



**US Army Corps
of Engineers®**

PUBLIC NOTICE

Applicant:
Genevieve Clifton
New Jersey Department of
Transportation

Published: 6/17/25
Expires: 7/17/25

**New York District
Permit Application No. NAN-2024-00075-MKO**

TO WHOM IT MAY CONCERN: The New York District of the U.S. Army Corps of Engineers (Corps) has received an application for a Department of the Army permit pursuant to Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. §403). The purpose of this public notice is to solicit comments from the public regarding the work described below:

APPLICANT: Genevieve Clifton
New Jersey Department of Transportation
1035 Parkway Avenue
P.O Box 600

AGENT: Katie Axt
WSP USA Inc.
250 W 4th Street
4th Floor
New York, New York 10119

WATERWAY AND LOCATION: The project would affect waters of the United States and navigable waters of the United States associated with Shrewsbury River Basin. The project/review area is located in the Shrewsbury River Basin channels 16-24, 26-28, and 31, in Monmouth County, New Jersey.

EXISTING CONDITIONS: Existing water depths range from 5 feet below MLW (near the shoreline) to 7 feet below MLW.

PROJECT PURPOSE:

Overall: The purpose of the project is to continue to provide safe depths for navigation throughout the Shrewsbury River Basin.

PROPOSED WORK: The applicant requests authorization to maintenance dredge with ten-years maintenance, by hydraulic cutterhead pipeline dredging, approximately 242,120-cubic yards (CY) of material from multiple state channels to extend to a depth of six feet below the plane of Mean Low Water (MLW) with one foot of allowable over dredging for an approximate total of 242,120CY. The dredge material will be pumped

into geotextile bags and placed at the Shrewsbury Basin Dredge Material Management Facility in Rumson, Monmouth County for dewatering and future beneficial use.

AVOIDANCE AND MINIMIZATION: The applicant has provided the following information in support of efforts to avoid and/or minimize impacts to the aquatic environment: preventing barge overflow of dredge material, and by the pipeline being sunk except when existing the dredge, as it approaches the placement site to avoid SAV beds.

COMPENSATORY MITIGATION: The applicant has provided the following explanation why compensatory mitigation should not be required: The Project would require temporary disturbance to state open water (SOW) areas in the multiple channels in the Shrewsbury River Basin. Work does not impact wetlands, subtidal or intertidal areas. Work will have a de minimis and temporary impact on general water areas and area has been previously dredged, thus work is not disturbing previously undisturbed areas and thus, mitigation is not required.

CULTURAL RESOURCES:

The Corps evaluated the undertaking pursuant to Section 106 of the National Historic Preservation Act (NHPA) utilizing its existing program-specific regulations and procedures along with 36 CFR Part 800. The Corps' program-specific procedures include 33 CFR 325, Appendix C, and revised interim guidance issued in 2005 and 2007, respectively. The District Engineer consulted district files and records and the latest published version of the National Register of Historic Places and initially determines that:

No historic properties (i.e., properties listed in or eligible for inclusion in the National Register of Historic Places) are present within the Corps' permit area; therefore, there will be no historic properties affected. The Corps subsequently requests concurrence from the SHPO and/or THPO.

The District Engineer's final eligibility and effect determination will be based upon coordination with the SHPO and/or THPO, as appropriate and required, and with full consideration given to the proposed undertaking's potential direct and indirect effects on historic properties within the Corps-identified permit area.

ENDANGERED SPECIES: The Corps has performed an initial review of the application, the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC), National Marine Fisheries Service (NMFS) Greater Atlantic Region Section 7 Mapper, and the NMFS Critical Habitat Mapper to determine if any threatened, endangered, proposed, or candidate species, as well as the proposed and final designated critical habitat may occur within the boundary of the proposed project. Based on this initial review, the Corps has made a preliminary determination that the proposed project may affect species and critical habitat listed in Table 1. No other ESA-listed species or critical habitat will be affected by the proposed action.

Table 1: ESA-listed species and/or critical habitat potentially present in the action area.

Common Name	Scientific Name	Status	Agency
Atlantic Sturgeon	<i>Acipenser oxyrinchus oxyrinchus</i>	Endangered	NMFS
Tricolored Bat	<i>Perimyotis subflavus</i>	Proposed Endangered	USFWS
Monarch Butterfly	<i>Danaus Plexippus</i>	Proposed Threatened	USFWS
Green sea turtle	<i>Chelonia mydas</i>	Threatened	USFWS
Kemp's ridley sea turtle	<i>Lepidochelys kempii</i>	Endangered	USFWS
Leatherback sea turtle	<i>Dermochelys coriacea</i>	Endangered	USFWS
Loggerhead sea turtle	<i>Caretta caretta</i>	Threatened	USFWS

Pursuant to Section 7 ESA, any required consultation with the Service(s) will be conducted in accordance with 50 CFR part 402.

This notice serves as request to the U.S. Fish and Wildlife Service and National Marine Fisheries Service for any additional information on whether any listed or proposed to be listed endangered or threatened species or critical habitat may be present in the area which would be affected by the proposed activity.

ESSENTIAL FISH HABITAT: Pursuant to the Magnuson-Stevens Fishery Conservation and Management Act 1996, the Corps reviewed the project area, examined information provided by the applicant, and consulted available species information.

The Corps intends to initiate Essential Fish Habitat (EFH) consultation separately from this public notice. A separate EFH consultation package will be sent to the National Marine Fisheries Service (NMFS). The Corps will not make a permit decision until the consultation process is complete.

Our final determination relative to project impacts and the need for mitigation measures is subject to review by and coordination with the National Marine Fisheries Service.

NAVIGATION: The proposed dredging will take place in state channels that connect to federal navigation channels.

SECTION 408: The applicant will not require permission under Section 14 of the Rivers and Harbors Act (33 USC 408) because the activity, in whole or in part, would not alter, occupy, or use a Corps Civil Works project.

WATER QUALITY CERTIFICATION: Reviews of activities pursuant to Section 404 of the Clean Water Act will include application of the guidelines promulgated by the Administrator, U.S. Environmental Protection Agency, under authority of Section 404 (b) of the Clean Water Act and the applicant will obtain a water quality certificate or waiver from the appropriate state agency in accordance with Section 401 of the Clean Water Act prior to a permit decision.

COASTAL ZONE MANAGEMENT ACT: Pursuant to Section 307 (c) of the Coastal Zone Management Act of 1972 as amended [16 U.S.C. 1456 (c)], for activities under consideration that are located within the coastal zone of a state which has a federally approved coastal zone management program, the applicant has certified in the permit application that the activity complies with, and will be conducted in a manner that is consistent with, the approved state coastal zone management program. By this public notice, we are requesting the state's concurrence with, objection to, or waiver of the applicant's certification. No permit decision will be made until one of these actions occurs. For activities within the coastal zone of New Jersey State, the applicant's certification and accompanying information is available from the New Jersey Department of Environmental Protection, Coastal Management Program, P.O. Box 418, 401 E. State Street, Trenton, NJ, 08625, Telephone (609) 633-2201. Comments regarding the applicant's certification, and copies of any letters to this office commenting upon this proposal, should be so addressed.

OTHER AUTHORIZATIONS: In addition to any required water quality certificate and coastal zone management program concurrence, the applicant has obtained or requested the following governmental authorization for the activity under consideration:

- New Jersey Department of Environmental Protection

NOTE: This public notice is being issued based on information furnished by the applicant. This information has not been verified or evaluated to ensure compliance with laws and regulation governing the regulatory program. The geographic extent of aquatic resources within the proposed project area that either are, or are presumed to be, within the Corps jurisdiction has been verified by Corps personnel.

EVALUATION: The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefits, which reasonably may be expected to accrue from the proposal, must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including cumulative impacts thereof; among these are conservation, economics, esthetics, general environmental concerns, wetlands, historical properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food, and fiber production, mineral needs, considerations of property ownership, and in general, the needs and welfare of the people. Evaluation of the impact of the

activity on the public interest will also include application of the guidelines promulgated by the Administrator, EPA, under authority of Section 404(b) of the Clean Water Act or the criteria established under authority of Section 102(a) of the Marine Protection Research and Sanctuaries Act of 1972. A permit will be granted unless its issuance is found to be contrary to the public interest.

COMMENTS: The Corps is soliciting comments from the public; Federal, State, and local agencies and officials; Indian Tribes; and other Interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps to determine whether to issue, modify, condition, or deny a permit for this proposal. To make this determination, comments are used to assess impacts to endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment (EA) and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act (NEPA). Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

The New York District will receive written comments on the proposed work, as outlined above, until the expiration date of this public notice. Comments should be submitted electronically via the Regulatory Request System (RRS) at <https://rrs.usace.army.mil/rrs> or to Zachary Kocsik at Zachary.J.Kocsik@usace.army.mil. Please refer to the permit application number in your comments.

Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider the application. Requests for public hearings shall state, with particularity, the reasons for holding a public hearing. Requests for a public hearing will be granted, unless the District Engineer determines that the issues raised are insubstantial or there is otherwise no valid interest to be served by a hearing.

Comments submitted in response to this notice will be fully considered during the public interest review for this permit application. Comments provided will become part of the public record for this permit application. All written comments, including contact information, will be made a part of the administrative record, available to the public under the Freedom of Information Act. The Administrative Record, or portions thereof, may also be posted on a Corps of Engineers internet web site. Due to resource limitations, this office will normally not acknowledge the receipt of comments or respond to individual letters of comment.

In order for us to better serve you, please complete our Customer Service Survey located at <https://www.nan.usace.army.mil/Missions/Regulatory/Customer-Survey/>.

For more information on New York District Corps of Engineers programs, visit our website at <http://www.nan.usace.army.mil>.

 Digitally signed by
Rosita Miranda

[FOR AND IN BEHALF OF]

Stephan A. Ryba
Chief, Regulatory Branch



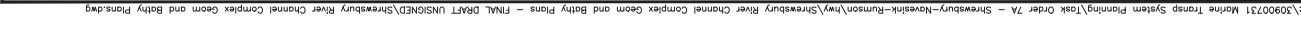
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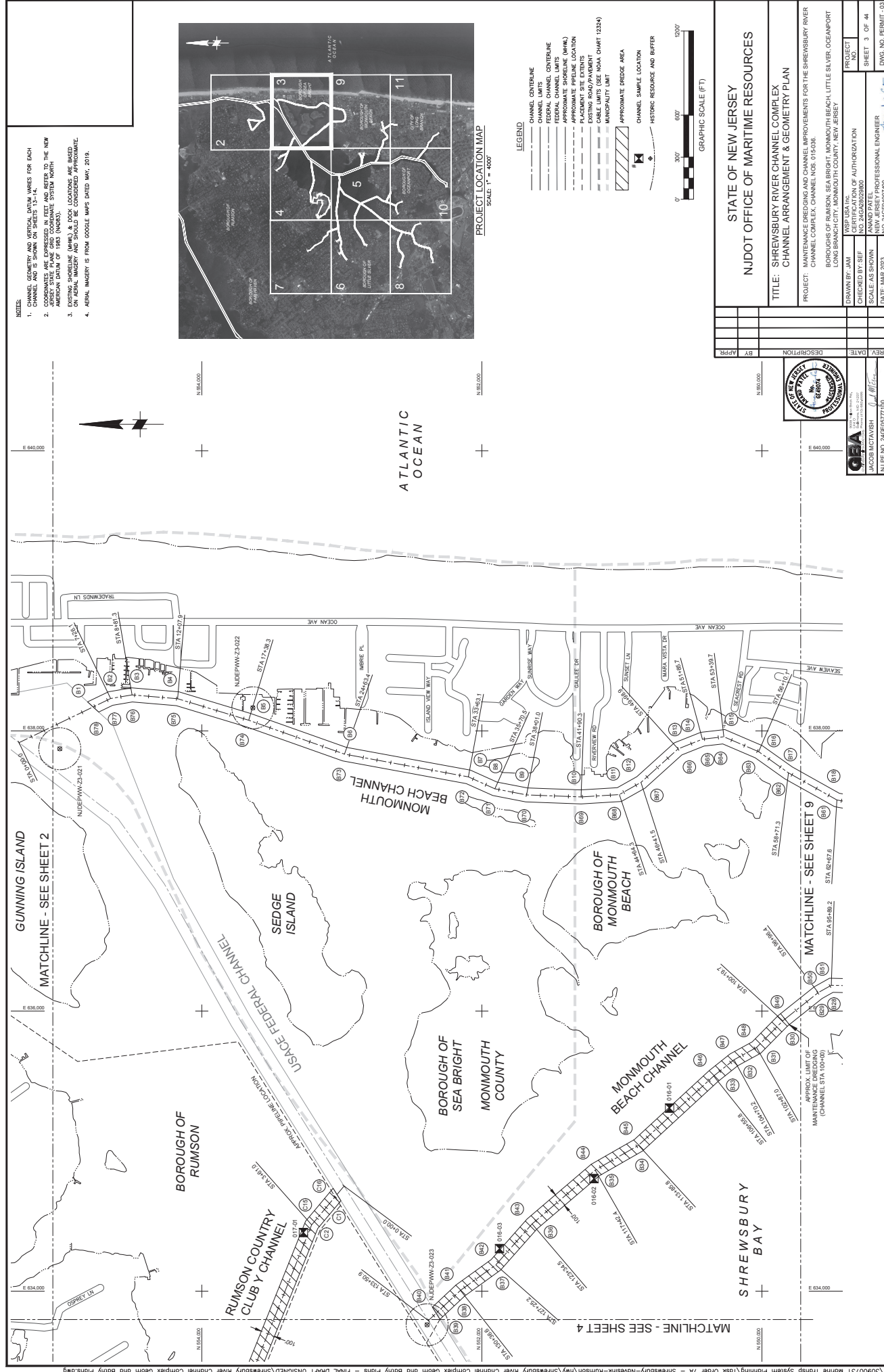
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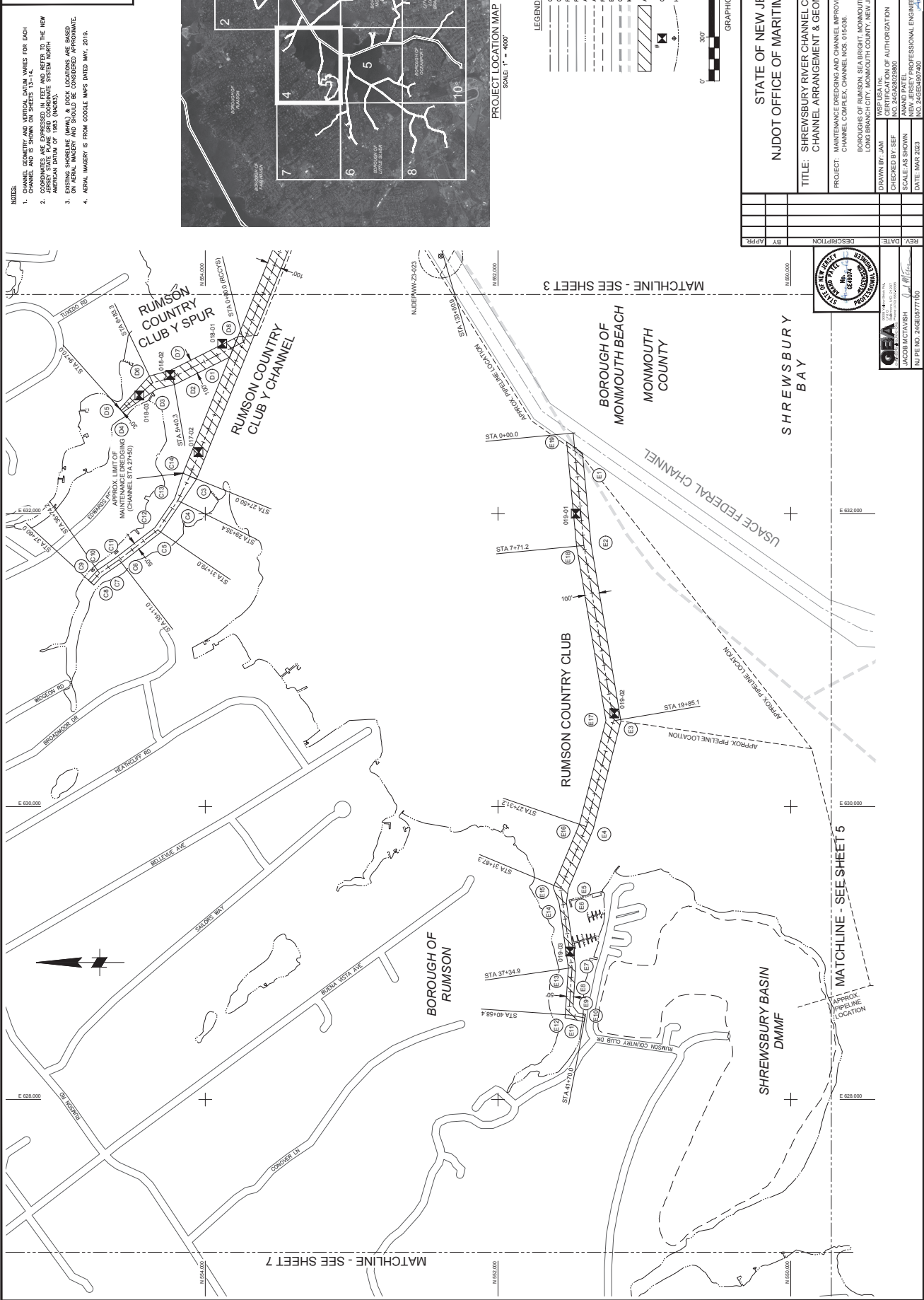
QEA
9005 New South Rd.,
Unit O
Baltimore, MD 21227
Call 202-237-6036 Fax 202-237-6036

JACOB MCTAVISH *Jacob MCTavish*
NJ PE NO. 24GE05777100





1:30000731 Marine Tramp System Planning/Task Order 7A - Shrewsbury-Novelsink-Rumson(hwy)Shrewsbury River Channel Complex Geom and Botby Plans.dwg - FINAL DRAFT (UNSIGNED)Shrewsbury River Channel Complex Geom and Botby Plans.dwg



NOTES:
1. CHANNEL GEOMETRY AND VERTICAL DATA VALUES FOR EACH CHANNEL ARE BASED ON THE 1985 DATUM OF THE NEW JERSEY STATE PLANE GRID COORDINATE SYSTEM NORTH.
2. COORDINATES ARE EXPRESSED IN FEET AND REFERS TO THE NEW JERSEY STATE PLANE GRID COORDINATE SYSTEM NORTH.
3. CHANNEL CENTERLINE AND LIMITS LOCATIONS ARE BASED ON AERIAL IMAGERY AND SHOULD BE CONSIDERED APPROXIMATE.
4. AERIAL IMAGERY IS FROM GOOGLE MAPS DATED MAY, 2019.

PROJECT LOCATION MAP
SCALE: 1" = 400'

LEGEND:
CHANNEL CENTERLINE
CHANNEL LIMITS
FEDERAL CHANNEL CENTERLINE
APPROXIMATE SHORELINE (MHW)
APPROXIMATE PRELINE LOCATION
PLACEMENT SITE EXTENTS
EXISTING ROAD/PAVEMENT
MUNICIPALITY LIMIT
APPROXIMATE DREDGE AREA
CHANNEL SAMPLE LOCATION
HISTORIC RESOURCE AND BUFFER

GRAPHIC SCALE (FT)
0 300 600 1200

STATE OF NEW JERSEY
NJDOT OFFICE OF MARITIME RESOURCES

TITLE: SHREWSBURY RIVER CHANNEL COMPLEX
CHANNEL ARRANGEMENT & GEOMETRY PLAN

PROJECT: MAINTENANCE DREDGING AND CHANNEL IMPROVEMENTS FOR THE SHREWSBURY RIVER
CHANNEL COMPLEX, CHANNEL NOS. 015006
BOROUGH OF RUMSON, SEA BRIGHT, MONMOUTH BEACH, LITTLE SILVER, OCEANPORT
LONG BRANCH CITY, MONMOUTH COUNTY, NEW JERSEY

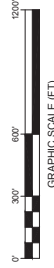
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SCALE AS SHOWN
DATE: MAR 2023

WSP USA INC.
CERTIFICATION OF AUTHORIZATION
NO 24602802860
NEW JERSEY PROFESSIONAL ENGINEER
NO 24604907400

REV. DATE. DESCRIPTION. BY. APPR.

015006
JACOB MCINISH
NJ PE NO 2460377100

1. CHANNEL GEOMETRY AND VERTICAL DATUM VALUES FOR EACH CHANNEL AND IS SHOWN ON SHEETS 13-14.
2. COORDINATES ARE EXPRESSED IN FEET AND REFER TO THE NEW JERSEY STATE PLANE GRID COORDINATE SYSTEM NORTH AMERICAN DATUM OF 1983 (NAD83).
3. EXISTING SHOULDERLINE (MWWL) & DOCK LOCATIONS ARE BASED ON AERIAL PHOTOGRAPHY DATED MAY, 2019.
4. AERIAL IMAGERY IS FROM GOOGLE MAPS DATED MAY, 2019.

