTHING	END EASTING
L4	173.16	40+00.00	41+73.16	N57° 38' 39.06"E	357877.8413	623387.9172	357970.5106	623534.1899

BOAT RENTAL KAYAK LAUNCH ALIGNMENT								
NUMBER	LENGTH	START STA.	END STA.	LINE/CHORD DIRECTION	START NORTHING	START EASTING	END NORTHING	END EASTING
L32	85.06	42+00.00	42+85.06	N65° 39' 32.08"E	357971.9687	623447.4611	358007.0268	623524.9581

REFERENCED DELDOT ITEMS		
PLAN CALLOUT	DELDOT SPECIFICATION SECTION	DESCRIPTION
1	201	CLEARING AND GRUBBING
2	202	EXCAVATION AND EMBANKMENT
3	209	BORROW, TYPE F
4	211	REMOVAL OF STRUCTURES AND OBSTRUCTIONS
5	301	GRADED AGGREGATE BASE COURSE, TYPE B
6	302	DELAWARE NO. 10 STONE
7	501	PCC PAVEMENT
8	605	PROVIDE TIMBER PILES – TREATED 12"
9	605	INSTALL TIMBER PILES – 12"
10	708	GEOTEXTILES SEPERATION
11	908	TOPSOIL, 6" DEPTH

BOAT RENTAL DOCK PILE LAYOUT				
POINT NO.	NORTHING	EASTING	TOP ELEV.	TIP ELEV.
400	357966.1478	623520.7641	21.23	4.80
401	357972.0944	623517.0701	21.23	4.80
402	357960.2680	623524.5625	21.23	4.80
403	357954.3548	623528.3088	21.23	4.80
404	357952.3506	623495.2485	22.90	–1.50'
405	357943.0585	623501.1354	22.90	–1.50'
406	357936.2953	623469.9063	22.90	–1.50
407	357927.0032	623475.7932	22.90	–1.50
408	357920.2401	623444.5640	22.90	–1.50
409	357910.9479	623450.4510	22.90	–1.50
410	357916.9403	623412.3178	22.90	–1.50
411	357904.7170	623420.0618	22.90	–1.50
412	357895.4248	623425.9487	22.90	–1.50
413	357883.1507	623433.7249	22.90	–1.50
414	358011.1900	623508.6857	21.96	6.27
415	358004.7864	623511.5145	21.96	6.27
416	357998.4344	623514.4560	21.96	6.27
417	357992.0567	623517.3412	21.96	6.27
418	357996.0440	623482.1189	22.90	–0.11
419	357981.8610	623486.6142	22.90	–0.11
420	357989.0237	623466.6361	22.90	–0.11
421	357984.3970	623468.7291	22.90	–0.11
422	357976.2968	623474.3143	22.90	–0.11

TRAVERSE POINT LAYOUT				
POINT NO.	DESCRIPTION	NORTHING	EASTING	ELEVATION
1	TP 1	357898.7560	623617.9360	19.740
13	TP 13	358039.7435	623501.1061	22.102
209	TP209R	357936.1514	623543.0627	19.853
210	TP210R	357948.8925	623533.3845	20.081
211	TP211R	357881.0225	623661.9806	18.213

0' 10' 20' 30'
SCALE: 1"=10'

REVISIONS:
DATE: DESCRIPTION: BY:

KILLENS POND STATE PARK
KILLENS POND BOAT DOCKS

BOAT RENTAL DOCK SITE LAYOUT AND PROFILE

SEAL:
ALEXANDER E. SCHMIDT
LICENSE
NO. 16139
PROFESSIONAL ENGINEER
06-20-2025

CIVIL ENGINEER:
CENTURY ENGINEERING
A Kleinfelder Company

CEI CONTRACT NO.: 25000286.001A

DELAWARE
DIVISION OF PARKS AND RECREATION

DESIGNED BY: EMC
DRAWN BY: ZTP
CHECKED BY: AES
DATE: JUNE 2025
SCALE: 1" = 10'
SHEET NO.: C411
CONTRACT NO.: —

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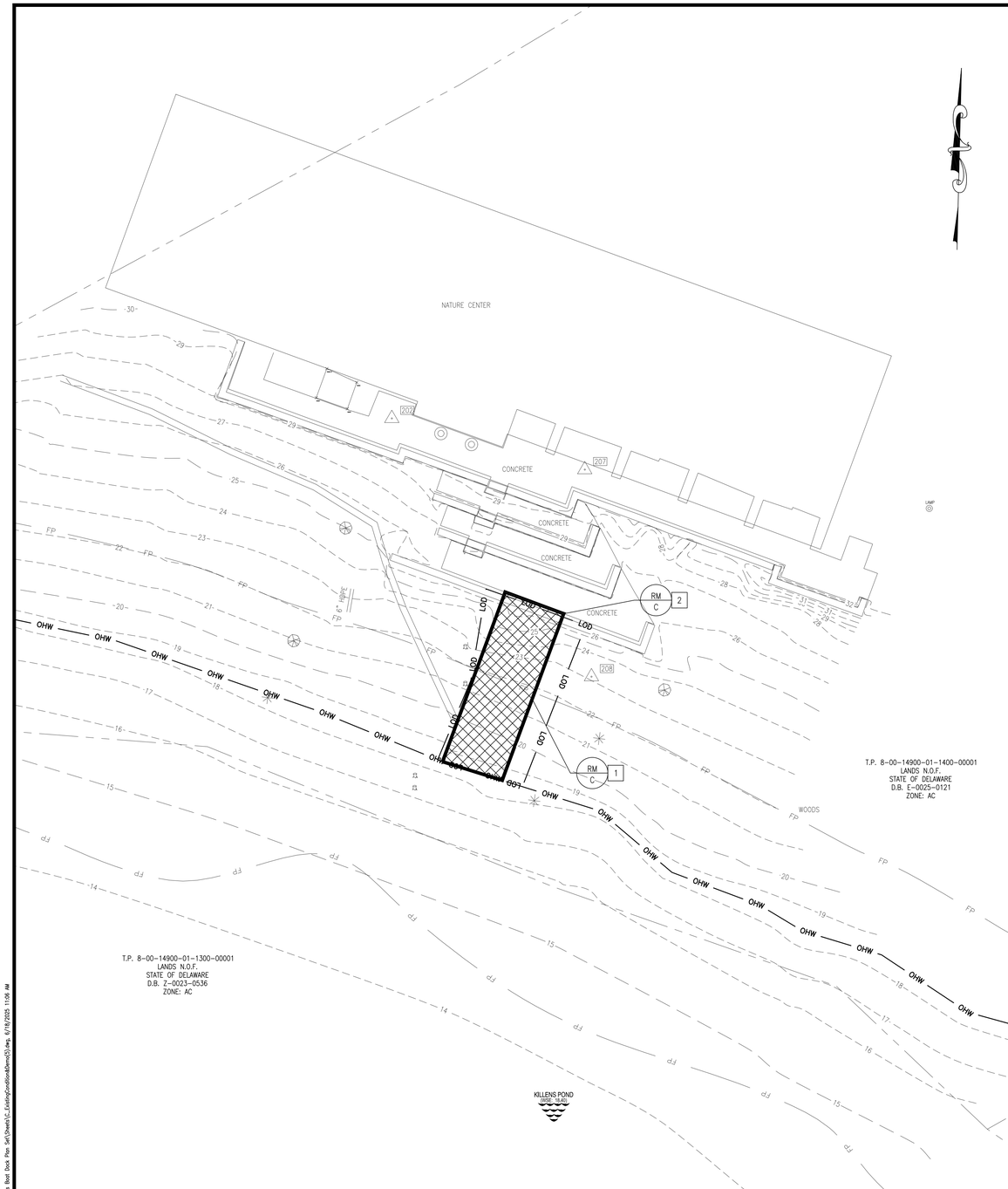


NATURE CENTER PIER EXISTING CONDITIONS AND DEMOLITION PLAN

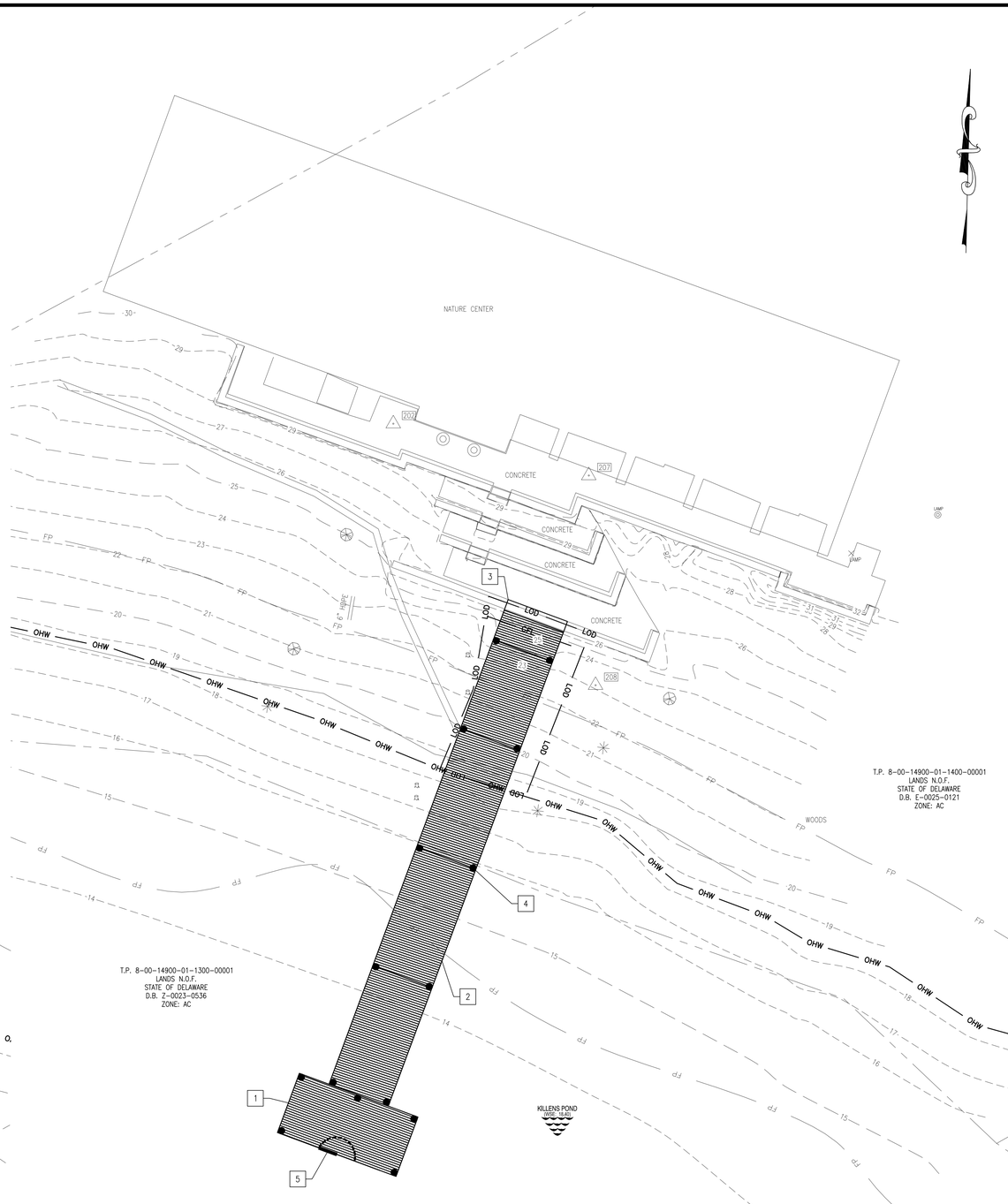
SCALE: 1" = 10'

DEMOLITION NOTES

1. CONTRACTOR TO CLEAR AND GRUB.
2. CONTRACTOR TO REMOVE PORTION OF RETAINING WALL. SEE DETAIL 6/C424

NOTES:

1. CONTRACTOR SHALL NOT DISTURB ANY UTILITY LINE UNLESS SPECIFICALLY NOTED.
2. CONTRACTOR SHALL FLAG ALL TREES GREATER THAN 8" DIAMETER AT BREAST HEIGHT. OWNER SHALL REVIEW AND APPROVE ALL FLAGGED TREES PRIOR TO REMOVAL.
3. EXISTING CONCRETE PATIO SHALL NOT BE DISTURBED.
4. CONTRACTOR ACCESS ROUTE SHALL BE APPROVED BY THE OWNER PRIOR TO SITE ACCESS.
5. EXISTING POND WATER SURFACE ELEVATION = 18.40' BASED UPON SURVEY PERFORMED BY CENTURY ENGINEERING ON AUGUST 2024. OHW LINE REFLECTS DETERMINED WATER LINE AS OF THE SAME DATE.
6. PORTIONS OF THE SITE ARE WITHIN A MAPPED 100 YEAR FLOODPLAIN. 100 YEAR FLOOD ELEVATION VARIES BETWEEN 17.00' AND 18.00'.



NATURE CENTER PIER SITE PLAN

SCALE: 1" = 10'

GENERAL NOTES

1. PROPOSED ALUMINUM FIXED DOCK.
2. PROPOSED ALUMINUM GANGWAY.
3. PROPOSED CANTILEVER TRANSITION. SEE DETAIL 6/C424.
4. PROPOSED TIMBER PILE (DELDOT SPECIFICATION 605).
5. PROPOSED SWING GATE. SEE DETAIL 10/C423

0' 10' 20' 30'
SCALE: 1"=10'

REVISIONS:

DATE:	DESCRIPTION:	BY:

KILLENS POND STATE PARK
KILLENS POND BOAT DOCKS

NATURE CENTER PIER DOCK SITE PLAN

SEAL:

ALEXANDER E. SCARDO
LICENSED
NO. 16139
PROFESSIONAL ENGINEER
DELAWARE

06-20-2025

CIVIL ENGINEER:

CENTURY ENGINEERING
A Kleinfelder Company

CEI CONTRACT NO.: 25000286.001A

DESIGNED BY: EMC

DRAWN BY: ZTP

CHECKED BY: AES

DATE: JUNE 2025

SCALE: 1" = 10'

SHEET NO.: C412

CONTRACT NO.: —

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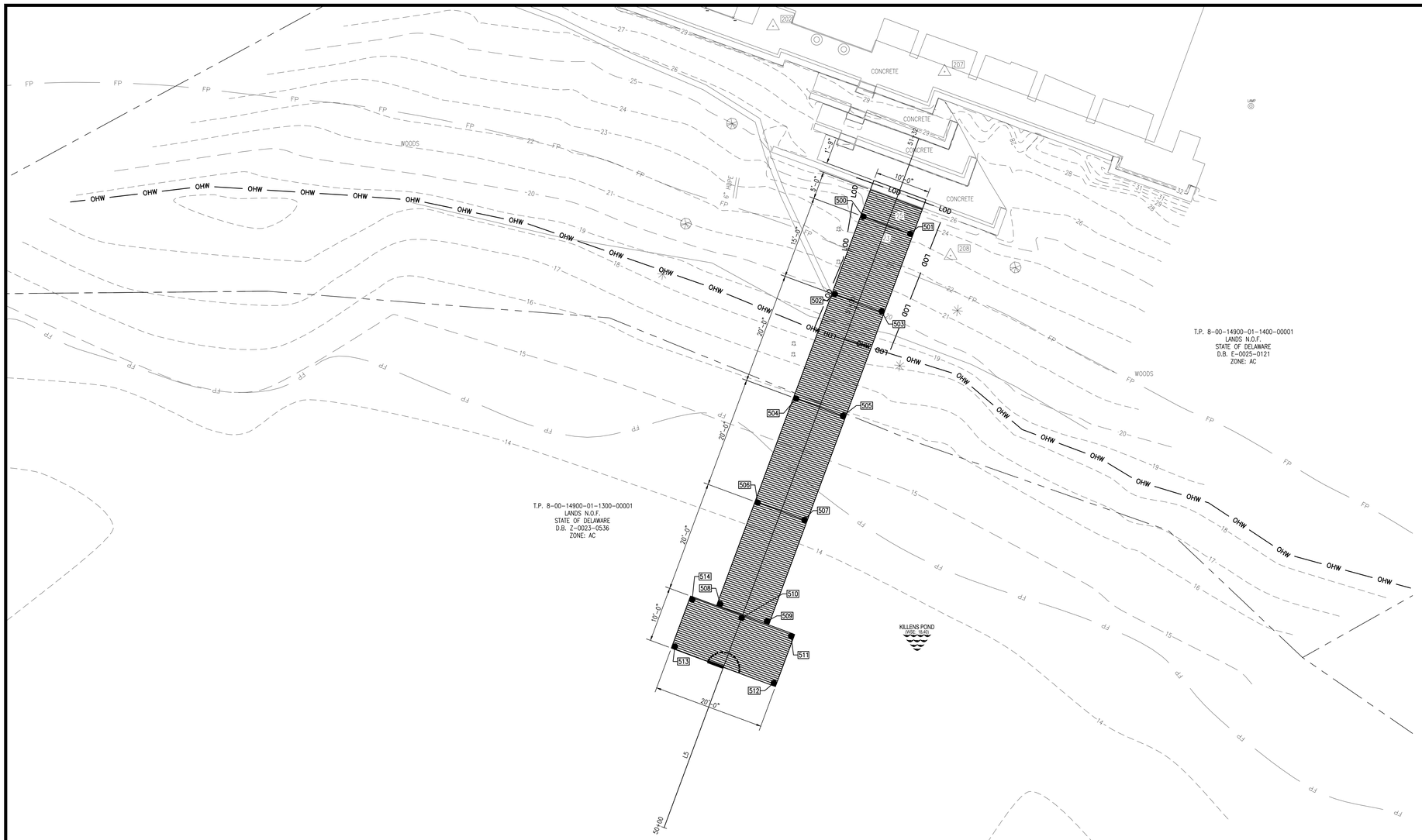
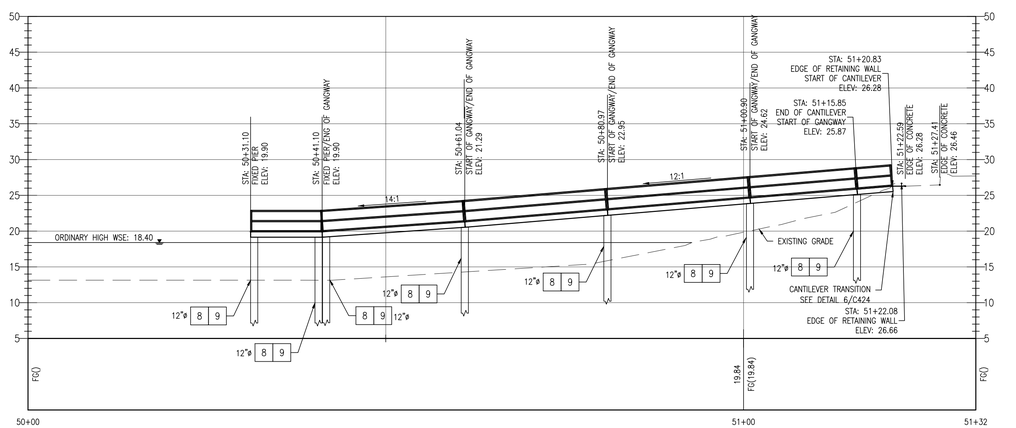


