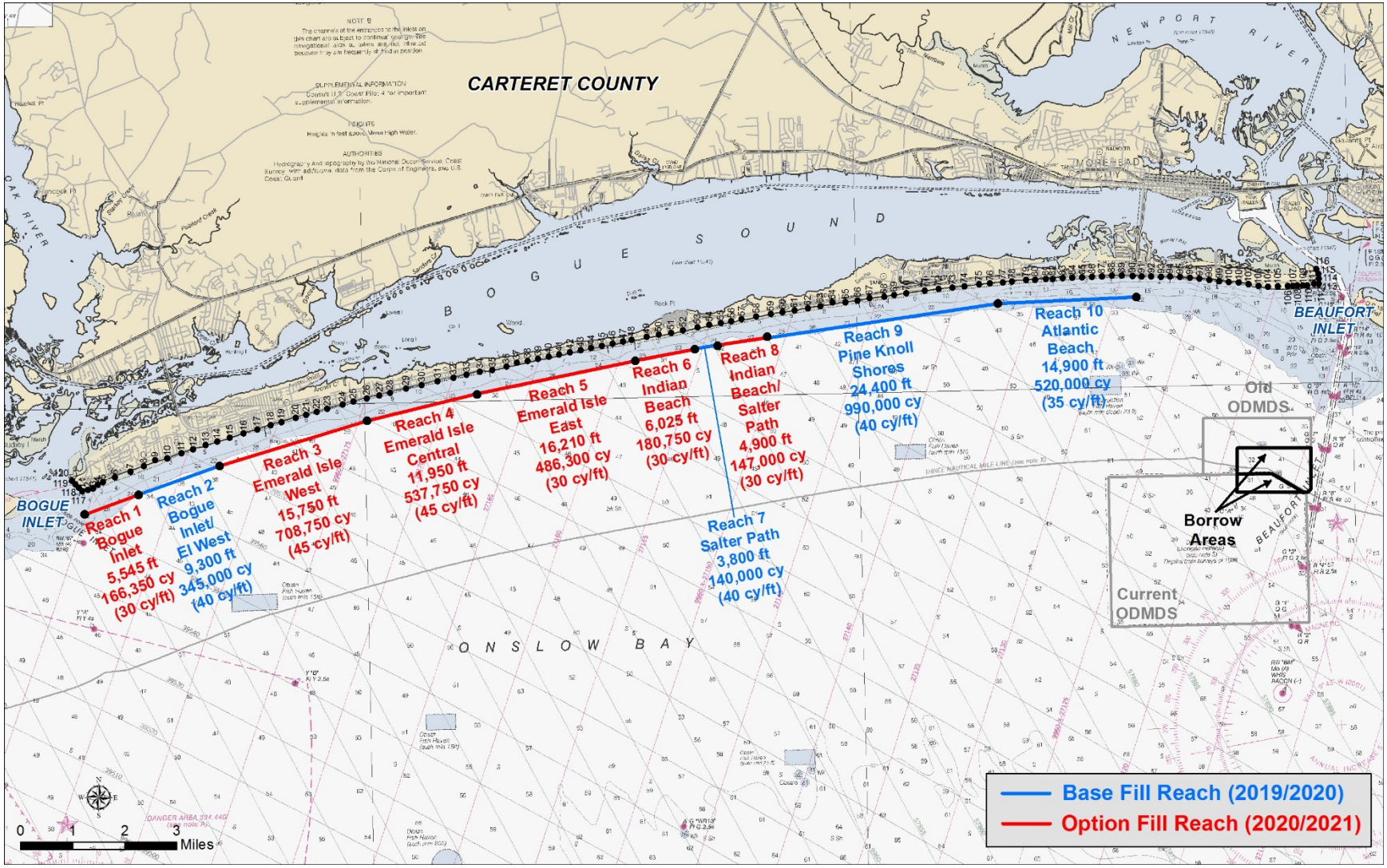


Figure 1-1: Post-Florence Renourishment Project – Phase II (Winter 2019/2020 and Winter 2020/2021)

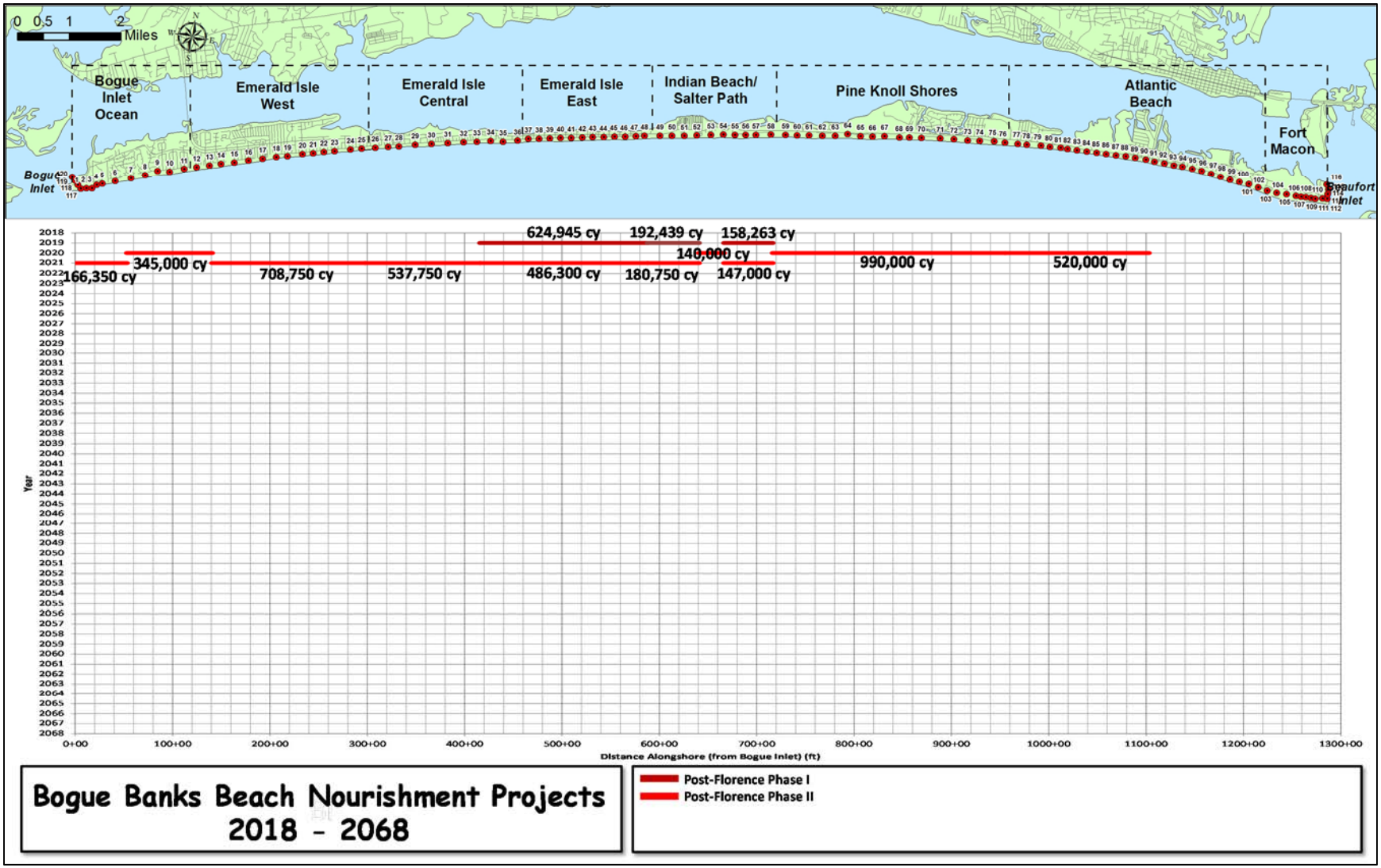


Figure 3-1: Bogue Banks Master Beach Nourishment Plan History

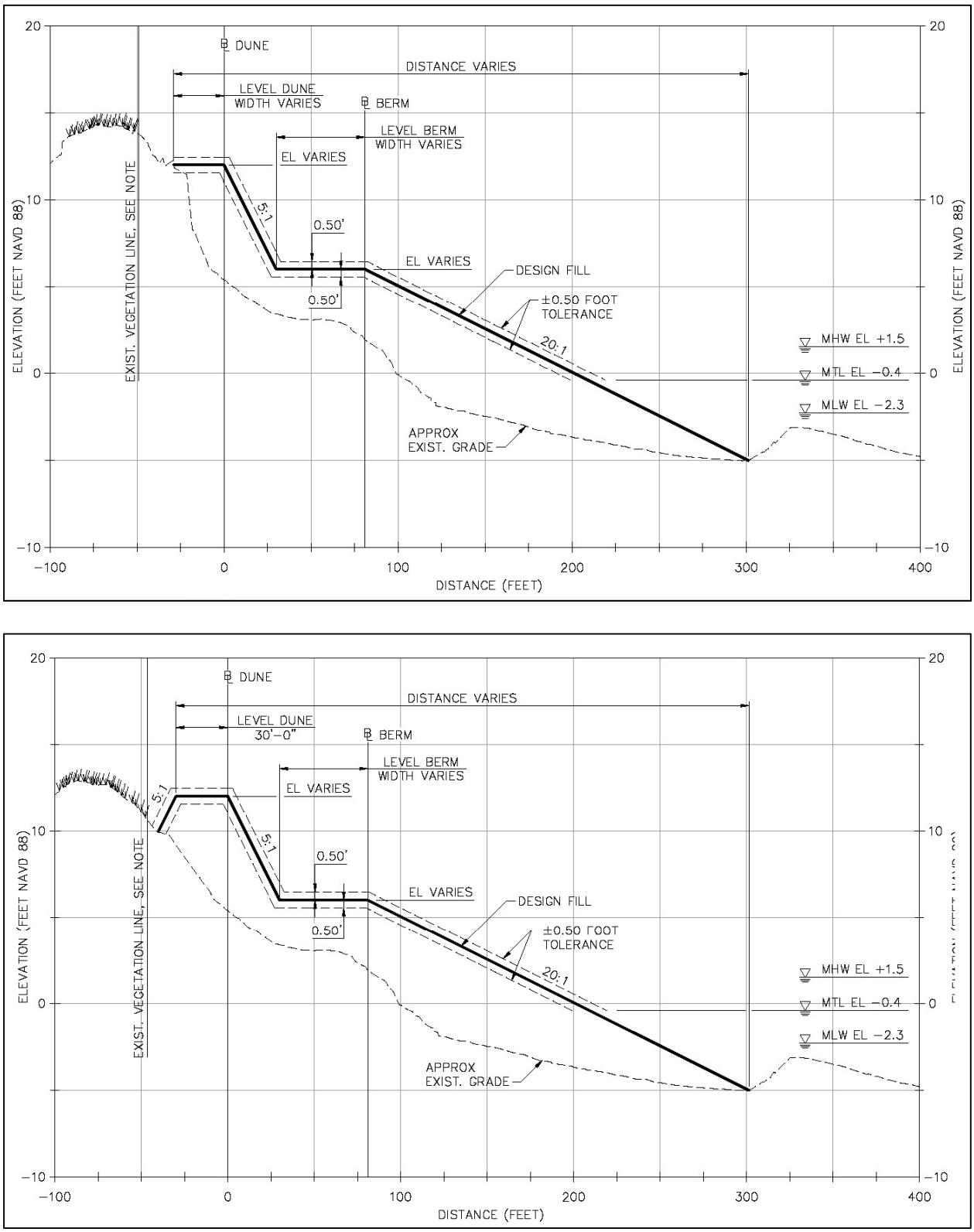


Figure 1-2: Reach 1, 2, 3, 4, 7, 9, and 10 Typical Cross Sections

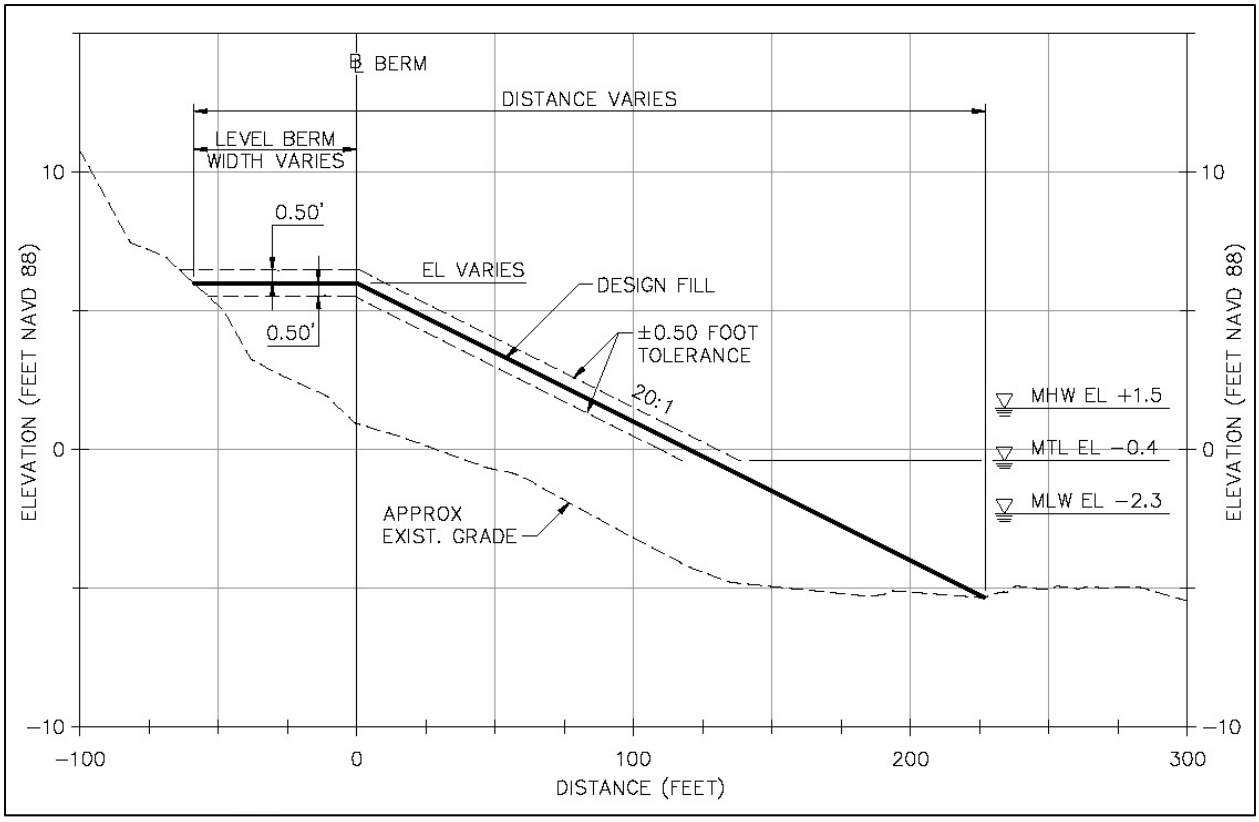


Figure 1-3: Reach 5, 6, and 8 Typical Cross Section

ATTACHMENT A

Post-Florence Renourishment Project – Phase II Plans

POST-FLORENCE RENOURISHMENT PROJECT
PHASE 2

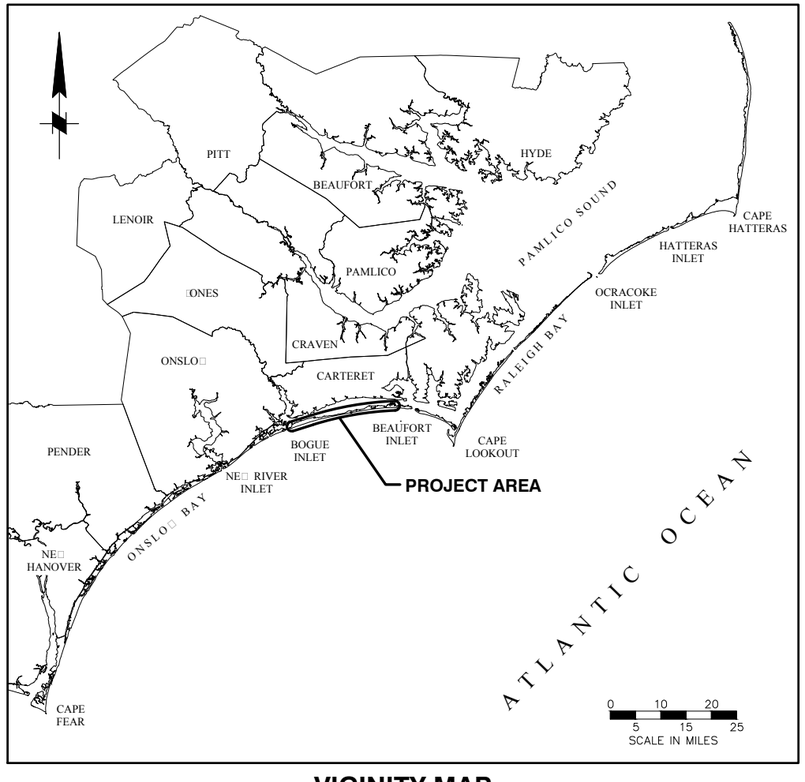
CARTERET COUNTY, NORTH CAROLINA

TOWN OF EMERALD ISLE
7500 EMERALD DRIVE
EMERALD ISLE, NC 28594

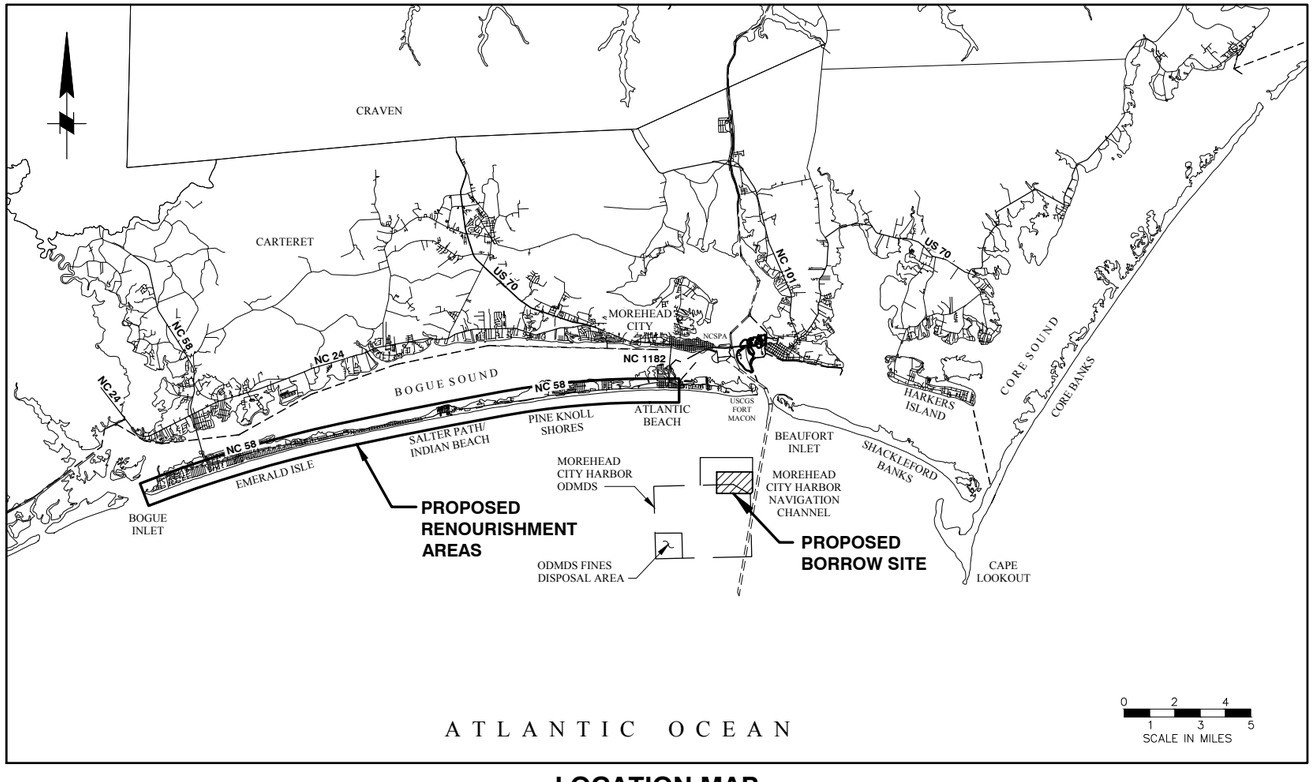
TOWN OF INDIAN BEACH
1400 SALTER PATH ROAD
INDIAN BEACH, NC 28512

TOWN OF PINE KNOLL SHORES
100 MUNICIPAL CIRCLE
PINE KNOLL SHORES, NC 28512

TOWN OF ATLANTIC BEACH
125 WEST FORT MACON ROAD
ATLANTIC BEACH, NC 28512



VICINITY MAP



LOCATION MAP

No.	Mark	BID DOCUMENTS	Date	Appr.
		Description	08/19/19	JM

POST-FLORENCE RENOURISHMENT
PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

COVER SHEET

Rev. –
Date: AUGUST 2019
M&N Project No. 10611
Drawing code:
Drawing Scale: Plot scale: 1:1 (D SHEET)
Designed by: NCV
Dwn by: BDF
Ckd by: SRM
Reviewed by: JDM
Submitted by: MOFFATT & NICHOL

4700 FALLS OF THE NEUSE ROAD
SUITE 300
RALEIGH, NC 27609
919-781-4626
moffatt & nichol
NC FIRM LICENSE No. F-0105

PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Sheet Reference No.
G-001
Sheet 1 of 66

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DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

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C-101	PROJECT SURVEY CONTROL PLANS
C-102	PROJECT STAGING AND ACCESS PLANS
C-103	ODMDS BORROW SITE DREDGE PLAN
C-104	ODMDS BORROW SITE DREDGE SECTIONS
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C-316	RENOURISHMENT SECTIONS SHEET 16 OF 35
C-317	RENOURISHMENT SECTIONS SHEET 17 OF 35
C-318	RENOURISHMENT SECTIONS SHEET 18 OF 35
C-319	RENOURISHMENT SECTIONS SHEET 19 OF 35
C-320	RENOURISHMENT SECTIONS SHEET 20 OF 35
C-321	RENOURISHMENT SECTIONS SHEET 21 OF 35
C-322	RENOURISHMENT SECTIONS SHEET 22 OF 35
C-323	RENOURISHMENT SECTIONS SHEET 23 OF 35
C-324	RENOURISHMENT SECTIONS SHEET 24 OF 35
C-325	RENOURISHMENT SECTIONS SHEET 25 OF 35
C-326	RENOURISHMENT SECTIONS SHEET 26 OF 35
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ABBREVIATIONS

CY	CUBIC YARDS	No.	NUMBER
FT	FEET OR FOOT	ODMDS	OFFSHORE DREDGE MATERIAL DISPOSAL SITE
MHW	MEAN HIGH WATER		
MLW	MEAN LOW WATER	TYP	TYPICAL
MTL	MEAN TIDE LEVEL	WP	WORK POINT
NAD	NORTH AMERICAN DATUM	℄	BASELINE
NAVD	NORTH AMERICAN VERTICAL DATUM	@	AT
NGS	NATIONAL GEODETIC SURVEY	~	APPROXIMATELY
NOAA	NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	NIC	NOT IN CONTRACT

GENERAL NOTES:

1. ALL BEACH FILL, PLANTING AND DREDGING WORK SHALL CONFORM TO THE REQUIREMENTS OF THESE PLANS AND SPECIFICATIONS.

2. THE CONTRACTOR SHALL PLACE THE PERMIT PLACARDS ON THE JOB SITE AND SHALL COMPLY WITH ALL TERMS OF THE PERMITS PERTAINING TO THE PERFORMANCE OF THE WORK. SEE THE TECHNICAL SPECIFICATIONS.

GENERAL NOTES:

3. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS BEFORE STARTING WORK. NOTIFY OWNER OF DISCREPANCIES.

4. ALL SAFETY REGULATIONS ARE TO BE STRICTLY FOLLOWED. METHODS OF CONSTRUCTION AND ERECTION OF STRUCTURAL MATERIAL ARE THE CONTRACTORS RESPONSIBILITY.

5. THE CONTRACTOR SHALL, ON A DAILY BASIS, REMOVE FROM THE SITE ANY UNSUITABLE EXCAVATED MATERIAL OR DEBRIS. DISPOSAL OF THE MATERIALS IS THE RESPONSIBILITY OF THE CONTRACTOR. ALL DEBRIS SHALL BE DISPOSED OF IN A PERMITTED LANDFILL.

6. THESE PLANS ARE INCOMPLETE WITHOUT THE PROJECT TECHNICAL SPECIFICATIONS. IF THERE ARE CONFLICTS BETWEEN THE PLANS AND SPECIFICATIONS, THE CONTRACTOR SHALL ALERT THE OWNER AND ENGINEER. THE TECHNICAL SPECIFICATIONS SHALL TAKE PRECEDENCE.

7. THE STAGING AND ACCESS AREAS SHOWN ON C-102 ARE OWNED BY THE TOWNS OF EMERALD ISLE, INDIAN BEACH, PINE KNOLL SHORES, AND ATLANTIC BEACH. COORDINATION WITH THE TOWN MANAGERS SHALL BE REQUIRED BEFORE USE. FOR THE STAGING AND ACCESS AREAS WITHIN REACHES THE POINTS OF CONTACT ARE AS FOLLOWS.

REACHES 1-5
MR. MATT ZAPP
TOWN MANAGER
TOWN OF EMERALD ISLE
7500 EMERALD DRIVE
EMERALD ISLE, NC 28594
(252) 354-3424
mzapp@emeraldisle-nc.org

REACHES 6-8
MR. TIM WHITE
TOWN MANAGER
TOWN OF INDIAN BEACH
1400 SALTER PATH RD
INDIAN BEACH, NC 28512
(252) 247-3344
admin@indianbeach.org

REACH 9
MR. BRIAN KRAMER
TOWN MANAGER
TOWN OF PINE KNOLL SHORES
100 MUNICIPAL CIRCLE
PINE KNOLL SHORES, NC 28512
(252) 247-4353
manager@townofpks.com

REACH 10
MR. DAVID WALKER
TOWN MANAGER
TOWN OF ATLANTIC BEACH
125 WEST FORT MACON RD
ATLANTIC BEACH, NC 28512
(252) 726-212
townmanager@atlanticbeach-nc.com

SEE THE TECHNICAL SPECIFICATIONS FOR A DESCRIPTION AND PHOTOS OF STAGING AND ACCESS AREAS.

8. STAGING AREAS SHALL BE MAINTAINED BY THE CONTRACTOR. STAGING AREAS SHALL BE CLEARED OF DEBRIS AND CONTRACTOR INSTALLED AMENITIES AT THE COMPLETION AND ACCEPTANCE OF WORK IN THE AREA. THE CONTRACTOR SHALL RESTORE THE ACCESS AREAS TO THEIR ORIGINAL CONDITION AFTER WORK IN THE AREA IS COMPLETE. THIS WORK INCLUDES, BUT NOT LIMITED TO, REPLACEMENT OF FENCING, SIGNS, SAND FENCE, BEACH VEGETATION, WALKWAYS, DUNES, DUNE VEGETATION, PARKING FACILITIES, PAVED AREAS AND OTHER MISCELLANEOUS ITEMS. ALL REPLACEMENT MATERIALS SHALL BE APPROVED BY THE ENGINEER/OWNER BEFORE INSTALLATION.

9. UNLESS OTHERWISE APPROVED BY THE OWNER, EXCESS EQUIPMENT MAY ONLY BE STORED IN APPROVED STORAGE/STAGING AREAS OR TEMPORARY AREAS IN THE IMMEDIATE VICINITY OF THE BEACHFILL PLACEMENT SITE. THE OWNER RESERVES THE RIGHT TO LIMIT SUCH AREAS AS DEEMED NECESSARY. OPERATION OF GRADING AND OTHER CONSTRUCTION EQUIPMENT WILL NOT BE PERMITTED OUTSIDE THE WORK AREA LIMITS EXCEPT FOR INGRESS AND EGRESS OF THE SITE AT APPROVED LOCATIONS. THE STACKING OF DISCHARGE PIPES IN LAYERS EXCEEDING TWO PIPES HIGH SHALL BE PROHIBITED IN ANY OF THE STORAGE OR STAGING AREAS INCLUDING THE TEMPORARY AREAS.

10. ANY EXISTING SIGNS, FENCES, OR OTHER STRUCTURES WITHIN THE WORK LIMITS SHALL BE PROTECTED AND/OR REMOVED AND LATER REPLACED BY THE CONTRACTOR AS DIRECTED.

PERMITS

1. IT IS THE INTENT OF THESE PLANS TO BE IN ACCORDANCE WITH APPLICABLE CODES AND AUTHORITIES HAVING JURISDICTION. ANY DISCREPANCIES BETWEEN THESE PLANS AND APPLICABLE CODES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER. THE APPLICABLE CODES SHALL TAKE PRECEDENCE.

2. IT IS THE INTENT OF THESE PLANS, AND THE RESPONSIBILITY OF THE CONTRACTOR, TO COMPLY WITH THE ENVIRONMENTAL PERMITS ISSUED FOR THIS PROJECT. THE PERMITS ARE HEREBY MADE PART OF THE CONTRACT DOCUMENTS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE AND GOVERN HIMSELF BY ALL PROVISIONS OF THESE PERMITS. SEE THE TECHNICAL SPECIFICATIONS.

BID QUANTITIES

1. THE FOLLOWING ESTIMATE OF SAND QUANTITIES REQUIRED FOR THE PROJECT IS:

   TOTAL PROJECT FILL . . . . . 1,995,000 CY (1)

2. THE FOLLOWING ESTIMATE OF PLANTING QUANTITIES REQUIRED FOR THE PROJECT IS:

   TOTAL PROJECT PLANTING . . . . . 230,500 SY

DREDGING

1. NO DREDGING WHATSOEVER SHALL OCCUR BELOW AN ELEVATION OF -52 FT NAVD 88.

2. ALL DREDGING SHALL BE PERFORMED WITHIN THE LIMITS OF THE PERMITTED DREDGING AREA AS SHOWN IN THE DRAWINGS.

3. PIPELINE CORRIDOR SHALL BE DELINEATED WITH BUOYS BY THE CONTRACTOR IN THE PRESENCE OF THE ENGINEER/OWNER BEFORE PLACEMENT.

DREDGING

4. THE PLANE COORDINATES AND BEARINGS SHOWN FOR THE DREDGING SURVEYS ARE BASED ON THE NORTH CAROLINA STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM 83 (NAD 83).

5. ALL ELEVATIONS SHOWN ON THE DREDGING DRAWINGS ARE REFERENCED TO NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 88).

6. THE BATHYMETRY PRESENTED ON THE DREDGING PLANS IS BASED ON A SURVEY COMPLETED IN MAY 2019 BY GEODYNAMICS AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS AT THAT TIME.

7. A POST-DREDGE SURVEY OF THE BORROW AREA SHALL BE COMPLETED BY AN INDEPENDENT REGISTERED/CERTIFIED SURVEYOR COORDINATED AND PAID FOR BY THE CONTRACTOR TO STANDARDS OUTLINED IN THE TECHNICAL SPECIFICATIONS.

BEACH FILL

1. ALL SAND EXCAVATED FROM THE BORROW AREAS SHALL BE TRANSPORTED TO, AND DEPOSITED ON, THE BEACH BETWEEN THE LINES, GRADES, AND CROSS-SECTIONS SHOWN ON THE DRAWINGS OR AS ADJUSTED BY THE ENGINEER.

2. AFTER NOTIFICATION BY THE CONTRACTOR OF THEIR INTENT TO COMMENCE DREDGING AND SAND PLACEMENT, A CURRENT BEACH SURVEY WILL BE PERFORMED BY THE OWNER. THE CONTRACTOR SHALL NOTIFY THE OWNER AT LEAST 4 WEEKS PRIOR TO THE COMMENCEMENT OF BEACH FILL PLACEMENT. THE UPDATED BEACH SURVEY WILL BE USED TO ADJUST THE LIMITS AND GRADE LINES TO MEET THE FILL DENSITIES PROVIDED WITH THE SECTIONS ON SHEETS C-301 THRU C-335.

3. SAND SHALL BE PLACED WITHIN THESE LIMITS AND GRADE LINES AS PRACTICALLY AS POSSIBLE. TOLERANCE SHALL BE WITHIN ±0.5 FOOT FOR BERM ELEVATION AND WIDTHS OUT TO THE MEAN TIDE LEVEL (MTL) AS SHOWN ON SHEET C-300. PAYMENT WILL BE MADE FOR THE CY/FT SHOWN ON THE PLANS WITH A TOLERANCE OF ±10%. EVERY ATTEMPT WILL BE MADE BY THE CONTRACTOR TO FILL WITHIN THE PRESCRIBED TEMPLATE. SEE TECHNICAL SPECIFICATIONS. THE BEACH FILL SHALL BE PLACED BY REACH GENERALLY FROM EAST TO WEST.

4. THE OWNER MAY MAKE ALTERATIONS IN THE PLAN DIMENSIONS, GRADE OF SLOPES, OR VOLUME OF FILL PER FOOT OF BEACH IN ORDER TO ACCOUNT FOR CHANGED CONDITIONS SINCE THE TIME OF THE EXISTING CONDITIONS SURVEY. THE CONTRACTOR SHALL WORK CLOSELY WITH THE OWNER TO ENSURE THAT THE TOTAL QUANTITY OF SAND ALLOWED UNDER THE CONTRACT IS PLACED AS EFFECTIVELY AS POSSIBLE.

5. CONTRACTOR SHALL TAKE CARE TO GRADE THE DUNE AND BERM SO THAT PONDING LANDWARD OF THE CRESTS IS MINIMIZED.

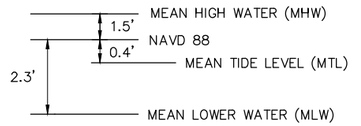
6. EXISTING WALKWAYS SHALL REMAIN AND NOT BE DAMAGED BEYOND CURRENT CONDITIONS. ANY ADDITIONAL DAMAGE WILL BE REPAIRED OR REPLACED AT THE CONTRACTORS COST AS DIRECTED BY THE OWNER OR THE ENGINEER. FILL SHALL BE PLACED COMPLETELY UNDERNEATH AND/OR AROUND STRUCTURES.

7. THE PLANE COORDINATES AND BEARINGS SHOWN FOR THE BEACH FILL SURVEYS ARE BASED ON THE NORTH CAROLINA STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM 83 (NAD 83).

8. ALL ELEVATIONS SHOWN ON THE BEACH FILL DRAWINGS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM (NAVD 88).

9. THE BATHYMETRY/TOPOGRAPHY PRESENTED ON THE BEACH FILL PLANS AND SECTIONS IS BASED ON A SURVEY COMPLETED IN MAY 2019 BY GEODYNAMICS AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS AT THAT TIME.

10. THE MEAN HIGH WATER ELEVATION AND MEAN LOW WATER ELEVATION SHOWN ON THE BEACH FILL DRAWINGS AND BELOW WERE PROVIDED BY CARTERET COUNTY AND ARE BASED ON NOAA TIDAL DATUMS AT THE ATLANTIC BEACH TRIPLE S PIER AND THE DUKE MARINE LAB.



11. HORIZONTAL AND VERTICAL CONTROL FOR THE BEACH FILL SURVEY WAS BASED ON NUMEROUS RANGE MONUMENTS AS FOUND BY GEODYNAMICS.

12. CONTOURS FOR THE BEACH FILL PLANS ARE SHOWN AT 1 FT INTERVALS.

13. PRE- AND POST-CONSTRUCTION SURVEYS OF THE BEACH AREA SHALL BE COMPLETED BY AN INDEPENDENT REGISTERED/CERTIFIED SURVEYOR COORDINATED AND PAID FOR BY THE CONTRACTOR. TRANSECTS SHALL BE AT 100-FOOT INTERVALS. ADDITIONAL ELEVATIONS SHALL BE TAKEN AS NECESSARY TO ACCURATELY REPRESENT TOPOGRAPHY OF THE BEACH AREA.

14. BEACH FILL SLOPES CALLED OUT ON PLANS ARE HORIZONTAL : VERTICAL.

15. SEE TECHNICAL SPECIFICATION FOR ADDITIONAL PLACEMENT REQUIREMENTS.

16. THE CONTRACTOR SHALL PROVIDE TEMPORARY SAND RAMPS OVER THE PIPELINE FOR PEDESTRIAN AND EMERGENCY VEHICLE ACCESS ALONG THE BEACH. THE MAXIMUM DISTANCE BETWEEN THESE TEMPORARY SAND RAMPS SHALL BE 500 FEET. THESE TEMPORARY SAND RAMPS SHALL BE LEVELED ONCE THE PIPELINE HAS BEEN MOVED. THE CONTRACTOR SHALL ALSO CONSTRUCT A BARRIER TO KEEP THE PUBLIC AT LEAST 250 FEET FROM THE DISCHARGE PIPE IN BOTH DIRECTIONS UP AND DOWN THE BEACH. SEE THE TECHNICAL SPECIFICATIONS.

Mark	Description	Date	Appr.
1	ADDENDUM 1	08/27/19	JM
0	BID DOCUMENTS	08/19/19	JM

POST-FLORENCE RENOURISHMENT
PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

INDEX OF DRAWINGS, ABBREVIATIONS, AND GENERAL NOTES

Designed by: NCV	Cad by: SRM	Drawing code:	Rev. -
Drawn by: BDF	M&N Project No. 10611		
Reviewed by: JDM	Drawing Scale: Plot scale: 1:1 (0 SHEET)		
Submitted by: MOFFATT & NICHOL	Date: AUGUST 2019		

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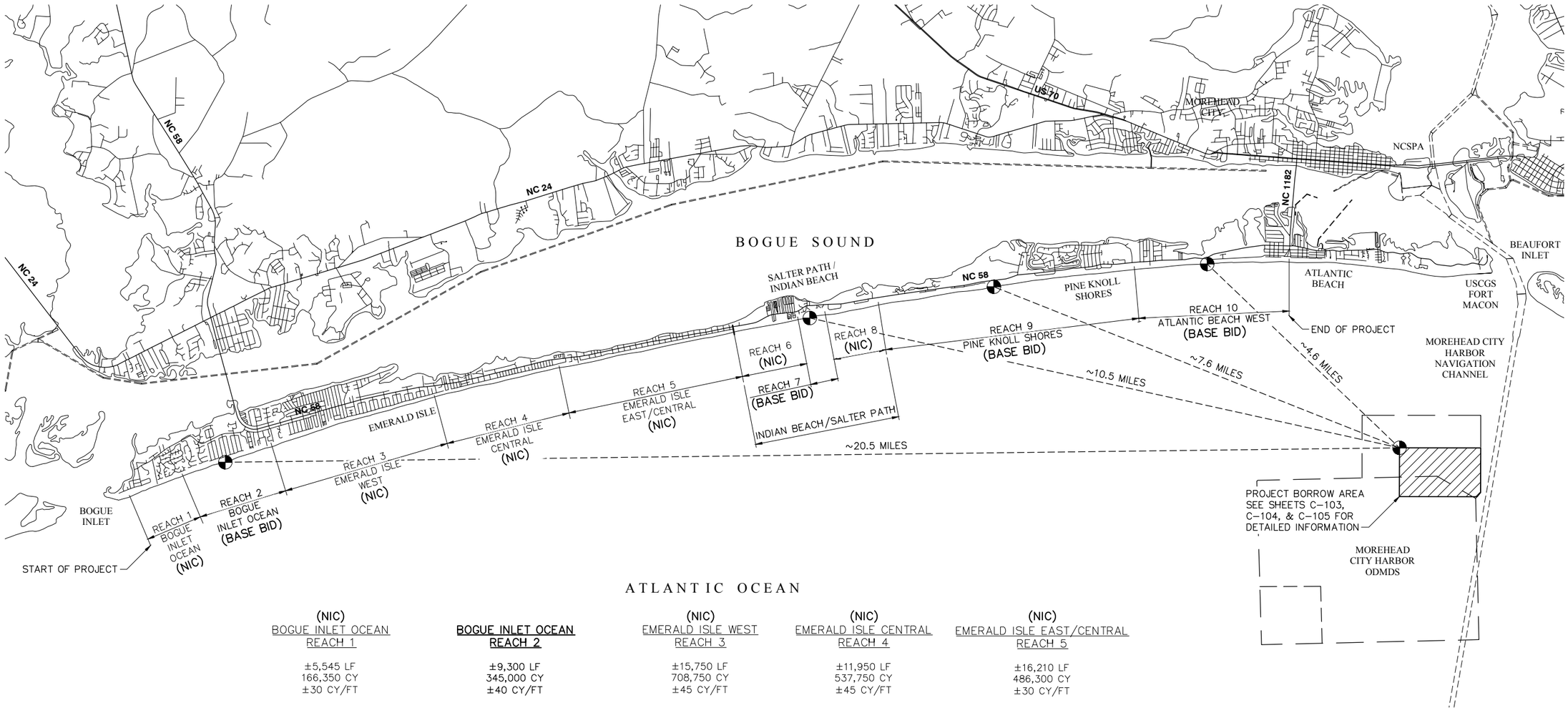
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PINE KNOLL SHORES, AND ATLANTIC BEACH

NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Sheet Reference No.
G-002
Sheet 2 of 66

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DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



(NIC) BOGUE INLET OCEAN REACH 1	BOGUE INLET OCEAN REACH 2	(NIC) EMERALD ISLE WEST REACH 3	(NIC) EMERALD ISLE CENTRAL REACH 4	(NIC) EMERALD ISLE EAST/CENTRAL REACH 5
±5,545 LF 166,350 CY ±30 CY/FT	±9,300 LF 345,000 CY ±40 CY/FT	±15,750 LF 708,750 CY ±45 CY/FT	±11,950 LF 537,750 CY ±45 CY/FT	±16,210 LF 486,300 CY ±30 CY/FT

(NIC) INDIAN BEACH/SALTER PATH REACH 6	INDIAN BEACH/SALTER PATH REACH 7	(NIC) INDIAN BEACH/SALTER PATH REACH 8	PINE KNOLL SHORES REACH 9	ATLANTIC BEACH WEST REACH 10
±6,025 LF 180,750 CY ±30 CY/FT	±3,800 LF 140,000 CY ±40 CY/FT (1)	±4,900 LF 147,000 CY ±30 CY/FT	±24,400 LF 990,000 CY ±40 CY/FT (1)	±14,900 LF 520,000 CY ±35 CY/FT (1)

NOTES:
1. OFFLOADING STATION AT BEACH NOURISHMENT SITES SHALL BE USED TO PUMP DREDGED MATERIAL ONTO BEACH. THIS STATION SHALL MOVE EAST OR WEST AS THE NOURISHMENT PROJECT IS COMPLETED. DREDGED MATERIAL SHALL BE TRANSPORTED FROM THE BORROW AREA DIRECTLY BY THE DREDGE AND OFFLOADED AT THIS LOCATION. CONTRACTOR SHALL PROVIDE MAP OF PROPOSED OFFLOADING STATIONS AND PIPELINE IN ACCORDANCE WITH PERMITS, SEE TECHNICAL SPECIFICATIONS.
2. BASE BID REACHES 2 , 7, AND 9 REQUIRE A 500 FOOT TAPER TO BE PLACED WITHIN ADJACENT (NOT IN CONTRACT) REACHES.
3. REACHES 2, 7, 9, AND 10 ARE CONSIDERED PART OF THE BASE BID. REACHES 1, 3 THRU 6, AND 8 ARE CURRENTLY NOT IN CONTRACT (NIC) DUE TO DELAYS IN FEMA FUNDING.

No.	Mark	Description	Date	Appr.
1	ADDENDUM 1		08/27/19	JM
0	BID DOCUMENTS		08/19/19	JM

POST-FLORENCE RENOURISHMENT
PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

PROJECT MAP AND KEY PLAN

Date: AUGUST 2019 | Rev. -
Designed by: NCV | Dwn by: BDF | Ckd by: SRM | Reviewed by: JDM
M&N Project No. 10611
Drawing code:
Submitted by: MOFFATT & NICHOL
Drawing Scale: Plot scale: 1:1 (0 SHEET)

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SUITE 300
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moffatt & nichol

PREPARED FOR THE TOWNS OF EMERALD ISLE, INDIAN BEACH, PINE KNOLL SHORES, AND ATLANTIC BEACH

NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

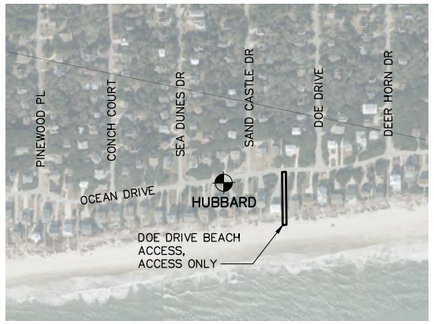
Sheet Reference No.
C-100
Sheet 3 of 66

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DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



NGS CONTROL STATION			
STATION	NORTHING	EASTING	ELEVATION
BEAR	331243.42	2572100.58	16.08



NGS CONTROL STATION			
STATION	NORTHING	EASTING	ELEVATION
HUBBARD	334559.51	2581884.14	14.99



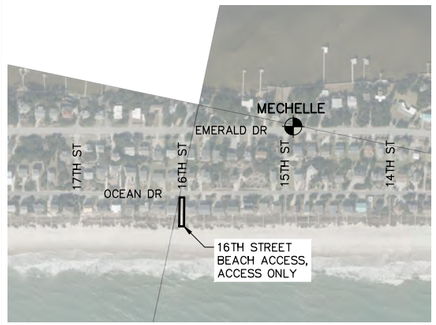
NGS CONTROL STATION			
STATION	NORTHING	EASTING	ELEVATION
SEAVIEW	338492.52	2589895.22	15.43



NGS CONTROL STATION			
STATION	NORTHING	EASTING	ELEVATION
COQUINA	339814.76	2599077.46	17.82



NGS CONTROL STATION			
STATION	NORTHING	EASTING	ELEVATION
EMERALD RM2	343122.52	2612927.40	16.79



NGS CONTROL STATION			
STATION	NORTHING	EASTING	ELEVATION
MECHELLE	344990.91	2620512.31	17.51



NGS CONTROL STATION			
STATION	NORTHING	EASTING	ELEVATION
McNEILL	346476.28	2628573.13	18.47



NGS CONTROL STATION			
STATION	NORTHING	EASTING	ELEVATION
SALTER	348063.64	2637673.57	25.21



NGS CONTROL STATION			
STATION	NORTHING	EASTING	ELEVATION
GROVE	349629.16	2645424.90	11.53



NGS CONTROL STATION			
STATION	NORTHING	EASTING	ELEVATION
VERRANZZANO	351254.18	2654624.71	10.71



NGS CONTROL STATION			
STATION	NORTHING	EASTING	ELEVATION
WEEPING	351818.98	2659539.89	18.66



NGS CONTROL STATION			
STATION	NORTHING	EASTING	ELEVATION
SHERATON	352583.33	2667932.37	9.81



NGS CONTROL STATION			
STATION	NORTHING	EASTING	ELEVATION
RIDGE	352747.25	2673936.72	13.31



NGS CONTROL STATION			
STATION	NORTHING	EASTING	ELEVATION
POLICE RM5	354033.16	2679512.54	5.26

NOTES:

1. THE NORTHINGS AND EASTINGS SHOWN ARE BASED ON THE NORTH CAROLINA STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM 1983 (NAD 83) (FEET).
2. THE ELEVATIONS SHOWN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 88) (FEET).