SHREWSBURY RIVER CHANNEL COMPLEX
CHANNEL ARRANGEMENT & GEOMETRY DI AND

PROJECT: MAINTENANCE DREDGING AND CHANNEL IMPROVEMENTS FOR THE SHREWSBURY RIVER
CHANNEL COMPLEX CHANNEL NOS. 015,026

BOROUGH OF RUMSON, SEA BRIGHT, MONMOUTH BEACH, LITTLE SILVER, OCEANPORT
LONG BRANCH CITY, MONMOUTH COUNTY, NEW JERSEY

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	CERTIFICATION OF AUTHORIZATION		

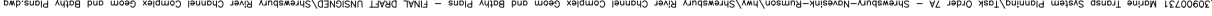
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SCALE: AS SHOWN			

DATE: MAR 2023

NO. 24GE04907400

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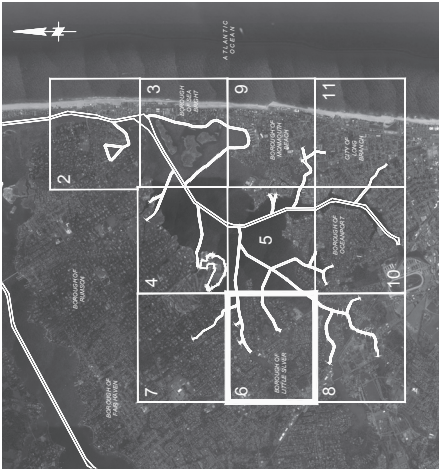
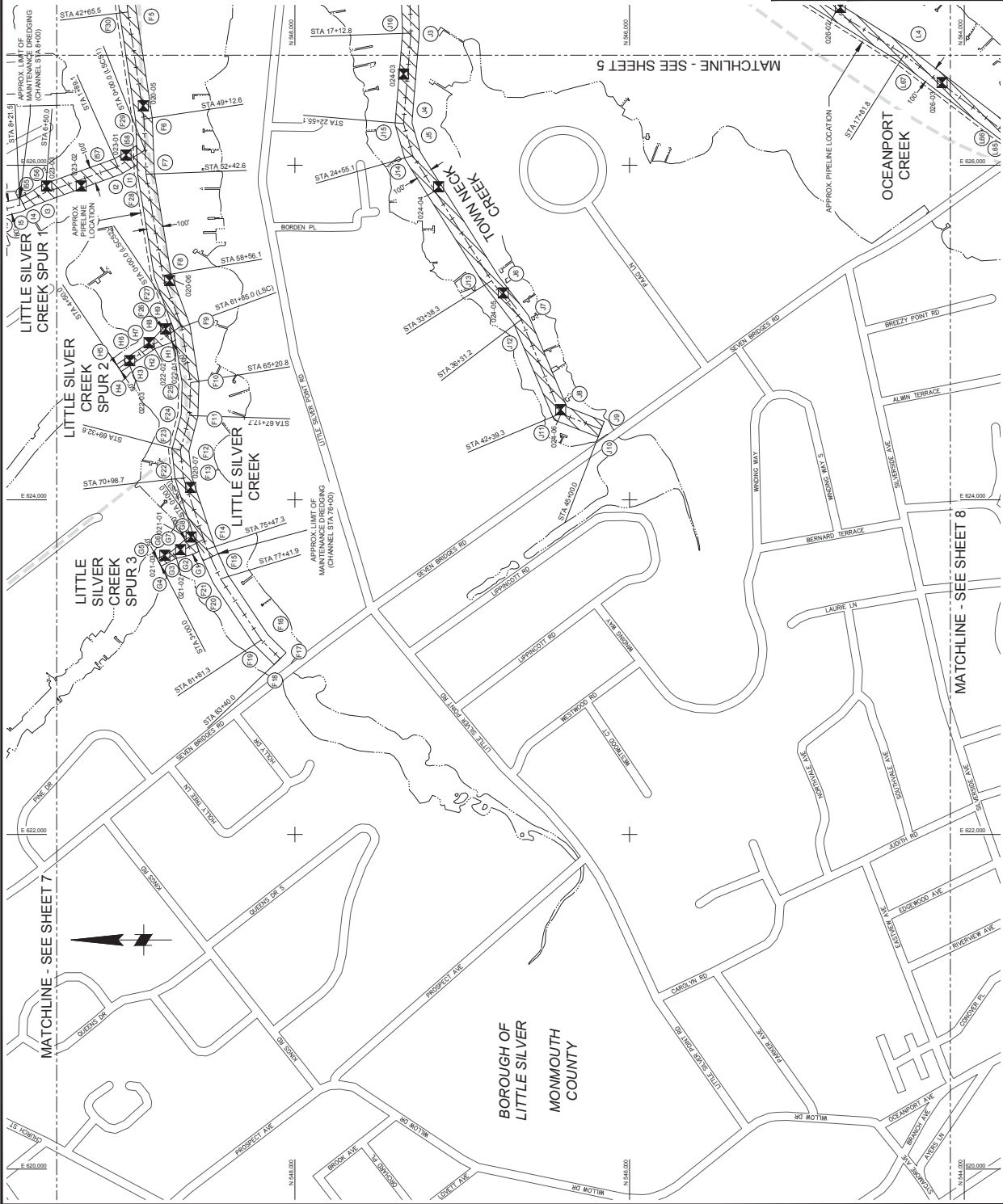
Amal c/ete



3005 Vienna Beach Rd.,
St O
Baltimore, MD 21227
phone (410) 662-9999

NJ PE NO. 24GE0577100

NOTES:
1. CHANNEL GEOMETRY AND VERTICAL DATA VALUES FOR EACH CHANNEL SECTION ARE PROVIDED IN THE TABLES.
2. COORDINATES ARE EXPRESSED IN FEET AND REFERS TO THE NEW JERSEY STATE PLANE GRID COORDINATE SYSTEM NORTH.
3. ELEVATIONS ARE BASED ON THE MEAN SEA LEVEL DATUM OF 1985 (MSL).
4. AERIAL IMAGERY IS FROM GOOGLE MAPS DATED MAY, 2019.



PROJECT LOCATION MAP
SCALE: 1" = 400'

LEGEND

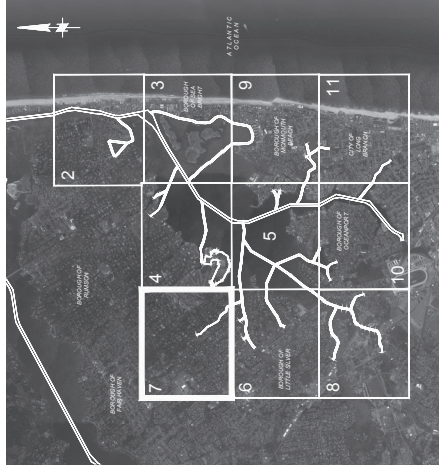
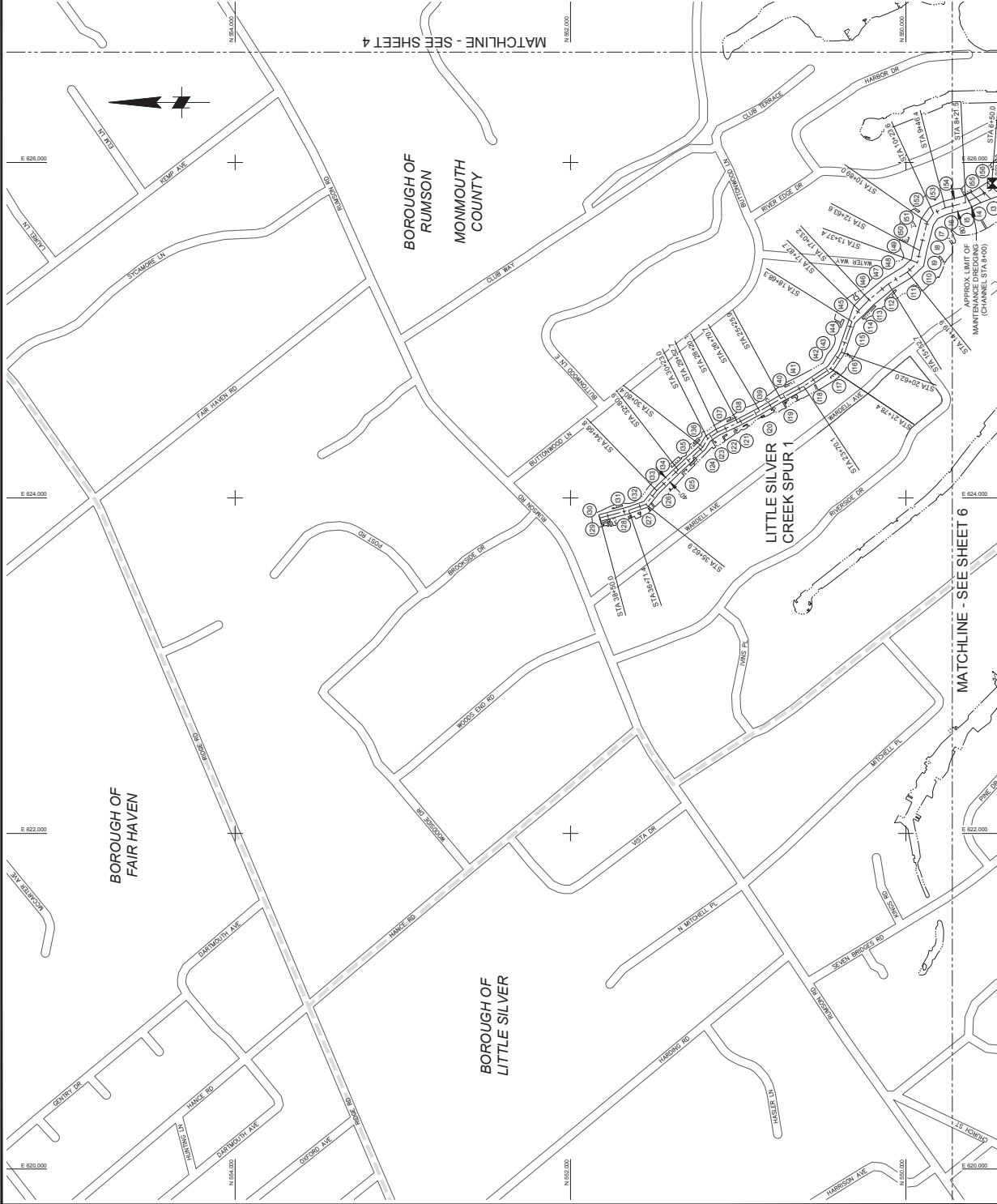
- CHANNEL CENTERLINE
- CHANNEL LIMITS
- FEDERAL CHANNEL CENTERLINE
- APPROXIMATE CHANNEL CENTERLINE
- APPROXIMATE SHORELINE (MHW)
- APPROXIMATE PIKELINE LOCATION
- PLACEMENT SITE EXTENTS
- EXISTING ROAD/PAVEMENT
- EXISTING SIDEWALK
- MUNICIPALITY LIMIT
- APPROXIMATE DREDGE AREA
- CHANNEL SAMPLE LOCATION
- HISTORIC RESOURCE AND BUFFER

GRAPHIC SCALE (FT)
0 300 600 1200



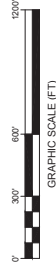
STATE OF NEW JERSEY NJDOT OFFICE OF MARITIME RESOURCES	
TITLE: SHREWSBURY RIVER CHANNEL COMPLEX CHANNEL ARRANGEMENT & GEOMETRY PLAN	
PROJECT: MAINTENANCE DREDGING AND CHANNEL IMPROVEMENTS FOR THE SHREWSBURY RIVER REACHES OF RAMAPO, SEA BEESIT, ANASQUAH, BEACH, LITTLE SILVER, OCEANPORT LONG BRANCH CITY, MONMOUTH COUNTY, NEW JERSEY	
DRAWN BY: JAM	PROJECT NO.
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SCALE AS SHOWN	NO. 2460577100
DATE: MAR 2023	NEW JERSEY PROFESSIONAL ENGINEER
	DWG. NO. PERMIT 08

1. CHANNEL GEOMETRY AND VERTICAL DATUM VARIES FOR EACH CHANNEL AND IS SHOWN ON SHEETS 13-14.
2. COORDINATES ARE EXPRESSED IN FEET AND REFER TO THE NEW JERSEY STATE PLANE GRID COORDINATE SYSTEM NORTH AMERICAN DATUM OF 1983 (NAD83).
3. EXISTING SHORELINE (MHW) & DOCK LOCATIONS ARE BASED ON AERIAL IMAGERY AND SHOULD BE CONSIDERED APPROXIMATE.
4. AERIAL IMAGERY IS FROM GOOGLE MAPS DATED MAY, 2019.



LEGEND

----	CHANNEL CENTERLINE
----	CHANNEL LIMITS
----	FEDERAL CHANNEL CENTERLINE
----	FEDERAL CHANNEL LIMITS
----	APPROXIMATE SHOULDER (MHW)
----	APPROXIMATE PREDLINE LOCATION
----	EXISTING ROAD/PAVEMENT
----	CABLE LIMITS (SEE NOAA CHART 12324)
----	MUNICIPALITY LIMIT
	APPROXIMATE DREDGE AREA
	CHANNEL SAMPLE LOCATION
	HISTORIC RESOURCE AND BUFFER



STATE OF NEW JERSEY
NJDOT OFFICE OF MARITIME RESOURCES

**TITLE: SHREWSBURY RIVER CHANNEL COMPLEX
CHANNEL ARRANGEMENT & GEOMETRY PLAN**

PROJECT: MAINTENANCE DREDGING AND CHANNEL IMPROVEMENTS FOR THE SHREWSBURY RIVER
CHANNEL COMPLEX, CHANNEL NOS. 015-036.

BOROUGH OF RUMSON, SEA BRIGHT, MONMOUTH BEACH, LITTLE SILVER, OCEANPORT
LONG BRANCH CITY, MONMOUTH COUNTY, NEW JERSEY

WSP USA Inc.	PROJECT NO.
CERTIFICATION OF AUTHORIZATION	
NO. 24GA28029800	

SCALE: AS SHOWN	ANAND PATEL	NEW JERSEY PROFESSIONAL ENGINEER NO. 24GE04907400	DWG. NO. PERMIT - 07
DATE: MAR 2023			

GPA
60008 Via San Diego Rd.
Unit C
Olathe, MO 64627
Call 800-333-7267 ext. 209
Phone 816-900-0999

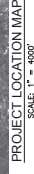
JACOB MCTAVISH *James McTavish*

NJ PE NO. 24GE05777160

JACOB MCTAVISH
NJ PE NO. 24GE05777100

JACOB MCTAVISH
NJ PE NO. 24GE05777100

1. CHANNEL GEOMETRY AND VERTICAL DATUM VARIES FOR EACH CHANNEL AND IS SHOWN ON SHEETS 13-14.
2. COORDINATES ARE EXPRESSED IN FEET AND REFER TO THE NEW JERSEY STATE PLANE GRID COORDINATE SYSTEM NORTH AMERICAN DATUM OF 1983 (NAD83).
3. EXISTING SHORELINE (WATER) & DOCK LOCATIONS ARE BASED ON AERIAL PHOTOGRAPHY DATED MAY, 2019.
4. AERIAL IMAGERY IS FROM GOOGLE MAPS DATED MAY, 2019.



-
- 0' 300' 600' 1200'
- GRAPHIC SCALE (FT)

STATE OF NEW JERSEY
NJDOT OFFICE OF MARITIME RESOURCES

**TITLE: SHREWSBURY RIVER CHANNEL COMPLEX
CHANNEL ARRANGEMENT & GEOMETRY PLAN**

PROJECT: MAINTENANCE DREDGING AND CHANNEL IMPROVEMENTS FOR THE SHREWSBURY RIVER
CHANNEL COMPLEX, CHANNEL NOS. 015-036.

BOROUGH OF RUMSON, SEABRIGHT, MONMOUTH BEACH, LITTLE SILVER, OCEANPORT
LONG BRANCH CITY, MONMOUTH COUNTY, NEW JERSEY

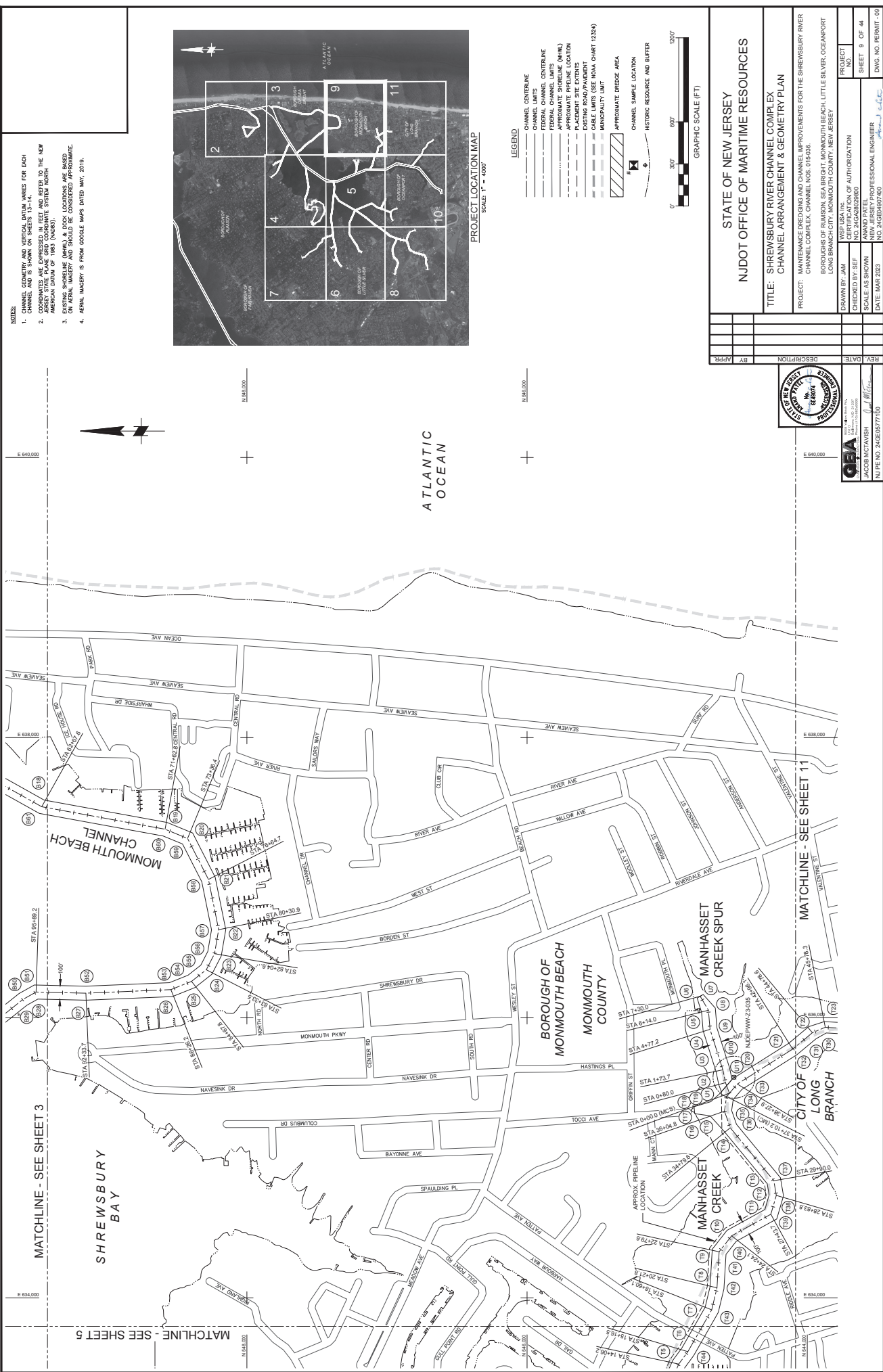
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DATE: MAR 2023	NO. 24GEG04907400 <i>Amal c/s</i>	



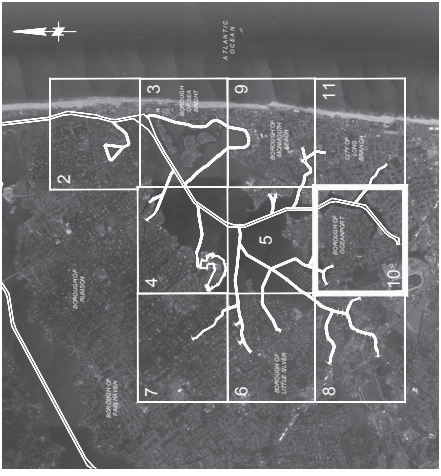
CEA 8900 York Ave. Ste 101
M.D.
Baltimore, MD 21227
Call: 410-528-2227
Fax: 410-528-2099
E-mail: info@cea.com

JACOB MCTAVISH *Jacob McTavish*
NJ PE NO. 24GE0577100

REV.	DATE:	DESCRIPTION	BY	APPR.



- NOTES:
1. CHANNEL GEOMETRY AND VERTICAL DATA NAMES FOR EACH CHANNEL ARE SHOWN IN THE PLAN AND REFER TO THE NEW JERSEY STATE PLANE GRID COORDINATE SYSTEM NORTH
 2. COORDINATES ARE EXPRESSED IN FEET AND INCHES TO THE NEAREST TENTH OF AN INCH
 3. CHANNEL CENTERLINE LOCATIONS ARE BASED ON AERIAL IMAGERY AND SHOULD BE CONSIDERED APPROXIMATE.
 4. AERIAL IMAGERY IS FROM GOOGLE MAPS DATED MAY, 2019.