NATURE CENTER PIER LAYOUT

SCALE: 1" = 10'



NATURE CENTER PIER PROFILE

HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 1'

REFERENCED DELDOT ITEMS

PLAN CALLOUT	DELDOT SPECIFICATION SECTION	DESCRIPTION
1	201	CLEARING AND GRUBBING
2	202	EXCAVATION AND EMBANKMENT
3	209	BORROW, TYPE F
4	211	REMOVAL OF STRUCTURES AND OBSTRUCTIONS
5	301	GRADED AGGREGATE BASE COURSE, TYPE B
6	302	DELAWARE NO. 10 STONE
7	501	PCC PAVEMENT
8	605	PROVIDE TIMBER PILES – TREATED 12"
9	605	INSTALL TIMBER PILES – 12"
10	708	GEOTEXTILES SEPERATION
11	908	TOPSOIL, 6" DEPTH

TRAVERSE POINT LAYOUT

POINT NO.	DESCRIPTION	NORTHING	EASTING	ELEVATION
202	TP202 DH KW	358307.1540	623181.2690	30.331
207	TP207 DH KW	358298.9501	623212.1898	30.361
208	TP208R CIP KW	358265.7696	623213.2623	23.145

NATURE CENTER PIER PILE LAYOUT

POINT NO.	NORTHING	EASTING	TOP ELEV.	TIP ELEV.
500	358272.8146	623197.5532	25.11	–2.96
501	358269.6953	623205.9953	25.11	–2.96
502	358258.8516	623192.3939	23.87	–6.99
503	358255.7323	623200.8361	23.87	–6.99
504	358239.9807	623185.4315	22.20	–11.14
505	358236.8614	623193.8737	22.20	–11.14
506	358221.2204	623178.4997	20.53	–12.71
507	358218.1010	623186.9418	20.53	–12.71
508	358202.9291	623171.7412	19.20	–13.86
509	358199.8097	623180.1833	19.20	–13.86
510	358200.4314	623175.6156	19.15	–13.86
511	358197.1453	623184.5292	19.15	–13.86
512	358188.6901	623181.4050	19.15	–13.86

NATURE CENTER PIER ALIGNMENT

NUMBER	LENGTH	START STA.	END STA.	LINE/CHORD DIRECTION	START NORTHING	START EASTING	END NORTHING	END EASTING
L5	132.46	50+00.00	51+32.46	N20° 16' 28.94"E	358162.5981	623161.6364	358286.8489	623207.5359

0' 10' 20' 30'
SCALE: 1"=10'

REVISIONS:

DATE:	DESCRIPTION:	BY:

KILLENS POND STATE PARK
KILLENS POND BOAT DOCKS

NATURE CENTER PIER SITE LAYOUT AND PROFILE

SEAL:
ALEXANDER E. SCHMIDT
LICENSE
NO. 16139
DELAWARE
PROFESSIONAL ENGINEER
06-20-2025

CIVIL ENGINEER:
CENTURY ENGINEERING
A Kleinfelder Company

CEI CONTRACT NO.: 25000286.001A

DESIGNED BY: EMC
DRAWN BY: ZTP
CHECKED BY: AES
DATE: JUNE 2025
SCALE: 1" = 10'
SHEET NO.: C413
CONTRACT NO.: —

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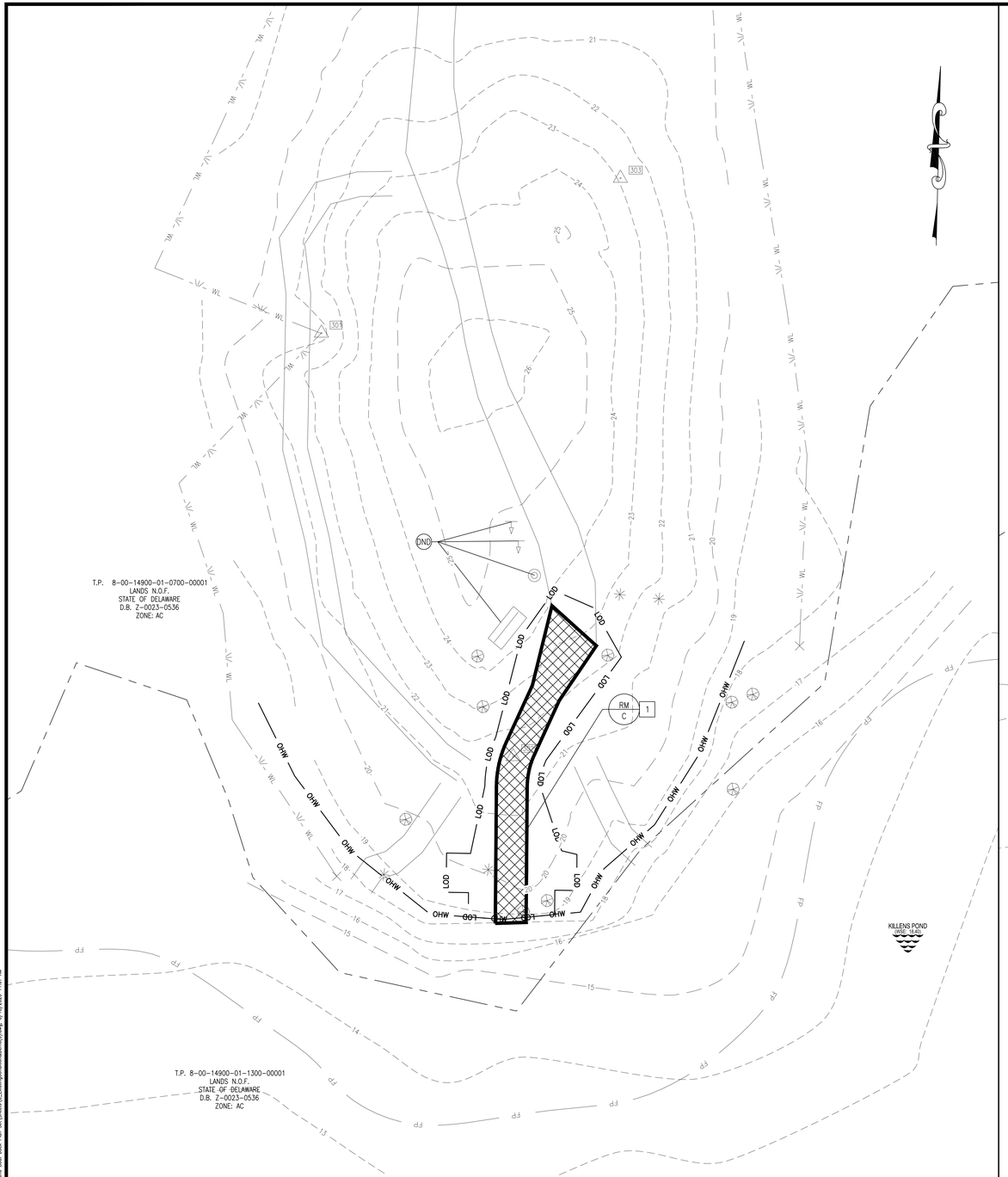


MARKER 18 DOCK EXISTING CONDITIONS AND DEMOLITION PLAN

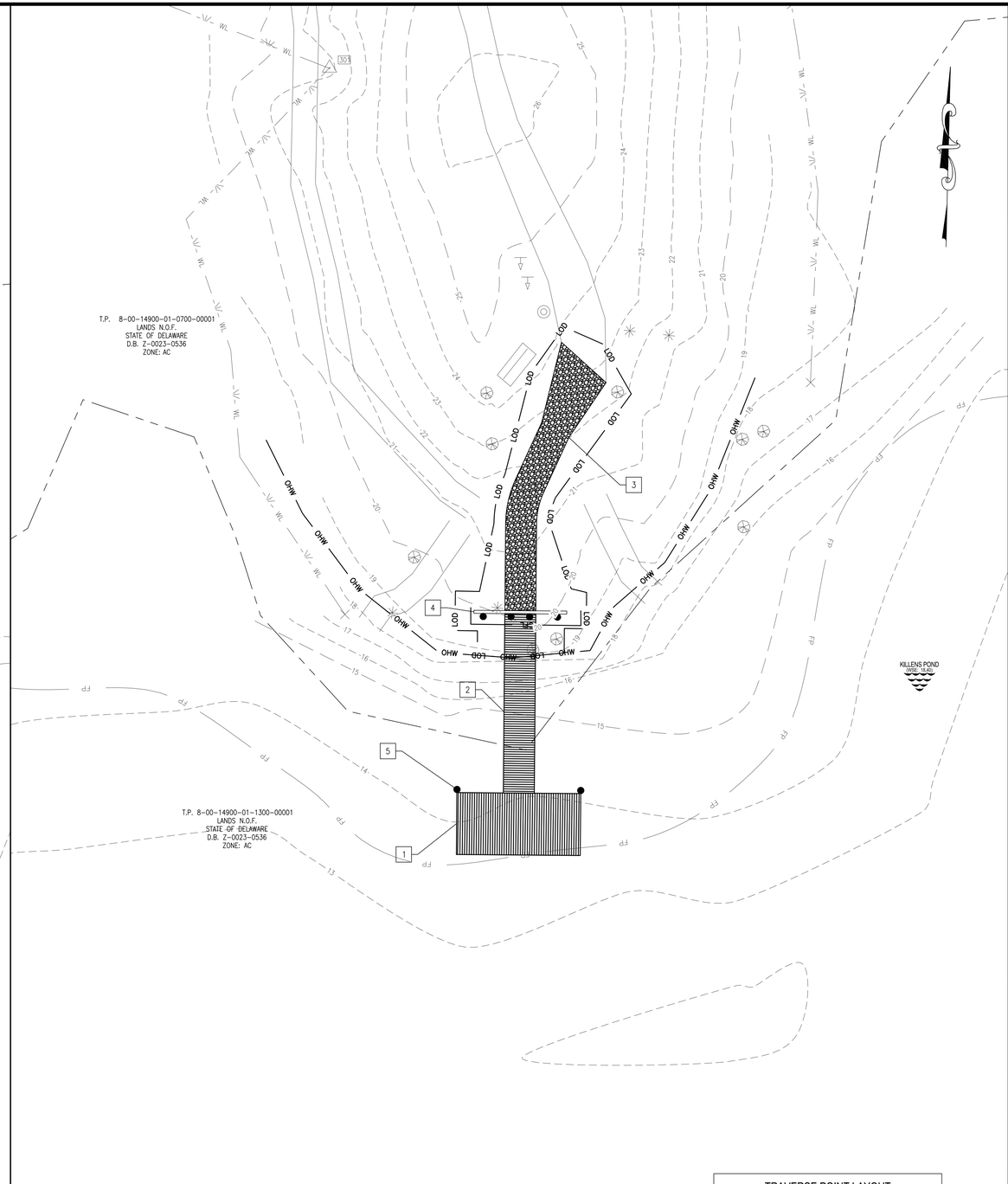
SCALE: 1" = 10'

DEMOLITION NOTES

1 CONTRACTOR TO CLEAR AND GRUB.

NOTES:

1. CONTRACTOR SHALL NOT DISTURB ANY UTILITY LINE UNLESS SPECIFICALLY NOTED.
2. CONTRACTOR SHALL FLAG ALL TREES GREATER THAN 8" DIAMETER AT BREAST HEIGHT. OWNER SHALL REVIEW AND APPROVE ALL FLAGGED TREES PRIOR TO REMOVAL.
3. EXISTING PAVEMENT SHALL NOT BE DISTURBED.
4. CONTRACTOR ACCESS ROUTE SHALL BE APPROVED BY THE OWNER PRIOR TO SITE ACCESS.
5. EXISTING POND WATER SURFACE ELEVATION = 18.40' BASED UPON SURVEY PERFORMED BY CENTURY ENGINEERING ON AUGUST 2024. OHW LINE REFLECTS DETERMINED WATER LINE AS OF THE SAME DATE.
6. PORTIONS OF THE SITE ARE WITHIN A MAPPED 100 YEAR FLOODPLAIN. 100 YEAR FLOOD ELEVATION VARIES BETWEEN 17.00' AND 18.00'.



MARKER 18 DOCK SITE PLAN

SCALE: 1" = 10'

GENERAL NOTES

1 PROPOSED ALUMINUM FLOATING DOCK.

2 PROPOSED ALUMINUM GANGWAY.

3 PROPOSED DELAWARE NO. 10 STONE OVER GRADED AGGREGATE BASE COURSE (DELDOT SPECIFICATION 301 AND 302). SEE DETAIL 4/C424.

4 TIMBER ABUTMENT.

5 PROPOSED TIMBER PILE (DELDOT SPECIFICATION 605).

TRAVERSE POINT LAYOUT

POINT NO.	DESCRIPTION	NORTHING	EASTING	ELEVATION
301	TP301 CIP KW	357885.9474	620905.5868	22.273
302	TP302 CIP KW	357817.1566	620936.7207	21.590
303	TP303 CIP KW	357911.1147	620954.1611	22.920

0' 10' 20' 30'

SCALE: 1"=10'

REVISIONS:

DATE:	DESCRIPTION:	BY:

KILLENS POND STATE PARK
KILLENS POND BOAT DOCKS

MARKER 18 DOCK SITE PLAN

SEAL:

ALEXANDER E. SCHMID
LICENSE
NO. 16139
PROFESSIONAL ENGINEER
STATE OF DELAWARE

06-20-2025

CIVIL ENGINEER:

CENTURY ENGINEERING
A Kleinfelder Company

CEI CONTRACT NO.: 25000286.001A

DELAWARE
DIVISION OF PARKS AND RECREATION

DESIGNED BY: EMC

DRAWN BY: ZTP

CHECKED BY: AES

DATE: JUNE 2025

SCALE: 1" = 10'

SHEET NO.: C414

CONTRACT NO.: —

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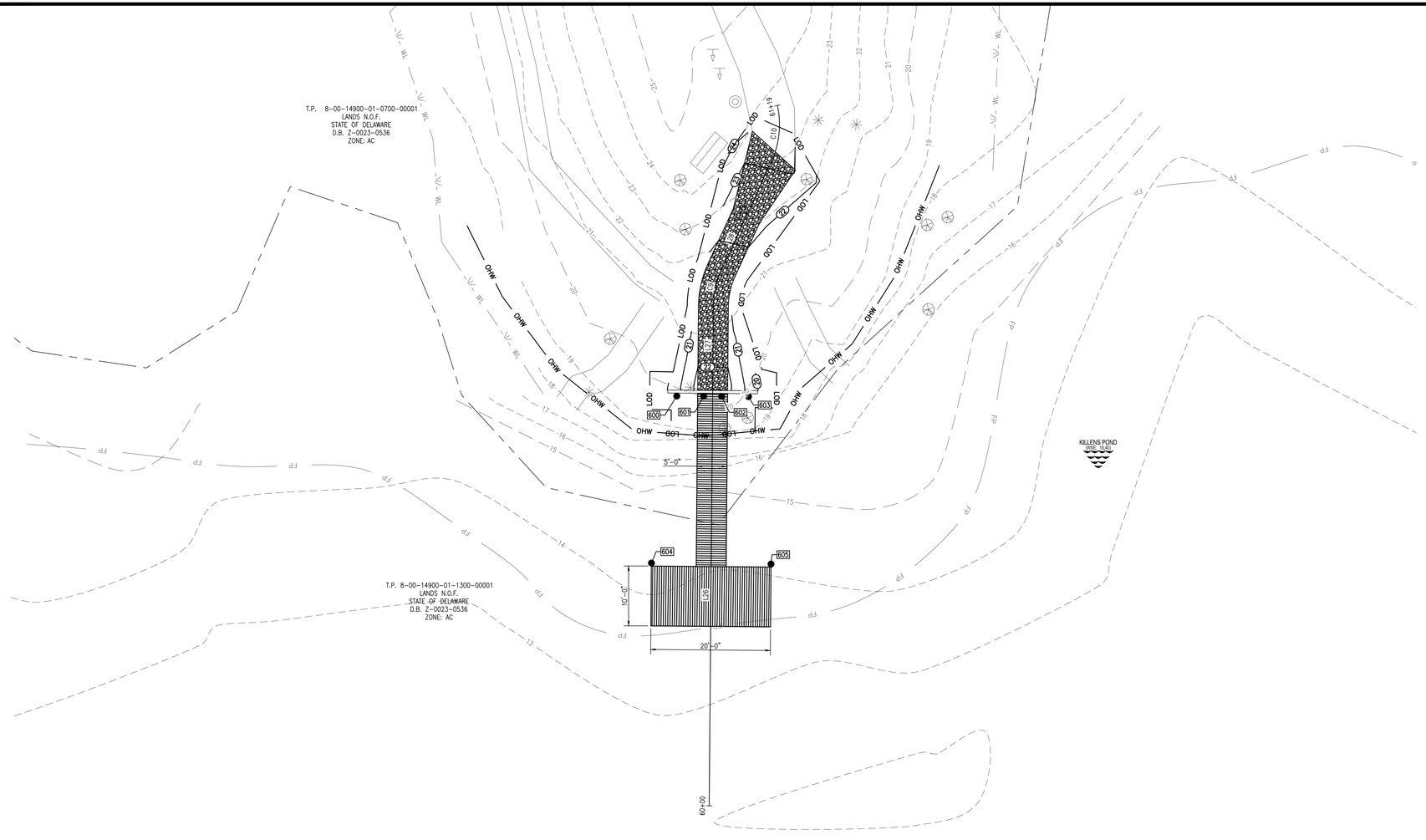
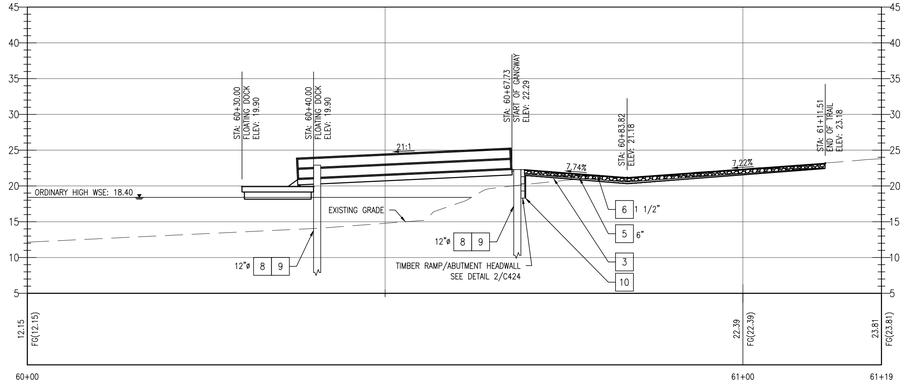
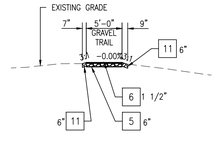