No.	Mark	BID DOCUMENTS Description	Date	Appr.
0			08/19/19	JM

POST-FLORENCE RENOURISHMENT
PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

PROJECT SURVEY CONTROL PLANS

Rev. –
Date: AUGUST 2019
M&N Project No. 10611
Drawing code:
Drawing Scale:
Plot scale: 1:1 (0 SHEET)
Designed by: NCV
Cad by: SRM
Dwn by: BDF
Reviewed by: JDM
Submitted by: MOFFATT & NICHOL

4700 FALLS OF THE NEUSE ROAD
SUITE 300
RALEIGH, NC 27609
919-781-4626
NC FIRM LICENSE No. F-0105
moffatt & nichol

PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Sheet Reference No.
C-101
Sheet 4 of 66

File: C:\RA\10611\0500_CAD_Active_10611 Bouge Banks Phase 2\10611000-101; Plotted: 8/19/2019 1:38 PM by FORD, BRIAN; Saved: 8/19/2019 1:37 PM by BFORD

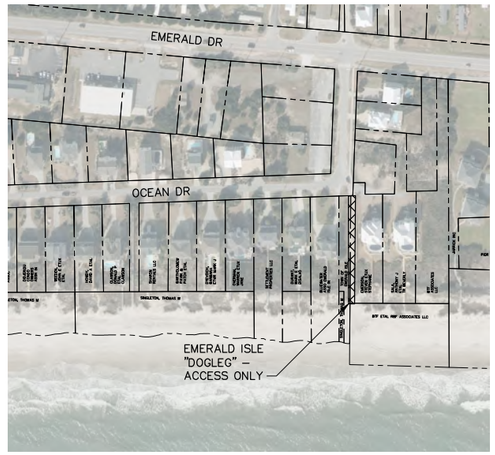
DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



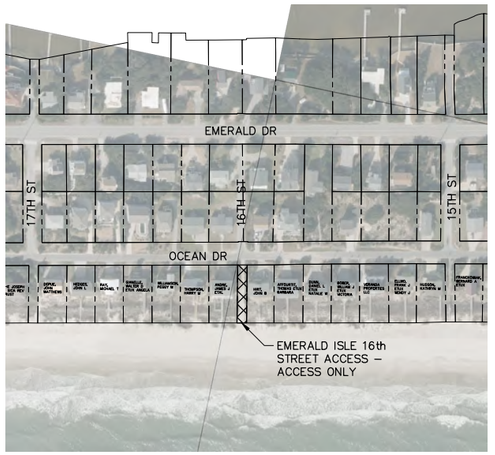
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NOT TO SCALE



STAGING & ACCESS SITE 2
NOT TO SCALE



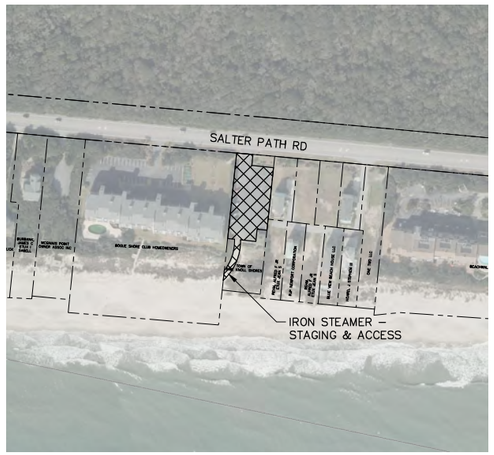
STAGING & ACCESS SITE 3
NOT TO SCALE



STAGING & ACCESS SITE 4
NOT TO SCALE



STAGING & ACCESS SITE 5
NOT TO SCALE



STAGING & ACCESS SITE 6
NOT TO SCALE



STAGING & ACCESS SITE 7
NOT TO SCALE



STAGING & ACCESS SITE 8
NOT TO SCALE

NOTES:

1. SEE TECHNICAL SPECIFICATIONS FOR ADDITIONAL INFORMATION.
2. SEE TECHNICAL SPECIFICATIONS FOR DESCRIPTIONS AND PHOTOS OF STAGING AND ACCESS AREAS.

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

Mark	Description	Date	Appr.
0	BID DOCUMENTS	08/19/19	JM

POST-FLORENCE RENOURISHMENT
PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

PROJECT STAGING AND ACCESS PLANS

Designed by: .	Date: AUGUST 2019
Drawn by: BDF	Qad by: .
Reviewed by: .	M&N Project No. 10611
Submitted by: MOFFATT & NICHOL	Drawing code:
	Drawing Scale: Plot scale: 1:1 (0 SHEET)
	Rev. -

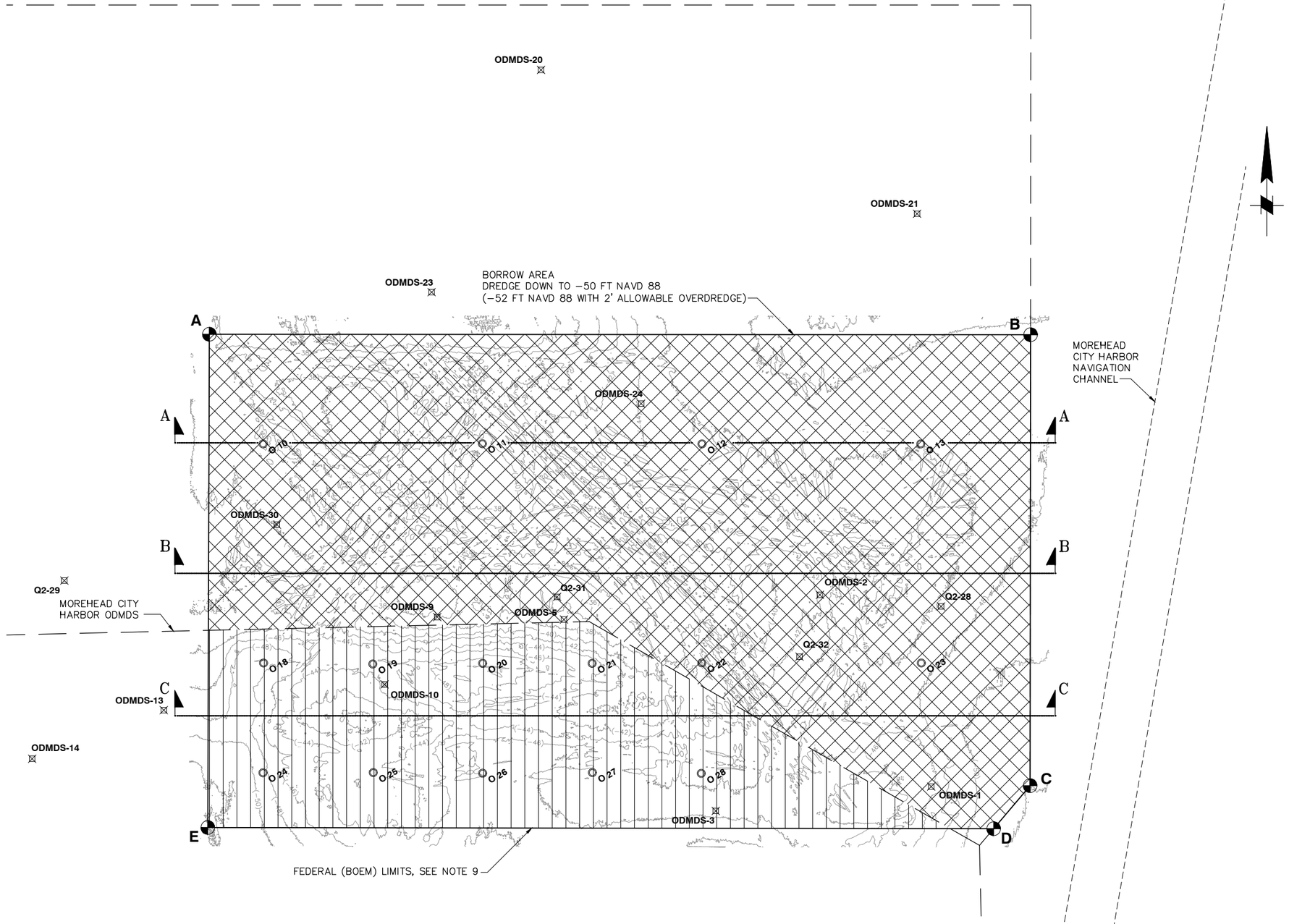
4700 FALLS OF THE NEUSE ROAD
SUITE 300
RALEIGH, NC 27609
919-781-4626
moffatt & nichol NC FIRM LICENSE No. F-0105

PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Sheet Reference No.
C-102
Sheet 5 of 66

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PROPOSED BORROW AREA COORDINATE TABLE

POINT	NORTHING	EASTING
A	335251.00	2689873.17
B	335246.38	2697361.70
C	331134.26	2697357.83
D	330742.17	2697024.91
E	330752.97	2689859.35

LEGEND

- A — PROPOSED BORROW AREA CONTROL POINT
- O## — 2011 VIBRACORE LOCATION (SEE TECHNICAL SPECIFICATIONS FOR DATA SUMMARY)
- ID — REMOTE SENSING TARGET

NOTES

1. BATHYMETRY CONTOURS SHOWN IN FEET REFERENCED TO NAVD 88 ARE BASED ON MULTIBEAM SURVEYS PERFORMED BY GEODYNAMICS IN MAY 2019 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS AT THE TIME OF THE SURVEY.
2. BORROW AREA COORDINATES ARE NORTH CAROLINA STATE PLANE, NAD 83 (FEET).
3. THE MEAN HIGH WATER ELEVATION AND MEAN LOW WATER ELEVATION SHOWN ON THE DREDGE SECTIONS WERE PROVIDED BY CARTERET COUNTY AND ARE BASED ON NOAA TIDAL DATUMS AT THE ATLANTIC BEACH TRIPLE S PIER AND THE DUKE MARINE LAB.
4. OTHER CONTRACTORS MAY BE PRESENT IN AREAS WHERE DREDGING OF BEACH FILL MATERIALS IS TO OCCUR. CONTRACTOR IS RESPONSIBLE FOR COORDINATING ACTIVITIES.
5. SEE TECHNICAL SPECIFICATIONS FOR DATA SUMMARY OF THE ARCHAEOLOGICAL REMOTE SENSING AND TARGET IDENTIFICATION STUDY. THE STUDY CONCLUDES THAT THE TARGETS CONSIST OF MODERN DEBRIS (WIRE ROPE, PIPE, ETC.) THAT APPEARS TO BE RELATED TO THE ODMDS OR ARTIFICIAL REEF SYSTEMS BUILT IN THE 1970'S. NO CULTURAL RESOURCES OR HISTORICAL ARTIFACTS WERE FOUND.
6. THE CONTRACTOR SHALL LEAVE UNDISTURBED FURROWS BETWEEN DREDGING PASSES WITHIN THE ODMDS BORROW SITE.
7. FOR ODMDS BORROW SITE DREDGE SECTIONS, SEE SHEET C−104.
8. FOR ODMDS BORROW SITE VIBRACORE SUMMARY TABLE, SEE SHEET C−105.
9. THE CONTRACTOR WILL BE LIMITED TO 1,750,000 CUBIC YARDS OF DREDGE MATERIAL REMOVAL, BY SURVEY, FROM WITHIN THE BOEM LIMITS.

REMOTE SENSING TARGET COORDINATE TABLE

TARGET ID	NORTHING	EASTING
ODMDS−1	331,126	2,696,456
ODMDS−2	332,875	2,695,144
ODMDS−3	330,904	2,694,491
ODMDS−5	332,650	2,693,107
ODMDS−9	332,672	2,691,951
ODMDS−10	332,058	2,691,471
ODMDS−13	331,823	2,689,458
ODMDS−14	331,380	2,688,258
ODMDS−20	337,662	2,692,898
ODMDS−21	336,350	2,696,327
ODMDS−23	335,635	2,691,900
ODMDS−24	334,618	2,693,811
ODMDS−30	333,515	2,690,490
Q2−28	332,769	2,696,546
Q2−29	333,005	2,688,551
Q2−31	332,856	2,693,045
Q2−32	332,311	2,695,255

500′ 0′ 500′ 1000′

SCALE: 1"=500' HORIZONTAL

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

0	Mark	BID DOCUMENTS	08/19/19	JM
		Description	Date	Appr.

POST-FLORENCE RENOURISHMENT
PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

ODMDS BORROW SITE DREDGE
PLAN

Rev. 1
Date: AUGUST 2019
M&N Project No. 10611
Drawing code:
Drawing Scale: Plot scale: 1:1 (0 SHEET)
Designed by: NCV
Dsn by: BDF
Rvd by: SRM
Reviewed by: JDM
Submitted by: MOFFATT & NICHOL

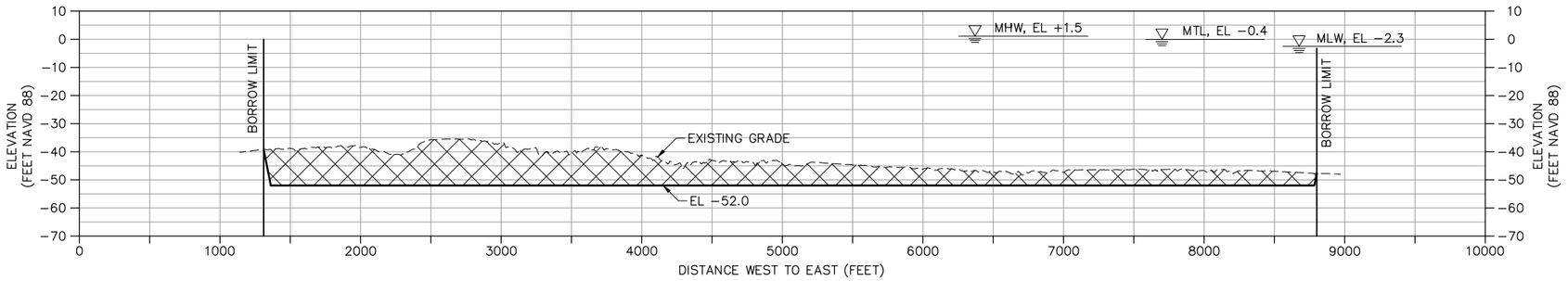
4700 FALLS OF THE NEUSE ROAD
SUITE 300
RALEIGH, NC 27609
919−781−4626
moffatt & nichol NC FIRM LICENSE No. F−0105

PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

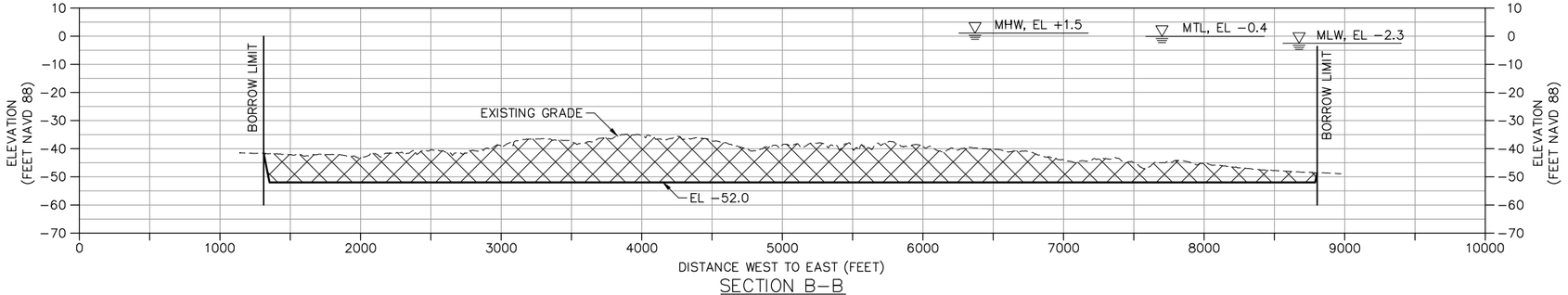
NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Sheet Reference No.
C-103
Sheet 6 of 66

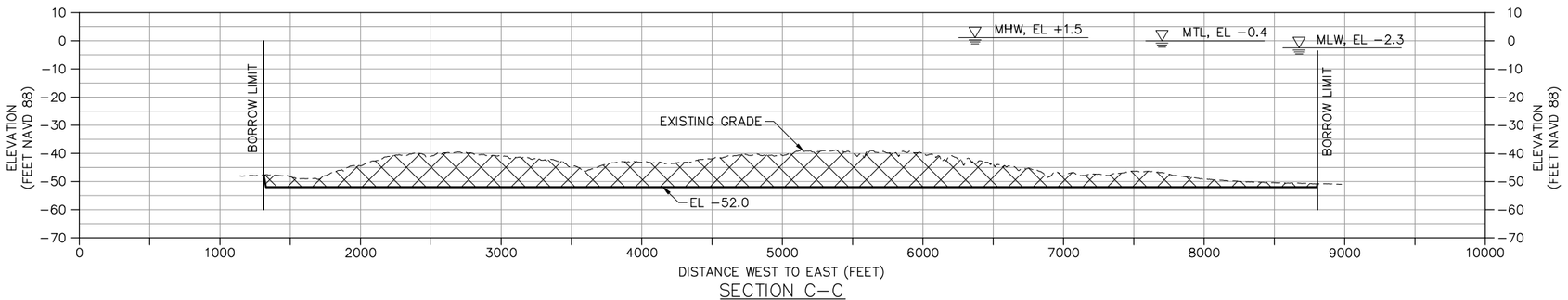
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SECTION A–A



SECTION B–B



SECTION C–C

25' 0' 25' 50'

SCALE: 1"=25' VERTICAL

500' 0' 500' 1000'

SCALE: 1"=500' HORIZONTAL

No.	Mark	BID DOCUMENTS Description	Date	Appr.
0			08/19/19	JM

POST-FLORENCE RENOURISHMENT PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

ODMDS BORROW SITE DREDGE SECTIONS

Designed by: NCV	Date: AUGUST 2019
Dwn by: BDF	Cad by: SRM
Reviewed by: JDM	M&N Project No. 10611
Submitted by: MOFFATT & NICHOL	Drawing code:
	Drawing Scale: Plot scale: 1:1 (0 SHEET)
	Rev. –

4700 FALLS OF THE NEUSE ROAD
SUITE 300
RALEIGH, NC 27609
919-781-4626
moffatt & nichol NC FIRM LICENSE No. F-0105

PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Sheet Reference No.
C-104
Sheet 7 of 66

File: Q:\RA\10611\0500_CAD_Active_10611 Bouge Banks Phase 2\10611000-104; Plotted: 8/19/2019 10:36 AM by FORD, BRIAN; Saved: 8/16/2019 11:56 AM by BFORD

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

Bogue Banks Sediment Compatibility

Native Sediment Characteristics

Reference - (CSE, 2001 - EA for Phases 1 & 2 and CAMA Permit #124-01)

Mean	1.76 phi	0.30 mm
Standard Deviation	0.77 phi	0.59 mm

Borrow Area Sediment Characteristics ODMDS

Reference - (Alpine, February 2012)

Mean	1.71	phi	0.31	mm
Standard Deviation	1.10	phi	0.81	mm

Percent Fines 0.5%

Percent Sand 98.0%

Precent Gravel 1.5%

Overfill Factor

Mean Difference	Sorting Ratio
-0.07	1.42

Summary of ODMDS Borrow Area Sediment Characteristics

Vibracore	Sample Number	Depth (ft)	Bed Elevation (ft NAVD)	Sample Elevation (ft NAVD)			Sample Depth (ft)	Gravel	Sand	<#200	<#230	Carbonate	Mean (mm)	Mean (phi)
O10	1	0-5	-38.2	-38.2	-	-43.2	5.0	1.18	98.64	0.18	0.12	11.8	0.27	1.89
O10	2	5-10	-38.2	-43.2	-	-48.2	5.0	0.22	99.43	0.35	0.29	12.9	0.28	1.84
O10	3	10-15	-38.2	-48.2	-	-53.2	5.0	0.18	99.50	0.32	0.25	10.0	0.26	1.94
O11	1	0-2	-37.6	-37.6	-	-39.6	2.0	2.7	96.48	0.82	0.63	15.5	0.34	1.56
O11	2	2-5	-37.6	-39.6	-	-42.6	3.0	0.43	99.28	0.29	0.27	13.7	0.33	1.60
O11	3	5-10	-37.6	-42.6	-	-47.6	5.0	0.07	99.66	0.27	0.26	13.8	0.26	1.94
O11	4	10-15	-37.6	-47.6	-	-52.6	5.0	1.93	97.92	0.15	0.12	14.1	0.29	1.79
O12	1	0-5	-46.6	-46.6	-	-51.6	5.0	4.59	95.09	0.32	0.26	23.3	0.45	1.15
O12	2	5-9	-46.6	-51.6	-	-55.6	4.0	1.32	98.39	0.29	0.21	14.2	0.32	1.64
O13	1	0-6	-47.3	-47.3	-	-53.3	6.0	0.08	99.53	0.39	0.28	11.5	.29	1.79
O18	1	0-6	-44.1	-44.1	-	-50.1	6.0	1.22	98.07	0.71	0.53	12.1	0.28	1.84
O18	2	6-12	-44.1	-50.1	-	-56.1	6.0	0.21	99.39	0.4	0.29	12.6	0.28	1.84
O19	1	0-6	-36.1	-36.1	-	-42.1	6.0	0	99.82	0.18	0.08	10.6	0.25	2.00
O19	2	6-12	-36.1	-42.1	-	-48.1	6.0	1.69	98.27	0.04	0	13.5	0.29	1.79
O19	3	12-17	-36.1	-48.1	-	-53.1	5.0	1.63	98.19	0.18	0.12	12.8	0.32	1.64
O19	4	17-19.3	-36.1	-53.1	-	-55.4	2.3	0	99.3	0.7	0.49	9.5	0.24	2.06
O20	1	0-5	-36.4	-36.4	-	-41.4	5.0	2.55	97.31	0.14	0.12	17.8	0.35	1.51
O20	2	5-10	-36.4	-41.4	-	-46.4	5.0	1.28	97.83	0.89	0.72	21.2	0.31	1.69
O20	3	10-13.9	-36.4	-46.4	-	-50.3	3.9	2.31	97.24	0.45	0.39	9.3	0.3	1.74
O21	1	0-5	-37	-37.0	-	-42.0	5.0	0.36	99.34	0.3	0.28	16.2	0.3	1.74
O21	2	5-10	-37	-42.0	-	-47.0	5.0	1.77	97.72	0.51	0.46	11.7	0.36	1.47
O21	3	10-15	-37	-47.0	-	-52.0	5.0	1.66	98.11	0.23	0.16	12.3	0.31	1.69
O22	1	0-5	-32.7	-32.7	-	-37.7	5.0	2.14	97.72	0.14	0.13	16.2	0.34	1.56
O22	2	5-10	-32.7	-37.7	-	-42.7	5.0	2.12	97.68	0.2	0.14	12.3	0.31	1.69
O22	3	10-15	-32.7	-42.7	-	-47.7	5.0	1.58	98.04	0.38	0.37	11.7	0.29	1.79
O22	4	15-20	-32.7	-47.7	-	-52.7	5.0	1.06	98.53	0.41	0.4	14.7	0.34	1.56
O23	1	0-6	-47.8	-47.8	-	-53.8	6.0	1.88	97.98	0.14	0.11	13.3	0.36	1.47
O24	1	0-4.9	-49.3	-49.3	-	-54.2	4.9	4.78	90.03	5.19	4.81	13	0.24	2.06
O24	2	4.9-6.8	-49.3	-54.2	-	-56.1	1.9	0.32	99.38	0.3	0.2	10.4	0.26	1.94
O25	1	0-6	-42	-42.0	-	-48.0	6.0	0.9	98.65	0.45	0.36	13.6	0.33	1.60
O25	2	6-12	-42	-48.0	-	-54.0	6.0	2.05	96.99	0.96	0.83	18	0.33	1.60
O25	3	12-17.9	-42	-54.0	-	-59.9	5.9	1.79	98.06	0.15	0.12	19.2	0.32	1.64
O26	1	0-5	-45.7	-45.7	-	-50.7	5.0	5.01	94.52	0.47	0.37	12.7	0.36	1.47
O26	2	5-9.3	-45.7	-50.7	-	-55.0	4.3	0.97	98.79	0.24	0.21	11.9	0.3	1.74
O27	1	0-4	-43.6	-43.6	-	-47.6	4.0	0.56	99.24	0.2	0.2	16.7	0.4	1.32
O27	2	4-8	-43.6	-47.6	-	-51.6	4.0	0.67	98.95	0.38	0.35	12	0.32	1.64
O27	3	8-12.9	-43.6	-51.6	-	-56.5	4.9	0.16	99.35	0.49	0.41	11.8	0.29	1.79
O28	1	0-6	-42.7	-42.7	-	-48.7	6.0	0.59	99.29	0.12	0.09	12.8	0.28	1.84
O28	2	6-11.6	-42.7	-48.7	-	-54.3	5.6	0.41	99.34	0.25	0.16	13.4	0.3	1.74
							average	1.44	98.04	0.52	0.44	13.56	0.31	1.71
							median	1.28	98.19	0.30	0.28	12.80	0.31	1.74

No.	Mark	BID DOCUMENTS	Description	08/19/19	Date	JM	Appr.
0							

POST-FLORENCE RENOURISHMENT
PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

ODMDS BORROW SITE
VIBRACORE SUMMARY TABLE

Designed by: NCV
Drawn by: BDF
Cad by: SRM
Reviewed by: JDM
Submitted by: MOFFATT & NICHOL

Date: AUGUST 2019
M&N Project No. 10611
Drawing code:
Drawing Scale:
Plot scale: 1:1 (D SHEET)
Rev. -

4700 FALLS OF THE NEUSE ROAD
SUITE 300
RALEIGH, NC 27609
919-781-4626
moffatt & nichol NC FIRM LICENSE No. F-0105

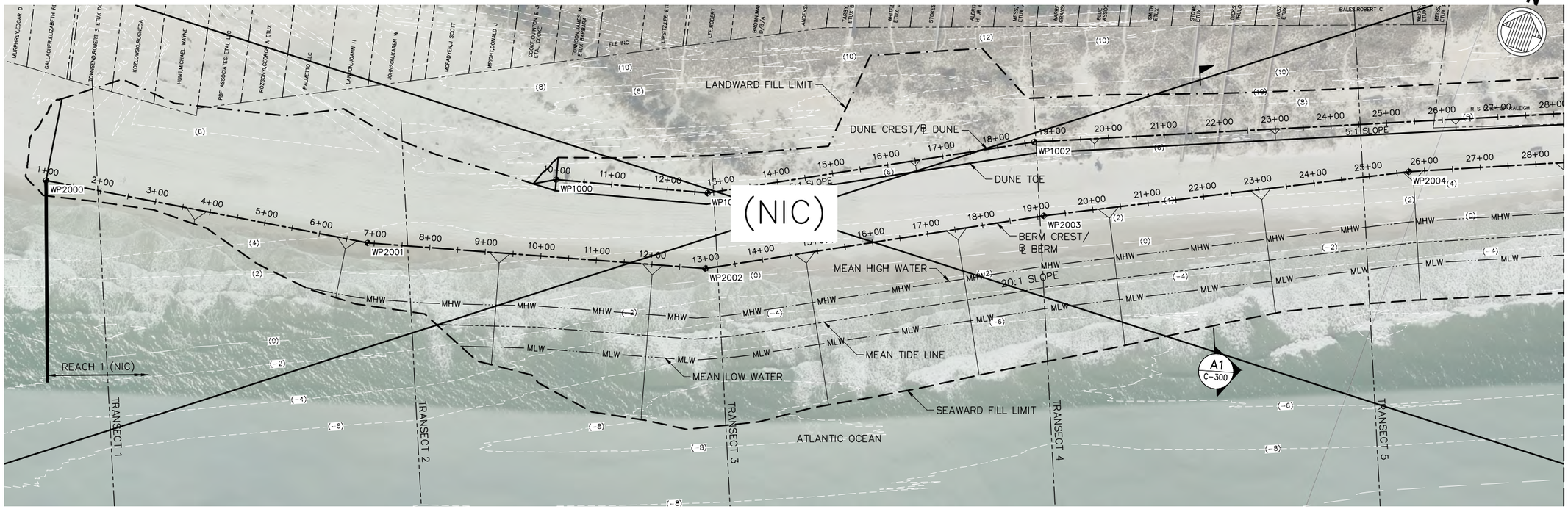
PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Sheet Reference No.
C-105
Sheet 8 of 66

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DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



NOTES:
1. SEE SHEET C-601 FOR CONSTRUCTION BASELINE WORK POINT TABLES.
2. SEE SHEETS C-301 THRU C-335 FOR CROSS SECTIONS.

100' 0' 100' 200'
SCALE: 1"=100'

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

Mark	Description	Date	Appr.
0	BID DOCUMENTS	08/19/19	JM

POST-FLORENCE RENOURISHMENT
PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

BEACH RENOURISHMENT PLAN - SHEET 1 OF 20

Rev.	-
Date:	AUGUST 2019
M&N Project No.	10611
Drawing code:	
Drawing Scale:	Plot. scale: 1:1 (D SHEET)
Designed by:	NCV
Dwn by:	BDF
Ckd by:	SRM
Reviewed by:	JDM
Submitted by:	MOFFATT & NICHOL

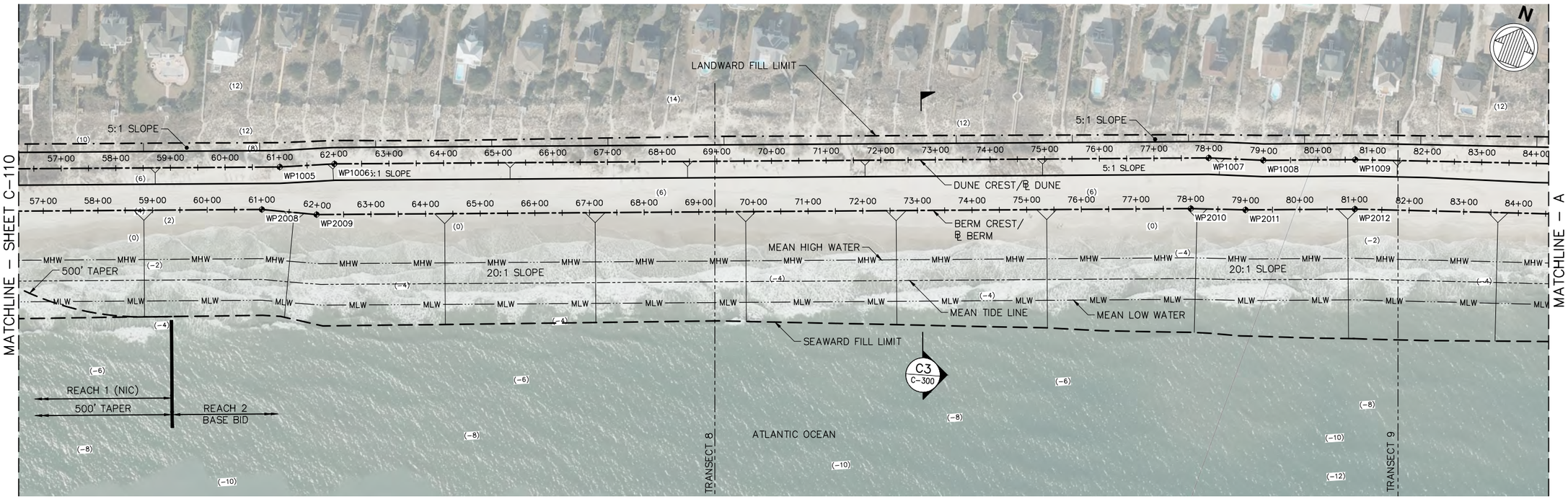
4700 FALLS OF THE NEUSE ROAD
SUITE 300
RALEIGH, NC 27609
919-781-4626
NC FIRM LICENSE No. F-0105
moffatt & nichol

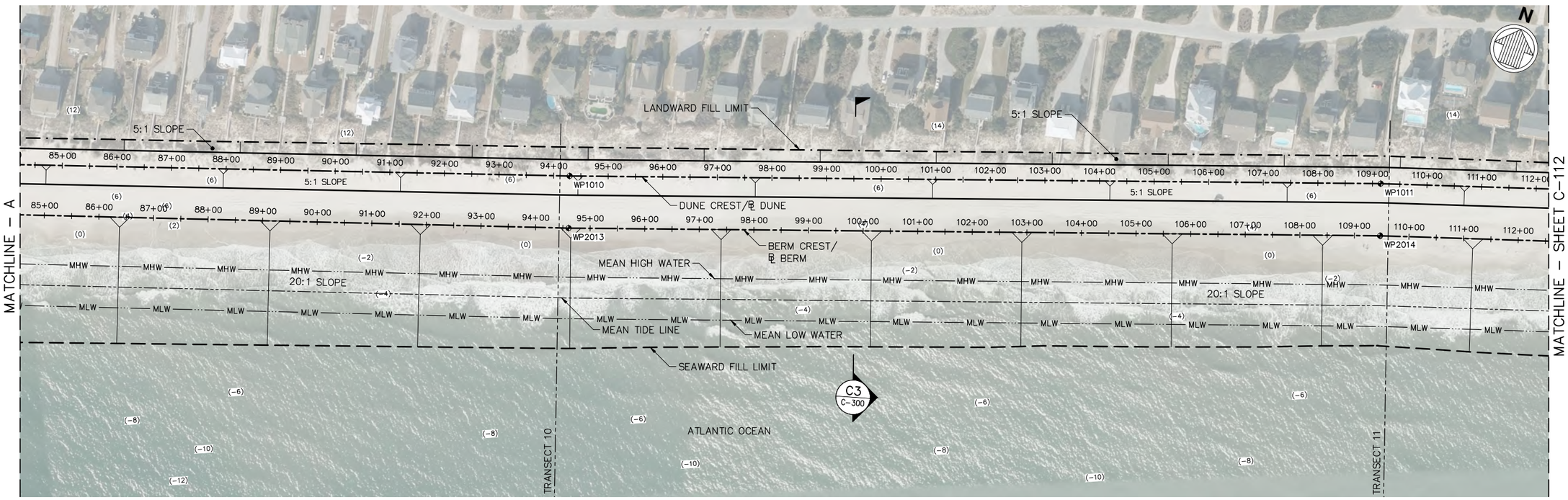
PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Sheet Reference No.
C-110
Sheet 9 of 66

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NOTES:
1. SEE SHEET C–601 FOR CONSTRUCTION BASELINE WORK POINT TABLES.
2. SEE SHEETS C–301 THRU C–335 FOR CROSS SECTIONS.

100' 0' 100' 200'
SCALE: 1"=100'

Mark	Description	Date	Appr.
0	BID DOCUMENTS	08/19/19	JM

POST-FLORENCE RENOURISHMENT
PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

BEACH RENOURISHMENT PLAN - SHEET 2 OF 20

4700 FALLS OF THE NEUSE ROAD
SUITE 300
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PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

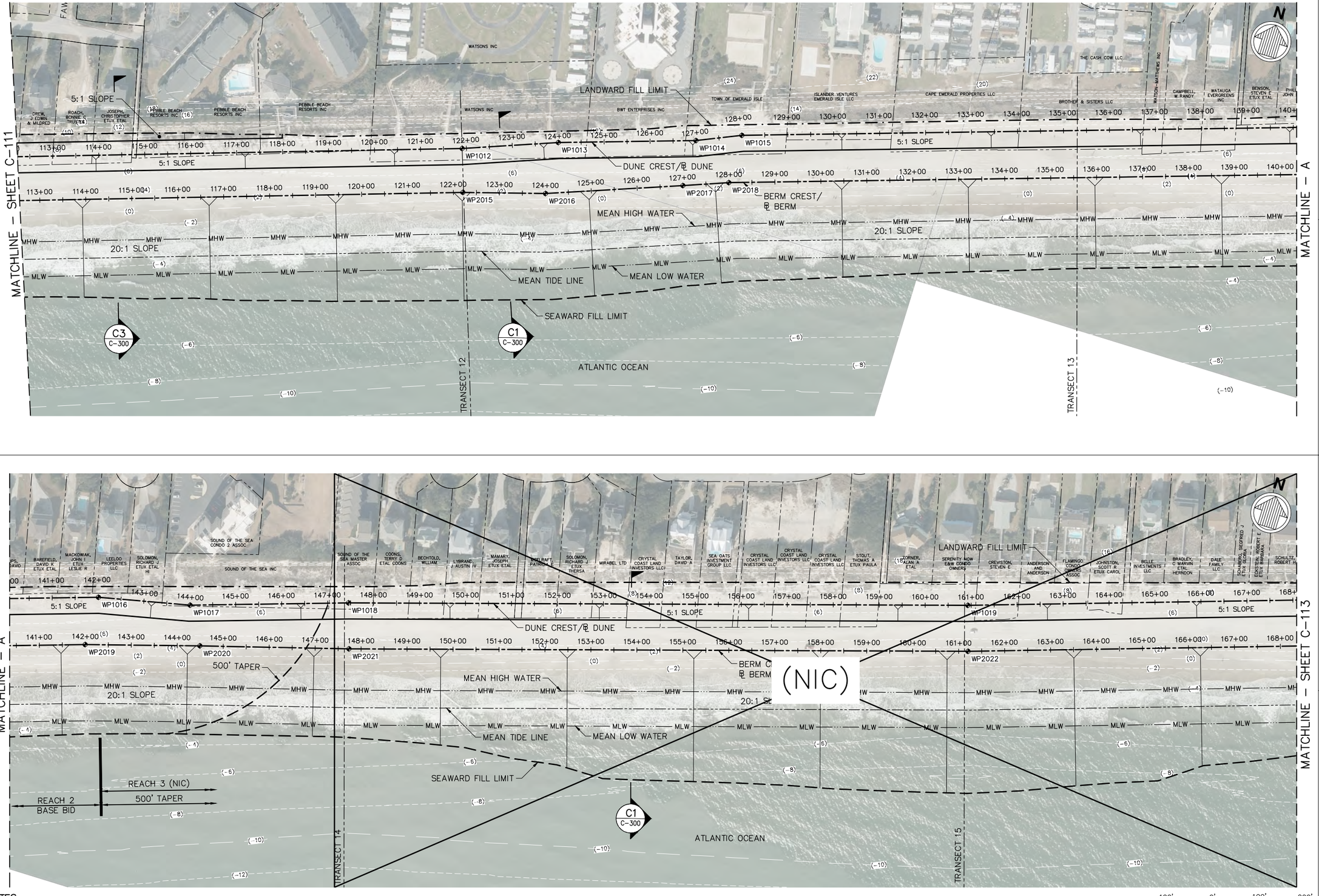
Rev.	-
Date:	AUGUST 2019
M&N Project No.	10611
Drawing code:	
Drawing Scale:	Plot scale: 1:1 (0 SHEET)
Designed by:	NCV
Dwn by:	BDF
Cad by:	SRM
Reviewed by:	JDM
Submitted by:	MOFFATT & NICHOL

NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Sheet Reference No.
C-111
Sheet 10 of 66

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DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



NOTES:
1. SEE SHEET C–601 FOR CONSTRUCTION BASELINE WORK POINT TABLES.
2. SEE SHEETS C–301 THRU C–335 FOR CROSS SECTIONS.

100' 0' 100' 200'
SCALE: 1"=100'

Mark	Description	Date	Appr.
0	BID DOCUMENTS	08/19/19	JM

POST-FLORENCE RENOURISHMENT PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

BEACH RENOURISHMENT PLAN - SHEET 3 OF 20

4700 FALLS OF THE NEUSE ROAD
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PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

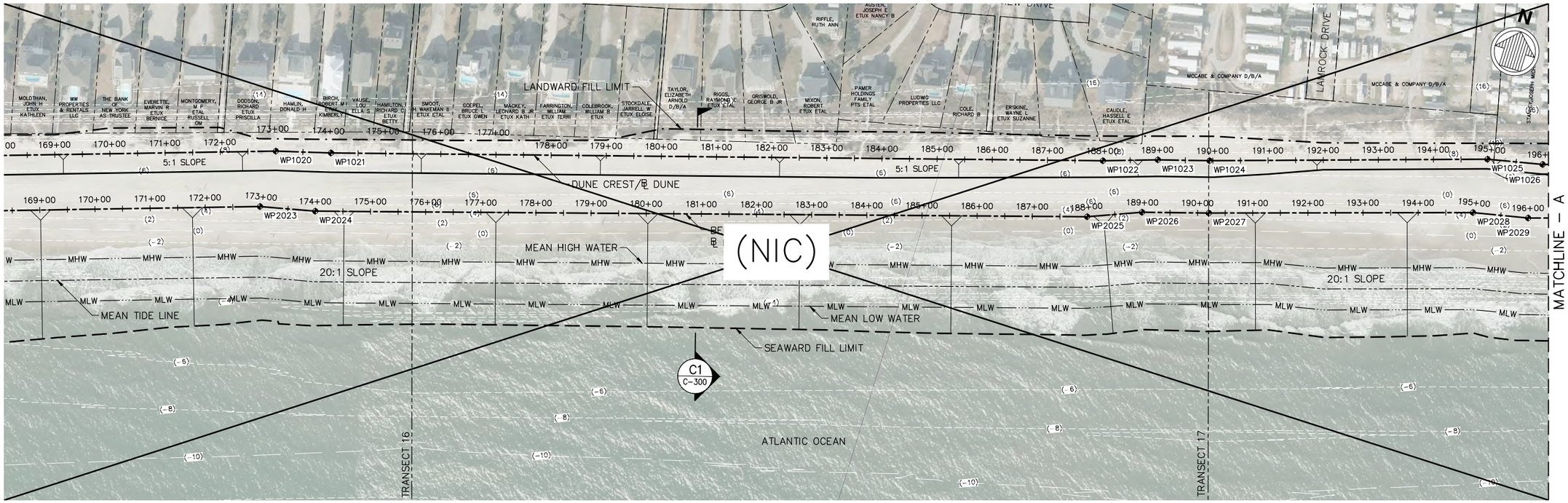
NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

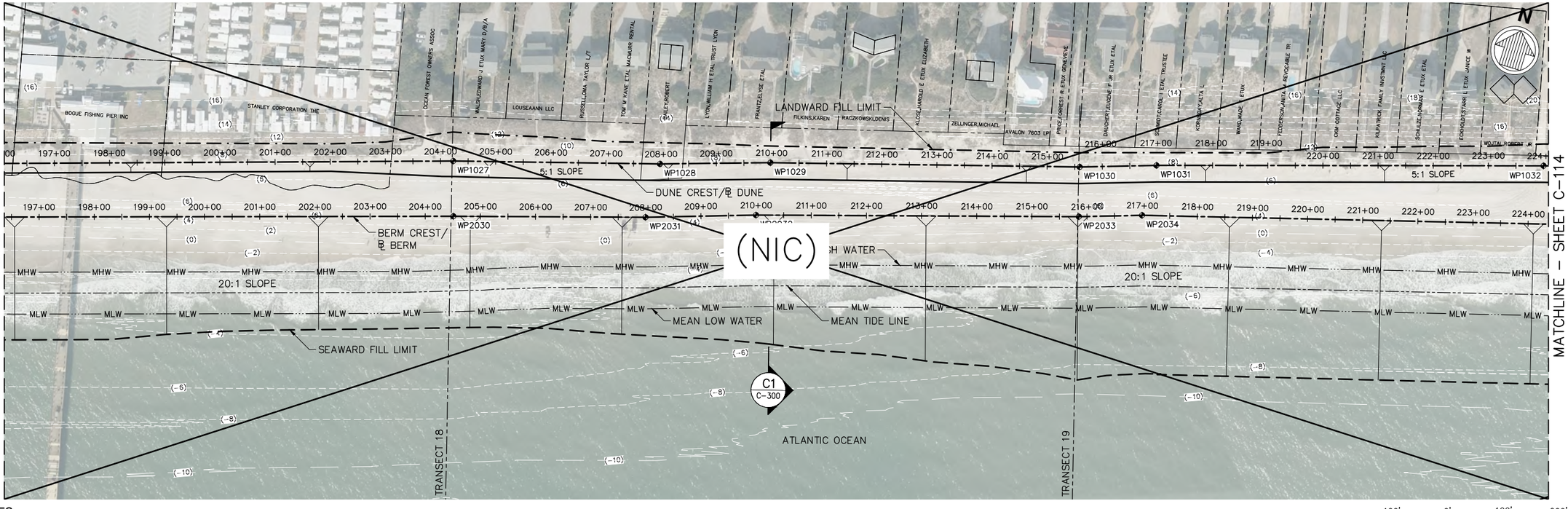
Rev.	-
Date:	AUGUST 2019
M&N Project No.	10611
Drawing code:	
Drawing Scale:	Plot scale: 1:1 (0 SHEET)
Designed by:	NCV
Dwn by:	BDF
Qcd by:	SRM
Reviewed by:	JDM
Submitted by:	MOFFATT & NICHOL

Sheet Reference No.
C-112
Sheet 11 of 66

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DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING





NOTES:
1. SEE SHEET C–601 FOR CONSTRUCTION BASELINE WORK POINT TABLES.
2. SEE SHEETS C–301 THRU C–335 FOR CROSS SECTIONS.