PROJECT LOCATION MAP
SCALE: 1" = 400'

- LEGEND
- CHANNEL CENTERLINE
 - CHANNEL LIMITS
 - FEDERAL CHANNEL CENTERLINE
 - APPROXIMATE CHANNEL CENTERLINE
 - APPROXIMATE SHORELINE (MHW)
 - APPROXIMATE SHORELINE LOCATION
 - PLACEMENT SITE EXTENTS
 - EXISTING ROAD/PAVEMENT
 - EXISTING ROAD/PAVEMENT
 - MUNICIPALITY LIMIT
 - APPROXIMATE DREDGE AREA
 - CHANNEL SAMPLE LOCATION
 - HISTORIC RESOURCE AND BUFFER



STATE OF NEW JERSEY
NJDOT OFFICE OF MARITIME RESOURCES

TITLE: SHREWSBURY RIVER CHANNEL COMPLEX
CHANNEL ARRANGEMENT & GEOMETRY PLAN

PROJECT: MAINTENANCE DREDGING AND CHANNEL IMPROVEMENTS FOR THE SHREWSBURY RIVER
CHANNEL COMPLEX, CHANNEL NOS. 015-036

PROJECT LOCATION: LITTLE SILVER, OCEANPORT
LONG BRANCH CITY, MONMOUTH COUNTY, NEW JERSEY

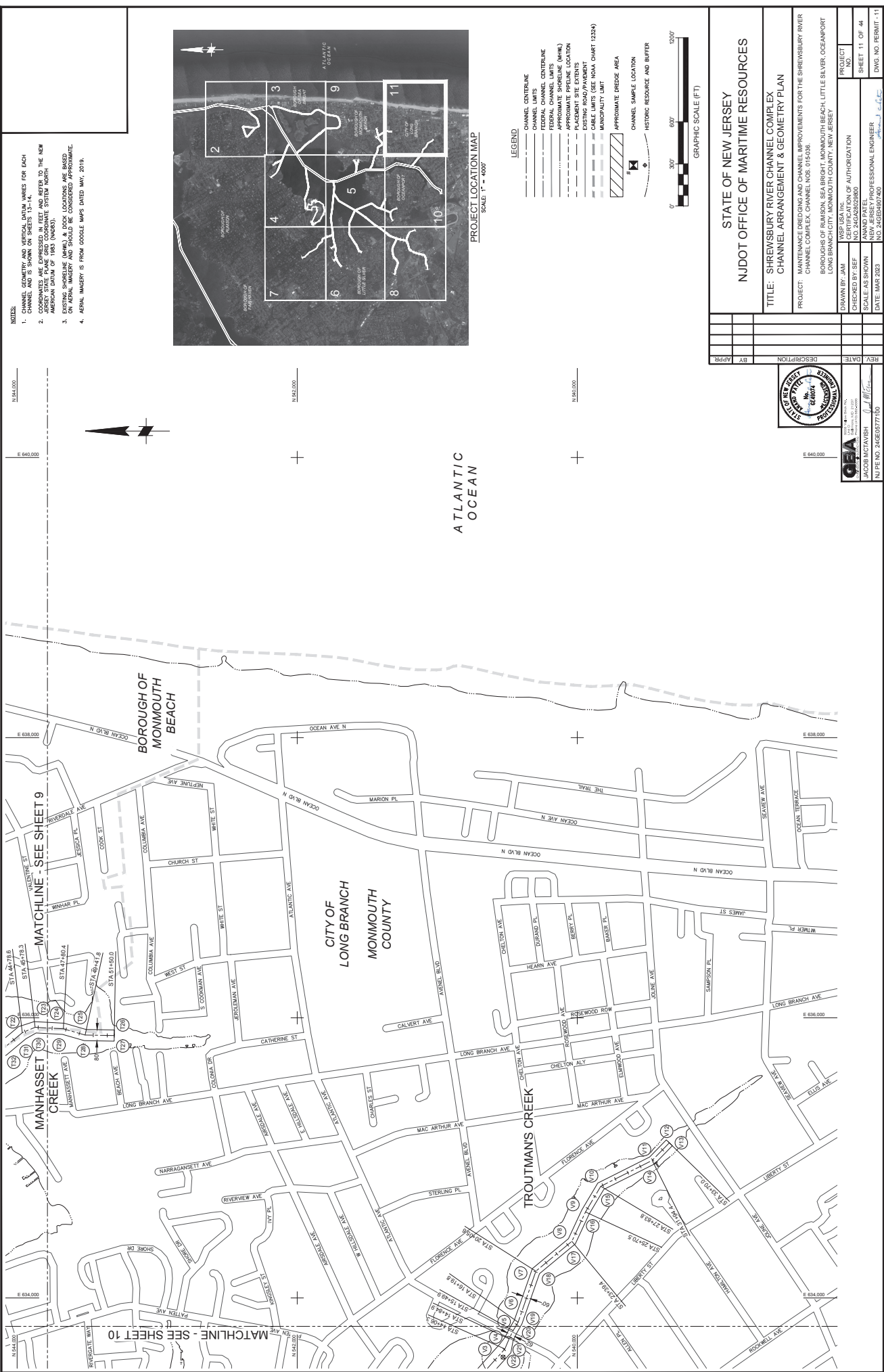
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SCALE AS SHOWN
DATE: MAR 2023

CERTIFICATION OF AUTHORIZATION
NEW JERSEY PROFESSIONAL ENGINEER
NO. 24605777-00

DWG. NO. PERMIT - 10



REVISIONS
DATE DESCRIPTION
BY APPR



- NOTES:
1. CHANNEL GEOMETRY AND VERTICAL DATA LINES FOR EACH CHANNEL CENTERLINE AND CHANNEL LIMITS ARE SHOWN.
 2. COORDINATES ARE EXPRESSED IN FEET AND REFERS TO THE NEW JERSEY STATE PLANE GRID COORDINATE SYSTEM NORTH (NAD83).
 3. CHANNEL CENTERLINE AND CHANNEL LIMITS LOCATIONS ARE BASED ON AERIAL IMAGERY AND SHOULD BE CONSIDERED APPROXIMATE.
 4. AERIAL IMAGERY IS FROM GOOGLE MAPS DATED MAY, 2019.



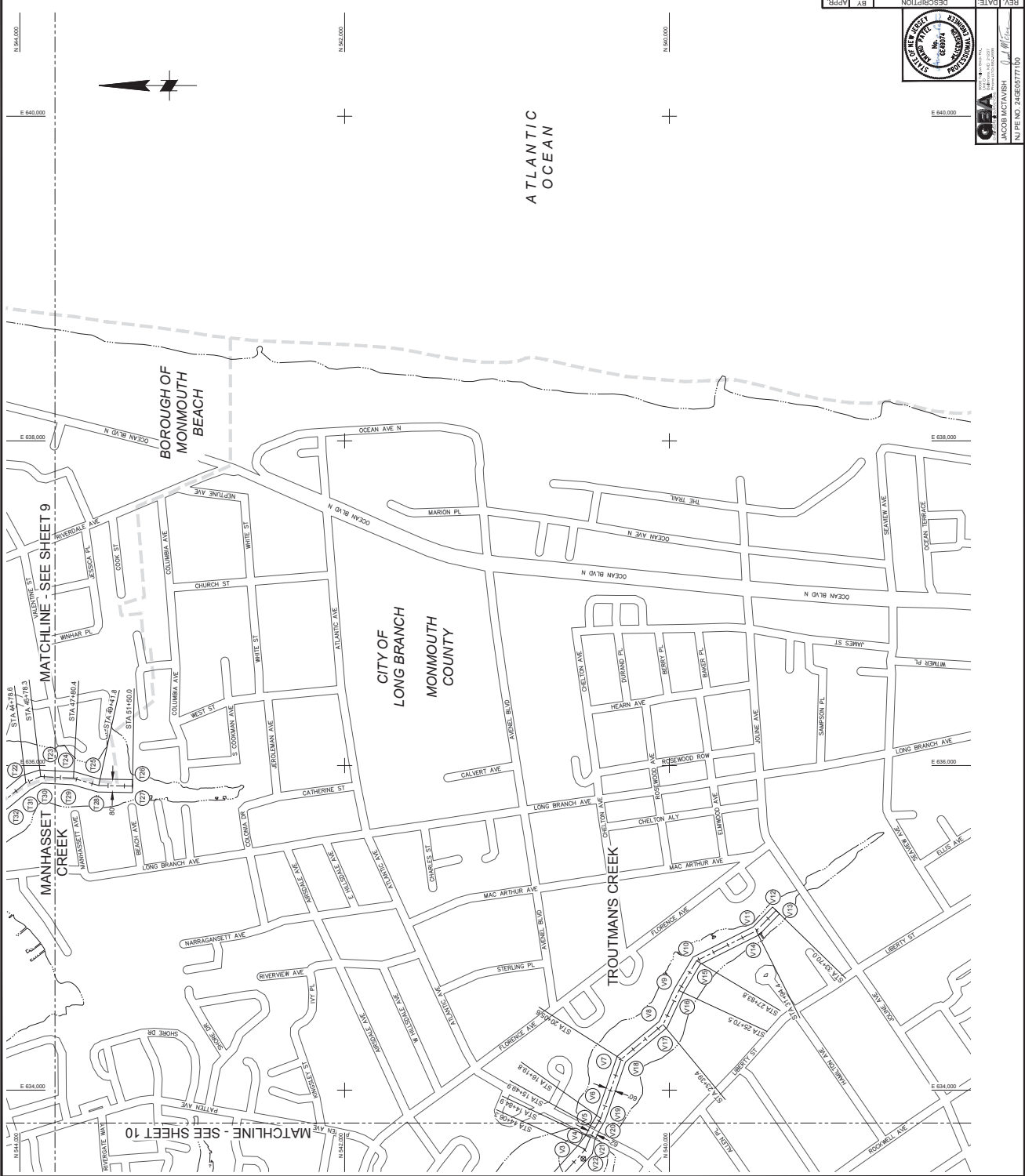
LEGEND

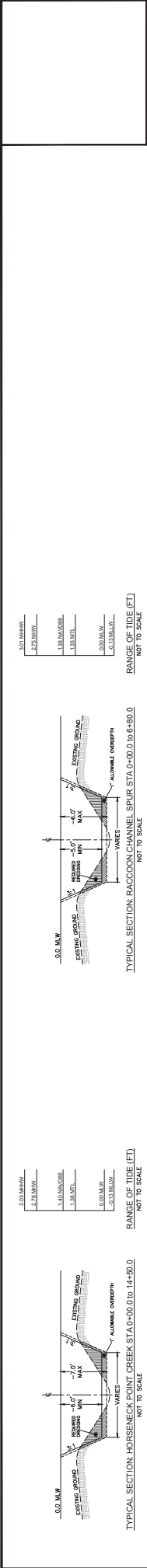
- CHANNEL CENTERLINE
- CHANNEL LIMITS
- FEDERAL CHANNEL CENTERLINE
- APPROXIMATE CHANNEL CENTERLINE
- APPROXIMATE CHANNEL LIMITS
- APPROXIMATE SHORELINE (MHW)
- APPROXIMATE PHELINE LOCATION
- PLACEMENT SITE EXTENTS
- EXISTING ROAD/PAVEMENT
- EXISTING SITE LIMITS
- MUNICIPALITY LIMIT
- APPROXIMATE DREDGE AREA
- CHANNEL SAMPLE LOCATION
- HISTORIC RESOURCE AND BUFFER

GRAPHIC SCALE (FT)

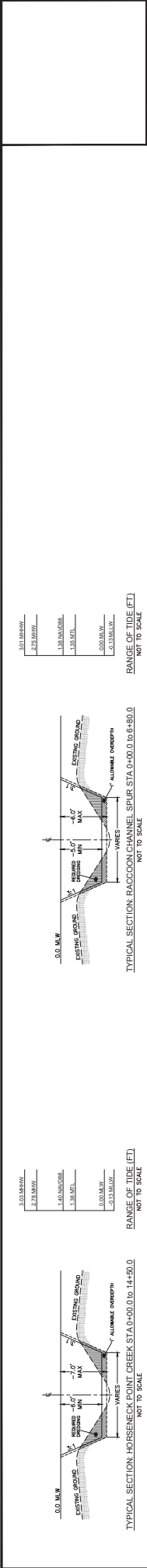
0 300 600 1200

STATE OF NEW JERSEY	
NJDOT OFFICE OF MARITIME RESOURCES	
TITLE: SHREWSBURY RIVER CHANNEL COMPLEX CHANNEL ARRANGEMENT & GEOMETRY PLAN	
PROJECT: MAINTENANCE DREDGING AND CHANNEL IMPROVEMENTS FOR THE SHREWSBURY RIVER CHANNEL COMPLEX, CHANNEL NOS. 015-036	
PROJECT LOCATION: SHREWSBURY BEACH, LITTLE SILVER, OCEANPORT BOROUGH OF RAMAPO, SEA BROOK, MONMOUTH BEACH, LITTLE SILVER, OCEANPORT LONG BRANCH CITY, MONMOUTH COUNTY, NEW JERSEY	
DRAWN BY: JAM	WSP USA INC.
CHECKED BY: SET	CERTIFICATION OF AUTHORIZATION
SCALE AS SHOWN	NO 24602802800
DATE: MAR 2023	NEW JERSEY PROFESSIONAL ENGINEER
DWG. NO. PERMIT - 11	

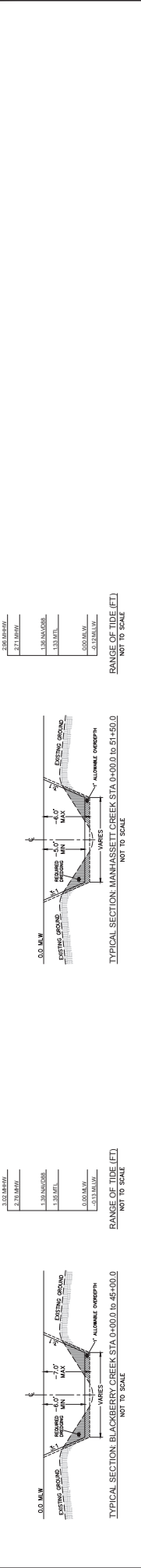




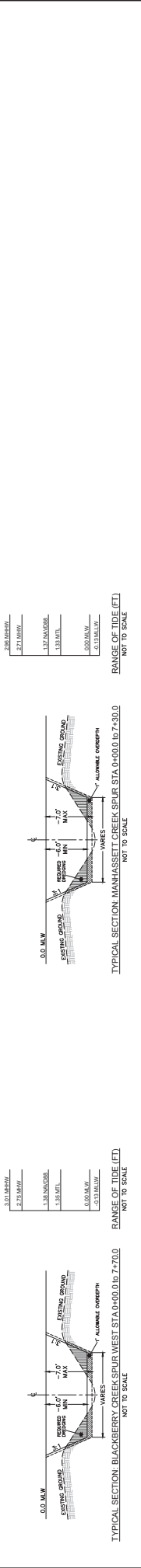
RANGE OF TIDE (FT)
NOT TO SCALE



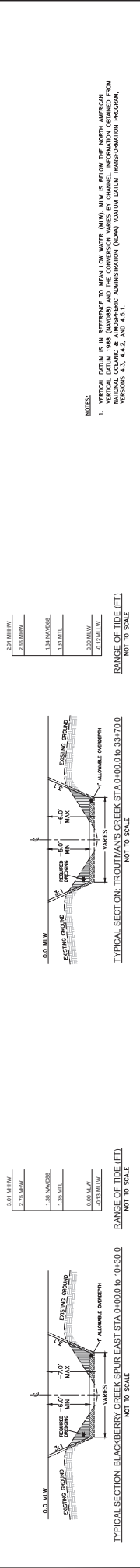
RANGE OF TIDE (FT)
NOT TO SCALE



RANGE OF TIDE (FT)
NOT TO SCALE



RANGE OF TIDE (FT)
NOT TO SCALE



RANGE OF TIDE (FT)
NOT TO SCALE



RANGE OF TIDE (FT)
NOT TO SCALE

NOTES:
1. VERTICAL DATUM IS IN REFERENCE TO MEAN LOW WATER (MLW). MLW IS BELOW THE NORTH AMERICAN VERTICAL DATUM 1988 (NAVD88) AND THE COMPARISON VARIES BY CHANNEL INFORMATION OBTAINED FROM THE NEW JERSEY DEPARTMENT OF TRANSPORTATION (NJDOT) USING DATUM TRANSFORMATION PROGRAM, VERSIONS 4.3, 4.4.2, AND 4.5.1.

STATE OF NEW JERSEY		NJDOT OFFICE OF MARITIME RESOURCES	
TITLE: SHREWSBURY RIVER CHANNEL COMPLEX		CHANNEL GEOMETRY TEMPLATES AND VERTICAL DATUMS	
PROJECT: MAINTENANCE DREDGING AND CHANNEL IMPROVEMENTS FOR THE SHREWSBURY RIVER CHANNEL COMPLEX, CHANNEL NOS. 0165086		PROJECT NO.	
PROJECT LOCATION: 8000 USGS OF RANAPACK SEA BRIDGE, MANASQUIT BEACH, LITTLE SILVER, OCEANPORT LONG BRANCH CITY, MONMOUTH COUNTY, NEW JERSEY		DRAWN BY: JAM	
CHECKED BY: SET		CERTIFICATION OF AUTHORIZATION	
SCALE AS SHOWN		NO 24GB0282880	
DATE: MAR 2023		NEW JERSEY PROFESSIONAL ENGINEER	
NO 24GB04907400		SHEET 13 OF 44	
DWG. NO. PERMIT - 13		REV. NO. PERMIT - 13	

OYSTER BAY CHANNEL HISTORIC RESOURCE COORDINATES				
	POINT	NORTHING	EASTING	BUFFER RADIUS
	NUDEPWW-23-020	506.546.9	637.067.8	250'
	NUDEPWW-23-010	506.829.2	637.063.7	150'

NONMOUNT BEACH CHANNEL			
POINT	NO. 1	NO. 2	NO. 3
81	54478.17	54478.17	54478.17
82	54490.04	54490.04	54490.04
83	54490.04	54490.04	54490.04
84	54410.02	54410.02	54410.02
85	54449.23	54449.23	54449.23
86	54490.04	54490.04	54490.04
87	54490.04	54490.04	54490.04
88	54490.04	54490.04	54490.04
89	54490.04	54490.04	54490.04
90	54490.04	54490.04	54490.04
91	54490.04	54490.04	54490.04
92	54490.04	54490.04	54490.04
93	54490.04	54490.04	54490.04
94	54490.04	54490.04	54490.04
95	54490.04	54490.04	54490.04
96	54490.04	54490.04	54490.04
97	54490.04	54490.04	54490.04
98	54490.04	54490.04	54490.04
99	54490.04	54490.04	54490.04
100	54490.04	54490.04	54490.04
101	54490.04	54490.04	54490.04
102	54490.04	54490.04	54490.04
103	54490.04	54490.04	54490.04
104	54490.04	54490.04	54490.04
105	54490.04	54490.04	54490.04
106	54490.04	54490.04	54490.04
107	54490.04	54490.04	54490.04
108	54490.04	54490.04	54490.04
109	54490.04	54490.04	54490.04
110	54490.04	54490.04	54490.04
111	54490.04	54490.04	54490.04
112	54490.04	54490.04	54490.04
113	54490.04	54490.04	54490.04
114	54490.04	54490.04	54490.04
115	54490.04	54490.04	54490.04
116	54490.04	54490.04	54490.04
117	54490.04	54490.04	54490.04
118	54490.04	54490.04	54490.04
119	54490.04	54490.04	54490.04
120	54490.04	54490.04	54490.04
121	54490.04	54490.04	54490.04
122	54490.04	54490.04	54490.04
123	54490.04	54490.04	54490.04
124	54490.04	54490.04	54490.04
125	54490.04	54490.04	54490.04
126	54490.04	54490.04	54490.04
127	54490.04	54490.04	54490.04
128	54490.04	54490.04	54490.04
129	54490.04	54490.04	54490.04
130	54490.04	54490.04	54490.04
131	54490.04	54490.04	54490.04
132	54490.04	54490.04	54490.04
133	54490.04	54490.04	54490.04
134	54490.04	54490.04	54490.04
135	54490.04	54490.04	54490.04
136	54490.04	54490.04	54490.04
137	54490.04	54490.04	54490.04
138	54490.04	54490.04	54490.04
139	54490.04	54490.04	54490.04
140	54490.04	54490.04	54490.04
141	54490.04	54490.04	54490.04
142	54490.04	54490.04	54490.04
143	54490.04	54490.04	54490.04
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145	54490.04	54490.04	54490.04
146	54490.04	54490.04	54490.04
147	54490.04	54490.04	54490.04
148	54490.04	54490.04	54490.04
149	54490.04	54490.04	54490.04
150	54490.04	54490.04	54490.04
151	54490.04	54490.04	54490.04
152	54490.04	54490.04	54490.04
153	54490.04	54490.04	54490.04
154	54490.04	54490.04	54490.04
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159	54490.04	54490.04	54490.04
160	54490.04	54490.04	54490.04
161	54490.04	54490.04	54490.04
162	54490.04	54490.04	54490.04
163	54490.04	54490.04	54490.04
164	54490.04	54490.04	54490.04
165	54490.04	54490.04	54490.04
166	54490.04	54490.04	54490.04
167	54490.04	54490.04	54490.04
168	54490.04	54490.04	54490.04
169	54490.04	54490.04	54490.04
170	54490.04	54490.04	54490.04
171	54490.04	54490.04	54490.04
172	54490.04	54490.04	54490.04
173	54490.04	54490.04	54490.04
174	54490.04	54490.04	54490.04
175	54490.04	54490.04	54490.04
176	54490.04	54490.04	54490.04
177	54490.04	54490.04	54490.04
178	54490.04	54490.04	54490.04

	STATION	NORTHING	EASTING
RUMSON COUNTRY CLUB 7 CHANNEL CENTERLINE COORDINATES	0+0.00	562.983.8	604.750.5
	3+61.0	603.215.3	634.473.4
	7+60.0	564.105.9	602.296.7
	20+55.4	564.187.7	602.000.3
	31+79.0	564.324.9	631.980.1
	35+11.0	564.597.7	631.006.4
	36+74.2	564.722.0	631.500.3
	37+60.0	564.779.9	631.530.0

POINT	NORTHING		EASTING	
	C1	C2	C1	C2
C1	553.0064	684.0454	684.0454	
C2	553.1718	684.0474	684.0474	
C3	554.0002	682.236		682.236
C4	554.1661	682.0777		682.0777
C5	554.3005	681.9717		681.9717
C6	554.4731	681.6602		681.6602
C7	554.7025	681.5744		681.5744
C8	554.7614	681.5132		681.5132
C9	554.7983	681.5469		681.5469
C10	554.7385	681.6123		681.6123
C11	554.6027	681.7068		681.7068
C12	554.3433	681.9006		681.9006
C13	554.2004	682.023		682.023
C14	554.1518	682.271		682.271
C15	553.2587	684.4694		684.4694
C16	553.0823	684.7345		684.7345

RUMSON COUNTRY CLUB Y CHANNEL SAMPLE LOCATION COORDINATES		
BORING	NORTHING	EASTING
017-01	553,274.4	634,419.0
017-02	554,046.1	632,421.4

RUMSON COUNTRY CLUB CHANNEL CENTERLINE COORDINATES	STATION	NORTHING	EASTING
	0+0.00	551,486.8	626,551.2
	7+71.2	551,413.4	631,763.5
	10+465.1	551,211.4	630,566.5
	27+512.2	551,396.6	632,663.8
	31+487.3	551,571.6	635,442.6
	37+349.8	551,494.2	630,000.5
	40+584.4	551,515.9	634,577.8
	41+70.0	551,406.2	628,557.2