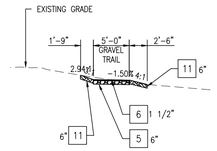
MARKER 18 DOCK LAYOUT
SCALE: 1" = 10'



MARKER 18 BOAT DOCK PROFILE
HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 1'



MARKER 18 BOAT DOCK TYPICAL SECTION STA 60+69.47 TO 60+83.28
SCALE: 1" = 10'



MARKER 18 BOAT DOCK TYPICAL SECTION STA. 60+83.28 TO 61+11.51
SCALE: 1" = 10'

TRAVERSE POINT LAYOUT

POINT NO.	DESCRIPTION	NORTHING	EASTING	ELEVATION
301	TP301 CIP KW	357885.9474	620905.5868	22.273
302	TP302 CIP KW	357817.1566	620936.7207	21.590
303	TP303 CIP KW	357911.1147	620954.1611	22.920

MARKER 18 DOCK PILE LAYOUT

POINT NO.	NORTHING	EASTING	TOP ELEV.	TIP ELEV.
600	357797.3636	620930.3947	22.29	6.08
601	357797.3261	620934.8945	22.29	6.08
602	357797.2970	620937.8944	22.29	6.08
603	357797.2636	620942.3943	22.29	6.08
604	357769.4278	620926.1661	22.90	0.08
605	357769.2613	620946.1571	22.90	0.08

MARKER 18 ALIGNMENT

NUMBER	LENGTH	START STA.	END STA.	LINE/CHORD DIRECTION	START NORTHING	START EASTING	END NORTHING	END EASTING
L26	70.50	60+00.00	60+70.50	N00° 28' 37.48"E	357728.8460	620935.8244	357799.3435	620936.4114
L27	12.97	60+70.50	60+83.47	N00° 28' 37.48"E	357799.3435	620936.4114	357812.3102	620936.5194
C9	6.335	60+83.47	60+89.80	N12° 34' 30.41"E	357812.3102	620936.5194	357818.4470	620937.8883
L28	19.89	60+89.80	61+09.69	N24° 40' 23.34"E	357818.4470	620937.8883	357836.5233	620946.1922
C10	9.671	61+09.69	61+19.36	N06° 12' 12.62"E	357836.5233	620946.1922	357845.9717	620947.2193

REFERENCED DELDOT ITEMS

PLAN CALLOUT	DELDOT SPECIFICATION SECTION	DESCRIPTION
1	201	CLEARING AND GRUBBING
2	202	EXCAVATION AND EMBANKMENT
3	209	BORROW, TYPE F
4	211	REMOVAL OF STRUCTURES AND OBSTRUCTIONS
5	301	GRADED AGGREGATE BASE COURSE, TYPE B
6	302	DELAWARE NO. 10 STONE
7	501	PCC PAVEMENT
8	605	PROVIDE TIMBER PILES – TREATED 12"
9	605	INSTALL TIMBER PILES – 12"
10	708	GEOTEXTILES SEPERATION
11	908	TOPSOIL, 6" DEPTH

0' 10' 20' 30'
SCALE: 1"=10'

REVISIONS:
DATE: DESCRIPTION: BY:

KILLENS POND STATE PARK
KILLENS POND BOAT DOCKS

MARKER 18 DOCK SITE LAYOUT AND PROFILE

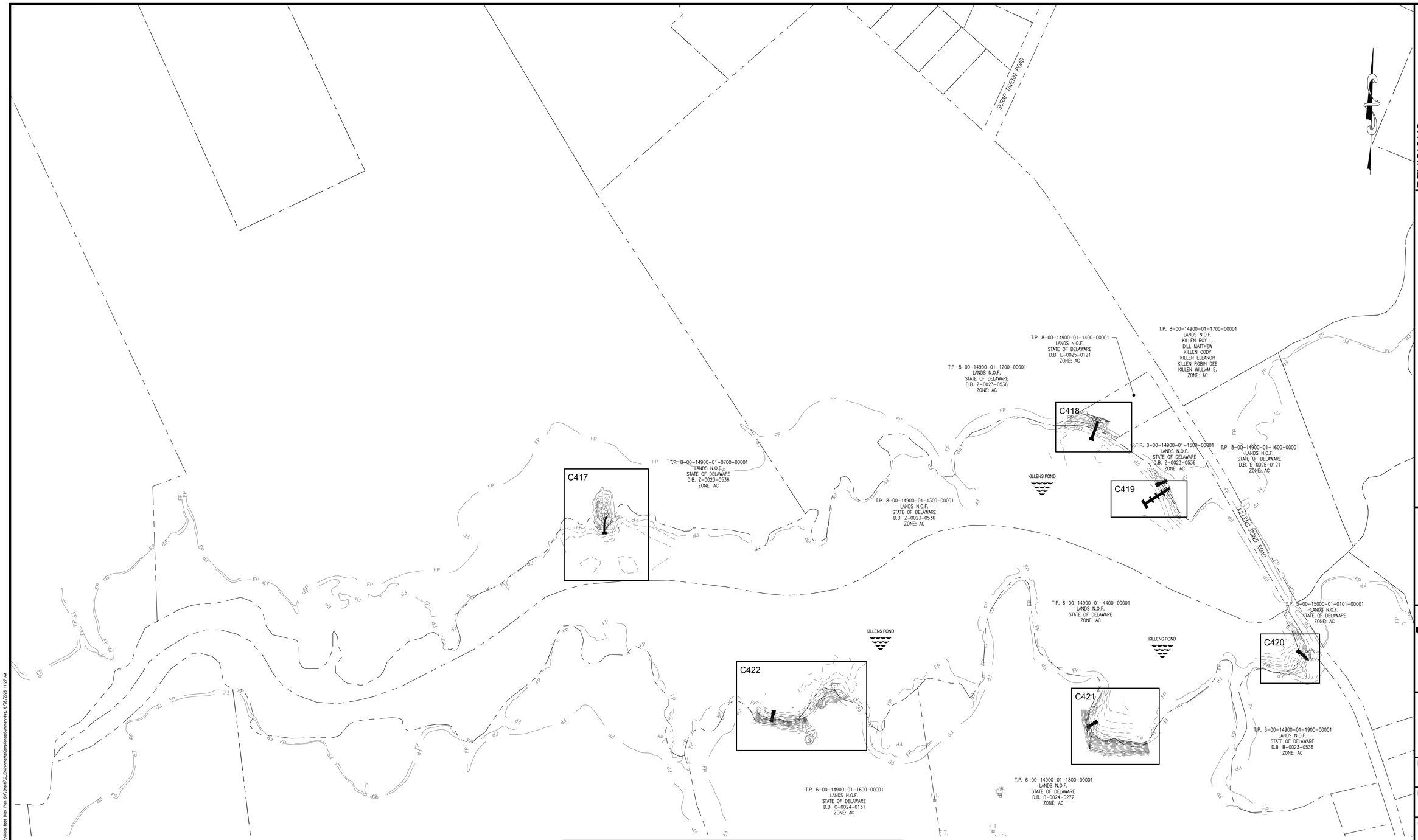
SEAL:
ALEXANDER E. SCHMIDT
LICENSED
NO. 16139
PROFESSIONAL ENGINEER
06-20-2025

CIVIL ENGINEER:
CENTURY ENGINEERING
A Kleinfelder Company

CEI CONTRACT NO.: 25000286.001A

DESIGNED BY: EMC
DRAWN BY: ZTP
CHECKED BY: AES
DATE: JUNE 2025
SCALE: 1" = 10'
SHEET NO.: C415
CONTRACT NO.: —

L:\State of Delaware\25000286.001A-DNREC Components\Working\Killens Pond\CADD\Killens Boat Dock Proj Set\Sheets\C_SitePlan(0).dwg, 6/18/2025 11:08 AM



PERMANENT OPEN WATER IMPACT AREA SCHEDULE

SHEET	IMPACT DESCRIPTION	AREA (SF)	AREA (AC)	JURISDICTION	LOSS AREA (AC)
C417	SHADING FROM DOCK	313.63	0.0072	DNREC	0.0000
C418	SHADING FROM DOCK	731.81	0.0168	DNREC	0.0000
C419	SHADING FROM DOCK	2,334.86	0.0536	DNREC	0.0000
C420	SHADING FROM DOCK	518.36	0.0119	DNREC	0.0000
C421	SHADING FROM DOCK	535.79	0.0123	DNREC	0.0000
C422	SHADING FROM DOCK	492.28	0.0113	DNREC	0.0000
TOTAL FOR THIS PROJECT		4,926.73	0.1130	DNREC	0.0000

REVISIONS:

DATE:	DESCRIPTION:	BY:

KILLENS POND STATE PARK
KILLENS POND BOAT DOCKS

ENVIRONMENTAL COMPLIANCE SUMMARY PLAN

SEAL:

ALEXANDER E. SCHMIDT
LICENSE
NO. 16139
PROFESSIONAL ENGINEER

06-20-2025

CIVIL ENGINEER:

CENTURY ENGINEERING
A Kleinfelder Company

CEI CONTRACT NO.: 25000286.001A

DELAWARE
DIVISION OF PARKS AND RECREATION

DESIGNED BY: EMC

DRAWN BY: ZTP

CHECKED BY: AES

DATE: JUNE 2025

SCALE: 1" = 200'

SHEET NO.: C416

CONTRACT NO.: —

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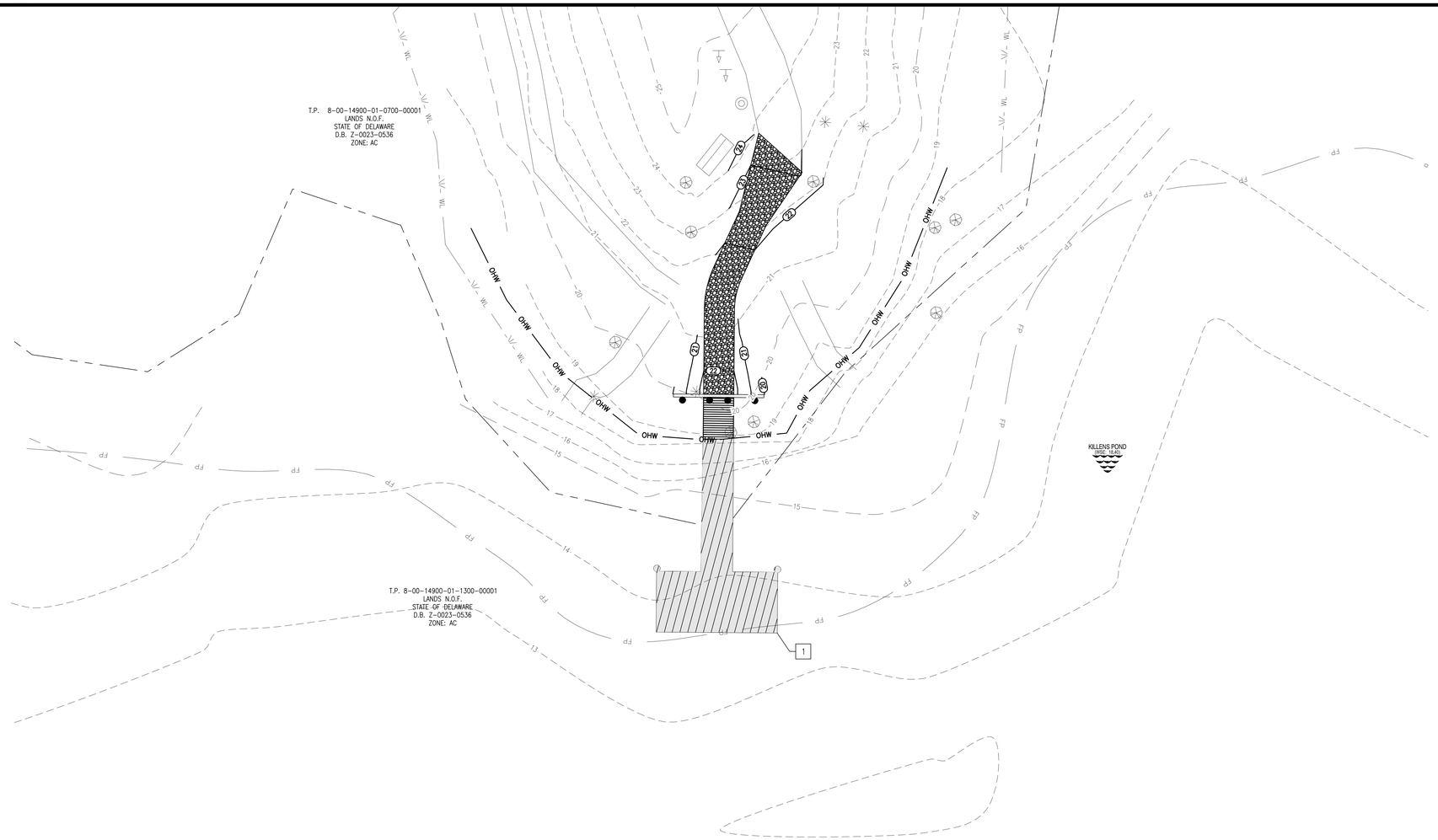

MARKER 18 DOCK LAYOUT
SCALE: 1" = 10'

PERMANENT OPEN WATER IMPACT AREA SCHEDULE							
PLAN CALLOUT	IMPACT DESCRIPTION	AREA (SF)	AREA (AC)	VOLUME (CY)	JURISDICTION	LOSS VS IMPACT	LOSS AREA (AC)
1	SHADING FROM DOCK	313.63	0.0072	11.45	DNREC	IMPACT	0.0000

LEGEND	
	PERMANENT IMPACT AREA

CONSTRUCTION RESTRICTION NOTES:

1. NO IN WATER WORK FROM ARPIL 1 TO JUNE 30.
2. NO TREE CUTTING/TRIMMING FROM MAY 15 TO JULY 31.
3. AVOID REMOVAL OF BALD CYPRESS AS MUCH AS POSSIBLE.

0' 10' 20' 30'
SCALE: 1"=10'

REVISIONS:

DATE:	DESCRIPTION:	BY:

KILLENS POND STATE PARK
KILLENS POND BOAT DOCKS

MARKER 18 DOCK ENVIRONMENTAL COMPLIANCE

SEAL:

ALEXANDER E. SCHMIDT
LICENSE
NO. 16139
PROFESSIONAL ENGINEER
06-20-2025

CIVIL ENGINEER:

CENTURY ENGINEERING
A Kleinfelder Company

CEI CONTRACT NO.: 25000286.001A

DELAWARE
DIVISION OF PARKS AND RECREATION

DESIGNED BY: EMC

DRAWN BY: ZTP

CHECKED BY: AES

DATE: JUNE 2025

SCALE: 1" = 10'

SHEET NO.: C417

CONTRACT NO.: —

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NATURE CENTER PIER LAYOUT

SCALE: 1" = 10'

PERMANENT OPEN WATER IMPACT AREA SCHEDULE							
PLAN CALLOUT	IMPACT DESCRIPTION	AREA (SF)	AREA (AC)	VOLUME (CY)	JURISDICTION	LOSS VS IMPACT	LOSS AREA (AC)
2	SHADING FROM DOCK	731.81	0.0168	20.17	DNREC	IMPACT	0.0000

LEGEND	
	PERMANENT IMPACT AREA

CONSTRUCTION RESTRICTION NOTES:

1. NO IN WATER WORK FROM ARPIL 1 TO JUNE 30.
2. NO TREE CUTTING/TRIMMING FROM MAY 15 TO JULY 31.
3. AVOID REMOVAL OF BALD CYPRESS AS MUCH AS POSSIBLE.