100' 0' 100' 200'
SCALE: 1"=100'

Mark	Description	Date	Appr.
0	BID DOCUMENTS	08/19/19	JM

POST-FLORENCE RENOURISHMENT
PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

BEACH RENOURISHMENT PLAN - SHEET 4 OF 20

Rev.	–
Date:	AUGUST 2019
M&N Project No.	10611
Drawing code:	
Drawing Scale:	Plot scale: 1:1 (D SHEET)
Designed by:	NCV
Dwn by:	BDF
Ckd by:	SRM
Reviewed by:	JDM
Submitted by:	MOFFATT & NICHOL

4700 FALLS OF THE NEUSE ROAD
SUITE 300
RALEIGH, NC 27609
919-781-4626
moffatt & nichol NC FIRM LICENSE No. F-0105

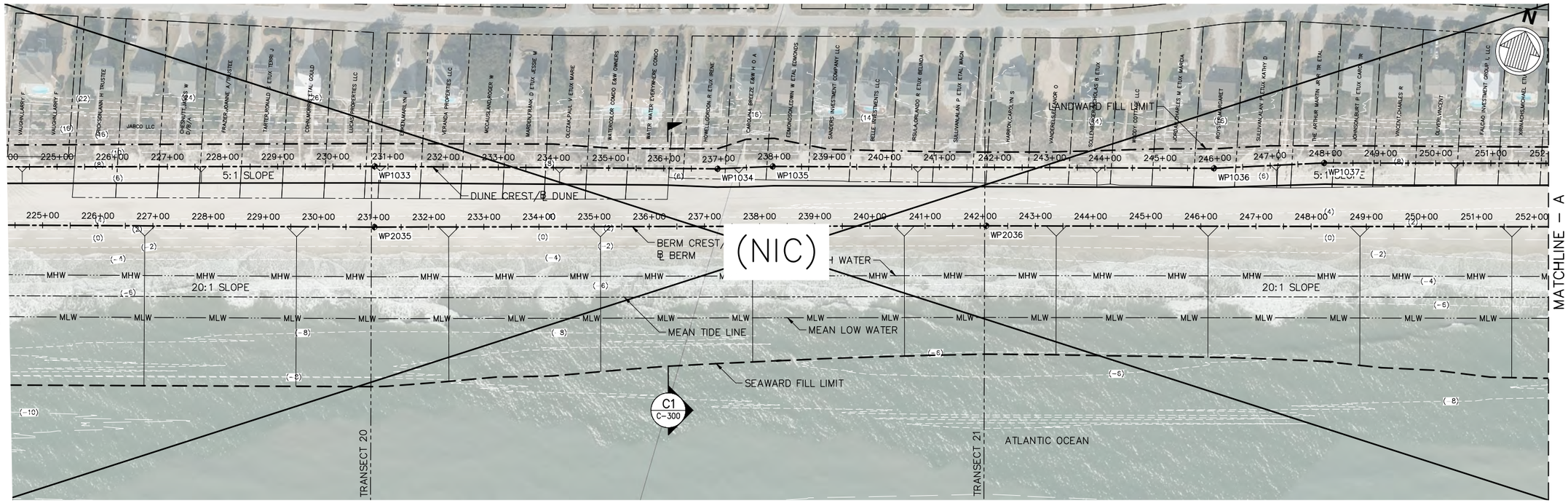
PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

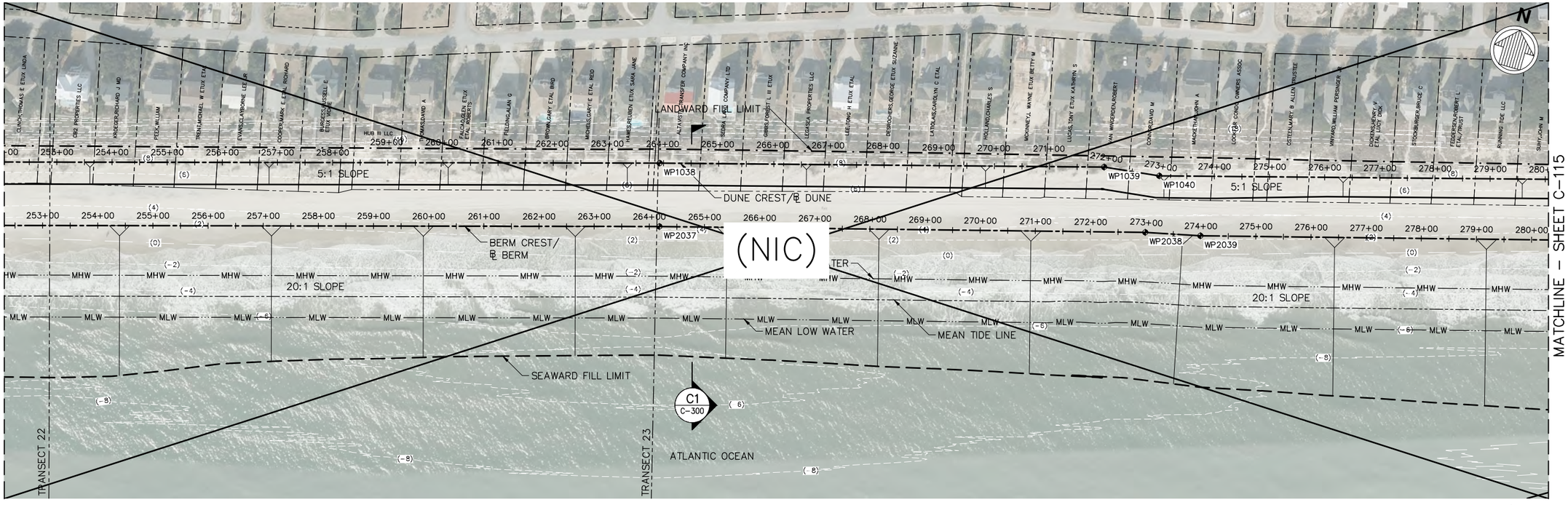
NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Sheet Reference No.
C-113
Sheet 12 of 66

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DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING





NOTES:
1. SEE SHEET C–601 FOR CONSTRUCTION BASELINE WORK POINT TABLES.
2. SEE SHEETS C–301 THRU C–335 FOR CROSS SECTIONS.

100' 0' 100' 200'
SCALE: 1"=100'

Mark	Description	Date	Appr.
0	BID DOCUMENTS	08/19/19	JM

POST-FLORENCE RENOURISHMENT
PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

BEACH RENOURISHMENT PLAN -
SHEET 5 OF 20

Rev.	–
Date:	AUGUST 2019
M&N Project No.	10611
Drawing code:	
Drawing Scale:	Plot scale: 1:1 (D SHEET)
Designed by:	NCV
Dwn by:	BDF
Ckd by:	SRM
Reviewed by:	JDM
Submitted by:	MOFFATT & NICHOL

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SUITE 300
RALEIGH, NC 27609
919-781-4626
NC FIRM LICENSE No. F-0105
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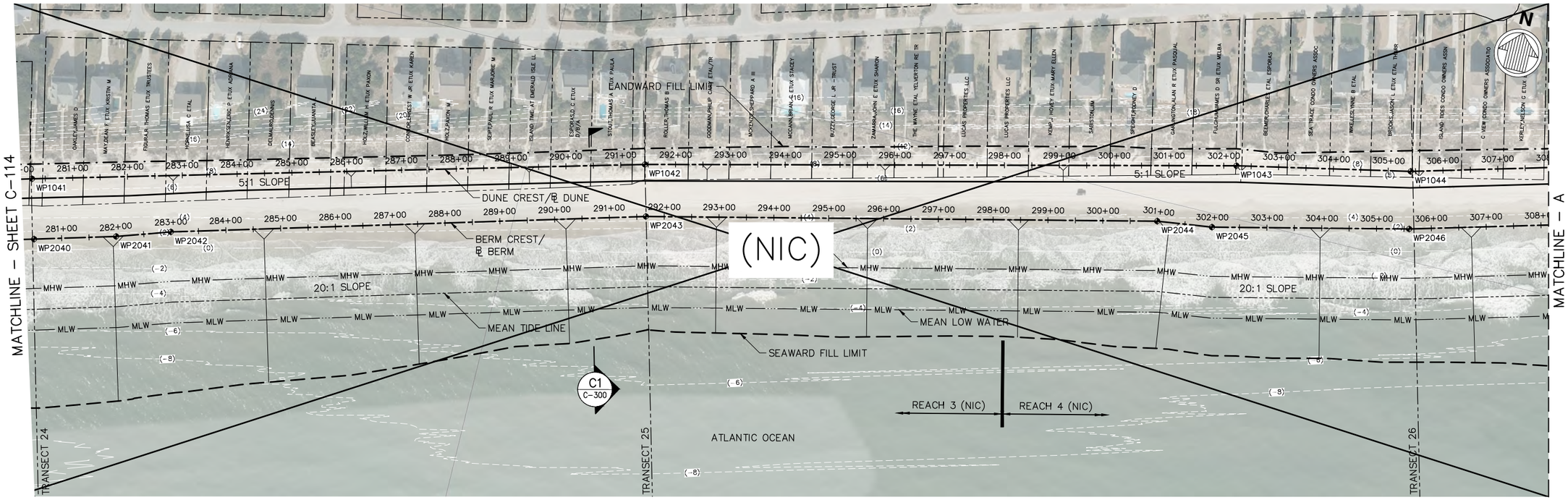
PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

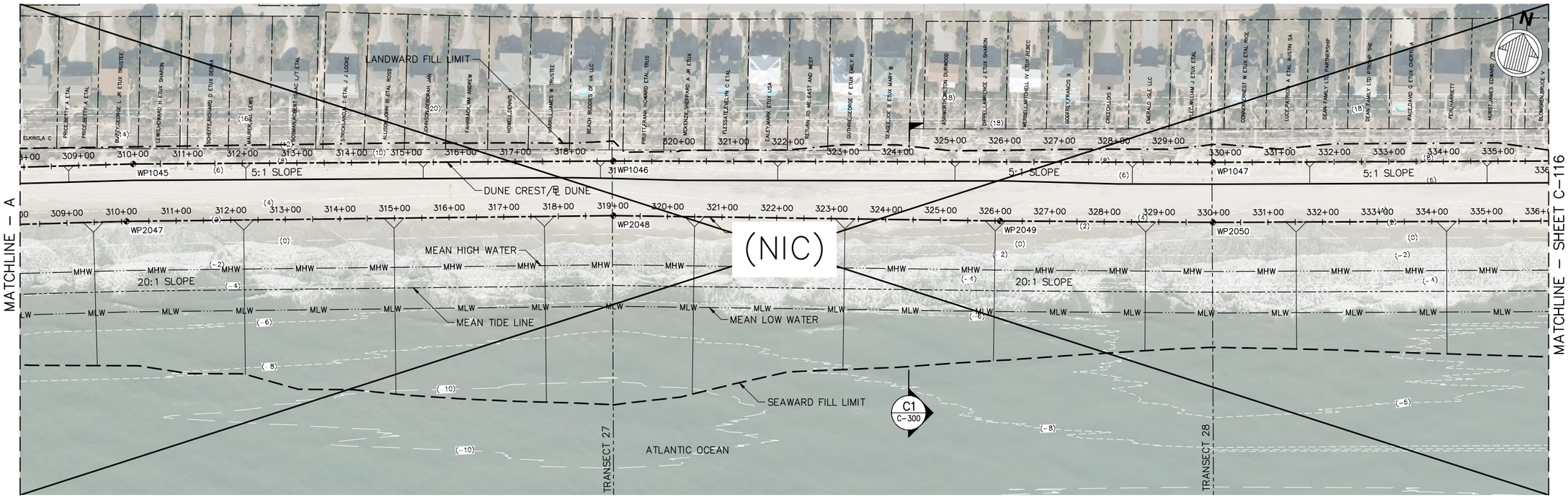
NORTH CAROLINA
PROFESSIONAL
SEAL
23487
ENGINEER
JOHNNY D. MARTIN
SEAL

Sheet
Reference No.
C-114
Sheet 13 of 66

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DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING





NOTES:
1. SEE SHEET C–601 FOR CONSTRUCTION BASELINE WORK POINT TABLES.
2. SEE SHEETS C–301 THRU C–335 FOR CROSS SECTIONS.

100' 0' 100' 200'
SCALE: 1"=100'

Mark	Description	Date	Appr.
0	BID DOCUMENTS	08/19/19	JM

POST-FLORENCE RENOURISHMENT
PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

BEACH RENOURISHMENT PLAN - SHEET 6 OF 20

Rev. –
Date: AUGUST 2019
M&N Project No. 10611
Drawing code:
Drawing Scale: Plot scale: 1:1 (0 SHEET)
Designed by: NCV
Drawn by: BDF
Checked by: SRM
Reviewed by: JDM
Submitted by: MOFFATT & NICHOL

4700 FALLS OF THE NEUSE ROAD
SUITE 300
RALEIGH, NC 27609
919-781-4626
moffatt & nichol NC FIRM LICENSE No. F-0105

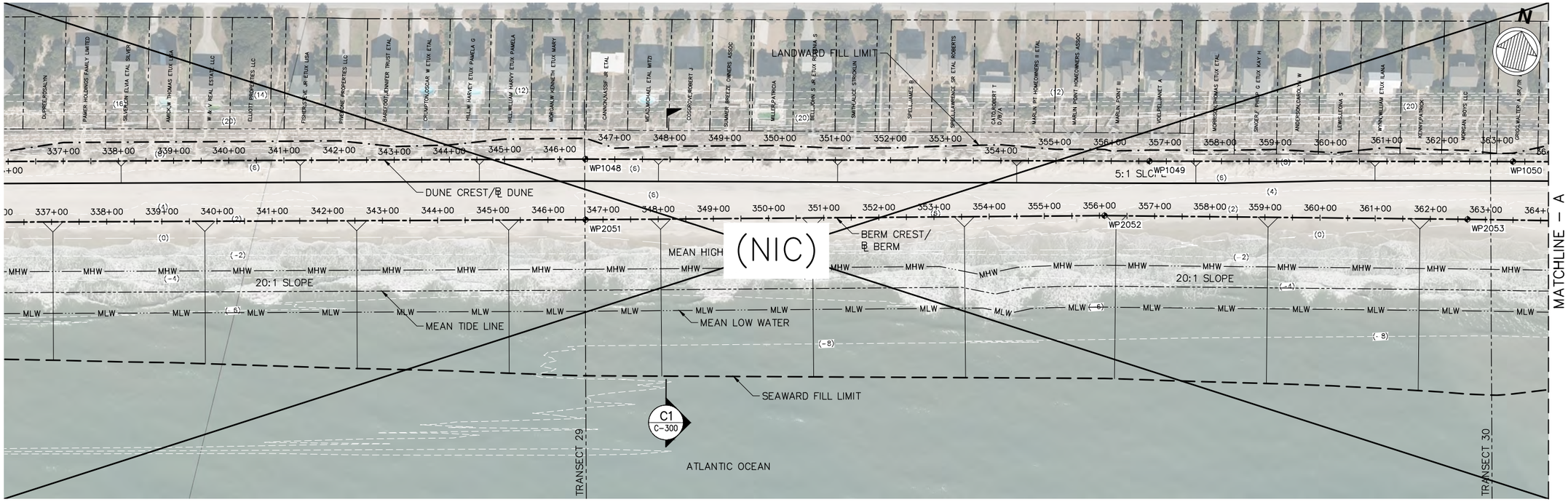
PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

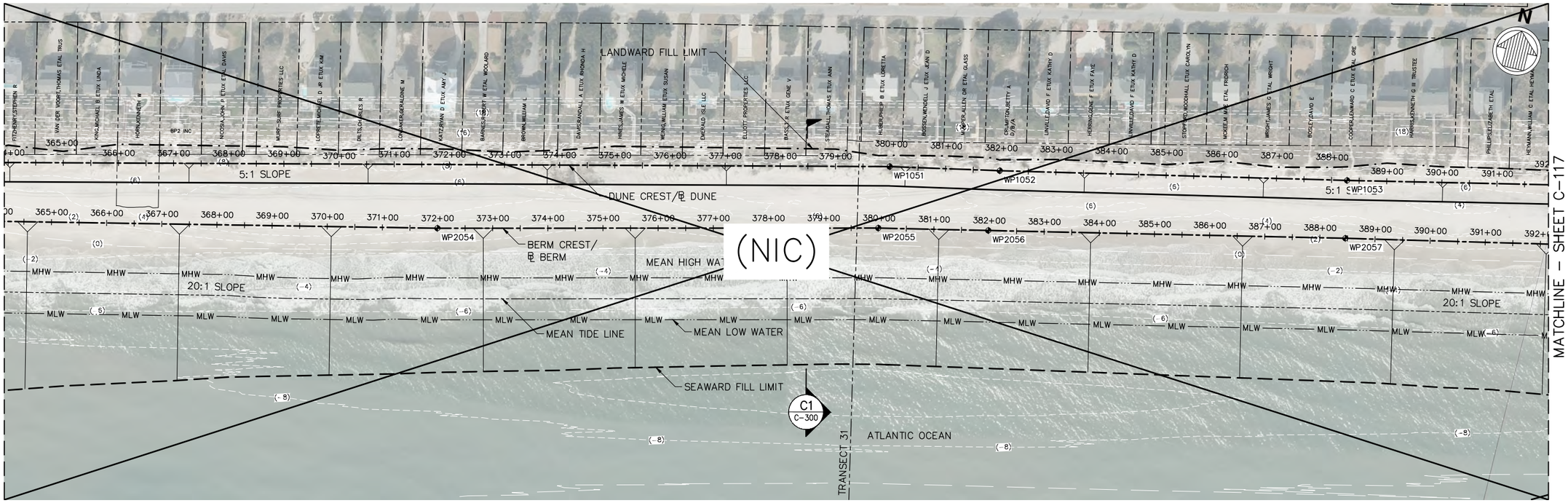
NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Sheet Reference No.
C-115
Sheet 14 of 66

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DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING





NOTES:
1. SEE SHEET C–601 FOR CONSTRUCTION BASELINE WORK POINT TABLES.
2. SEE SHEETS C–301 THRU C–335 FOR CROSS SECTIONS.

100' 0' 100' 200'
SCALE: 1"=100'

Mark	Description	Date	Appr.
0	BID DOCUMENTS	08/19/19	JM

POST-FLORENCE RENOURISHMENT PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

BEACH RENOURISHMENT PLAN - SHEET 7 OF 20

Rev. –
Date: AUGUST 2019
M&N Project No. 10611
Drawing code:
Drawing Scale:
Plot scale: 1:1 (0 SHEET)
Designed by: NCV
Dwn by: BDF
Ckd by: SRM
Reviewed by: JDM
Submitted by: MOFFATT & NICHOL

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919-781-4626
NC FIRM LICENSE No. F-0105
moffatt & nichol

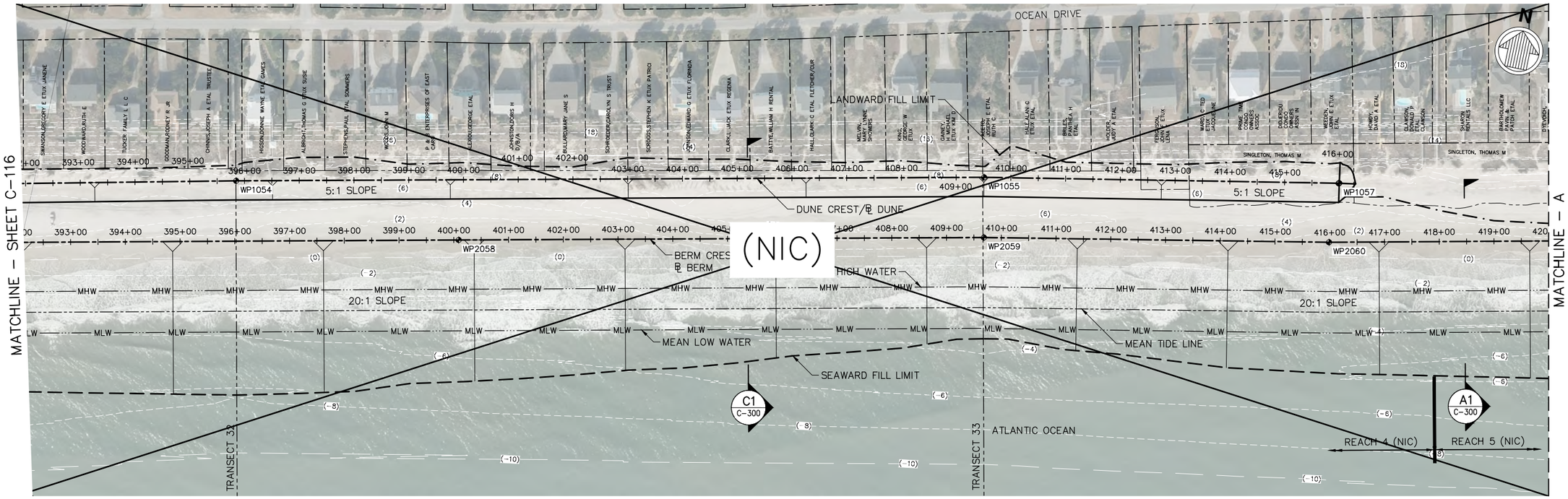
PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

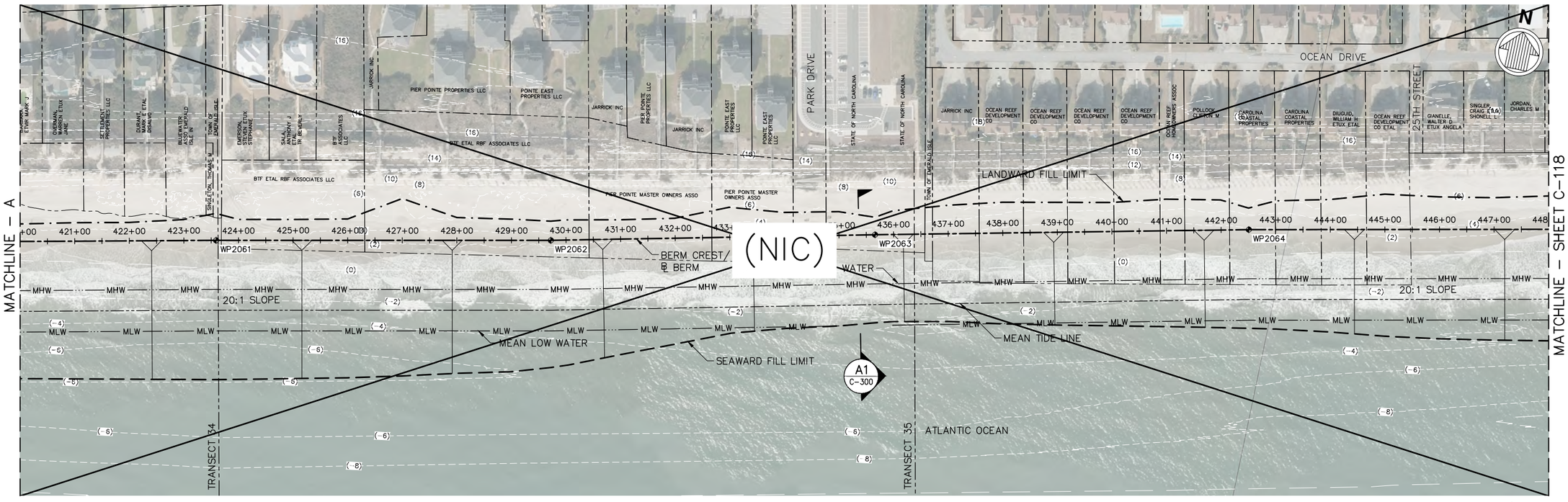
NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Sheet Reference No.
C-116
Sheet 15 of 66

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DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING





NOTES:
1. SEE SHEET C–601 FOR CONSTRUCTION BASELINE WORK POINT TABLES.
2. SEE SHEETS C–301 THRU C–335 FOR CROSS SECTIONS.

100' 0' 100' 200'
SCALE: 1"=100'

Mark	Description	Date	Appr.
0	BID DOCUMENTS	08/19/19	JM

POST-FLORENCE RENOURISHMENT
PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

BEACH RENOURISHMENT PLAN -
SHEET 8 OF 20

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PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

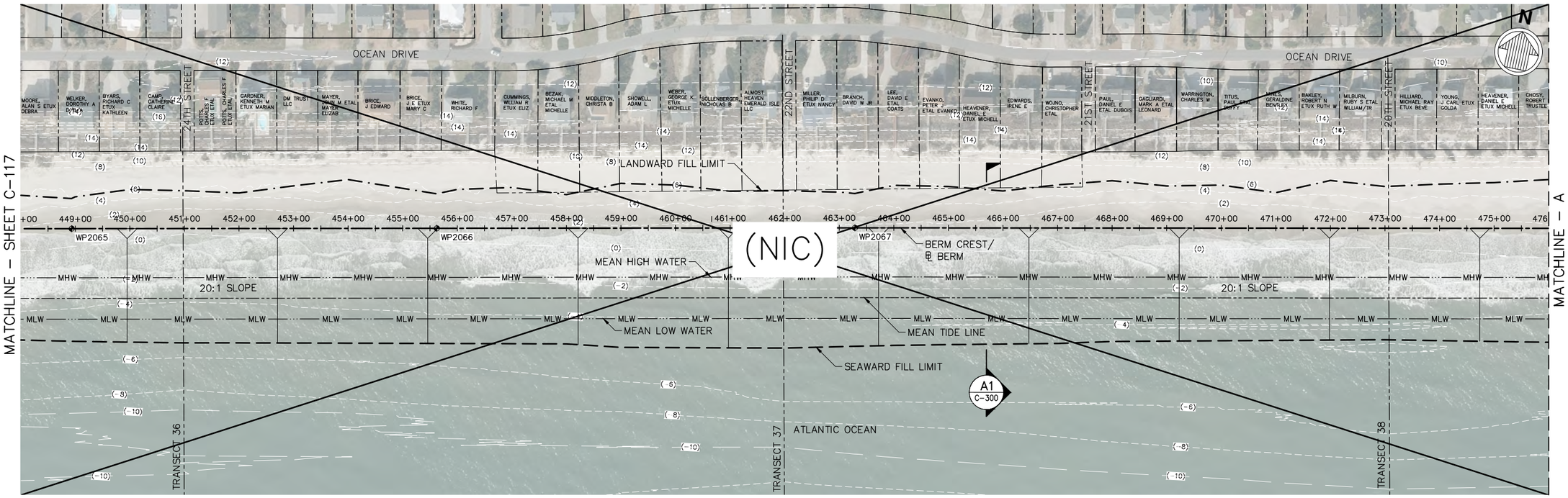
Rev.	–
Date:	AUGUST 2019
M&N Project No.	10611
Drawing code:	
Drawing Scale:	Plot scale: 1:1 (D SHEET)
Designed by:	NCV
Drawn by:	BDF
Ckd by:	SRM
Reviewed by:	JDM
Submitted by:	MOFFATT & NICHOL

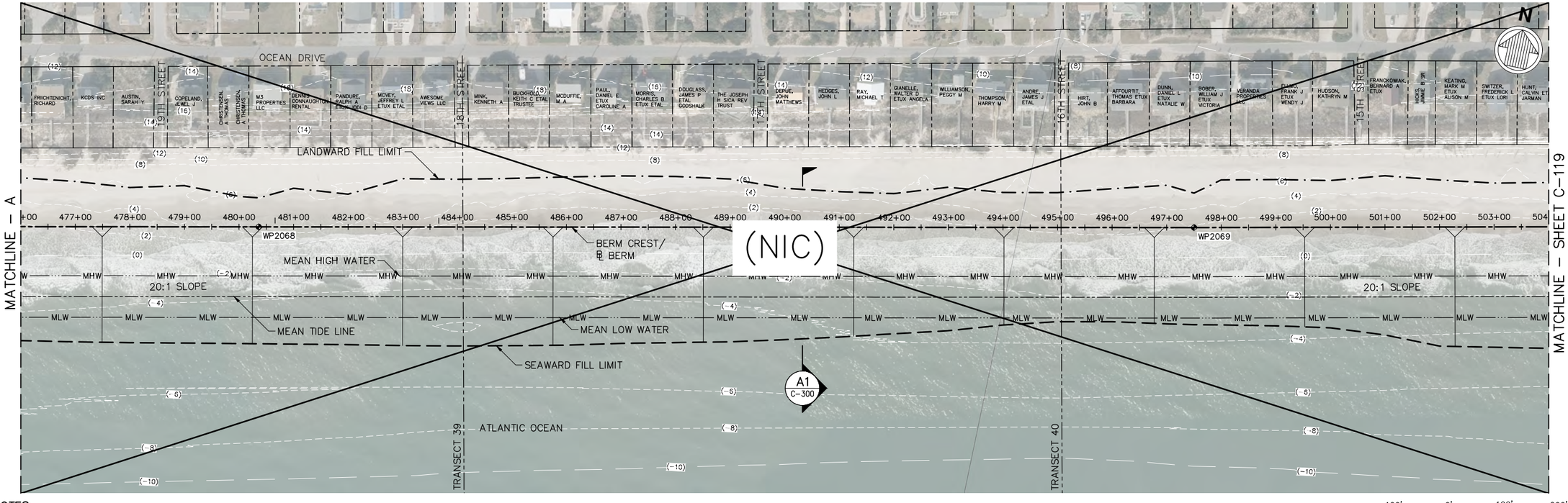
NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Sheet Reference No.
C-117
Sheet 16 of 66

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DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING





NOTES:
1. SEE SHEET C-601 FOR CONSTRUCTION BASELINE WORK POINT TABLES.
2. SEE SHEETS C-301 THRU C-335 FOR CROSS SECTIONS.

100' 0' 100' 200'
SCALE: 1"=100'

Mark	BID DOCUMENTS	Date	Appr.
0	Description	08/19/19	JM

POST-FLORENCE RENOURISHMENT
PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

BEACH RENOURISHMENT PLAN - SHEET 9 OF 20

Designed by: NCV
Drawn by: BDF
Checked by: SRM
Reviewed by: JDM
Submitted by: MOFFATT & NICHOL

Date: AUGUST 2019
M&N Project No. 10611
Drawing code:
Drawing Scale: Plot scale: 1:1 (D SHEET)
Rev. –

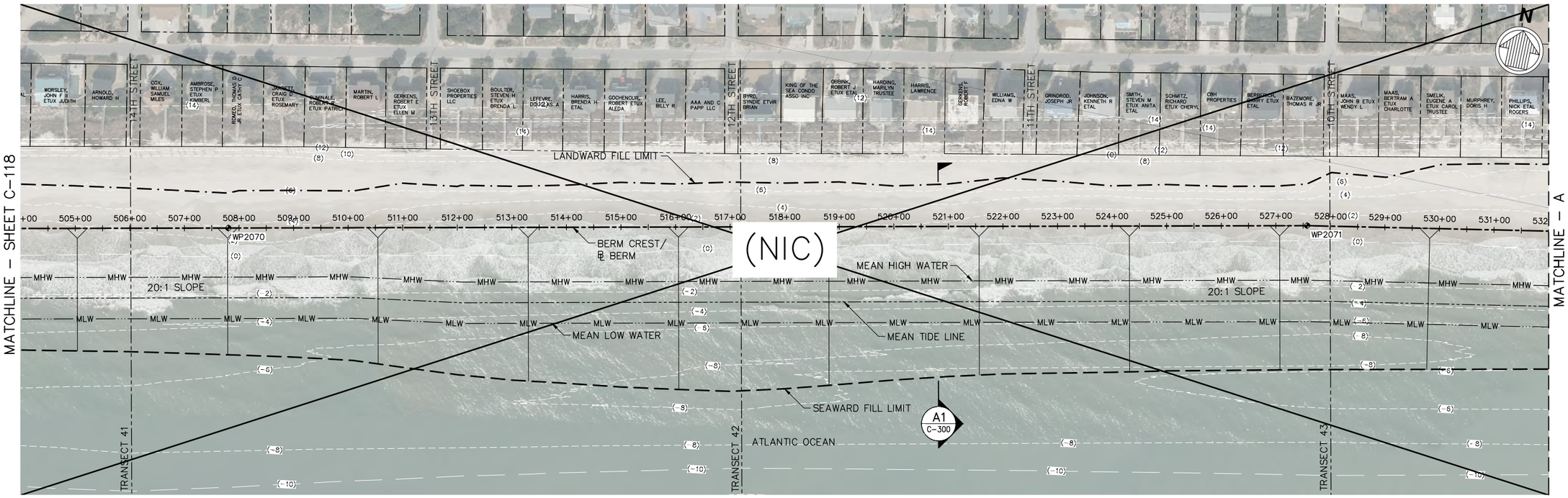
4700 FALLS OF THE NEUSE ROAD
SUITE 300
RALEIGH, NC 27609
919-781-4626
NC FIRM LICENSE No. F-0105
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PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Sheet Reference No.
C-118
Sheet 17 of 66

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DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



NOTES:
1. SEE SHEET C–601 FOR CONSTRUCTION BASELINE WORK POINT TABLES.
2. SEE SHEETS C–301 THRU C–335 FOR CROSS SECTIONS.

Mark	Description	Date	Appr.
0	BID DOCUMENTS	08/19/19	JM

POST-FLORENCE RENOURISHMENT
PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

BEACH RENOURISHMENT PLAN - SHEET 10 OF 20

4700 FALLS OF THE NEUSE ROAD
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moffatt & nichol
NC FIRM LICENSE No. F-0105

PREPARED FOR THE TOWNS OF
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PINE KNOLL SHORES, AND ATLANTIC BEACH

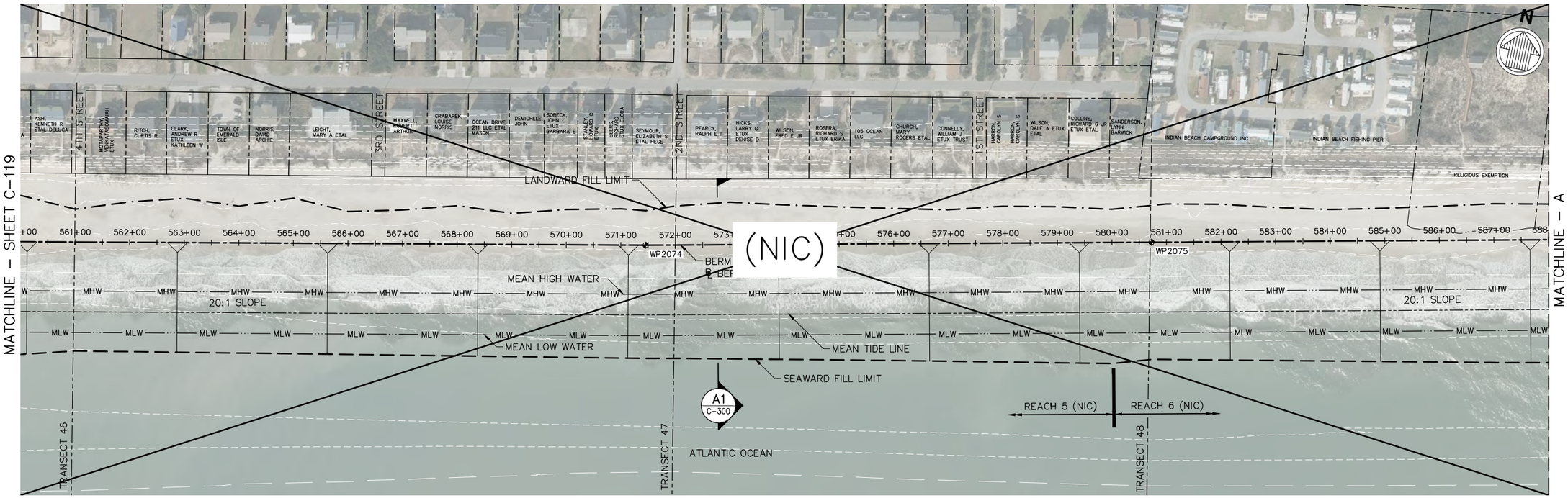
NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

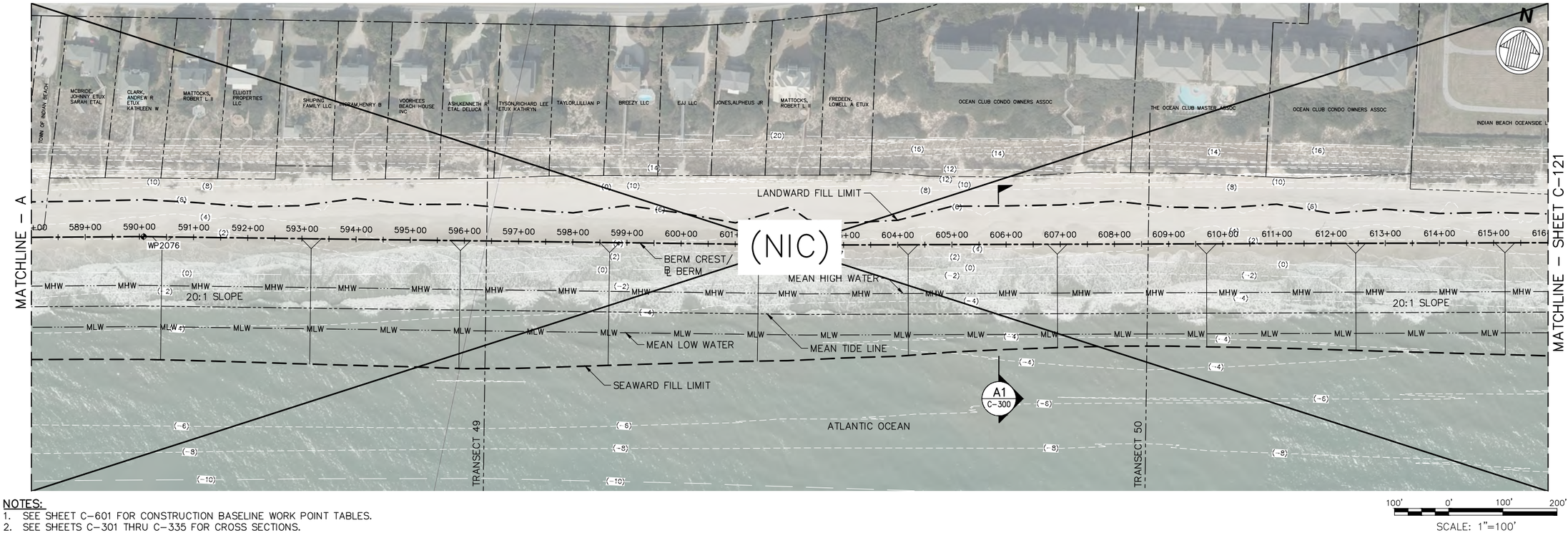
Rev.	–
Date:	AUGUST 2019
M&N Project No.	10611
Drawing code:	
Drawing Scale:	Plot scale: 1:1 (D SHEET)
Designed by:	NCV
Dwn by:	BDF
Qcd by:	SRM
Reviewed by:	JDM
Submitted by:	MOFFATT & NICHOL

Sheet Reference No.
C-119
Sheet 18 of 66

File: C:\RA\10611\0500_CA_Active_10611 Bouge Banks Phase 2\10611000–119; Plotted: 8/19/2019 10:43 AM by FORD, BRIAN; Saved: 8/16/2019 5:43 PM by BFORD

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING





NOTES:
1. SEE SHEET C–601 FOR CONSTRUCTION BASELINE WORK POINT TABLES.
2. SEE SHEETS C–301 THRU C–335 FOR CROSS SECTIONS.

100' 0' 100' 200'
SCALE: 1"=100'

Mark	BID DOCUMENTS Description	Date	Appr.
0		08/19/19	JM

POST-FLORENCE RENOURISHMENT
PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

BEACH RENOURISHMENT PLAN - SHEET 11 OF 20

Rev. –
Date: AUGUST 2019
M&N Project No. 10611
Designed by: NCV
Dwn by: BDF
Ckd by: SRM
Drawing code:
Reviewed by: JDM
Drawing Scale:
Submitted by: MOFFATT & NICHOL
Plot scale: 1:1 (0 SHEET)

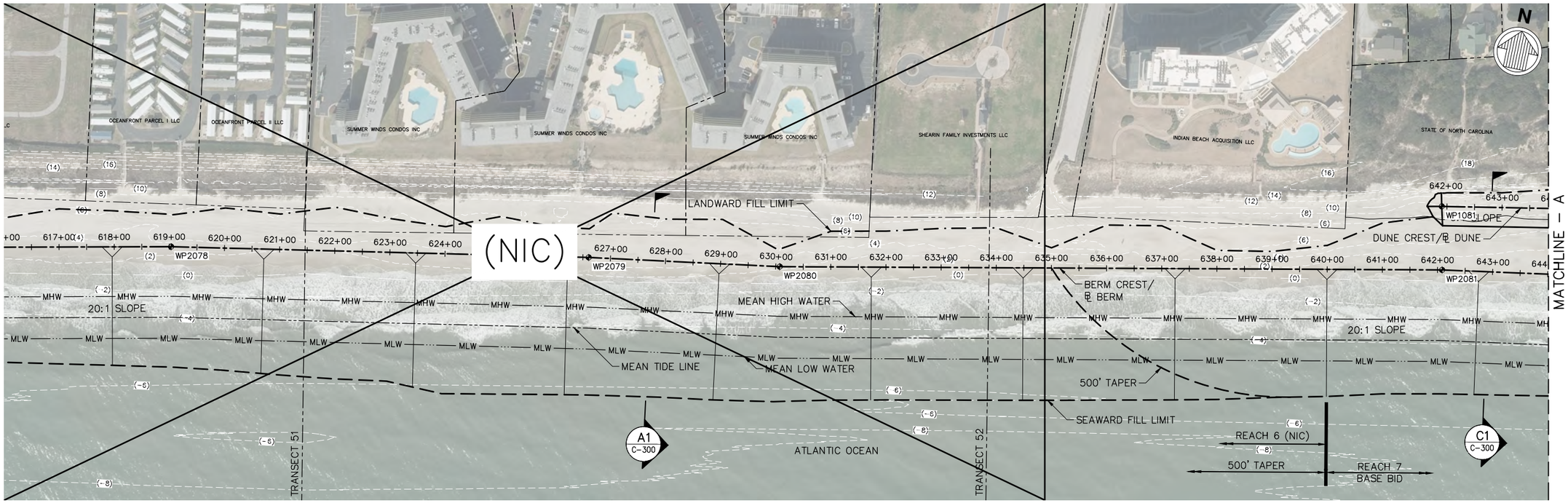
4700 FALLS OF THE NEUSE ROAD
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RALEIGH, NC 27609
919-781-4626
moffatt & nichol NC FIRM LICENSE No. F-0105
PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
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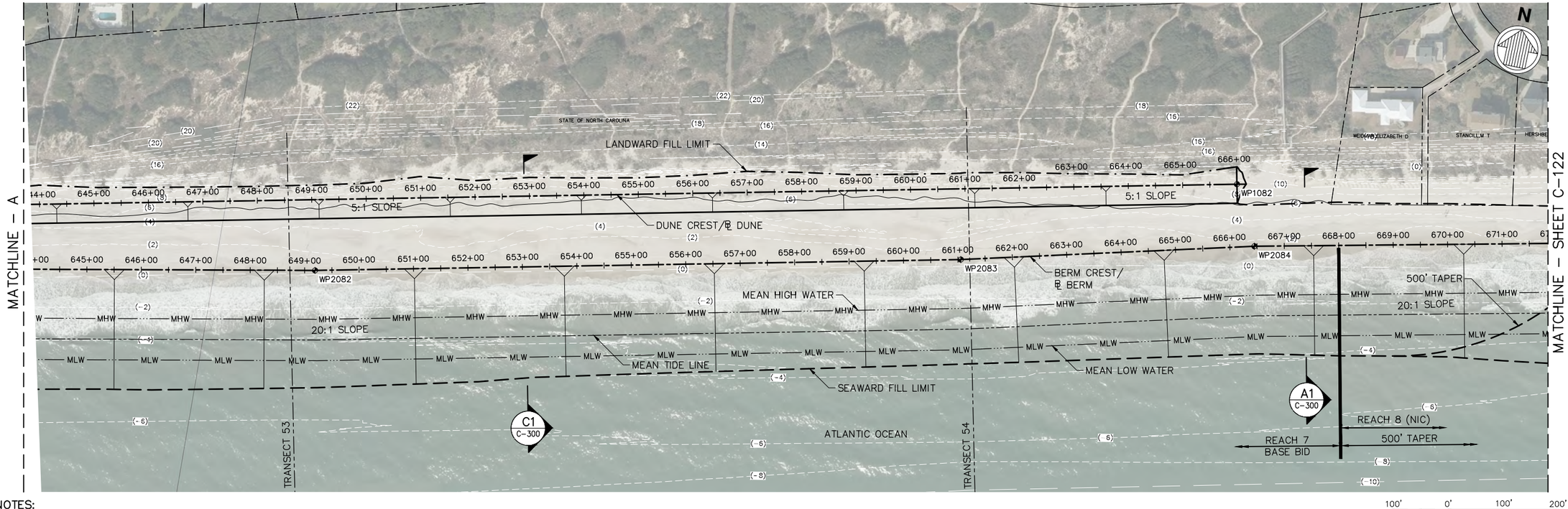
NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Sheet Reference No.
C-120
Sheet 19 of 66

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DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING





NOTES:
1. SEE SHEET C–601 FOR CONSTRUCTION BASELINE WORK POINT TABLES.
2. SEE SHEETS C–301 THRU C–335 FOR CROSS SECTIONS.

100' 0' 100' 200'
SCALE: 1"=100'

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

No.	Mark	BID DOCUMENTS Description	Date	Appr.
0			08/19/19	JM

POST-FLORENCE RENOURISHMENT PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

BEACH RENOURISHMENT PLAN - SHEET 12 OF 20

Rev.	–
Date:	AUGUST 2019
M&N Project No.	10611
Drawing code:	
Drawing Scale:	Plot scale: 1:1 (D SHEET)
Designed by:	NCV
Dwn by:	BDF
Ckd by:	SRM
Reviewed by:	JDM
Submitted by:	MOFFATT & NICHOL

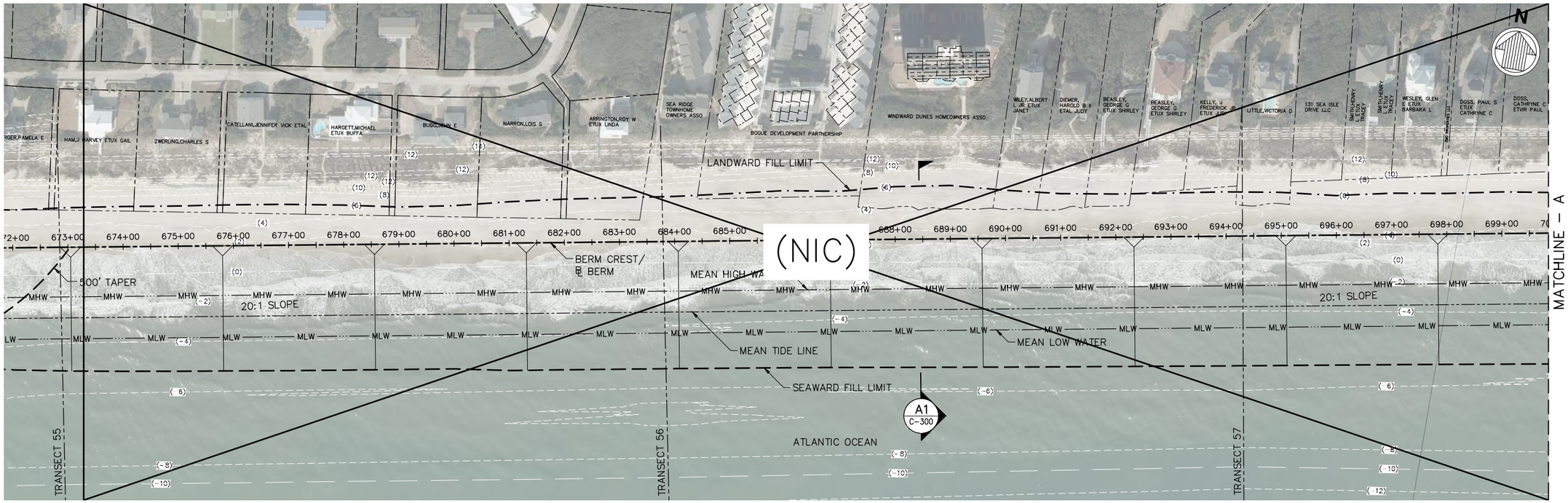
4700 FALLS OF THE NEUSE ROAD
SUITE 300
RALEIGH, NC 27609
919-781-4626
NC FIRM LICENSE No. F-0105
moffatt & nichol

PREPARED FOR THE TOWNS OF EMERALD ISLE, INDIAN BEACH, PINE KNOLL SHORES, AND ATLANTIC BEACH

NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Sheet Reference No.
C-121
Sheet 20 of 66

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NOTES:
1. SEE SHEET C–601 FOR CONSTRUCTION BASELINE WORK POINT TABLES.
2. SEE SHEETS C–301 THRU C–335 FOR CROSS SECTIONS.