POINT	NORTHING		EASTING	
	E	N	E	N
E1	551 4234	632 1513	551 4234	632 1513
E2	551 3638	631 7901	551 3638	631 7901
E3	551 1603	630 5644	551 1603	630 5644
E4	551 1481	629 8479	551 1481	629 8479
E5	551 2002	629 4045	551 2002	629 4045
E6	551 3237	629 3817	551 3237	629 3817
E7	551 4684	628 5042	551 4684	628 5042
E8	551 4870	628 3913	551 4870	628 3913
E9	551 4625	628 3518	551 4625	628 3518
E10	551 4108	628 3518	551 4108	628 3518
E11	551 4108	628 3327	551 4108	628 3327
E12	551 3424	628 3517	551 3424	628 3517
E13	551 5193	628 8596	551 5193	628 8596
E14	551 5822	629 3401	551 5822	629 3401
E15	551 6221	629 4481	551 6221	629 4481
E16	551 4442	629 7979	551 4442	629 7979
E17	551 2825	630 5868	551 2825	630 5868
E18	551 4830	631 7770	551 4830	631 7770
E19	551 4311	632 4608	551 4311	632 4608

RUMSON COUNTRY CLUB CHANNEL SAMPLE LOCATION COORDINATES			
BORING	NORTHING	EASTING	
019-01	551,469.2	632,000.6	
019-02	551,203.2	630,637.0	
019-03	551,507.7	629,010.5	

RUMSON COUNTRY CLUB BY SPUR	CHANNEL COORDINATES	
	NORTHING	EASTING
D1	553.833.0	603.070.1
D2	554.205.2	632.865.2
D3	554.534.4	632.840.7
D4	554.503.1	632.003.2
D5	554.083.0	632.715.6
D6	554.303.2	632.940.1
D7	554.238.6	632.979.1
D8	553.776.8	633.210.0

RUMSON COUNTRY CLUB Y SPUR CHANNEL SAMPLE LOCATION COORDINATES		
BORING	NORTHING	EASTING
018-01	553,864.5	633,162.6
018-02	554,236.7	632,948.0
018-03	554,430.1	632,807.5

[illegible]

STATE OF NEW JERSEY
NJDOT OFFICE OF MARITIME RESOURCES



QEA
8000 1st Ave South, Rm. 100
Unit D
Miami, FL 33143
Phone (305) 556-2000
Fax (305) 556-2000

JACOB MCTAVISH *J. McTavish*
NJ PE NO. 24GE05777100

DRAWN BY: JAM	WSP USA Inc.
CHECKED BY: SEF	CERTIFICATION OF AUTHORIZATION
SCALE: AS SHOWN	NO. 24GAE28029800
DATE: MAR 2023	ANAND PATEL
	NEW JERSEY PROFESSIONAL ENGINEER
	NO. 24GJE04907400

PROJECT NO.	SHEET 14 OF 44
	DWG. NO. PERMIT - 14
	ENGINEER <i>David C. Cote</i>

POINT	HORNESBACH POINT CRACK	
	NORTHING	EASTING
N1	541.0552	605.5452
N2	541.0450	605.8638
N3	541.1768	606.0187
N4	541.7204	606.1041
N5	541.6500	606.2443
N6	541.5060	606.3331
N7	541.4842	606.3520
N8	541.0704	606.5175
N9	541.0016	604.1793
N10	541.6980	607.3452
N11	541.5568	606.3025
N12	541.0582	606.1033
N13	541.0368	606.0703
N14	541.0972	605.9641
N15	541.7503	605.6450
N16	541.8540	605.4091
N17	541.0976	605.5272

BLACKBERRY CREEK SPUR WEST CHANNEL COORDINATES	POINT		NORTHING	EASTING
	P1		543,037.7	626,247.1
	P2		543,406.2	626,279.7
	P3		543,316.7	626,324.1
	P4		543,217.2	626,439.0
	P5		543,007.6	626,037.1
	P6		542,000.5	626,563.7
	P7		542,794.5	626,534.9
	P8		542,091.1	626,449.5
	P9		543,197.7	626,397.6
	P10		543,262.8	626,209.4
	P11		543,334.2	626,210.1
P12		543,372.1	626,171.1	

BLACKBERRY CREEK SPUR/EAST CHANNEL	CENTERLINE COORDINATES	
	STATION	NORTHING
	0+00.0	544,324.3
	2+75.7	544,220.8
	8+59.7	543,951.2
	10+30.0	543,922.4

BLACKBERRY CREEK SPUR EAST CHANNEL COORDINATES		
POINT	NORTHING	EASTING
G1	544.5535	626.6069
G2	544.5661	626.8250
G3	544.5993	626.3151
G4	543.9710	626.4846
G5	543.7230	626.4795
G6	543.8031	626.2627
G7	544.1756	626.7652
G8	544.2573	626.8601

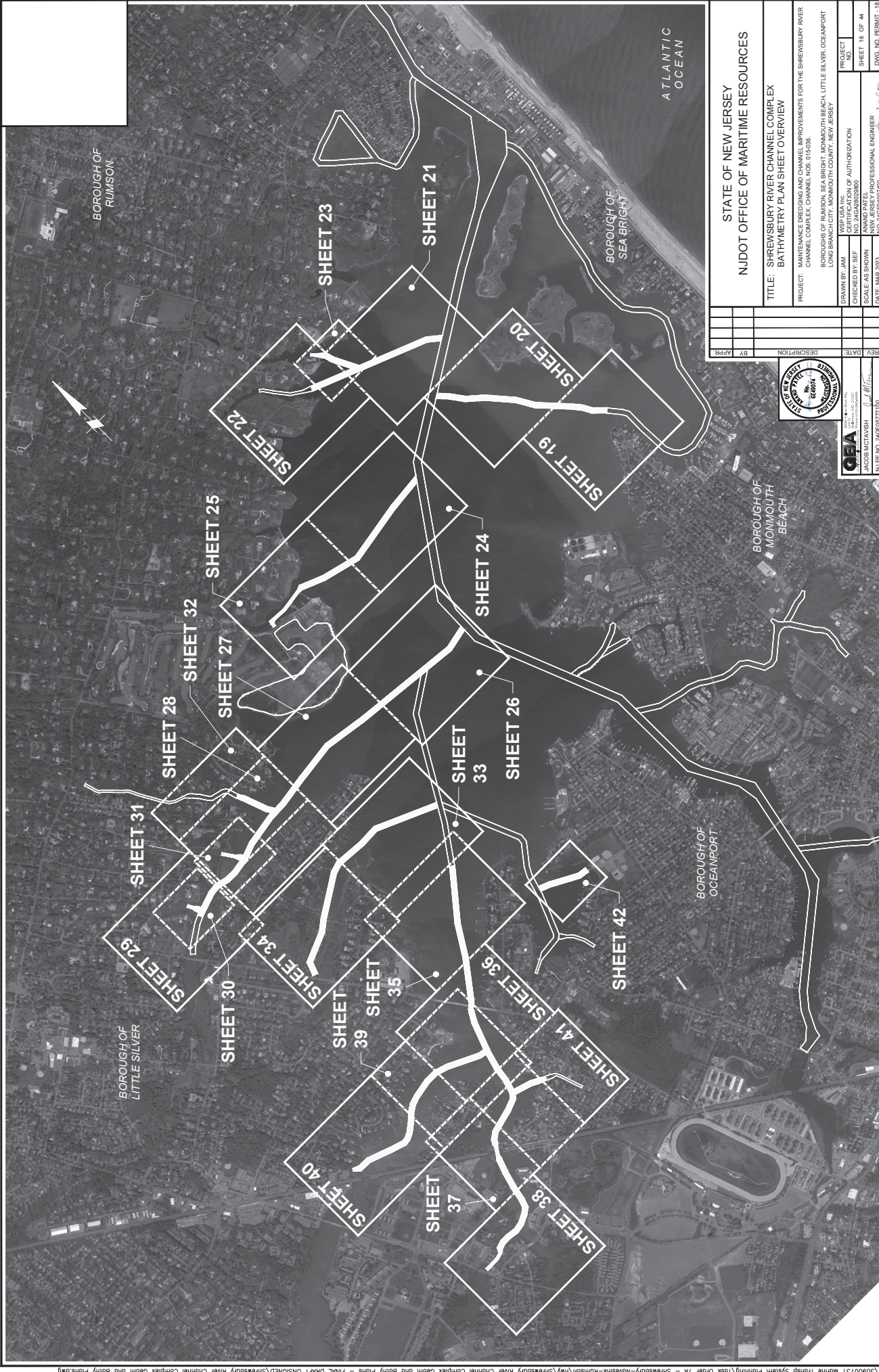
STATE OF NEW JERSEY		NJDOT OFFICE OF MARITIME RESOURCES	
TITLE: SHREWSBURY RIVER CHANNEL COMPLEX CHANNEL GEOMETRY & SAMPLING COORDINATE TABLES			
PROJECT: MAINTENANCE DREDGING AND CHANNEL IMPROVEMENTS FOR THE SHREWSBURY RIVER CHANNEL COMPLEX, CHANNEL NOS. 015036, BOROUGH/IS OF RAMPOUR, SEA BRIGHT, MONMOUTH BEACH, LITTLE SILVER, OCEANPORT LONG BRANCH CITY, MONMOUTH COUNTY, NEW JERSEY		PROJECT NO.	SHEET 16 OF 44
DRAWN BY: JAM		WSP USA, Inc. NO. 0600000000	DATE: MAR 2023
CHECKED BY: SEF		DATE OF AUTHORIZATION	DATE: MAR 2023
SCALE AS SHOWN		ANNAW PATEL NEW JERSEY PROFESSIONAL ENGINEER	DATE: MAR 2023
DATE: MAR 2023			DATE: MAR 2023

WSP USA Inc. CERTIFICATION OF AUTHORIZATION NO. 24GS028029800	PROJECT NO.
DRAWN BY: JAM	SHEET 16 OF 44
CHECKED BY: SEF	
SCALE: AS SHOWN	
DATE: MAR 2023	DWG. NO. PERMIT - 16
ANAND PATEL NEW JERSEY PROFESSIONAL ENGINEER NO. 24GS04907200	

MANHATTAN TREK CHANNEL CENTERLINE COORDINATES			
STATION	NORTHING	EASTING	
0+00	846,427.2	832,256.0	
6+13.0	846,133.4	832,069.8	
8+94.8	846,104.0	831,961.1	
11+19.4	846,022.2	831,930.2	
14+06.2	845,917.5	831,873.8	
16+91.8	845,800.0	831,800.0	
19+07.8	845,664.3	831,722.2	
22+76.2	845,528.0	831,625.3	
26+24.1	845,328.9	831,544.2	
27+43.7	845,200.0	831,507.2	
29+83.3	844,202.0	831,721.1	
29+96.0	844,338.0	831,456.8	
34+79.8	844,439.7	832,114.9	
36+04.8	844,500.0	832,332.2	
37+10.2	844,765.3	832,458.8	
38+75.9	844,699.0	832,538.8	
42+77.8	844,500.0	832,500.0	
46+16.2	843,563.3	832,458.8	
46+73.2	843,719.7	832,922.2	
47+66.4	843,669.7	833,011.1	
50+11.8	843,106.4	832,758.8	
51+10.0	843,206.4	832,732.2	

TROUTMANS CREEK CHANNEL HISTORIC RESOURCE COORDINATES				
	POINT	NORTHING	EASTING	BUFFER RADIUS
	NJDEPWW-23-036	540,529.9	633,577.2	150'

STATE OF NEW JERSEY		NJDOT OFFICE OF MARITIME RESOURCES	
TITLE: SHREWSBURY RIVER CHANNEL COMPLEX CHANNEL GEOMETRY & SAMPLING COORDINATE TABLES			
PROJECT: MAINTENANCE DREDGING AND CHANNEL IMPROVEMENTS FOR THE SHREWSBURY RIVER CHANNEL COMPLEX, CHANNEL NOS. 01-5036. BOROUGH OF RAMONA, SEA BRIGHT, MONMOUTH BEACH, LITTLE SILVER, OCEANPORT LONG BRANCH CITY, MONMOUTH COUNTY, NEW JERSEY		PROJECT NUMBER:	17
DESIGNED BY: JAM	VERIFIED BY: JAM	DATE OF AUTHORIZATION	17
CHECKED BY: SEF	NO. 24G4262800	ANNOY PATE	17
SCALE AS SHOWN	NO. 24G4262800	PROFESSIONAL ENGINEER	17
DATE: MAR 2023	NO. 24G4262800	NO. 24G4262800	17
		DATE: MAR 2023	17



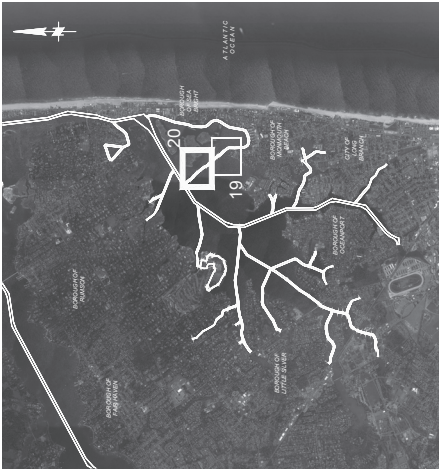
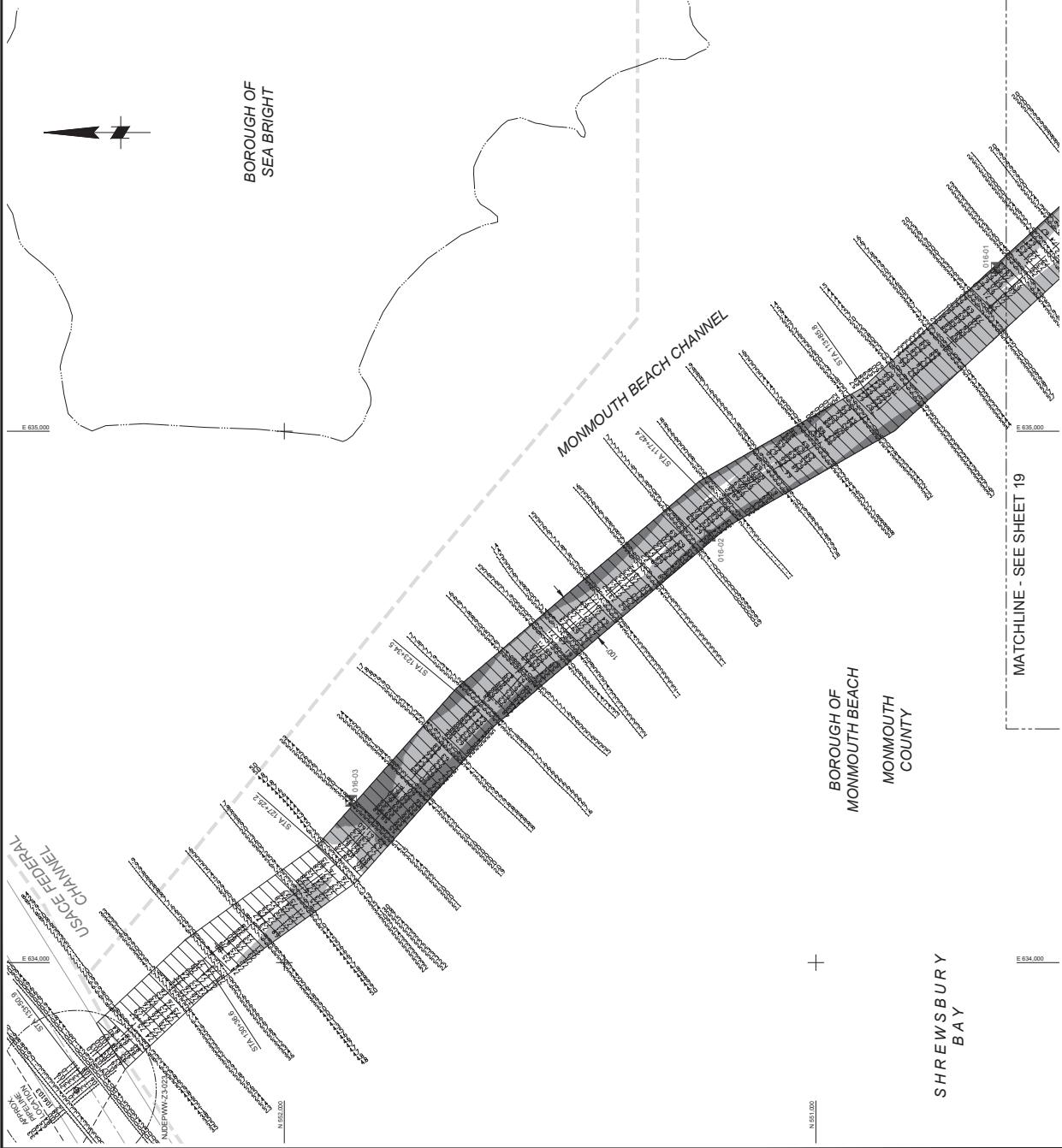
STATE OF NEW JERSEY	
NJDOT OFFICE OF MARITIME RESOURCES	
TITLE: SHREWSBURY RIVER CHANNEL COMPLEX	
BATHYMETRY PLAN SHEET OVERVIEW	
PROJECT: MAINTENANCE, DREDGING AND CHANNEL IMPROVEMENTS FOR THE SHREWSBURY RIVER	
PROJECT: CHANNEL COMPLEX, CHANNEL NOS. 015-036	
BOROUGH OF RUMSON, SEA BRIGHT, MONMOUTH BEACH, LITTLE SILVER, OCEANPORT	
LONG BRANCH CITY, MONMOUTH COUNTY, NEW JERSEY	
DESIGNED BY: JAM	WSP USA, INC.
CHECKED BY: SEF	CERTIFICATION OF AUTHORIZATION
SCALE: AS SHOWN	NO. 24G0577-00
DATE: MAR 2023	NEW JERSEY PROFESSIONAL ENGINEER
DWG. NO. PERMIT: 18	



REV.	DATE	DESCRIPTION
1	03/20/2023	ISSUED FOR PERMIT
2	03/20/2023	ISSUED FOR PERMIT
3	03/20/2023	ISSUED FOR PERMIT
4	03/20/2023	ISSUED FOR PERMIT
5	03/20/2023	ISSUED FOR PERMIT
6	03/20/2023	ISSUED FOR PERMIT
7	03/20/2023	ISSUED FOR PERMIT
8	03/20/2023	ISSUED FOR PERMIT
9	03/20/2023	ISSUED FOR PERMIT
10	03/20/2023	ISSUED FOR PERMIT
11	03/20/2023	ISSUED FOR PERMIT
12	03/20/2023	ISSUED FOR PERMIT
13	03/20/2023	ISSUED FOR PERMIT
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16	03/20/2023	ISSUED FOR PERMIT
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36	03/20/2023	ISSUED FOR PERMIT
37	03/20/2023	ISSUED FOR PERMIT
38	03/20/2023	ISSUED FOR PERMIT
39	03/20/2023	ISSUED FOR PERMIT
40	03/20/2023	ISSUED FOR PERMIT
41	03/20/2023	ISSUED FOR PERMIT
42	03/20/2023	ISSUED FOR PERMIT

MONMOUTH BEACH CHANNEL		
TEMPERATURE (°C)	1.50	
WIND SPEED (MPH)	5.00	
TOTAL TIDE	5.00	

- NOTES:
1. VERTICAL DATUM IS IN REFERENCE TO MEAN LOW WATER (MLW). MLW IS 1.54 FEET BELOW THE NORTH AMERICAN VERTICAL DATUM 1988 (NAVD83). INFORMATION OBTAINED FROM NAVAL OCEANIC & ATMOSPHERIC DATA CENTER (NOA) NAVD83 DATUM IS USED FOR ALL VERTICAL ELEVATIONS.
 2. COORDINATES ARE GIVEN IN FEET AND REFER TO THE NEW JERSEY STATE PLANE GRID COORDINATE SYSTEM NORTH AMERICAN DATUM OF 1983 (NAD83).
 3. CONDITIONAL (CND) SOUNDING DATA SHOWN WAS COLLECTED ON DECEMBER 16-17, 2019 BY GANIGAN & BRYANT ASSOCIATES (GBA) AND INDICATED DEPTH BELOW MLW.
 4. THE INFORMATION SHOWN ON THIS PLAN REPRESENTS THE RESULTS OF SURVEY CONDUCTED ON THE MONMOUTH BEACH CHANNEL. THE CHANNEL CENTERLINE AND BOUNDARIES ARE SHOWN ON THE PLAN. THE CHANNEL CENTERLINE AND BOUNDARIES ARE SHOWN ON THE PLAN. THE CHANNEL CENTERLINE AND BOUNDARIES ARE SHOWN ON THE PLAN.
 5. EXISTING SHORELINE, DOCK, & PILING LOCATIONS BASED ON GOOGLE MAPS AERIAL IMAGERY DATED MAY, 2019 AND SHOULD BE CONSIDERED APPROXIMATE.