0' 10' 20' 30'

SCALE: 1" = 10'

REVISIONS:

DATE:	DESCRIPTION:	BY:

KILLENS POND STATE PARK
KILLENS POND BOAT DOCKS

NATURE CENTER PIER ENVIRONMENTAL COMPLIANCE

SEAL:

ALEXANDER E. SCHMIDT LICENSE NO. 16139 PROFESSIONAL ENGINEER

06-20-2025

CIVIL ENGINEER:

CENTURY ENGINEERING
A Kleinfelder Company

CEI CONTRACT NO.: 25000286.001A

DESIGNED BY: EMC

DRAWN BY: ZTP

CHECKED BY: AES

DATE: JUNE 2025

SCALE: 1" = 10'

SHEET NO.: C418

CONTRACT NO.: —

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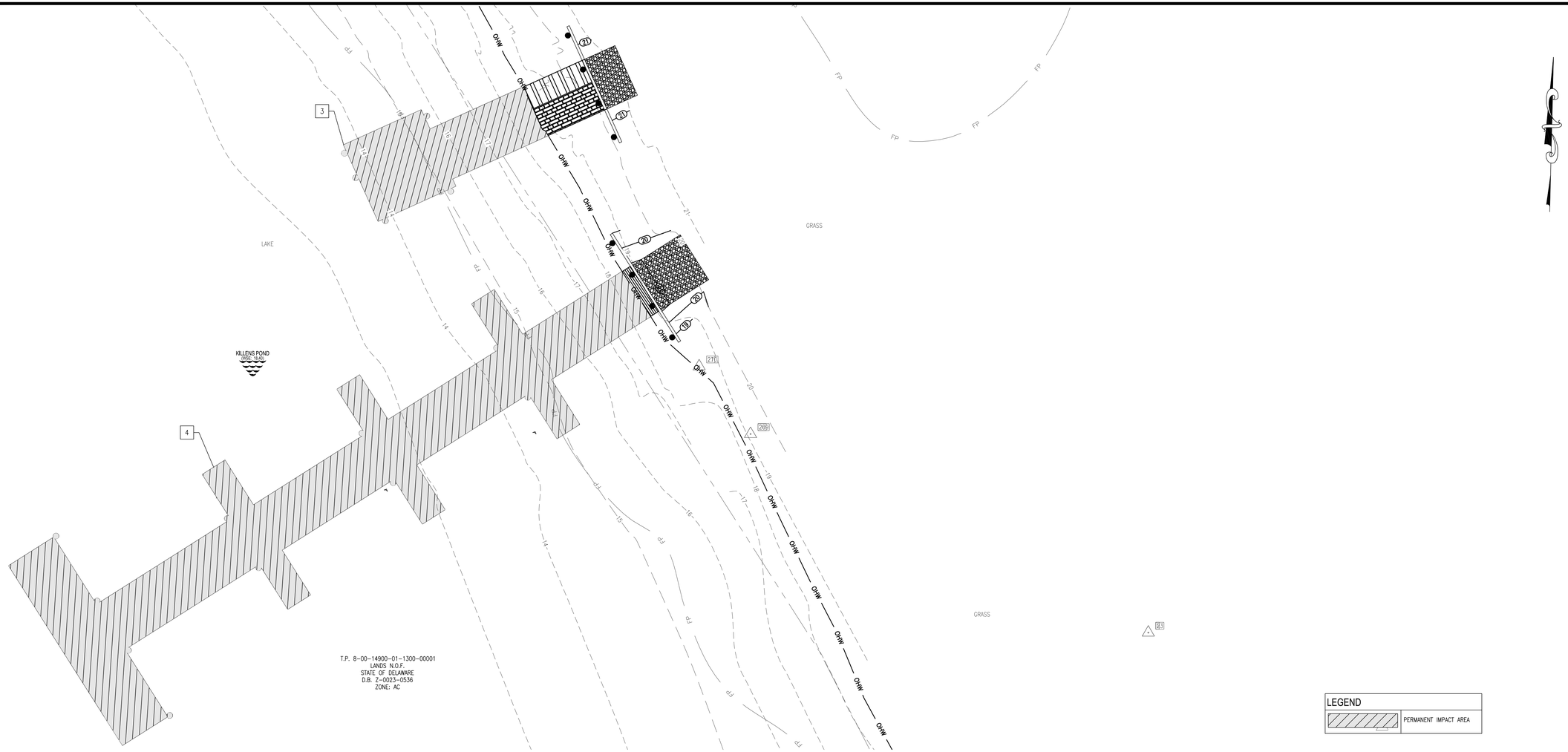

BOAT RENTAL DOCK LAYOUT
SCALE: 1" = 10'

PERMANENT OPEN WATER IMPACT AREA SCHEDULE							
PLAN CALLOUT	IMPACT DESCRIPTION	AREA (SF)	AREA (AC)	VOLUME (CY)	JURISDICTION	LOSS VS IMPACT	LOSS AREA (AC)
3	SHADING FROM DOCK	453.02	0.0104	16.94	DNREC	IMPACT	0.0000
4	SHADING FROM DOCK	1,881.79	0.0432	68.57	DNREC	IMPACT	0.0000
TOTAL PERMANENT OPEN WATER IMPACTS		2,334.86	0.0536	85.51	DNREC	IMPACT	0.0000

LEGEND

	PERMANENT IMPACT AREA

CONSTRUCTION RESTRICTION NOTES:

1. NO IN WATER WORK FROM ARPIL 1 TO JUNE 30.
2. NO TREE CUTTING/TRIMMING FROM MAY 15 TO JULY 31.
3. AVOID REMOVAL OF BALD CYPRESS AS MUCH AS POSSIBLE.

0' 10' 20' 30'
SCALE: 1"=10'

REVISIONS:

DATE:	DESCRIPTION:	BY:

KILLENS POND STATE PARK
KILLENS POND BOAT DOCKS

BOAT RENTAL DOCK ENVIRONMENTAL COMPLIANCE

SEAL:

ALEXANDER E. SCHMIDT
LICENSE
NO. 16139
PROFESSIONAL ENGINEER
STATE OF DELAWARE
06-20-2025

CIVIL ENGINEER:

CENTURY ENGINEERING
A Kleinfelder Company

CEI CONTRACT NO.: 25000286.001A

DELAWARE
DIVISION OF PARKS AND RECREATION

DESIGNED BY: EMC
DRAWN BY: ZTP
CHECKED BY: AES
DATE: JUNE 2025
SCALE: 1" = 10'
SHEET NO.: C419
CONTRACT NO.: —

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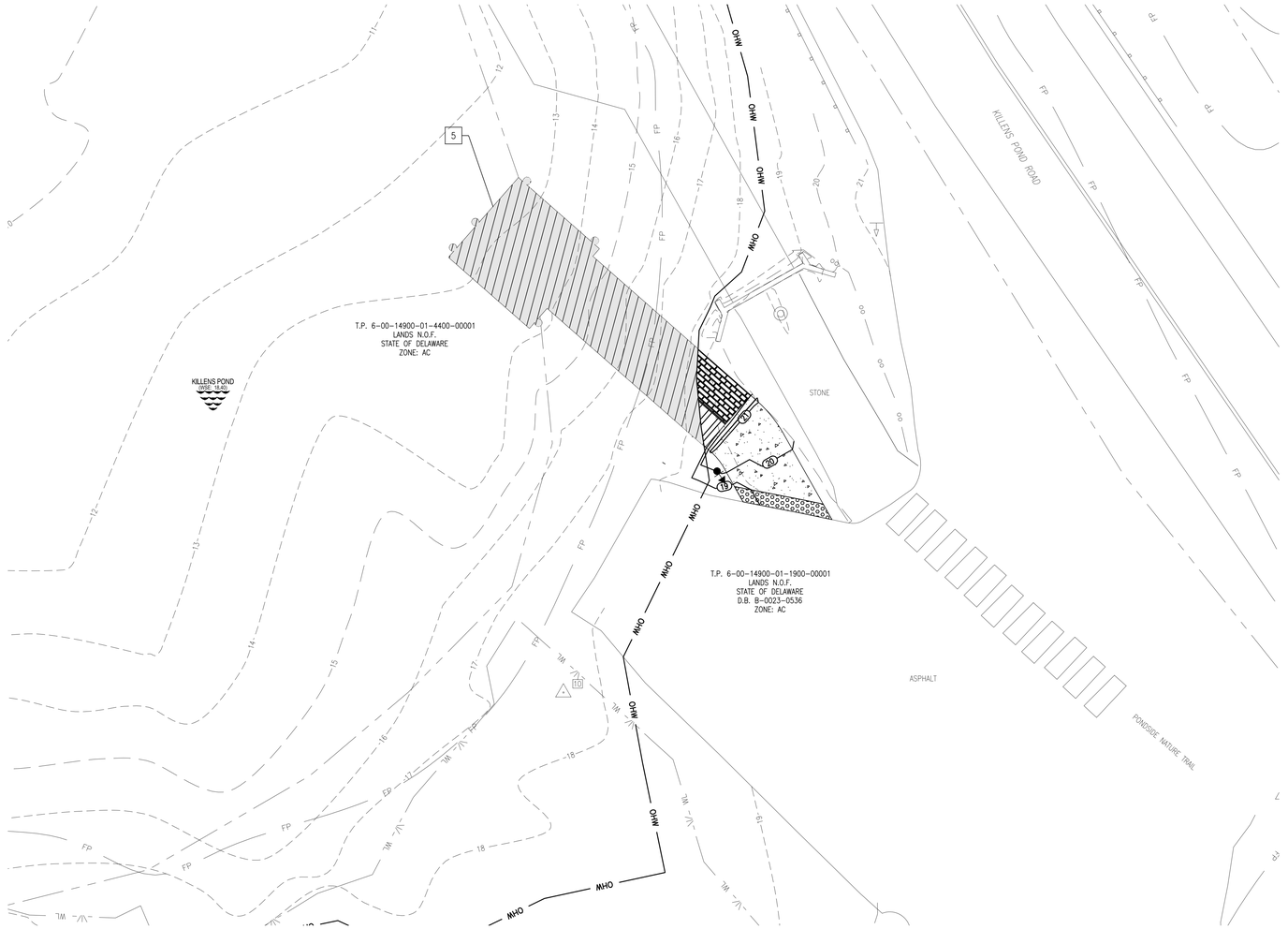

BOAT LAUNCH DOCK LAYOUT
SCALE: 1" = 10'

PERMANENT OPEN WATER IMPACT AREA SCHEDULE							
PLAN CALLOUT	IMPACT DESCRIPTION	AREA (SF)	AREA (AC)	VOLUME (CY)	JURISDICTION	LOSS VS IMPACT	LOSS AREA (AC)
5	SHADING FROM DOCK	518.36	0.0119	19.68	DNREC	IMPACT	0.0000

LEGEND

	PERMANENT IMPACT AREA

CONSTRUCTION RESTRICTION NOTES:

1. NO IN WATER WORK FROM ARPIL 1 TO JUNE 30.
2. NO TREE CUTTING/TRIMMING FROM MAY 15 TO JULY 31.
3. AVOID REMOVAL OF BALD CYPRESS AS MUCH AS POSSIBLE.

0' 10' 20' 30'
SCALE: 1"=10'

REVISIONS:

DATE:	DESCRIPTION:	BY:

KILLENS POND STATE PARK
KILLENS POND BOAT DOCKS

BOAT LAUNCH DOCK ENVIRONMENTAL COMPLIANCE

SEAL:

ALEXANDER E. SCHMIDT
LICENSED
NO. 16139
PROFESSIONAL ENGINEER
DELAWARE
06-20-2025

CIVIL ENGINEER:

CENTURY ENGINEERING
A Kleinfelder Company

CEI CONTRACT NO.: 25000286.001A

DELAWARE
DIVISION OF PARKS AND RECREATION

DESIGNED BY: EMC
DRAWN BY: ZTP
CHECKED BY: AES
DATE: JUNE 2025
SCALE: 1" = 10'
SHEET NO.: C420
CONTRACT NO.: —

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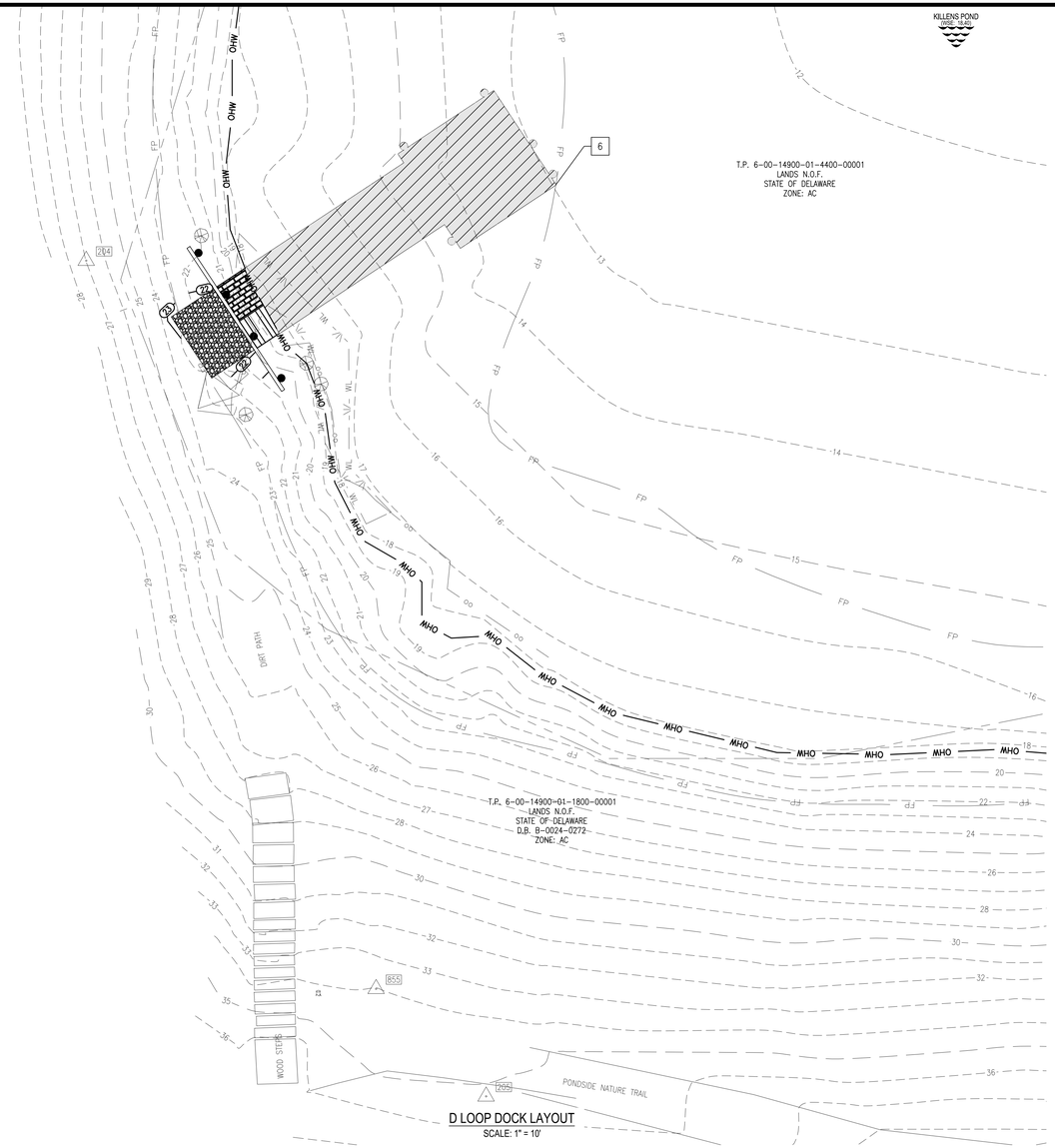

D LOOP DOCK LAYOUT
SCALE: 1" = 10'

LEGEND	
	PERMANENT IMPACT AREA

CONSTRUCTION RESTRICTION NOTES:

1. NO IN WATER WORK FROM ARPIL 1 TO JUNE 30.
2. NO TREE CUTTING/TRIMMING FROM MAY 15 TO JULY 31.
3. AVOID REMOVAL BALD CYPRESS AS MUCH AS POSSIBLE.

0' 10' 20' 30'
SCALE: 1"=10'

PERMANENT OPEN WATER IMPACT AREA SCHEDULE

PLAN CALLOUT	IMPACT DESCRIPTION	AREA (SF)	AREA (AC)	VOLUME (CY)	JURISDICTION	LOSS VS IMPACT	LOSS AREA (AC)
6	SHADING FROM DOCK	535.79	0.0123	18.07	DNREC	IMPACT	0.0000

REVISIONS:

DATE:	DESCRIPTION:	BY:

KILLENS POND STATE PARK
KILLENS POND BOAT DOCKS

D LOOP DOCK ENVIRONMENTAL COMPLIANCE

SEAL:

ALEXANDER E. SCHMIDT
LICENSE
NO. 16139
PROFESSIONAL ENGINEER
DELAWARE
06-20-2025

CIVIL ENGINEER:

CENTURY ENGINEERING
A Kleinfelder Company

CEI CONTRACT NO.: 25000286.001A

DELAWARE
DIVISION OF PARKS AND RECREATION

DESIGNED BY: EMC
DRAWN BY: ZTP
CHECKED BY: AES
DATE: JUNE 2025
SCALE: 1" = 10'
SHEET NO.: C421
CONTRACT NO.: —

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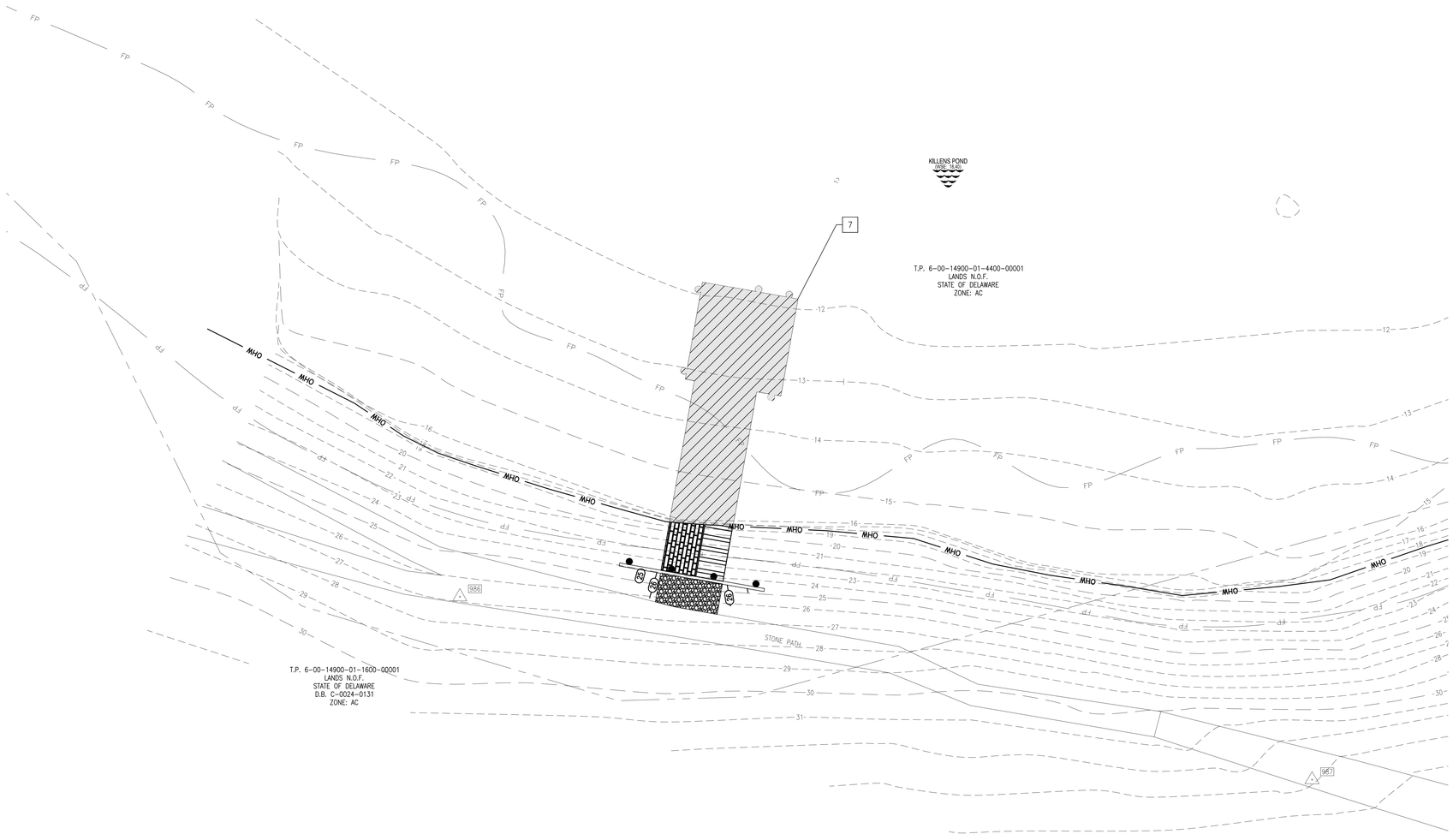

CABIN DOCK LAYOUT
SCALE: 1" = 10'

PERMANENT OPEN WATER IMPACT AREA SCHEDULE							
PLAN CALLOUT	IMPACT DESCRIPTION	AREA (SF)	AREA (AC)	VOLUME (CY)	JURISDICTION	LOSS VS IMPACT	LOSS AREA (AC)
7	SHADING FROM DOCK	492.28	0.0113	19.84	DNREC	IMPACT	0.0000

LEGEND	
	PERMANENT IMPACT AREA

CONSTRUCTION RESTRICTION NOTES:

1. NO IN WATER WORK FROM ARPIL 1 TO JUNE 30.
2. NO TREE CUTTING/TRIMMING FROM MAY 15 TO JULY 31.
3. AVOID REMOVAL OF BALD CYPRESS AS MUCH AS POSSIBLE

0' 10' 20' 30'
SCALE: 1"=10'

REVISIONS:

DATE:	DESCRIPTION:	BY:

KILLENS POND STATE PARK
KILLENS POND BOAT DOCKS

CABIN DOCK ENVIRONMENTAL COMPLIANCE

SEAL:

ALEXANDER E. SCHMIDT
LICENSE
NO. 16139
PROFESSIONAL ENGINEER
DELAWARE

06-20-2025

CIVIL ENGINEER:

CENTURY ENGINEERING
A Kleinfelder Company

CEI CONTRACT NO.: 25000286.001A

DELAWARE
DIVISION OF PARKS AND RECREATION

DESIGNED BY: EMC
DRAWN BY: ZTP
CHECKED BY: AES
DATE: JUNE 2025
SCALE: 1" = 10'
SHEET NO.: C422
CONTRACT NO.: —

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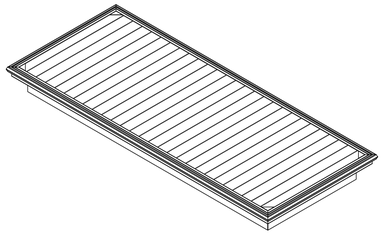
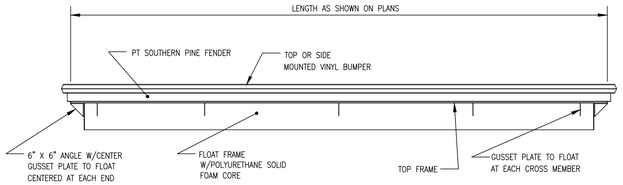
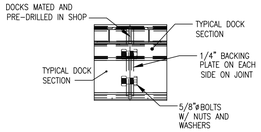


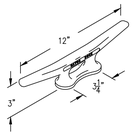
ISOMETRIC VIEW OF ALUMINUM DECKED FULL FLOATING DOCK
NOT TO SCALE



ELEVATION VIEW FOR ALUMINUM DECKED FULL FLOATING DOCK
NOT TO SCALE

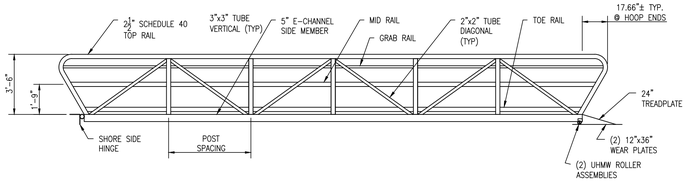


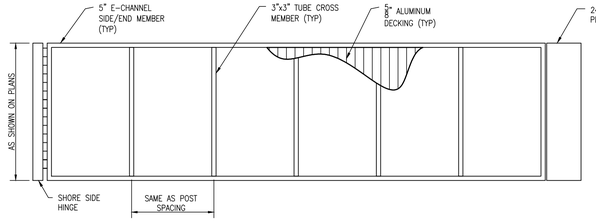
REINFORCED BOLTED DOCK CONNECTION
NOT TO SCALE



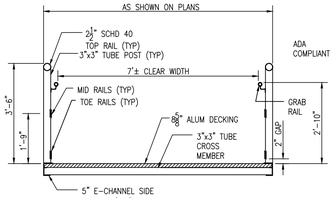
ALUMINUM CLEAT
NOT TO SCALE

* CLEAT TO BE FILLET WELDED



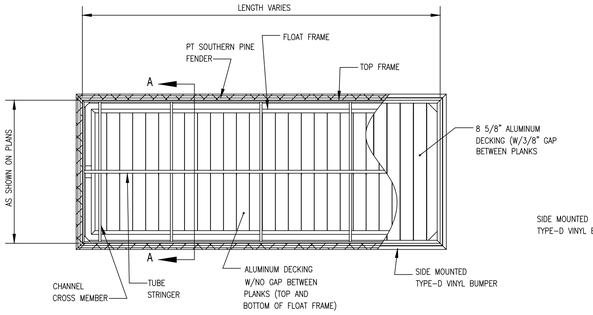


GANGWAY PLAN
SCALE: 1/4"=1'-0"

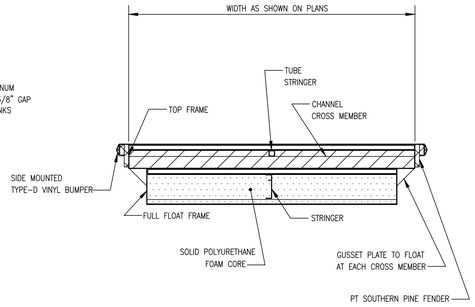


GANGWAY SECTION
SCALE: 1/2"=1'-0"

5 / C423 GANGWAY DETAIL
SCALE: AS SHOWN

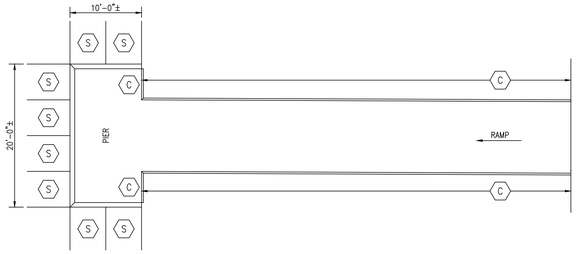


PLAN VIEW OF ALUMINUM DECKED FULL FLOATING DOCK
NOT TO SCALE



SECTION A-A
NOT TO SCALE

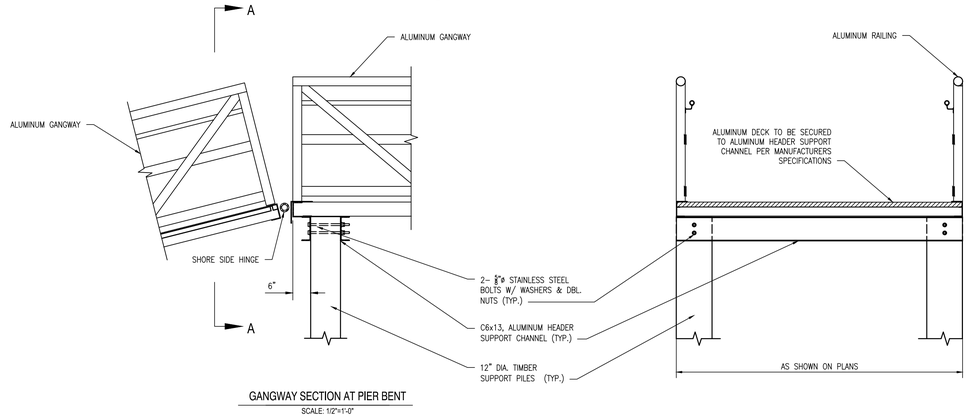
1 / C423 ALUMINUM DECKING FLOATING DOCK DETAIL
NOT TO SCALE



6 / C423 NATURE CENTER RAIL LAYOUT KEY PLAN
SCALE: 1" = 10'

NOTES

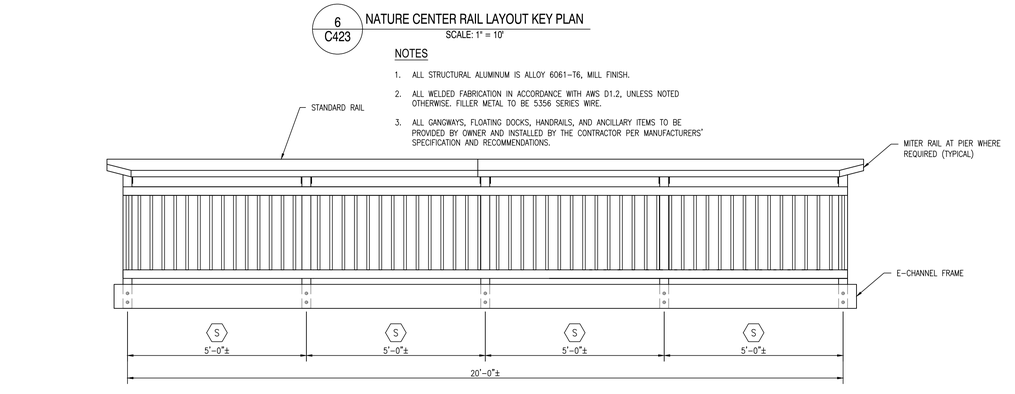
1. ALL STRUCTURAL ALUMINUM IS ALLOY 6061-T6, MILL FINISH.
2. ALL WELDED FABRICATION IN ACCORDANCE WITH AWS D1.2, UNLESS NOTED OTHERWISE. FILLER METAL TO BE 5356 SERIES WIRE.
3. ALL GANGWAYS, FLOATING DOCKS, HANDRAILS, AND ANCILLARY ITEMS TO BE PROVIDED BY OWNER AND INSTALLED BY THE CONTRACTOR PER MANUFACTURERS' SPECIFICATION AND RECOMMENDATIONS.



GANGWAY SECTION AT PIER BENT
SCALE: 1/2"=1'-0"

SECTION A
GANGWAY ELEVATION AT PIER BENT
SCALE: 1/2"=1'-0"

4 / C423 GANGWAY AT PIER BENT DETAIL
SCALE: AS SHOWN

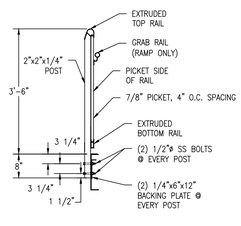


RAIL VIEWED FROM PIER DECK SIDE

ALL COMPONENTS SHOWN ARE PER GATOR DOCK SHOP DRAWINGS

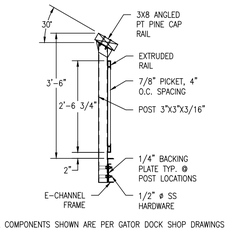
7 / C423 TYPICAL ALUMINUM FISHING RAIL
SCALE: 1/2" = 1'-0"

NOTE:
SEE RAIL LAYOUT KEY PLAN FOR LOCATIONS OF STANDARD FISHING RAIL AND LOW FISHING RAIL.



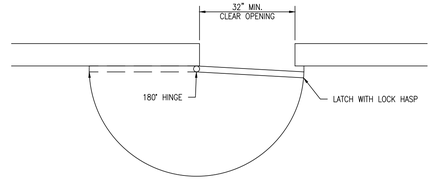
ALL COMPONENTS SHOWN ARE PER GATOR DOCK SHOP DRAWINGS

8 / C423 COMBINATION ALUMINUM RAIL SECTION (C)
SCALE: 1/2" = 1'-0"



ALL COMPONENTS SHOWN ARE PER GATOR DOCK SHOP DRAWINGS

9 / C423 STANDARD ALUMINUM RAIL SECTION (S)
SCALE: 1/2" = 1'-0"



10 / C423 NATURE RESERVE SWING GATE DETAIL
SCALE: 1/2" = 1'-0"

REVISIONS:

BY:	DESCRIPTION:	DATE:

KILLENS POND STATE PARK
KILLENS POND BOAT DOCKS

CONSTRUCTION DETAILS

SEAL:
ALEXANDER E. SCHMIDT LICENSED PROFESSIONAL ENGINEER NO. 16139 DELAWARE
06-20-2025

CIVIL ENGINEER:
CENTURY ENGINEERING
A Kleinfelder Company

CEI CONTRACT NO.: 25000286.001A

DESIGNED BY: EMC
DRAWN BY: ZTP
CHECKED BY: AES
DATE: JUNE 2025
SCALE: AS NOTED
SHEET NO.: C423
CONTRACT NO.: —

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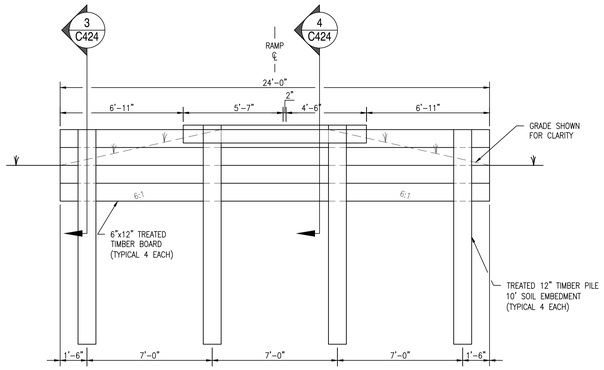
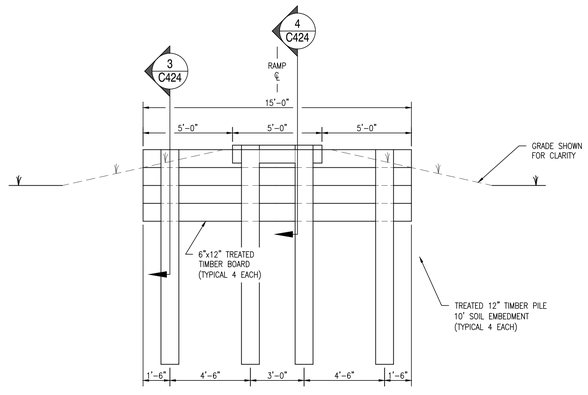


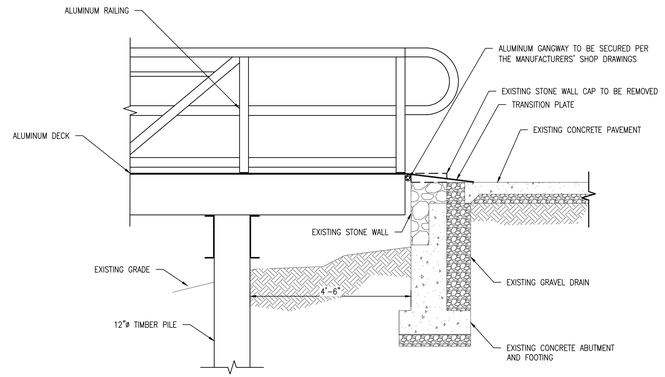
1 C424 TIMBER RAMP ABUTMENT / HEADWALL WITH KAYAK LAUNCH DOCK OR 10' WIDE GANGWAY

SCALE: 1/4" = 1'-0"



2 C424 TIMBER RAMP ABUTMENT / HEADWALL WITHOUT KAYAK LAUNCH DOCK

SCALE: 1/4" = 1'-0"



6 C424 PIER CANTILEVER TRANSITION DETAIL - NATURE CENTER

SCALE: 1/2"=1'-0"

3 C424 TIMBER HEADWALL

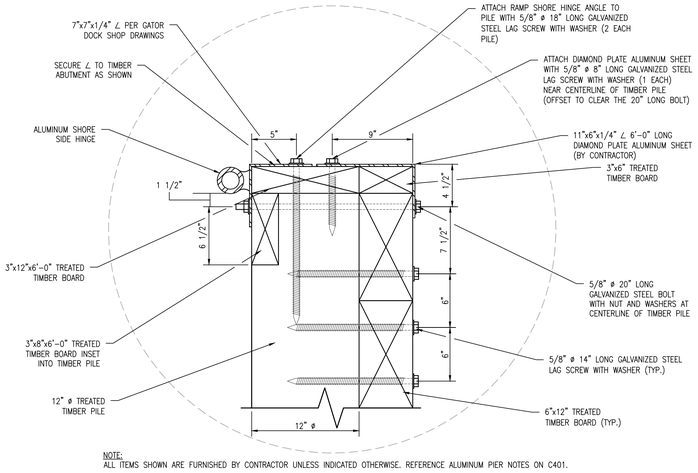
SCALE: 1/2" = 1'-0"

4 C424 TIMBER RAMP ABUTMENT

SCALE: 1/2" = 1'-0"

7 C424 GANGWAY ABUTMENT DETAIL - BOAT LAUNCH

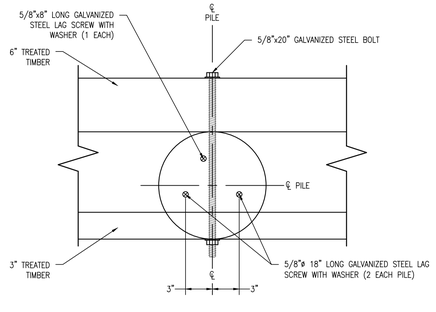
SCALE: 1/2"=1'-0"



NOTE:
ALL ITEMS SHOWN ARE FURNISHED BY CONTRACTOR UNLESS INDICATED OTHERWISE. REFERENCE ALUMINUM PIER NOTES ON C401.