100' 0' 100' 200'
SCALE: 1"=100'

No.	Mark	BID DOCUMENTS	Date	Appr.
0			08/19/19	JM

POST-FLORENCE RENOURISHMENT
PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

BEACH RENOURISHMENT PLAN -
SHEET 13 OF 20

4700 FALLS OF THE NEUSE ROAD
SUITE 300
RALEIGH, NC 27609
919-781-4626
NC FIRM LICENSE No. F-0105
moffatt & nichol

PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

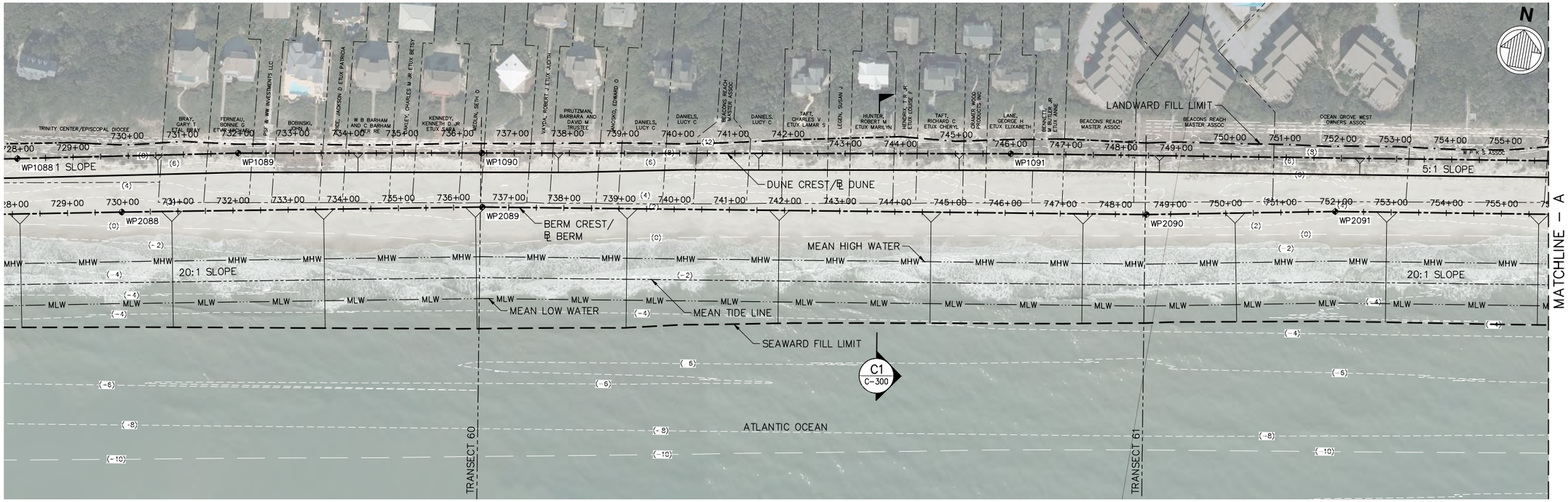
NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

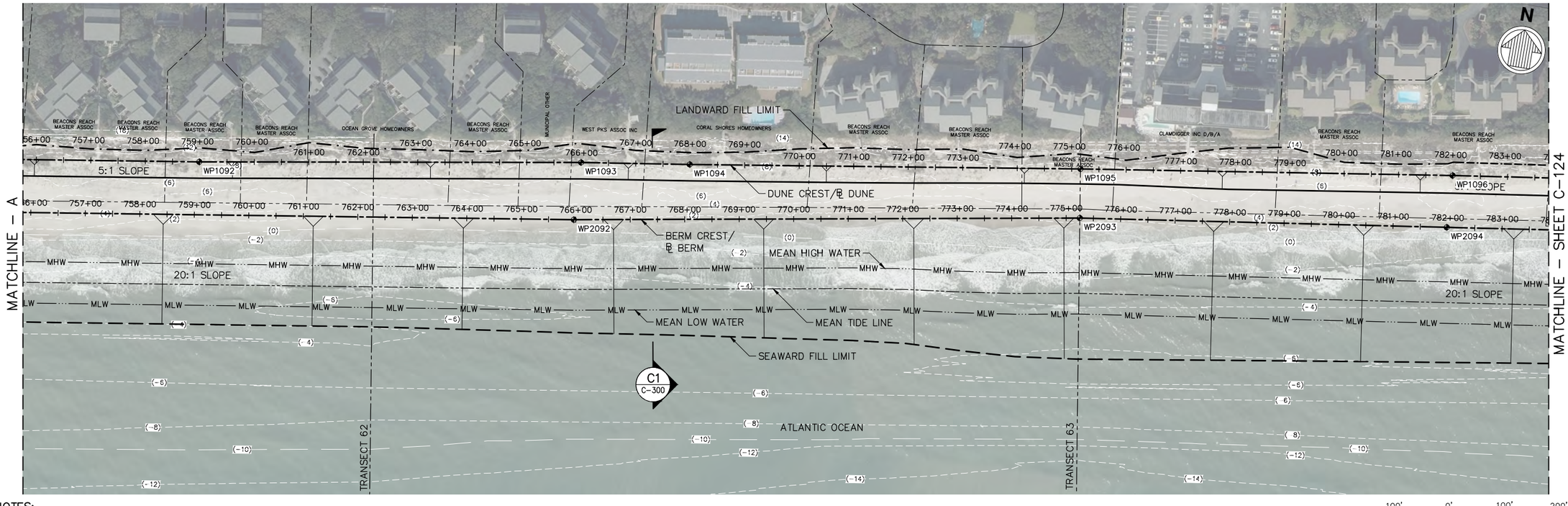
Designed by:	NCV
Drawn by:	BDF
Checked by:	SRM
Reviewed by:	JDM
Submitted by:	MOFFATT & NICHOL
Date:	AUGUST 2019
M&N Project No.	10611
Drawing code:	
Drawing Scale:	
Plot scale: 1:1 (0 SHEET)	
Rev.	-

Sheet Reference No.
C-122
Sheet 21 of 66

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DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING





NOTES:
1. SEE SHEET C–601 FOR CONSTRUCTION BASELINE WORK POINT TABLES.
2. SEE SHEETS C–301 THRU C–335 FOR CROSS SECTIONS.

100' 0' 100' 200'
SCALE: 1"=100'

Mark	Description	Date	Appr.
0	BID DOCUMENTS	08/19/19	JM

POST-FLORENCE RENOURISHMENT PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

BEACH RENOURISHMENT PLAN - SHEET 14 OF 20

Designed by:	NCV
Drawn by:	BDF
Checked by:	SRM
Reviewed by:	JDM
Submitted by:	MOFFATT & NICHOL
Date:	AUGUST 2019
M&N Project No.	10611
Drawing code:	
Drawing Scale:	
Plot scale: 1:1 (0 SHEET)	
Rev.	-

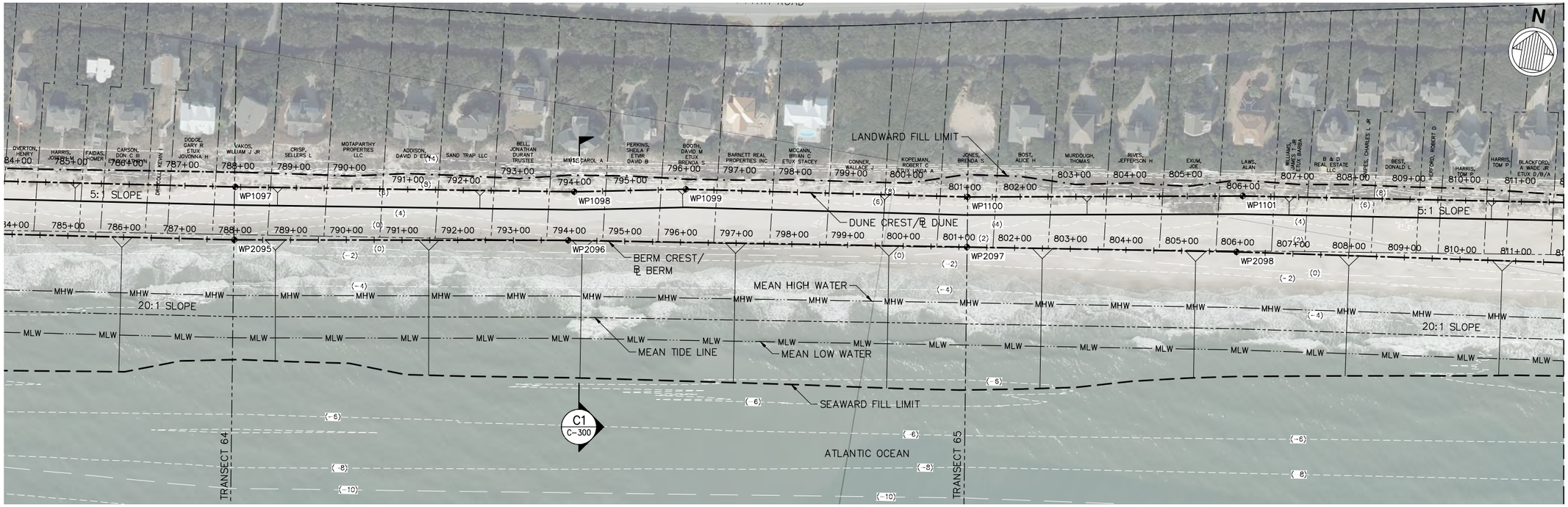
4700 FALLS OF THE NEUSE ROAD
SUITE 300
RALEIGH, NC 27609
919-781-4626
NC FIRM LICENSE No. F-0105
moffatt & nichol
PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

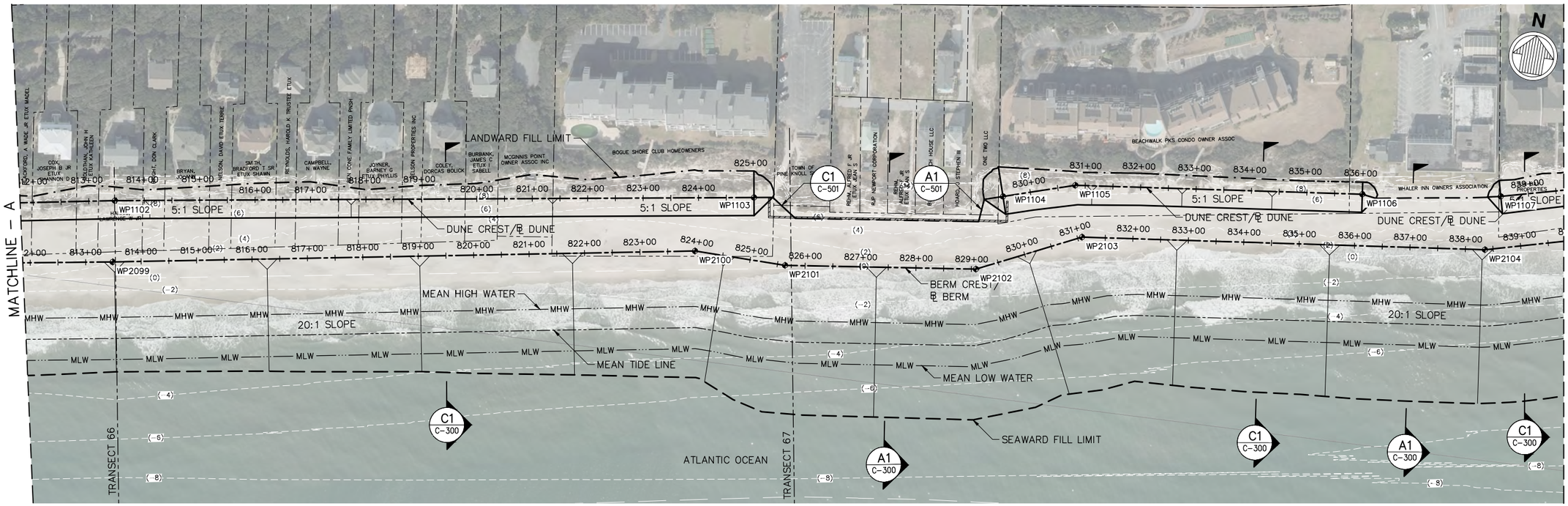
NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Sheet Reference No.
C-123
Sheet 22 of 66

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DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING





NOTES:
1. SEE SHEET C–601 FOR CONSTRUCTION BASELINE WORK POINT TABLES.
2. SEE SHEETS C–301 THRU C–335 FOR CROSS SECTIONS.

100' 0' 100' 200'
SCALE: 1"=100'

Mark	Description	Date	Appr.
0	BID DOCUMENTS	08/19/19	JM

POST-FLORENCE RENOURISHMENT
PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

BEACH RENOURISHMENT PLAN -
SHEET 15 OF 20

Rev.	–
Date:	AUGUST 2019
M&N Project No.	10611
Drawing code:	
Drawing Scale:	Plot scale: 1:1 (0 SHEET)
Designed by:	NCV
Cad by:	SRM
Dwn by:	BDF
Reviewed by:	JDM
Submitted by:	MOFFATT & NICHOL

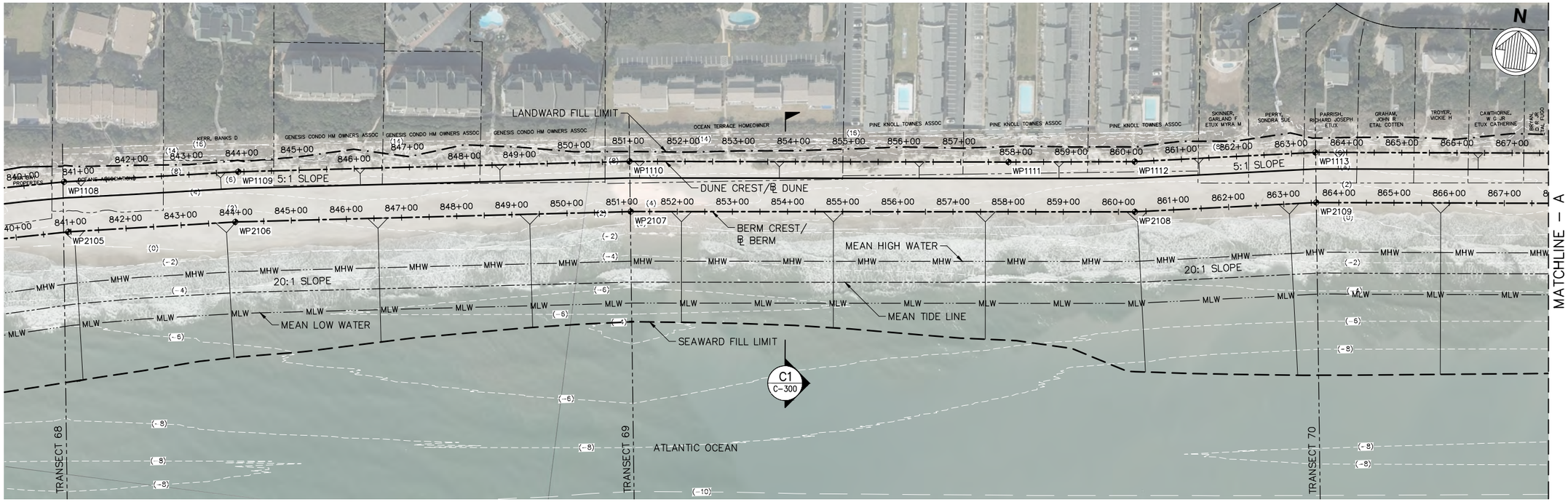
4700 FALLS OF THE NEUSE ROAD
SUITE 300
RALEIGH, NC 27609
919-781-4626
NC FIRM LICENSE No. F-0105
PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

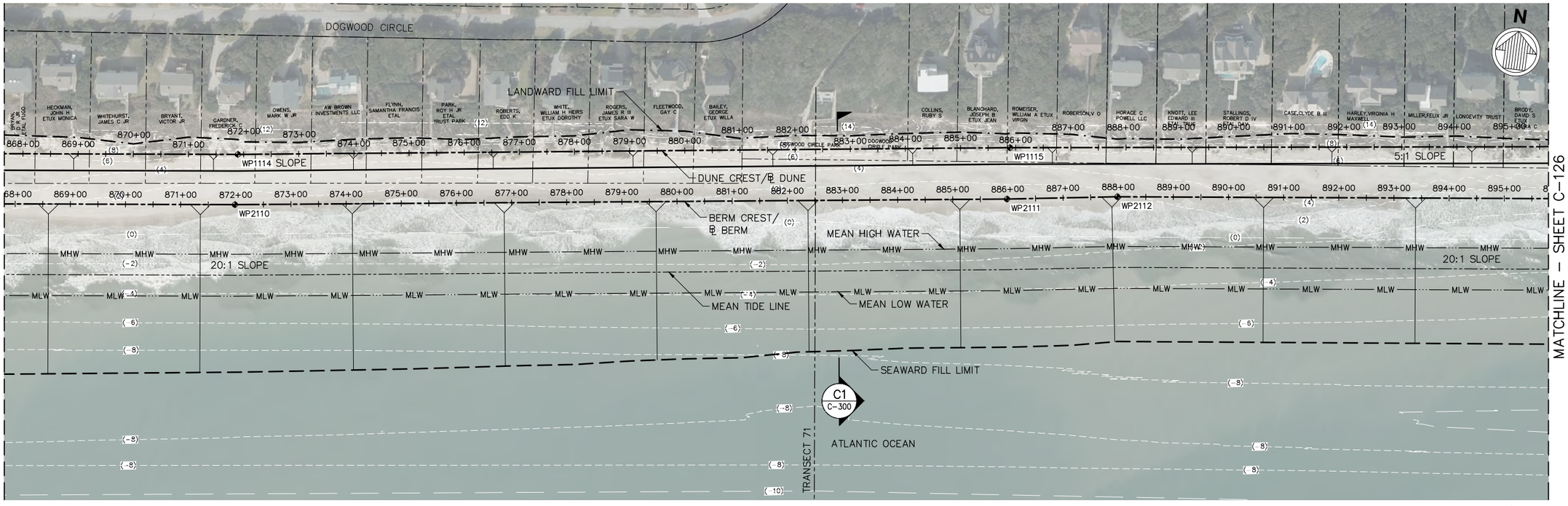
NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Sheet Reference No.
C-124
Sheet 23 of 66

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DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING





NOTES:
1. SEE SHEET C–601 FOR CONSTRUCTION BASELINE WORK POINT TABLES.
2. SEE SHEETS C–301 THRU C–335 FOR CROSS SECTIONS.

100' 0' 100' 200'
SCALE: 1"=100'

Mark	Description	Date	Appr.
0	BID DOCUMENTS	08/19/19	JM

POST-FLORENCE RENOURISHMENT PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

BEACH RENOURISHMENT PLAN - SHEET 16 OF 20

Designed by:	NCV
Drawn by:	BDF
Checked by:	SRM
Reviewed by:	JDM
Submitted by:	MOFFATT & NICHOL
Date:	AUGUST 2019
M&N Project No.	10611
Drawing code:	
Drawing Scale:	
Plot scale: 1:1 (0 SHEET)	
Rev.	-

4700 FALLS OF THE NEUSE ROAD
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919-781-4626
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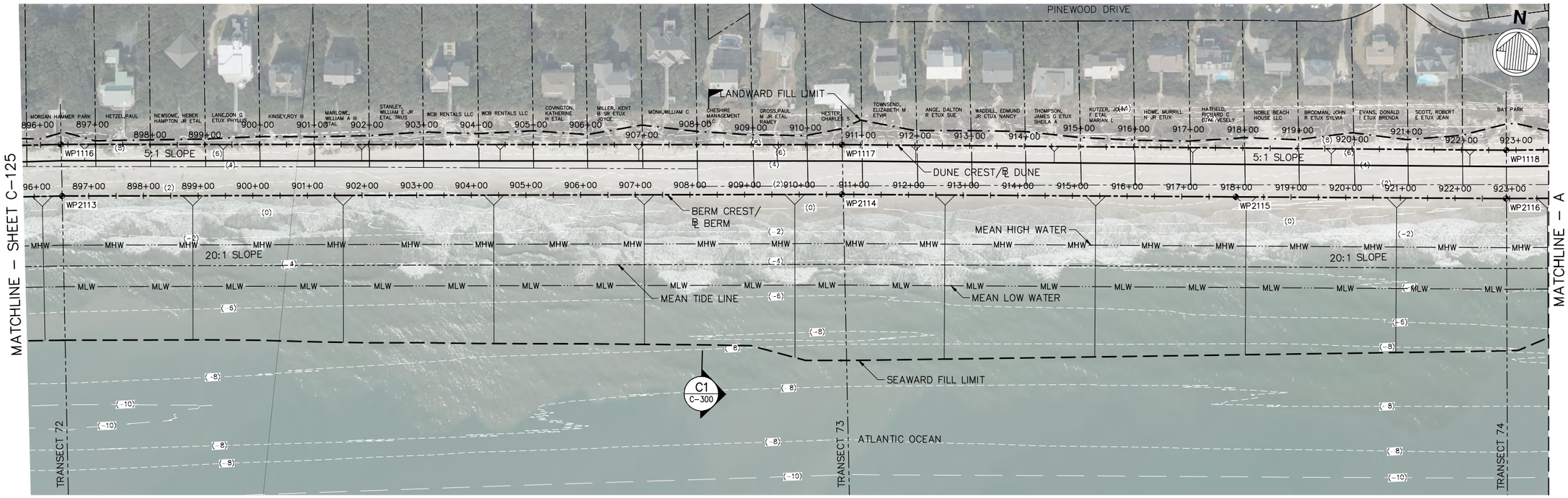
PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Sheet Reference No.
C-125
Sheet 24 of 66

File: Q:\RA\10611\0500_CAD_Active_10611 Bouge Banks Phase 2\10611OOC-125; Plotted: 8/19/2019 10:48 AM by FORD, BRIAN; Saved: 8/16/2019 5:40 PM by BFORD

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



NOTES:
1. SEE SHEET C–601 FOR CONSTRUCTION BASELINE WORK POINT TABLES.
2. SEE SHEETS C–301 THRU C–335 FOR CROSS SECTIONS.

Mark	Description	Date	Appr.
0	BID DOCUMENTS	08/19/19	JM

POST-FLORENCE RENOURISHMENT
PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

BEACH RENOURISHMENT PLAN -
SHEET 17 OF 20

Designed by:	NCV
Drawn by:	BDF
Checked by:	SRM
Reviewed by:	JDM
Submitted by:	MOFFATT & NICHOL
Date:	AUGUST 2019
M&N Project No.	10611
Drawing code:	
Drawing Scale:	Plot scale 1:1 (0 SHEET)
Rev.	-

4700 FALLS OF THE NEUSE ROAD
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RALEIGH, NC 27609
919-781-4626
moffatt & nichol NC FIRM LICENSE No. F-0105

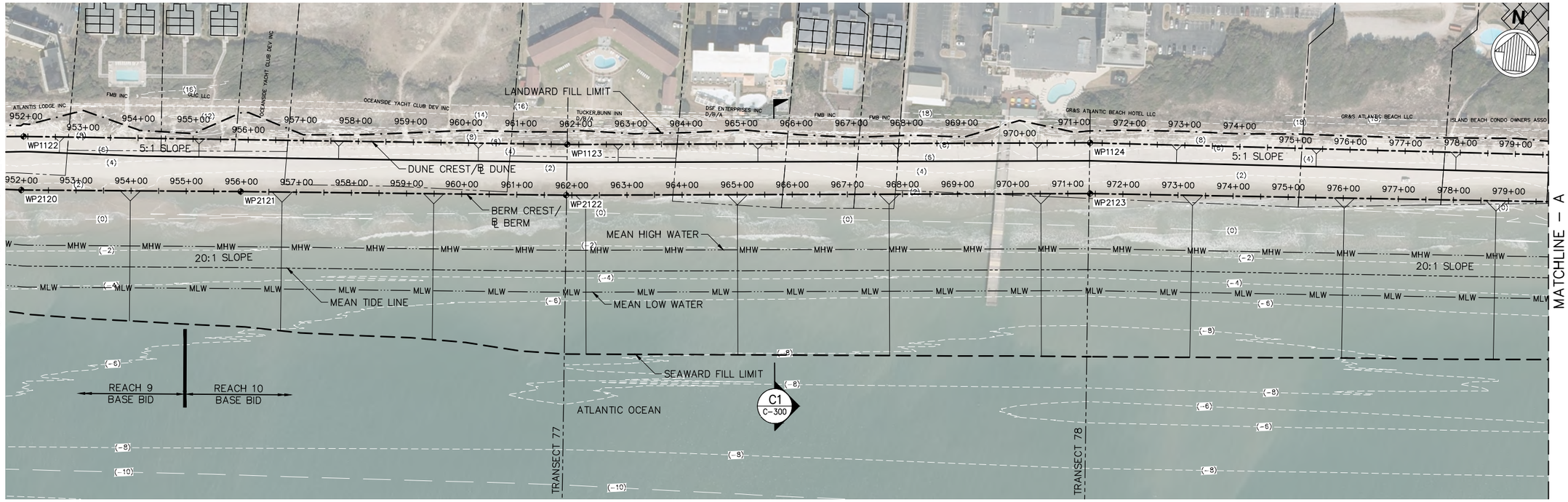
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PINE KNOLL SHORES, AND ATLANTIC BEACH

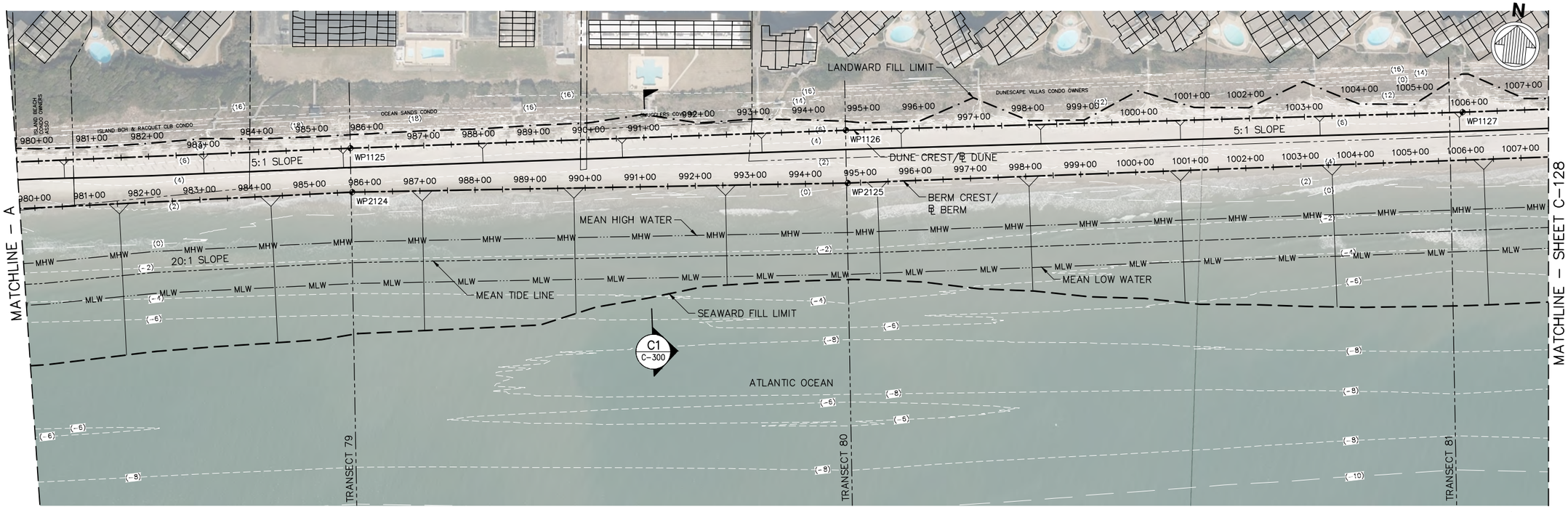
NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Sheet Reference No.
C-126
Sheet 25 of 66

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DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING





NOTES:
1. SEE SHEET C–601 FOR CONSTRUCTION BASELINE WORK POINT TABLES.
2. SEE SHEETS C–301 THRU C–335 FOR CROSS SECTIONS.

100' 0' 100' 200'
SCALE: 1"=100'

No.	Mark	BID DOCUMENTS Description	Date	Appr.
0			08/19/19	JM

POST-FLORENCE RENOURISHMENT PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

BEACH RENOURISHMENT PLAN - SHEET 18 OF 20

Designed by: NCV
Drawn by: BDF
Reviewed by: JDM
Submitted by: MOFFATT & NICHOL
Date: AUGUST 2019
M&N Project No. 10611
Drawing code:
Drawing Scale: Plot scale: 1:1 (0 SHEET)
Rev. -

4700 FALLS OF THE NEUSE ROAD
SUITE 300
RALEIGH, NC 27609
919-781-4626
moffatt & nichol NC FIRM LICENSE No. F-0105

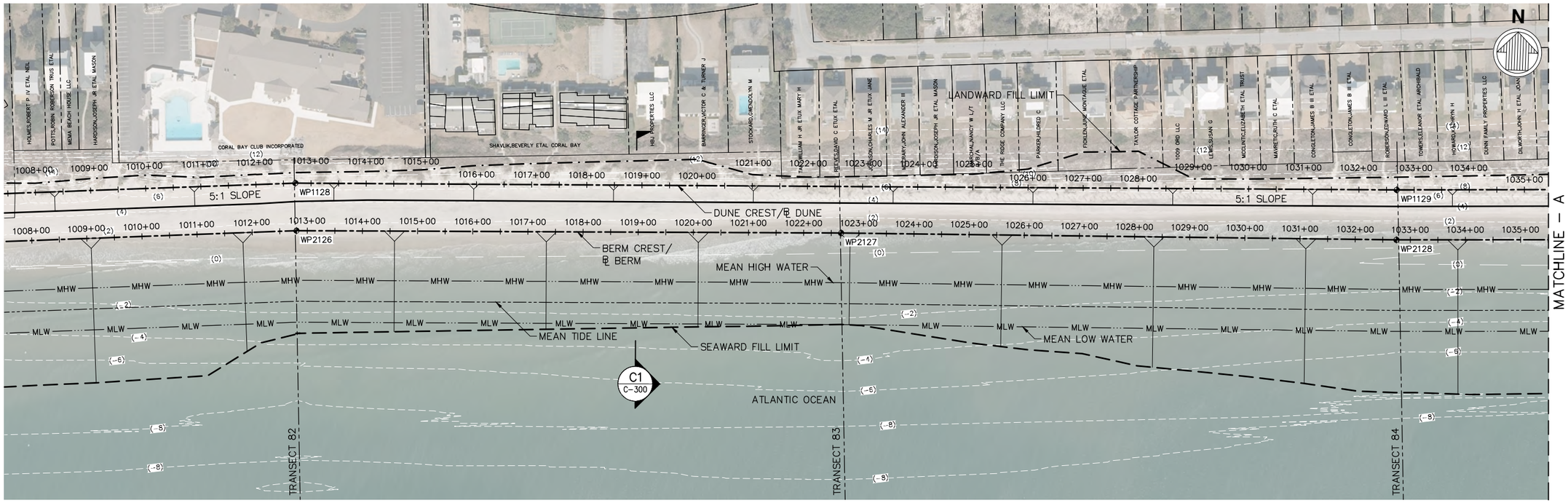
PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

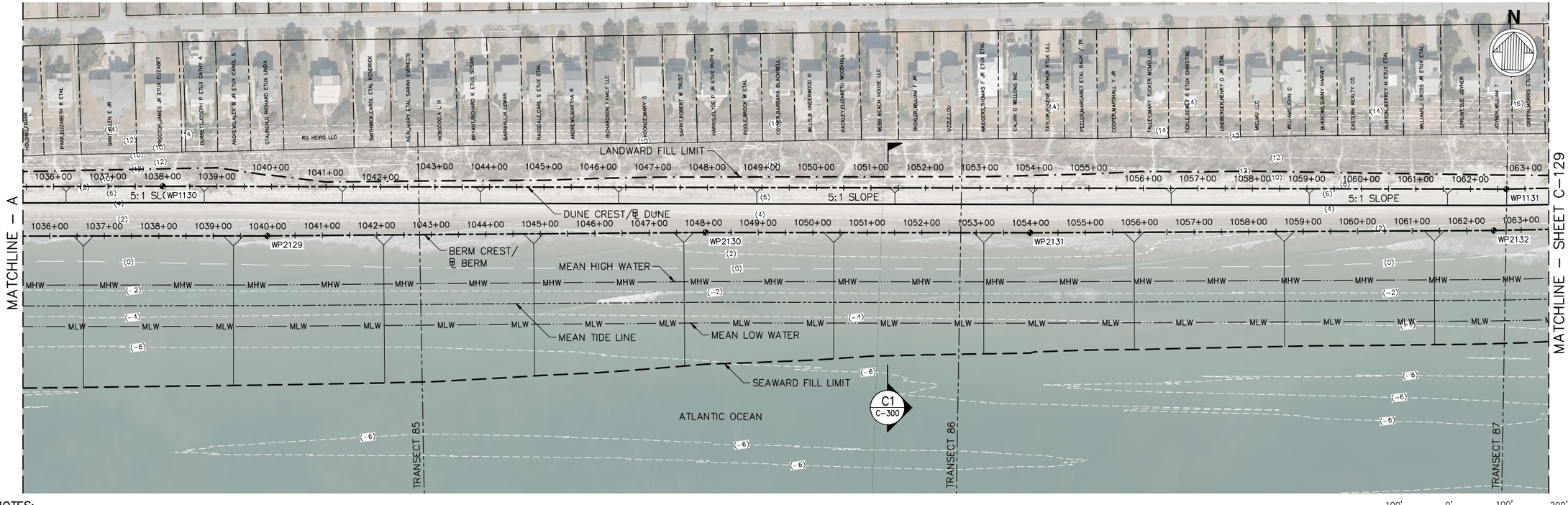
NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Sheet Reference No.
C-127
Sheet 26 of 66

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DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING





NOTES:
1. SEE SHEET C-601 FOR CONSTRUCTION BASELINE WORK POINT TABLES.
2. SEE SHEETS C-301 THRU C-335 FOR CROSS SECTIONS.

100' 0' 100' 200'
SCALE: 1"=100'

Mark	Description	Date	Appr.
0	BID DOCUMENTS	08/19/19	JM

POST-FLORENCE RENOURISHMENT PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

BEACH RENOURISHMENT PLAN - SHEET 19 OF 20

Designed by:	NCV
Dwn by:	BDF
Ckd by:	SRM
Reviewed by:	JDM
Submitted by:	MOFFATT & NICHOL
Date:	AUGUST 2019
M&N Project No.	10611
Drawing code:	
Drawing Scale:	
Plot scale: 1:1 (D SHEET)	
Rev.	-

4700 FALLS OF THE NEUSE ROAD
SUITE 300
RALEIGH, NC 27609
919-781-4626
NC FIRM LICENSE No. F-0105
moffatt & nichol

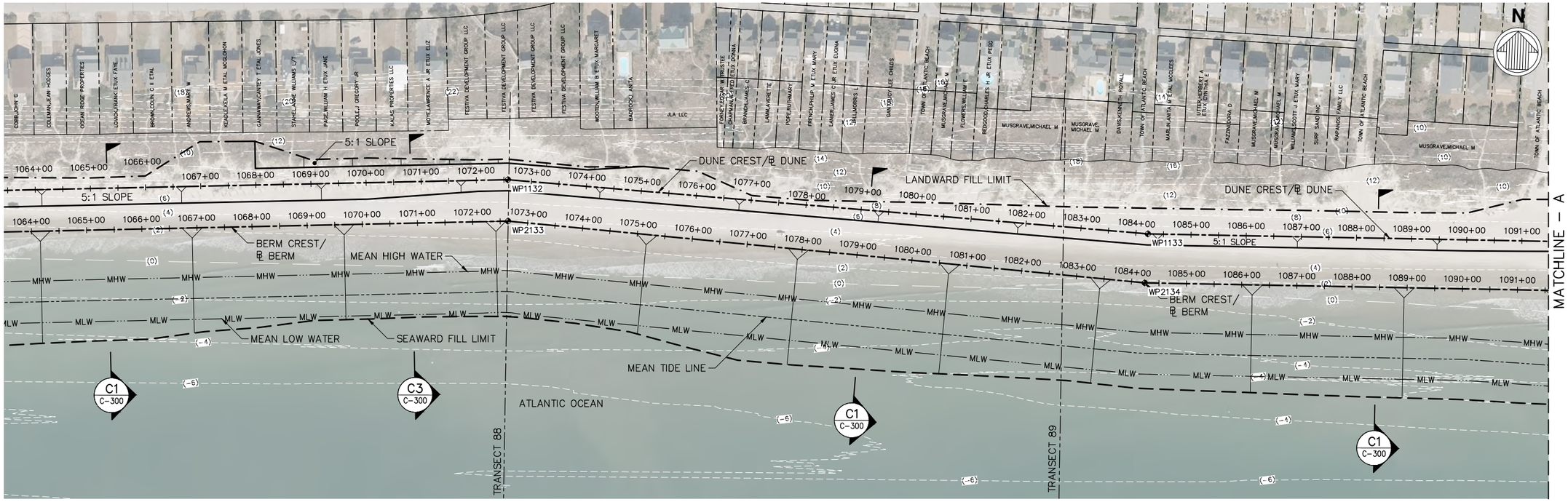
PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

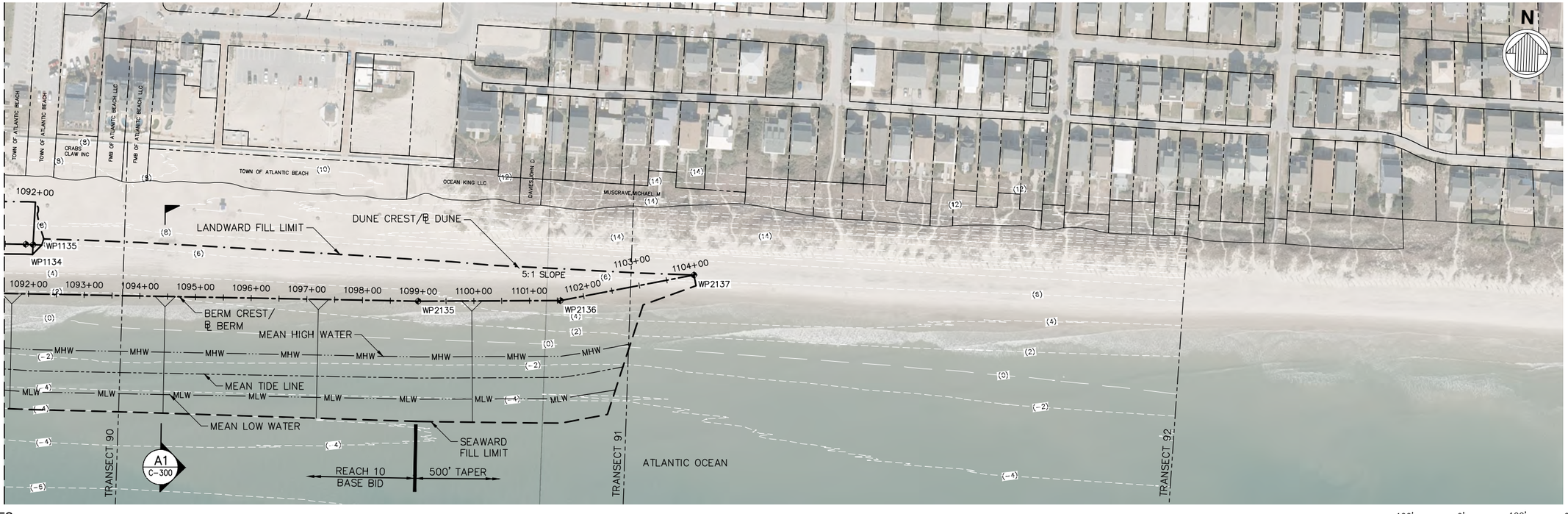
NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Sheet Reference No.
C-128
Sheet 27 of 66

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DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING





NOTES:
1. SEE SHEET C–601 FOR CONSTRUCTION BASELINE WORK POINT TABLES.
2. SEE SHEETS C–301 THRU C–335 FOR CROSS SECTIONS.

100' 0' 100' 200'
SCALE: 1"=100'

Mark	Description	Date	Appr.
0	BID DOCUMENTS	08/19/19	JM

POST-FLORENCE RENOURISHMENT
PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

BEACH RENOURISHMENT PLAN - SHEET 20 OF 20

4700 FALLS OF THE NEUSE ROAD
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NC FIRM LICENSE No. F-0105
moffatt & nichol

PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

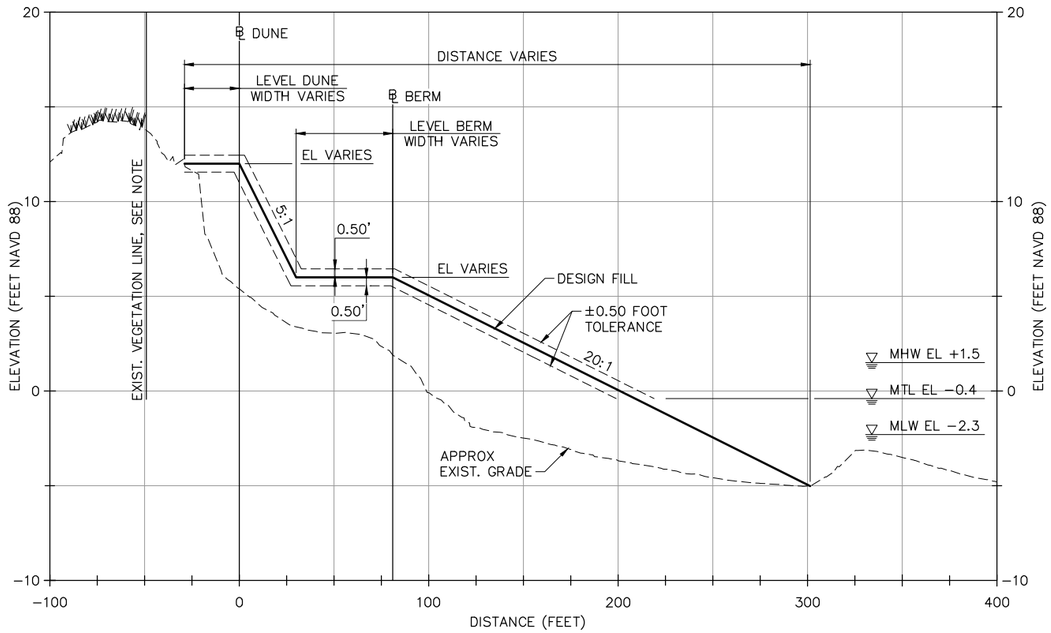
Designed by: NCV
Drawn by: BDF
Checked by: SRM
Reviewed by: JDM
Submitted by: MOFFATT & NICHOL
Date: AUGUST 2019
M&N Project No. 10611
Drawing code:
Drawing Scale: Plot scale: 1:1 (0 SHEET)
Rev. -

NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Sheet Reference No.
C-129
Sheet 28 of 66

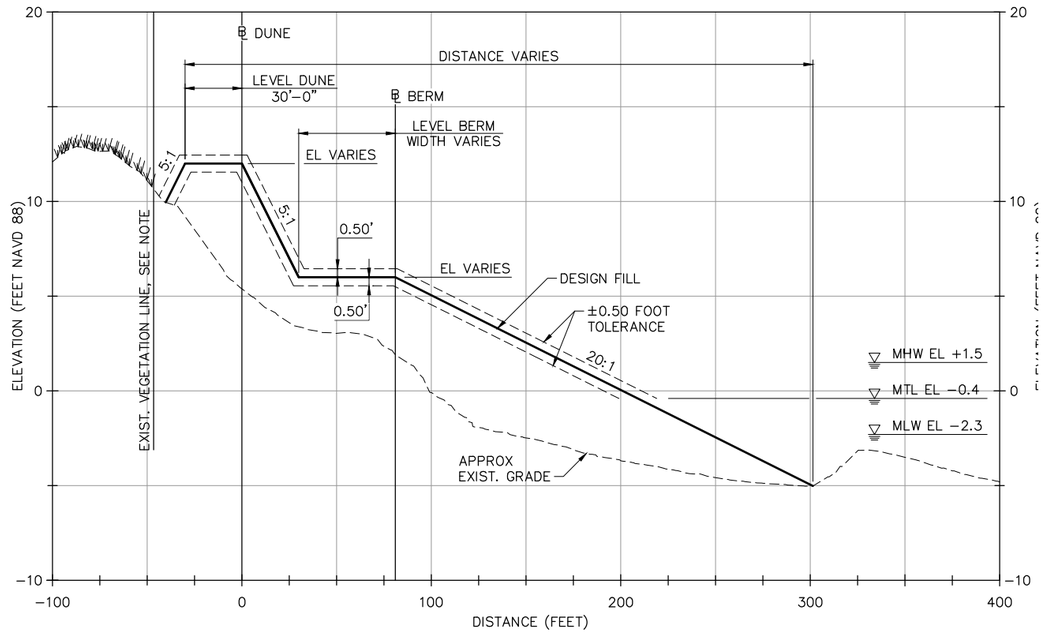
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DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



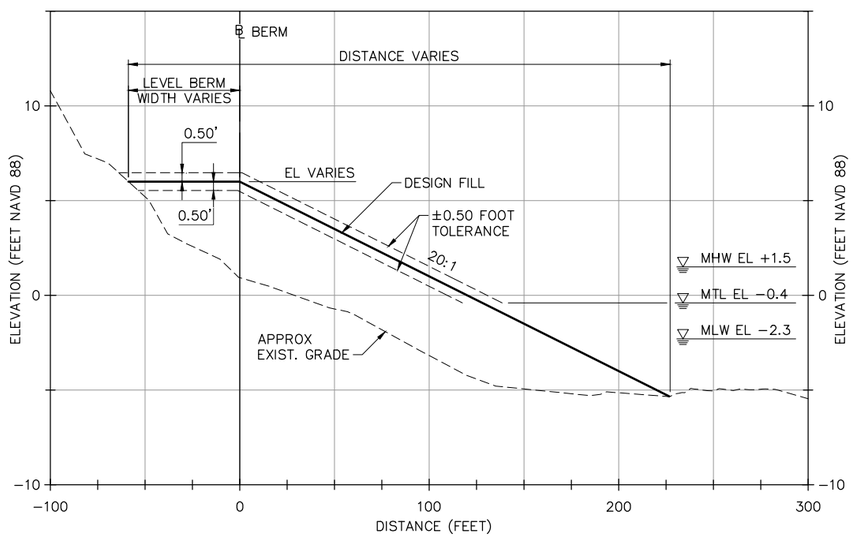
NOTE:
FIELD FIT THE LANDWARD DUNE CREST TIE IN, IF ELEVATION OF THE EXISTING VEGETATION LINE IS HIGHER THAN THE FINAL ELEVATION OF THE DUNE CREST DESIGN, THE DUNE CREST WILL BE CONSTRUCTED TO TIE IN AT THE ELEVATION OF THE CONSTRUCTED DUNE CREST. IF ELEVATION OF THE EXISTING VEGETATION LINE IS LOWER THAN THE FINAL ELEVATION OF THE DUNE CREST DESIGN, THE DUNE WILL BE CONSTRUCTED TO TIE INTO THE VEGETATION LINE WITH A 1:5 BACK SLOPE UP TO THE FINAL ELEVATION OF THE CONSTRUCTED DUNE.

C1 C-300 LEVEL DUNE BEACH NOURISHMENT FILL TOLERANCE SECTION
SCALE: 1"=40'

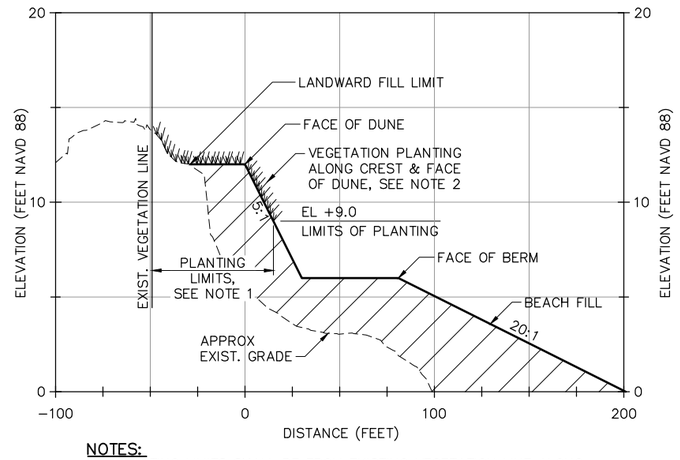


NOTE:
FIELD FIT THE LANDWARD DUNE CREST TIE IN, IF ELEVATION OF THE EXISTING VEGETATION LINE IS HIGHER THAN THE FINAL ELEVATION OF THE DUNE CREST DESIGN, THE DUNE CREST WILL BE CONSTRUCTED TO TIE IN AT THE ELEVATION OF THE CONSTRUCTED DUNE CREST. IF ELEVATION OF THE EXISTING VEGETATION LINE IS LOWER THAN THE FINAL ELEVATION OF THE DUNE CREST DESIGN, THE DUNE WILL BE CONSTRUCTED TO TIE INTO THE VEGETATION LINE WITH A 1:5 BACK SLOPE UP TO THE FINAL ELEVATION OF THE CONSTRUCTED DUNE.