PROJECT LOCATION MAP
SCALE: 1" = 400'

- LEGEND
- CHANNEL CENTERLINE
 - FEDERAL CHANNEL CENTERLINE
 - FEDERAL CHANNEL LIMITS
 - APPROXIMATE SHORELINE (MHW)
 - APPROXIMATE SHORELINE (MLW)
 - EXISTING ROAD/PAVEMENT
 - CABLE LIMITS (SEE NOAA CHART 12324)
 - MUNICIPALITY LIMIT
 - APPROXIMATE DREDGE AREA (CFA 100'-500' TO 130'-250')
 - CHANNEL SAMPLE LOCATION
 - HISTORIC RESOURCE AND BUFFER
 - AREA PRESENTLY ABOVE TEMPLATE (AMW ELEV. -8' MLW)
 - AREA PRESENTLY ABOVE DEPTH (CURRENT ELEV. -7' & -8' MLW)

GRAPHIC SCALE (FT)
0 100 200 300 400

STATE OF NEW JERSEY
NJDOT OFFICE OF MARITIME RESOURCES

TITLE: MONMOUTH BEACH CHANNEL
CHANNEL BATHYMETRY PLAN

PROJECT: MAINTENANCE DREDGING AND CHANNEL IMPROVEMENTS FOR THE SHREWSBURY RIVER
CHANNEL COMPLEX, CHANNEL NOS. 016306
BOROUGH OF SEA BRIGHT, MONMOUTH BEACH, LITTLE SILVER, OCEANPORT
LONG BRANCH CITY, MONMOUTH COUNTY, NEW JERSEY

DRAWN BY: JAM
CHECKED BY: SEE
SCALE AS SHOWN
DATE: MAR 2023
NEW JERSEY PROFESSIONAL ENGINEER
NO. 24684907400

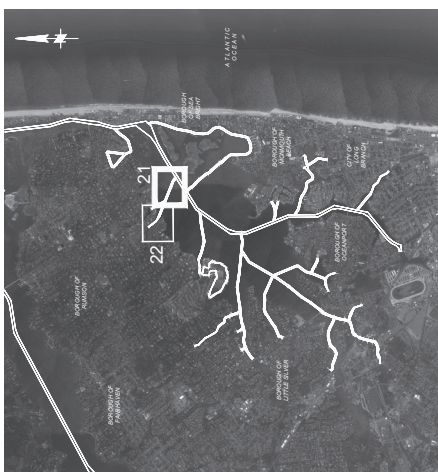
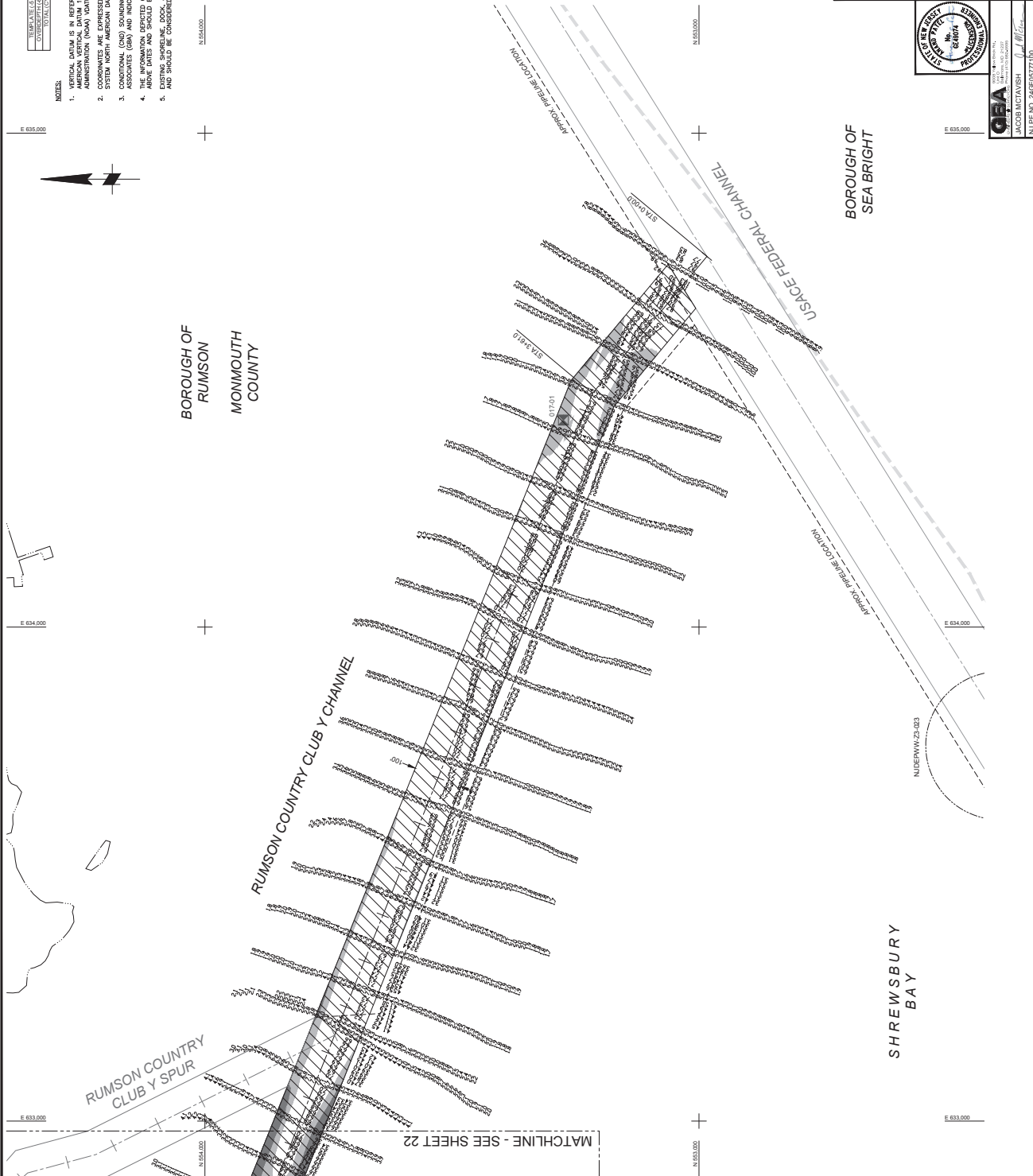


QEA
JACOB MCINISH
NJ PE NO. 2468577150

MATCHLINE - SEE SHEET 19

NOTES:

1. VERTICAL DATUM IS IN REFERENCE TO MEAN LOW WATER (MLW). MLW IS 1.53 FEET BELOW THE NORTH AMERICAN VERTICAL DATUM 1988 (NAVD83). INFORMATION OBTAINED FROM NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION (NOAA) DATUM TRANSFORMATION PROGRAM, VERSION 4.5.1.
2. SYSTEM NAME: NEW JERSEY STATE PLANE COORDINATE SYSTEM (NAD83) DATUM: MEAN DATUM OF LOW WATERS
3. CONDITIONAL (230) SOUNDING DATA SHOWN WAS COLLECTED ON DECEMBER 15, 2019 BY CHANDON & BRYANT ASSOCIATES (GBA) AND INDICATES DEPTH BELOW MLW.
4. THE INFORMATION DEPICTED ON THIS REPRESENTS THE RESULTS OF SURVEYS CONDUCTED ON THE ABOVE DATES AND SHOULD BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.
5. EXISTING SHORELINE, DOCKS, & PILING CONDITIONS BASED ON GOOGLE MAPS AERIAL IMAGED DATA MAY, 2019

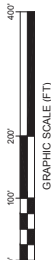


PROJECT LOCATION MAP

- LEGEND**
- | | |
|-------|-------------------------------------|
| ---- | CHANNEL CENTERLINE |
| ---- | CHANNEL LIMITS |
| ---- | FEDERAL CHANNEL CENTERLINE |
| ---- | FEDERAL CHANNEL LIMITS |
| | APPROXIMATE SHOULDER (MHWL) |
| ---- | APPROXIMATE PIPELINE LOCATION |
| ---- | EXISTING ROAD/PAVEMENT |
| ---- | CABLE LIMITS (SEE NOAA CHART 12324) |
| ---- | MUNICIPALITY LIMIT |



CHANGE OF TIDE (FT)
NOT TO SCALE



GRAPHIC SCALE (FT)

**BOROUGH OF
SEA BRIGHT**

STATE OF NEW JERSEY
NJDOT OFFICE OF MARITIME RESOURCES

SHREWSBURY
BAY

**TITLE: RUMSON COUNTRY CLUB Y CHANNEL
CHANNEL BATHYMETRY PLAN**

PROJECT: MAINTENANCE DREDGING AND CHANNEL IMPROVEMENTS FOR THE SHREWSBURY RIVER
CHANNEL COMPLEX, CHANNEL NOS. 015-036.

BOROUGH OF RUMSON, SEA BRIGHT, MONMOUTH BEACH, LITTLE SILVER, OCEANPORT
LONG BRANCH CITY, MONMOUTH COUNTY, NEW JERSEY

DRAWN BY: JAM	WSP USA Inc. CERTIFICATION OF AUTHORIZATION NO. 24GAG2029800	PROJECT NO.
CHECKED BY: SEF		
SCALE: AS SHOWN	ANAND PATEL NEW JERSEY PROFESSIONAL ENGINEER NO. 24GAG2029800	SHEET 21 OF 44
DATE: MAR 2023		DWG NO. PERMIT - 21

QEA
9000 Van Ness Blvd. N.
Unit O
Dallas, TX 75227
Tel: 214-343-1100
Fax: 214-343-1101

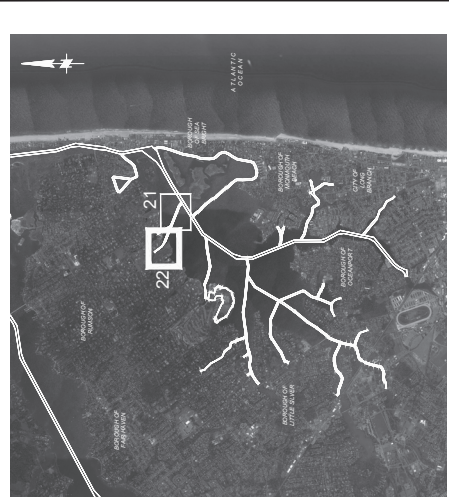
JACOB MCTAVISH
J. M. McTavish
ID NO. 24CE057740

DATE: MAR 2023
NEW JERSEY PROFESSIONAL ENGINEER
DWG NO PERMIT - 21



RUMSON COUNTRY CLUB Y CHANNEL		
TEMPERATURE (°C)	3.50	
COORDINATE (NAD 83)	3.50	
TOTAL (FT)	6.00	

- NOTES:
1. VERTICAL DATUM IS IN REFERENCE TO MEAN LOW WATER (MLW). MLW IS 1.53 FEET BELOW THE NORTH AMERICAN VERTICAL DATUM 1988 (NAVD83). INFORMATION OBTAINED FROM NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION (NOAA) CHART 11406 (1988) AND CHART 11406 (1998) IS USED TO DETERMINE THE VERTICAL DATUM.
 2. COORDINATES ARE CONSIDERED IN FEET AND REFER TO THE NEW JERSEY STATE PLANE GRID COORDINATE SYSTEM NORTH AMERICAN DATUM OF 1983 (NAD83).
 3. CONDITIONAL (CND) SOUNDING DATA SHOWN WAS COLLECTED ON DECEMBER 16, 2019 BY GANAGAN & BRYANT ASSOCIATES (GBA) AND INDICATED DEPTH BELOW MLW.
 4. THIS INFORMATION IS BASED ON THE RESULTS OF SURVEY CONDUCTED AT THE TIME OF THE SURVEY. THE RESULTS OF THE SURVEY MAY BE DIFFERENT FROM THE RESULTS OF A FUTURE SURVEY.
 5. EXISTING SHORELINE, DOCK, & PILING LOCATIONS BASED ON GOOGLE MAPS AERIAL IMAGERY DATED MAY, 2019 AND SHOULD BE CONSIDERED APPROXIMATE.



LEGEND

- CHANNEL CENTERLINE
- FEDERAL CHANNEL CENTERLINE
- FEDERAL CHANNEL LIMITS
- APPROXIMATE SHORELINE (MHW)
- APPROXIMATE SHORELINE (MLW)
- EXISTING ROAD/PAVEMENT
- CABLE LIMITS (SEE NOAA CHART 12324)
- MUNICIPALITY LIMIT
- APPROXIMATE DREDGE AREA (STA 0+00 TO 2+750.0)
- CHANNEL SAMPLE LOCATION
- HISTORIC RESOURCE AND BUFFER
- AREA PRESENTLY ABOVE TEMPLATE (ANOVE ELEV. -5 M.W.)
- AREA PRESENTLY ABOVE OVERDEPTH (ANOVE ELEV. -8 M.W.)

GRAPHIC SCALE (FT)

RANGE OF TIDE (FT)

NOT TO SCALE

STATE OF NEW JERSEY	
NJDOT OFFICE OF MARITIME RESOURCES	
TITLE: RUMSON COUNTRY CLUB Y CHANNEL	
CHANNEL BATHYMETRY PLAN	
PROJECT: MAINTENANCE DREDGING AND CHANNEL IMPROVEMENTS FOR THE SHREWSBURY RIVER	
CHANNEL COMPLEX, CHANNEL NOS. 015006	
RIVER: RUMSON RIVER, SEA BRIDGE, MONMOUTH BEACH, LITTLE SILVER, OCEANPORT	
LONG BRANCH CITY, MONMOUTH COUNTY, NEW JERSEY	
DRAWN BY: JAM	PROJECT NO.
CHECKED BY: SEE	SHEET 22 OF 44
SCALE AS SHOWN	DATE: MAR 2023
DATE: MAR 2023	DWG. NO. PERMIT 221

SHREWSBURY BAY

REVISIONS

REV	DATE	DESCRIPTION	BY	APP'D
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

QSEA

JACOB MCINTOSH

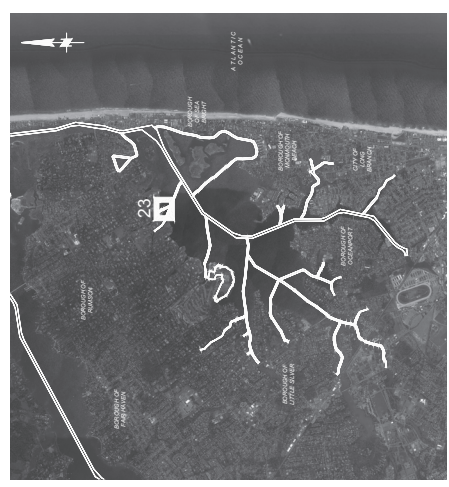
NU PE NO. 2460577100

SHREWSBURY RIVER CHANNEL COMPLEX GEOM AND BOTHY PLANS

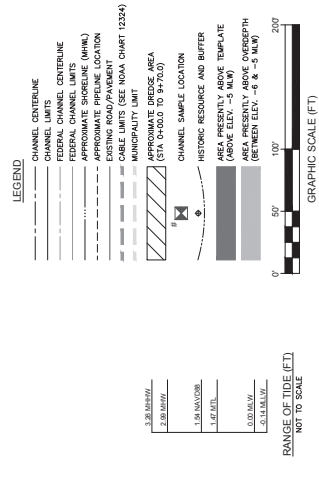
RUMSON COUNTRY CLUB Y SPUR		
TEMPERATURE (°C)	4.20	
COORDINATE (NAD 83)	4.20	
TOTAL (FT)	8.00	

NOTES:

1. VERTICAL DATUM IS IN REFERENCE TO MEAN LOW WATER (MLW). MLW IS 1.54 FEET BELOW THE NORTH AMERICAN VERTICAL DATUM 1988 (NAVD83). INFORMATION OBTAINED FROM NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION (NOAA) CHART 11406, SHEET 11406, IS USED TO DETERMINE THE VERTICAL DATUM.
2. COORDINATES ARE CONSIDERED IN FEET AND REFER TO THE NEW JERSEY STATE PLANE GRID COORDINATE SYSTEM NORTH AMERICAN DATUM OF 1983 (NAD83).
3. CONDITIONAL (CND) SOUNDING DATA SHOWN WAS COLLECTED ON DECEMBER 17, 2019 BY GANAGAN & BRIANT ASSOCIATES (GBA) AND INDICATED DEPTH BELOW MLW.
4. INFORMATION DEPICTED ON THIS PLAN REPRESENTS THE RESULTS OF SURVEY CONDUCTED AT THE TIME THE DATA WAS COLLECTED. THE DATA IS NOT GUARANTEED TO BE ACCURATE OR COMPLETE. THE DATA IS FOR INFORMATIONAL PURPOSES ONLY AND SHOULD BE CONSIDERED APPROXIMATE.
5. EXISTING SHORELINE, DOCK, & PILING LOCATIONS BASED ON GOOGLE MAPS AERIAL IMAGERY DATED MAY, 2019 AND SHOULD BE CONSIDERED APPROXIMATE.

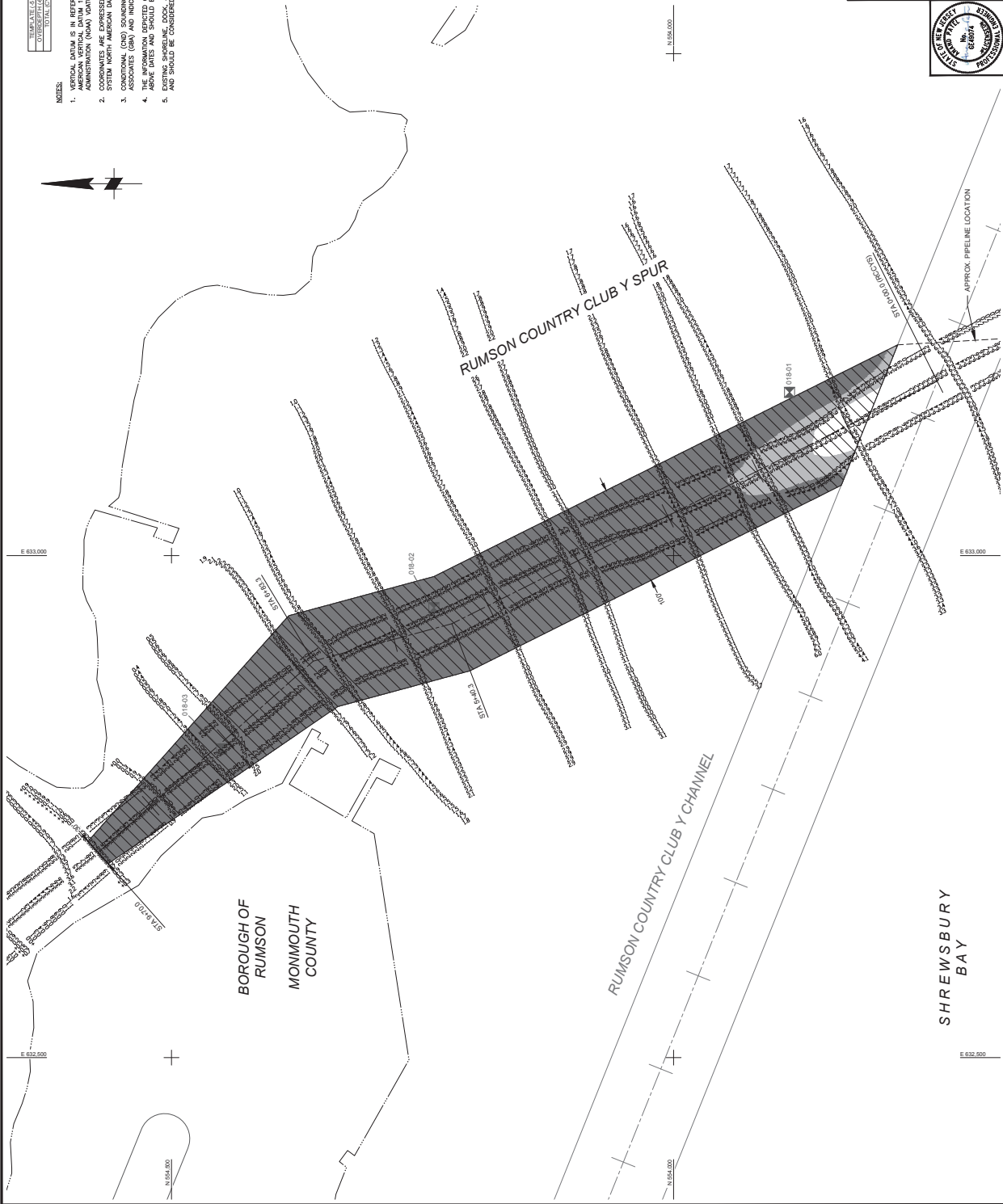


PROJECT LOCATION MAP
SCALE: 1" = 400'



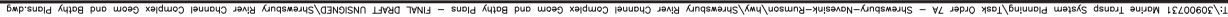
GRAPHIC SCALE (FT)

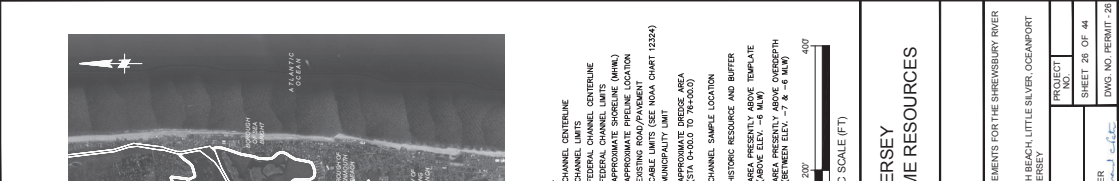
STATE OF NEW JERSEY	
NJDOT OFFICE OF MARITIME RESOURCES	
TITLE: RUMSON COUNTRY CLUB Y SPUR	
CHANNEL BATHYMETRY PLAN	
PROJECT: MAINTENANCE DREDGING AND CHANNEL IMPROVEMENTS FOR THE SHREWSBURY RIVER	
PROJECT: CHANNEL COMPLEX, CHANNEL NOS. 015006	
PROJECT: RUMSON COUNTRY CLUB Y SPUR, LITTLE SILVER, OCEANPORT	
PROJECT: LONG BRANCH CITY, MONMOUTH COUNTY, NEW JERSEY	
DRAWN BY: JAM	WSP USA INC.
CHECKED BY: SEE	CERTIFICATION OF AUTHORIZATION
SCALE AS SHOWN	NO 24602802800
DATE: MAR 2023	NEW JERSEY PROFESSIONAL ENGINEER
DWG. NO. PERMIT 231	NO 24604907400



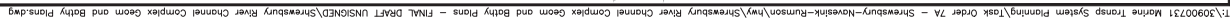
JACOB MCINISH
NJ PE NO 2460577100

[illegible]