4A C424 TIMBER RAMP ABUTMENT - ENLARGED VIEW

SCALE: 1 1/2" = 1'-0"



ALUMINUM ∠'S NOT SHOWN FOR CLARITY

5 C424 TIMBER RAMP ABUTMENT PILE - PLAN VIEW

SCALE: 1 1/2" = 1'-0"

L:\State of Delaware\25000286.001A-DNREC Campgrounds\Working\Killens Pond\CAD\Killens Boat Dock Proj Set\Sheet\C_ConstructionDetails03.dwg, 6/18/2025 11:11 AM

REVISIONS:

DATE:	DESCRIPTION:	BY:

KILLENS POND STATE PARK
KILLENS POND BOAT DOCKS

CONSTRUCTION DETAILS

SEAL:

ALEXANDER E. SCHMIDT LICENSE NO. 16139 PROFESSIONAL ENGINEER DELAWARE

06-20-2025

CIVIL ENGINEER:

CENTURY ENGINEERING
A Kleinfelder Company

CEI CONTRACT NO.: 25000286.001A

DELAWARE DIVISION OF PARKS AND RECREATION

DESIGNED BY: EMC

DRAWN BY: ZTP

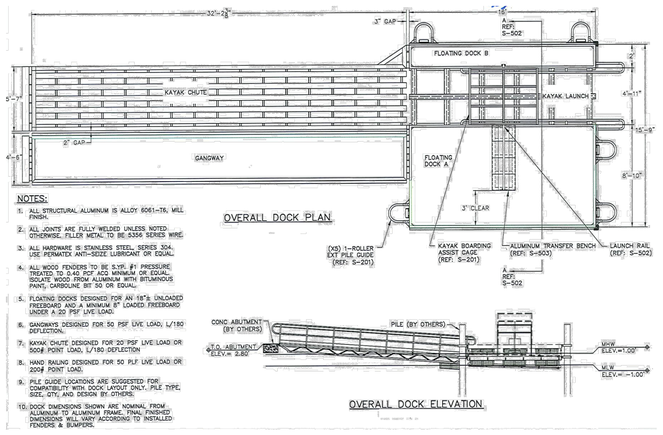
CHECKED BY: AES

DATE: JUNE 2025

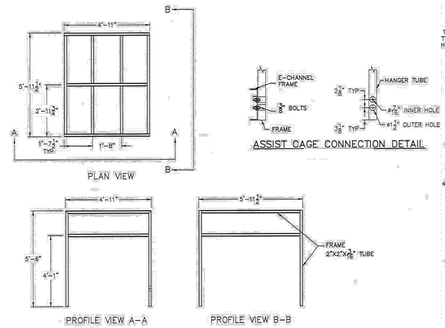
SCALE: AS NOTED

SHEET NO.: C424

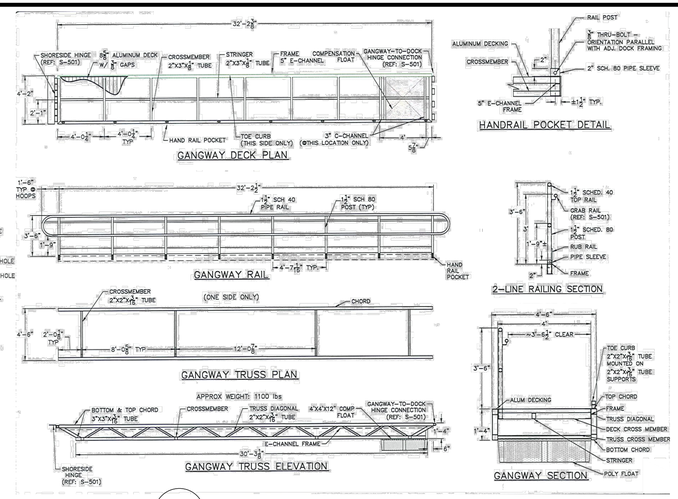
CONTRACT NO.: —



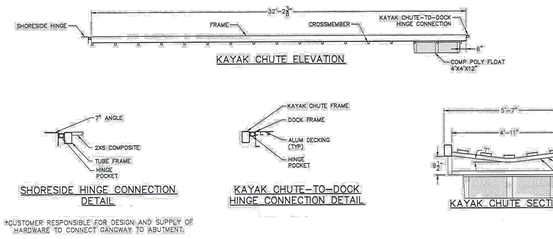
1 C425 OVERALL KAYAK LAUNCH DOCK DETAIL
SCALE: N.T.S.



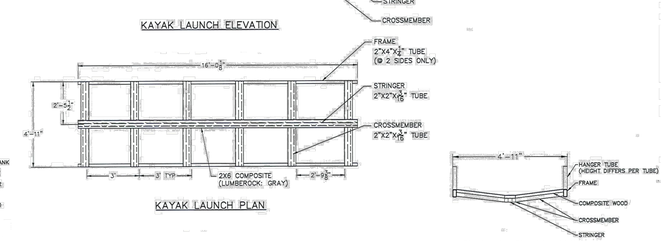
2 C425 KAYAK BOARDING ASSIST CAGE DETAIL
SCALE: N.T.S.



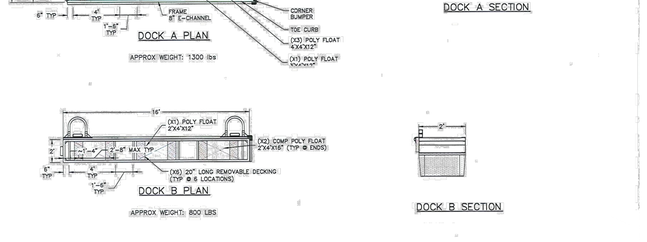
3 C425 ALUMNIUM GANGWAY DETAIL
SCALE: N.T.S.



3 C425 KAYAK CHUTE DETAILS
SCALE: N.T.S.



4 C425 KAYAK LAUNCH DETAILS
SCALE: N.T.S.



4 C425 KAYAK DOCK DETAILS
SCALE: N.T.S.

REVISIONS:
DATE: DESCRIPTION: BY:

KILLENS POND STATE PARK
KILLENS POND BOAT DOCKS

CONSTRUCTION DETAILS

SEAL:
ALEXANDER E. SCHMIDT LICENSE NO. 16139 PROFESSIONAL ENGINEER
06-20-2025

CIVIL ENGINEER:
CENTURY ENGINEERING
A Kleinfelder Company

CEI CONTRACT NO.: 25000286.001A

DELAWARE DIVISION OF PARKS AND RECREATION

DESIGNED BY: EMC
DRAWN BY: ZTP
CHECKED BY: AES
DATE: JUNE 2025
SCALE: AS NOTED
SHEET NO.: C425
CONTRACT NO.: —

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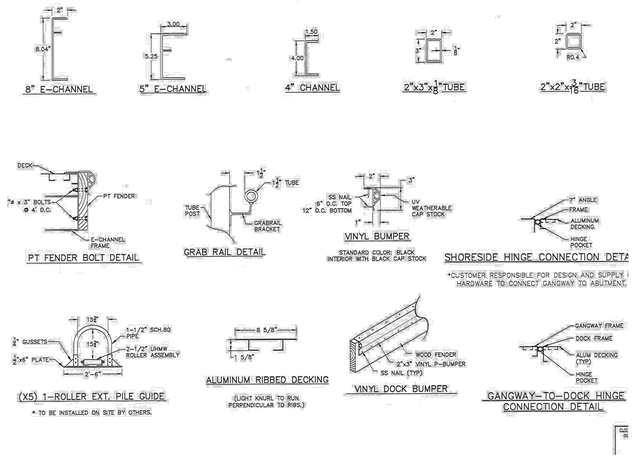
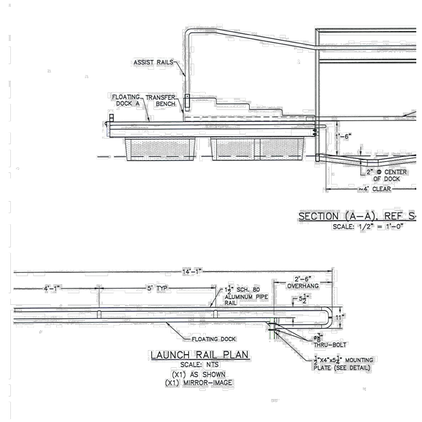
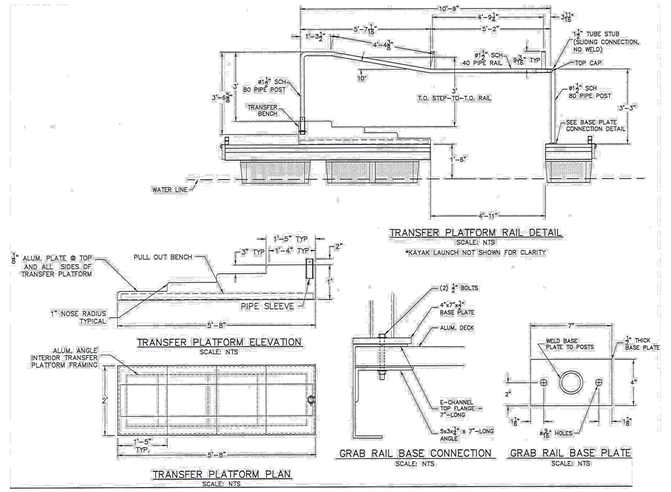


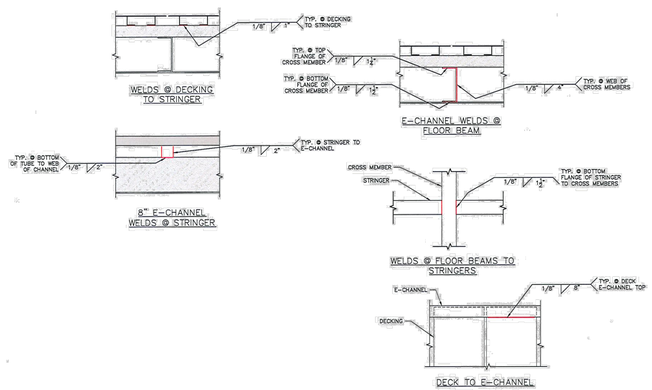
1 C426 KAYAK LAUNCH DOCK COMPONENTS DETAILS
SCALE: N.T.S.



2 C426 KAYAK LAUNCH DOCK COMPONENTS DETAILS
SCALE: N.T.S.



3 C426 TRANSFER BENCH DETAILS
SCALE: N.T.S.



4 C426 WELD DETAILS
SCALE: N.T.S.

REVISIONS:

DATE:	DESCRIPTION:	BY:

KILLENS POND STATE PARK
KILLENS POND BOAT DOCKS

CONSTRUCTION DETAILS

SEAL:

ALEXANDER E. SCHMIDT — LICENSE — NO. 16139 — PROFESSIONAL ENGINEER

06-20-2025

CIVIL ENGINEER:

CENTURY ENGINEERING
A Kleinfelder Company

CEI CONTRACT NO.: 25000286.001A

DELAWARE — DIVISION OF PARKS AND RECREATION

DESIGNED BY: EMC

DRAWN BY: ZTP

CHECKED BY: AES

DATE: JUNE 2025

SCALE: AS NOTED

SHEET NO.: C426

CONTRACT NO.: —

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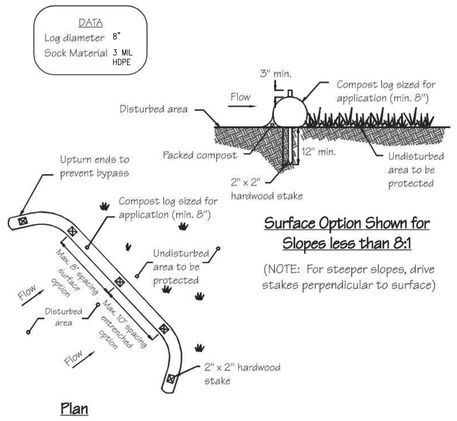
Standard Detail & Specifications

Compost Filter Log



NOTE: Manufacturer's recommendations supersede any installation details shown for this practice

Source:	Symbol:	Detail No.
Adapted from MD Stds & Specs for ESC & Filtrexx™ International	CFL	**DE-ESC-3.1.7** Sheet 1 of 2 Effective July 2023

Standard Detail & Specifications

Compost Filter Log

Construction Notes:

1. Prior to installation, clear bedding area of obstructions including rocks or debris larger than 1 inch and fill in any sharp depression areas.
2. If socks are prepared on-site, fill the sock fabric using a pneumatic blower so that the logs are rigid and do not deform. Terminate at the desired length.
3. For trenched applications, excavate 2 to 4 inches below grade along the width and length of the compost filter log.
4. Install the compost filter logs perpendicular to the flow direction and parallel to the slope with the beginning and end of the installation pointing up the slope a minimum of 1 foot elevation difference. On sites where this is not possible, upturn at a minimum length of 10' at a 30 degree angle to prevent runoff bypass.
5. For untrenched applications, blow or hand pack soil, mulch, or compost on the upslope side of the log, filling the bottom void area.
6. Stake the filled log every 10 feet maximum through the center of the sock for trenched applications, or every 8 feet for untrenched. The stake shall be a 2" by 2" hardwood. It should extend 12" below grade and protrude at least 3" above the top of the sock. If located on a slope greater than 8:1, the stake shall be angled downslope at a 45 degree angle to prevent the force of the water from dislodging to log.
7. When the length of the compost filter log needed exceeds the available compost filter sock length, the next sock shall be overlapped a minimum of 12" before being filled, and a stake placed through both socks at the overlap.
8. Remove accumulated sediment when it has reached half of the effective height of the log.
9. Inspect weekly and after rain event. If sock is degrading or the sock is failing, vegetate to secure the compost, replace the log, or reinforce with an additional log. If the log has been crushed due to construction equipment, it can be "fluffed" back to its effective height. If the effective height can no longer be restored, the log shall be replaced or reinforced with an additional compost filter log.

Source:	Symbol:	Detail No.
Adapted from MD Stds & Specs for ESC & Filtrexx™ International	CFL	**DE-ESC-3.1.7** Sheet 2 of 2 Effective July 2023

Standard Detail & Specifications

Topsoiling

Construction Notes:

1. **Site Preparation** (Where Topsoil is to be added)

   Note: When topsoiling, maintain needed erosion and sediment control practices such as diversions, grade stabilization structures, berms, dikes, waterways and sediment basins.

   a. Grading - Grades on the areas to be topsoiled which have been previously established shall be maintained.

   b. Liming - Where the topsoil is either highly acid or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet). Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.

   c. Tilling - After the areas to be topsoiled have been brought to grade, and immediately prior to dumping and spreading the topsoil, the subgrade shall be loosened by discing or by scarifying to a depth of a least 3 inches to permit bonding of the topsoil to the subsoil. Pack by passing a bulldozer up and down over the entire surface area of the slope to create horizontal erosion check slots to prevent topsoil from sliding down the slope.

2. **Topsoil Material and Application**

   Note:Topsoil salvaged from the existing site may often be used but it should meet the same standards as set forth in these specifications. The depth of topsoil to be salvaged shall be no more than the depth described as a representative profile for that particular soil type as described in the soil survey published by USDA-SCS in cooperation with Delaware Agricultural Experimental Station.

Source:	Symbol:	Detail No.
USDA - NRCS		**DE-ESC-3.4.1** Sheet 1 of 2 Effective July 2023

Standard Detail & Specifications

Topsoiling

Construction Notes (cont.)

a. Materials - Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand or other soil as approved by an agronomist or soil scientist. It shall not have a mixture of contrasting textured subsoil and contain no more than 5 percent by volume of cinders, stones, slag, coarse fragment, gravel, sticks, roots, trash or other extraneous materials larger than 1-1/2 inches in diameter. Topsoil must be free of plants or plant parts of bermudagrass, quackgrass, Johnsongrass, nutsedge, poison ivy, thistles, or others as specified. All topsoil shall be tested by a reputable laboratory for organic matter content, pH and soluble salts. A pH of 6.0 to 7.5 and an organic content of not less than 1.5 percent by weight is required. If pH value is less than 6.0 lime shall be applied and incorporated with the topsoil to adjust the pH to 6.5 or higher. Topsoil containing soluble salts greater than 500 parts per million shall not be used.

Note: No sod or seed shall be placed on soil which has been treated with soil sterilant or chemicals used for weed control until sufficient time has elapsed to permit dissipation of toxic materials.

b. Grading - The topsoil shall be uniformly distributed and compacted to a minimum of four (4) inches. Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets. Topsoil shall not be placed while in a frozen or muddy condition, when the subgrade is excessively wet, or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

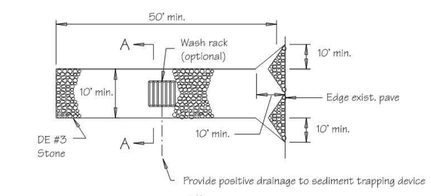
Note:Topsoil substitutes or amendments as approved by a qualified agronomist or soil scientist, may be used in lieu of natural topsoil. Compost material used to improve the percentage of organic matter shall be provided by a certified supplier.