C3 C-300 LEVEL DUNE WITH BACK SLOPE NOURISHMENT FILL TOLERANCE SECTION
SCALE: 1"=40'



A1 C-300 BERM BEACH NOURISHMENT FILL TOLERANCE SECTION
SCALE: 1"=40'



NOTES:
1. PLANTING LIMITS SHALL BE FROM EXISTING VEGETATION LINE ALONG EXISTING GRADE TO ELEVATION +9.0 ON FACE OF DUNE.
2. LEVEL DUNE SHOWN, PLANTING FOR DUNE WITH 5:1 BACK SLOPE SIMILAR.
3. SEE TECHNICAL SPECIFICATIONS FOR PLANTING, FERTILIZING AND WATERING REQUIREMENTS.

A3 C-300 BEACH NOURISHMENT FILL PLANTING SECTION
SCALE: 1"=40'

4' 0' 4' 8'
SCALE: 1"=4' VERTICAL

40' 0' 40' 80'
SCALE: 1"=40' HORIZONTAL

Mark	Description	Date	Appr.
0	BID DOCUMENTS	08/19/19	JM

POST-FLORENCE RENOURISHMENT
PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

BEACH NOURISHMENT TYPICAL SECTIONS

Rev. -
Date: AUGUST 2019
M&N Project No. 10611
Drawing code:
Designed by: NCV
Cad by: SRM
Dwn by: BDF
Reviewed by: JDM
Submitted by: MOFFATT & NICHOL
Drawing Scale: Plot scale: 1:1 (0 SHEET)

4700 FALLS OF THE NEUSE ROAD
SUITE 300
RALEIGH, NC 27609
919-781-4626
moffatt & nichol NC FIRM LICENSE No. F-0105

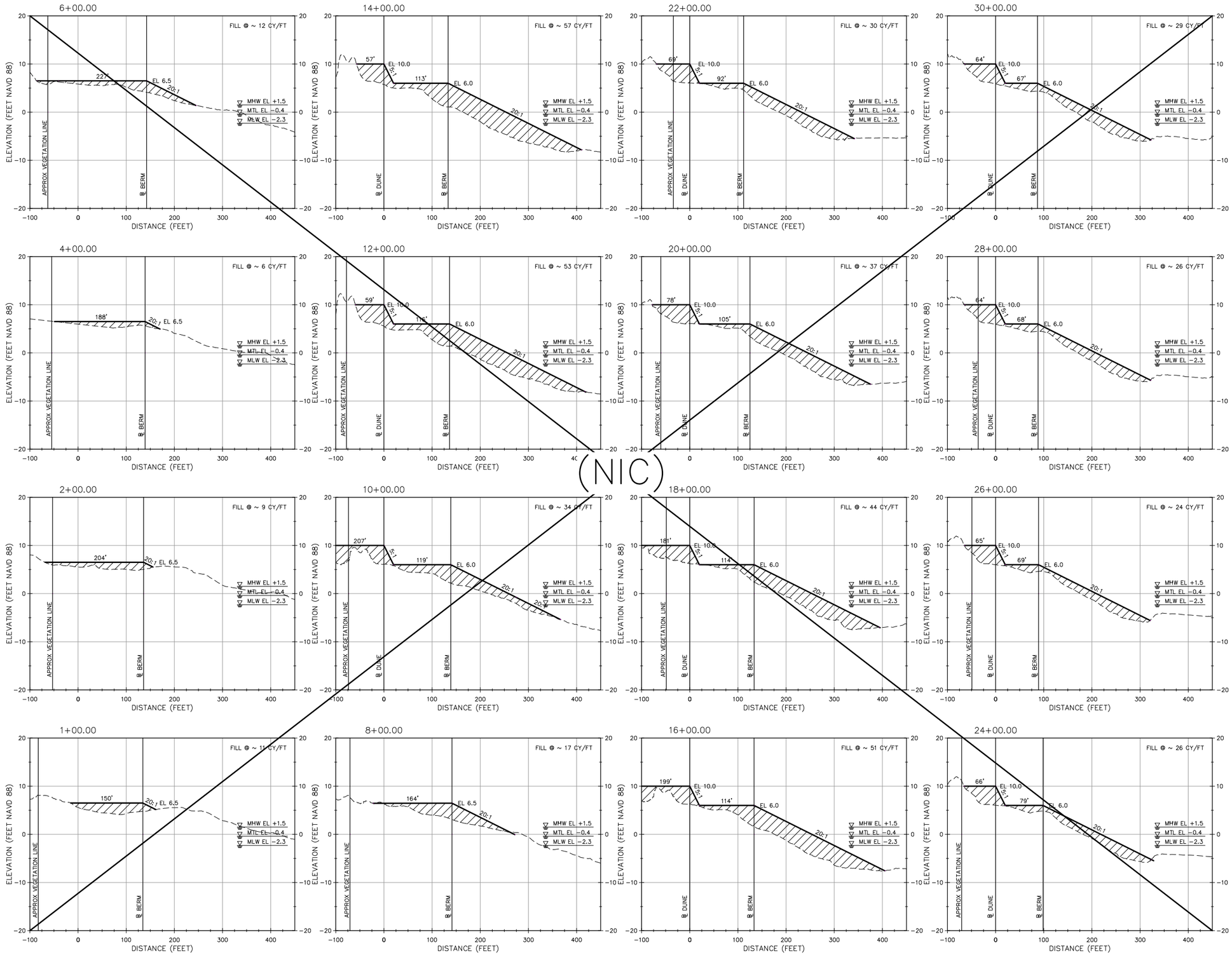
PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Sheet Reference No.
C-300
Sheet 29 of 66

File: G:\PA\10611\0500_CAD_Active_10611 Bouge Banks Phase 2\10611C00-300; Plotted: 8/19/2019 10:50 AM by FORD, BRIAN; Saved: 8/16/2019 5:49 PM by BFORD

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



(NIC)

NOTES:

1. FOR ADDITIONAL INFORMATION SEE BEACH RENOURISHMENT TYPICAL SECTION ON SHEET C-300.
2. EXISTING GROUND SHOWN IS BASED ON MAY 2019 SURVEY BY GEODYNAMICS AND REPRESENTS THE APPROXIMATE CONDITIONS AT THE TIME OF THE SURVEY.

LEGEND

- APPROXIMATE EXISTING GROUND
- PROPOSED RENOURISHMENT
- LIMITS OF FILL

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

100' 0' 100' 200'
SCALE: 1"=100' HORIZONTAL

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

No.	Mark	BID DOCUMENTS Description	Date	Appr.
0			08/19/19	JM

POST-FLORENCE RENOURISHMENT PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

RENOURISHMENT SECTIONS
SHEET 1 OF 35

Designed by: NCV
Drawn by: BDF
Reviewed by: JDM
Submitted by: MOFFATT & NICHOL
Cad by: SRM
Date: AUGUST 2019
M&N Project No. 10611
Drawing code:
Drawing Scale: Plot scale: 1:1 (0 SHEET)
Rev. -

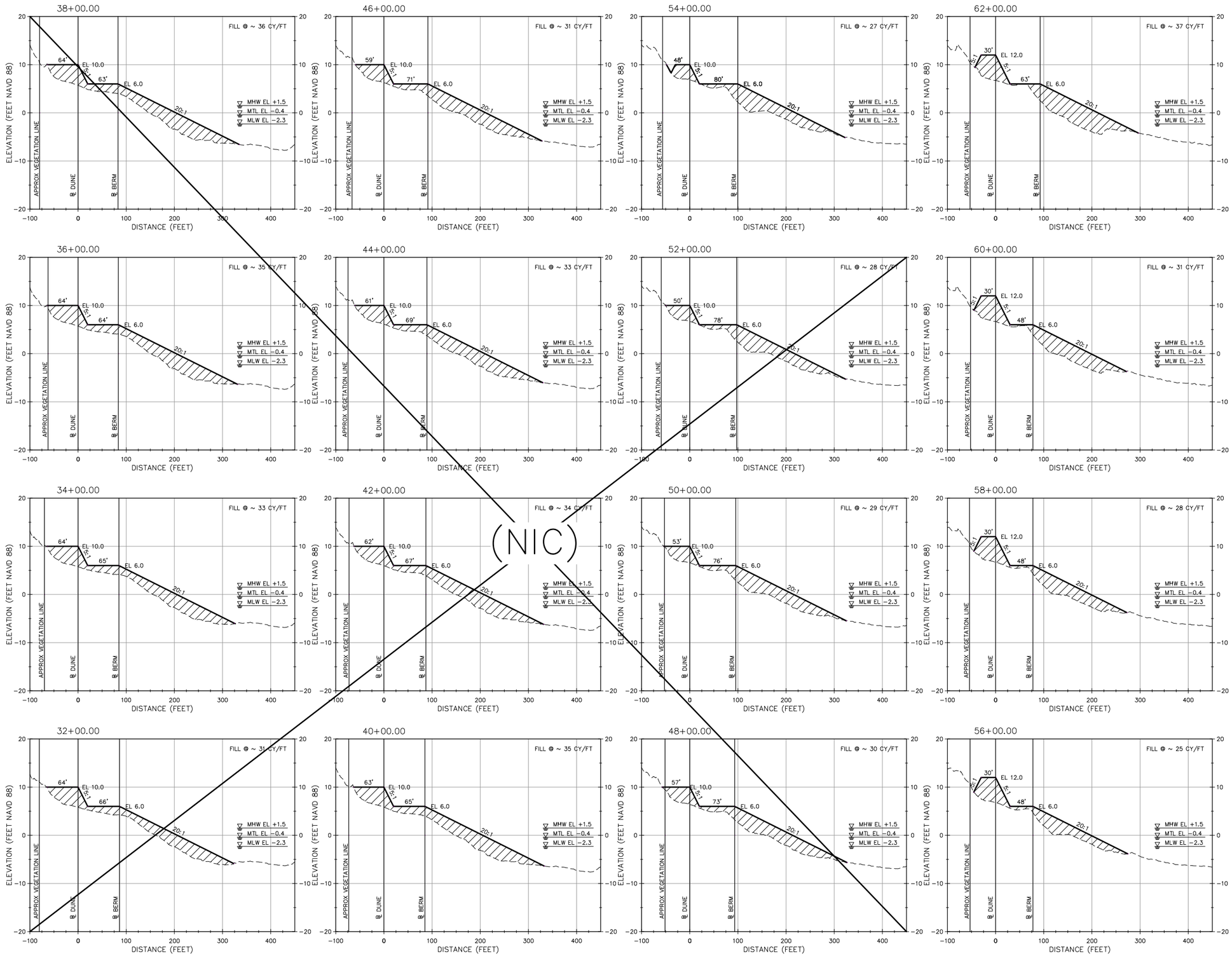
4700 FALLS OF THE NEUSE ROAD
SUITE 300
RALEIGH, NC 27609
919-781-4626
moffatt & nichol NC FIRM LICENSE No. F-0105

PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Sheet Reference No.
C-301
Sheet 30 of 66

File: G:\PA\10611\0500_CAD_Active_10611 Bouge Banks Phase 2\10611C00-301; Plotted: 8/19/2019 10:50 AM by FORD, BRIAN; Saved: 8/16/2019 5:50 PM by BFORD



NOTES:

1. FOR ADDITIONAL INFORMATION SEE BEACH RENOURISHMENT TYPICAL SECTION ON SHEET C-300.
2. EXISTING GROUND SHOWN IS BASED ON MAY 2019 SURVEY BY GEODYNAMICS AND REPRESENTS THE APPROXIMATE CONDITIONS AT THE TIME OF THE SURVEY.

LEGEND

- APPROXIMATE EXISTING GROUND
- PROPOSED RENOURISHMENT
- LIMITS OF FILL

SCALE: 1"=10' VERTICAL

SCALE: 1"=100' HORIZONTAL

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

No.	Mark	BID DOCUMENTS Description	Date	Appr.
0			08/19/19	JM

POST-FLORENCE RENOURISHMENT PROJECT PHASE 2 CARTERET COUNTY, NORTH CAROLINA

RENOURISHMENT SECTIONS SHEET 2 OF 35

Designed by:	NCV
Dwn by:	BDF
Ckd by:	SRM
Reviewed by:	JDM
Submitted by:	MOFFATT & NICHOL
Date:	AUGUST 2019
M&N Project No.	10611
Drawing code:	
Drawing Scale:	Plot scale: 1:1 (0 SHEET)
Rev.	1

4700 FALLS OF THE NEUSE ROAD
SUITE 300
RALEIGH, NC 27609
919-781-4626
moffatt & nichol NC FIRM LICENSE No. F-0105

PREPARED FOR THE TOWNS OF EMERALD ISLE, INDIAN BEACH, PINE KNOLL SHORES, AND ATLANTIC BEACH

NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN

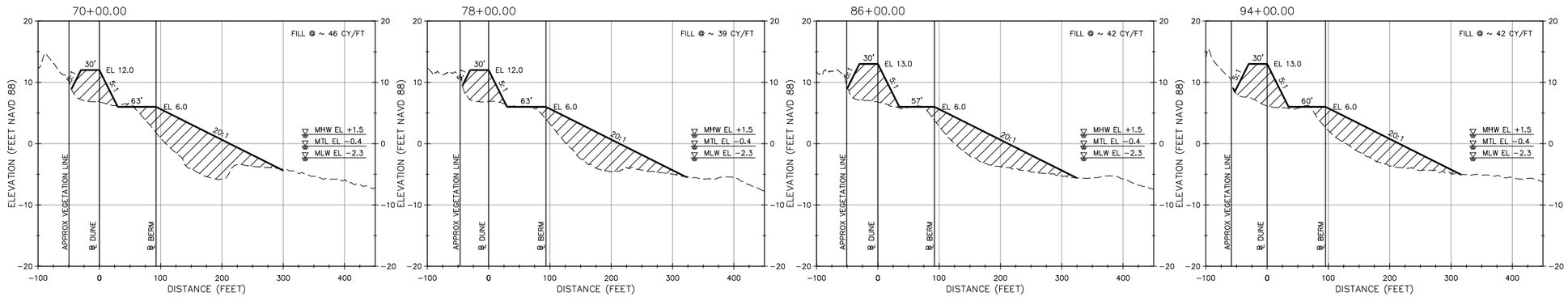
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Sheet Reference No.

C-302

Sheet 31 of 66

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NOTES:

1. FOR ADDITIONAL INFORMATION SEE BEACH RENOURISHMENT TYPICAL SECTION ON SHEET C−300.
2. EXISTING GROUND SHOWN IS BASED ON MAY 2019 SURVEY BY GEODYNAMICS AND REPRESENTS THE APPROXIMATE CONDITIONS AT THE TIME OF THE SURVEY.

LEGEND

- APPROXIMATE EXISTING GROUND
- PROPOSED RENOURISHMENT
- LIMITS OF FILL

SCALE: 1"=10' VERTICAL

SCALE: 1"=100' HORIZONTAL

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

No.	Mark	BID DOCUMENTS Description	Date	Appr.
0			08/19/19	JM

POST-FLORENCE RENOURISHMENT PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

RENOURISHMENT SECTIONS SHEET 3 OF 35

Designed by: NCV
Drawn by: BDF
Checked by: SRM
Reviewed by: JDM
Date: AUGUST 2019
M&N Project No. 10611
Drawing code:
Submitted by: MOFFATT & NICHOL
Drawing Scale: Plot scale: 1:1 (D SHEET)
Rev. –

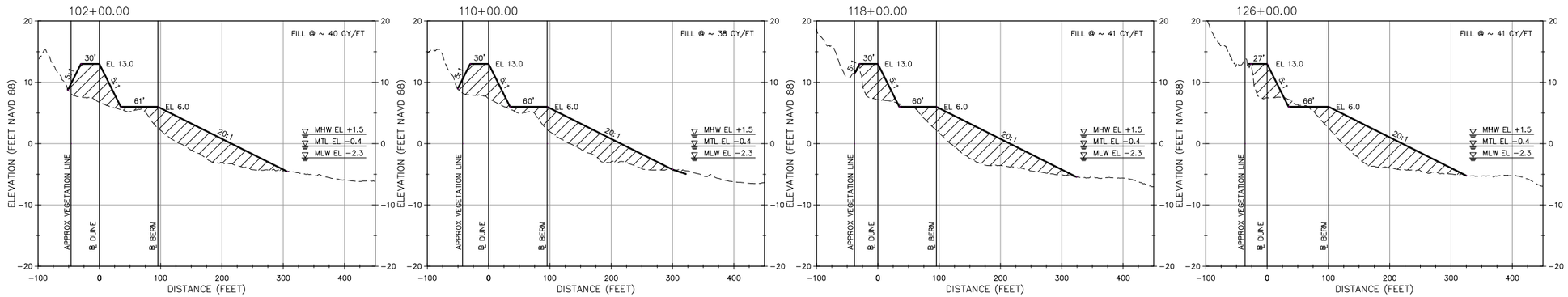
4700 FALLS OF THE NEUSE ROAD
SUITE 300
RALEIGH, NC 27609
919−781−4626
moffatt & nichol NC FIRM LICENSE No. F−0105

PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Sheet Reference No.
C-303
Sheet 32 of 66

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NOTES:

1. FOR ADDITIONAL INFORMATION SEE BEACH RENOURISHMENT TYPICAL SECTION ON SHEET C-300.
2. EXISTING GROUND SHOWN IS BASED ON MAY 2019 SURVEY BY GEODYNAMICS AND REPRESENTS THE APPROXIMATE CONDITIONS AT THE TIME OF THE SURVEY.

LEGEND

- APPROXIMATE EXISTING GROUND
- PROPOSED RENOURISHMENT
- LIMITS OF FILL

SCALE: 1"=10' VERTICAL

SCALE: 1"=100' HORIZONTAL

No.	Mark	BID DOCUMENTS Description	Date	Appr.
0			08/19/19	JM

POST-FLORENCE RENOURISHMENT
PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

RENOURISHMENT SECTIONS
SHEET 4 OF 35

4700 FALLS OF THE NEUSE ROAD
SUITE 300
RALEIGH, NC 27609
919-781-4626
moffatt & nichol NC FIRM LICENSE No. F-0105

PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

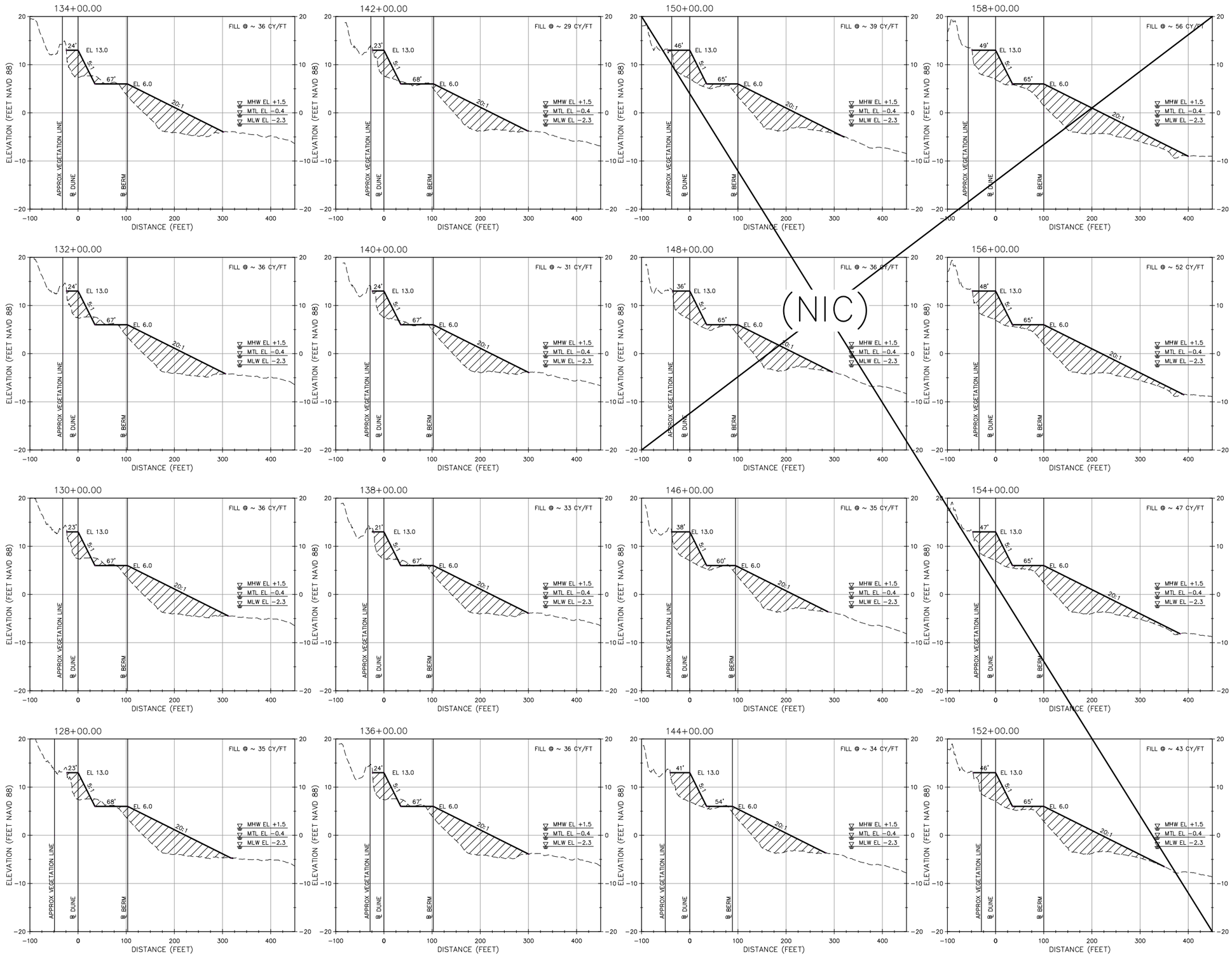
Rev.	–
Date:	AUGUST 2019
M&N Project No.	10611
Drawing code:	
Drawing Scale:	Plot scale: 1:1 (D SHEET)
Designed by:	NCV
Dwn by:	BDF
Ckd by:	SRM
Reviewed by:	JDM
Submitted by:	MOFFATT & NICHOL

NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Sheet Reference No.
C-304
Sheet 33 of 66

File: Q:\RA\10611\0500_CAD_Active_10611 Bouge Banks Phase 2\10611000C-304; Plotted: 8/19/2019 10:51 AM by FORD_BRIAN; Saved: 8/16/2019 5:59 PM by BFORD

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



NOTES:

1. FOR ADDITIONAL INFORMATION SEE BEACH RENOURISHMENT TYPICAL SECTION ON SHEET C−300.
2. EXISTING GROUND SHOWN IS BASED ON MAY 2019 SURVEY BY GEODYNAMICS AND REPRESENTS THE APPROXIMATE CONDITIONS AT THE TIME OF THE SURVEY.

LEGEND

- APPROXIMATE EXISTING GROUND
- PROPOSED RENOURISHMENT
- LIMITS OF FILL

SCALE: 1"=10' VERTICAL

SCALE: 1"=100' HORIZONTAL

No.	Mark	BID DOCUMENTS Description	Date	Appr.
0			08/19/19	JM

POST-FLORENCE RENOURISHMENT
PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

RENOURISHMENT SECTIONS
SHEET 5 OF 35

4700 FALLS OF THE NEUSE ROAD
SUITE 300
RALEIGH, NC 27609
919−781−4626
moffatt & nichol NC FIRM LICENSE No. F−0105

PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

Designed by:	Dwn by:	Reviewed by:	Submitted by:
NCV	BDF	JDM	MOFFATT & NICHOL

Date:	Chd by:	Drawing code:	Drawing Scale:
AUGUST 2019	SRM	M&N Project No. 10611	Plot scale: 1:1 (D SHEET)

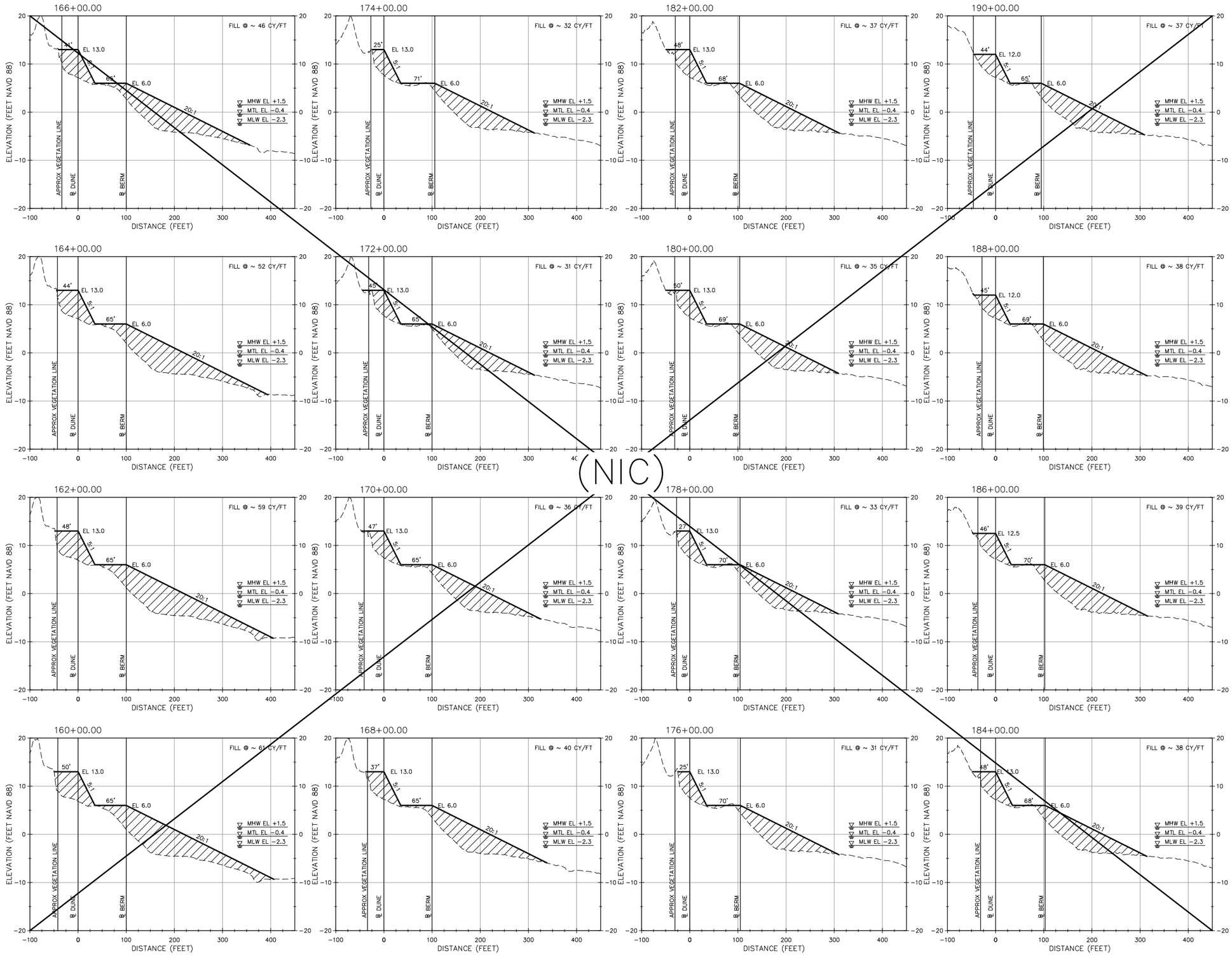
Rev. −

NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Sheet Reference No.
C-305
Sheet 34 of 66

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DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



NOTES:

1. FOR ADDITIONAL INFORMATION SEE BEACH RENOURISHMENT TYPICAL SECTION ON SHEET C–300.
2. EXISTING GROUND SHOWN IS BASED ON MAY 2019 SURVEY BY GEODYNAMICS AND REPRESENTS THE APPROXIMATE CONDITIONS AT THE TIME OF THE SURVEY.

LEGEND

- APPROXIMATE EXISTING GROUND
- PROPOSED RENOURISHMENT
- LIMITS OF FILL

SCALE: 1"=10' VERTICAL

SCALE: 1"=100' HORIZONTAL

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

No.	Mark	BID DOCUMENTS Description	Date	Appr.
0			08/19/19	JM

POST-FLORENCE RENOURISHMENT PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

RENOURISHMENT SECTIONS SHEET 6 OF 35

Designed by:	NCV
Dwn by:	BDF
Cad by:	SRM
Reviewed by:	JDM
Submitted by:	MOFFATT & NICHOL
Date:	AUGUST 2019
M&N Project No.	10611
Drawing code:	
Drawing Scale:	Plot scale: 1:1 (0 SHEET)
Rev.	1

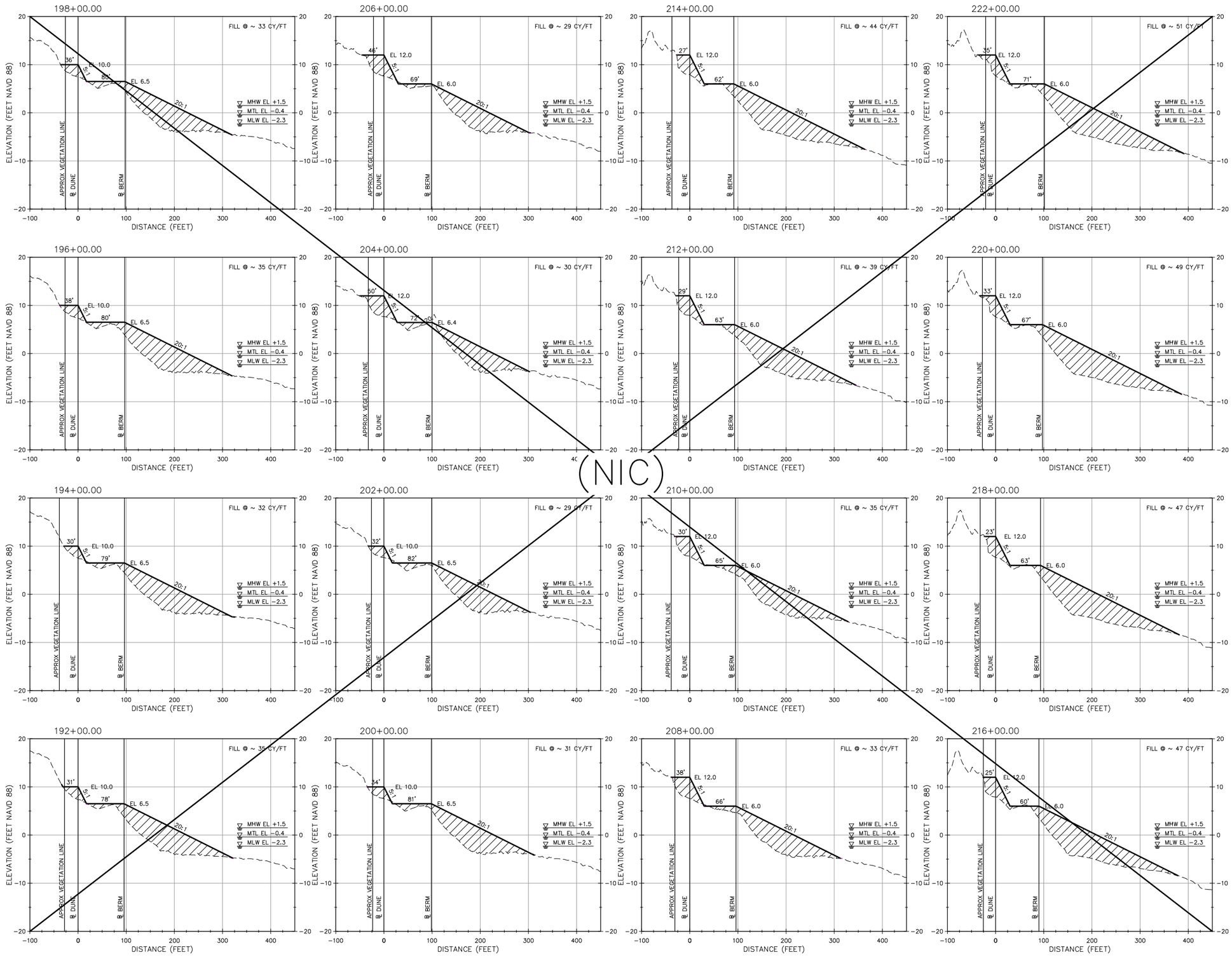
4700 FALLS OF THE NEUSE ROAD
SUITE 300
RALEIGH, NC 27609
919-781-4626
moffatt & nichol NC FIRM LICENSE No. F-0105

PREPARED FOR THE TOWNS OF EMERALD ISLE, INDIAN BEACH, PINE KNOLL SHORES, AND ATLANTIC BEACH

NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Sheet Reference No.
C-306
Sheet 35 of 66

File: G:\PA\10611\0500_CAD_Active_10611 Bouge Banks Phase 2\10611C00-306; Plotted: 8/19/2019 10:51 AM by FORD, BRIAN; Saved: 8/16/2019 5:58 PM by BFORD



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NOTES:

1. FOR ADDITIONAL INFORMATION SEE BEACH RENOURISHMENT TYPICAL SECTION ON SHEET C−300.
2. EXISTING GROUND SHOWN IS BASED ON MAY 2019 SURVEY BY GEODYNAMICS AND REPRESENTS THE APPROXIMATE CONDITIONS AT THE TIME OF THE SURVEY.

LEGEND

- APPROXIMATE EXISTING GROUND
- PROPOSED RENOURISHMENT
- LIMITS OF FILL

SCALE: 1"=10' VERTICAL

SCALE: 1"=100' HORIZONTAL

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

No.	Mark	BID DOCUMENTS Description	Date	Appr.
0			08/19/19	JM

POST-FLORENCE RENOURISHMENT
PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

RENOURISHMENT SECTIONS
SHEET 7 OF 35

4700 FALLS OF THE NEUSE ROAD
SUITE 300
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moffatt & nichol NC FIRM LICENSE No. F-0105

PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

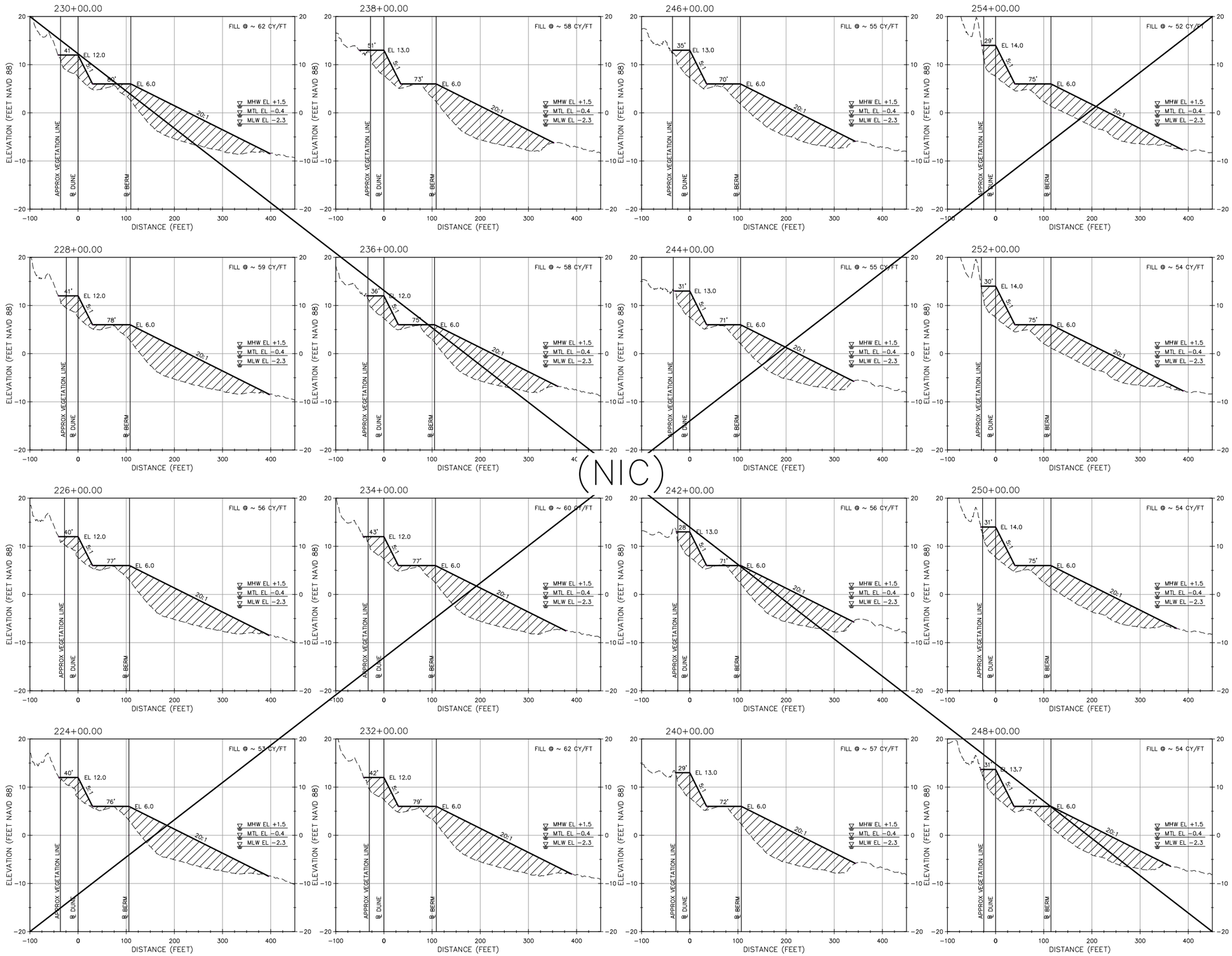
NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Rev.	Date:	Designed by:	Dwn by:	Reviewed by:	Submitted by:	Drawing Scale:
1	AUGUST 2019	NCV	BDF	JDM	MOFFATT & NICHOL	Plot scale: 1:1 (0 SHEET)

M&N Project No.	Drawing code:	Chd by:
10611		SRM

Sheet Reference No.
C-307
Sheet 36 of 66

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NOTES:

1. FOR ADDITIONAL INFORMATION SEE BEACH RENOURISHMENT TYPICAL SECTION ON SHEET C-300.
2. EXISTING GROUND SHOWN IS BASED ON MAY 2019 SURVEY BY GEODYNAMICS AND REPRESENTS THE APPROXIMATE CONDITIONS AT THE TIME OF THE SURVEY.

LEGEND

- APPROXIMATE EXISTING GROUND
- PROPOSED RENOURISHMENT
- LIMITS OF FILL

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

100' 0' 100' 200'
SCALE: 1"=100' HORIZONTAL

0	BID DOCUMENTS	08/19/19	JM
Mark	Description	Date	Appr.

POST-FLORENCE RENOURISHMENT
PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

RENOURISHMENT SECTIONS
SHEET 8 OF 35

Date: AUGUST 2019	M&N Project No. 10611	Drawing code:	Drawing Scale: Plot scale: 1:1 (0 SHEET)	Rev. -
Designed by: NCV	Cad by: SRM			
Dwn by: BDF		Reviewed by: JDM	Submitted by: MOFFATT & NICHOL	

4700 FALLS OF THE NEUSE ROAD
SUITE 300
RALEIGH, NC 27609
919-781-4626
moffatt & nichol NC FIRM LICENSE No. F-0105

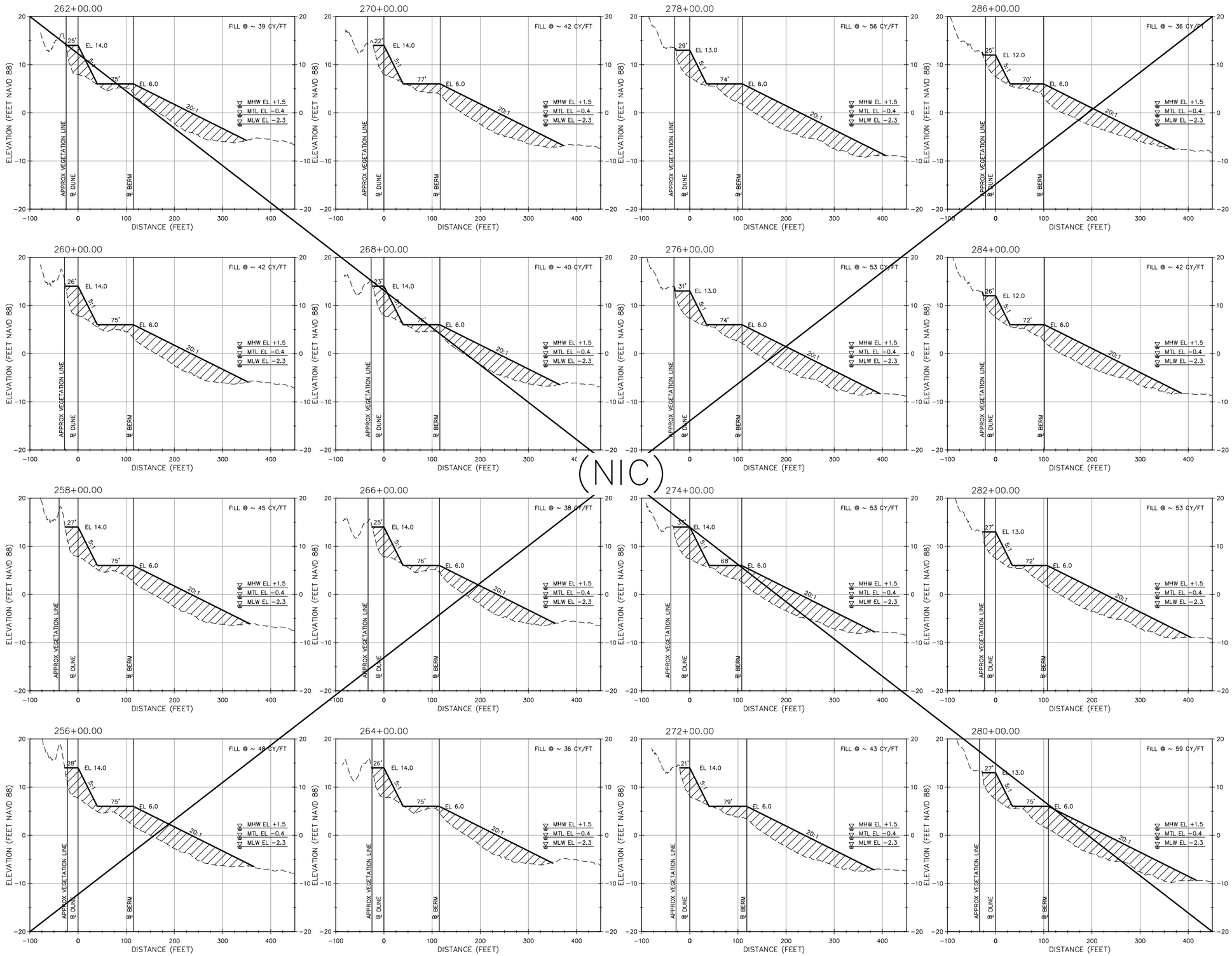
PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Sheet Reference No.
C-308
Sheet 37 of 66

File: G:\PA\10611\0500_CAD_Active_10611 Bouge Banks Phase 2\10611C00-308; Plotted: 8/19/2019 10:52 AM by FORD, BRIAN; Saved: 8/16/2019 5:58 PM by BFORD

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



NOTES:

1. FOR ADDITIONAL INFORMATION SEE BEACH RENOURISHMENT TYPICAL SECTION ON SHEET C-300.
2. EXISTING GROUND SHOWN IS BASED ON MAY 2019 SURVEY BY GEODYNAMICS AND REPRESENTS THE APPROXIMATE CONDITIONS AT THE TIME OF THE SURVEY.

LEGEND

- APPROXIMATE EXISTING GROUND
- PROPOSED RENOURISHMENT
- LIMITS OF FILL

SCALE: 1"=10' VERTICAL

SCALE: 1"=100' HORIZONTAL

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

No.	Mark	BID DOCUMENTS Description	Date	Appr.
0			08/19/19	JM

POST-FLORENCE RENOURISHMENT PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

RENOURISHMENT SECTIONS SHEET 9 OF 35

Designed by:	NCV
Drawn by:	BDF
Submitted by:	JDM
Date:	AUGUST 2019
Cad by:	SRM
Reviewed by:	JDM
M&N Project No.	10611
Drawing code:	
Drawing Scale:	Plot scale: 1:1 (0 SHEET)
Rev.	-

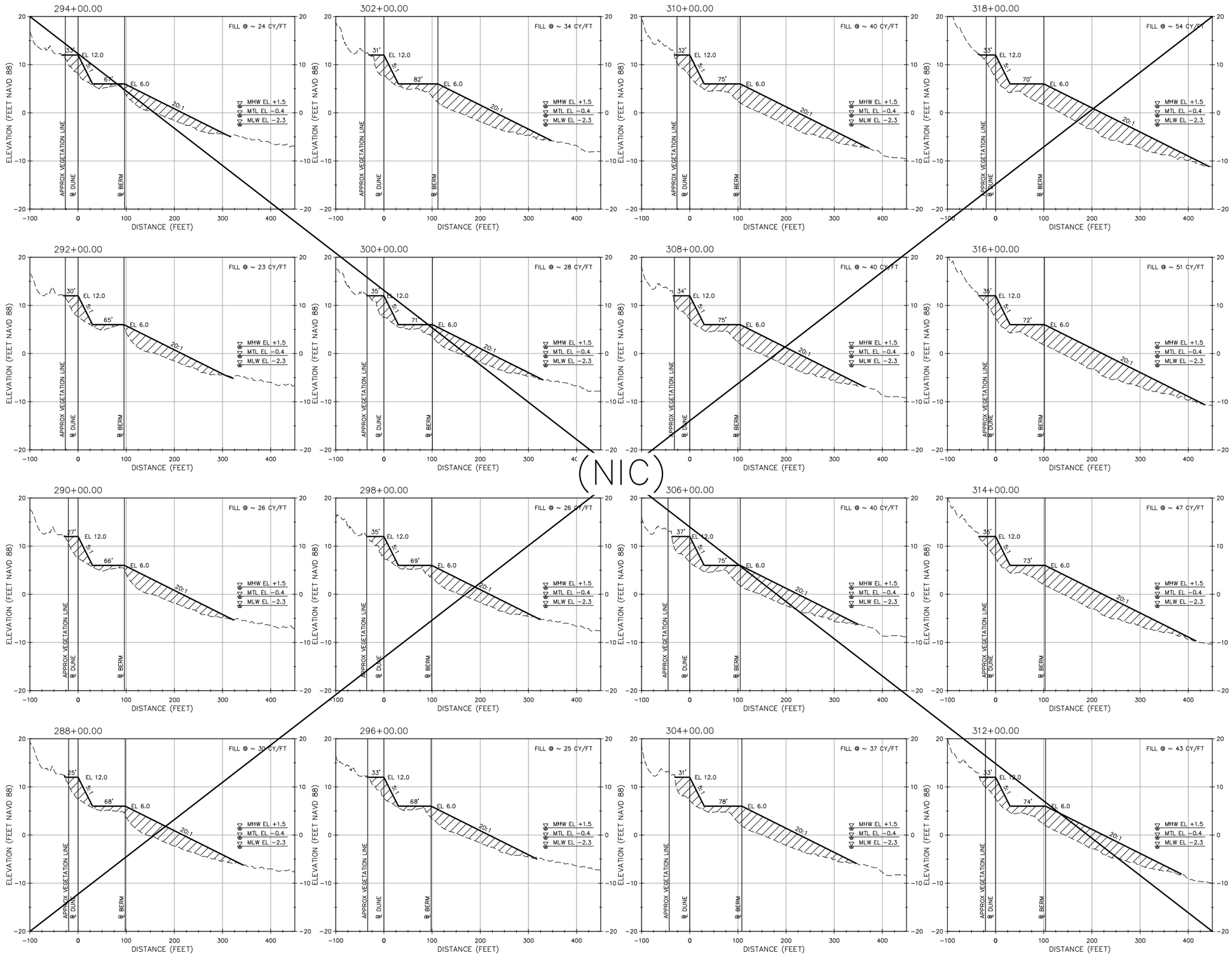
4700 FALLS OF THE NEUSE ROAD
SUITE 300
RALEIGH, NC 27609
919-781-4626
moffatt & nichol NC FIRM LICENSE No. F-0105

PREPARED FOR THE TOWNS OF EMERALD ISLE, INDIAN BEACH, PINE KNOLL SHORES, AND ATLANTIC BEACH

NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Sheet Reference No.
C-309
Sheet 38 of 66

File: G:\PA\10611\0500_CAD_Active_10611 Bouge Banks Phase 2\10611C00-309; Plotted: 8/19/2019 10:52 AM by FORD, BRIAN; Saved: 8/16/2019 5:58 PM by BFORD



NOTES:

1. FOR ADDITIONAL INFORMATION SEE BEACH RENOURISHMENT TYPICAL SECTION ON SHEET C-300.
2. EXISTING GROUND SHOWN IS BASED ON MAY 2019 SURVEY BY GEODYNAMICS AND REPRESENTS THE APPROXIMATE CONDITIONS AT THE TIME OF THE SURVEY.