STATE OF NEW JERSEY

DEPARTMENT OF TRANSPORTATION

NEW JERSEY TURNPIKE AUTHORITY

PROJECT NO. 2460577-100

NO. 2460577-100

DATE: MAR 2023

NO. 2460577-100

NO. 2460577-100

NO. 2460577-100

STATE OF NEW JERSEY

DEPARTMENT OF TRANSPORTATION

NEW JERSEY TURNPIKE AUTHORITY

PROJECT NO. 2460577-100

NO. 2460577-100

STATE OF NEW JERSEY

DEPARTMENT OF TRANSPORTATION

NEW JERSEY TURNPIKE AUTHORITY

PROJECT NO. 2460577-100

NO. 2460577-100

STATE OF NEW JERSEY

DEPARTMENT OF TRANSPORTATION

NEW JERSEY TURNPIKE AUTHORITY

PROJECT NO. 2460577-100

NO. 2460577-100

STATE OF NEW JERSEY

DEPARTMENT OF TRANSPORTATION

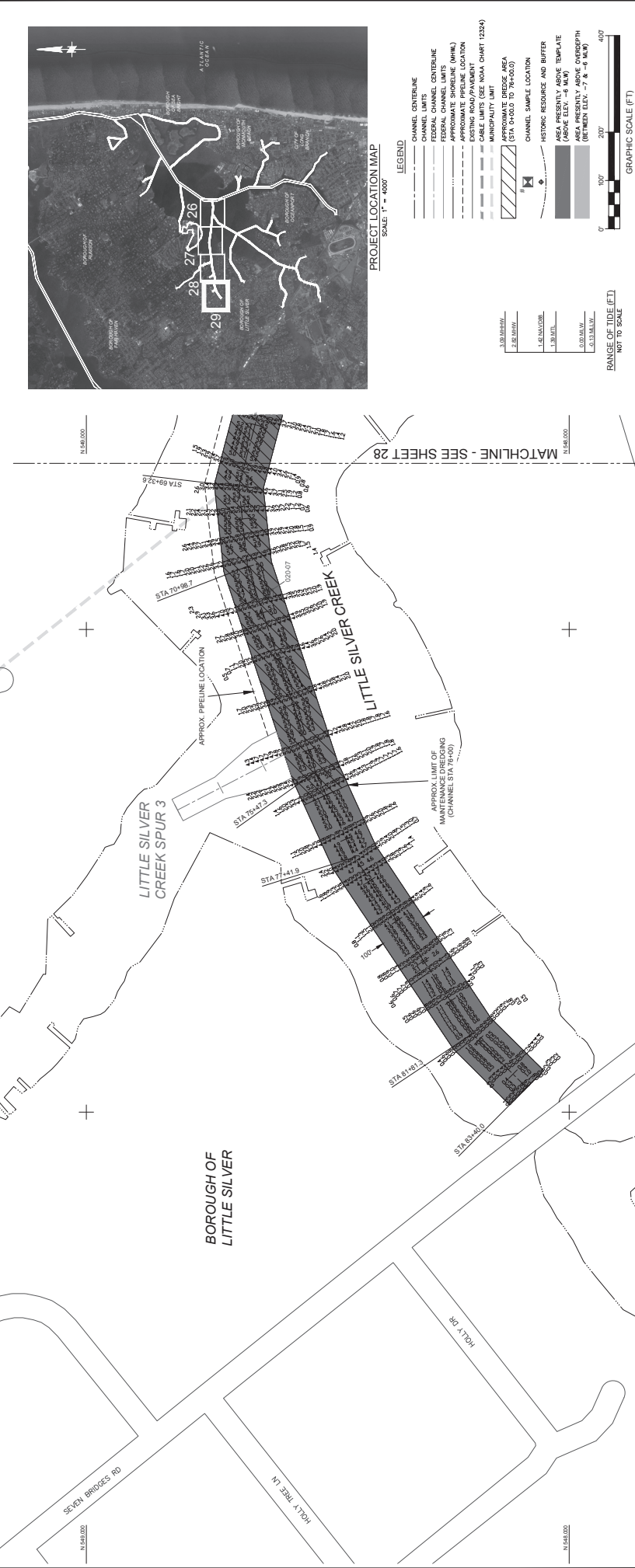
NEW JERSEY TURNPIKE AUTHORITY

PROJECT NO. 2460577-100

NO. 2460577-100

NOTES:

1. VERTICAL DATUM IS IN REFERENCE TO MEAN LOW WATER (MLW). MLW IS 1.42 FEET BELOW THE NORTH AMERICAN VERTICAL DATUM 1988 (NAVD83). INFORMATION OBTAINED FROM NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION (NOAA) CHART 11406, SHEET 11406, IS USED TO DETERMINE THE MEAN LOW WATER DATUM.
2. COORDINATES ARE GIVEN IN FEET AND INCHES. THE NEW JERSEY STATE PLANE GRID COORDINATE SYSTEM NORTH AMERICAN DATUM OF 1983 (NAD83) IS USED.
3. CONDITIONAL (CND) SOUNDING DATA SHOWN WAS COLLECTED ON DECEMBER 15-16, 2019 BY GANAGAN & BRYANT ASSOCIATES (GBA) AND INDICATED DEPTH BELOW MLW.
4. INFORMATION DEPICTED ON THIS PLAN REPRESENTS THE RESULTS OF SURVEY CONDUCTED ON THE LITTLE SILVER CREEK CHANNEL. THE CHANNEL CENTERLINE AND CHANNEL LIMITS ARE SHOWN. THE CHANNEL CENTERLINE IS SHOWN AS A DASHED LINE. THE CHANNEL LIMITS ARE SHOWN AS SOLID LINES. THE CHANNEL CENTERLINE IS SHOWN AS A DASHED LINE. THE CHANNEL LIMITS ARE SHOWN AS SOLID LINES.
5. EXISTING SHORELINE, DOCK, & PILING LOCATIONS BASED ON GOOGLE MAPS AERIAL IMAGERY DATED MAY, 2019 AND SHOULD BE CONSIDERED APPROXIMATE.



STATE OF NEW JERSEY

DEPARTMENT OF TRANSPORTATION

NEW JERSEY TURNPIKE AUTHORITY

PROJECT NO. 2460577-100

NO. 2460577-100

STATE OF NEW JERSEY

DEPARTMENT OF TRANSPORTATION

NEW JERSEY TURNPIKE AUTHORITY

PROJECT NO. 2460577-100

NO. 2460577-100

STATE OF NEW JERSEY

DEPARTMENT OF TRANSPORTATION

NEW JERSEY TURNPIKE AUTHORITY

PROJECT NO. 2460577-100

NO. 2460577-100

STATE OF NEW JERSEY

DEPARTMENT OF TRANSPORTATION

NEW JERSEY TURNPIKE AUTHORITY

PROJECT NO. 2460577-100

NO. 2460577-100

STATE OF NEW JERSEY

DEPARTMENT OF TRANSPORTATION

NEW JERSEY TURNPIKE AUTHORITY

PROJECT NO. 2460577-100

NO. 2460577-100

PROJECT LOCATION MAP
SCALE: 1" = 400'

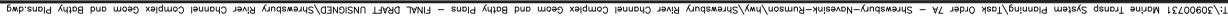
LEGEND

- CHANNEL CENTERLINE
- FEDERAL CHANNEL LIMITS
- APPROXIMATE SHORELINE (MHW)
- APPROXIMATE DOCK/PIILING LOCATION
- EXISTING ROAD/PAVEMENT
- CABLE LIMITS (SEE NOAA CHART 12324)
- MUNICIPALITY LIMIT
- APPROXIMATE DREDGE AREA (STA 61+0.0 TO 70+98.7)
- CHANNEL SAMPLE LOCATION
- HISTORIC RESOURCE AND BUFFER
- AREA PRESENTLY ABOVE TIDE (AREA PRESENTLY ABOVE TIDE)
- AREA PRESENTLY ABOVE DEPTH (AREA PRESENTLY ABOVE DEPTH)

GRAPHIC SCALE (FT)

RANGE OF TIDE (FT)

NOT TO SCALE



STATE OF NEW JERSEY

DEPARTMENT OF TRANSPORTATION

NEW JERSEY TURNPIKE AUTHORITY

LITTLE SILVER CREEK SPUR 2

CHANNEL BATHYMETRY PLAN

DATE: 03/20/2023

TEMPERATURE (°C/MIN)

WIND SPEED (MPH)

WIND DIRECTION

WIND GUST (MPH)

WIND BURST (MPH)

WIND MAX (MPH)

WIND TOTAL (MPH)

NOTES:

1. VERTICAL DATUM IS IN REFERENCE TO MEAN LOW WATER (MLW). MLW IS 1.42 FEET BELOW THE NORTH AMERICAN VERTICAL DATUM 1988 (NAVD83). INFORMATION OBTAINED FROM NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION (NOAA) CHART 11350, SHEET 11350-1, LITTLE SILVER CREEK, NEW JERSEY, 1983.

2. COORDINATES ARE CONSIDERED IN FEET AND REFER TO THE NEW JERSEY STATE PLANE GRID COORDINATE SYSTEM NORTH AMERICAN DATUM OF 1983 (NAD83).

3. CONDITIONAL (CND) SOUNDING DATA SHOWN WAS COLLECTED ON DECEMBER 15, 2019 BY GANAGAN & BRYANT ASSOCIATES (GBA) AND INDICATED DEPTH BELOW MLW.

4. INFORMATION DEPICTED ON THIS PLAN REPRESENTS THE RESULTS OF SURVEY CONDUCTED AT THE TIME OF THE SURVEY. THE SURVEY WAS CONDUCTED ON THE DATE OF THE SURVEY. THE SURVEY WAS CONDUCTED ON THE DATE OF THE SURVEY. THE SURVEY WAS CONDUCTED ON THE DATE OF THE SURVEY.

5. EXISTING SHORELINE, DOCK, & PILING LOCATIONS BASED ON GOOGLE MAPS AERIAL IMAGERY DATED MAY, 2019 AND SHOULD BE CONSIDERED APPROXIMATE.

The main map displays the Little Silver Creek Spur 2 channel bathymetry plan. It shows the channel's path through the Rumson River and Little Silver Creek. Key features include the channel centerline, federal channel centerline, approximate channel limits, and various soundings (depths) along the channel. The map also shows the surrounding land, including the Borough of Rumson and Monmouth County. A north arrow and a scale bar are provided for reference.

STATE OF NEW JERSEY

NEW JERSEY TURNPIKE AUTHORITY

NEW JERSEY DEPARTMENT OF TRANSPORTATION

PROJECT: LITTLE SILVER CREEK SPUR 2

CHANNEL BATHYMETRY PLAN

DATE: 03/20/2023

PROJECT: MAINTENANCE, DREDGING AND CHANNEL IMPROVEMENTS FOR THE SHREWSBURY RIVER

PROJECT: CHANNEL COMPLEX, CHANNEL NOS. 016006

PROJECT: RECONSTRUCTION OF RUMSON, SEA BRIDGE, MONMOUTH BEACH, LITTLE SILVER, OCEANPORT

PROJECT: LONG BRANCH CITY, MONMOUTH COUNTY, NEW JERSEY

DESIGNED BY: JAM

CHECKED BY: SEE

SCALE AS SHOWN

DATE: MAR 2023

WSP USA Inc.

CERTIFICATION OF AUTHORIZATION

NO 2460282880

NEW JERSEY PROFESSIONAL ENGINEER

NO 24604907400

REV

DATE

DESCRIPTION

BY

APPR

QTEA

QUALITY TECHNICAL EVALUATION

JACOB MCINAVISH

NU PE NO 2460577100

1:30900731 Marine Tramp System Planning/Task Order 7A - Shrewsbury-Novelsink-Rumson\mwy\Shrewsbury River Channel Complex Geom and Bathy Plans.dwg

FINAL DRAFT (UNSIGNED) Shrewsbury River Channel Complex Geom and Bathy Plans.dwg

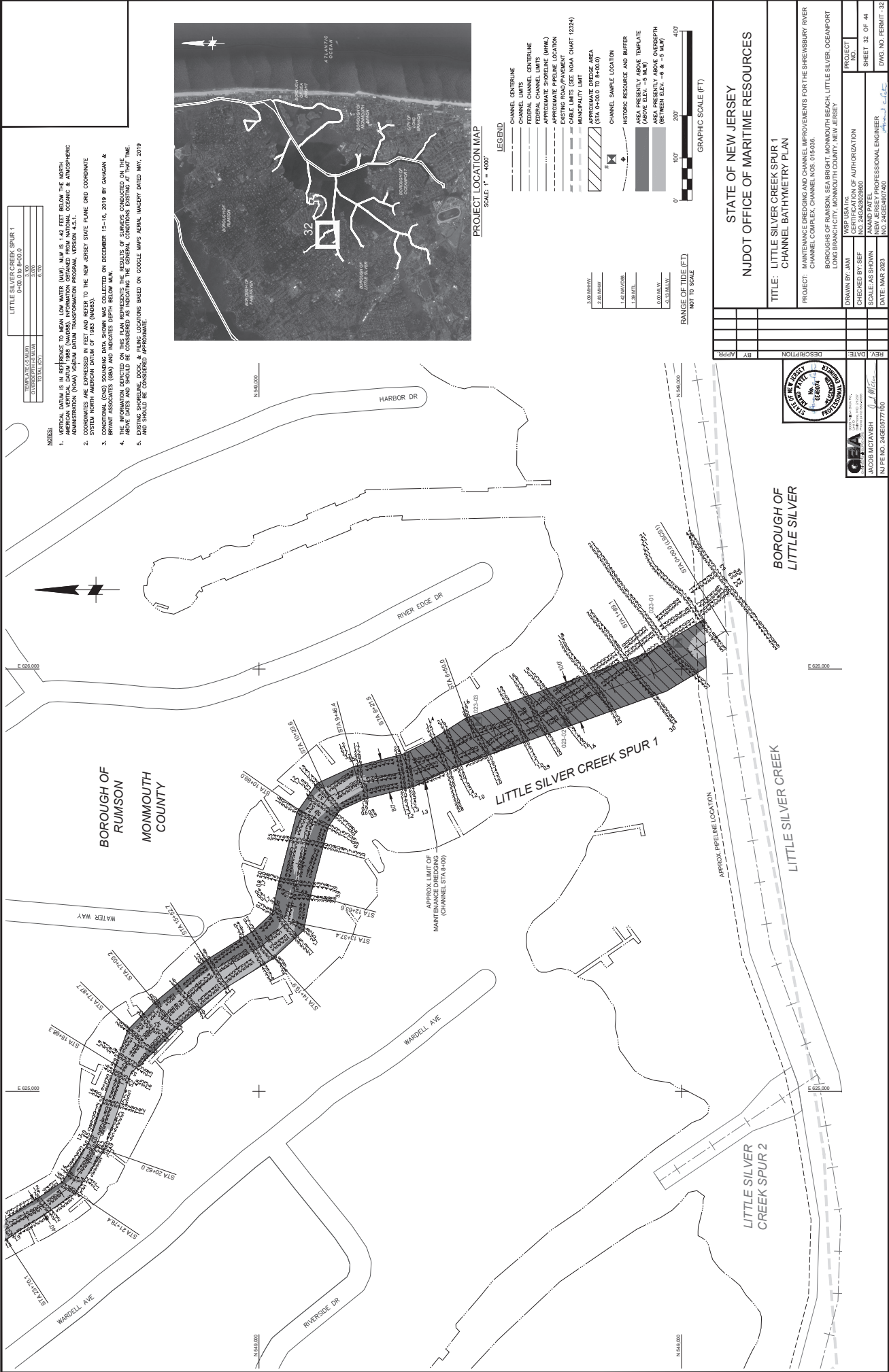
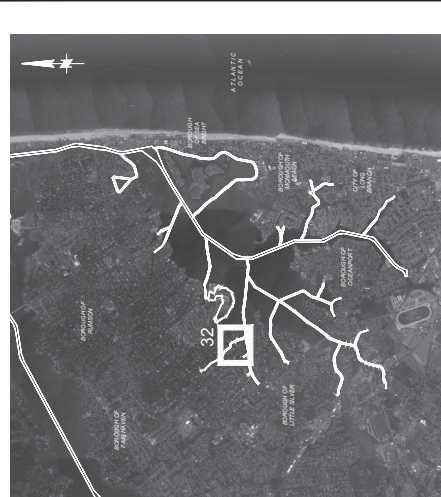


TABLE 1: COORDINATE DATA

COORDINATE (Easting)	COORDINATE (Northing)
625,000	1,460,000
625,000	1,460,000

- NOTES:
- VERTICAL DATUM IS IN REFERENCE TO MEAN LOW WATER (MLW). MLW IS 1.42 FEET BELOW THE NORTH AMERICAN VERTICAL DATUM 1988 (NAVD83). INFORMATION OBTAINED FROM NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION (NOAA) CHART 11360, SHEET 1, IS USED TO DETERMINE THE MLW DATUM.
 - COORDINATES ARE CONSIDERED IN FEET AND REFER TO THE NEW JERSEY STATE PLANE GRID COORDINATE SYSTEM NORTH AMERICAN DATUM OF 1983 (NAD83).
 - CONDITIONAL (CND) SOUNDING DATA SHOWN WAS COLLECTED ON DECEMBER 15-16, 2019 BY GANAKAN & BRYANT ASSOCIATES (GBA) AND INDICATED DEPTH BELOW MLW.
 - THE INFORMATION SHOWN ON THIS PLAN REPRESENTS THE RESULTS OF SURVEY CONDUCTED ON THE LITTLE SILVER CREEK SPUR 1 CHANNEL. THE CHANNEL CENTERLINE AND BANKS ARE SHOWN AS THEY EXIST ON MAY 1, 2019.
 - EXISTING SHORELINE, DOCK, & PILING LOCATIONS BASED ON GOOGLE MAPS AERIAL IMAGERY DATED MAY, 2019 AND SHOULD BE CONSIDERED APPROXIMATE.



LEGEND

- CHANNEL CENTERLINE
- FEDERAL CHANNEL LIMITS
- APPROXIMATE SHORELINE (MHW)
- APPROXIMATE SHORELINE (MLW)
- EXISTING ROAD/PAVEMENT
- CABLE LIMITS (SEE NOAA CHART 12324)
- MUNICIPALITY LIMIT
- APPROXIMATE DREDGE AREA (C/A CHGO TO 8+40.0)
- CHANNEL SAMPLE LOCATION
- HISTORIC RESOURCE AND BUFFER
- AREA PRESENTLY ABOVE TEMPLATE (ANOVE ELEV. -5 MLW)
- AREA PRESENTLY ABOVE OVERDEPTH (OVERHEAD ELEV. -6' & -5' MLW)

GRAPHIC SCALE (FT)

RANGE OF TIDE (FT)

NOT TO SCALE

STATE OF NEW JERSEY
NJDOT OFFICE OF MARITIME RESOURCES

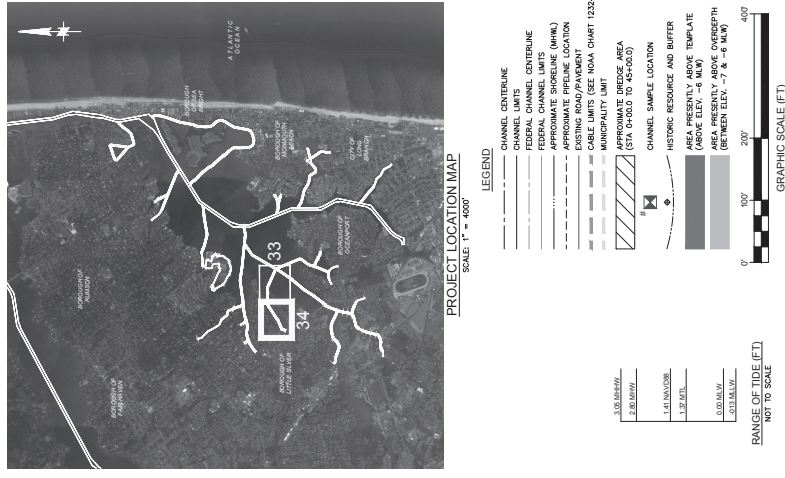
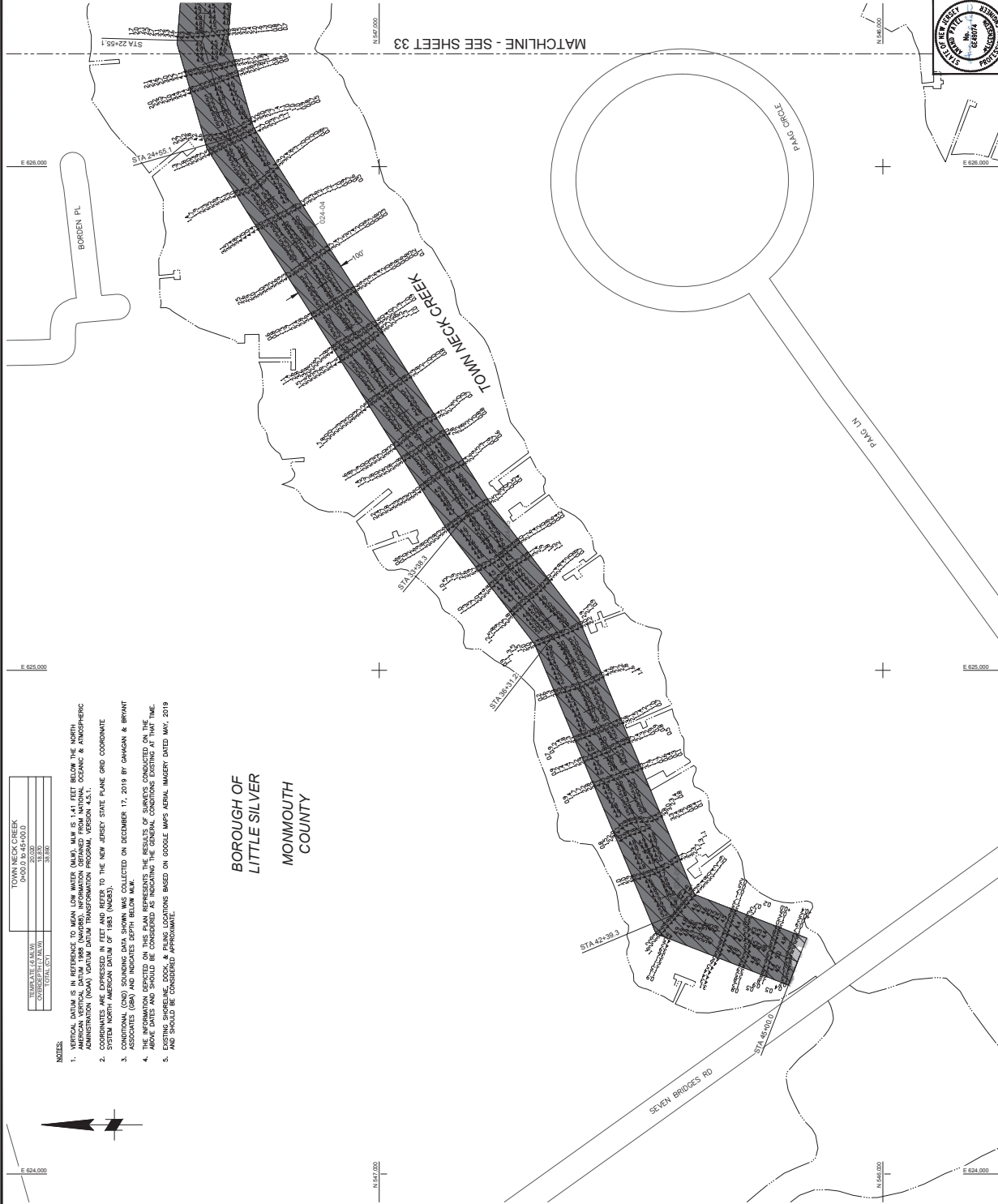
TITLE: LITTLE SILVER CREEK SPUR 1
CHANNEL BATHYMETRY PLAN