Compost amendments that are intended to meet specific post-construction stormwater management goals shall further meet the requirements of **Appendix 3.06.2 Post Construction Stormwater Management BMP Standards and Specifications, Section 14.0 Soil Amendments.**

Source:	Symbol:	Detail No.
USDA - NRCS		**DE-ESC-3.4.1** Sheet 2 of 2 Effective July 2023

Standard Detail & Specifications

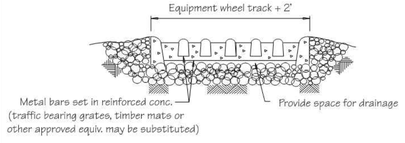
Stabilized Construction Entrance



Source:	Symbol:	Detail No.
Adapted from VA ESC Handbook	SCE	**DE-ESC-3.4.7** Sheet 1 of 2 Effective July 2023

Standard Detail & Specifications

Stabilized Construction Entrance



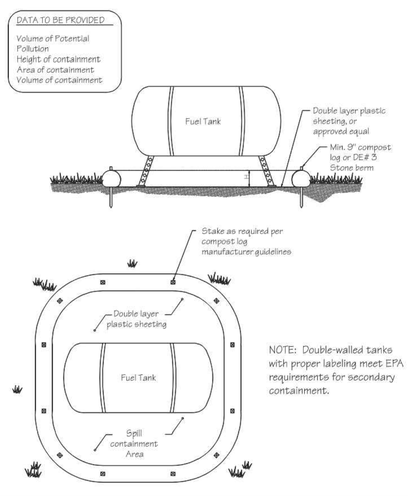
Construction Notes:

1. Stone size - Use DE #3 stone.
2. Length - As required, but not less than 50 feet (except on a single residence lot where a 30 foot minimum length would apply).
3. Thickness - Not less than size (6) inches.
4. Width - Ten (10) foot minimum, but not less than the full width at points where ingress or egress occurs.
5. Geotextile - Type GS-I; placed over the entire area prior to placing of stone.
6. Surface Water - All surface water flowing or diverted toward construction entrances shall be piped across the entrance. If piping is impractical, a mountable berm with 5:1 slopes will be permitted.
7. Maintenance - The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately.
8. Washing - Vehicle wheels shall be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.
9. Inspection - Periodic inspection and needed maintenance shall be provided after each rain.

Source:	Symbol:	Detail No.
Adapted from VA ESC Handbook	SCE	**DE-ESC-3.4.7** Sheet 2 of 2 Effective July 2023

Standard Detail & Specifications

Fueling & Spill Control



Source:	Symbol:	Detail No.
Delaware ESC Handbook		**DE-ESC-3.6.4** Sheet 1 of 2 Effective July 2023

Standard Detail & Specifications

Fueling & Spill Control

Pollution Prevention – Fueling & Spill Control

1. Fueling should only take place in signed designated areas, away from downstream drainage facilities and watercourses.
2. Fueling must be with nozzles equipped with automatic shut-off to control drips. Do not top off.
3. Protect the areas where equipment or vehicles are being repaired, maintained, fueled or parked from storm water run-on and runoff.
4. Use barriers such as berms to prevent storm water run-on and runoff, and to contain spills.
5. Place a "Fueling Area" sign next to each fueling area.
6. Store hazardous materials such as fuel, solvents, oil and chemicals in secondary containment.
7. Inspect vehicles and equipment for leaks on each day of use. Repair fluid and oil leaks immediately.
8. Absorbent spill clean-up materials and spill kits must be available in fueling areas and on fuel trucks.
9. If fueling is to take place at night, make sure the fueling area is sufficiently illuminated.
10. Properly dispose of used oil, fluids, lubricants and spill clean-up materials.

CLEAN UP SPILLS

1. If it is safe to do so, immediately contain and clean up any chemical and/or hazardous material spills.
2. Properly dispose of used oil, fluids, lubricants and spill clean-up materials.
3. Do not bury spills or wash them down with water.

LEAKS AND DRIPS

1. Use drip pans or absorbent pads at all times. Place under and around leaky equipment.
2. Do not allow oil, grease, fuel or chemicals to drip onto the ground.
3. Have spill kits and clean up material on-site.
4. Repair leaky equipment promptly or remove problem vehicles and equipment from the site. Clean up contaminated soil immediately.
5. Store contaminated waste in sealed containers constructed of suitable material. Label these containers properly.
6. Clean up all spills and leaks. Promptly dispose of waste and spent clean up materials.

Source:	Symbol:	Detail No.
Delaware ESC Handbook		**DE-ESC-3.6.4** Sheet 2 of 2 Effective July 2023

REVISIONS:

DATE:	DESCRIPTION:	BY:

KILLENS POND STATE PARK
KILLENS POND BOAT DOCKS

EROSION & SEDIMENT CONTROL DETAILS

SEAL:

ALEXANDER E. SCHMIDT LICENSE NO. 16139 PROFESSIONAL ENGINEER DELAWARE

06-20-2025

CIVIL ENGINEER:

CENTURY ENGINEERING
A Kleinfelder Company

CEI CONTRACT NO.: 25000286.001A

DELAWARE DEPARTMENT OF PARKS AND RECREATION

DESIGNED BY: EMC

DRAWN BY: ZTP

CHECKED BY: AES

DATE: JUNE 2025

SCALE: AS NOTED

SHEET NO.: C427

CONTRACT NO.: —

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Standard Detail & Specifications

Construction Site Pollution Prevention

Delaware NPDES Discharge Permit
General Permit for Discharge of Stormwater from Construction Activities

((Project Name))

((NOI Permit Number))

((Agency Plan Approval ID))

((Contact Name & Number for Additional Site Information))

((Contact Name & Number to Obtain Copy of Approved Plan))

If you observe indicators of stormwater pollutants in the discharge or in the receiving waterbody, call the DNREC Spill Notification 24 HR Hotline at

1-800-662-8802

Example Construction General Permit (CGP) Signage

NOTES:
1. Minimum sign size 2' x 2'
2. Minimum text size 1"
3. Sign must be posted at a safe, publicly accessible location close to construction site
4. Sign must be visible from the public road nearest the active construction site
5. Signs posted within a DelDOT or other public road right-of-way (ROW) must be in accordance with all local and/or State requirements in regards to safety, location, orientation, etc.

Source:	Symbol:	Detail No.
Delaware ESC Handbook		**DE-ESC-3.6.1** Sheet 1 of 4 Effective July 2023

Standard Detail & Specifications

Construction Site Pollution Prevention

Notes:

The Construction Site Pollution Prevention Plan includes the following elements:

1. **Material Inventory**

   Document the storage and use of the following materials:
   a. Concrete
   b. Detergents
   c. Paints (enamel and latex)
   d. Cleaning solvents
   e. Pesticides
   f. Wood scraps
   g. Fertilizers
   h. Petroleum based products

2. **Good housekeeping practices**
   a. Store only enough product required to do the job.
   b. Store all materials in a neat, orderly manner in their original labeled containers and covered.
   c. Do not mix different substances.
   d. When possible, use all of a product prior to disposal of the container.
   e. Manufacturers' instructions for disposal should be strictly adhered to.
   f. Designate someone to inspect all BMPs daily.

3. **Waste management practices**
   a. Collect and store all waste materials in securely lidded dumpsters in a location that does not drain to a waterbody.
   b. Salvage and/or recycle waste materials whenever possible.
   c. The dumpsters shall be emptied a minimum of twice per week, or more if necessary. The licensed trash hauler is responsible for cleaning out dumpsters.

Source:	Symbol:	Detail No.
Adapted from USEPA Pub. 840-B-92-002		**DE-ESC-3.6.1** Sheet 2 of 4 Effective July 2023

Standard Detail & Specifications

Construction Site Pollution Prevention

Notes (cont.)

   d. Dispose of all trash in accordance with all applicable Delaware laws.
   e. Littering is strictly prohibited. Trash cans should be placed at all lunch spots and recycle bins should be placed near the construction trailer.
   f. If fertilizer bags can not be stored in a weather-proof location, they should be kept on a pallet and covered with plastic sheeting which is overlapped and anchored.

4. **Equipment maintenance practices**
   a. If possible, equipment should be taken to off-site commercial facilities for washing and maintenance.
   b. If performed on-site, wash vehicles with high-pressure water spray without detergents in an area contained by an impervious berm.
   c. Use drip pans for all equipment maintenance.
   d. Inspect equipment for leaks on a daily basis.
   e. Direct washout from concrete trucks into a temporary pit for hardening and proper disposal.
   f. Equip fuel nozzles with automatic shut-off valves.
   g. Dispose of all used products such as oil, antifreeze, solvents and tires in accordance with manufacturers' recommendations and local, state and federal laws and regulations.

5. **Spill prevention practices**
   a. Identify potential spill areas and contain them in covered areas with no connection to the storm drain system.
   b. Post warning signs in hazardous material storage areas.
   c. Perform preventive maintenance on all tanks, valves, pumps, pipes and other equipment as necessary.
   d. Prioritize low or non-toxic substances for use.

Source:	Symbol:	Detail No.
Adapted from USEPA Pub. 840-B-92-002		**DE-ESC-3.6.1** Sheet 3 of 4 Effective July 2023

Standard Detail & Specifications

Construction Site Pollution Prevention

Notes (cont.)

   e. Prominently post contact information for reporting spills through the DNREC 24-Hour Toll Free Number.

6. **Education**
   a. Include Best Management Practices (BMPs) for construction site pollution control as part of regular progress meetings.
   b. Information regarding waste management, equipment maintenance and spill prevention should be prominently posted in the construction trailer.

CONTACT INFORMATION

DNREC 24-Hour Toll Free Number	**800-662-8802**
DNREC Solid & Hazardous Waste Management Section	**302-739-9403**

Source:	Symbol:	Detail No.
Adapted from USEPA Pub. 840-B-92-002		**DE-ESC-3.6.1** Sheet 4 of 4 Effective July 2023

Standard Detail & Specifications

Vegetative Stabilization

TEMPORARY SEEDING BY RATES, DEPTHS AND DATES

Mix #	Species[5]	Seeding Rate		Optimum Seeding Dates [1] O = Optimum Planting Period; A = Acceptable Planting Period							Planting Depth[3]
				Coastal Plain			Piedmont			All	
	Certified Seed	lb/Ac [4]	lb/1000 sq.ft.	2/1-4/30	[2] 5/1-8/14	8/15-10/31	3/1-4/30	[2] 5/1-7/31	8/1-10/31	10/31-2/1	
1	Barley	125	4	O	A	O	O	A	O		1-2 inches 2-3" sandy soils
2	Oats	125	4	O	A	A	O	A	A		1-2 inches 2-3" sandy soils
3	Rye	125	4	O	A	O	O	A	O	A	1-2 inches 2-3" sandy soils
4	Perennial Ryegrass	125	4	O	A	O	O	A	O		0.5 inches 1-2" sandy soils
5	Annual Ryegrass	125	4	O	A	O	O	A	O	A	0.5 inches 1-2" sandy soils
6	Winter Wheat	125	4	O	A	O	O	A	O	A	1-2 inches 2-3" sandy soils
7	Foxtail Millet	30 PLS	0.7		O			O			0.5 inches 1-2" sandy soils
8	Pearl Millet	20 PLS	0.5		O			O			0.5 inches 1-2" sandy soils

1. Winter seeding requires 3 tons per acre of straw mulch for proper stabilization.
2. May be planted throughout summer if soil moisture is adequate or seeded area can be irrigated.
3. Applicable on slopes 3:1 or less.
4. Use varieties currently recommended for Delaware. Contact a County Extension Office for information.
5. Warm season grasses such as Millet may be used between 5/1 and 9/1 if desired. Seed at 3-5 lbs. per acre. Good on low fertility and acid areas. Seed after frost through summer at a depth of 0.5".

NOTE: Alternative seed mixes may be used with prior approval from the Department or Delegated Agency.

Source:	Symbol:	Detail No.
Delaware ESC Handbook		**DE-ESC-3.4.3** Sheet 1 of 4 Effective July 2023

Standard Detail & Specifications

Vegetative Stabilization

PERMANENT SEEDING AND SEEDING DATES

Mix No.	Seeding Mixtures	Seeding Rate[1]		Optimum Seeding Dates [2] O = Optimum Planting Period A = Acceptable Planting Period							Remarks
				Coastal Plain			Piedmont			All[6]	
	Certified Seed[3]										
	Well Drained Soils	lb/Ac	lb/1000 sq.ft.	2/1-4/30	5/1-8/14	8/15-10/31	3/1-4/30	5/1-7/31	8/1-10/31	10/31-2/1	
1	Tall Fescue Canada Wild Rye	140 10	3.2 0.23	A	O	A	A	O	A	Add 100 lbs./ac. Winter Rye	Good erosion control mix Tolerant of low fertility soils Good for droughty sites
2	Deertongue Sheep Fescue White Clover	30 30 10	0.69 0.69 0.35	A	O	A	A	O	A	Add 100 lbs./ac. Winter Rye	Good erosion control mix Tolerant of low fertility soils Legume that fixes atmospheric N into soil
3	Tall Fescue (Turf-type) **or** Strong Creeping Red Fescue **or** Perennial Ryegrass **plus** Flatpea[3]	50 50 50 15	1.15 1.15 1.15 0.34	O	A[7]	O	O	A[7]	O	Add 100 lbs./ac. Winter Rye	Good erosion control mix Tall Fescue for droughty conditions. Creeping Red Fescue for heavy shade. Flatpea to suppress woody vegetation.
4	Strong Creeping Red Fescue Kentucky Bluegrass Perennial Ryegrass **or** Redtop **plus** White Clover[2]	100 70 15 5 3	2.3 1.61 0.35 0.11 0.07	O	A[7]	O	O	A[7]	O	Add 100 lbs./ac. Winter Rye	Suitable waterway mix. Canada Bluegrass more drought tolerant. Use Redtop for increased drought tolerance.
5	Switchgrass[5,7] **or** Coastal Panicgrass Big Bluestem Little Bluestem Indian Grass	10 10 5 5 5	0.23 0.23 0.11 0.11 0.1		O			O			Native warm-season mixture. Tolerant of low fertility soils. Drought tolerant. Poor shade tolerance. N fertilizer discouraged - weeds
6	Tall Fescue (turf-type) (Blend of 3 cultivars)	150	3.5	O	A[7]	O	O	A[7]	O		Managed filter strip for nutrient uptake.
7	Tall Fescue Ky. Bluegrass (Blend) Perennial Ryegrass	150 20 20	3.5 0.46 0.46	O	A[7]	O	O	A[7]	O		Three cultivars of Kentucky Bluegrass. Traffic tolerant.
8	Big Bluestem[5] Indian Grass[5] Little Bluestem[5] Creeping Red Fescue **plus one of:** Partridge Pea Bush Clover Wild Indigo Showy Tick-Trefoil	10 10 8 30 5 3 3 2	0.23 0.23 0.18 0.69 0.11 0.07 0.07 0.05	O	A[7]			O	A[7]		All species are native. Indian Grass and Bluestem have fluffy seeds. Plant with a specialized native seed drill. Creeping Red Fescue will provide erosion protection while the warm season grasses get established.

NOTE: Alternative seed mixes may be used with prior approval from the Department or Delegated Agency.

Source:	Symbol:	Detail No.
Delaware ESC Handbook		**DE-ESC-3.4.3** Sheet 2 of 4 Effective July 2023

Standard Detail & Specifications

Vegetative Stabilization

REQUIRED FOR THIS PROJECT

PERMANENT SEEDING AND SEEDING DATES (cont.)

Mix No.	Seeding Mixtures	Seeding Rate[1]		Optimum Seeding Dates [2] O = Optimum Planting Period A = Acceptable Planting Period							Remarks
				Coastal Plain			Piedmont			All[6]	
	Certified Seed[3]										
	Poorly Drained Soils	lb/Ac	lb/1000 sq.ft.	2/1-4/30	5/1-8/14	8/15-10/31	3/1-4/30	5/1-7/31	8/1-10/31	10/31-2/1	
9	Redtop Creeping Bentgrass Sheep Fescue Rough Bluegrass	75 35 30 45	1.72 0.8 0.69 1	O	A[7]	O	O	A[7]	O	Add 100 lbs./ac. Winter Rye	Quick stabilization of disturbed sites and waterways
10	Switchgrass	10	0.23	A		O	A		O		Good erosion control, wildlife cover and wetland revegetation.
	Residential Lawns										
11	Tall Fescue Perennial Ryegrass Kentucky Bluegrass Blend	100 25 30	2.3 0.57 0.69	O	A[7]	O	O	A[7]	O		High value, high maintenance, light traffic, irrigation necessary. Well drained soils, full sun.
12	Tall Fescue Perennial Ryegrass Sheep Fescue	100 25 25	2.3 0.57 0.57	O	A[7]	O	O	A[7]	O		Moderate value, low maintenance, traffic tolerant
13	Creeping Red Fescue Chewings Fescue Rough Bluegrass Kentucky Bluegrass	50 50 20 20	1.15 1.15 0.4 0.4	O	A[7]	O	O	A[7]	O		Shade tolerant, moderate traffic tolerance, moderate maintenance.
14	Creeping Red Fescue Rough Bluegrass **or** Chewings Fescue	50 90	1.15 2.1	O	A[7]	O	O	A[7]	O		Shade tolerant, moisture tolerant.
15	K-31 Tall Fescue	150	3.5	O	A[7]	O	O	A[7]	O		Monoculture, but performs well alone in lawns. Discouraged.

1. When hydroseeding is the chosen method of application, the total rate of seed should be increased by 25%.
2. Winter seeding requires 3 tons per acre of straw mulch. Planting dates listed above are average for Delaware. These dates may require adjustment to reflect local conditions.
3. All seed shall meet the minimum purity and minimum germination percentages recommended by the Delaware Department of Agriculture. The maximum % of weed seeds shall be in accordance with Chapter 15, Title 3 of the Delaware Code.
4. Turftype species may be planted throughout summer if soil moisture is adequate or seeded area can be irrigated.
5. It is recommended that all leguminous seed be inoculated.
6. Warm season grass mix and Switchgrass cannot be mowed more than 4 times per year.
7. Warm season grasses require a soil temperature of at least 50 degrees in order to germinate and will remain dormant until then.

NOTE: Alternative seed mixes may be used with prior approval from the Department or Delegated Agency.

Source:	Symbol:	Detail No.
Delaware ESC Handbook		**DE-ESC-3.4.3** Sheet 3 of 4 Effective July 2023

Standard Detail & Specifications

Vegetative Stabilization

Construction Notes:

1. Site Preparation
   a. Prior to seeding, install needed erosion and sediment control practices such as diversions, grade stabilization structures, berms, dikes, grassed waterways, and sediment basins.
   b. Final grading and shaping is not necessary for temporary seedings.

2. Seedbed Preparation

   It is important to prepare a good seedbed to ensure the success of establishing vegetation. The seedbed should be well prepared, loose, uniform, and free of large clods, rocks, and other objectionable material. The soil surface should not be compacted or crusted.

3. Soil Amendments
   a. Lime - Apply liming materials based on the recommendations of a **soil test** in accordance with the approved nutrient management plan. If a nutrient management plan is not required, apply dolomitic limestone at the rate of 1 to 2 tons per acre. Apply limestone uniformly and incorporate into the top 4 to 6 inches of soil.
   b. Fertilizer - Apply fertilizer based on the recommendations of a **soil test** in accordance with the approved nutrient management plan. If a nutrient management plan is not required, apply a formulation of 10-10-10 at the rate of 600 pounds per acre. Apply fertilizer uniformly and incorporate into the top 4 to 6 inches of soils.

4. Seeding
   a. For **temporary stabilization**, select a mixture from **Sheet 1** . For a **permanent stabilization**, select a mixture from **Sheet 2** or **Sheet 3** depending on the conditions. Alternative seed mixes may be used with prior approval from the Department or Delegated Agency.
   b. Apply seed uniformly with a broadcast seeder, drill, cultipacker seeder or hydroseeder. All seed will be applied at the recommended rate and planting depth.
   c. Seed that has been broadcast should be covered by raking or dragging and then lightly tamped into place using a roller or cultipacker. If hydroseeding is used and the seed and fertilizer is mixed, they will be mixed on site and the seeding shall be done immediately and without interruption.

5. Mulching

   All mulching shall be done in accordance with detail **DE-ESC-3.4.5**.

Source:	Symbol:	Detail No.
Delaware ESC Handbook		**DE-ESC-3.4.3** Sheet 4 of 4 Effective July 2023

REVISIONS:

DATE:	DESCRIPTION:	BY:

KILLENS POND STATE PARK
KILLENS POND BOAT DOCKS

EROSION & SEDIMENT CONTROL DETAILS

SEAL:

ALEXANDER E. SCHMIDT — LICENSE — NO. 16139 — PROFESSIONAL ENGINEER — DELAWARE

06-20-2025

CIVIL ENGINEER:

CENTURY ENGINEERING
A Kleinfelder Company

CEI CONTRACT NO.: 25000286.001A

DELAWARE — DIVISION OF PARKS AND RECREATION

DESIGNED BY: EMC

DRAWN BY: ZTP

CHECKED BY: AES

DATE: JUNE 2025

SCALE: AS NOTED

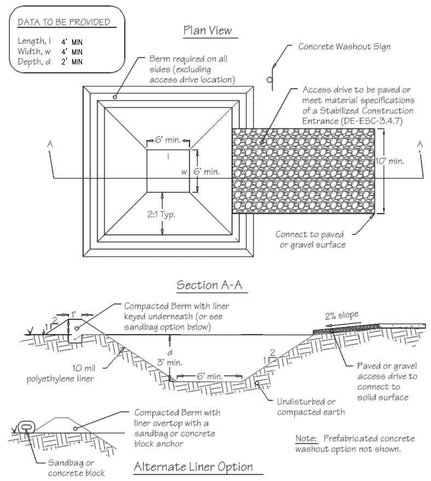
SHEET NO.: C428

CONTRACT NO.: —

L:\State of Delaware\25000286.001A-DNREC Campgrounds\Working\Killens Pond\CAD\Killens Boat Dock Plan Set\Sheets\GSMP_ConstructionDetails(22).dwg, 6/18/2025 11:13 AM

Standard Detail & Specifications

Concrete Washout



Source:	Symbol:	Detail No.
Adapted from Colorado Urban Storm Drainage Criteria Manual, Vol 3	CW	DE-ESC-3.6.2 Sheet 1 of 2 Effective July 2023

Standard Detail & Specifications

Concrete Washout

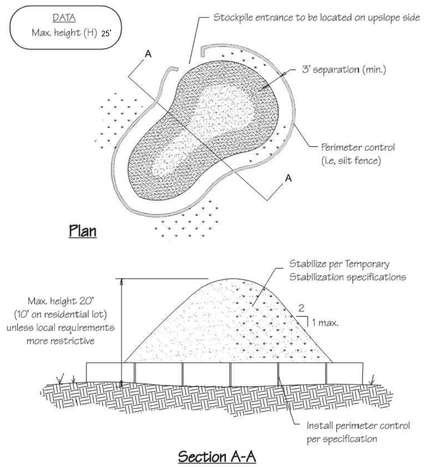
Construction Notes:

1. Locate washout area a minimum of 50 feet from open channels, stormdrain inlets, wetlands or waterbodies.
2. Locate washout area so that it is accessible to concrete equipment (service with a minimum 10 foot wide gravel accessway), but so it is not in a highly active construction area causing accidental damage.
3. Minimum dimensions for prefabricated units are 4 feet by 4 feet by 1 foot deep with a minimum 4mil polyethylene plastic liner. Minimum dimensions for constructed concrete washout areas are 6 feet by 6 feet by 3 feet deep, with a minimum 10mil polyethylene liner, 2:1 side slopes, and a 1 foot high by 1 foot wide compacted fill berm.
4. The liner must be free of tears or holes and placed over smooth surfaces to prevent puncturing. For excavated washouts, anchor the liner underneath the berm or overtop with sandbags or concrete blocks to hold in place.
5. Provide a sign designating the washout area, and for large construction sites, provide signs throughout directing traffic to its location.
6. Allow washed out concrete mixture to harden through evaporation of the wastewater. Once the facility has reached 75 percent of its capacity, remove the hardened concrete by reusing the broken aggregate onsite, recycling, or disposing of offsite. The hardened material can be buried on site with minimum of 1 foot of clean, compacted fill.
7. Apply a new liner before reusing the station for additional washouts after maintenance has occurred.

Source:	Symbol:	Detail No.
Adapted from Colorado Urban Storm Drainage Criteria Manual, Vol 3	CW	DE-ESC-3.6.2 Sheet 2 of 2 Effective July 2023

Standard Detail & Specifications

Soil Stockpile



Source:	Symbol:	Detail No.
Adapted from Colorado Urban Storm Drainage Criteria Manual, Vol 3	SP	DE-ESC-3.7.3 Sheet 1 of 2 Effective July 2023

Standard Detail & Specifications

Soil Stockpile

Construction Notes:

1. Locate stockpiles so that they are 50 feet from any storm drain inlet, open channel, wetland or waterbody. Redirect any concentrated flow around the stockpile using an approved erosion and sediment control measure.
2. Secure the perimeter of the stockpile with an approved erosion and sediment control perimeter device.
3. If stockpile is to remain inactive for more than 14 calendar days, the stockpile must be vegetated. Follow the temporary vegetation specifications. The vegetation chosen shall last the duration of the stockpile; the stockpile shall be restabilized if the temporary vegetation dies or erosion results.

Source:	Symbol:	Detail No.
Adapted from Colorado Urban Storm Drainage Criteria Manual, Vol 3	SP	DE-ESC-3.7.3 Sheet 2 of 2 Effective July 2023

Standard Detail & Specifications

Mulching

1. Materials and Amounts

a. *Straw* - Straw shall be unrotted small grain straw applied at the rate of 1-1/2 to 2 tons per acre, or 70 to 90 pounds (two bales) per 1,000 square feet. Mulch materials shall be relatively free of weeds and shall be free of noxious weeds such as; thistles, Johnsongrass, and quackgrass. Spread mulch uniformly by hand or mechanically. For uniform distribution of hand spread mulch, divide area into approximately 1,000 square feet sections and place 70-90 pounds (two bales) of mulch in each section.

b. *Wood chips* - Apply at the rate of approximately 6 tons per acre or 275 pounds per 1,000 square feet when available and when feasible. These are particularly well suited for utility and road rights-of-way. If wood chips are used, increase the application rate of nitrogen fertilizer by 20 pounds of N per acre (200 pounds of 10-10-10 or 66 pounds of 30-0-0 per acre).

c. *Hydraulically applied mulch* -The following conditions apply to hydraulically applied mulch:

i. Definitions:

a. Wood fiber mulch shall consist of specially prepared wood that has been processed to a uniform state, is packaged for sale as a hydraulic mulch for use with hydraulic seeding equipment, and consists of a minimum of 70% virgin or recycled wood fiber combined with 30% paper fiber and additives.

b. Blended fiber mulch shall consist of any hydraulic mulch that contains greater than 30% paper fiber. The paper component must consist of specially prepared paper that has been processed to a uniform fibrous state and is packaged for sale as a hydraulic mulch for use with hydraulic seeding equipment.

c. A bonded fiber matrix (BFM) consists of long strand, specially prepared wood fibers that have been processed to a uniform state held together by a water resistant bonding agent. BFMs shall contain no paper (cellulose) mulch but may contain small percentages of synthetic fibers to enhance performance.

d. Refer to **Figure 3.4-5a** for conditions and limitations of use for each of the above categories of hydraulic mulch.

ii. All components of the hydraulically applied mulches shall be pre-packaged by the manufacturer to assure material performance. Field mixing of the mulch components is acceptable, but must be done per manufacturers recommendations to ensure the proper results.

iii. Hydraulic mulches shall be applied with a viable seed and at manufacturer's recommended rates. Increased rates may be necessary based on site conditions.

iv. Hydraulically applied mulches and additives shall be mixed according to manufacturers recommendations.

iv. Materials within this category shall only be used when hydraulically applied mulch has been specified for use on the approved Sediment and Stormwater Plan, or supplemental approval from the plan approval agency has been obtained in writing for a specific area.

Source:	Symbol:	Detail No.
Delaware ESC Handbook & Filtrexx™ International		DE-ESC-3.4.5 Sheet 1 of 3 Effective July 2023

Standard Detail & Specifications

Mulching

v. Application:

a. Apply product to geotechnically stable slopes that have been designed and constructed to divert runoff away from the face of the slope.

b. Do not apply to saturated soils, or if precipitation is anticipated within 24-48 hours.

c. During the spring (March 1 to May 31) and fall (September 1 to November 30) seasons, hydraulic mulches may be applied in a one-step process where all components are mixed together in single-tank loads. It is recommended that the product be applied from opposing directions to achieve optimum soil coverage.

d. During the summer (June 1 to August 31) and winter (December 1 to February 28) seasons, the following two-step process is required:

Step One– Mix and apply seed and soil amendments with a small amount of mulch for visual metering.

Step Two – Mix and apply mulch at manufacturers recommended rates over freshly seeded surfaces. Apply from opposing directions to achieve optimum soil coverage.

e. Minimum curing temperature is 40° F (4° C). The best results and more rapid curing are achieved at temperatures exceeding 60° F (15° C). Curing times may be accelerated in high temperature, low humidity conditions on dry soils.

vi. Recommended application rates are for informational purposes only. Conformance with this standard and specification shall be performance-based and requires **100% soil coverage**. Any areas with bare soil showing shall be top dressed until full coverage is achieved.

d. *Compost blanket (CB)* - Loosely applied with a pneumatic blower so that a 1" compost blanket uniformly covers the **soil with 100% coverage**. This application can be used with seed to promote germination by applying the approved seed mix directly into the loosely blown compost. The compost blanket performs best on slopes less than 2:1 and requires no mulch anchoring.

2. Anchoring mulch - Mulch must be anchored immediately to minimize loss by wind or water. This may be done by one of the following methods, depending upon size of area, erosion hazard, and cost.

a. *Crimping* - A crimper is a tractor drawn implement designed to punch and anchor mulch into the top two (2) inches of soil. This practice affords maximum erosion control but is limited to flatter slopes where equipment can operate safely. On sloping land, crimping should be done on the contour whenever possible.

b. *Tracking* - Tracking is the process of cutting mulch (usually straw) into the soil using a bulldozer or other equipment that runs on cleated tracks. Tracking is used primarily on slopes 3:1 or steeper and should be done up and down the slope with cleat marks running across the slope.

c. *Liquid mulch binders* - Applications of liquid mulch binders should be heavier at edges, in valleys, and at crests of banks and other areas where the mulch will be moved by wind or water. All other areas should have a uniform application of binder. The use of synthetic binders is the preferred method of mulch binding and should be applied at the rates recommended by the manufacturer.

d. *Paper fiber* - The fiber binder shall be applied at a net dry weight of 750 lbs/ac. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons.

e. *Nettings* - Biodegradable nettings may be used to secure straw mulch. Install and secure according to the manufacturer's recommendations. Photodegradable or synthetic nettings are not acceptable.

Source:	Symbol:	Detail No.
Delaware ESC Handbook & Filtrexx™ International		DE-ESC-3.4.5 Sheet 2 of 3 Effective July 2023

Standard Detail & Specifications

Mulching

MULCHING MATERIAL SELECTION GUIDE

Percent Slope	Type of Mulch / App. Rate	Dec. 1 to Feb. 28(29)	March 1 to May 31	June 1 to Aug. 31	Sept. 1 to Nov. 30
Less than 2%	Straw @ 2 Tons/ac. min.	xxxxxxxxxxxxxx	OK (1" Min.)	xxxxxxxxxxxxxx	OK (1" Min.)
	Wood Fiber @ 2500 lbs/ac. min.	xxxxxxxxxxxxxx	OK	xxxxxxxxxxxxxx	OK
	BFM @ 3000 lbs/ac. min.	OK	OK	OK	OK
	Straw @ 2 Tons/ac. min.	OK	OK	OK	OK
	Stabilization Matting**	OK	OK	OK	OK
	1" Compost Blanket (CB)	xxxxxxxxxxxxxx	OK	xxxxxxxxxxxxxx	OK
2% to 5.9%	Wood Fiber @ 2500-3000 lbs/ac. min.	xxxxxxxxxxxxxx	OK	xxxxxxxxxxxxxx	OK
	BFM @ 3000-3500 lbs/ac. min.	OK	OK	OK	OK
	Straw @ 2 Tons/ac. min.	OK	OK	OK	OK
	Stabilization Matting**	OK	OK	OK	OK
	1" Compost Blanket (CB)	xxxxxxxxxxxxxx	OK	xxxxxxxxxxxxxx	OK
6% to 10.9%	Wood Fiber @ 2500-3000 lbs/ac. min.	xxxxxxxxxxxxxx	OK	xxxxxxxxxxxxxx	OK
	BFM @ 3500-4000 lbs/ac. min.	OK	OK	OK	OK
	Straw @ 2 Tons/ac. min.	OK	OK	OK	OK
	Stabilization Matting**	OK	OK	OK	OK
	1" Compost Blanket (CB)	xxxxxxxxxxxxxx	OK	xxxxxxxxxxxxxx	OK
11% to 24.9%	Wood Fiber @ 2500-3000 lbs/ac. min.	xxxxxxxxxxxxxx	OK	xxxxxxxxxxxxxx	OK
	BFM @ 3000-3500 lbs/ac. min.	OK	OK	OK	OK
	Straw @ 2 Tons/ac. min.	OK	OK	OK	OK
	Stabilization Matting**	OK	OK	OK	OK
	1" Compost Blanket (CB)	xxxxxxxxxxxxxx	OK	xxxxxxxxxxxxxx	OK
25% to 33%	Wood Fiber @ 2500-3000 lbs/ac. min.	xxxxxxxxxxxxxx	OK	xxxxxxxxxxxxxx	OK
	BFM @ 3000-3500 lbs/ac. min.	OK	OK	OK	OK
	Straw @ 2 Tons/ac. min.	OK	OK	OK	OK
	Stabilization Matting**	OK	OK	OK	OK
	1" Compost Blanket (CB)	xxxxxxxxxxxxxx	OK	xxxxxxxxxxxxxx	OK
33% and up	BFM @ 3500-4000 lbs/ac. min.	xxxxxxxxxxxxxx	OK	xxxxxxxxxxxxxx	OK
	Straw @ 2 Tons/ac. min.**	OK	OK	OK	OK
	Stabilization Matting**	OK	OK	OK	OK
	1" Compost Blanket (CB)	xxxxxxxxxxxxxx	2:1 Max.	2:1 Max.	2:1 Max.

* Note: Manufacturers Recommended Rates for informational purposes only. Performance standard requires 100% soil coverage.
** Note: Stabilization Matting must be applied in accordance with Section 3.4.6 of the Delaware ESC Handbook.
*** Note: Straw applied on slopes greater than 33% must be netted (this does not apply to topsoil stockpiles).
OK = Acceptable to use during this time period.
xxx = Not acceptable to use during this time period.
All application rates are minimums

Source:	Symbol:	Detail No.
Delaware ESC Handbook & Filtrexx™ International		DE-ESC-3.4.5 Sheet 3 of 3 Effective July 2023

REVISIONS:

DATE:	DESCRIPTION:	BY:

KILLENS POND STATE PARK
KILLENS POND BOAT DOCKS

EROSION & SEDIMENT CONTROL DETAILS

SEAL:

ALEXANDER E. SCHMIDT
LICENSED
DELAWARE
PROFESSIONAL ENGINEER
NO. 16139

06-20-2025

CIVIL ENGINEER:

CENTURY ENGINEERING
A Kleinfelder Company

CEI CONTRACT NO.: 25000286.001A

DELAWARE
DIVISION OF PARKS AND RECREATION

DESIGNED BY: EMC

DRAWN BY: ZTP

CHECKED BY: AES

DATE: JUNE 2025

SCALE: AS NOTED

SHEET NO.: C429

CONTRACT NO.: —

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