LEGEND

- APPROXIMATE EXISTING GROUND
- PROPOSED RENOURISHMENT
- LIMITS OF FILL

SCALE: 1"=10' VERTICAL

SCALE: 1"=100' HORIZONTAL

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

No.	Mark	BID DOCUMENTS	Date	Appr.
0		Description	08/19/19	JM

POST-FLORENCE RENOURISHMENT PROJECT PHASE 2 CARTERET COUNTY, NORTH CAROLINA

RENOURISHMENT SECTIONS SHEET 10 OF 35

moffatt & nichol
4700 FALLS OF THE NEUSE ROAD
SUITE 300
RALEIGH, NC 27609
919-781-4626
NC FIRM LICENSE No. F-0105

PREPARED FOR THE TOWNS OF EMERALD ISLE, INDIAN BEACH, PINE KNOLL SHORES, AND ATLANTIC BEACH

Designed by:	Date:	Rev.
NCV	AUGUST 2019	-
Drawn by:	Cad by:	M&N Project No.
BDF	SRM	10611
Reviewed by:	Drawing code:	
JDM		
Submitted by:	Drawing Scale:	
MOFFATT & NICHOL	Plot scale: 1:1 (0 SHEET)	

NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN

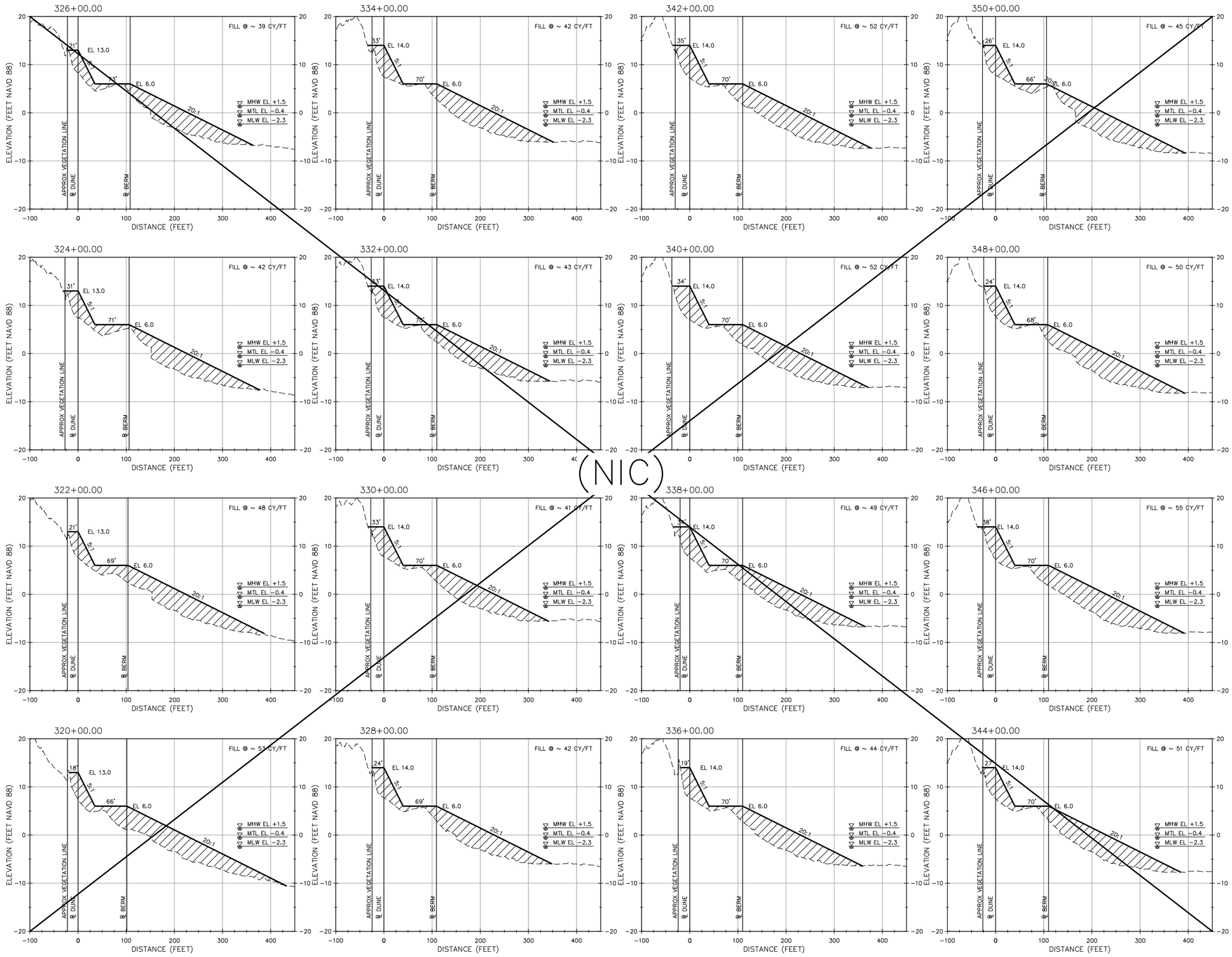
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Sheet Reference No.

C-310

Sheet 39 of 66

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NOTES:

1. FOR ADDITIONAL INFORMATION SEE BEACH RENOURISHMENT TYPICAL SECTION ON SHEET C-300.
2. EXISTING GROUND SHOWN IS BASED ON MAY 2019 SURVEY BY GEODYNAMICS AND REPRESENTS THE APPROXIMATE CONDITIONS AT THE TIME OF THE SURVEY.

LEGEND

- APPROXIMATE EXISTING GROUND
- PROPOSED RENOURISHMENT
- LIMITS OF FILL

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

100' 0' 100' 200'
SCALE: 1"=100' HORIZONTAL

No.	Mark	BID DOCUMENTS	Date	Appr.
0			08/19/19	JM

POST-FLORENCE RENOURISHMENT
PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

RENOURISHMENT SECTIONS
SHEET 11 OF 35

4700 FALLS OF THE NEUSE ROAD
SUITE 300
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919-781-4626
NC FIRM LICENSE No. F-0105
moffatt & nichol

PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

Rev.	Date:	Designed by:	Drawn by:	Submitted by:	Drawing Scale:
1	AUGUST 2019	NCV	BDF	MOFFATT & NICHOL	Plot scale: 1:1 (0 SHEET)

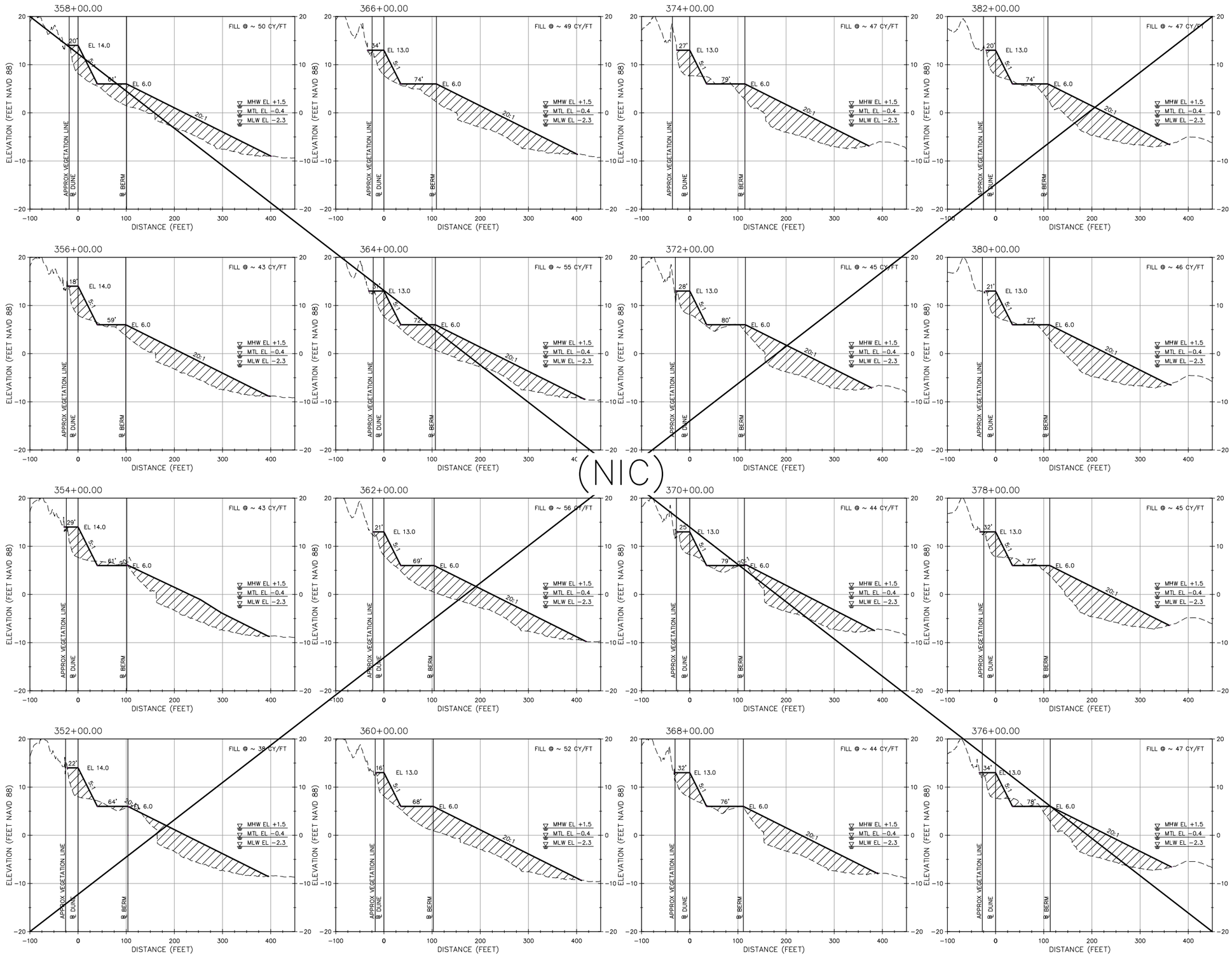
M&N Project No.	Cad by:	Drawing code:	Reviewed by:
10611	SRM		JDM

NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Sheet Reference No.
C-311
Sheet 40 of 66

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DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



NOTES:

1. FOR ADDITIONAL INFORMATION SEE BEACH RENOURISHMENT TYPICAL SECTION ON SHEET C−300.
2. EXISTING GROUND SHOWN IS BASED ON MAY 2019 SURVEY BY GEODYNAMICS AND REPRESENTS THE APPROXIMATE CONDITIONS AT THE TIME OF THE SURVEY.

LEGEND

- APPROXIMATE EXISTING GROUND
- PROPOSED RENOURISHMENT
- LIMITS OF FILL

SCALE: 1"=10' VERTICAL

SCALE: 1"=100' HORIZONTAL

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

No.	Mark	BID DOCUMENTS Description	Date	Appr.
0			08/19/19	JM

POST-FLORENCE RENOURISHMENT
PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

RENOURISHMENT SECTIONS
SHEET 12 OF 35

4700 FALLS OF THE NEUSE ROAD
SUITE 300
RALEIGH, NC 27609
919−781−4626
moffatt & nichol NC FIRM LICENSE No. F−0105

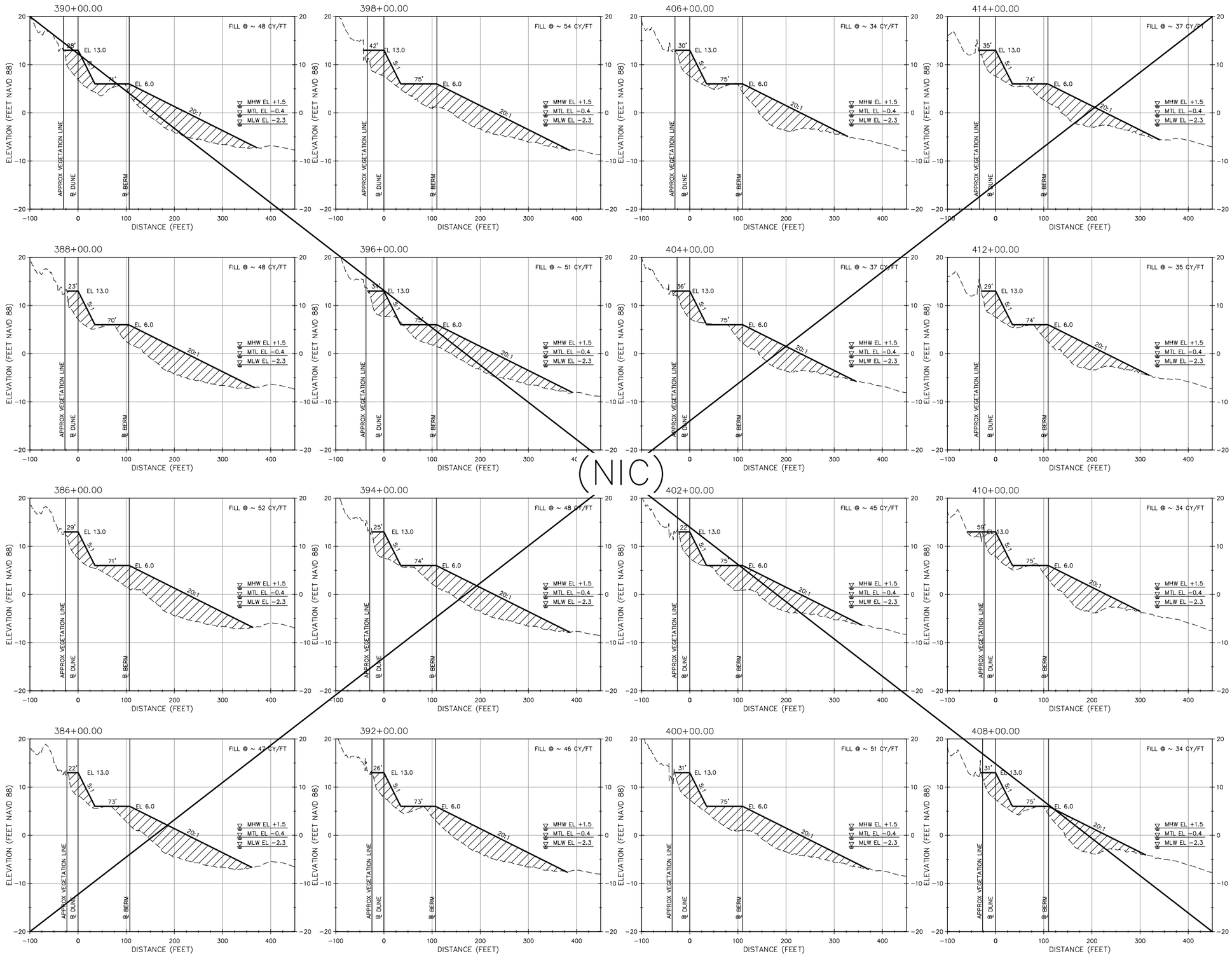
PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

Rev.	1
Date:	AUGUST 2019
Designed by:	NCV
Dwn by:	BDF
Ckd by:	SRM
Reviewed by:	JDM
Submitted by:	MOFFATT & NICHOL
M&N Project No.	10611
Drawing code:	
Drawing Scale:	Plot scale: 1:1 (0 SHEET)

NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Sheet Reference No.
C-312
Sheet 41 of 66

File: G:\PA\10611\0500_CAD_Active_10611 Bouge Banks Phase 2\10611C00−312; Plotted: 8/19/2019 10:52 AM by FORD, BRIAN; Saved: 8/16/2019 5:57 PM by BFORD



NOTES:

1. FOR ADDITIONAL INFORMATION SEE BEACH RENOURISHMENT TYPICAL SECTION ON SHEET C–300.
2. EXISTING GROUND SHOWN IS BASED ON MAY 2019 SURVEY BY GEODYNAMICS AND REPRESENTS THE APPROXIMATE CONDITIONS AT THE TIME OF THE SURVEY.

LEGEND

- APPROXIMATE EXISTING GROUND
- PROPOSED RENOURISHMENT
- LIMITS OF FILL

SCALE: 1"=10' VERTICAL

SCALE: 1"=100' HORIZONTAL

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

Mark	Description	Date	Appr.
0	BID DOCUMENTS	08/19/19	JM

POST-FLORENCE RENOURISHMENT PROJECT PHASE 2 CARTERET COUNTY, NORTH CAROLINA

RENOURISHMENT SECTIONS SHEET 13 OF 35

moffatt & nichol
4700 FALLS OF THE NEUSE ROAD
SUITE 300
RALEIGH, NC 27609
919-781-4626
NC FIRM LICENSE No. F-0105

PREPARED FOR THE TOWNS OF EMERALD ISLE, INDIAN BEACH, PINE KNOLL SHORES, AND ATLANTIC BEACH

Designed by:	NCV
Dwn by:	BDF
Submitted by:	JDM
Date:	AUGUST 2019
Cad by:	SRM
Reviewed by:	JDM
M&N Project No.	10611
Drawing code:	
Drawing Scale:	Plot scale: 1:1 (0 SHEET)
Rev.	-

NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN

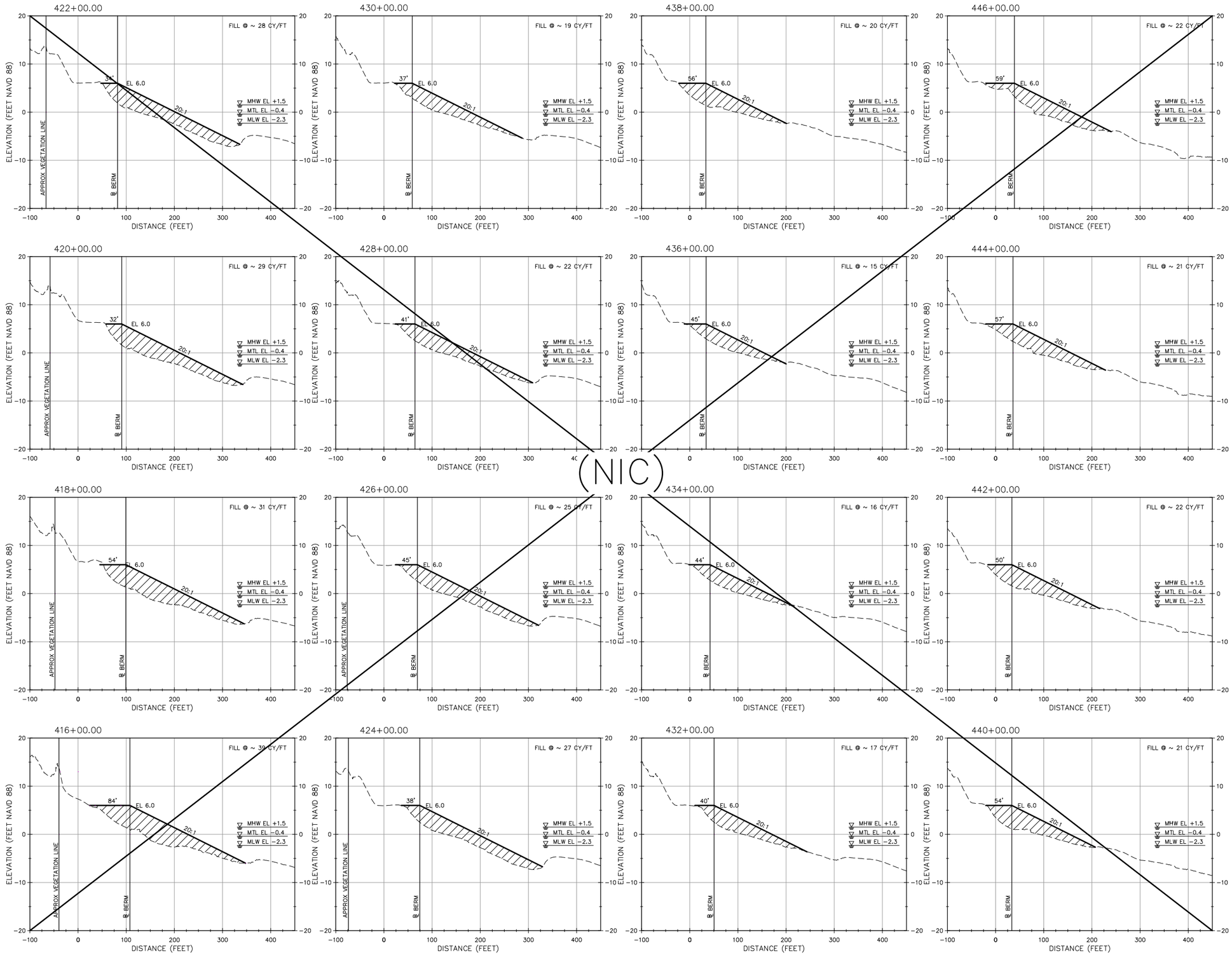
SEAL

Sheet Reference No.

C-313

Sheet 42 of 66

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(NIC)

NOTES:

1. FOR ADDITIONAL INFORMATION SEE BEACH RENOURISHMENT TYPICAL SECTION ON SHEET C-300.
2. EXISTING GROUND SHOWN IS BASED ON MAY 2019 SURVEY BY GEODYNAMICS AND REPRESENTS THE APPROXIMATE CONDITIONS AT THE TIME OF THE SURVEY.

LEGEND

- APPROXIMATE EXISTING GROUND
- PROPOSED RENOURISHMENT
- LIMITS OF FILL

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

100' 0' 100' 200'
SCALE: 1"=100' HORIZONTAL

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

Mark	Description	Date	Appr.
0	BID DOCUMENTS	08/19/19	JM

POST-FLORENCE RENOURISHMENT
PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

RENOURISHMENT SECTIONS
SHEET 14 OF 35

4700 FALLS OF THE NEUSE ROAD
SUITE 300
RALEIGH, NC 27609
919-781-4626
moffatt & nichol NC FIRM LICENSE No. F-0105

PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

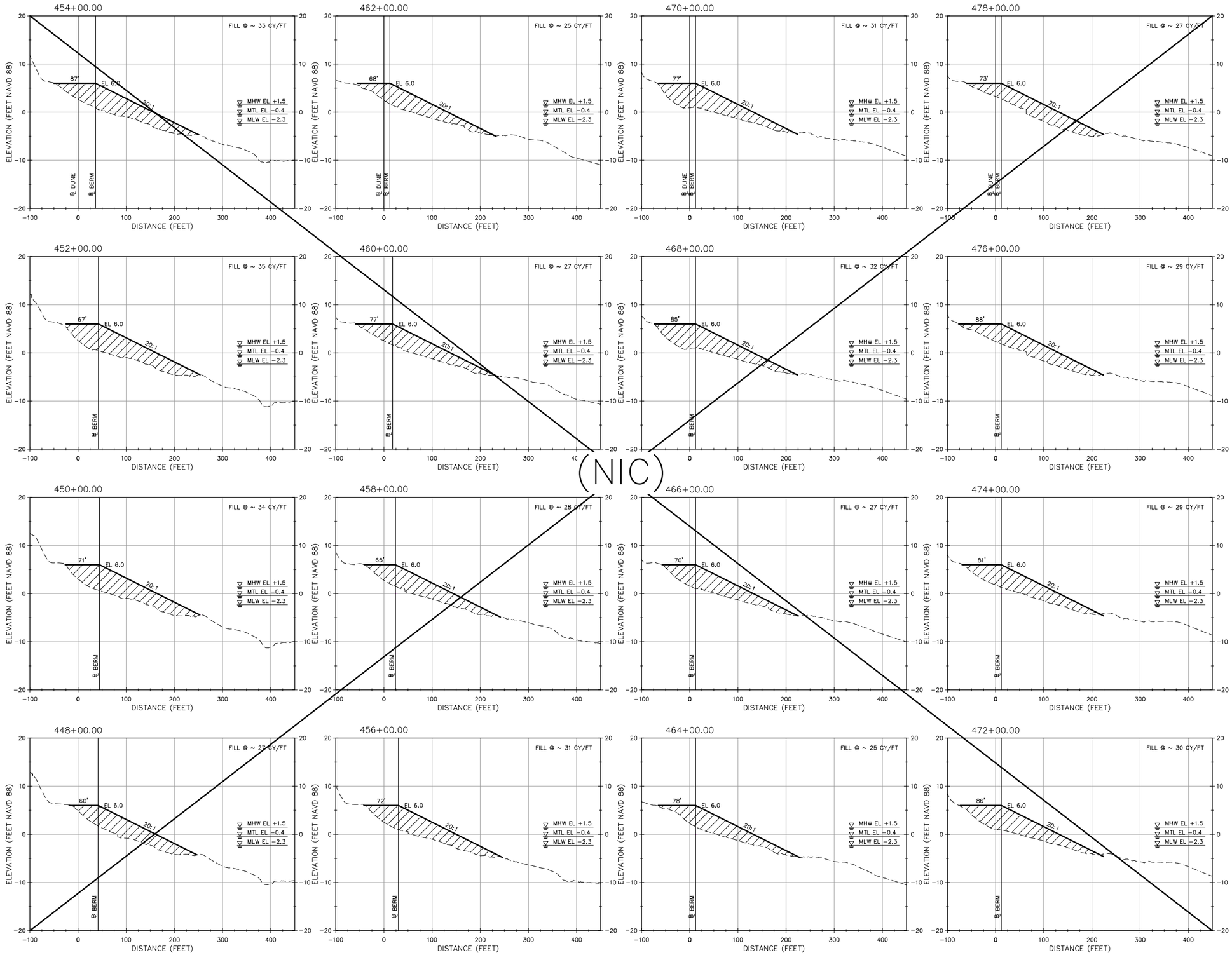
NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Rev.	Date	Designed by	Drawn by	Reviewed by	Submitted by	Drawing Scale
-	AUGUST 2019	NCV	BDF	JDM	MOFFATT & NICHOL	Plot scale: 1:1 (0 SHEET)

M&N Project No. 10611 | Cad by: SRM | Drawing code:

Sheet Reference No.
C-314
Sheet 43 of 66

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NOTES:

1. FOR ADDITIONAL INFORMATION SEE BEACH RENOURISHMENT TYPICAL SECTION ON SHEET C−300.
2. EXISTING GROUND SHOWN IS BASED ON MAY 2019 SURVEY BY GEODYNAMICS AND REPRESENTS THE APPROXIMATE CONDITIONS AT THE TIME OF THE SURVEY.

LEGEND

- APPROXIMATE EXISTING GROUND
- PROPOSED RENOURISHMENT
- LIMITS OF FILL

SCALE: 1"=10' VERTICAL

SCALE: 1"=100' HORIZONTAL

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

Mark	Description	Date	Appr.
0	BID DOCUMENTS	08/19/19	JM

POST-FLORENCE RENOURISHMENT
PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

RENOURISHMENT SECTIONS
SHEET 15 OF 35

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PREPARED FOR THE TOWNS OF
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PINE KNOLL SHORES, AND ATLANTIC BEACH

Designed by:	Drawn by:	Reviewed by:	Submitted by:
NCV	BDF	JDM	MOFFATT & NICHOL

Date:	Cad by:	Drawing code:	Drawing Scale:
AUGUST 2019	SRM		Plot scale: 1:1 (0 SHEET)

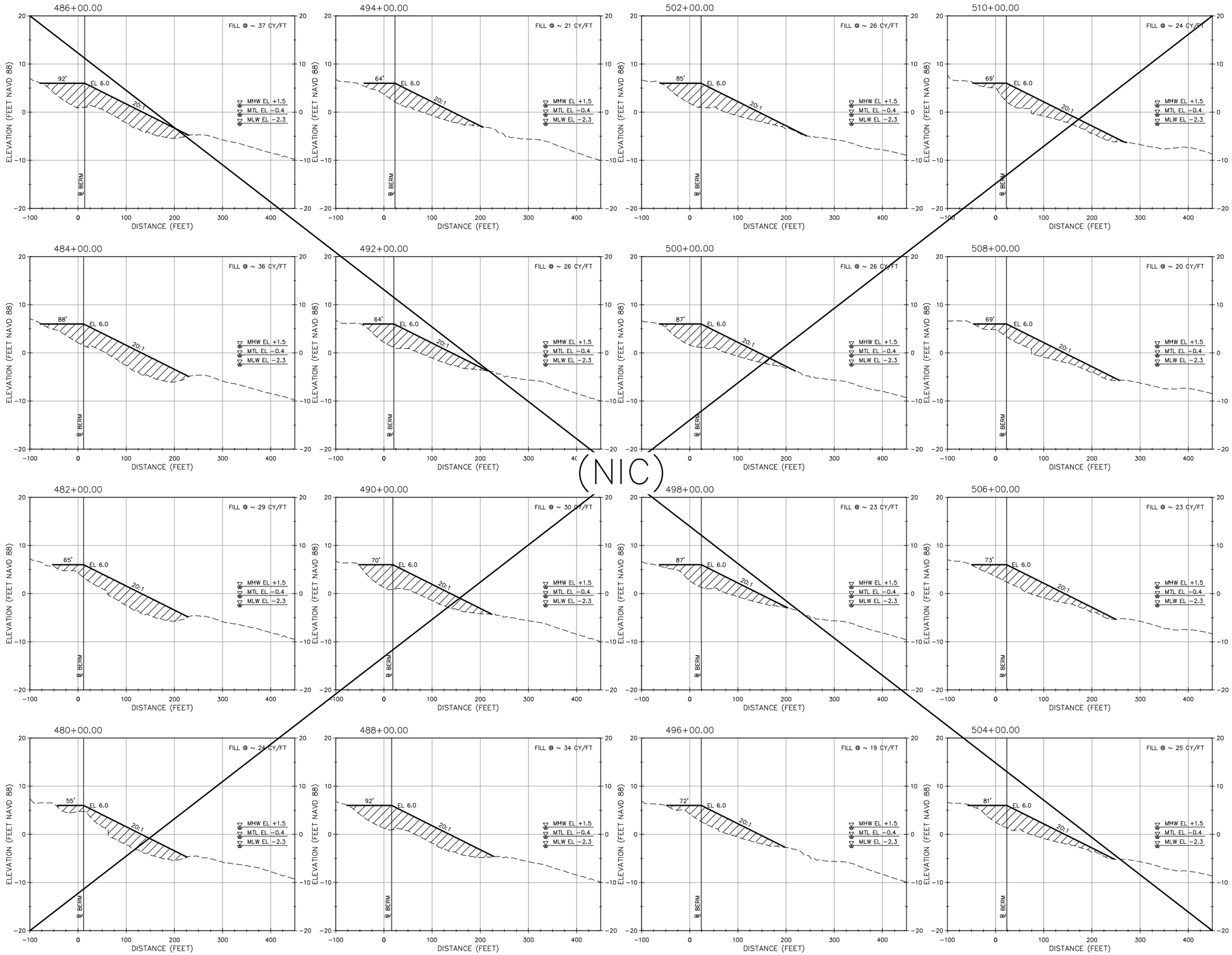
M&N Project No.: 10611

Rev.: 1

NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Sheet Reference No.
C-315
Sheet 44 of 66

File: G:\PA\10611\0500_CAD_Active_10611 Bouge Banks Phase 2\10611C00-315; Plotted: 8/19/2019 10:53 AM by FORD, BRIAN; Saved: 8/16/2019 5:57 PM by BFORD



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NOTES:

1. FOR ADDITIONAL INFORMATION SEE BEACH RENOURISHMENT TYPICAL SECTION ON SHEET C-300.
2. EXISTING GROUND SHOWN IS BASED ON MAY 2019 SURVEY BY GEODYNAMICS AND REPRESENTS THE APPROXIMATE CONDITIONS AT THE TIME OF THE SURVEY.

LEGEND

- APPROXIMATE EXISTING GROUND
- PROPOSED RENOURISHMENT
- LIMITS OF FILL

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

100' 0' 100' 200'
SCALE: 1"=100' HORIZONTAL

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

No.	Mark	BID DOCUMENTS Description	Date	Appr.
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POST-FLORENCE RENOURISHMENT
PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

RENOURISHMENT SECTIONS
SHEET 16 OF 35

4700 FALLS OF THE NEUSE ROAD
SUITE 300
RALEIGH, NC 27609
919-781-4626
NC FIRM LICENSE No. F-0105
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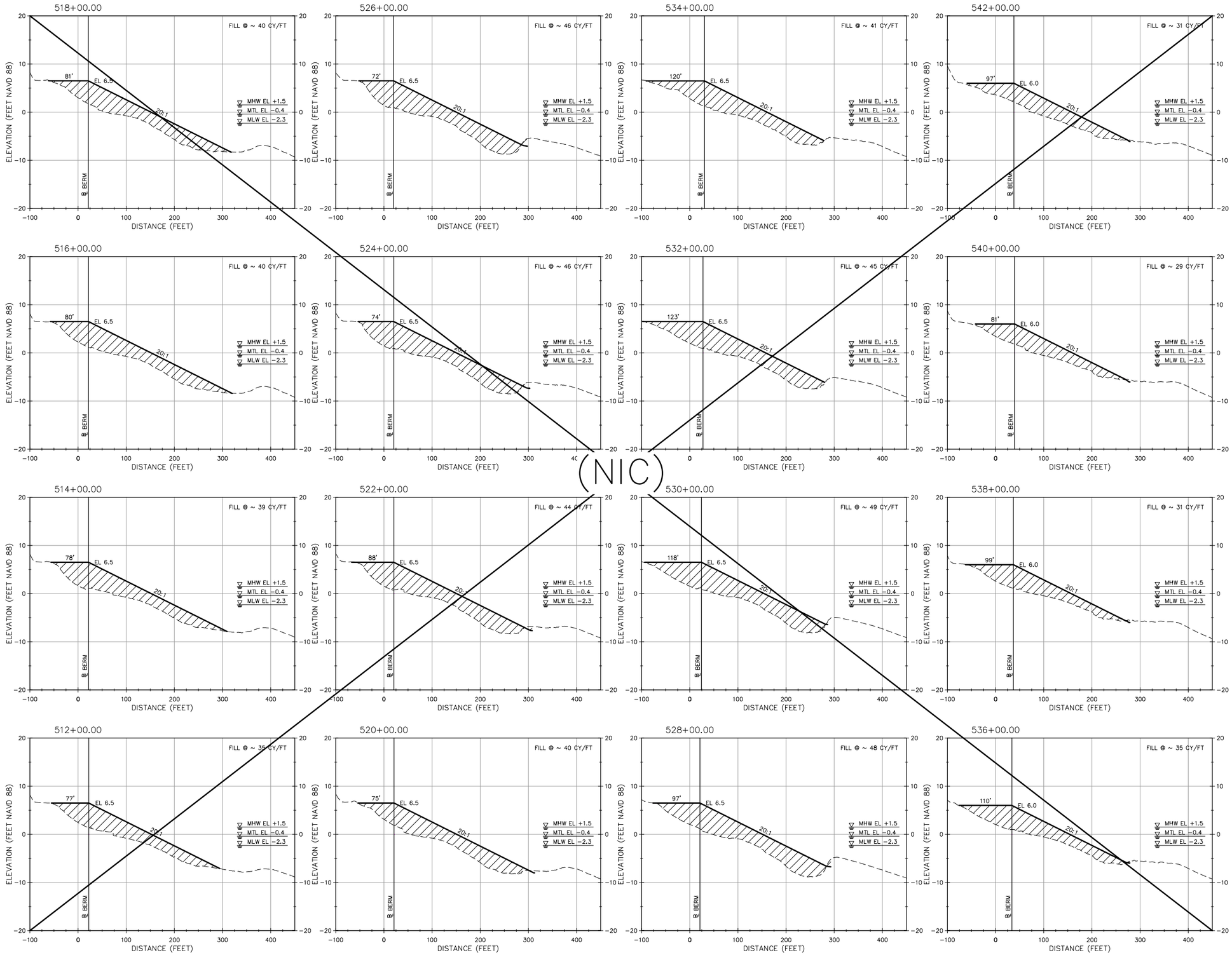
PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Rev.	Date: AUGUST 2019	Designed by: NCV	Drawn by: BDF	Reviewed by: JDM	Submitted by: MOFFATT & NICHOL
1	M&N Project No. 10611	Cad by: SRM	Drawing code:		Drawing Scale: Plot scale: 1:1 (0 SHEET)

Sheet Reference No.
C-316
Sheet 45 of 66

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NOTES:

1. FOR ADDITIONAL INFORMATION SEE BEACH RENOURISHMENT TYPICAL SECTION ON SHEET C-300.
2. EXISTING GROUND SHOWN IS BASED ON MAY 2019 SURVEY BY GEODYNAMICS AND REPRESENTS THE APPROXIMATE CONDITIONS AT THE TIME OF THE SURVEY.

LEGEND

- APPROXIMATE EXISTING GROUND
- PROPOSED RENOURISHMENT
- LIMITS OF FILL

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

100' 0' 100' 200'
SCALE: 1"=100' HORIZONTAL

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

No.	Mark	BID DOCUMENTS Description	Date	Appr.
0			08/19/19	JM

POST-FLORENCE RENOURISHMENT PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

RENOURISHMENT SECTIONS
SHEET 17 OF 35

Designed by: NCV	Date: AUGUST 2019
Dwn by: BDF	Cad by: SRM
Reviewed by: JDM	M&N Project No. 10611
Submitted by: MOFFATT & NICHOL	Drawing code:
	Drawing Scale: Plot scale: 1:1 (0 SHEET)
	Rev. -

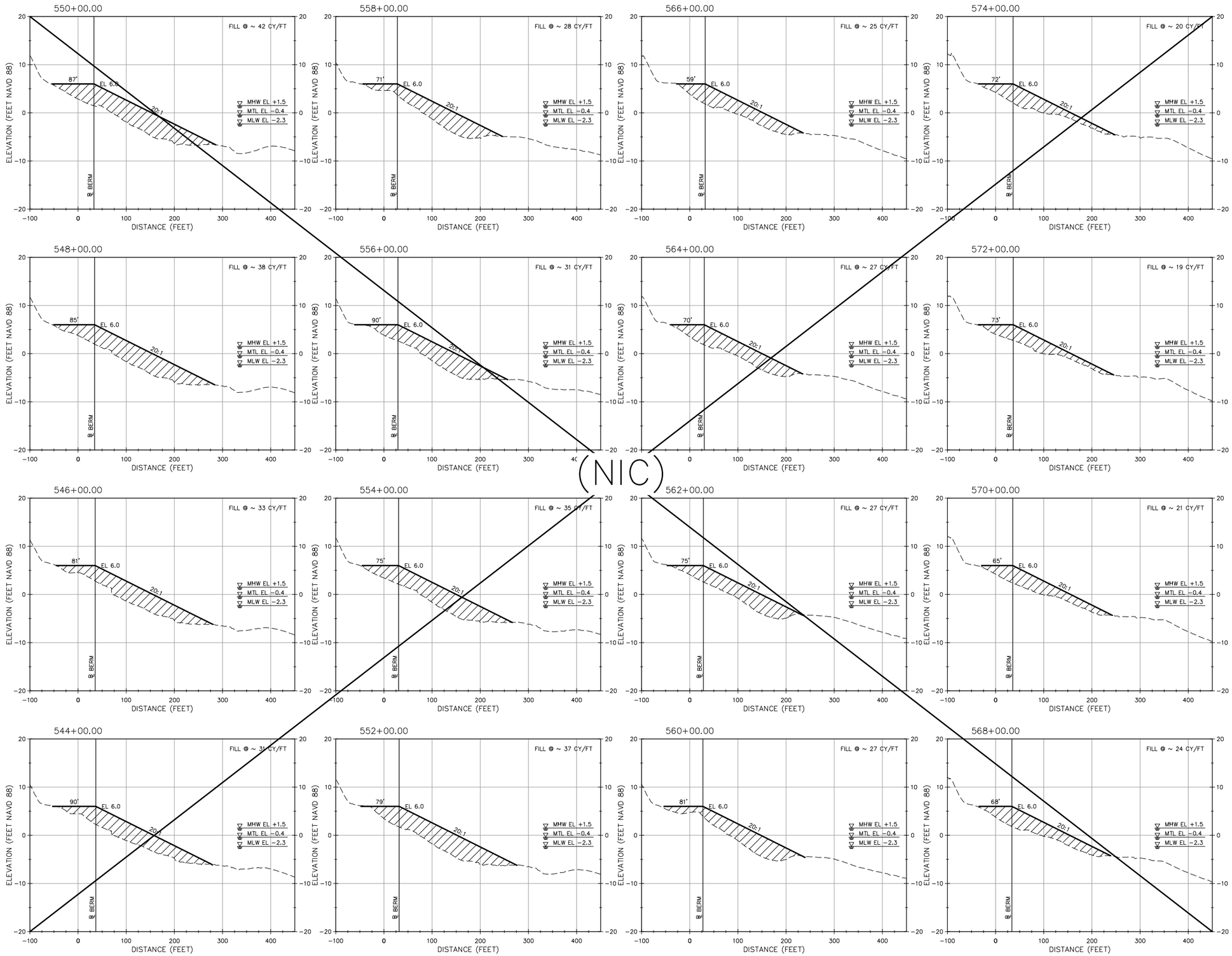
4700 FALLS OF THE NEUSE ROAD
SUITE 300
RALEIGH, NC 27609
919-781-4626
moffatt & nichol NC FIRM LICENSE No. F-0105

PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

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Sheet Reference No.
C-317
Sheet 46 of 66

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NOTES:

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2. EXISTING GROUND SHOWN IS BASED ON MAY 2019 SURVEY BY GEODYNAMICS AND REPRESENTS THE APPROXIMATE CONDITIONS AT THE TIME OF THE SURVEY.

LEGEND

- APPROXIMATE EXISTING GROUND
- PROPOSED RENOURISHMENT
- LIMITS OF FILL

SCALE: 1"=10' VERTICAL

SCALE: 1"=100' HORIZONTAL

No.	Mark	BID DOCUMENTS Description	Date	Appr.
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POST-FLORENCE RENOURISHMENT
PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

RENOURISHMENT SECTIONS
SHEET 18 OF 35

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NC FIRM LICENSE No. F-0105

PREPARED FOR THE TOWNS OF
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PINE KNOLL SHORES, AND ATLANTIC BEACH

Rev.	Date	Designed by	Drawn by	Reviewed by	Submitted by	Drawing Scale
1	AUGUST 2019	NCV	BDF	JDM	MOFFATT & NICHOL	Plot scale: 1:1 (0 SHEET)

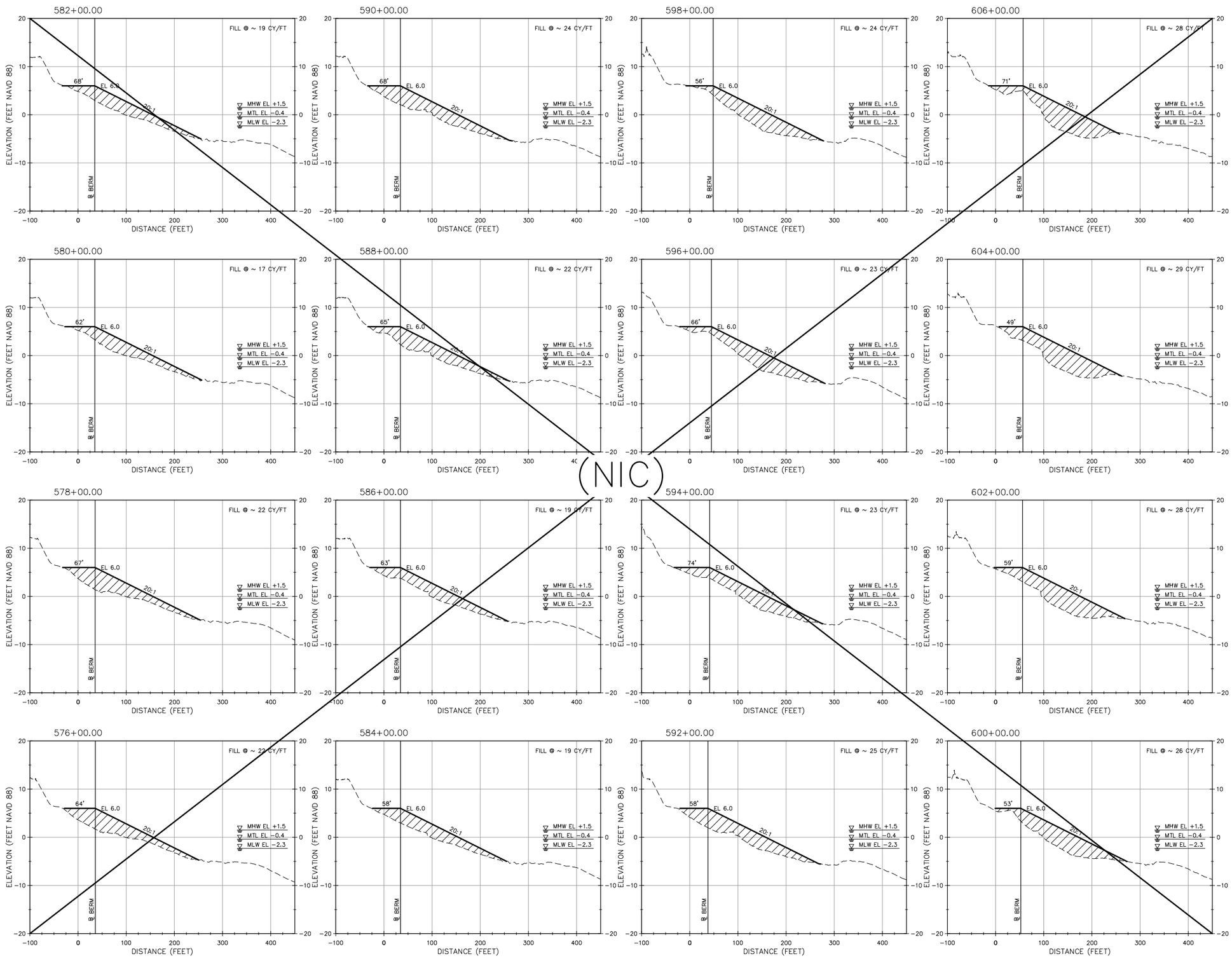
M&N Project No. 10611 | Cad by: SRM | Drawing code:

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SEAL

Sheet Reference No.
C-318
Sheet 47 of 66

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

File: G:\PA\10611\0500_CAD_Active_10611 Bouge Banks Phase 2\10611C00-318; Plotted: 8/19/2019 10:54 AM by FORD, BRIAN; Saved: 8/16/2019 5:57 PM by BFORD



NOTES:

1. FOR ADDITIONAL INFORMATION SEE BEACH RENOURISHMENT TYPICAL SECTION ON SHEET C-300.
2. EXISTING GROUND SHOWN IS BASED ON MAY 2019 SURVEY BY GEODYNAMICS AND REPRESENTS THE APPROXIMATE CONDITIONS AT THE TIME OF THE SURVEY.