PROJECT: MAINTENANCE DREDGING AND CHANNEL IMPROVEMENTS FOR THE SHREWSBURY RIVER
CHANNEL COMPLEX, CHANNEL NOS. 016306
BOROUGH OF RUMSON, SEA BRIGHT, ANANASUITY BEACH, LITTLE SILVER, OCEANPORT
LONG BRANCH CITY, MONMOUTH COUNTY, NEW JERSEY

DRAWN BY: JAM
CHECKED BY: SEE
SCALE AS SHOWN
DATE: MAR 2023

WSP USA INC.
CERTIFICATION OF AUTHORIZATION
NO 24602802800
NEW JERSEY PROFESSIONAL ENGINEER
NO 24604907400

REV. NO. PERMIT 32



		STATE OF NEW JERSEY NJDOT OFFICE OF MARITIME RESOURCES	
TITLE: TOWN NECK CREEK CHANNEL BATHYMETRY PLAN		PROJECT: MAINTENANCE DREDGING AND CHANNEL IMPROVEMENTS FOR THE SHREWSBURY RIVER CHANNEL COMPLEX, CHANNEL NOS. 01-03-06. BOROUGH OF RAMSON, SEA BRIGHT, MOUNMOUTH BEACH, LITTLE SILVER, OCEANPORT LONG BRANCH CITY, MONMOUTH COUNTY, NEW JERSEY	
DRAWN BY: JAM CHECKED BY: SEF DESIGNED BY: SEF SCALE: AS SHOWN DATE: MAR 2023	WSP USA Inc. DIVISION OF AUTHORIZATION NO. 24G00020890 ANNO DATED: PROFESSIONAL ENGINEER NO. 24G0004790	PROJECT NO. SHEET 34 OF 44 DWG NO PERMIT 34	PROJECT NO. SHEET 34 OF 44 DWG NO PERMIT 34

1. VERTICAL DATUM IS IN REFERENCE TO MEAN LOW WATER (NAD 83). MLLW IS 1.41 FEET BELOW THE AMERICAN VERTICAL DATUM (NAD 1988) DATUM. INFORMATION OBTAINED FROM ATLANTIC OCEANIC & ATMOSPHERIC ADMINISTRATION (NOAA) DATUM DATUM TRANSFORMATION PROGRAM, VERSION 4.5.1.
2. COORDINATES ARE EXPRESSED IN FEET AND REFER TO THE NEW JERSEY STATE PLANE GRID COORDINATE SYSTEM (NAD 83) DATUM OF 1983 (NAD83).
3. CONDITIONAL (COND) SOUNDING DATA WAS COLLECTED ON DECEMBER 17, 2019 BY GHAMON & BRYANT ASSOCIATES (GBA) AND INDICATES DEPTH BELOW MLLW.
4. THE INFORMATION DERIVED ON THIS PLAN REPRESENTS THE RESULTS OF SURVEYS CONDUCTED ON THE ABOVE DATES AND SHOULD BE CONSIDERED AS INCLUDING THE USUAL CONDITIONS EXISTING AT THAT TIME.
5. EXISTING SURVEY DATA AND SOUNDING PRISM LOCATIONS BASED ON GOOGLE MAPS AERIAL IMAGERY DATED MAY, 2019.

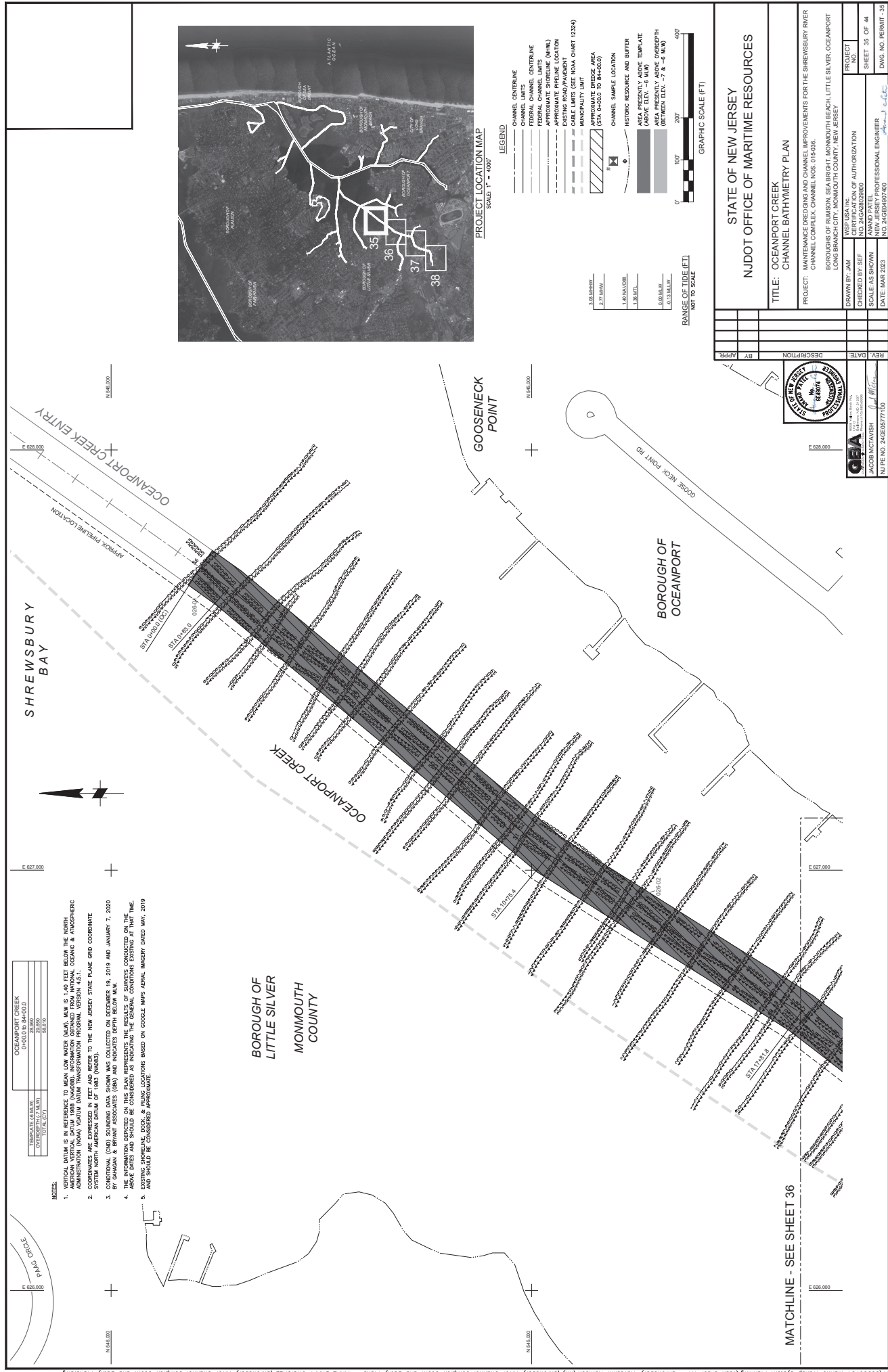
TEMPLATE (6 ML/W)	20.030	TOWN NECK CREEK 0+00.0 to 45+00.0
COVERDEPTH (7 ML/W)	18.870	
TOTAL (CY)	38.890	

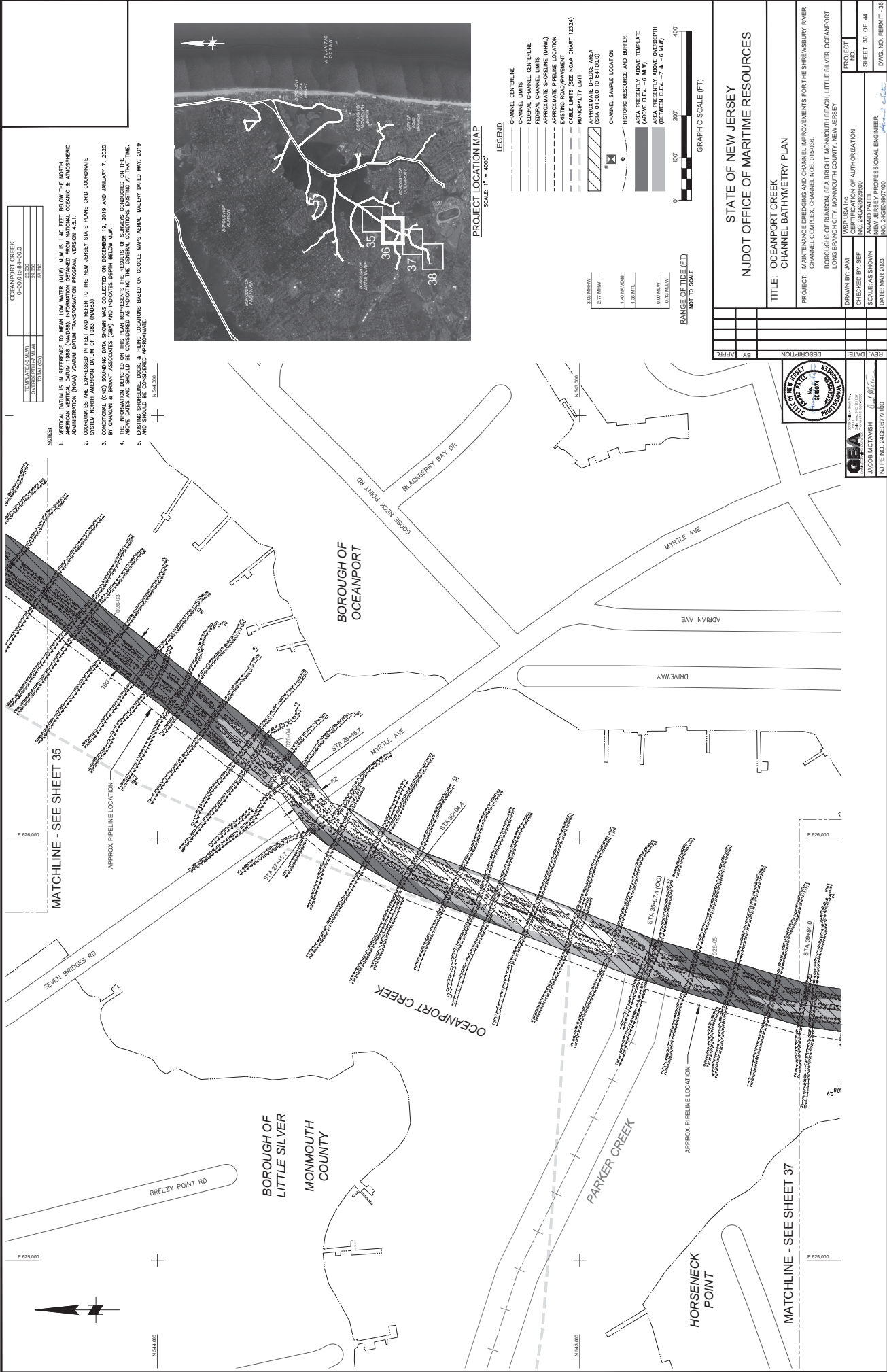
BOROUGH OF
LITTLE SILVER

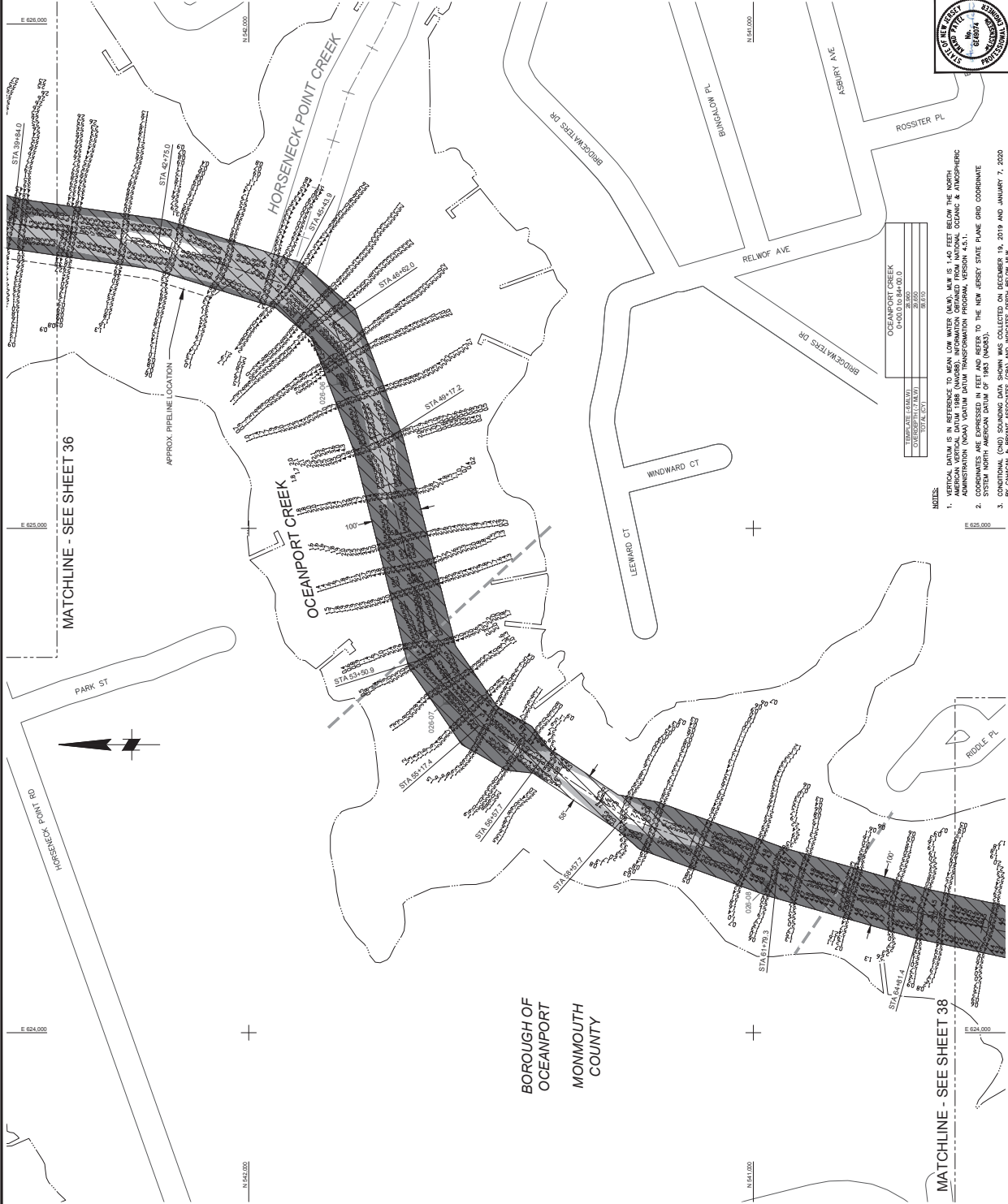
MONMOUTH
COUNTY

1. VERT
AMEE
ADM
2. COO
SYST
3. CON
ASSO
4. THE
ABO
5. EXS
AND

\\f:\30900731 Marine Transp System Planning\Task Order 7A - Shrewsbury-Novasink-Rumson\hwy\Shrewsbury River Channel Complex Geom and Bathy Plans.dwg - FINAL DRAFT UNSIGNED\Shrewsbury River Channel Complex Geom and Bathy Plans.dwg







- NOTES:
1. THE INFORMATION ON THIS PLAN IS BASED ON THE DATA PROVIDED BY THE NEW JERSEY STATE PLANE (NAD 83) DATUM TRANSFORMATION PROGRAM, VERSION 4.5.1.
 2. COORDINATES ARE EXPRESSED IN FEET AND REFER TO THE NEW JERSEY STATE PLANE (NAD 83) DATUM TRANSFORMATION PROGRAM, VERSION 4.5.1.
 3. COORDINATES ARE EXPRESSED IN FEET AND REFER TO THE NEW JERSEY STATE PLANE (NAD 83) DATUM TRANSFORMATION PROGRAM, VERSION 4.5.1.
 4. THE INFORMATION ON THIS PLAN IS BASED ON THE DATA PROVIDED BY THE NEW JERSEY STATE PLANE (NAD 83) DATUM TRANSFORMATION PROGRAM, VERSION 4.5.1.
 5. THE INFORMATION ON THIS PLAN IS BASED ON THE DATA PROVIDED BY THE NEW JERSEY STATE PLANE (NAD 83) DATUM TRANSFORMATION PROGRAM, VERSION 4.5.1.

OCEANPORT CREEK	0+00.0 TO 84+00.0
TEMP. CORR. (F/M)	0.000
COEFFICIENT (F/M)	0.000
TOTAL (F/M)	0.000

PROJECT LOCATION MAP

SCALE: 1" = 400'

LEGEND

- CHANNEL CENTERLINE
- FEDERAL CHANNEL LIMITS
- APPROXIMATE SHORELINE (MHW)
- APPROXIMATE SHORELINE (MLW)
- EXISTING ROAD/PAVEMENT
- CABLE LIMITS (SEE NOAA CHART 12324)
- MUNICIPALITY LIMIT
- APPROXIMATE DREDGE AREA (STA 40+00 TO 84+00)
- CHANNEL SAMPLE LOCATION
- HISTORIC RESOURCE AND BUFFER
- AREA PRESENTLY ABOVE TIDE (AMW ELEV. -8 M.W.)
- AREA PRESENTLY ABOVE DEPTH (BOTTOM ELEV. -7' & -8' M.W.)

3.0 MHW	1.6 M.W.	0.0 M.W.
2.7 M.W.	1.3 M.W.	0.0 M.W.
1.6 M.W.	1.0 M.W.	0.0 M.W.
0.0 M.W.	0.0 M.W.	0.0 M.W.

RANGE OF TIDE (FT)
NOT TO SCALE

GRAPHIC SCALE (FT)

STATE OF NEW JERSEY
NJDOT OFFICE OF MARITIME RESOURCES

TITLE: OCEANPORT CREEK
CHANNEL BATHYMETRY PLAN

PROJECT: MAINTENANCE DREDGING AND CHANNEL IMPROVEMENTS FOR THE SHREWSBURY RIVER
CHANNEL COMPLEX, CHANNEL NOS. 015-036

PROPOSING: BAYVIEW SEA SERVICES, MONMOUTH BEACH, LITTLE SILVER, OCEANPORT
LONG BRANCH CITY, MONMOUTH COUNTY, NEW JERSEY

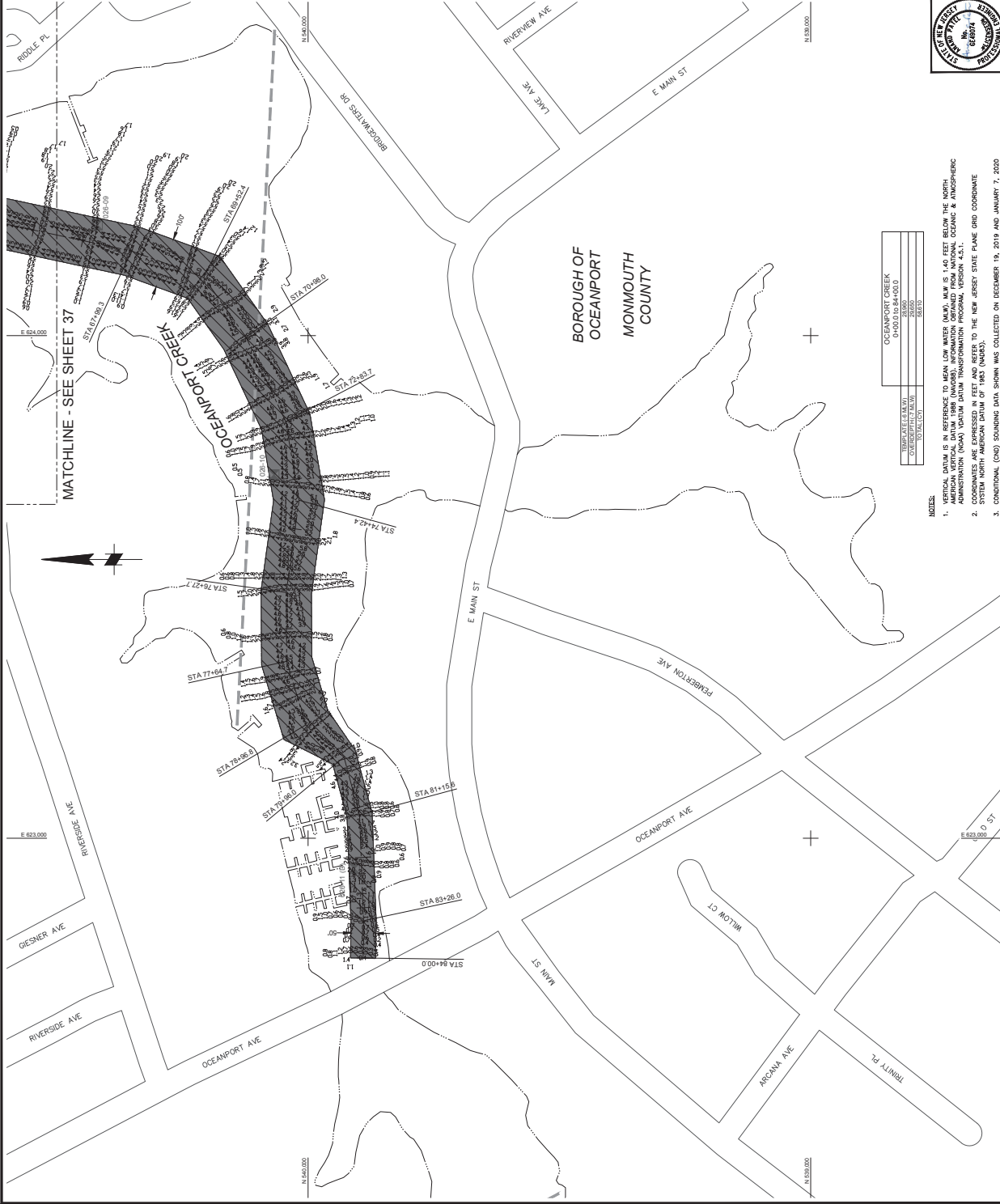
DRAWN BY: JAM
CHECKED BY: SEF
SCALE AS SHOWN
DATE: MAR 2023

PROJECT NO.
SHEET 37 OF 44
NEW JERSEY PROFESSIONAL ENGINEER
NO. 24604907200

DWG. NO. PERMIT-37

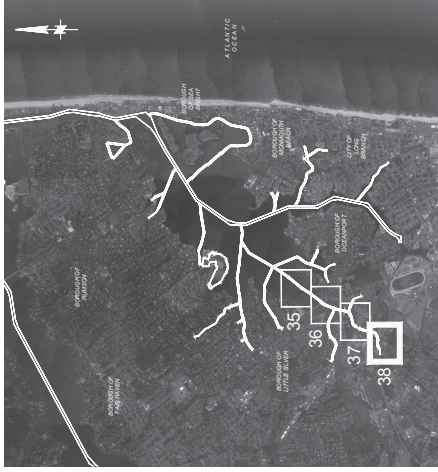


JACOBI & MACKEY
NJ PE NO. 2460377100



WATER SURFACE ELEVATION	0+000.00
CHANNEL BOTTOM ELEVATION	0+000.00
CHANNEL WIDTH	40.00
TOTAL LENGTH	40.00

- NOTES:
1. THE INFORMATION ON THIS PLAN IS A SUMMARY OF THE DATA OBTAINED FROM THE SURVEY. THE SURVEY WAS CONDUCTED ON DECEMBER 19, 2019 AND JANUARY 7, 2020. THE SURVEY WAS CONDUCTED BY JACOBSON & BRYANT ASSOCIATES (J&B) AND INDICATES DEPTH BELOW M.W.
 2. COORDINATES ARE EXPRESSED IN FEET AND METERS TO THE NEW JERSEY STATE PLANE GRID COORDINATE SYSTEM (NAD83) DATUM. THE DATUM IS THE NEW JERSEY STATE PLANE GRID COORDINATE SYSTEM (NAD83) DATUM. THE DATUM IS THE NEW JERSEY STATE PLANE GRID COORDINATE SYSTEM (NAD83) DATUM.
 3. BY JACOBSON & BRYANT ASSOCIATES (J&B) AND INDICATES DEPTH BELOW M.W.
 4. THE INFORMATION ON THIS PLAN REPRESENTS THE RESULTS OF SURVEYS CONDUCTED ON THE ABOVE DATES AND SHOULD BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.
 5. THIS PLAN IS A SUMMARY OF THE DATA OBTAINED FROM THE SURVEY. THE SURVEY WAS CONDUCTED ON DECEMBER 19, 2019 AND JANUARY 7, 2020. THE SURVEY WAS CONDUCTED BY JACOBSON & BRYANT ASSOCIATES (J&B) AND INDICATES DEPTH BELOW M.W.



PROJECT LOCATION MAP
SCALE: 1" = 400'

LEGEND

- CHANNEL CENTERLINE
- FEDERAL CHANNEL CENTERLINE
- APPROXIMATE SHORELINE (MHW)
- APPROXIMATE SHORELINE (MWS)
- EXISTING ROAD/PAVEMENT
- CABLE LIMITS (SEE NOAA CHART 12324)
- MUNICIPALITY LIMIT
- APPROXIMATE DREDGE AREA (SEE CHART 12324)
- CHANNEL SAMPLE LOCATION
- HISTORIC RESOURCE AND BUFFER
- AREA PRESENTLY ABOVE TEMPLATE (MHW ELEV. - 8 M.W.)
- AREA PRESENTLY ABOVE DREDGE (MHW ELEV. - 7 M.W.)

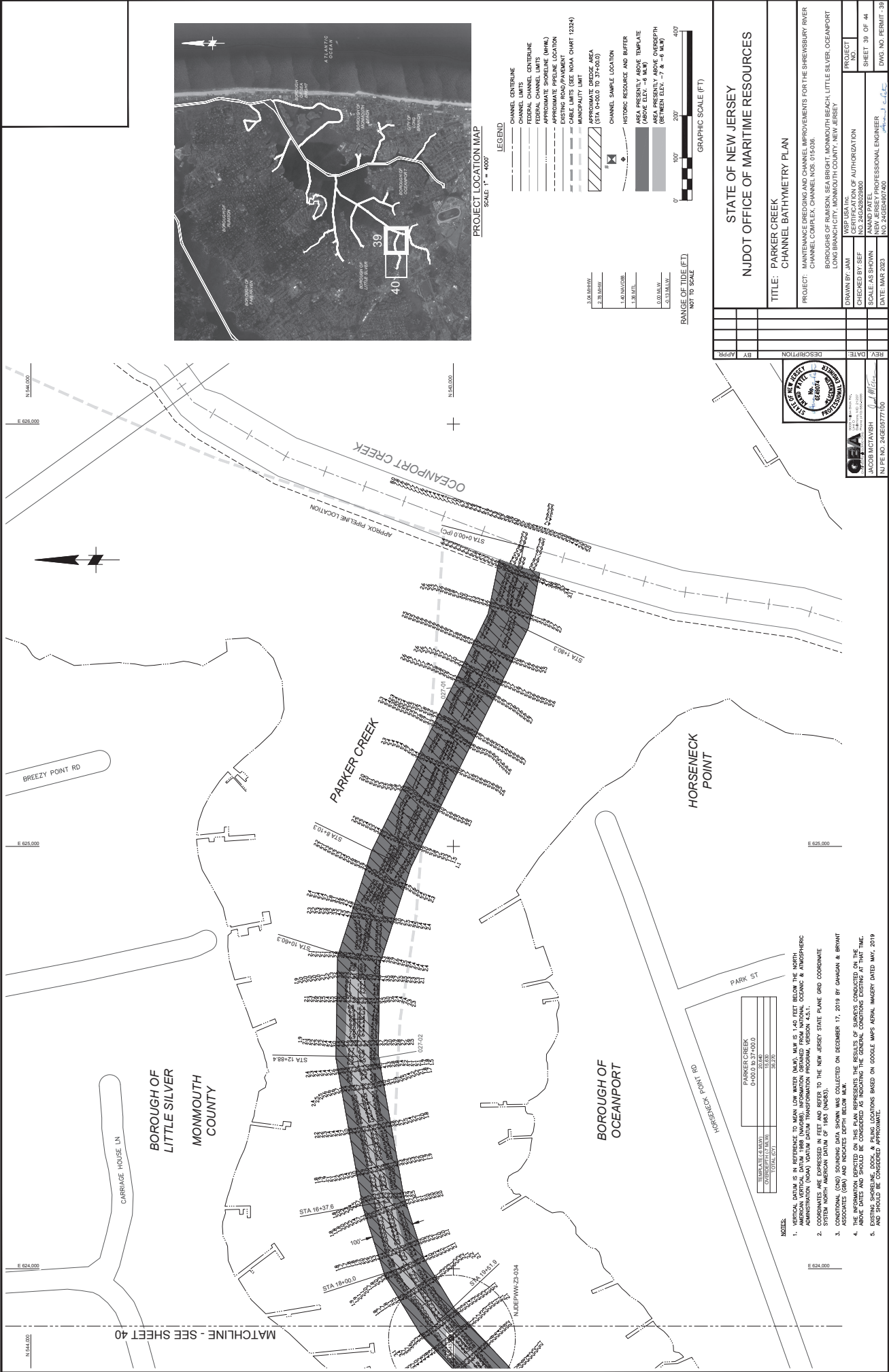
GRAPHIC SCALE (FT)

0 100 200 300 400

RANGE OF TIDE (FT)
NOT TO SCALE

3.0 MHW
2.7 MWS
1.6 MWS
1.3 MWS
0.0 MWS
-0.1 MWS

STATE OF NEW JERSEY NJDOT OFFICE OF MARITIME RESOURCES	
TITLE: OCEANPORT CREEK CHANNEL BATHYMETRY PLAN	
PROJECT: MAINTENANCE DREDGING AND CHANNEL IMPROVEMENTS FOR THE SHREWSBURY RIVER CHANNEL COMPLEX, CHANNEL NOS. 015006	
PROJECT NO. 2460577100	
DESIGNED BY: J&B	CERTIFICATION OF AUTHORIZATION
CHECKED BY: J&B	NO 2460577100
SCALE AS SHOWN	NEW JERSEY PROFESSIONAL ENGINEER
DATE: MAR 2023	NO 2460577100
REV	DATE
APPR	BY



STATE OF NEW JERSEY
NJDOT OFFICE OF MARITIME RESOURCES



LEGEND

- CHANNEL CENTERLINE
- FEDERAL CHANNEL CENTERLINE
- APPROXIMATE SHORELINE (MHW)
- APPROXIMATE SHORELINE (MWW)
- EXISTING ROAD/PARKWAY
- CABLE LIMITS (SEE NOAA CHART 12324)
- MUNICIPALITY LIMIT
- APPROXIMATE DREDGE AREA (STA 0+00.0 TO 37+00.0)
- CHANNEL SAMPLE LOCATION
- HISTORIC RESOURCE AND BUFFER
- AREA PRESENTLY ABOVE TEMPLATE (AMOVE ELEV. -6 M.W.)
- AREA PRESENTLY ABOVE OVERDEPTH (PRESENT ELEV. -7' & -8' M.W.)

GRAPHIC SCALE (FT)

0 100 200 400

RANGE OF TIDE (FT)

NOT TO SCALE

REV	DATE	DESCRIPTION	BY	APP'D
1	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
2	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
3	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
4	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
5	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
6	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
7	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
8	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
9	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
10	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
11	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
12	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
13	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
14	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
15	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
16	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
17	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
18	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
19	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
20	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
21	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
22	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
23	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
24	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
25	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
26	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
27	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
28	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
29	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
30	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
31	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
32	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
33	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
34	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
35	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
36	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
37	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
38	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
39	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
40	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
41	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
42	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
43	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
44	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
45	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
46	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
47	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
48	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
49	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
50	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
51	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
52	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
53	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
54	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
55	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
56	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
57	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
58	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
59	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
60	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
61	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
62	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
63	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
64	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
65	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
66	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
67	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
68	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
69	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
70	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
71	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
72	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
73	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
74	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
75	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
76	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
77	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
78	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
79	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
80	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
81	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
82	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
83	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
84	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
85	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
86	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
87	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
88	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
89	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
90	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
91	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
92	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
93	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
94	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
95	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
96	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
97	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
98	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
99	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	
100	03/17/2019	ISSUED FOR PERMIT	JACOB MCTAVISH	

STATE OF NEW JERSEY
NJDOT OFFICE OF MARITIME RESOURCES

TITLE: PARKER CREEK
CHANNEL BATHYMETRY PLAN

PROJECT: MAINTENANCE DREDGING AND CHANNEL IMPROVEMENTS FOR THE SHREWSBURY RIVER
PROJECT: CHANNEL COMPLEX, CHANNEL NOS. 015-036
PERMITS: OF RAN-ISA, SEA RESIST, ANSASADY, BEACH, LITTLE SILVER, OCEANPORT
LONG BRANCH CITY, MONMOUTH COUNTY, NEW JERSEY

DRAWN BY: JAM
CHECKED BY: JAM
SCALE AS SHOWN
DATE: MAR 2023
DWG. NO.: PERMIT-39

WSP USA INC.
CERTIFICATION OF AUTHORIZATION
NO. 2460282880
NEW JERSEY PROFESSIONAL ENGINEER

REV
DATE
DESCRIPTION
BY
APP'D

NOTES:

- VERTICAL DATUM IS IN REFERENCE TO NAVD 83. HORIZONTAL DATUM IS 14.0 FEET BELOW THE NORTH AMERICAN VERTICAL DATUM 1985 (NAVD85). INFORMATION OBTAINED FROM NATIONAL COAST & GEOSURVEY ADMINISTRATION (NOAA) VERTICAL DATUM TRANSFORMATION PROGRAM, VERSION 4.5.1.
- COORDINATES ARE EXPRESSED IN FEET AND REFER TO THE NEW JERSEY STATE PLANE GRID COORDINATE SYSTEM. COORDINATES ARE EXPRESSED IN FEET AND REFER TO THE NEW JERSEY STATE PLANE GRID COORDINATE SYSTEM. COORDINATES ARE EXPRESSED IN FEET AND REFER TO THE NEW JERSEY STATE PLANE GRID COORDINATE SYSTEM.
- ASSOCIATES (ISA) AND INDICATES DEPTH BELOW M.W.
- THE INFORMATION REPORTED ON THIS PLAN REPRESENTS THE RESULTS OF SURVEYS CONDUCTED ON THE ABOVE DATES AND SHOULD BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.
- EXISTING SHORELINE LOCATIONS ARE PLOTTED BASED ON GOOGLE MAPS AERIAL IMAGERY DATED MAY, 2019 AND SHOULD BE CONSIDERED APPROXIMATE.

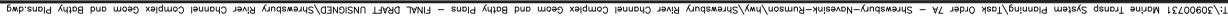
TABLE 1: CHANNEL DATA

STATION	DEPTH (FT)
0+00.0	10.0
10+60.3	10.0
TOTAL	30.0

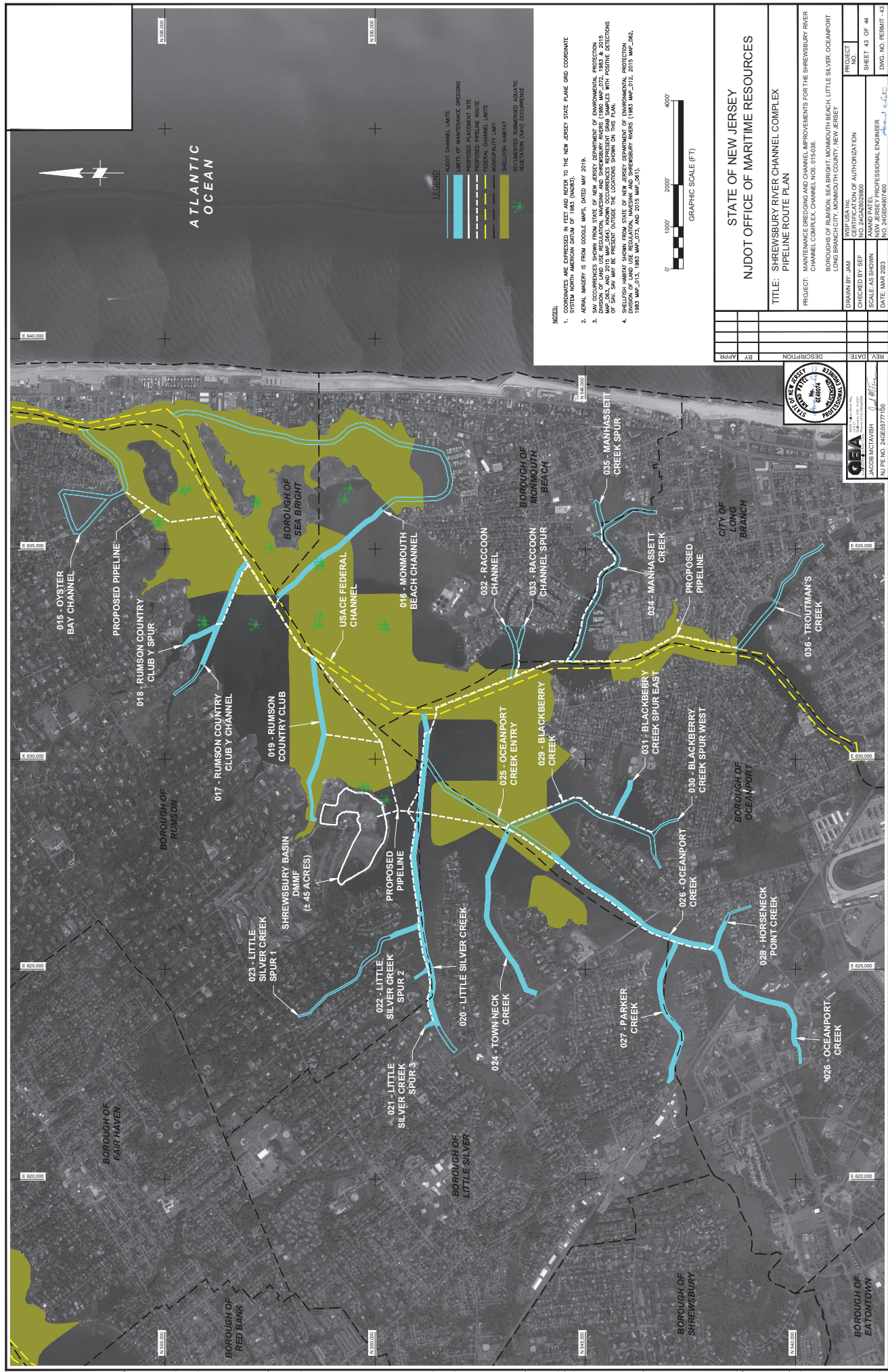
PROJECT LOCATION MAP
SCALE: 1" = 400'

GRAPHIC SCALE (FT)
0 100 200 400

RANGE OF TIDE (FT)
NOT TO SCALE







NOTES:

1. COORDINATES ARE EXPRESSED IN FEET AND REFERS TO THE NEW JERSEY STATE PLANE GRID COORDINATE SYSTEM NORTH AMERICAN DATUM OF 1983 (NAD83).
2. AERIAL IMAGERY IS FROM GOOGLE MAPS, DATED MAY 2019.
3. SAW OCCURRENCES SHOWN FROM STATE OF NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF WILDLIFE AND NATURE, AND SHERBROOK RIVERS (1980 MAP_072, 1983 & 2015). COORDINATES OF SAW MAY BE PRESENT OUTSIDE THE LOCATIONS SHOWN ON THIS PLAN.
4. SHELLISH HABITAT SHOWN FROM STATE OF NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF WILDLIFE AND NATURE, AND SHERBROOK RIVERS (1983 MAP_072, 2015 MAP_062, 1983 MAP_070, 2015 MAP_073, AND 2015 MAP_081).

0' 1000' 2000' 4000'

GRAPHIC SCALE (FT)

STATE OF NEW JERSEY
NJDOT OFFICE OF MARITIME RESOURCES

**TITLE: SHREWSBURY RIVER CHANNEL COMPLEX
PIPELINE ROUTE PLAN**

PROJECT: MAINTENANCE DREDGING AND CHANNEL IMPROVEMENTS FOR THE SHREWSBURY RIVER
CHANNEL COMPLEX, CHANNEL NOS. 015-036.

BOROUGH OF RUMSON, SEA BRIGHT, MONMOUTH BEACH, LITTLE SILVER, OCEANPORT
LONG BRANCH CITY, MONMOUTH COUNTY, NEW JERSEY

DRAWN BY: JAM	WSP USA Inc.	PROJECT NO.
APPROVED BY: SEE	U.S. PAT. 6,000,000	

DATE: MAR 2023	SCALE: AS SHOWN	NO. 24GA28029800	NEW JERSEY PROFESSIONAL ENGINEER	DWG NO PERMIT - 43
			ANAND PATEL	SHEET 43 OF 44

DATE: MAR 2023

NEW JERSEY PROFESSIONAL ENGINEER
NO. 24CE04907400

DWG. NO. PERMIT - 43



1:\30900731 Marine Transp System Planning\Task Order 7A - Shrewsbury-Novelsink-Runson\mhw\Proposed Confined Disposal Facility.dwg

RUNSON CDP PROPOSED STAGE STORAGE TABLE			
ELEVATION NAVD83 (FT)	AREA (SF)	INCREMENTAL VOLUME (CY)	CUMULATIVE VOLUME (CY)
8.430.10	26.5	85.000	85.000
8.429.12	27.6	87.000	172.000
8.429.14	28.5	90.000	262.000
8.429.16	29.5	94.000	356.000
8.429.18	30.5	97.000	453.000
8.429.20	31.5	100.000	553.000
8.429.21	32.0	51.000	604.000

- NOTES:
- VERTICAL DATUM IS IN REFERENCE TO NORTH AMERICAN VERTICAL DATUM 1988 (NAVD83).
 - THE HORIZONTAL DATUM IS IN REFERENCE TO THE NAD83 DATUM TRANSFORMATION PROGRAM, VERSION 4.5.1.
 - COORDINATES ARE SHOWN IN FEET AND DECIMALS TO THE FOURTH STATE PLANE COORDINATE SYSTEM IN THE PROJECT AREA.
 - AERIAL MAPS SHOWN FROM FLIGHT PHOTOGRAPHY DATED DECEMBER 2017 AND FROM GOOGLE MAPS DATED MAY 2019.
 - HIGH TIDE LINE (HTL) & MEAN HIGH WATER (MHW) LINE SHOWN ON THIS SHEET ARE BASED ON THE AERIAL PHOTOGRAPHY AND SHOULD BE CONSIDERED APPROXIMATE.
 - THE PROPOSED CONFINED DISPOSAL FACILITY IS SHOWN ON THIS SHEET AS A CONCEPTUAL CDP DESIGN. A MINIMUM BERM CREST ELEVATION OF 22' AND A MINIMUM OF 1' FREEBOARD ARE ASSUMED IN THIS DESIGN.

1.52' MHW
1.51' MHW
1.50' MHW
1.49' MHW
1.48' MHW
1.47' MHW
1.46' MHW
1.45' MHW
1.44' MHW
1.43' MHW
1.42' MHW
1.41' MHW
1.40' MHW
1.39' MHW
1.38' MHW
1.37' MHW
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1.12' MHW
1.11' MHW
1.10' MHW
1.09' MHW
1.08' MHW
1.07' MHW
1.06' MHW
1.05' MHW
1.04' MHW
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1.01' MHW
1.00' MHW
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