LEGEND

- APPROXIMATE EXISTING GROUND
- PROPOSED RENOURISHMENT
- LIMITS OF FILL

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

100' 0' 100' 200'
SCALE: 1"=100' HORIZONTAL

No.	Mark	BID DOCUMENTS Description	Date	Appr.
0			08/19/19	JM

POST-FLORENCE RENOURISHMENT PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

RENOURISHMENT SECTIONS
SHEET 19 OF 35

4700 FALLS OF THE NEUSE ROAD
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moffatt & nichol NC FIRM LICENSE No. F-0105

PREPARED FOR THE TOWNS OF EMERALD ISLE, INDIAN BEACH, PINE KNOLL SHORES, AND ATLANTIC BEACH

NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

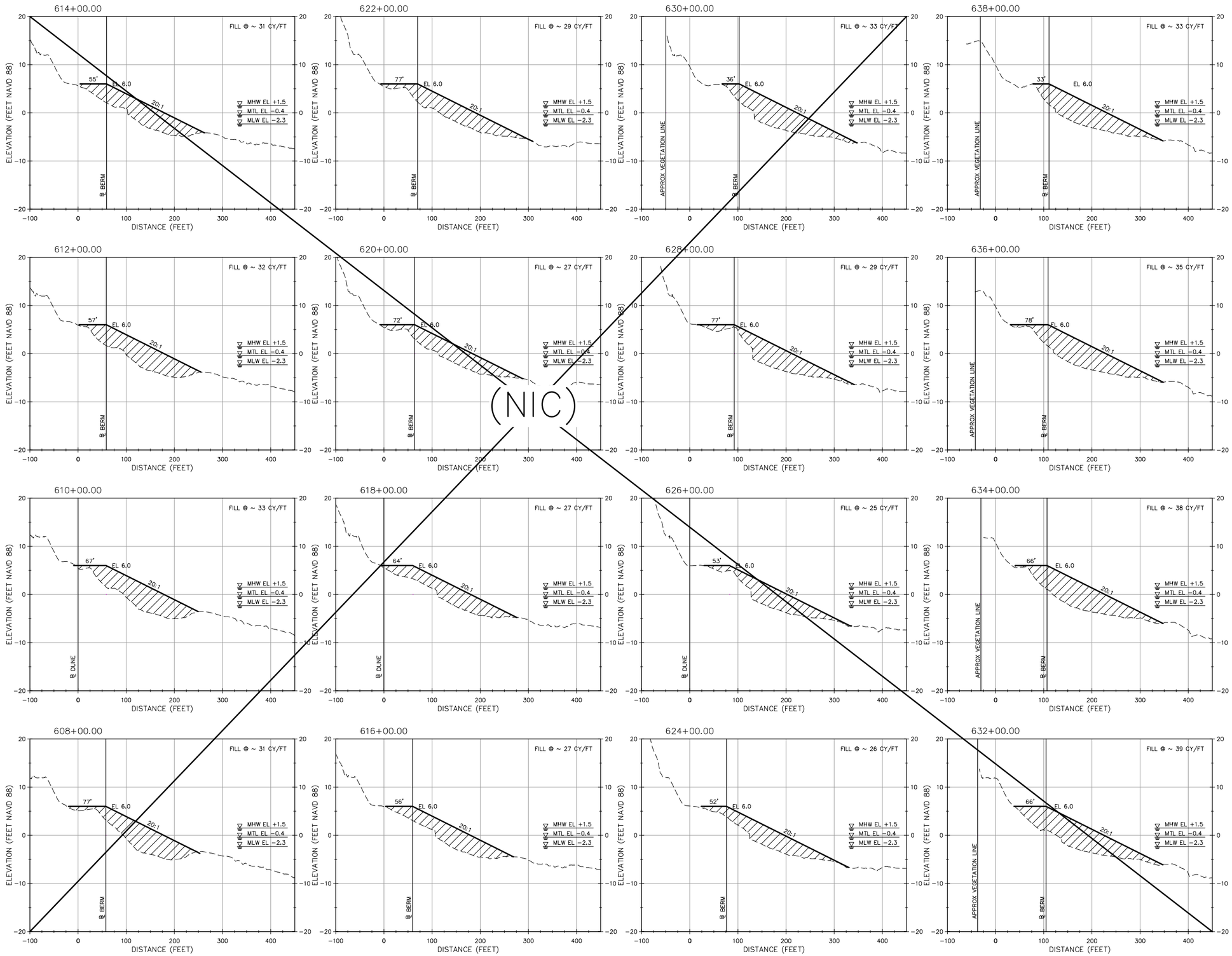
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1	AUGUST 2019	NCV	BDF	JDM	MOFFATT & NICHOL	Plot scale: 1:1 (0 SHEET)

M&N Project No. 10611 | Cad by: SRM | Drawing code:

Sheet Reference No.
C-319
Sheet 48 of 66

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DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



NOTES:

1. FOR ADDITIONAL INFORMATION SEE BEACH RENOURISHMENT TYPICAL SECTION ON SHEET C−300.
2. EXISTING GROUND SHOWN IS BASED ON MAY 2019 SURVEY BY GEODYNAMICS AND REPRESENTS THE APPROXIMATE CONDITIONS AT THE TIME OF THE SURVEY.

LEGEND

- APPROXIMATE EXISTING GROUND
- PROPOSED RENOURISHMENT
- LIMITS OF FILL

SCALE: 1"=10' VERTICAL

SCALE: 1"=100' HORIZONTAL

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

Mark	Description	Date	Appr.
0	BID DOCUMENTS	08/19/19	JM

POST-FLORENCE RENOURISHMENT PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

RENOURISHMENT SECTIONS
SHEET 20 OF 35

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SUITE 300
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919−781−4626
NC FIRM LICENSE No. F−0105

PREPARED FOR THE TOWNS OF EMERALD ISLE, INDIAN BEACH, PINE KNOLL SHORES, AND ATLANTIC BEACH

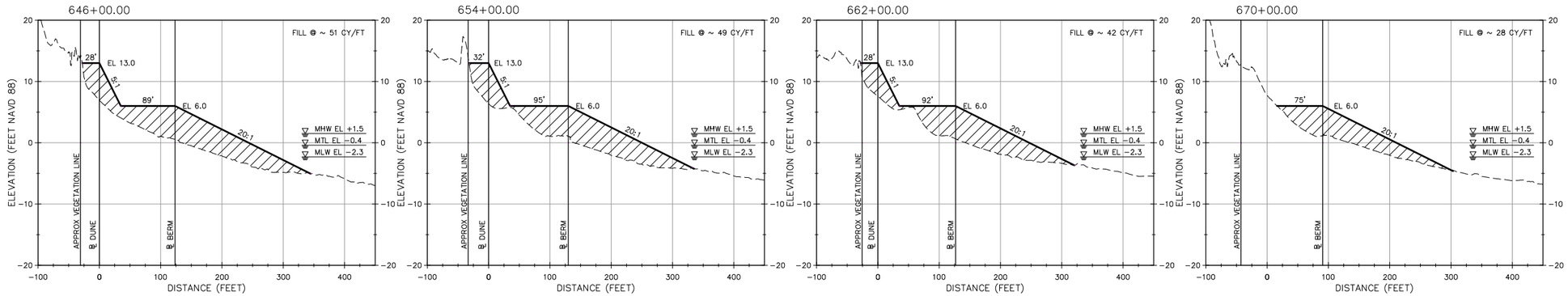
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Dwn by: BDF	Ckd by: SRM
Reviewed by: JDM	M&N Project No. 10611
Submitted by: MOFFATT & NICHOL	Drawing code:
	Drawing Scale: Plot scale: 1:1 (D SHEET)
	Rev. 1

NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN

SEAL

Sheet Reference No.
C-320
Sheet 49 of 66

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NOTES:

1. FOR ADDITIONAL INFORMATION SEE BEACH RENOURISHMENT TYPICAL SECTION ON SHEET C−300.
2. EXISTING GROUND SHOWN IS BASED ON MAY 2019 SURVEY BY GEODYNAMICS AND REPRESENTS THE APPROXIMATE CONDITIONS AT THE TIME OF THE SURVEY.

LEGEND

- APPROXIMATE EXISTING GROUND
- PROPOSED RENOURISHMENT
- LIMITS OF FILL

SCALE: 1"=10' VERTICAL

SCALE: 1"=100' HORIZONTAL

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

Mark	Description	Date	Appr.
0	BID DOCUMENTS	08/19/19	JM

POST-FLORENCE RENOURISHMENT PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

RENOURISHMENT SECTIONS
SHEET 21 OF 35

4700 FALLS OF THE NEUSE ROAD
SUITE 300
RALEIGH, NC 27609
919−781−4626
moffatt & nichol NC FIRM LICENSE No. F−0105

PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

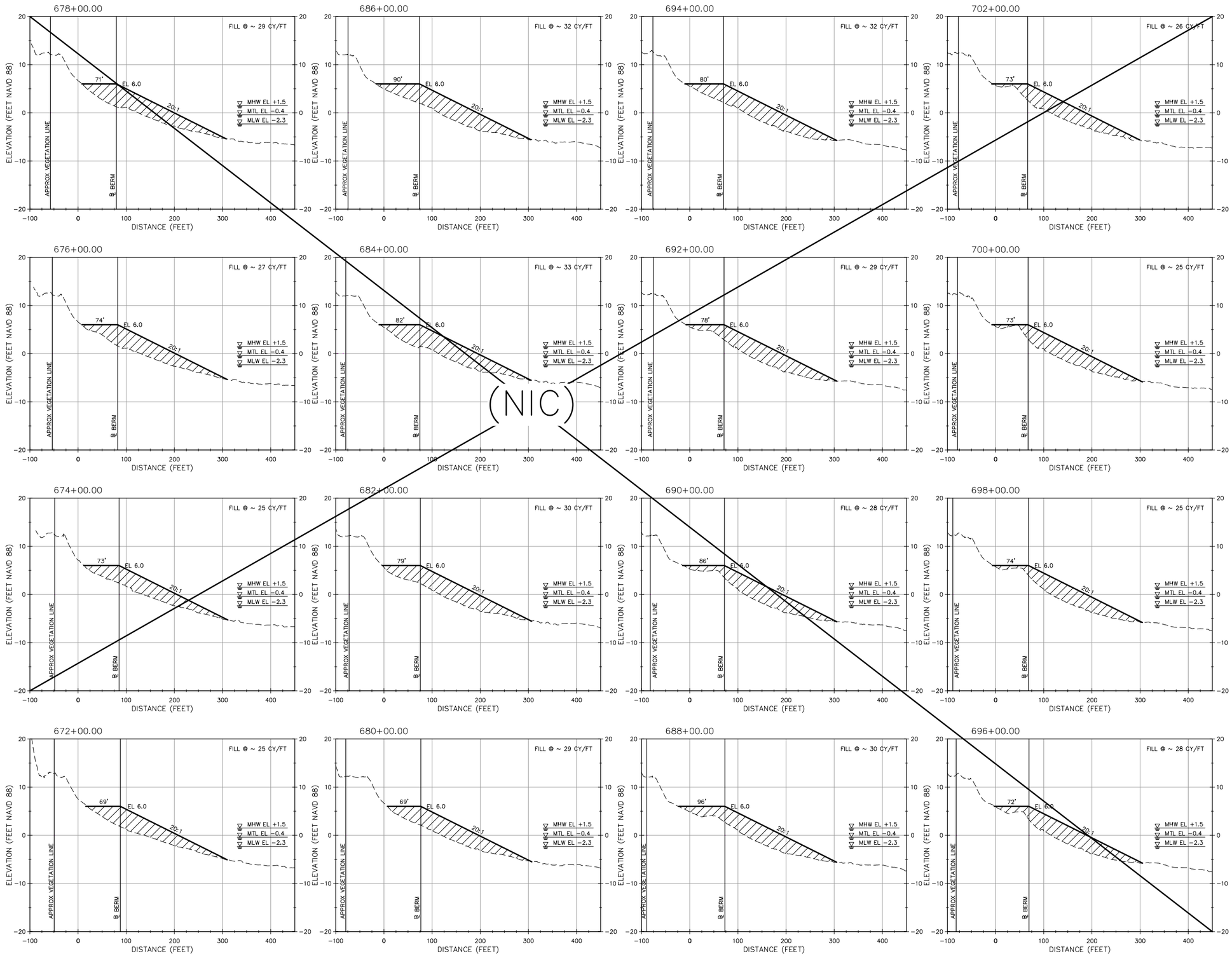
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−	AUGUST 2019	NCV	BDF	JDM	MOFFATT & NICHOL

M&N Project No.	Drawing code:	Drawing Scale:
10611		Plot scale: 1:1 (D SHEET)

NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Sheet Reference No.
C-321
Sheet 50 of 66

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NOTES:

1. FOR ADDITIONAL INFORMATION SEE BEACH RENOURISHMENT TYPICAL SECTION ON SHEET C–300.
2. EXISTING GROUND SHOWN IS BASED ON MAY 2019 SURVEY BY GEODYNAMICS AND REPRESENTS THE APPROXIMATE CONDITIONS AT THE TIME OF THE SURVEY.

LEGEND

- APPROXIMATE EXISTING GROUND
- PROPOSED RENOURISHMENT
- LIMITS OF FILL

SCALE: 1"=10' VERTICAL

SCALE: 1"=100' HORIZONTAL

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

No.	Mark	BID DOCUMENTS	Date	Appr.
0		Description	08/19/19	JM

POST-FLORENCE RENOURISHMENT PROJECT PHASE 2 CARTERET COUNTY, NORTH CAROLINA

RENOURISHMENT SECTIONS SHEET 22 OF 35

4700 FALLS OF THE NEUSE ROAD
SUITE 300
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919-781-4626
moffatt & nichol NC FIRM LICENSE No. F-0105

PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

Designed by:	Drawn by:	Reviewed by:	Submitted by:
NCV	BDF	JDM	MOFFATT & NICHOL

Date:	Job by:	Drawing code:	Drawing Scale:	Rev.
AUGUST 2019	SRM		Plot scale: 1:1 (0 SHEET)	–

M&N Project No. 10611

NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN

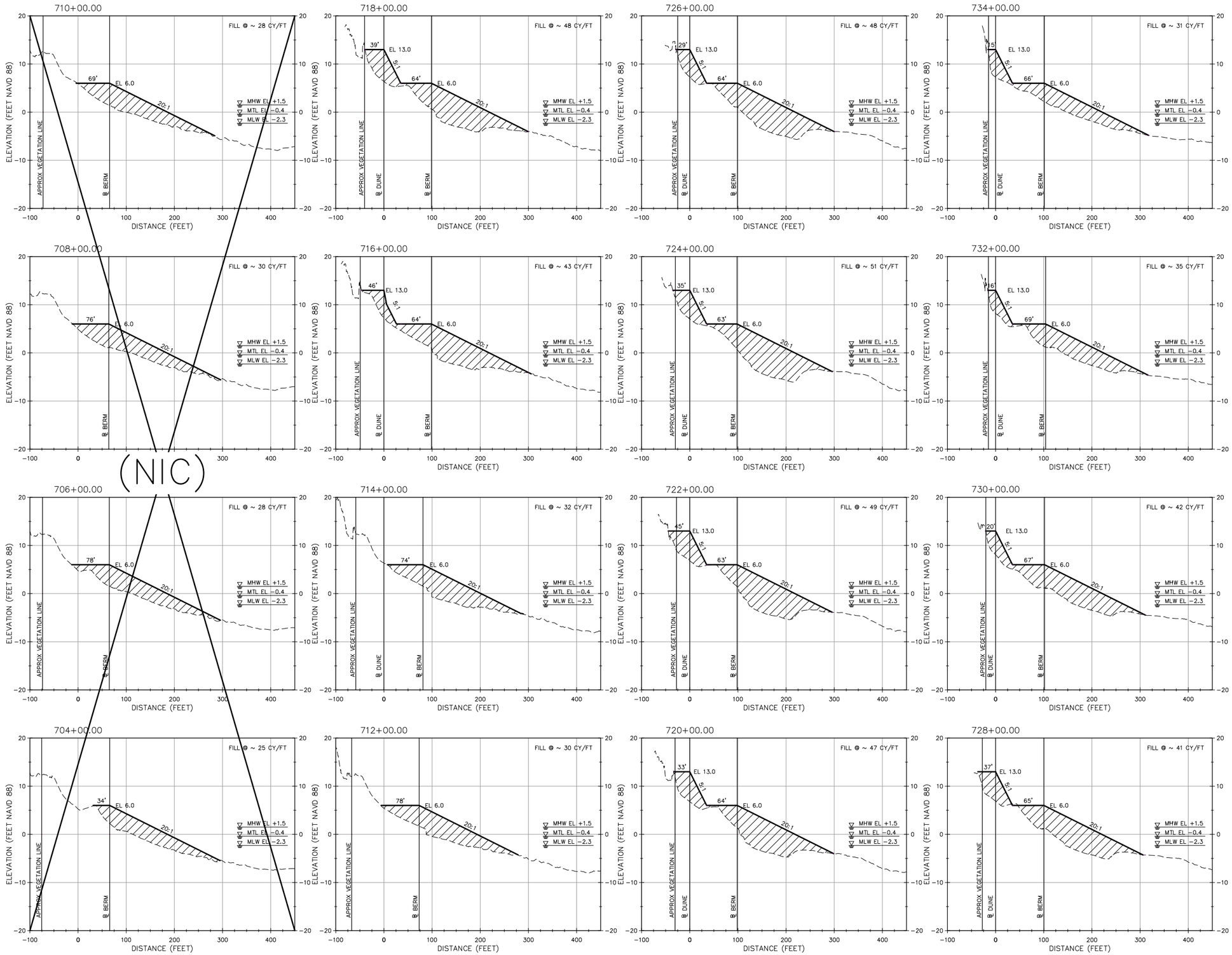
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Sheet Reference No.

C-322

Sheet 51 of 66

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NOTES:

1. FOR ADDITIONAL INFORMATION SEE BEACH RENOURISHMENT TYPICAL SECTION ON SHEET C-300.
2. EXISTING GROUND SHOWN IS BASED ON MAY 2019 SURVEY BY GEODYNAMICS AND REPRESENTS THE APPROXIMATE CONDITIONS AT THE TIME OF THE SURVEY.

LEGEND

- APPROXIMATE EXISTING GROUND
- PROPOSED RENOURISHMENT
- LIMITS OF FILL

SCALE: 1"=10' VERTICAL

SCALE: 1"=100' HORIZONTAL

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

No.	Mark	BID DOCUMENTS	Date	Appr.
0		Description	08/19/19	JM

POST-FLORENCE RENOURISHMENT
PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

RENOURISHMENT SECTIONS
SHEET 23 OF 35

4700 FALLS OF THE NEUSE ROAD
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moffatt & nichol NC FIRM LICENSE No. F-0105

PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

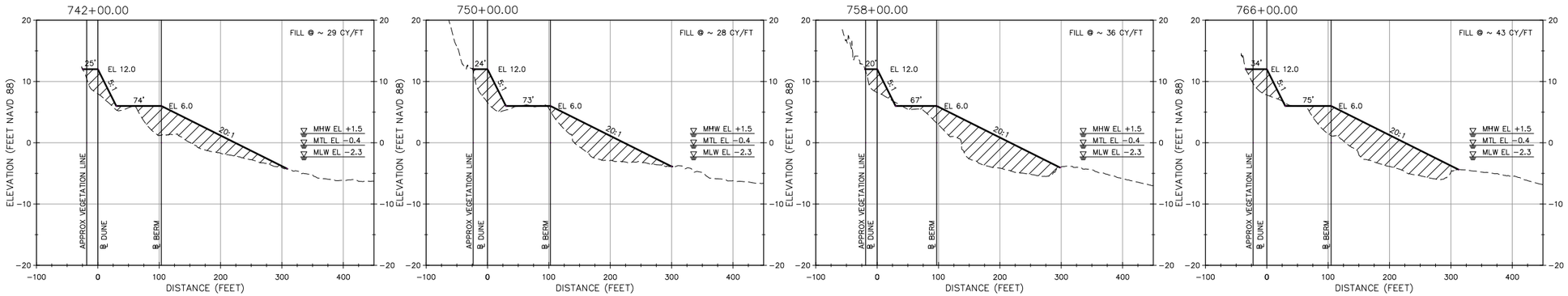
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NCV	BDF	JDM	MOFFATT & NICHOL	AUGUST 2019	-

Cad by:	Drawing code:	Drawing Scale:
SRM	M&N Project No. 10611	Plot scale: 1:1 (0 SHEET)

NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Sheet Reference No.
C-323
Sheet 52 of 66

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NOTES:

1. FOR ADDITIONAL INFORMATION SEE BEACH RENOURISHMENT TYPICAL SECTION ON SHEET C–300.
2. EXISTING GROUND SHOWN IS BASED ON MAY 2019 SURVEY BY GEODYNAMICS AND REPRESENTS THE APPROXIMATE CONDITIONS AT THE TIME OF THE SURVEY.

LEGEND

- APPROXIMATE EXISTING GROUND
- PROPOSED RENOURISHMENT
- LIMITS OF FILL

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

100' 0' 100' 200'
SCALE: 1"=100' HORIZONTAL

No.	Mark	BID DOCUMENTS Description	Date	Appr.
0			08/19/19	JM

POST-FLORENCE RENOURISHMENT
PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

RENOURISHMENT SECTIONS
SHEET 24 OF 35

4700 FALLS OF THE NEUSE ROAD
SUITE 300
RALEIGH, NC 27609
919-781-4626
NC FIRM LICENSE No. F-0105

PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

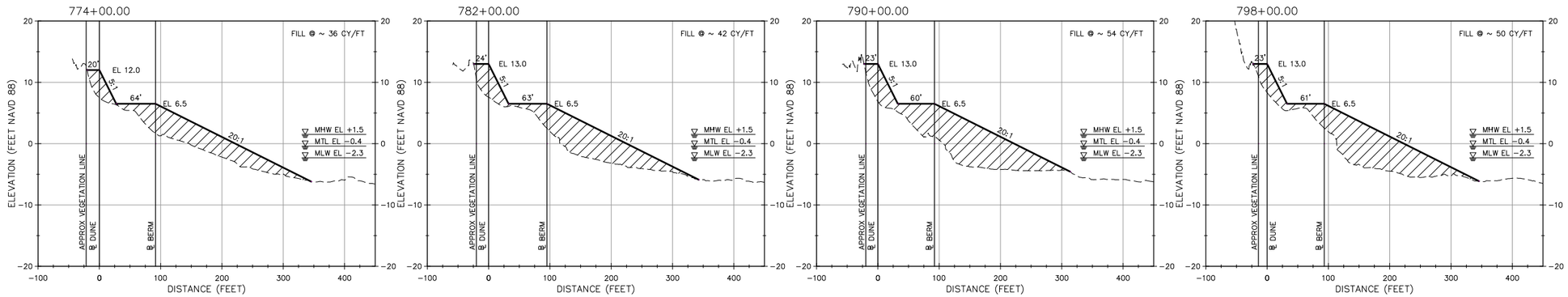
NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Rev.	–
Date:	AUGUST 2019
M&N Project No.	10611
Drawing code:	
Drawing Scale:	Plot scale: 1:1 (0 SHEET)
Designed by:	NCV
Cad by:	SRM
Dwn by:	BDF
Reviewed by:	JDM
Submitted by:	MOFFATT & NICHOL

Sheet Reference No.
C-324
Sheet 53 of 66

File: Q:\RA\10611\0500_CAD_Active_10611 Bouge Banks Phase 2\10611DOC–324; Plotted: 8/19/2019 1:39 PM by FORD, BRIAN; Saved: 8/16/2019 5:56 PM by BFORD

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



NOTES:

1. FOR ADDITIONAL INFORMATION SEE BEACH RENOURISHMENT TYPICAL SECTION ON SHEET C–300.
2. EXISTING GROUND SHOWN IS BASED ON MAY 2019 SURVEY BY GEODYNAMICS AND REPRESENTS THE APPROXIMATE CONDITIONS AT THE TIME OF THE SURVEY.

LEGEND

- APPROXIMATE EXISTING GROUND
- PROPOSED RENOURISHMENT
- LIMITS OF FILL

SCALE: 1"=10' VERTICAL

SCALE: 1"=100' HORIZONTAL

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

No.	Mark	BID DOCUMENTS	Date	Appr.
0		Description	08/19/19	JM

POST-FLORENCE RENOURISHMENT PROJECT PHASE 2 CARTERET COUNTY, NORTH CAROLINA

RENOURISHMENT SECTIONS SHEET 25 OF 35

4700 FALLS OF THE NEUSE ROAD
SUITE 300
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919-781-4626
moffatt & nichol NC FIRM LICENSE No. F-0105

PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

Designed by:	Drawn by:	Reviewed by:	Submitted by:
NCV	BDF	JDM	MOFFATT & NICHOL

Date:	Job by:	Drawing code:	Drawing Scale:
AUGUST 2019	SRM		Plot scale: 1:1 (0 SHEET)

Rev.	M&N Project No.
–	10611

SEAL

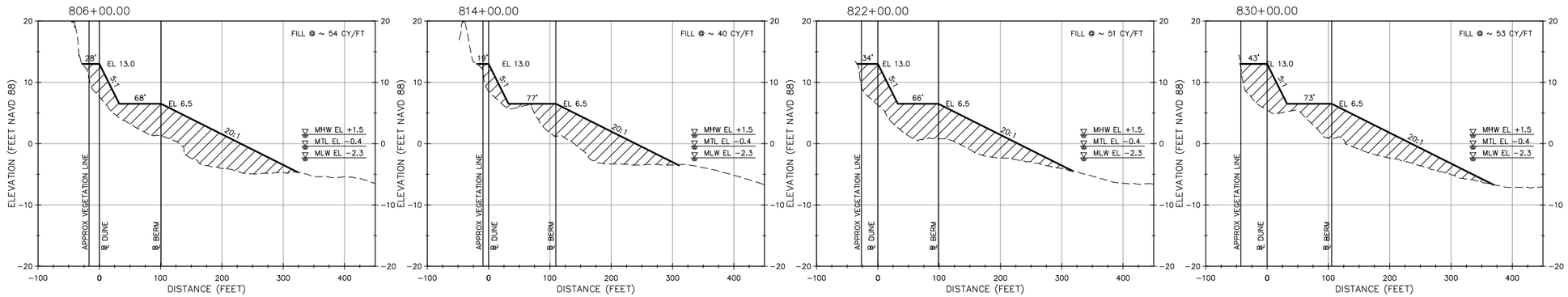
NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN

Sheet Reference No.

C-325

Sheet 54 of 66

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NOTES:

1. FOR ADDITIONAL INFORMATION SEE BEACH RENOURISHMENT TYPICAL SECTION ON SHEET C−300.
2. EXISTING GROUND SHOWN IS BASED ON MAY 2019 SURVEY BY GEODYNAMICS AND REPRESENTS THE APPROXIMATE CONDITIONS AT THE TIME OF THE SURVEY.

LEGEND

- APPROXIMATE EXISTING GROUND
- PROPOSED RENOURISHMENT
- LIMITS OF FILL

SCALE: 1"=10' VERTICAL

SCALE: 1"=100' HORIZONTAL

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

Mark	Description	Date	Appr.
0	BID DOCUMENTS	08/19/19	JM

POST-FLORENCE RENOURISHMENT PROJECT PHASE 2 CARTERET COUNTY, NORTH CAROLINA

RENOURISHMENT SECTIONS SHEET 26 OF 35

4700 FALLS OF THE NEUSE ROAD
SUITE 300
RALEIGH, NC 27609
919−781−4626
moffatt & nichol NC FIRM LICENSE No. F−0105

PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

Designed by:	Date:	Rev.
NCV	AUGUST 2019	−
Dwn by: BDF	Ckd by: SRM	M&N Project No. 10611
Reviewed by: JDM	Drawing code:	Drawing Scale: Plot scale: 1:1 (D SHEET)
Submitted by: MOFFATT & NICHOL		

NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN

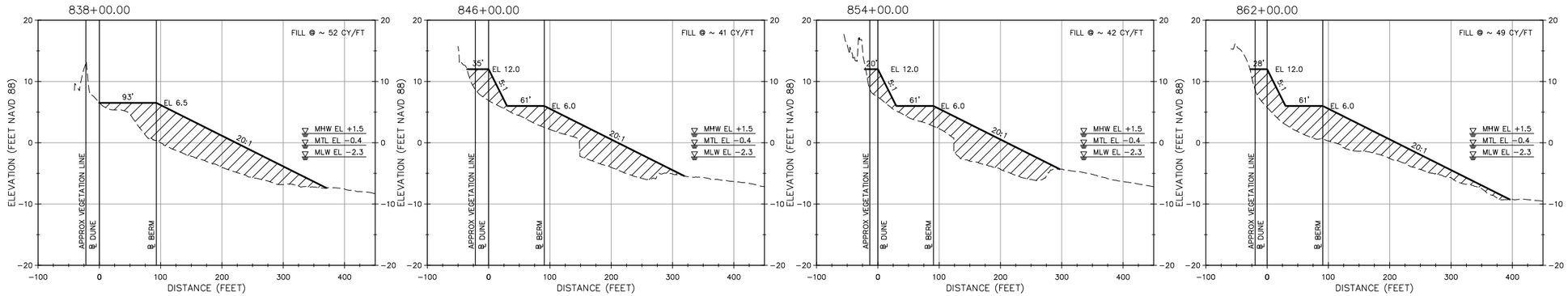
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Sheet Reference No.

C-326

Sheet 55 of 66

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NOTES:

1. FOR ADDITIONAL INFORMATION SEE BEACH RENOURISHMENT TYPICAL SECTION ON SHEET C−300.
2. EXISTING GROUND SHOWN IS BASED ON MAY 2019 SURVEY BY GEODYNAMICS AND REPRESENTS THE APPROXIMATE CONDITIONS AT THE TIME OF THE SURVEY.

LEGEND

- APPROXIMATE EXISTING GROUND
- PROPOSED RENOURISHMENT
- LIMITS OF FILL

SCALE: 1"=10' VERTICAL

SCALE: 1"=100' HORIZONTAL

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

Mark	Description	Date	Appr.
0	BID DOCUMENTS	08/19/19	JM

POST-FLORENCE RENOURISHMENT
PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

RENOURISHMENT SECTIONS
SHEET 27 OF 35

4700 FALLS OF THE NEUSE ROAD
SUITE 300
RALEIGH, NC 27609
919-781-4626
moffatt & nichol
NC FIRM LICENSE No. F-0105

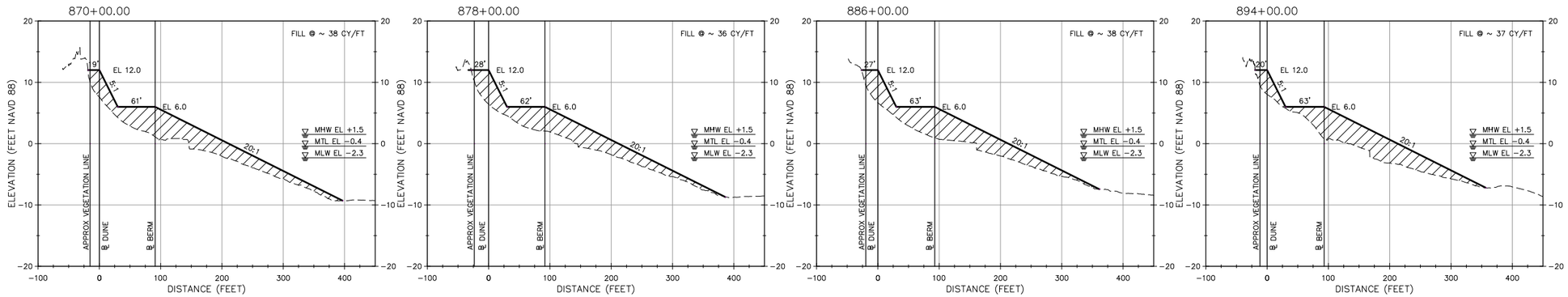
PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Rev.	1
Date:	AUGUST 2019
M&N Project No.	10611
Drawing code:	
Drawing Scale:	Plot scale: 1:1 (0 SHEET)
Designed by:	NCV
Cad by:	SRM
Dwn by:	BDF
Reviewed by:	JDM
Submitted by:	MOFFATT & NICHOL

Sheet Reference No.
C-327
Sheet 56 of 66

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NOTES:

1. FOR ADDITIONAL INFORMATION SEE BEACH RENOURISHMENT TYPICAL SECTION ON SHEET C–300.
2. EXISTING GROUND SHOWN IS BASED ON MAY 2019 SURVEY BY GEODYNAMICS AND REPRESENTS THE APPROXIMATE CONDITIONS AT THE TIME OF THE SURVEY.

LEGEND

- APPROXIMATE EXISTING GROUND
- PROPOSED RENOURISHMENT
- LIMITS OF FILL

SCALE: 1"=10' VERTICAL

SCALE: 1"=100' HORIZONTAL

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

No.	Mark	BID DOCUMENTS Description	Date	Appr.
0			08/19/19	JM

POST-FLORENCE RENOURISHMENT
PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

RENOURISHMENT SECTIONS
SHEET 28 OF 35

Designed by: NCV
Drawn by: BDF
Checked by: SRM
Reviewed by: JDM
Date: AUGUST 2019
M&N Project No. 10611
Drawing code:
Submitted by: MOFFATT & NICHOL
Drawing Scale: Plot scale: 1:1 (D SHEET)
Rev. –

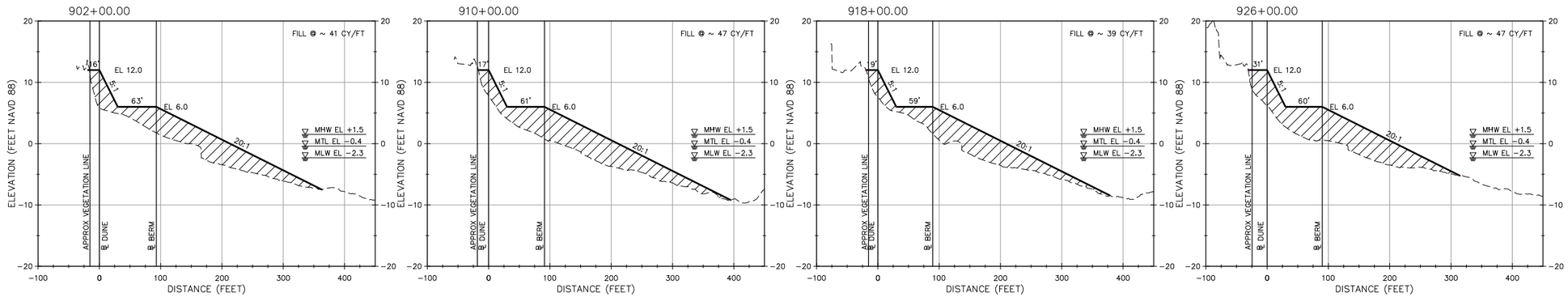
4700 FALLS OF THE NEUSE ROAD
SUITE 300
RALEIGH, NC 27609
919-781-4626
moffatt & nichol NC FIRM LICENSE No. F-0105

PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Sheet Reference No.
C-328
Sheet 57 of 66

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NOTES:

1. FOR ADDITIONAL INFORMATION SEE BEACH RENOURISHMENT TYPICAL SECTION ON SHEET C–300.
2. EXISTING GROUND SHOWN IS BASED ON MAY 2019 SURVEY BY GEODYNAMICS AND REPRESENTS THE APPROXIMATE CONDITIONS AT THE TIME OF THE SURVEY.

LEGEND

- APPROXIMATE EXISTING GROUND
- PROPOSED RENOURISHMENT
- LIMITS OF FILL

SCALE: 1"=10' VERTICAL

SCALE: 1"=100' HORIZONTAL

Mark	BID DOCUMENTS	Date	Appr.
0	Description	08/19/19	JM

POST-FLORENCE RENOURISHMENT PROJECT PHASE 2 CARTERET COUNTY, NORTH CAROLINA

RENOURISHMENT SECTIONS SHEET 29 OF 35

4700 FALLS OF THE NEUSE ROAD
SUITE 300
RALEIGH, NC 27609
919-781-4626
moffatt & nichol NC FIRM LICENSE No. F-0105

PREPARED FOR THE TOWNS OF EMERALD ISLE, INDIAN BEACH, PINE KNOLL SHORES, AND ATLANTIC BEACH

Designed by:	Date:	Rev.
NCV	AUGUST 2019	–
Drwn by: BDF	Chkd by: SRM	M&N Project No. 10611
Reviewed by: JDM	Drawing code:	Drawing Scale: Plot scale: 1:1 (0 SHEET)
Submitted by: MOFFATT & NICHOL		

NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN

SEAL

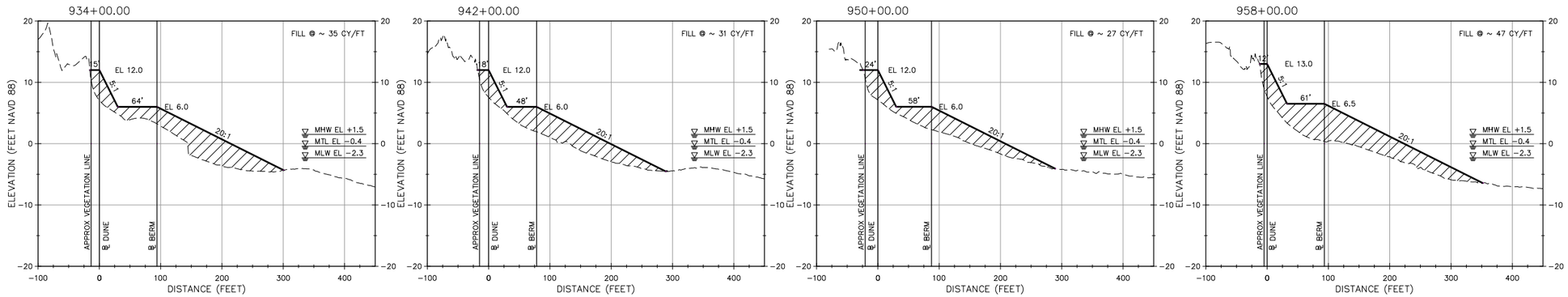
Sheet Reference No.

C-329

Sheet 58 of 66

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DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



NOTES:

1. FOR ADDITIONAL INFORMATION SEE BEACH RENOURISHMENT TYPICAL SECTION ON SHEET C−300.
2. EXISTING GROUND SHOWN IS BASED ON MAY 2019 SURVEY BY GEODYNAMICS AND REPRESENTS THE APPROXIMATE CONDITIONS AT THE TIME OF THE SURVEY.

LEGEND

- APPROXIMATE EXISTING GROUND
- PROPOSED RENOURISHMENT
- LIMITS OF FILL

SCALE: 1"=10' VERTICAL

SCALE: 1"=100' HORIZONTAL

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

No.	Mark	BID DOCUMENTS Description	Date	Appr.
0			08/19/19	JM

POST-FLORENCE RENOURISHMENT PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

RENOURISHMENT SECTIONS SHEET 30 OF 35

4700 FALLS OF THE NEUSE ROAD
SUITE 300
RALEIGH, NC 27609
919−781−4626
moffatt & nichol NC FIRM LICENSE No. F−0105

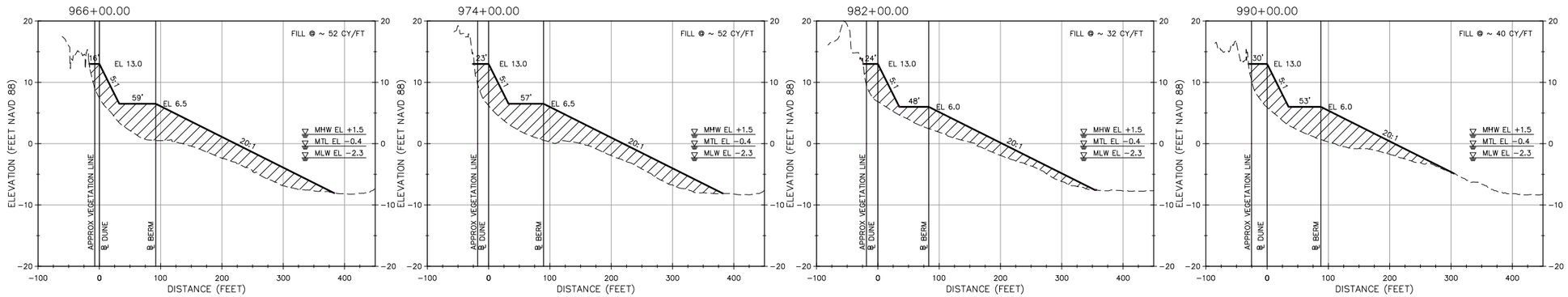
PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

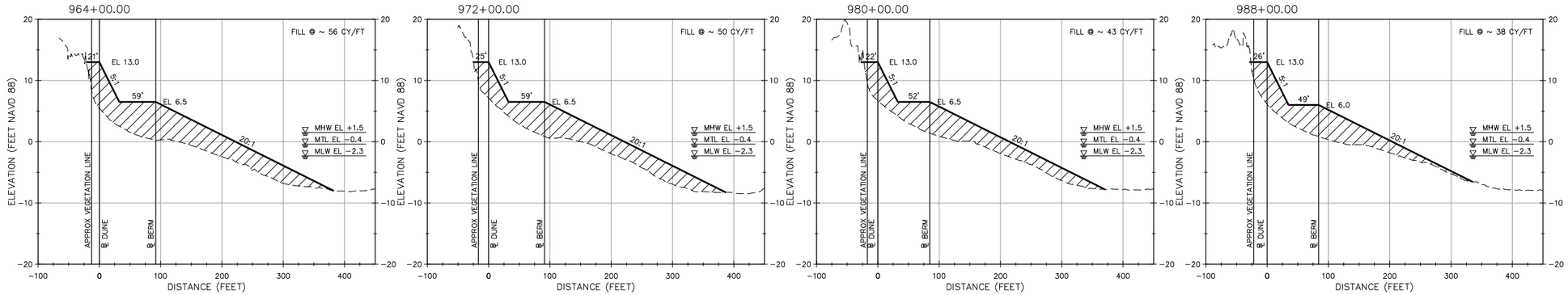
Designed by:	Date:	Rev.
NCV	AUGUST 2019	−
Drwn by: BDF	Ckd by: SRM	M&N Project No. 10611
Reviewed by: JDM	Drawing code:	Drawing Scale: Plot scale: 1:1 (0 SHEET)
Submitted by: MOFFATT & NICHOL		

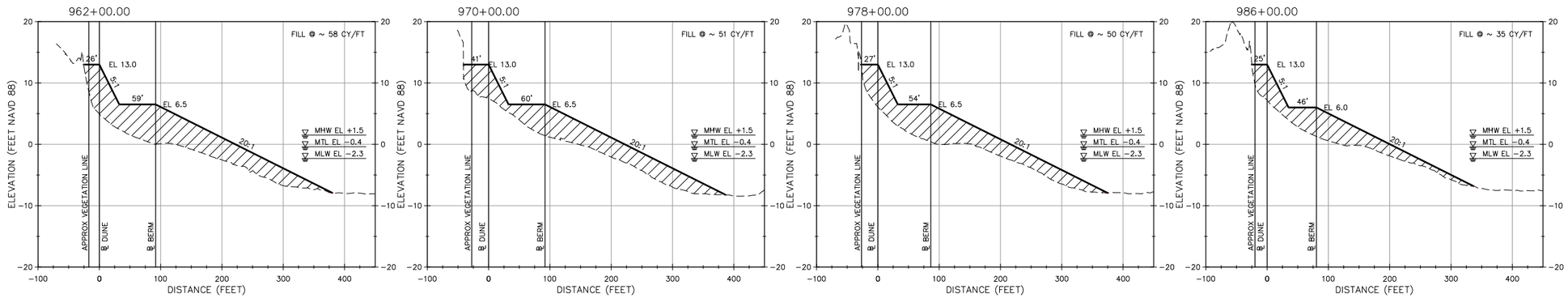
NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

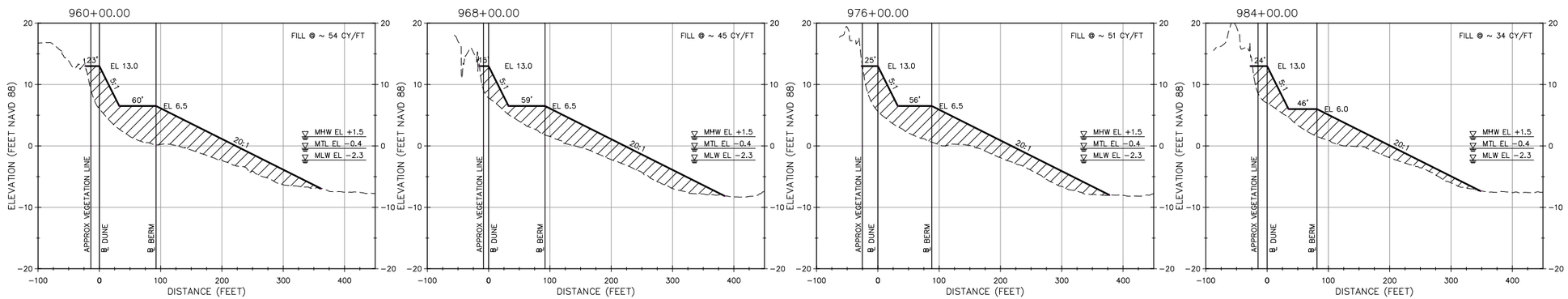
Sheet Reference No.
C-330
Sheet 59 of 66

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NOTES:

1. FOR ADDITIONAL INFORMATION SEE BEACH RENOURISHMENT TYPICAL SECTION ON SHEET C−300.
2. EXISTING GROUND SHOWN IS BASED ON MAY 2019 SURVEY BY GEODYNAMICS AND REPRESENTS THE APPROXIMATE CONDITIONS AT THE TIME OF THE SURVEY.

LEGEND

- APPROXIMATE EXISTING GROUND
- PROPOSED RENOURISHMENT
- LIMITS OF FILL

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

100' 0' 100' 200'
SCALE: 1"=100' HORIZONTAL

No.	Mark	BID DOCUMENTS Description	Date	Appr.
0			08/19/19	JM

POST-FLORENCE RENOURISHMENT
PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

RENOURISHMENT SECTIONS
SHEET 31 OF 35

Designed by: NCV
Drawn by: BDF
Checked by: SRM
Reviewed by: JDM
Submitted by: MOFFATT & NICHOL
Date: AUGUST 2019
M&N Project No. 10611
Drawing code:
Drawing Scale: Plot scale: 1:1 (0 SHEET)
Rev. −

4700 FALLS OF THE NEUSE ROAD
SUITE 300
RALEIGH, NC 27609
919−781−4626
moffatt & nichol NC FIRM LICENSE No. F−0105

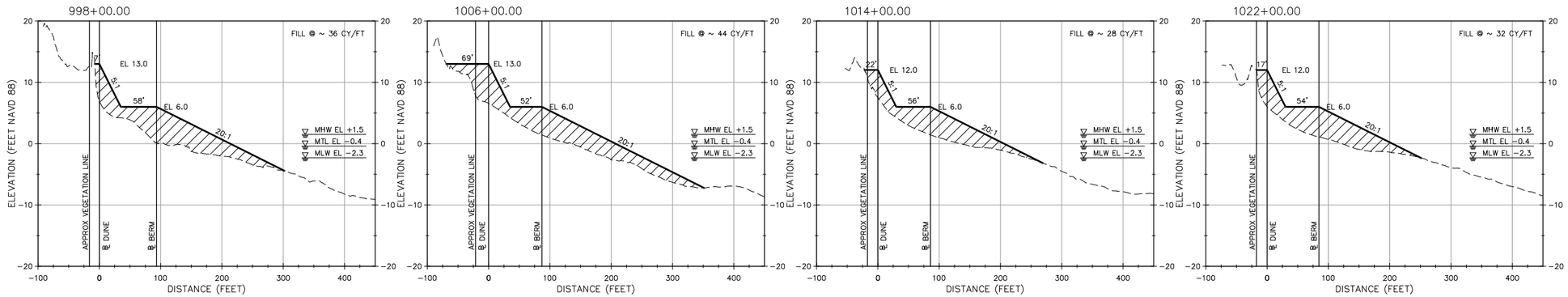
PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

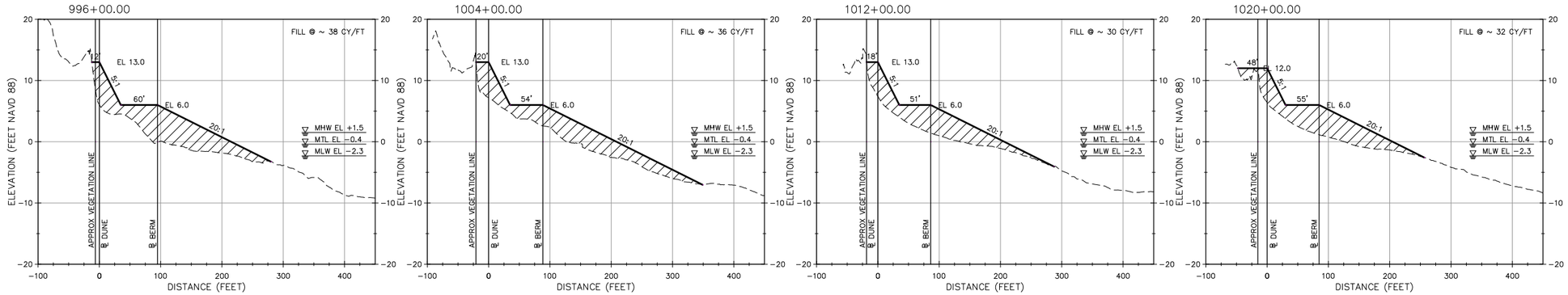
NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

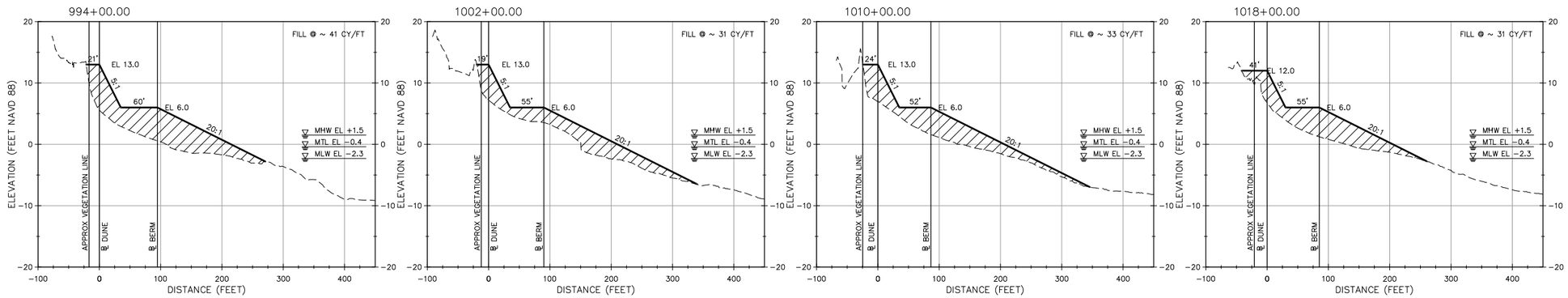
Sheet Reference No.
C-331
Sheet 60 of 66

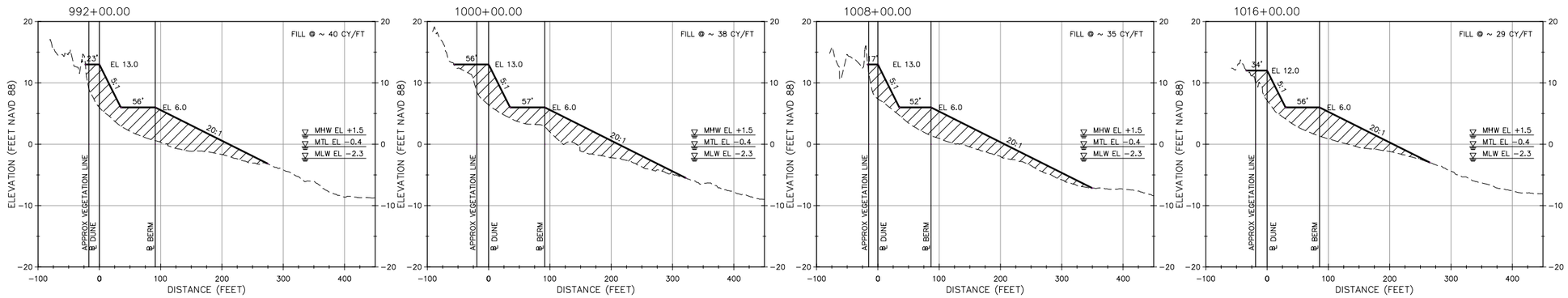
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DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING









NOTES:

1. FOR ADDITIONAL INFORMATION SEE BEACH RENOURISHMENT TYPICAL SECTION ON SHEET C−300.
2. EXISTING GROUND SHOWN IS BASED ON MAY 2019 SURVEY BY GEODYNAMICS AND REPRESENTS THE APPROXIMATE CONDITIONS AT THE TIME OF THE SURVEY.

LEGEND

- APPROXIMATE EXISTING GROUND
- PROPOSED RENOURISHMENT
- LIMITS OF FILL

SCALE: 1"=10' VERTICAL

SCALE: 1"=100' HORIZONTAL

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

No.	Mark	BID DOCUMENTS Description	Date	Appr.
0			08/19/19	JM

POST-FLORENCE RENOURISHMENT
PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

RENOURISHMENT SECTIONS
SHEET 32 OF 35

Designed by: NCV
Drawn by: BDF
Checked by: SRM
Reviewed by: JDM
Submitted by: MOFFATT & NICHOL
Date: AUGUST 2019
M&N Project No. 10611
Drawing code:
Drawing Scale: Plot scale: 1:1 (D SHEET)
Rev. –

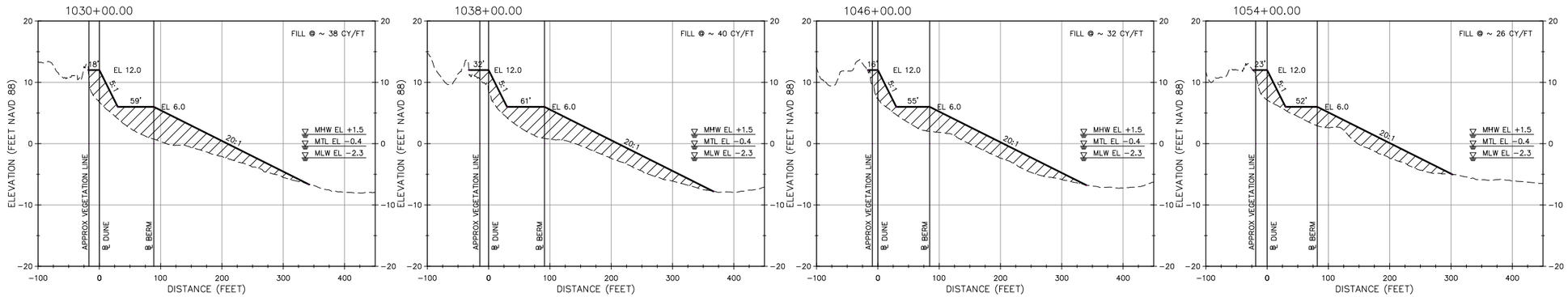
4700 FALLS OF THE NEUSE ROAD
SUITE 300
RALEIGH, NC 27609
919−781−4626
moffatt & nichol NC FIRM LICENSE No. F−0105

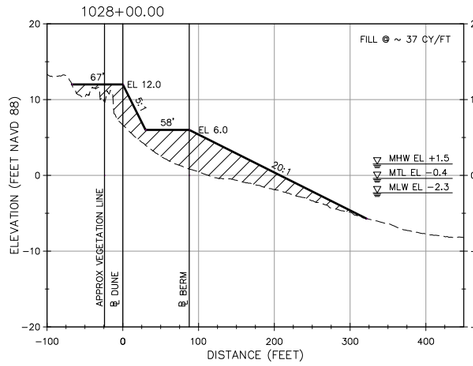
PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

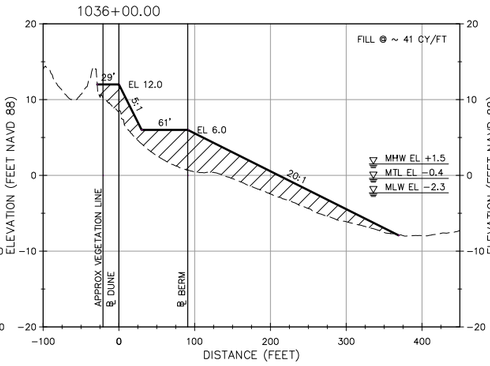
NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

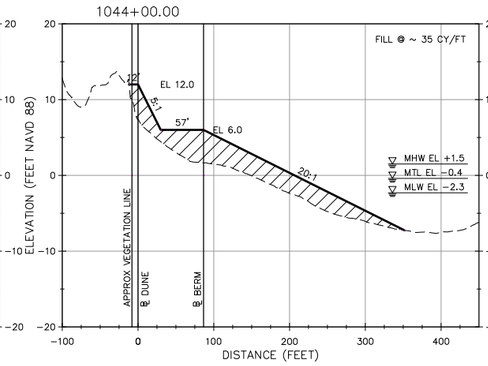
Sheet Reference No.
C-332
Sheet 61 of 66

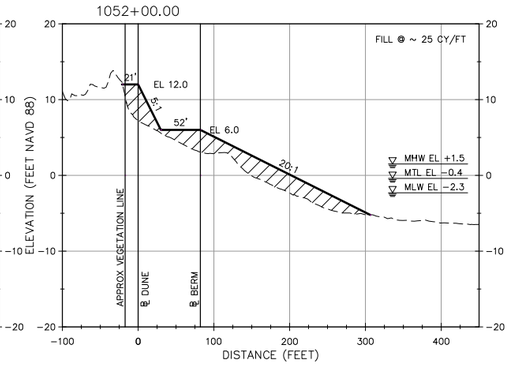
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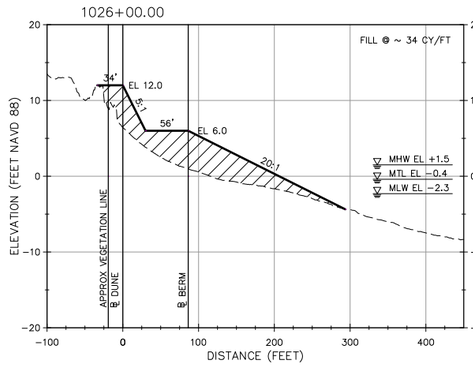


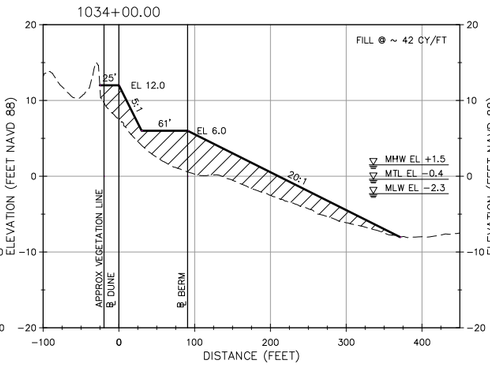


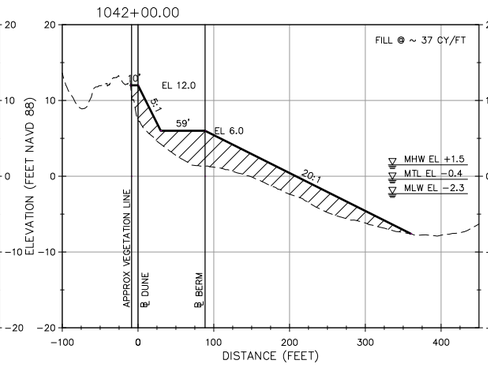


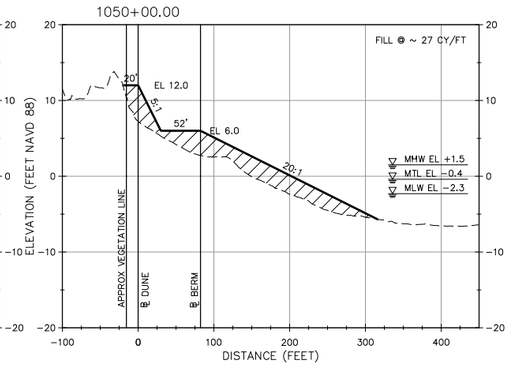


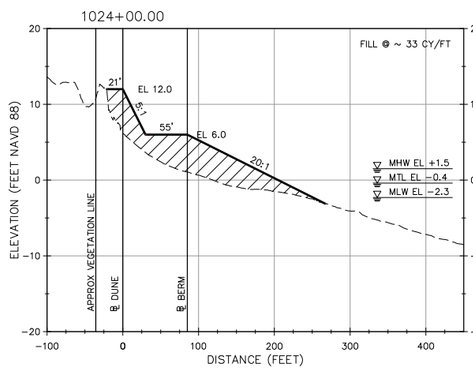


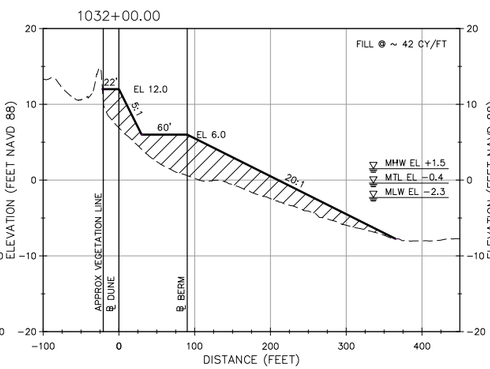


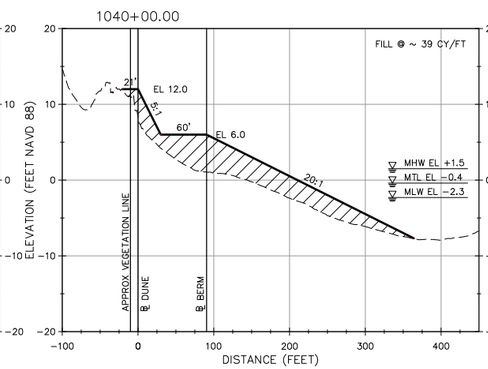


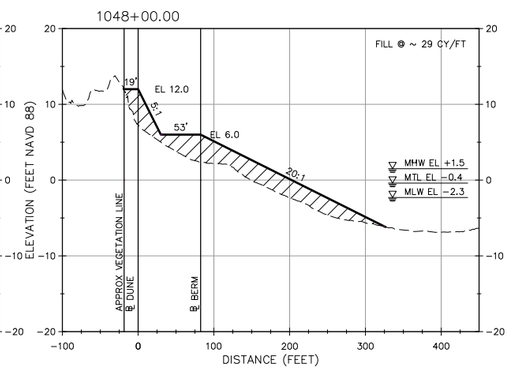












NOTES:

1. FOR ADDITIONAL INFORMATION SEE BEACH RENOURISHMENT TYPICAL SECTION ON SHEET C−300.
2. EXISTING GROUND SHOWN IS BASED ON MAY 2019 SURVEY BY GEODYNAMICS AND REPRESENTS THE APPROXIMATE CONDITIONS AT THE TIME OF THE SURVEY.

LEGEND

- APPROXIMATE EXISTING GROUND
- PROPOSED RENOURISHMENT
- LIMITS OF FILL

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

100' 0' 100' 200'
SCALE: 1"=100' HORIZONTAL

No.	Mark	BID DOCUMENTS Description	Date	Appr.
0			08/19/19	JM

POST-FLORENCE RENOURISHMENT PROJECT PHASE 2 CARTERET COUNTY, NORTH CAROLINA

RENOURISHMENT SECTIONS SHEET 33 OF 35

4700 FALLS OF THE NEUSE ROAD
SUITE 300
RALEIGH, NC 27609
919-781-4626
moffatt & nichol NC FIRM LICENSE No. F-0105

PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

Designed by:	Drawn by:	Reviewed by:	Submitted by:
NCV	BDF	JDM	MOFFATT & NICHOL

Date:	Job by:	Drawing code:	Drawing Scale:
AUGUST 2019	SRM		Plot scale: 1:1 (0 SHEET)

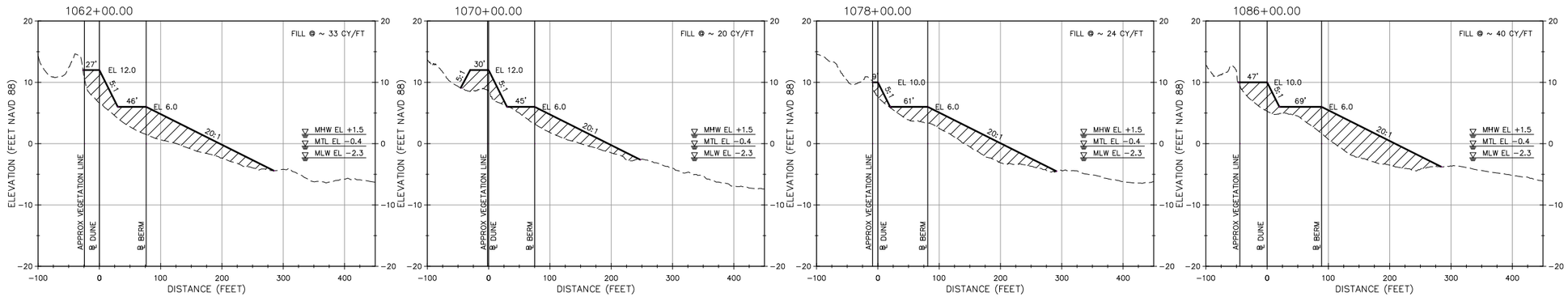
Rev.	M&N Project No.
–	10611

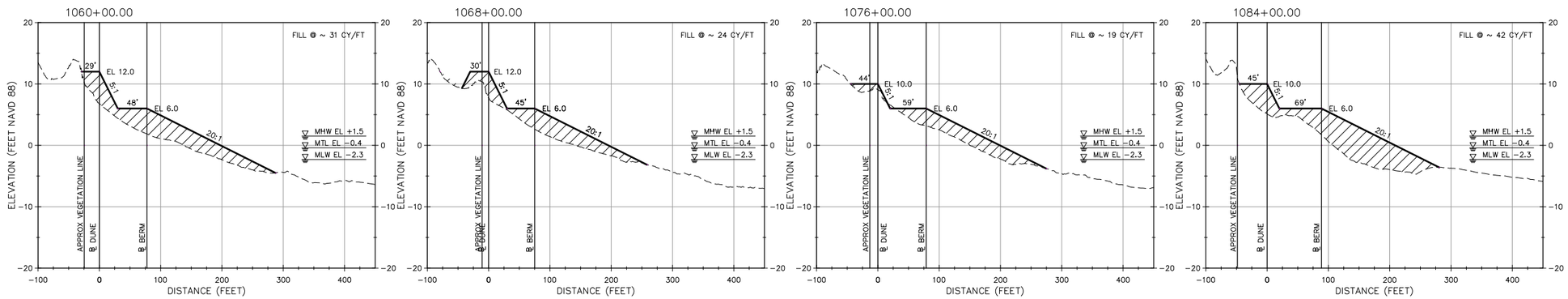
NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

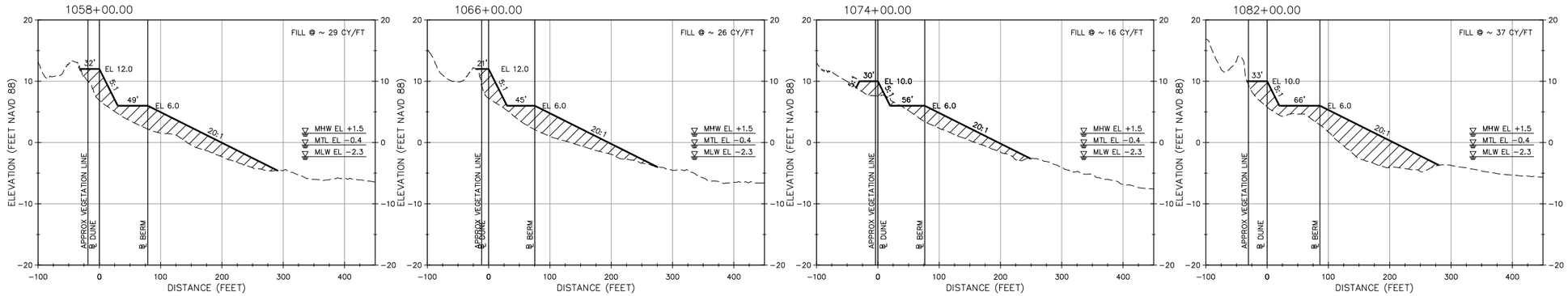
Sheet Reference No.
C-333
Sheet 62 of 66

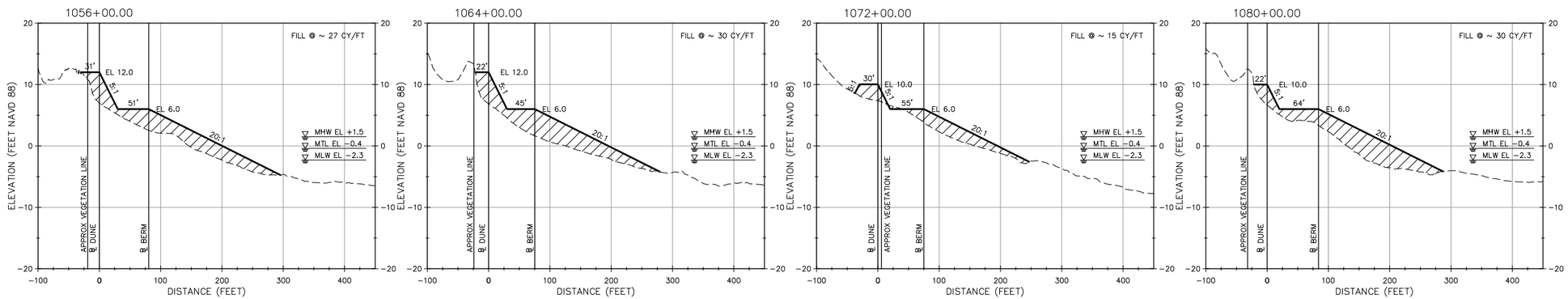
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DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING









NOTES:

1. FOR ADDITIONAL INFORMATION SEE BEACH RENOURISHMENT TYPICAL SECTION ON SHEET C−300.
2. EXISTING GROUND SHOWN IS BASED ON MAY 2019 SURVEY BY GEODYNAMICS AND REPRESENTS THE APPROXIMATE CONDITIONS AT THE TIME OF THE SURVEY.

LEGEND

- APPROXIMATE EXISTING GROUND
- PROPOSED RENOURISHMENT
- LIMITS OF FILL

SCALE: 1"=10' VERTICAL

SCALE: 1"=100' HORIZONTAL

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

Mark	Description	Date	Appr.
0	BID DOCUMENTS	08/19/19	JM

POST-FLORENCE RENOURISHMENT PROJECT PHASE 2 CARTERET COUNTY, NORTH CAROLINA

RENOURISHMENT SECTIONS SHEET 34 OF 35

moffatt & nichol
4700 FALLS OF THE NEUSE ROAD SUITE 300 RALEIGH, NC 27609 919−781−4626
NC FIRM LICENSE No. F−0105

PREPARED FOR THE TOWNS OF EMERALD ISLE, INDIAN BEACH, PINE KNOLL SHORES, AND ATLANTIC BEACH

Designed by: NCV	Date: AUGUST 2019
Dwn by: BDF	Ckd by: SRM
Reviewed by: JDM	M&N Project No. 10611
Submitted by: MOFFATT & NICHOL	Drawing code:
	Drawing Scale: Plot scale: 1:1 (0 SHEET)
	Rev. −

NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN

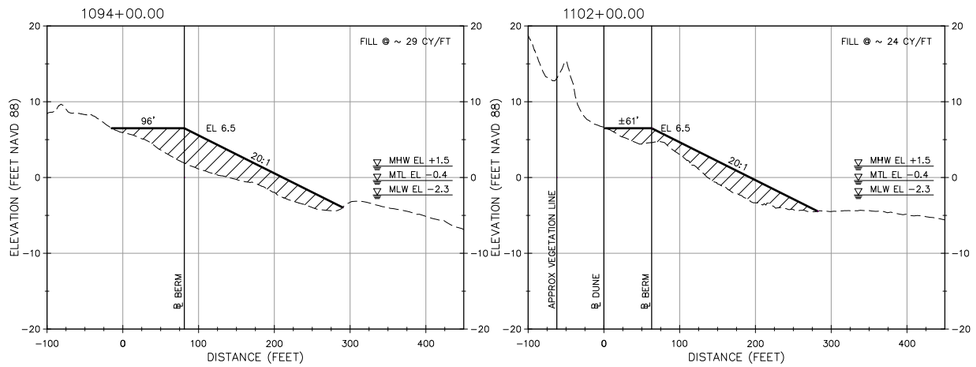
SEAL

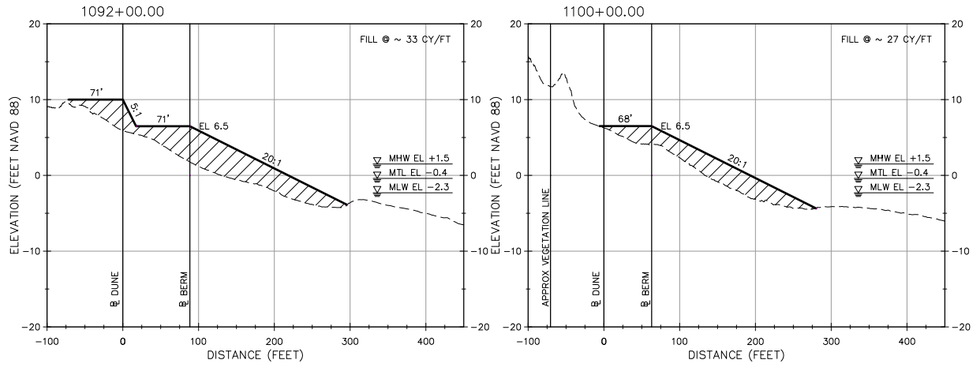
Sheet Reference No.

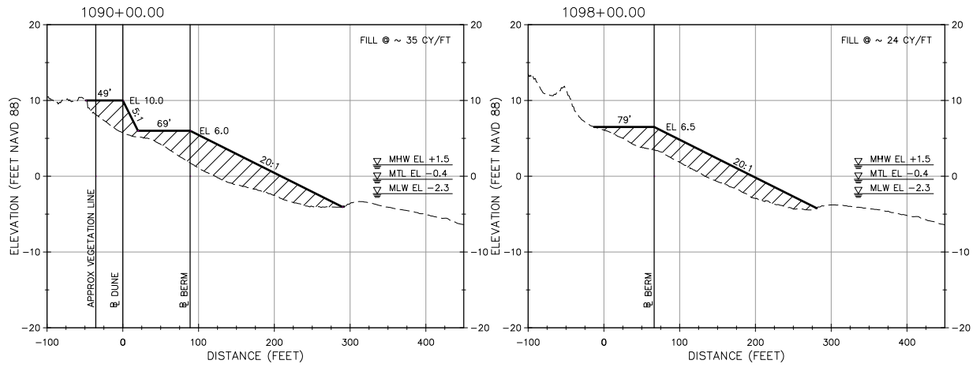
C-334

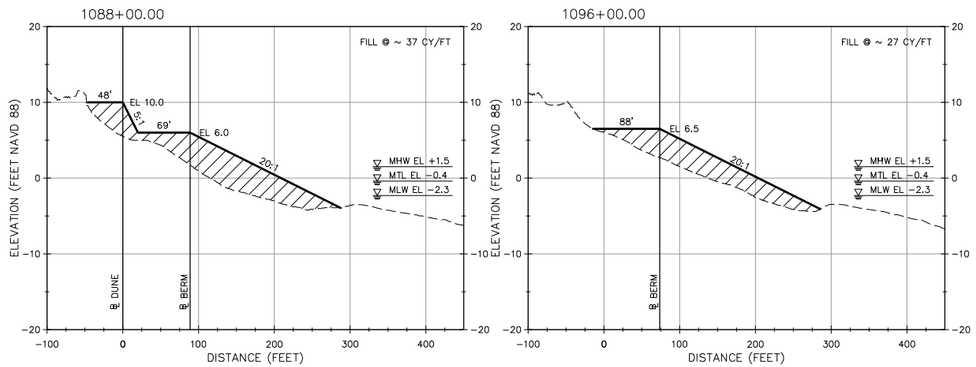
Sheet 63 of 66

File: Q:\RA\10611\0500_CAD_Active_10611 Bouge Banks Phase 2\10611000C−334; Plotted: 8/19/2019 10:57 AM by FORD, BRIAN; Saved: 8/16/2019 5:54 PM by BFORD









NOTES:

1. FOR ADDITIONAL INFORMATION SEE BEACH RENOURISHMENT TYPICAL SECTION ON SHEET C-300.
2. EXISTING GROUND SHOWN IS BASED ON MAY 2019 SURVEY BY GEODYNAMICS AND REPRESENTS THE APPROXIMATE CONDITIONS AT THE TIME OF THE SURVEY.

LEGEND

- APPROXIMATE EXISTING GROUND
- PROPOSED RENOURISHMENT
- LIMITS OF FILL

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

100' 0' 100' 200'
SCALE: 1"=100' HORIZONTAL

0	BID DOCUMENTS	08/19/19	JM
Mark	Description	Date	Appr.

POST-FLORENCE RENOURISHMENT PROJECT PHASE 2 CARTERET COUNTY, NORTH CAROLINA

RENOURISHMENT SECTIONS SHEET 35 OF 35

4700 FALLS OF THE NEUSE ROAD
SUITE 300
RALEIGH, NC 27609
919-781-4626
moffatt & nichol NC FIRM LICENSE No. F-0105

PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

Designed by: NCV	Date: AUGUST 2019	Rev. -
Dwn by: BDF	Ckd by: SRM	M&N Project No. 10611
Reviewed by: JDM	Drawing code:	Drawing Scale: Plot scale: 1:1 (0 SHEET)
Submitted by: MOFFATT & NICHOL		

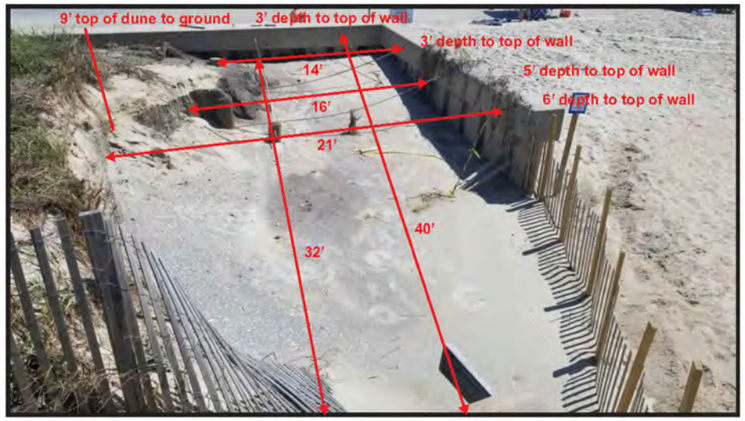
NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Sheet Reference No.
C-335
Sheet 64 of 66

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

File: Q:\RA\10611\0500_CAD_Active_10611 Bouge Banks Phase 2\10611000C-335; Plotted: 8/19/2019 10:57 AM by FORD, BRIAN; Saved: 8/16/2019 5:54 PM by BFORD

SOUTH



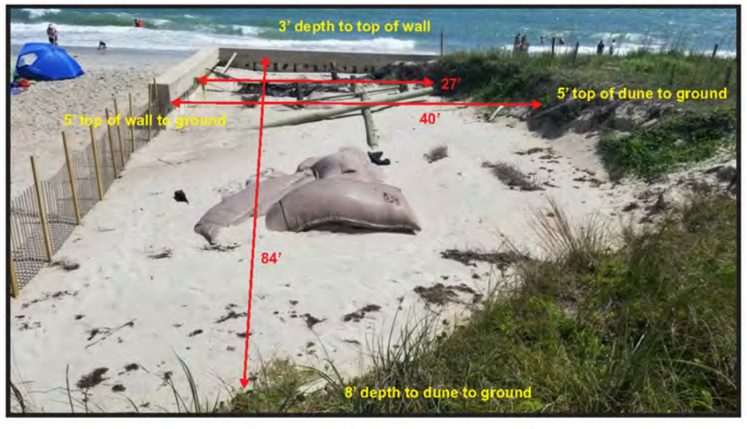
EAST WEST

NORTH

NOTE:
CONTRACTOR TO FILL AND PLANT THIS AREA BEHIND EXISTING RETAINING WALL TO MATCH THE PROPOSED DUNE DESIGN WITH APPROXIMATELY 75 CY TO 100 CY OF FILL.

C1 / C-124 IRON STEAMER WEST FILL
NOT TO SCALE

SOUTH



EAST WEST

NORTH

NOTE:
CONTRACTOR TO FILL AND PLANT THIS AREA BEHIND EXISTING RETAINING WALL TO MATCH THE PROPOSED DUNE DESIGN WITH APPROXIMATELY 75 CY TO 100 CY OF FILL.

A1 / C-124 IRON STEAMER EAST FILL
NOT TO SCALE

Mark	Description	Date	Appr.
0	BID DOCUMENTS	08/19/19	JM

POST-FLORENCE RENOURISHMENT
PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

MISCELLANEOUS DETAILS

Designed by: NCV
Drawn by: BDF
Checked by: SRM
Reviewed by: JDM
Submitted by: MOFFATT & NICHOL
Date: AUGUST 2019
M&N Project No. 10611
Drawing code:
Drawing Scale: Plot scale: 1:1 (D SHEET)
Rev. -

4700 FALLS OF THE NEUSE ROAD
SUITE 300
RALEIGH, NC 27609
919-781-4626
moffatt & nichol NC FIRM LICENSE No. F-0105

PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Sheet Reference No.
C-501
Sheet 65 of 66

File: Q:\RA\10611\0500_CAD_Active_10611 Bouge Banks Phase 2\10611000-501; Plotted: 8/19/2019 1:39 PM by FORD, BRIAN; Saved: 8/19/2019 1:28 PM by BFORD

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

DUNE WORK POINT TABLE			
WORK POINT	ELEVATION	NORTHING	EASTING
1000	10.00	330983.25	2573534.68
1001	10.00	331053.53	2573798.25
1002	10.00	331340.29	2574317.86
1003	10.00	332089.35	2576074.81
1004	10.30	332733.11	2577597.52
1005	12.00	332966.74	2578226.07
1006	12.00	333006.27	2578318.06
1007	12.00	333563.73	2579817.81
1008	12.00	333593.89	2579913.29
1009	12.00	333652.43	2580070.79
1010	13.00	334091.47	2581359.14
1011	13.00	334586.38	2582759.90
1012	13.00	334984.24	2583971.83
1013	13.00	335058.22	2584168.02
1014	13.00	335150.41	2584452.98
1015	13.00	335190.70	2584545.04
1016	13.00	335621.78	2585877.55
1017	13.00	335664.00	2586073.04
1018	13.00	335770.13	2586401.08
1019	13.00	336161.48	2587690.30
1020	13.00	336535.35	2588838.90
1021	13.00	336561.59	2588935.66
1022	12.00	336959.92	2590277.34
1023	12.00	336990.85	2590371.96
1024	12.00	337016.86	2590462.06
1025	10.00	337167.68	2590942.82
1026	10.00	337188.08	2591041.22
1027	12.00	337434.96	2591828.16
1028	12.00	337540.27	2592187.94
1029	12.00	337601.32	2592378.65
1030	12.00	337758.89	2592916.91
1031	12.00	337802.59	2593049.10
1032	12.00	338008.39	2593720.13
1033	12.00	338197.33	2594369.03
1034	12.64	338366.27	2594967.36
1035	13.00	338398.25	2595062.22
1036	13.00	338617.74	2595831.49
1037	13.65	338682.65	2596020.66
1038	14.00	339124.32	2597553.58
1039	14.00	339341.84	2598329.64
1040	14.00	339354.39	2598429.97
1041	13.00	339550.25	2599128.76
1042	12.00	339841.01	2600208.59
1043	12.00	340094.59	2601257.31
1044	12.00	340160.03	2601568.59
1045	12.00	340281.34	2602011.27
1046	12.38	340495.22	2602864.25
1047	14.00	340753.48	2603931.95
1048	14.00	341155.97	2605551.25
1049	14.00	341394.98	2606545.84
1050	13.00	341550.66	2607186.23
1051	13.00	341939.26	2608810.20
1052	13.00	341979.38	2609005.92
1053	13.00	342111.68	2609621.80
1054	13.00	342275.23	2610360.65
1055	13.00	342560.17	2611696.79
1056	13.00	342681.64	2612332.99

DUNE WORK POINT TABLE			
WORK POINT	ELEVATION	NORTHING	EASTING
1057	13.00	342681.87	2612334.31
1081	13.00	347250.63	2634456.26
1082	13.00	347696.53	2636823.80
1086	13.00	348560.07	2641745.32
1087	13.00	348720.42	2642561.11
1088	13.00	348791.34	2642921.58
1089	13.00	348868.64	2643314.52
1090	13.00	348943.29	2643750.13
1091	12.00	349103.68	2644695.54
1092	12.00	349305.76	2645978.60
1093	12.00	349422.70	2646669.41
1094	12.00	349452.68	2646866.48
1095	12.00	349565.44	2647574.68
1096	13.00	349668.69	2648249.83
1097	13.00	349753.80	2648835.06
1098	13.00	349847.79	2649436.32
1099	13.00	349886.00	2649632.92
1100	13.00	349957.68	2650134.14
1101	13.00	350042.62	2650620.66
1102	13.00	350153.70	2651359.83
1103	13.00	350304.42	2652502.93
1104	13.00	350362.87	2652948.23
1105	13.00	350399.29	2653075.04
1106	13.00	350448.44	2653590.76
1107	12.75	350476.09	2653839.00
1108	12.00	350525.82	2654056.57
1109	12.00	350583.78	2654367.63
1110	12.00	350691.64	2655068.95
1111	12.00	350777.13	2655750.85
1112	12.00	350806.61	2655977.95
1113	12.00	350864.55	2656300.61
1114	12.00	350968.46	2657140.54
1115	12.00	351156.87	2658527.79
1116	12.00	351290.61	2659566.43
1117	12.00	351435.14	2660988.61
1118	12.00	351548.38	2662199.26
1119	12.00	351716.51	2663686.25
1120	12.00	351761.80	2664094.96
1121	12.00	351836.92	2664789.70
1122	12.00	351869.73	2665091.52
1123	13.00	351955.28	2666074.75
1124	13.00	352054.52	2667018.35
1125	13.00	352162.96	2668453.10
1126	13.00	352226.33	2669351.11
1127	13.00	352297.35	2670468.96
1128	12.65	352345.34	2671151.67
1129	12.00	352401.32	2673147.78
1130	12.00	352420.54	2673679.17
1131	12.00	352499.64	2676143.56
1132	10.00	352554.57	2677133.47
1133	10.00	352495.95	2678296.44
1134	10.00	352507.81	2679061.46
1135	10.00	352507.53	2679074.58

BERM WORK POINT TABLE			
WORK POINT	ELEVATION	NORTHING	EASTING
2000	6.50	330668.51	2572674.42
2001	6.50	330760.76	2573255.49
2002	6.00	330924.73	2573840.95
2003	6.00	331221.53	2574379.32
2004	6.00	331520.16	2574968.25
2005	6.00	332013.13	2576107.28
2006	6.00	332640.14	2577634.37
2007	6.00	332719.89	2577784.40
2008	6.00	332882.51	2578221.89
2009	6.00	332907.98	2578319.11
2010	6.00	333465.44	2579818.86
2011	6.00	333497.47	2579913.64
2012	6.00	333567.18	2580101.20
2013	6.00	334001.09	2581389.99
2014	6.00	334496.27	2582791.58
2015	6.00	334893.46	2584001.49
2016	6.00	334944.04	2584174.07
2017	6.00	335048.45	2584454.56
2018	6.00	335084.00	2584548.22
2019	6.00	335514.89	2585880.13
2020	6.00	335585.58	2586119.56
2021	6.00	335674.84	2586431.43
2022	6.00	336065.98	2587719.97
2023	6.00	336430.90	2588841.08
2024	6.00	336452.34	2588939.27
2025	6.00	336854.50	2590279.83
2026	6.00	336891.50	2590372.57
2027	6.00	336925.84	2590488.76
2028	6.50	337067.51	2590946.24
2029	6.50	337087.53	2591044.72
2030	6.39	337339.31	2591857.78
2031	6.00	337440.15	2592191.37
2032	6.00	337502.91	2592381.63
2033	6.00	337672.34	2592942.05
2034	6.00	337708.43	2593050.77
2035	6.00	338091.56	2594399.25
2036	6.00	338402.62	2595464.11
2037	6.00	339013.76	2597585.22
2038	6.00	339248.87	2598434.14
2039	6.00	339270.74	2598531.84
2040	6.00	339444.30	2599158.51
2041	6.00	339484.53	2599302.76
2042	6.00	339516.22	2599397.74
2043	6.00	339749.15	2600232.84
2044	6.00	339962.15	2601140.96
2045	6.00	339975.25	2601240.60
2046	6.00	340057.39	2601590.79
2047	6.00	340176.43	2602024.52
2048	6.00	340398.13	2602888.19
2049	6.00	340556.69	2603578.53
2050	6.00	340646.65	2603957.88
2051	6.00	341049.22	2605577.79
2052	6.00	341279.72	2606490.03
2053	6.00	341429.30	2607130.96
2054	6.00	341636.15	2608040.18
2055	6.00	341826.07	2608816.68
2056	6.00	341869.15	2609011.43
2057	6.00	342008.99	2609643.70
2058	6.00	342252.32	2610780.63
2059	6.00	342452.43	2611718.96
2060	6.00	342572.47	2612337.75
2061	6.00	342731.99	2613081.29
2062	6.00	342857.07	2613681.54
2063	6.00	342988.18	2614260.79
2064	6.00	343136.98	2614929.14
2065	6.00	343268.57	2615557.96
2066	6.00	343405.68	2616212.91
2067	6.00	343562.79	2616962.84
2068	6.00	343909.80	2618634.69
2069	6.00	344258.14	2620312.92

BERM WORK POINT TABLE			
WORK POINT	ELEVATION	NORTHING	EASTING
2070	6.00	344470.47	2621321.05
2071	6.50	344877.99	2623255.65
2072	6.00	345099.73	2624455.63
2073	6.00	345487.58	2626322.16
2074	6.00	345737.82	2627558.33
2075	6.00	345932.20	2628464.86
2076	6.00	346128.84	2629379.39
2077	6.00	346363.43	2630581.85
2078	6.00	346709.22	2632215.81
2079	6.00	346844.56	2632960.95
2080	6.00	346898.86	2633303.52
2081	6.00	347138.00	2634480.36
2082	6.00	347254.91	2635181.39
2083	6.00	347474.49	2636347.25
2084	6.00	347589.48	2636874.57
2085	6.00	348436.45	2641557.90
2086	6.00	348463.89	2641769.26
2087	6.00	348626.63	2642592.64
2088	6.00	348727.71	2643124.65
2089	6.00	348846.83	2643767.43
2090	6.00	349036.43	2644956.72
2091	6.00	349099.54	2645293.13
2092	6.00	349317.05	2646673.90
2093	6.50	349476.52	2647588.58
2094	6.50	349573.18	2648255.18
2095	6.50	349659.88	2648849.35
2096	6.50	349760.00	2649440.37
2097	6.50	349868.76	2650148.06
2098	6.50	349941.82	2650626.71
2099	6.50	350043.57	2651369.70
2100	6.50	350195.41	2652409.46
2101	6.50	350190.23	2652573.84
2102	6.50	350226.84	2652916.41
2103	6.50	350308.14	2653098.84
2104	6.50	350377.13	2653822.72
2105	6.18	350436.83	2654075.64
2106	6.00	350492.77	2654373.80
2107	6.00	350601.69	2655082.79
2108	6.00	350716.37	2655989.67
2109	6.00	350774.48	2656313.63
2110	6.00	350877.47	2657146.70
2111	6.00	351063.78	2658534.13
2112	6.00	351093.10	2658732.14
2113	6.00	351196.85	2659578.43
2114	6.00	351344.61	2660997.80
2115	6.00	351413.20	2661715.26
2116	6.00	351460.27	2662207.54
2117	6.00	351621.06	2663696.50
2118	6.00	351683.44	2664099.11
2119	6.00	351755.51	2664798.53
2120	6.48	351772.60	2665097.31
2121	6.50	351810.26	2665493.63
2122	6.50	351863.56	2666082.04
2123	6.50	351962.97	2667027.52
2124	6.00	352083.25	2668459.06
2125	6.00	352130.57	2669357.75
2126	6.00	352259.25	2671156.60
2127	6.00	352288.76	2672143.70
2128	6.00	352310.78	2673150.38
2129	6.00	352336.18	2673874.18
2130	6.00	352369.93	2674677.85
2131	6.00	352389.69	2675273.10
2132	6.00	352422.92	2676123.18
2133	6.00	352479.51	2677136.12
2134	6.00	352407.00	2678293.60
2135	6.50	352429.79	2679769.42
2136	6.50	352439.64	2680024.82
2137	6.50	352493.71	2680262.9300

No.	Mark	BID DOCUMENTS Description	Date	Appr.
0			08/19/19	JM

POST-FLORENCE RENOURISHMENT
PROJECT PHASE 2
CARTERET COUNTY, NORTH CAROLINA

CONSTRUCTION BASELINE
WORK POINT TABLES

Rev. –
Date: AUGUST 2019
M&N Project No. 10611
Drawing code:
Drawing Scale:
Plot scale: 1:1 (0 SHEET)
Designed by: NCV
Cad by: SRM
Dwn by: BDF
Reviewed by: JDM
Submitted by: MOFFATT & NICHOL

4700 FALLS OF THE NEUSE ROAD
SUITE 300
RALEIGH, NC 27609
919-781-4626
NC FIRM LICENSE No. F-0105
moffatt & nichol

PREPARED FOR THE TOWNS OF
EMERALD ISLE, INDIAN BEACH,
PINE KNOLL SHORES, AND ATLANTIC BEACH

NORTH CAROLINA PROFESSIONAL SEAL 23487 ENGINEER JOHNNY D. MARTIN
SEAL

Sheet Reference No.
C-601
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DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING