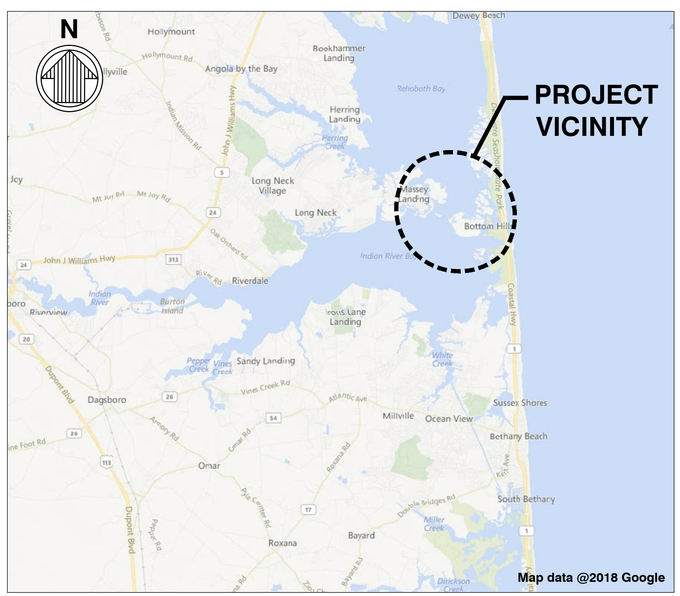
DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

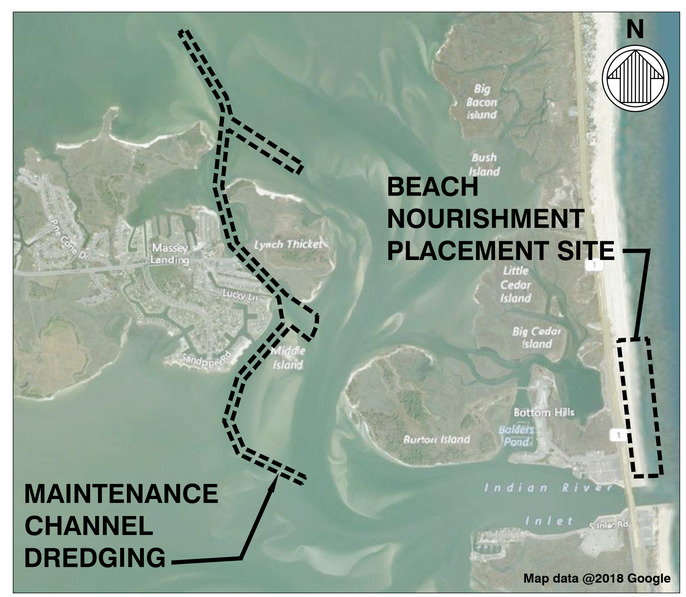
DOVER, DELAWARE

MASSEY'S DITCH CHANNEL MAINTENANCE DREDGING

CONTRACT No. NAT201910/MASSEYS



VICINITY MAP
NTS



LOCATION MAP
NTS

Mark	Description	Date	Appr.

MASSEY'S DITCH
MAINETENANCE DREDGING
SUSSEX COUNTY, DELAWARE

TITLE SHEET WITH VICINITY AND LOCATION MAPS

moffatt & nichol
2780 LIGHTHOUSE POINT EAST, SUITE D
BALTIMORE, MD 21224
410-563-7300

DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
89 KINGS HIGHWAY
DOVER, DE 19901

Designed by: PWK		Date: MAY 01, 2019	Rev. –
Dwn by: HR	Ckd by: PGV	M&N Project No. 10248	
Reviewed by: PWK		Drawing code:	
Submitted by: MOFFATT & NICHOL		Drawing Scale: Plot scale: 1:1 (D SHEET)	

PROFESSIONAL ENGINEER PETER WILLIAM KOTULAK LICENSE No. 18765 DELAWARE
SEAL

Sheet Reference No.
G-001
INDEX: 1 OF 40

File: O:\BA\10248 DNREC NAT17007\10248-01 M-D Dredge\500 CADD_ACTIVE_Massey's Ditch (sheets)\10248016-001; Plotted: 3/13/2019 4:36 PM by VDELKER, PAUL; Saved: 3/1/2019 4:01 PM by TOCOOPER

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

INDEX OF DRAWINGS

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2	G-002	INDEX OF DRAWINGS, GENERAL NOTES, ABBREVIATIONS, AND LEGEND
3	G-101	PLAN – GENERAL ARRANGEMENT
4	G-102	PLAN – GENERAL ARRANGEMENT CONTRACTOR'S STAGING AREA
		GEOTECHNICAL
5	B-101	PLAN – BORING LOCATION
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6	C-101	PLAN – CHANNEL DREDGING – SHEET 1 OF 6
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21	C-310	SECTION – DREDGING – SHEET 9 OF 21
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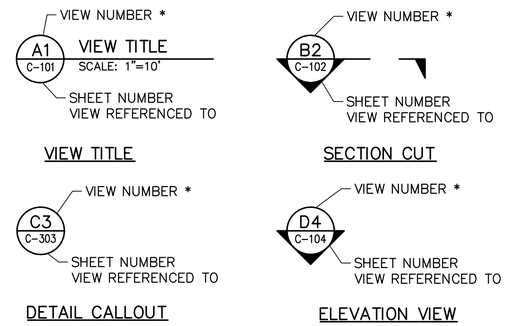
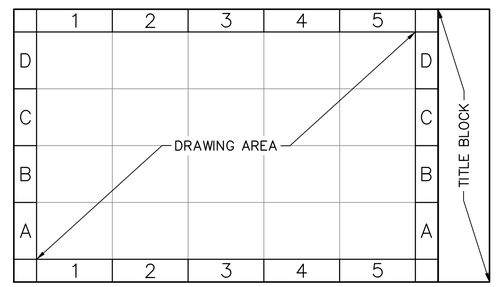
36	C-401	ENLARGED PLAN – SAND PLACEMENT DISCHARGE PIPING LAYOUT
37	C-402	ENLARGED PLAN – INLET ROAD UNDER BRIDGE PIPELINE LAYOUT 1 OF 2
38	C-403	ENLARGED PLAN – INLET ROAD UNDER BRIDGE PIPELINE LAYOUT 2 OF 2
39	C-404	ENLARGED PLAN – BAY CROSSING INLET ROAD PIPELINE LAYOUT
		REFERENCE
40	R-001	BEACH NOURISHMENT PLACEMENT SITE



* VIEW NUMBER IS BASED ON THE (DACS) LOCATION OF THE LOWER-LEFT EXTENTS OF THE VIEW ON THE REFERENCED SHEET. WHEN REFERENCING DRAWING INFORMATION BETWEEN SHEETS, BOTH THE VIEW AND SHEET NUMBERS MUST BE QUOTED TOGETHER – EITHER IN A CALLOUT FORMAT AS SHOWN ABOVE OR IN THE FORM: "VIEW NO./SHEET NO." (A1/C-501)



DRAWING AREA COORDINATE SYSTEM (DACS)

GENERAL NOTES

1. NOTES BELOW ARE NOT INTENDED TO REPLACE SPECIFICATIONS. SEE SPECIFICATIONS FOR REQUIREMENTS IN ADDITION TO GENERAL NOTES.
2. VERTICAL DATUM IS REFERENCED TO MEAN LOWER LOW WATER (MLLW). HORIZONTAL DATUM IS THE NORTH AMERICAN DATUM OF 1983 (NAD 83), DELAWARE STATE PLANE COORDINATE SYSTEM.

TIDAL DATUM	
MEAN HIGHER HIGH WATER (MHHW)	2.94 FEET
MEAN HIGH WATER (MHW)	2.67 FEET
NORTH AMERICAN VERTICAL DATUM (NAVD88)	1.82 FEET
MEAN LOW WATER (MLW)	0.15 FEET
MEAN LOWER LOW WATER (MLLW)	0.00 FEET

3. THE SURVEY INFORMATION WAS OBTAINED FROM DNREC-DIVISION OF SOIL AND WATER CONSERVATION ON JUNE 2018.
4. THE CONTRACTOR SHALL ABIDE BY ALL APPLICABLE ENVIRONMENTAL PROTECTION STANDARDS, PERMITS, LAWS AND REGULATIONS..
5. ALL SAFETY REGULATIONS ARE TO BE STRICTLY FOLLOWED.
6. CONTRACTOR SHALL TAKE ALL NECESSARY STEPS AND ACTIONS REQUIRED UNDER THE APPLICABLE SAFETY PRACTICES OF THE FOLLOWING REGULATORY AGENCIES INCLUDING, BUT NOT LIMITED TO: DELAWARE OFFICE OF OCCUPATIONAL HEALTH, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), AND NATIONAL INSTITUTE OF OCCUPATIONAL SAFETY AND HEALTH (NIOSH).

ABBREVIATIONS

ACI	—	AMERICAN CONCRETE INSTITUTE
AISC	—	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
APPROX	—	APPROXIMATE
AREA	—	AMERICAN RAILWAY ENGINEERING ASSOCIATION
ASTM	—	AMERICAN SOCIETY FOR TESTING MATERIALS
AWPA	—	AMERICAN WOOD PRESERVERS ASSOCIATION
AWS	—	AMERICAN WELDING SOCIETY
BL	—	BASELINE
BLDG	—	BUILDING
BOT	—	BOTTOM
CJ	—	CONSTRUCTION JOINT
CB	—	CATCH BASIN
CCA	—	CHROMATED COPPER ARSENATE
CF	—	CUBIC FEET
CHK	—	CHECKERED
CL	—	CENTERLINE
CLR	—	CLEAR
CMP	—	CORRUGATED METAL PIPE
CONC	—	CONCRETE
CONST	—	CONSTRUCTION
CONT	—	CONTINUOUS
CORR	—	CORRUGATED
CTS	—	CENTERS
CY	—	CUBIC YARDS
DBL	—	DOUBLE
DET	—	DETAIL
DIA	—	DIAMETER
DI	—	DUCTILE IRON
DISCON	—	DISCONTINUOUS
DNREC	—	DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
DWG	—	DRAWING
E	—	EAST
EA	—	EACH
EC	—	ELECTRICAL CONTRACTOR
EF	—	EACH FACE
ELEV, EL	—	ELEVATION
EP	—	END POINT
EQ	—	EQUAL
EW	—	EACH WAY
EXIST	—	EXISTING
EXP	—	EXPANSION
F	—	FAHRENHEIT
FFE	—	FINISHED FLOOR ELEVATION
FT	—	FEET
GALV	—	GALVANIZED
HDPE	—	HIGH DENSITY POLYETHYLENE
HORIZ	—	HORIZONTAL
IN.	—	INCHES
INFO	—	INFORMATION
INV	—	INVERT
JT	—	JOINT
KIP	—	1000 LB
KSI	—	KIPS PER SQUARE INCH
KT	—	KNOT
L	—	LENGTH / ANGLE
LB, LBS	—	POUND, POUNDS
LOD	—	LIMIT OF DISTURBANCE
LF	—	LINEAR FEET
LG	—	LONG
LT	—	LEFT
MAX	—	MAXIMUM
MH	—	MANHOLE
MHW	—	MEAN HIGH WATER
MHHW	—	MEAN HIGHER HIGH WATER
MIN	—	MINIMUM
MISC	—	MISCELLANEOUS
MLW	—	MEAN LOW WATER
MLLW	—	MEAN LOWER LOW WATER
MON	—	MONUMENT
MSL	—	MEAN SEA LEVEL
N	—	NORTH AMERICAN VERTICAL DATUM 1988
NAVD88	—	NATIONAL GEODETIC VERTICAL DATUM 1929
NGVD	—	
NIC	—	NOT IN CONTRACT
NTS	—	NOT TO SCALE
NO.	—	NUMBER
OC	—	ON CENTER
OD	—	OUTSIDE DIAMETER
OUTBD	—	OUTBOARD
PC	—	POINT OF CURVE
P/C	—	PRECAST
P/F	—	PREFABRICATED
PI	—	POINT OF INTERSECTION
P/S	—	PRESTRESSED
PERF	—	PERFORATED
PL	—	PLATE
POB	—	POINT OF BEGINNING
PSF	—	POUNDS PER SQUARE FOOT
PSI	—	POUND PER SQUARE INCH
PT	—	POINT OF TANGENT
PVC	—	POLYVINYL CHLORIDE
QTY	—	QUANTITY
R/C	—	REINFORCED CONCRETE
REQ'D	—	REQUIRED
RT	—	RIGHT
S	—	SOUTH
SEC	—	SECOND
SCH	—	SCHEDULE
SF	—	SQUARE FOOT, SILT FENCE
SHT	—	SHEET
SPA.	—	SPACES
SQ	—	SQUARE
SS	—	STAINLESS STEEL
STA	—	STATION
STD	—	STANDARD
T	—	TON
TBR	—	TO BE REMOVED
TC	—	TURBIDITY CURTAIN
TOC	—	TOP OF CONCRETE
TOS	—	TOP OF STEEL
TP	—	TURNING POINT
WT, tw	—	WALL THICKNESS
TYP	—	TYPICAL
U/G	—	UNDERGROUND
UNC	—	UNIFIED NATIONAL COARSE
UON	—	UNLESS OTHERWISE NOTED
VERT	—	VERTICAL
W	—	WEST
W/	—	WITH
WP	—	WORK POINT
WWF	—	WELDED WIRE FABRIC

LEGEND

- (5) EXISTING CONTOUR (BELOW MLLW)
- 5 EXISTING CONTOUR (ABOVE MLLW)
- (5) PROPOSED CONTOUR (BELOW MLLW)
- 5 PROPOSED CONTOUR (ABOVE MLLW)
- DREDGE DEPTH 6.5
- B-1 BORING
- WORKING POINT

Mark	Description	Date	Appr.

MASSEY'S DITCH
MAINETENANCE DREDGING
SUSSEX COUNTY, DELAWARE

INDEX OF DRAWINGS, GENERAL NOTES, ABBREVIATIONS, AND LEGEND

Designed by: PWK
Date: MAY 01, 2019
Rev. –
Dwn by: HR
Ckd by: PGV
M&N Project No. 10248
Drawing code:
Reviewed by: PWK
Drawing Scale:
Submitted by: MOFFATT & NICHOL
Plot scale: 1:1 (0 SHEET)

moffatt & nichol
2780 LIGHTHOUSE POINT EAST, SUITE 01
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410-563-7300

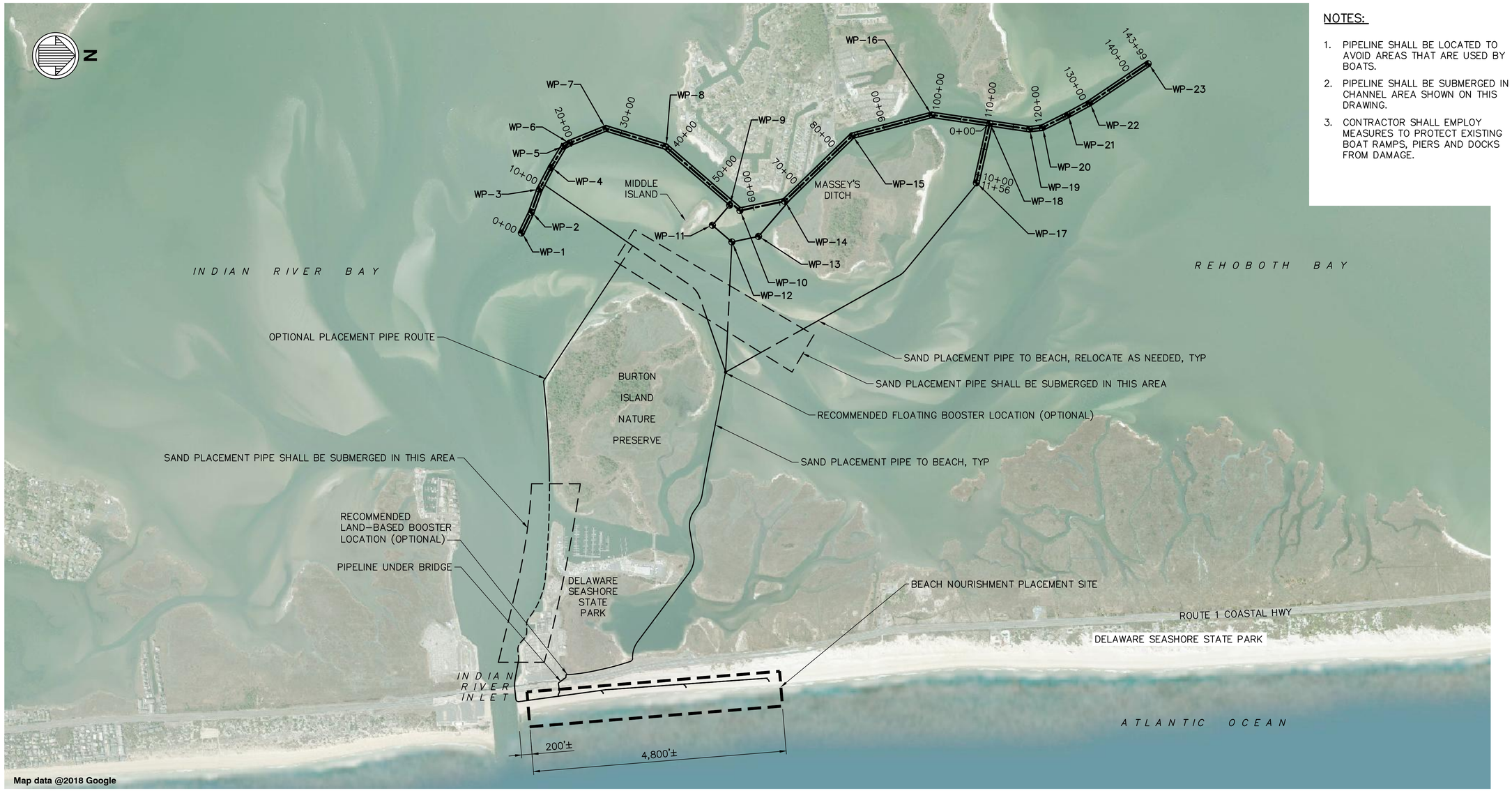
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
89 KINGS HIGHWAY
DOVER, DE 19901

PETER WILLIAM KOTLAK JR. LICENSE No. 18765 DELAWARE PROFESSIONAL ENGINEER
SEAL

Sheet Reference No.
G-002
INDEX: 2 OF 40

File: Q:\BA\10248 DNREC NAT17007\10248-01 M-D Dredge\500 CADD_ACTIVE_Massey's Ditch (sheets)\1024801C-002; Plotted: 3/13/2019 4:37 PM by VOELKER, PAUL; Saved: 3/1/2019 3:34 PM by TOCOOPER

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



NOTES:

1. PIPELINE SHALL BE LOCATED TO AVOID AREAS THAT ARE USED BY BOATS.
2. PIPELINE SHALL BE SUBMERGED IN CHANNEL AREA SHOWN ON THIS DRAWING.
3. CONTRACTOR SHALL EMPLOY MEASURES TO PROTECT EXISTING BOAT RAMPS, PIERS AND DOCKS FROM DAMAGE.

A1 / G-101 PLAN – GENERAL ARRANGEMENT
SCALE: 1" = 1000'

CHANNEL CENTERLINE COORDINATES			
POINT NO	STATION	NORTHING	EASTING
WP-1	0+00.00	222003.98	748381.00
WP-2	4+29.31	222190.35	747994.26
WP-3	8+97.05	222348.43	747554.04
WP-4	13+62.92	222565.39	747141.77
WP-5	18+30.66	222806.61	746741.03
WP-6	19+60.79	222920.32	746677.75
WP-7	27+00.22	223606.00	746401.00
WP-8	38+83.91	224738.00	746747.00
WP-9	55+22.72	225946.76	747854.74
WP-10	57+37.37	226142.00	747957.00

CHANNEL CENTERLINE COORDINATES			
POINT NO	STATION	NORTHING	EASTING
WP-11	55+22.72	225620.34	748233.49
WP-12	57+37.37	225988.43	748550.72
WP-13	59+82.11	226493.63	748445.62
WP-14	66+01.49	226988.00	747781.00
WP-15	83+83.62	228268.00	746541.00
WP-16	99+42.50	229776.00	746146.00
WP-17	11+54.41	230618.66	747433.11
WP-18	110+50.32	230872.18	746306.24
WP-19	118+09.13	231623.00	746416.00
WP-20	120+54.63	231866.96	746388.52

CHANNEL CENTERLINE COORDINATES			
POINT NO	STATION	NORTHING	EASTING
WP-21	125+91.65	232347.55	746148.90
WP-22	130+58.61	232757.97	745926.15
WP-23	143+98.88	233870.62	745178.94

1000' 0' 1000' 2000'
SCALE: 1"=1000'

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

Mark	Description	Date	Appr.

MASSEY'S DITCH
MAINETENANCE DREDGING
SUSSEX COUNTY, DELAWARE

PLAN - GENERAL ARRANGEMENT

Designed by: PWK
Date: MAY 01, 2019
Rev. –
Dwn by: HR
Ckd by: PGV
M&N Project No. 10248
Drawing code:
Reviewed by: PWK
Drawing Scale: Plot scale: 1:1 (0 SHEET)
Submitted by: MOFFATT & NICHOL

2780 LIGHTHOUSE POINT EAST, SUITE D
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DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
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DOVER, DE 19901

PROFESSIONAL ENGINEER PETER WILLIAM KOTULAK LICENSE No. 18765 DELAWARE
SEAL

Sheet Reference No.
G-101
INDEX: 3 OF 40

File: Q:\BA\10248 DNREC NAT17007\10248-01 M-D Dredge\500 CADD_ACTIVE_Massey's Ditch (sheets)\10248101G-101; Plotted: 3/13/2019 4:37 PM by VOELKER, PAUL; Saved: 3/1/2019 1:53 PM by TOCOOPER

A1 / G-102 PLAN – GENERAL ARRANGEMENT CONTRACTOR'S STAGING – OCEAN SIDE
SCALE: 1" = 120'

A4 / G-102 PLAN – GENERAL ARRANGEMENT CONTRACTOR'S STAGING – MASSEY'S LANDING
SCALE: 1" = 120'

120' 0' 120' 240'
SCALE: 1"=120'

Mark	Description	Date	Appr.

MASSEY'S DITCH
MAINETENANCE DREDGING
SUSSEX COUNTY, DELAWARE

PLAN - GENERAL ARRANGEMENT CONTRACTOR'S STAGING AREA

Designed by: PWK
Date: MAY 01, 2019
Rev. –
Dwn by: PGV
Ckd by: PGV
M&N Project No. 10248
Reviewed by: PWK
Drawing code:
Submitted by: MOFFATT & NICHOL
Drawing Scale: Plot scale: 1:1 (0 SHEET)

moffatt & nichol
2780 LIGHTHOUSE POINT EAST, SUITE D
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410-563-7300

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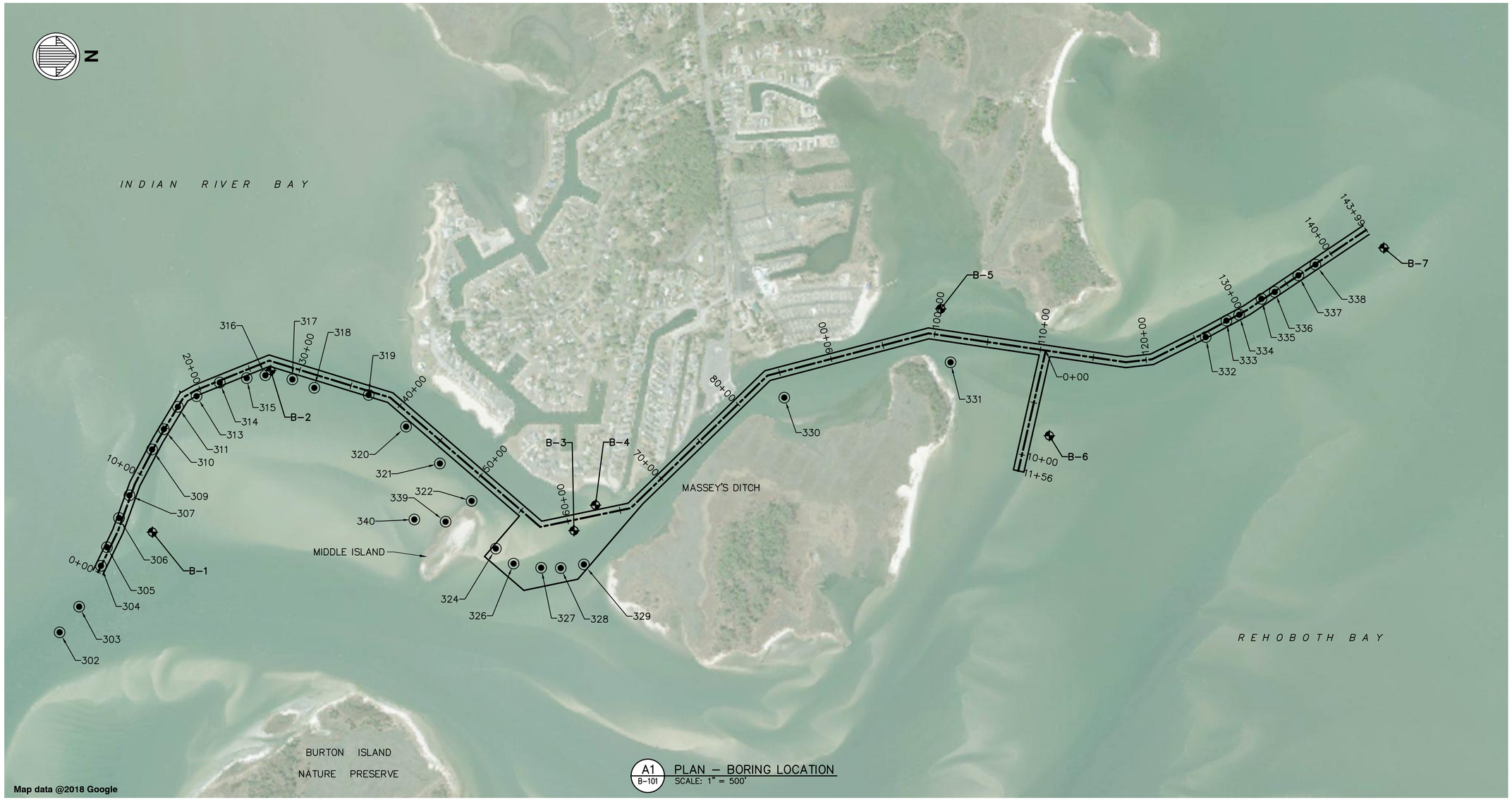
89 KINGS HIGHWAY
DOVER, DE 19901

PROFESSIONAL ENGINEER PETER WILLIAM KOTULAK LICENSE No. 18765 DELAWARE
SEAL

Sheet Reference No.
G-102
INDEX: 4 OF 40

File: Q:\BA\10248 DNREC NAT17007\10248-01 M-D Dredge\500 CADD_ACTIVE_Massey's Ditch (sheets)\10248016-102; Plotted: 3/13/2019 4:37 PM by VDELKER, PAUL; Saved: 11/30/2018 3:36 PM by PVDELKER

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



A1 B-101 PLAN – BORING LOCATION
SCALE: 1" = 500'

FINDLING BORING LOCATION TABLE		
POINT NO.	NORTHING	EASTING
B-1	222511.68	748005.81
B-2	223619.28	746493.81
B-3	226457.17	747992.00
B-4	226658.67	747753.19
B-5	229889.69	745916.73
B-6	230905.46	747103.54
B-7	234035.63	745347.13

HYNES BORING LOCATION TABLE		
POINT NO.	NORTHING	EASTING
302	221643.77	748942.72
303	221826.95	748702.73
304	222030.44	748320.70
305	222086.93	748146.77
306	222199.93	747872.84
307	222296.75	747661.83
309	222508.78	747232.12
310	222619.24	747042.54
311	222750.58	746833.36
313	222925.34	746733.77

HYNES BORING LOCATION TABLE		
POINT NO.	NORTHING	EASTING
314	223142.37	746606.04
315	223394.30	746564.85
316	223568.74	746538.41
317	223821.66	746576.64
318	224027.07	746655.39
319	224535.43	746722.09
320	224886.13	747018.95
321	225202.31	747363.29
322	225499.17	747713.93
324	225725.95	748159.45

HYNES BORING LOCATION TABLE		
POINT NO.	NORTHING	EASTING
326	225891.99	748300.01
327	226149.88	748338.71
328	226332.98	748341.29
329	226549.60	748307.75
330	228425.28	746747.28
331	229980.95	746417.12
332	232368.95	746180.48
333	232562.63	746026.46
334	232681.82	745971.80
335	232890.40	745822.74

HYNES BORING LOCATION TABLE		
POINT NO.	NORTHING	EASTING
336	233014.56	745758.15
337	233235.88	745602.76
338	233395.42	745502.61
339	225255.91	747907.82
340	224963.16	747887.19

✦ – BORINGS BY FINDLING, INC AUGUST 2018.

◉ – BORINGS BY JOHN D. HYNES & ASSOCIATES, INC MAY 2014.

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

Mark	Description	Date	Appr.

MASSEY'S DITCH
MAINETENANCE DREDGING
SUSSEX COUNTY, DELAWARE

PLAN - BORING LOCATION

Designed by: PWK
Date: MAY 01, 2019
Rev. –
Dwn by: HR
Ckd by: PGV
M&N Project No. 10248
Reviewed by: PWK
Drawing code:
Submitted by: MOFFATT & NICHOL
Drawing Scale: Plot scale: 1:1 (D SHEET)

moffatt & nichol
2780 LIGHTHOUSE POINT EAST, SUITE D
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89 KINGS HIGHWAY
DOVER, DE 19901

PETER WILLIAM KOTILAK
LICENSE No. 18765
DELAWARE
PROFESSIONAL ENGINEER
SEAL

Sheet Reference No.
B-101
INDEX: 5 OF 40

File: Q:\BA\10248 DNREC NATT7007\10248-01 M-D Dredge\500 CADD_ACTIVE_Massey's Ditch (Sheets)\102480IB-101; Plotted: 3/13/2019 4:35 PM by PVOELKER, PAUL; Saved: 3/13/2019 4:37 PM by VOELKER, PAUL

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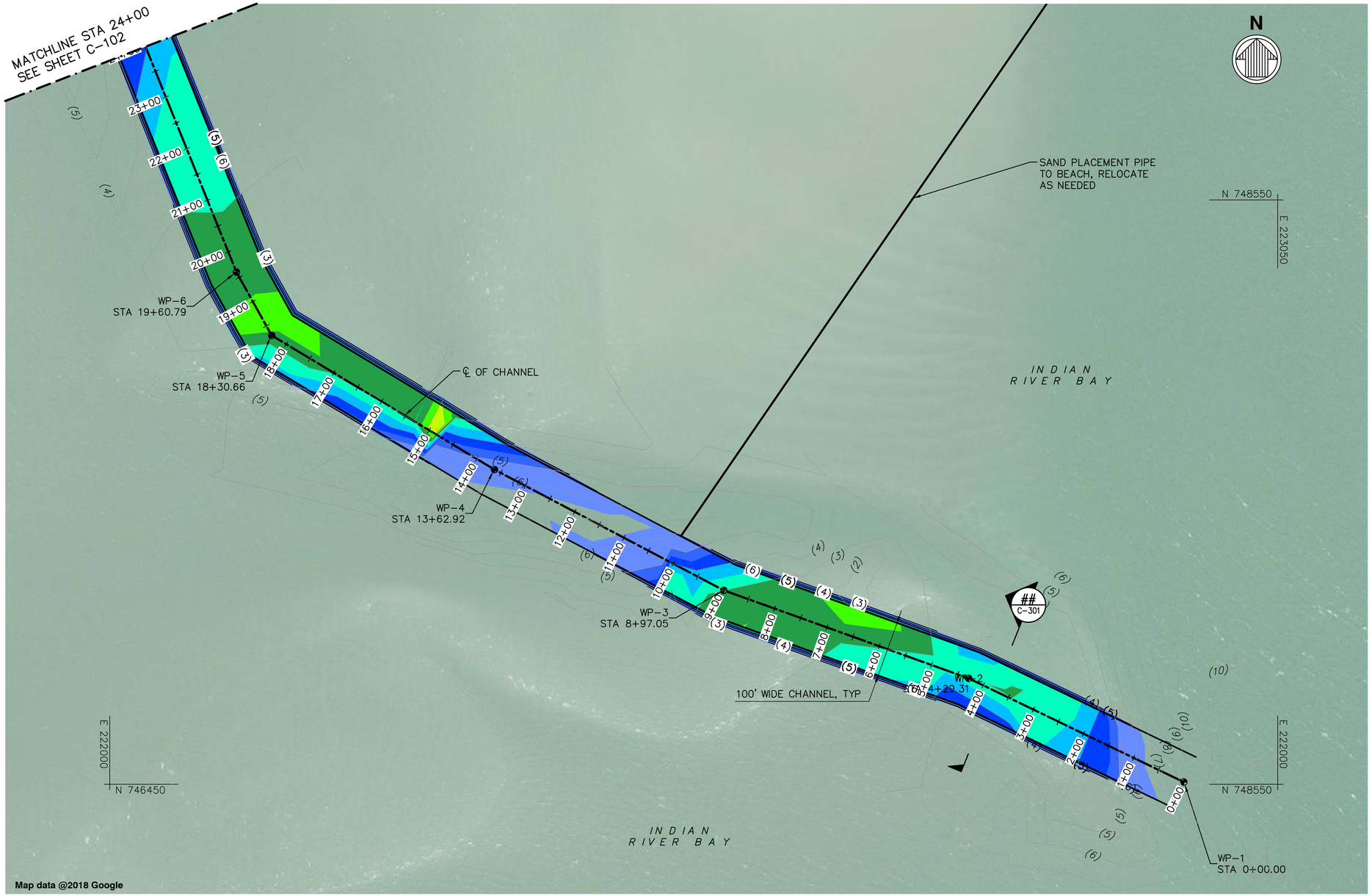


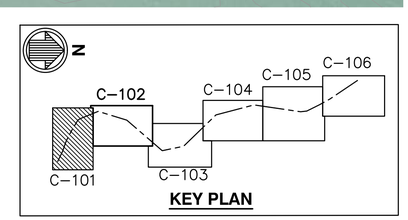
A1 / C-101 PLAN – CHANNEL DREDGING – SHEET 1 OF 6
SCALE: 1" = 100'

NOTES

1. FOR GENERAL NOTES, ABBREVIATIONS, AND LEGEND, SEE SHEET G-002
2. FOR CENTERLINE OF CHANNEL WORKING POINTS, SEE SHEET G-101.
3. FOR TYPICAL CHANNEL SECTION, SEE SHEET C-301.
4. FOR CHANNEL CROSS SECTIONS, SEE SHEETS C-302 TO C-324.
5. BASED ON SURVEY DATA; CHANNEL AREAS WITH NO COLOR WILL NOT BE DREDGED.

DREDGING THICKNESS (FT)

MIN	MAX	COLOR
6.00	6.50	
5.50	6.00	
5.00	5.50	
4.50	5.00	
4.00	4.50	
3.50	4.00	
3.00	3.50	
2.50	3.00	
2.00	2.50	
1.50	2.00	
0.00	1.50	



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

Mark	Description	Date	Appr.

MASSEY'S DITCH
MAINETENANCE DREDGING
SUSSEX COUNTY, DELAWARE

PLAN - CHANNEL DREDGING - SHEET 1 OF 6

Designed by: PWK
Dwn by: HR
Ckd by: PGV
Reviewed by: PWK
Submitted by: MOFFATT & NICHOL
Date: MAY 01, 2019
Rev. –
M&N Project No. 10248
Drawing code:
Drawing Scale:
Plot scale: 1:1 (0 SHEET)

moffatt & nichol
2780 LIGHTHOUSE POINT EAST, SUITE 10
BALTIMORE, MD 21224
410-563-7300

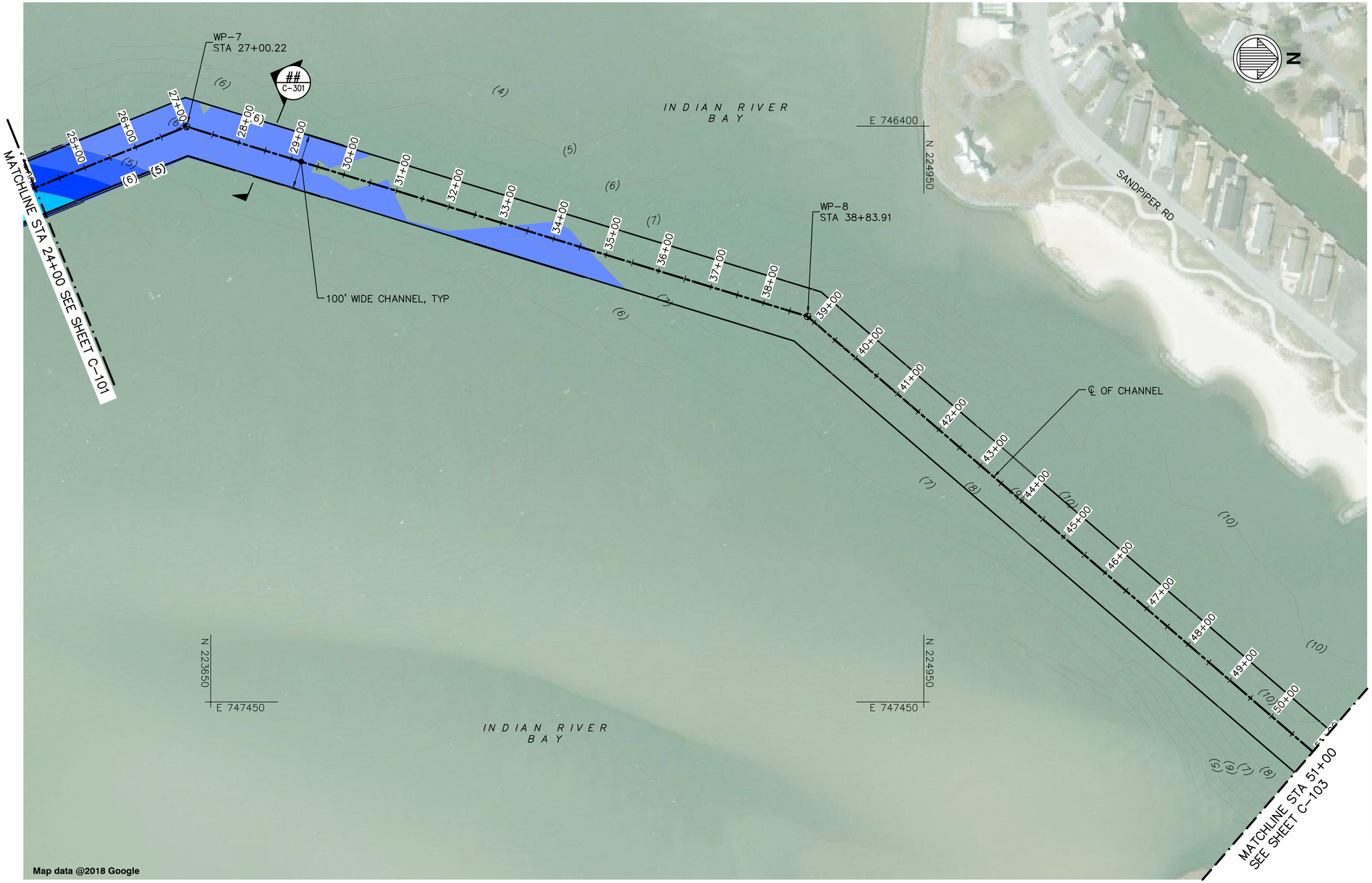
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
89 KINGS HIGHWAY
DOVER, DE 19901

PETER WILLIAM KOTULAK
LICENSE No. 18765
DELAWARE PROFESSIONAL ENGINEER
SEAL

Sheet Reference No.
C-101
INDEX: 6 OF 40

File: Q:\BA\10248 DNREC NATT7007\10248-01 M-D Dredge\500 CADD_ACTIVE_Massey's Ditch (sheets)\10248D1C-101; Plotted: 3/13/2019 4:37 PM by VOELKER, PAUL; Saved: 11/27/2018 4:07 PM by PVOELKER

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



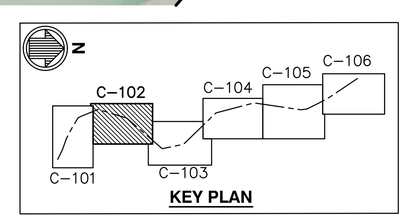
A1 / C-102 PLAN – CHANNEL DREDGING – SHEET 2 OF 6
SCALE: 1" = 100'

NOTES

1. FOR GENERAL NOTES, ABBREVIATIONS, AND LEGEND, SEE SHEET G-002
2. FOR CENTERLINE OF CHANNEL WORKING POINTS, SEE SHEET G-101.
3. FOR TYPICAL CHANNEL SECTION, SEE SHEET C-301.
4. FOR CHANNEL CROSS SECTIONS, SEE SHEETS C-302 TO C-324.
5. BASED ON SURVEY DATA; CHANNEL AREAS WITH NO COLOR WILL NOT BE DREDGED.

DREDGING THICKNESS (FT)

MIN	MAX	COLOR
6.00	6.50	
5.50	6.00	
5.00	5.50	
4.50	5.00	
4.00	4.50	
3.50	4.00	
3.00	3.50	
2.50	3.00	
2.00	2.50	
1.50	2.00	
0.00	1.50	



KEY PLAN

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

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

Mark	Description	Date	Appr.

MASSEY'S DITCH
MAINETENANCE DREDGING
SUSSEX COUNTY, DELAWARE

PLAN - CHANNEL DREDGING - SHEET 2 OF 6

Designed by: PWK
Dwn by: HR
Ckd by: PGV
Reviewed by: PWK
Submitted by: MOFFATT & NICHOL
Date: MAY 01, 2019
Rev. –
M&N Project No. 10248
Drawing code:
Drawing Scale:
Plot scale: 1:1 (0 SHEET)

moffatt & nichol
2780 LIGHTHOUSE POINT EAST, SUITE D
BALTIMORE, MD 21224
410-563-7300

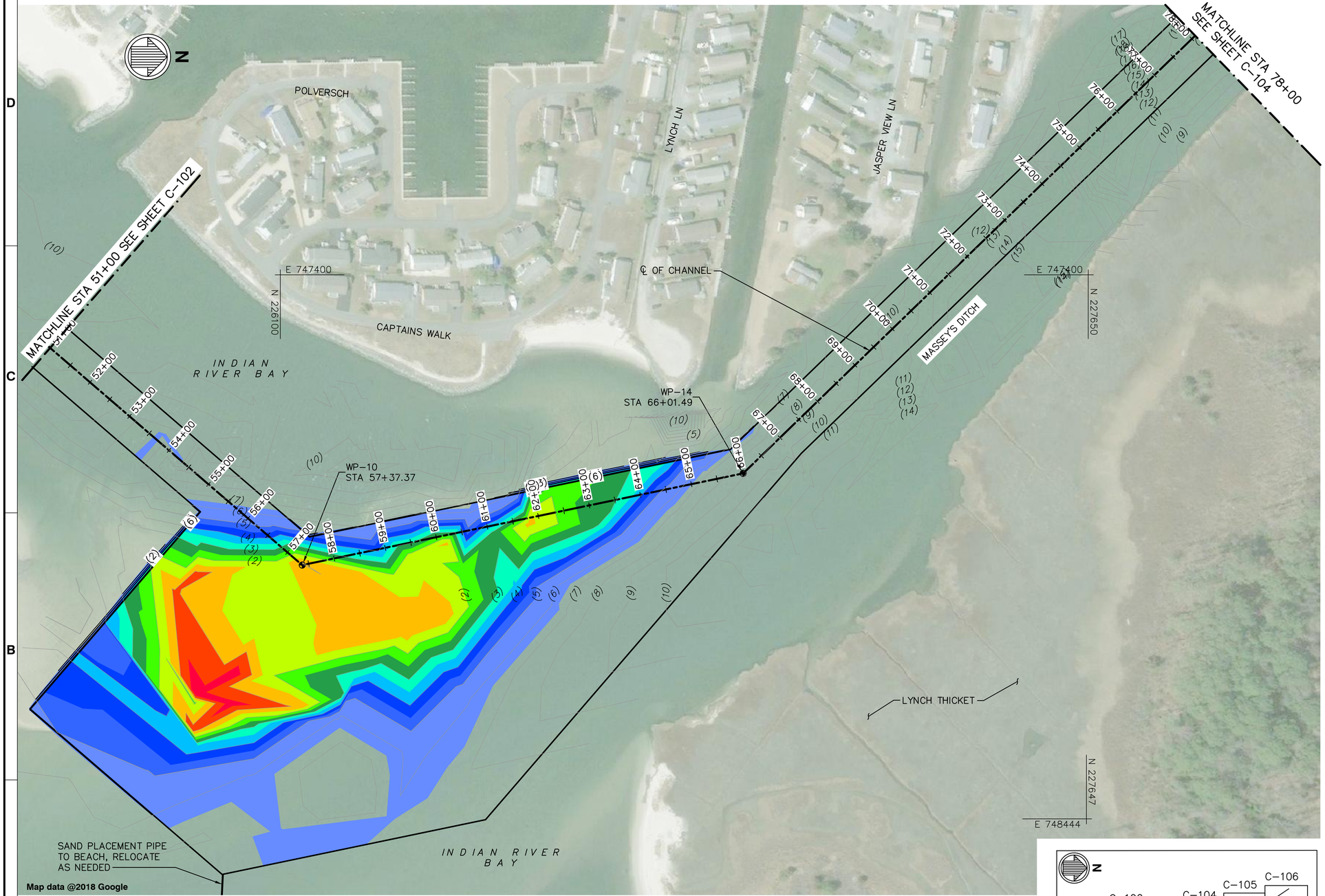
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
89 KINGS HIGHWAY
DOVER, DE 19901

PETER WILLIAM KOTULAK
LICENSE No. 18765
DELAWARE PROFESSIONAL ENGINEER
SEAL

Sheet Reference No.
C-102
INDEX: 7 OF 40

File: Q:\BA\10248 DNREC NAT17007\10248-01 M-D Dredge\500 CADD_ACTIVE_Massey's Ditch (sheets)\1024801C-102; Plotted: 3/13/2019 4:38 PM by VOELKER, PAUL; Saved: 11/27/2018 4:07 PM by PVOELKER

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



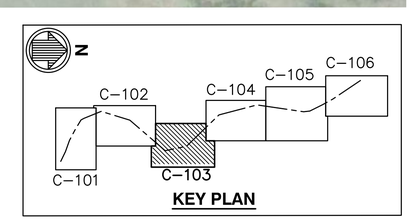
A1 / C-103 PLAN – CHANNEL DREDGING – SHEET 3 OF 6
SCALE: 1" = 100'

NOTES

1. FOR GENERAL NOTES, ABBREVIATIONS, AND LEGEND, SEE SHEET G-002
2. FOR CENTERLINE OF CHANNEL WORKING POINTS, SEE SHEET G-101.
3. FOR TYPICAL CHANNEL SECTION, SEE SHEET C-301.
4. FOR CHANNEL CROSS SECTIONS, SEE SHEETS C-302 TO C-324.
5. BASED ON SURVEY DATA; CHANNEL AREAS WITH NO COLOR WILL NOT BE DREDGED.

DREDGING THICKNESS (FT)

MIN	MAX	COLOR
6.00	6.50	
5.50	6.00	
5.00	5.50	
4.50	5.00	
4.00	4.50	
3.50	4.00	
3.00	3.50	
2.50	3.00	
2.00	2.50	
1.50	2.00	
0.00	1.50	



KEY PLAN

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

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

Mark	Description	Date	Appr.

MASSEY'S DITCH
MAINETENANCE DREDGING
SUSSEX COUNTY, DELAWARE

PLAN - CHANNEL DREDGING - SHEET 3 OF 6

Date: MAY 01, 2019
Rev. –
M&N Project No. 10248
Drawing code:
Drawing Scale: Plot scale: 1:1 (0 SHEET)

Designed by: PWK
Dwn by: HR
Ckd by: PGV
Reviewed by: PWK
Submitted by: MOFFATT & NICHOL

moffatt & nichol
2780 LIGHTHOUSE POINT EAST, SUITE D
BALTIMORE, MD 21224
410-563-7300

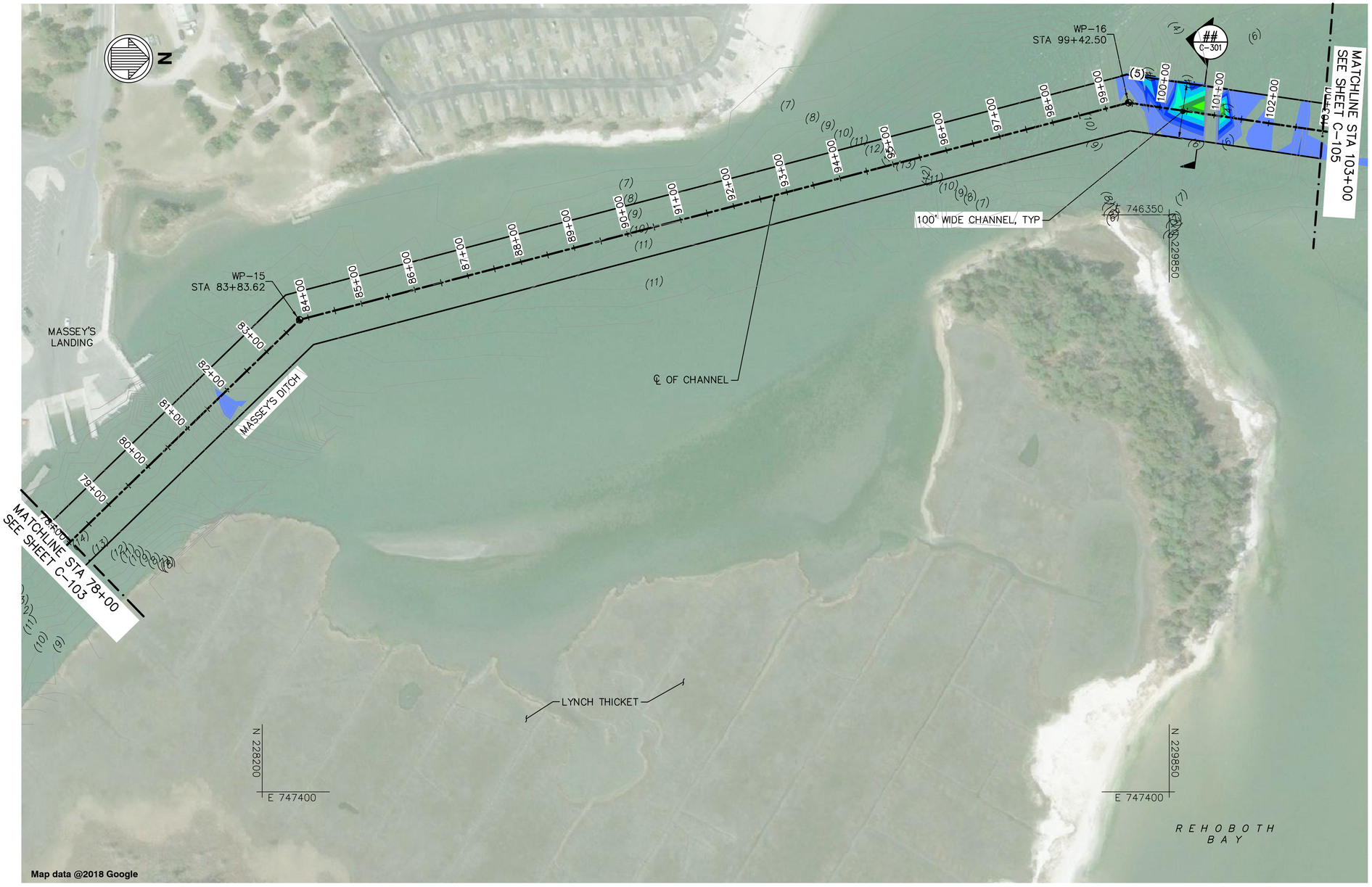
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
89 KINGS HIGHWAY
DOVER, DE 19901

PETER WILLIAM KOTULAK
LICENSE No. 18765
DELAWARE PROFESSIONAL ENGINEER
SEAL

Sheet Reference No.
C-103
INDEX: 8 OF 40

File: Q:\BA\10248 DNREC NATT7007\10248-01 M-D Dredge\500 CADD_ACTIVE_Massey's Ditch (sheets)\1024801C-103; Plotted: 3/13/2019 4:38 PM by VDELKER, PAUL; Saved: 11/27/2018 4:07 PM by PVOELKER

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

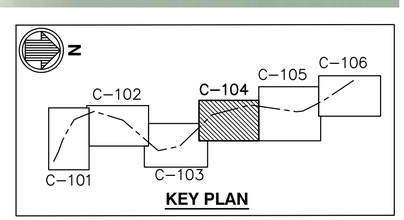


NOTES

1. FOR GENERAL NOTES, ABBREVIATIONS, AND LEGEND, SEE SHEET G-002
2. FOR CENTERLINE OF CHANNEL WORKING POINTS, SEE SHEET G-101.
3. FOR TYPICAL CHANNEL SECTION, SEE SHEET C-301.
4. FOR CHANNEL CROSS SECTIONS, SEE SHEETS C-302 TO C-324.
5. BASED ON SURVEY DATA; CHANNEL AREAS WITH NO COLOR WILL NOT BE DREDGED.

DREDGING THICKNESS (FT)		
MIN	MAX	COLOR
6.00	6.50	
5.50	6.00	
5.00	5.50	
4.50	5.00	
4.00	4.50	
3.50	4.00	
3.00	3.50	
2.50	3.00	
2.00	2.50	
1.50	2.00	
0.00	1.50	

A1 / C-104 PLAN – CHANNEL DREDGING – SHEET 4 OF 6
SCALE: 1" = 100'



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

Mark	Description	Date	Appr.

MASSEY'S DITCH
MAINETENANCE DREDGING
SUSSEX COUNTY, DELAWARE

PLAN - CHANNEL DREDGING - SHEET 4 OF 6

Designed by: PWK
Dwn by: HR
Ckd by: PGV
Reviewed by: PWK
Submitted by: MOFFATT & NICHOL
Date: MAY 01, 2019
Rev. –
M&N Project No. 10248
Drawing code:
Drawing Scale: Plot scale: 1:1 (0 SHEET)

moffatt & nichol
2780 LIGHTHOUSE POINT EAST, SUITE D
BALTIMORE, MD 21224
410-563-7300

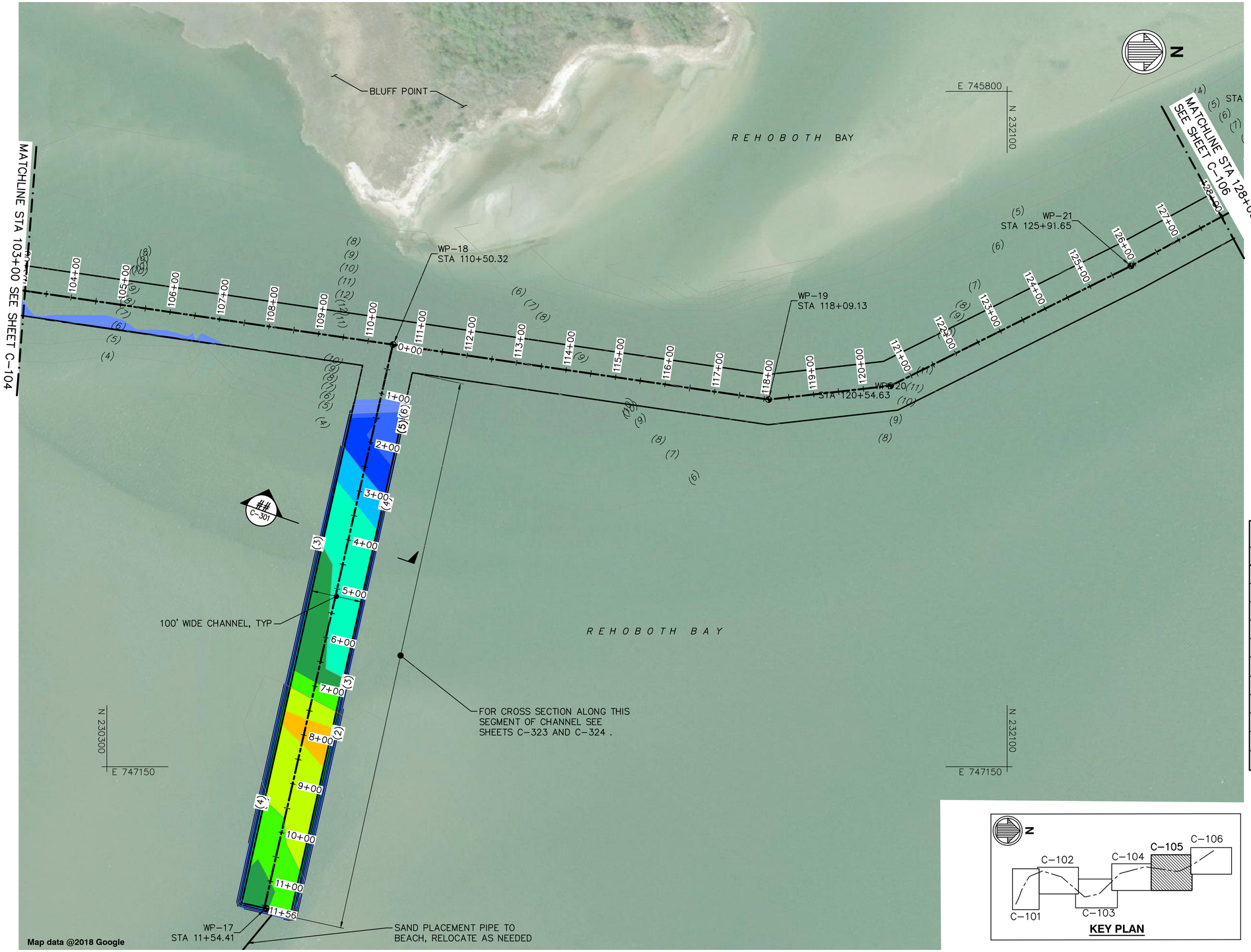
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
89 KINGS HIGHWAY
DOVER, DE 19901

PETER WILLIAM KOTULAK
LICENSE No. 18765
DELAWARE PROFESSIONAL ENGINEER
SEAL

Sheet Reference No.
C-104
INDEX: 9 OF 40

File: Q:\BA\10248 DNREC NATT7007\10248-01 M-D Dredge\500 CADD_ACTIVE_Massey's Ditch (sheets)\1024801C-104; Plotted: 3/13/2019 4:39 PM by VOELKER, PAUL; Saved: 11/27/2018 4:07 PM by PVOELKER

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



NOTES

1. FOR GENERAL NOTES, ABBREVIATIONS, AND LEGEND, SEE SHEET G-002
2. FOR CENTERLINE OF CHANNEL WORKING POINTS, SEE SHEET G-101.
3. FOR TYPICAL CHANNEL SECTION, SEE SHEET C-301.
4. FOR CHANNEL CROSS SECTIONS, SEE SHEETS C-302 TO C-324.
5. BASED ON SURVEY DATA; CHANNEL AREAS WITH NO COLOR WILL NOT BE DREDGED.

DREDGING THICKNESS (FT)

MIN	MAX	COLOR
6.00	6.50	
5.50	6.00	
5.00	5.50	
4.50	5.00	
4.00	4.50	
3.50	4.00	
3.00	3.50	
2.50	3.00	
2.00	2.50	
1.50	2.00	
0.00	1.50	

KEY PLAN

100' 0' 100' 200'

SCALE: 1"=100'

A1 C-105 PLAN – CHANNEL DREDGING – SHEET 5 OF 6

SCALE: 1" = 100'

Mark	Description	Date	Appr.

MASSEY'S DITCH
MAINETENANCE DREDGING
SUSSEX COUNTY, DELAWARE

PLAN - CHANNEL DREDGING - SHEET 5 OF 6

Designed by: PWK
Dwn by: HR
Ckd by: PGV
Reviewed by: PWK
Submitted by: MOFFATT & NICHOL
Date: MAY 01, 2019
Rev. –
M&N Project No. 10248
Drawing code:
Drawing Scale:
Plot scale: 1:1 (0 SHEET)

moffatt & nichol
2780 LIGHTHOUSE POINT EAST, SUITE D
BALTIMORE, MD 21224
410-563-7300

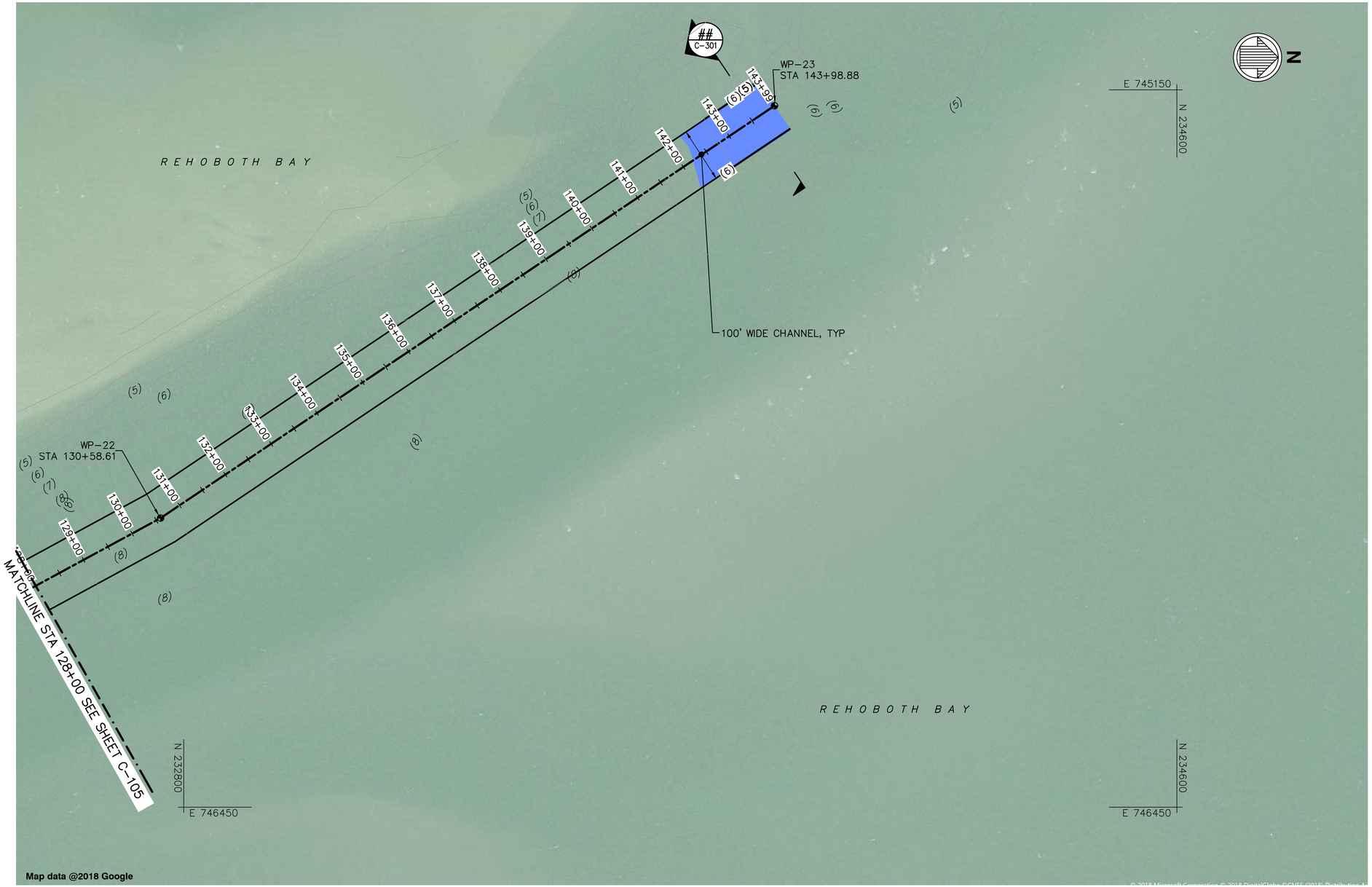
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
89 KINGS HIGHWAY
DOVER, DE 19901

PETER WILLIAM KOTULAK
LICENSE No. 18765
DELAWARE PROFESSIONAL ENGINEER
SEAL

Sheet Reference No.
C-105
INDEX: 10 OF 40

File: Q:\BA\10248 DNREC NATT7007\10248-01 M-D Dredge\500 CADD_ACTIVE_Massey's Ditch (sheets)\1024801C-105; Plotted: 3/13/2019 4:39 PM by VDELKER, PAUL; Saved: 11/27/2018 4:07 PM by PVDELKER

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



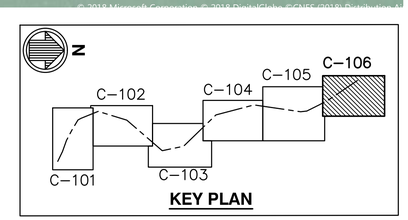
A1 / C-106 PLAN – CHANNEL DREDGING – SHEET 6 OF 6
SCALE: 1" = 100'

NOTES

1. FOR GENERAL NOTES, ABBREVIATIONS, AND LEGEND, SEE SHEET G-002
2. FOR CENTERLINE OF CHANNEL WORKING POINTS, SEE SHEET G-101.
3. FOR TYPICAL CHANNEL SECTION, SEE SHEET C-301.
4. FOR CHANNEL CROSS SECTIONS, SEE SHEETS C-302 TO C-324.
5. BASED ON SURVEY DATA; CHANNEL AREAS WITH NO COLOR WILL NOT BE DREDGED.

DREDGING THICKNESS (FT)

MIN	MAX	COLOR
6.00	6.50	
5.50	6.00	
5.00	5.50	
4.50	5.00	
4.00	4.50	
3.50	4.00	
3.00	3.50	
2.50	3.00	
2.00	2.50	
1.50	2.00	
0.00	1.50	



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

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

Mark	Description	Date	Appr.

MASSEY'S DITCH
MAINETENANCE DREDGING
SUSSEX COUNTY, DELAWARE

PLAN - CHANNEL DREDGING - SHEET 6 OF 6

Designed by: PWK
Dwn by: HR
Ckd by: PGV
Reviewed by: PWK
Submitted by: MOFFATT & NICHOL
Date: MAY 01, 2019
Rev. –
M&N Project No. 10248
Drawing code:
Drawing Scale:
Plot scale: 1:1 (0 SHEET)

moffatt & nichol
2780 LIGHTHOUSE POINT EAST, SUITE D
BALTIMORE, MD 21224
410-563-7300

DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
89 KINGS HIGHWAY
DOVER, DE 19901

PETER WILLIAM KOTULAK
LICENSE No. 18765
DELAWARE
PROFESSIONAL ENGINEER
SEAL

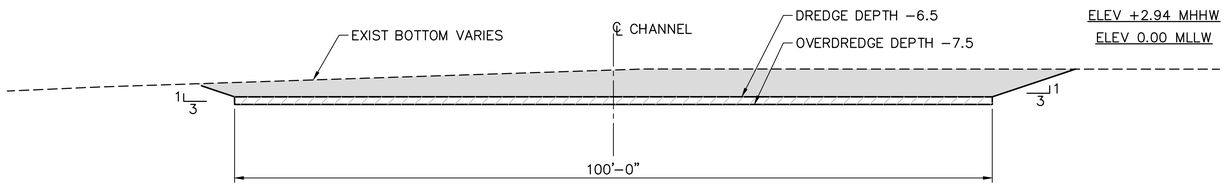
Sheet Reference No.
C-106
INDEX: 11 OF 40

File: Q:\BA\10248 DNREC NATT7007\10248-01 M-D Dredge\500 CADD_ACTIVE_Massey's Ditch (sheets)\1024801C-106; Plotted: 3/13/2019 4:40 PM by VOELKER, PAUL; Saved: 11/27/2018 4:07 PM by PVOELKER

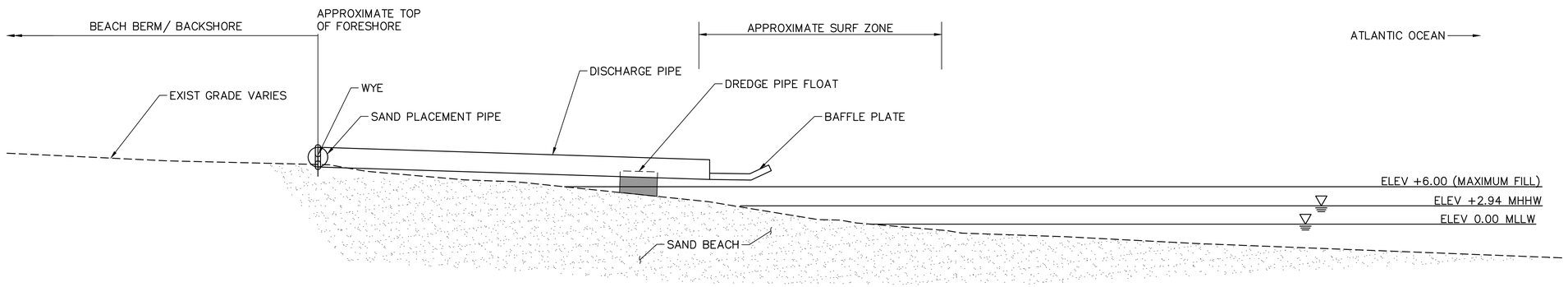
DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

NOTES:

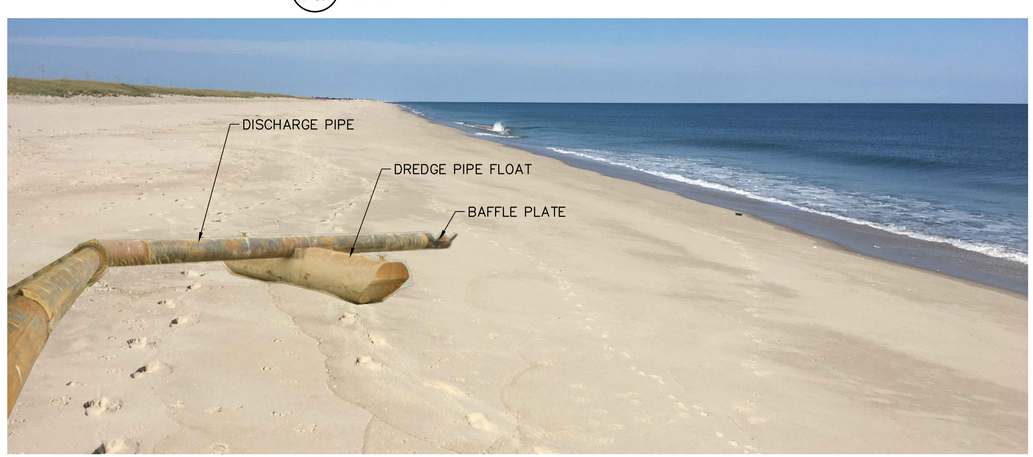
1. THE MAXIMUM VERTICAL HEIGHT TO WHICH THE MATERIAL SHALL BE PLACED IS +6.00 FEET ABOVE MLLW.
2. THERE IS NO LIMIT TO THE HORIZONTAL DISTANCE TO WHICH THE MATERIAL SHALL BE PLACED OR MOVED BY THE WAVES AND CURRENTS.



C1 / C-301 SECTION – TYPICAL DREDGING
SCALE: 1" = 10'



B1 / C-301 SECTION – DISCHARGE PIPE INTO SURF ZONE
SCALE: 1" = 10'



A1 / C-301 DISCHARGE PIPE INTO SURF ZONE (LOW TIDE BACKGROUND IMAGE)
SCALE: NTS

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

Mark	Description	Date	Appr.

MASSEY'S DITCH
MAINETENANCE DREDGING
SUSSEX COUNTY, DELAWARE

SECTION - TYPICAL DREDGING

Designed by: PWK
Dwn by: HR
Ckd by: PGV
Reviewed by: PWK
Submitted by: MOFFATT & NICHOL
Date: MAY 01, 2019
Rev. –
M&N Project No. 10248
Drawing code:
Drawing Scale:
Plot scale: 1:1 (D SHEET)

moffatt & nichol
2780 LIGHTHOUSE POINT EAST, SUITE 100
BALTIMORE, MD 21224
410-563-7300

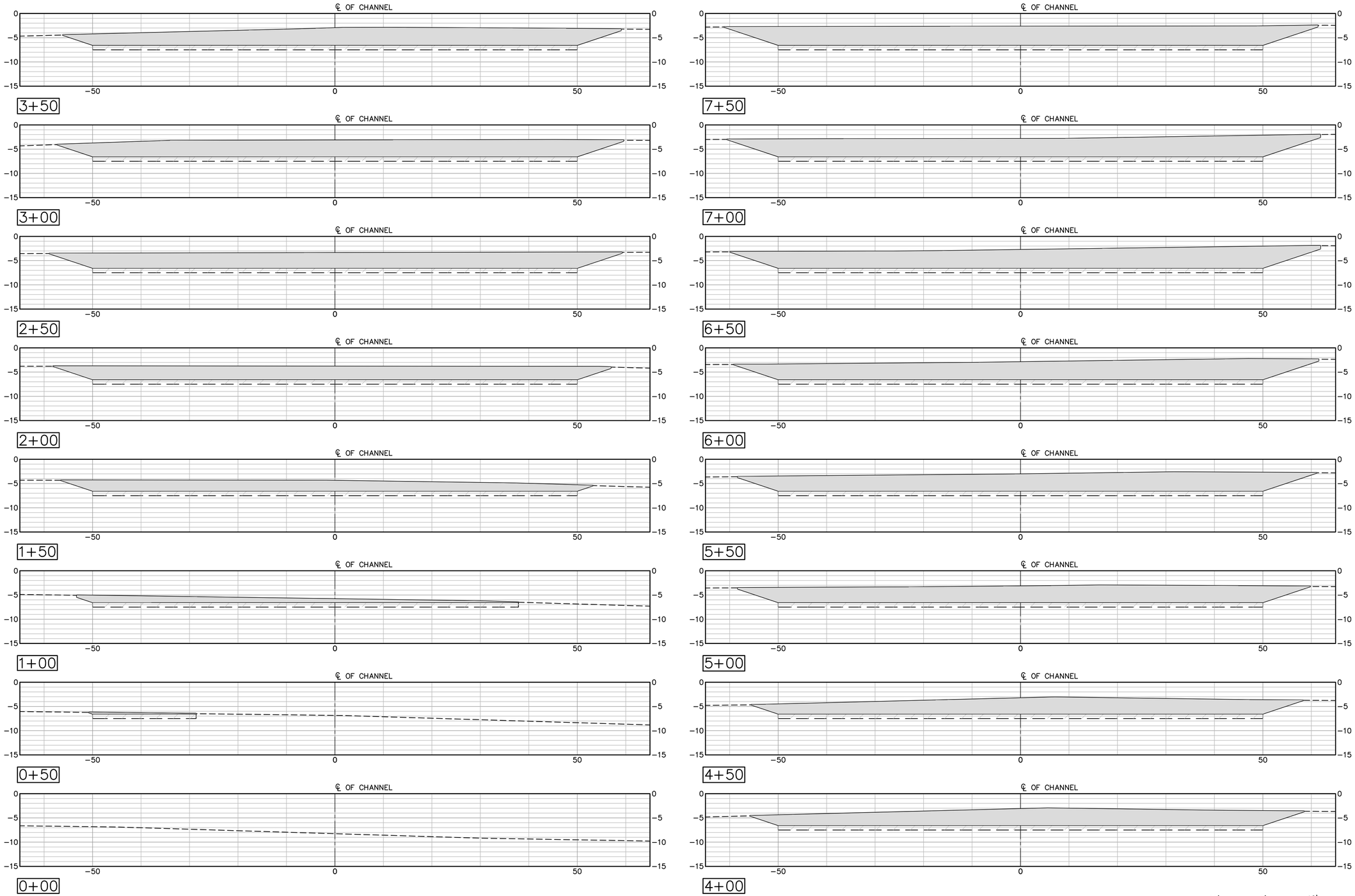
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
89 KINGS HIGHWAY
DOVER, DE 19901

PETER WILLIAM KOTULAK JR. PROFESSIONAL ENGINEER LICENSE No. 18765 DELAWARE
SEAL

Sheet Reference No.
C-301
INDEX: 12 OF 40

File: Q:\BA\10248 DNREC NAT17007\10248-01 M-D Dredge\500 CADD_ACTIVE_Massey's Ditch (sheets)\1024801C-301; Plotted: 3/13/2019 4:40 PM by VOELKER, PAUL; Saved: 11/30/2018 3:35 PM by PVOELKER

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



NOTES:

1. FOR LEGEND, ABBREVIATION, AND GENERAL NOTES SEE SHEET G-002.
2. FOR MAINTENANCE CHANNEL DREDGING PLANS, SEE SHEETS C-101 TO C-106.

LEGEND

DREDGE DEPTH −6.5

OVER DREDGE −7.5

Mark	Description	Date	Appr.

MASSEY'S DITCH
MAINETENANCE DREDGING
SUSSEX COUNTY, DELAWARE

SECTION - DREDGING - SHEET 1 OF 21

moffatt & nichol
2780 LIGHTHOUSE POINT EAST, SUITE 1
BALTIMORE, MD 21224
410-563-7300

DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
89 KINGS HIGHWAY
DOVER, DE 19901

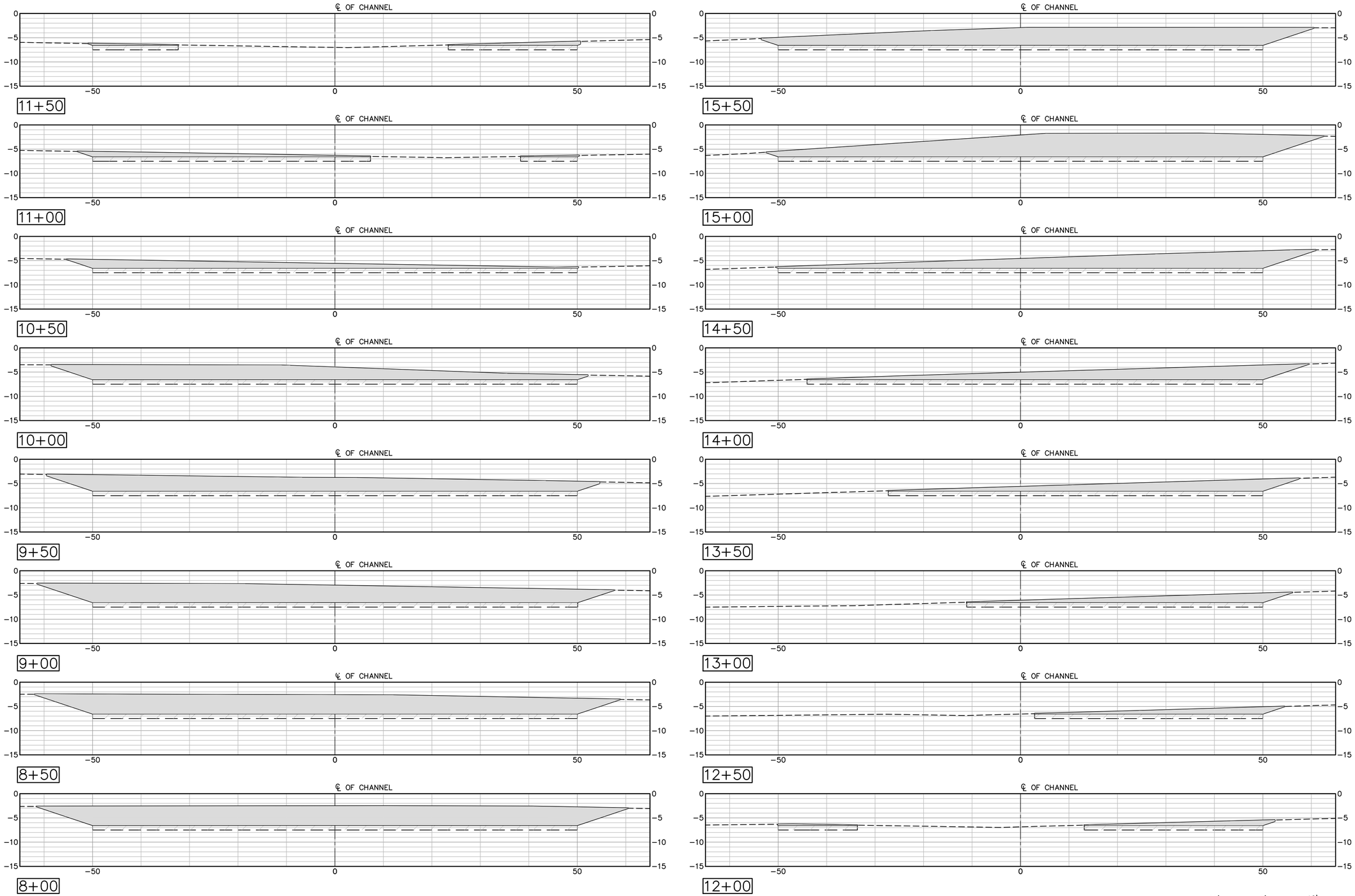
Designed by: PWK		Date: MAY 01, 2019	Rev. –
Dwn by: HR	Ckd by: PGV	M&N Project No. 10248	
Reviewed by: PWK		Drawing code:	
Submitted by: MOFFATT & NICHOL		Drawing Scale: Plot scale: 1:1 (0 SHEET)	

PETER WILLIAM KOTULAK JR.
LICENSE No. 18765
DELAWARE
PROFESSIONAL ENGINEER
SEAL

Sheet Reference No.
C-302
INDEX: 13 OF 40

File: Q:\BA\10248 DNREC NAT17007\10248-01 M-D Dredge\500 CADD_ACTIVE_Massey's Ditch (sheets)\1024801C-302; Plotted: 3/13/2019 4:40 PM by VOELKER, PAUL; Saved: 11/27/2018 4:07 PM by PVOELKER

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



NOTES:

1. FOR LEGEND, ABBREVIATION, AND GENERAL NOTES SEE SHEET G-002.
2. FOR MAINTENANCE CHANNEL DREDGING PLANS, SEE SHEETS C-101 TO C-106.

LEGEND

DREDGE DEPTH −6.5

OVER DREDGE −7.5

Mark	Description	Date	Appr.

MASSEY'S DITCH
MAINETENANCE DREDGING
SUSSEX COUNTY, DELAWARE

SECTION - DREDGING -
SHEET 2 OF 21

Designed by: PWK
Dwn by: HR
Ckd by: PGV
Reviewed by: PWK
Submitted by: MOFFATT & NICHOL
Date: MAY 01, 2019
M&N Project No. 10248
Rev. –
Drawing code:
Drawing Scale:
Plot scale: 1:1 (0 SHEET)

moffatt & nichol
2780 LIGHTHOUSE POINT EAST,
SUITE 1
BALTIMORE, MD 21224
410-563-7300

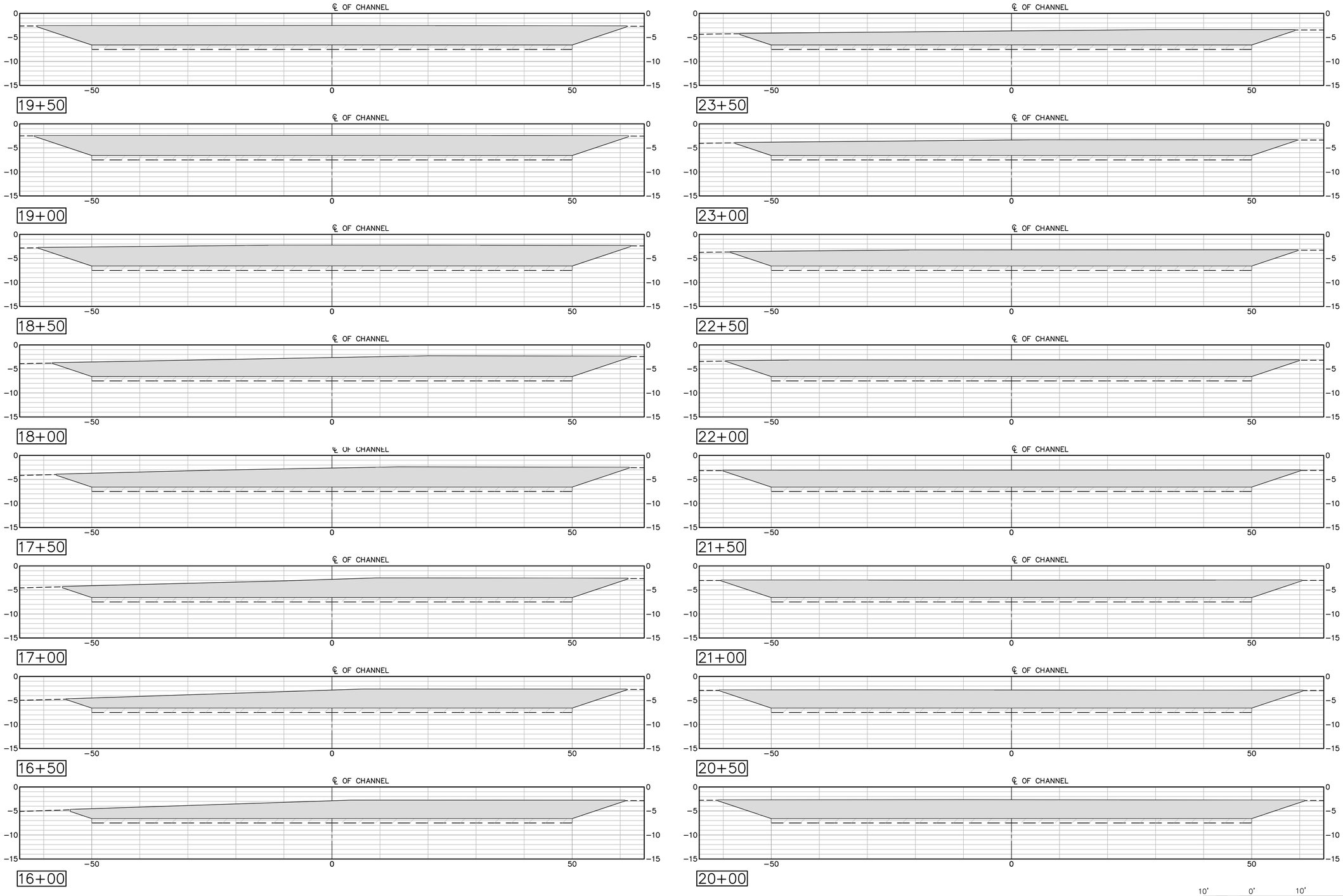
DEPARTMENT OF NATURAL RESOURCES AND
ENVIRONMENTAL CONTROL
89 KINGS HIGHWAY
DOVER, DE 19901

PETER WILLIAM KOTULAK JR.
LICENSE
No. 18765
DELAWARE
PROFESSIONAL ENGINEER
SEAL

Sheet
Reference No.
C-303
INDEX: 14 OF 40

File: Q:\BA\10248 DNREC NAT17007\10248-01 M-D Dredge\500 CADD_ACTIVE_Massey's Ditch (sheets)\1024801C-303; Plotted: 3/13/2019 4:41 PM by VOELKER, PAUL; Saved: 11/27/2018 4:07 PM by PVOELKER

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



NOTES:

1. FOR LEGEND, ABBREVIATION, AND GENERAL NOTES SEE SHEET G-002.
2. FOR MAINTENANCE CHANNEL DREDGING PLANS, SEE SHEETS C-101 TO C-106.

LEGEND

DREDGE DEPTH −6.5

OVER DREDGE −7.5

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

Mark	Description	Date	Appr.

MASSEY'S DITCH
MAINETENANCE DREDGING
SUSSEX COUNTY, DELAWARE

SECTION - DREDGING - SHEET 3 OF 21

Designed by: PWK
Date: MAY 01, 2019
Rev. –
Dwn by: HR
Ckd by: PGV
M&N Project No. 10248
Drawing code:
Reviewed by: PWK
Submitted by: MOFFATT & NICHOL
Drawing Scale: Plot scale: 1:1 (D SHEET)

moffatt & nichol
2780 LIGHTHOUSE POINT EAST,
SUITE 1
BALTIMORE, MD 21224
410-563-7300

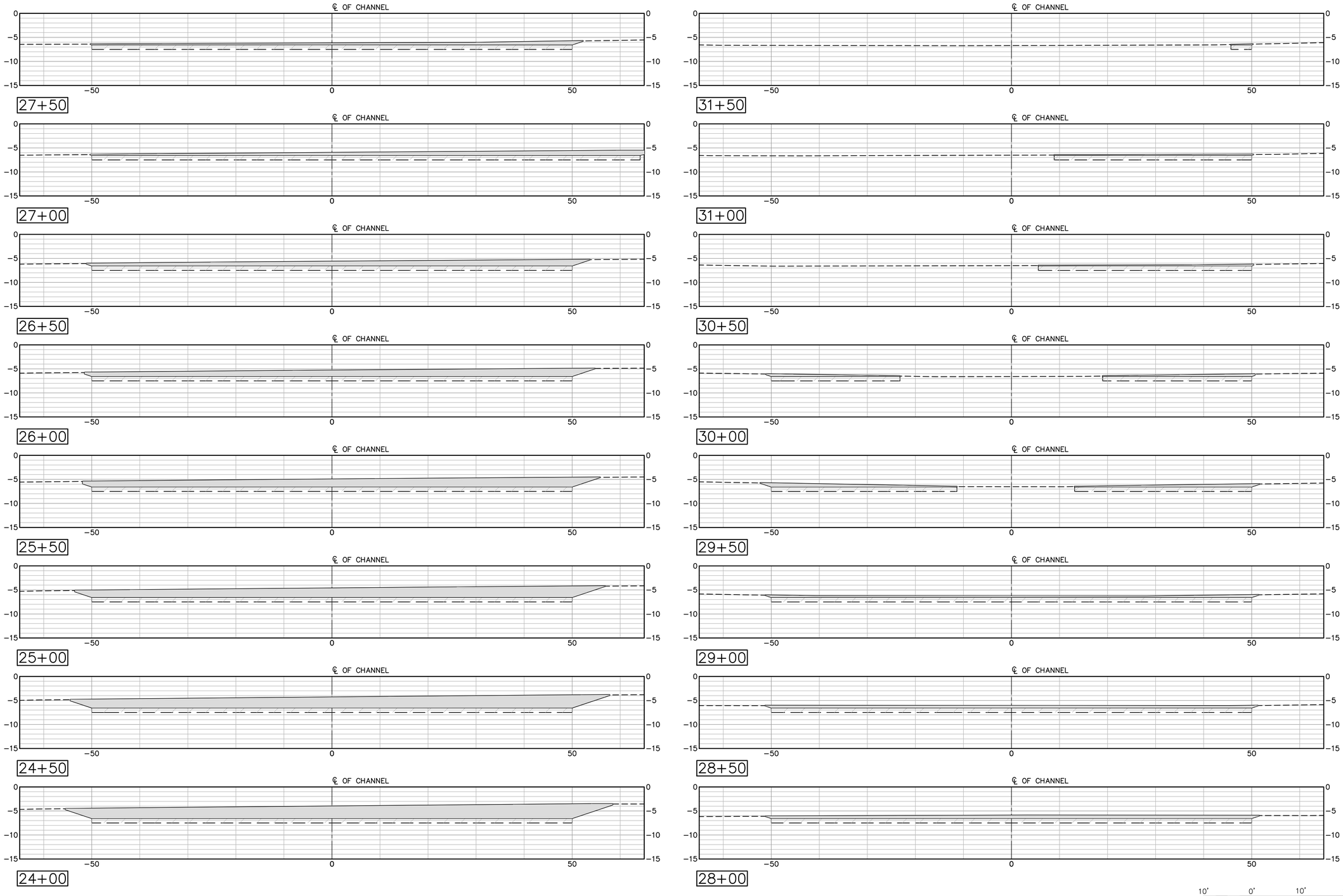
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
89 KINGS HIGHWAY
DOVER, DE 19901

PETER WILLIAM KOTULAK
LICENSE
No. 18765
DELAWARE
PROFESSIONAL ENGINEER
SEAL

Sheet Reference No.
C-304
INDEX: 15 OF 40

File: Q:\BA\10248 DNREC NAT17007\10248-01 M-D Dredge\500 CADD_ACTIVE_Massey's Ditch (sheets)\1024801C-304; Plotted: 3/13/2019 4:41 PM by VOELKER, PAUL; Saved: 11/27/2018 4:06 PM by PVOELKER

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



NOTES:

1. FOR LEGEND, ABBREVIATION, AND GENERAL NOTES SEE SHEET G-002.
2. FOR MAINTENANCE CHANNEL DREDGING PLANS, SEE SHEETS C-101 TO C-106.

LEGEND

DREDGE DEPTH −6.5

OVER DREDGE −7.5

Mark	Description	Date	Appr.

MASSEY'S DITCH
MAINETENANCE DREDGING
SUSSEX COUNTY, DELAWARE

SECTION - DREDGING - SHEET 4 OF 21

Designed by: PWK
Dwn by: HR
Ckd by: PGV
Reviewed by: PWK
Submitted by: MOFFATT & NICHOL
Date: MAY 01, 2019
Rev. –
M&N Project No. 10248
Drawing code:
Drawing Scale:
Plot scale: 1:1 (0 SHEET)

moffatt & nichol
2780 LIGHTHOUSE POINT EAST,
SUITE 1
BALTIMORE, MD 21224
410-563-7300

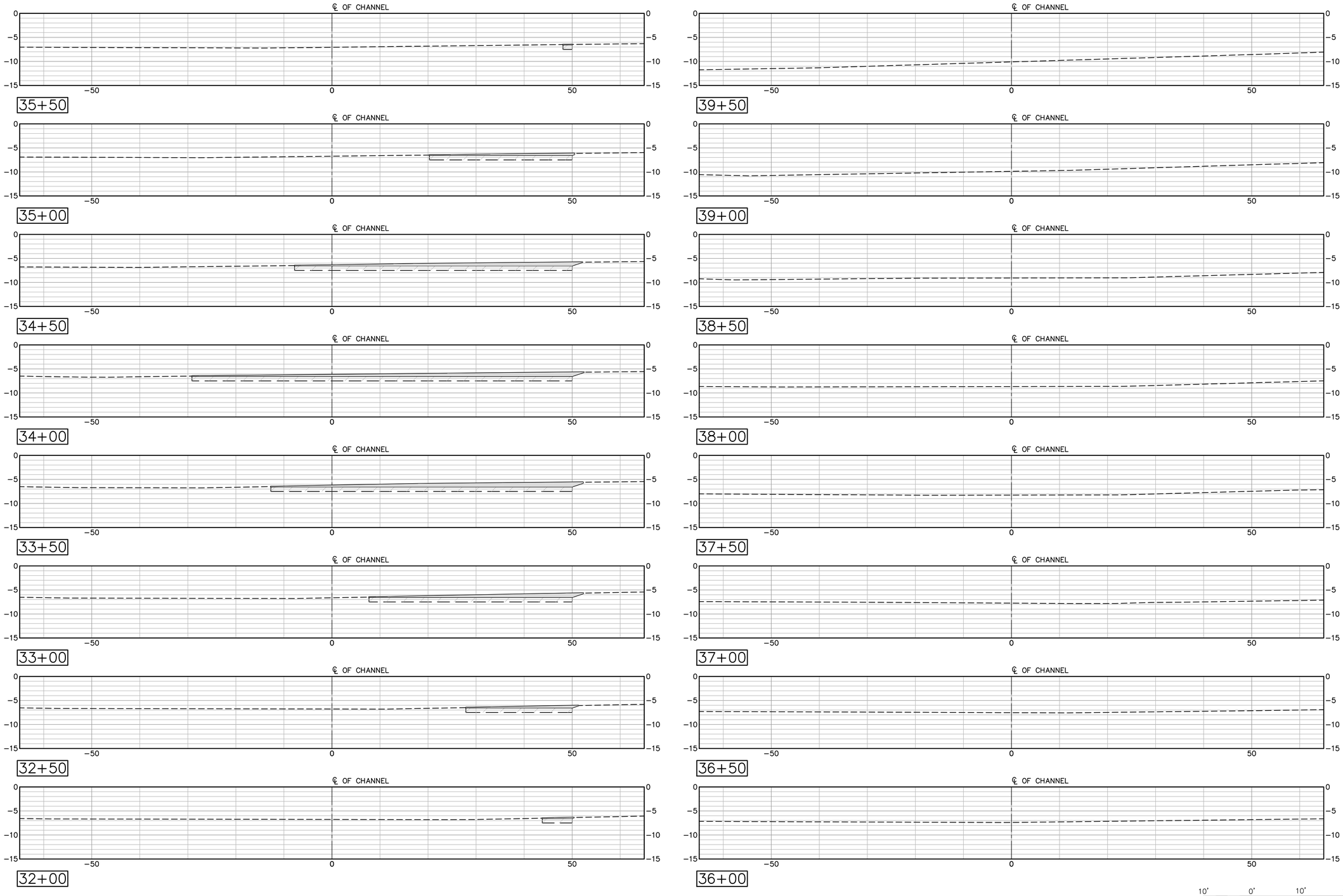
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
89 KINGS HIGHWAY
DOVER, DE 19901

PETER WILLIAM KOTULAK JR.
LICENSE
No. 18765
DELAWARE
PROFESSIONAL ENGINEER
SEAL

Sheet Reference No.
C-305
INDEX: 16 OF 40

File: Q:\BA\10248 DNREC NAT17007\10248-01 M-D Dredge\500 CADD_ACTIVE_Massey's Ditch (sheets)\1024801C-305; Plotted: 3/13/2019 4:42 PM by VOELKER, PAUL; Saved: 11/27/2018 4:07 PM by PVOELKER

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



NOTES:

1. FOR LEGEND, ABBREVIATION, AND GENERAL NOTES SEE SHEET G-002.
2. FOR MAINTENANCE CHANNEL DREDGING PLANS, SEE SHEETS C-101 TO C-106.

LEGEND

DREDGE DEPTH −6.5

OVER DREDGE −7.5

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

Mark	Description	Date	Appr.

MASSEY'S DITCH
MAINETENANCE DREDGING
SUSSEX COUNTY, DELAWARE

SECTION - DREDGING - SHEET 5 OF 21

Designed by: PWK
Dwn by: HR
Ckd by: PGV
Reviewed by: PWK
Submitted by: MOFFATT & NICHOL
Date: MAY 01, 2019
Rev. –
M&N Project No. 10248
Drawing code:
Drawing Scale:
Plot scale: 1:1 (0 SHEET)

moffatt & nichol
2780 LIGHTHOUSE POINT EAST, SUITE 1
BALTIMORE, MD 21224
410-563-7300

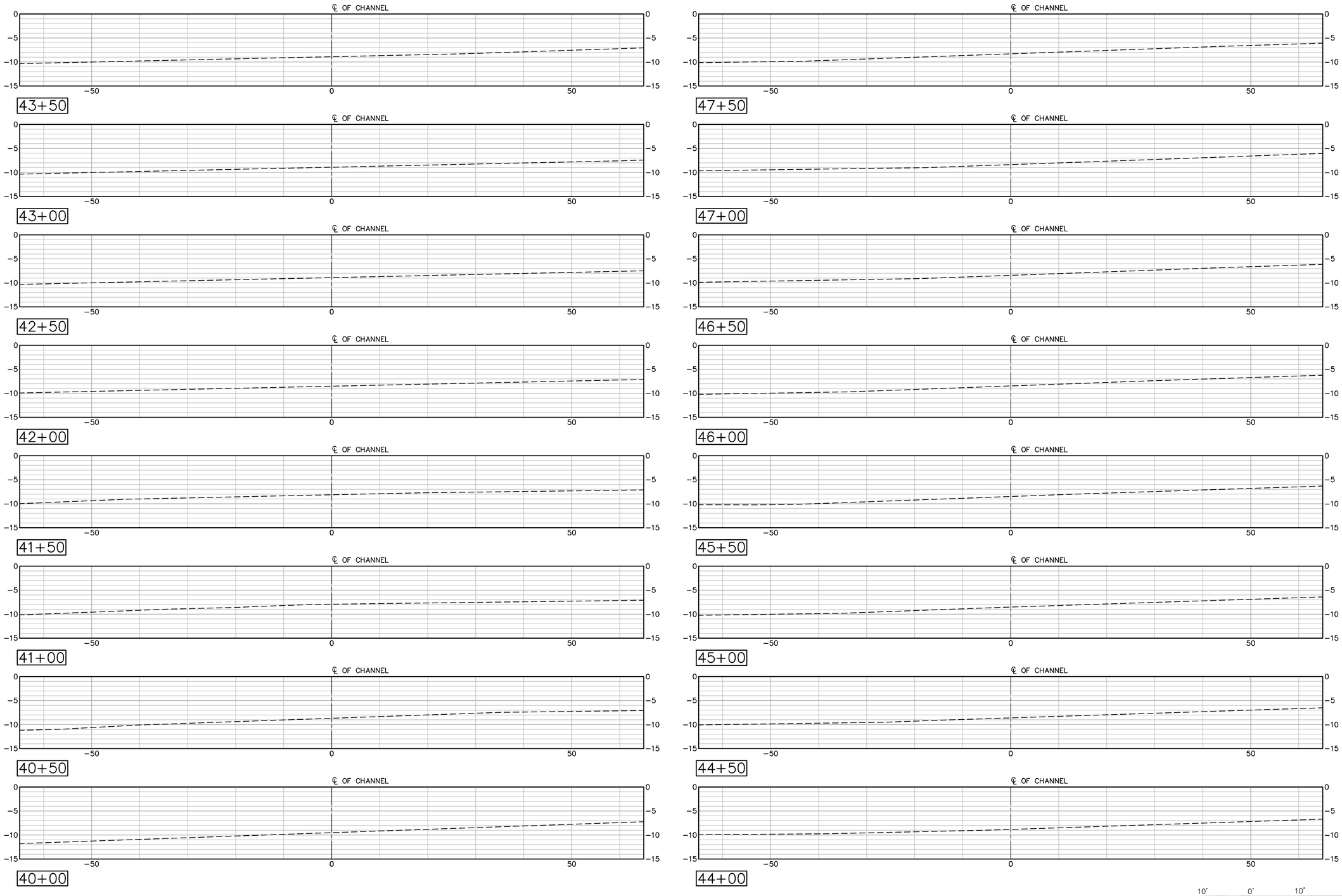
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
89 KINGS HIGHWAY
DOVER, DE 19901

PETER WILLIAM KOTULAK JR.
LICENSE No. 18765
DELAWARE
PROFESSIONAL ENGINEER
SEAL

Sheet Reference No.
C-306
INDEX: 17 OF 40

File: Q:\BA\10248 DNREC NAT17007\10248-01 M-D Dredge\500 CADD_ACTIVE_Massey's Ditch (sheets)\1024801C-306; Plotted: 3/13/2019 4:42 PM by VOELKER, PAUL; Saved: 11/27/2018 4:07 PM by PVOELKER

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



NOTES:

1. FOR LEGEND, ABBREVIATION, AND GENERAL NOTES SEE SHEET G-002.
2. FOR MAINTENANCE CHANNEL DREDGING PLANS, SEE SHEETS C-101 TO C-106.

LEGEND

DREDGE DEPTH −6.5

OVER DREDGE −7.5

Mark	Description	Date	Appr.

MASSEY'S DITCH
MAINETENANCE DREDGING
SUSSEX COUNTY, DELAWARE

SECTION - DREDGING - SHEET 6 OF 21

Designed by: PWK
Dwn by: HR
Ckd by: PGV
Reviewed by: PWK
Submitted by: MOFFATT & NICHOL
Date: MAY 01, 2019
Rev. –
M&N Project No. 10248
Drawing code:
Drawing Scale:
Plot scale: 1:1 (0 SHEET)

moffatt & nichol
2780 LIGHTHOUSE POINT EAST,
SUITE 1
BALTIMORE, MD 21224
410-563-7300

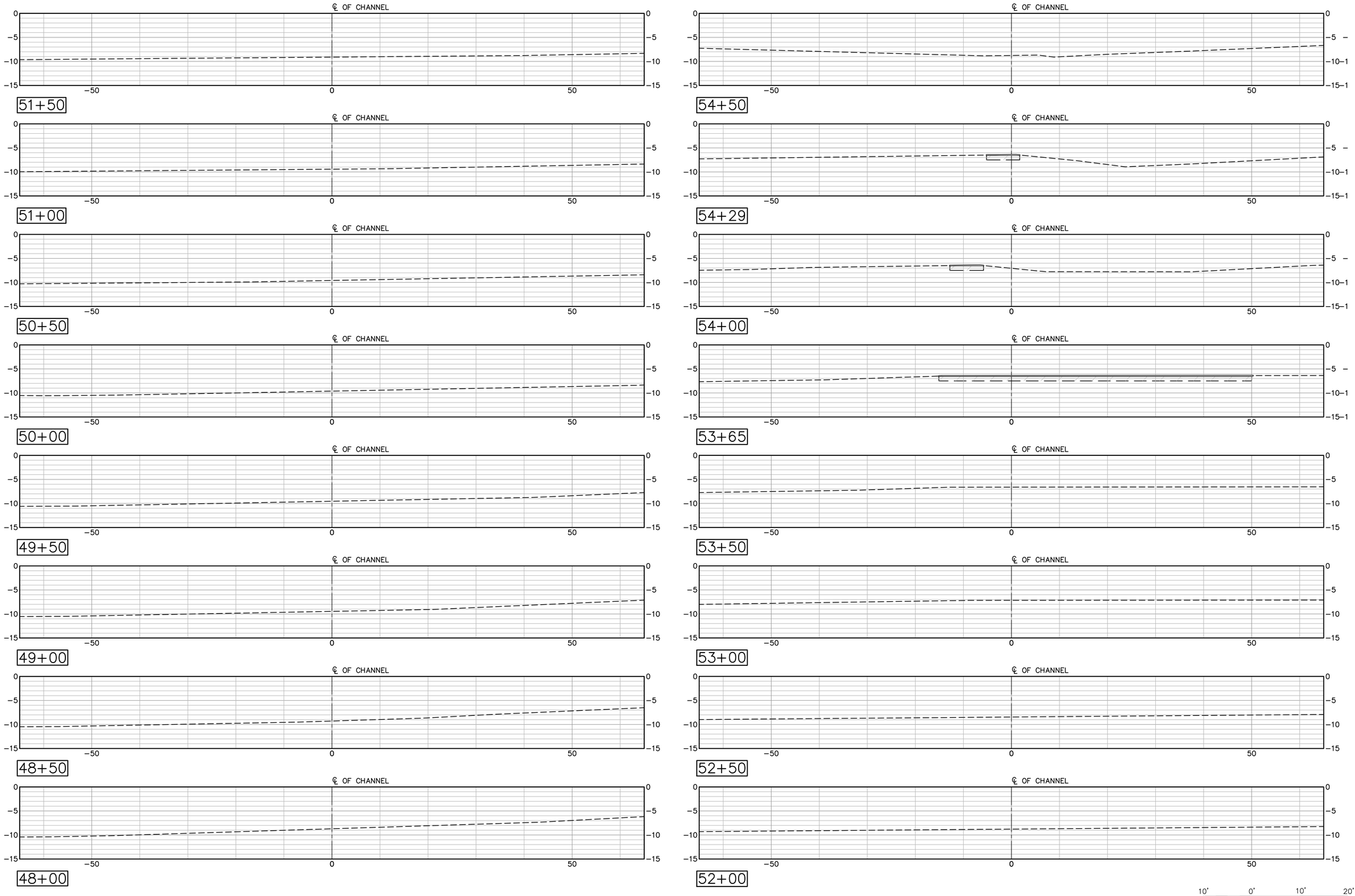
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
89 KINGS HIGHWAY
DOVER, DE 19901

PETER WILLIAM KOTULAK JR.
LICENSE
No. 18765
DELAWARE
PROFESSIONAL ENGINEER
SEAL

Sheet Reference No.
C-307
INDEX: 18 OF 40

File: Q:\BA\10248 DNREC NAT17007\10248-01 M-D Dredge\500 CADD_ACTIVE_Massey's Ditch (sheets)\1024801C-307; Plotted: 3/13/2019 4:43 PM by VOELKER, PAUL; Saved: 11/27/2018 4:07 PM by PVOELKER

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



NOTES:

1. FOR LEGEND, ABBREVIATION, AND GENERAL NOTES SEE SHEET G-002.
2. FOR MAINTENANCE CHANNEL DREDGING PLANS, SEE SHEETS C-101 TO C-106.

LEGEND

DREDGE DEPTH −6.5

OVER DREDGE −7.5

Mark	Description	Date	Appr.

MASSEY'S DITCH
MAINETENANCE DREDGING
SUSSEX COUNTY, DELAWARE

SECTION - DREDGING -
SHEET 7 OF 21

Designed by: PWK
Dwn by: HR
Ckd by: PGV
Reviewed by: PWK
Submitted by: MOFFATT & NICHOL
Date: MAY 01, 2019
Rev. –
M&N Project No. 10248
Drawing code:
Drawing Scale:
Plot scale: 1:1 (D SHEET)

moffatt & nichol
2780 LIGHTHOUSE POINT EAST,
SUITE 1
BALTIMORE, MD 21224
410-563-7300

DEPARTMENT OF NATURAL RESOURCES AND
ENVIRONMENTAL CONTROL
89 KINGS HIGHWAY
DOVER, DE 19901

PETER WILLIAM KOTULAK
LICENSE
No. 18765
DELAWARE
PROFESSIONAL ENGINEER
SEAL

Sheet
Reference No.
C-308
INDEX: 19 OF 40

File: Q:\BA\10248 DNREC NAT17007\10248-01 M-D Dredge\500 CADD_ACTIVE_Massey's Ditch (sheets)\1024801C-302; Plotted: 3/13/2019 4:43 PM by VOELKER, PAUL; Saved: 11/27/2018 4:07 PM by PVOELKER

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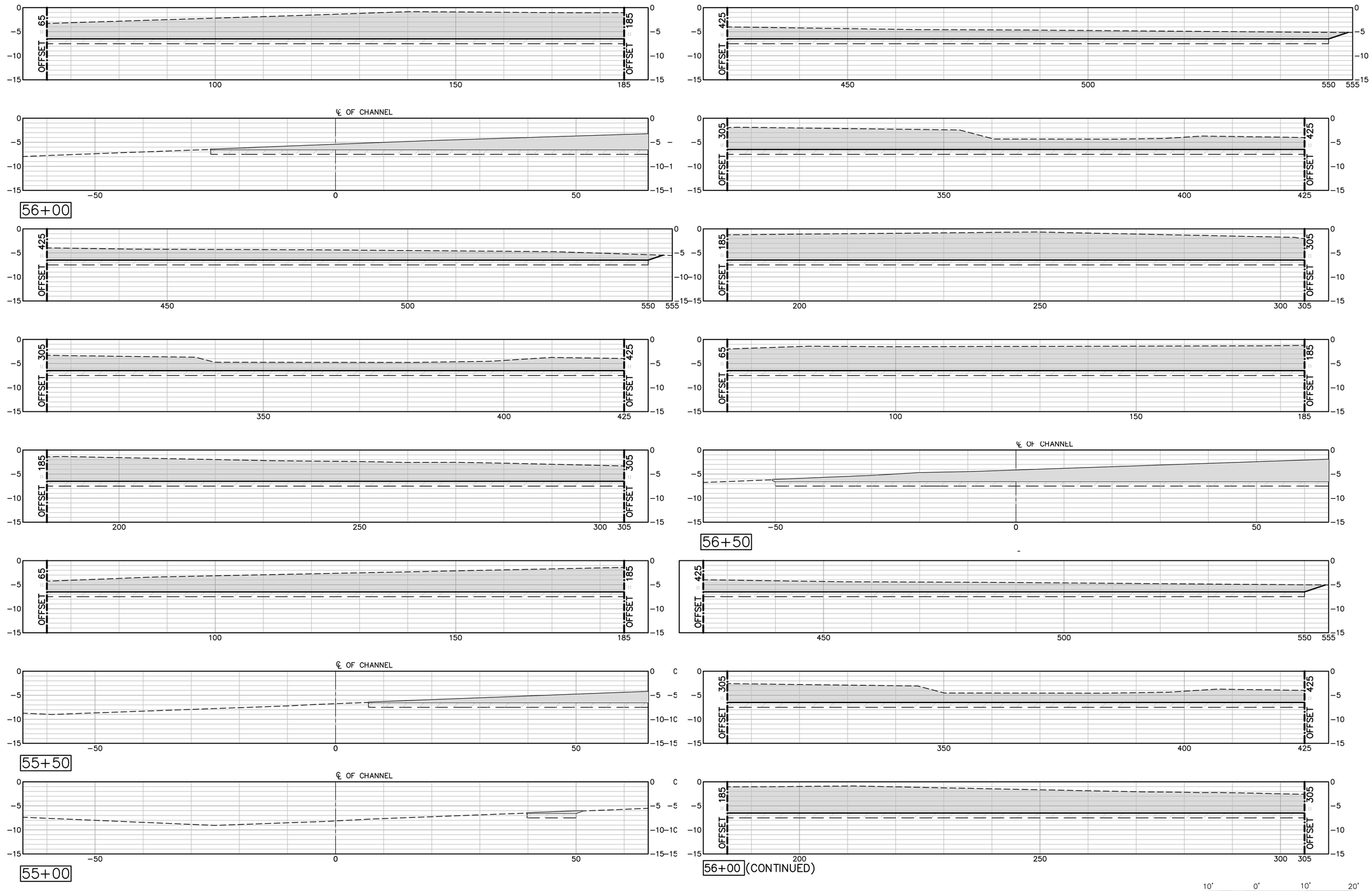


NOTES:

1. FOR LEGEND, ABBREVIATION, AND GENERAL NOTES SEE SHEET G-002.
2. FOR MAINTENANCE CHANNEL DREDGING PLANS, SEE SHEETS C-101 TO C-106.

LEGEND

DREDGE DEPTH -6.5

OVER DREDGE -7.5

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

Mark	Description	Date	Appr.

MASSEY'S DITCH
MAINETENANCE DREDGING
SUSSEX COUNTY, DELAWARE

SECTION - DREDGING - SHEET 8 OF 21

Designed by: PWK
Date: MAY 01, 2019
Rev. -
Dwn by: HR
Ckd by: PGV
M&N Project No. 10248
Reviewed by: PWK
Drawing code:
Submitted by: MOFFATT & NICHOL
Drawing Scale: Plot scale: 1:1 (D SHEET)

moffatt & nichol
2780 LIGHTHOUSE POINT EAST, SUITE D
BALTIMORE, MD 21224
410-563-7300

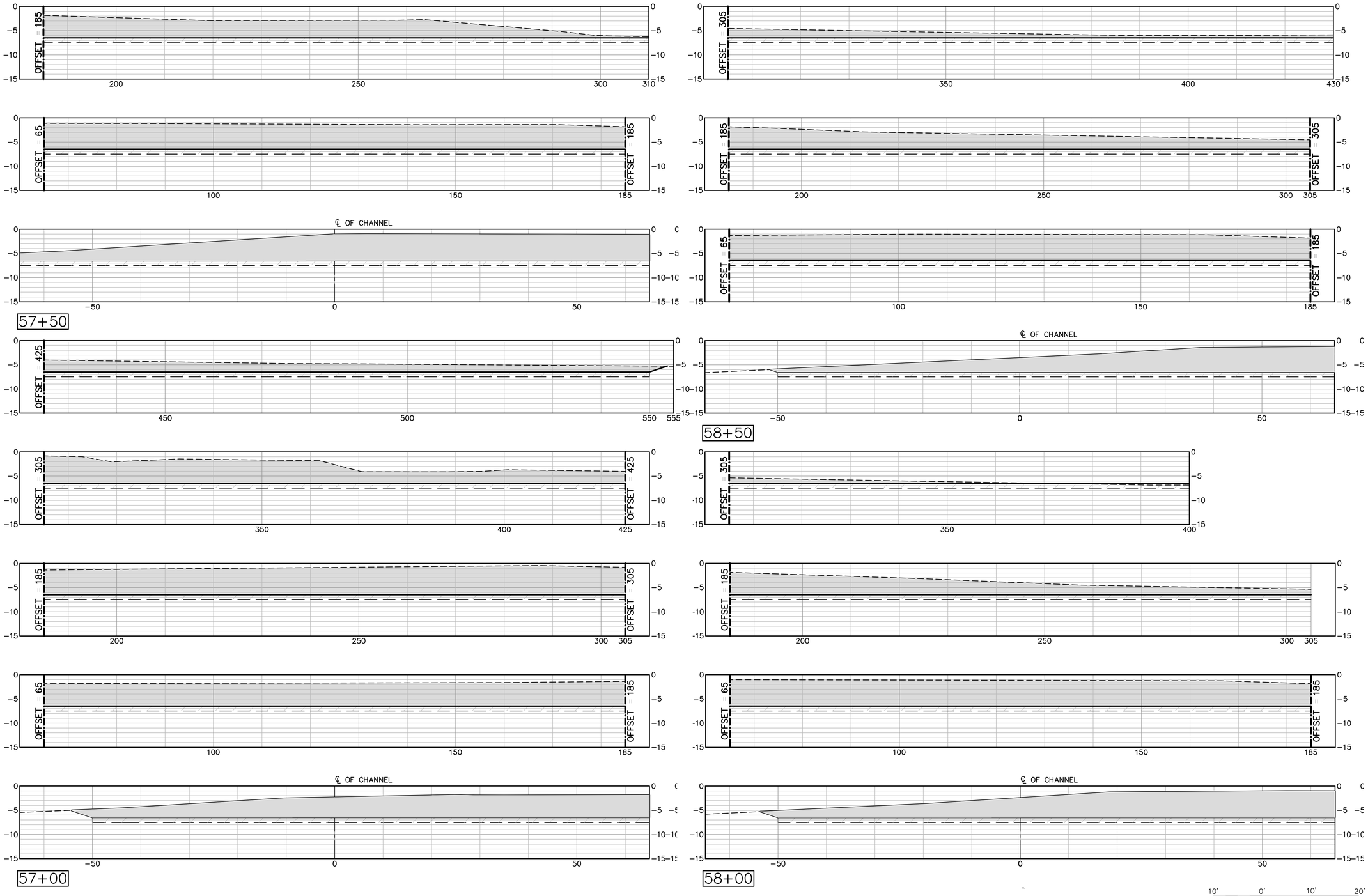
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
89 KINGS HIGHWAY
DOVER, DE 19901

PETER WILLIAM KOTULAK
LICENSE No. 18765
DELAWARE PROFESSIONAL ENGINEER

SEAL

Sheet Reference No.
C-309
INDEX: 20 OF 40

File: Q:\BA\10248 DNREC NATT2007\10248-01 M-D Dredge\500 CADD_ACTIVE_Massey's Ditch (sheets)\10248010C-309; Plotted: 3/13/2019 4:44 PM by VOELKER, PAUL; Saved: 11/27/2018 4:07 PM by PVOELKER



NOTES:

1. FOR LEGEND, ABBREVIATION, AND GENERAL NOTES SEE SHEET G-002.
2. FOR MAINTENANCE CHANNEL DREDGING PLANS, SEE SHEETS C-101 TO C-106.

LEGEND

DREDGE DEPTH -6.5

OVER DREDGE -7.5

Mark	Description	Date	Appr.

MASSEY'S DITCH
MAINETENANCE DREDGING
SUSSEX COUNTY, DELAWARE

SECTION - DREDGING - SHEET 9 OF 21

Rev. –
Date: MAY 01, 2019
M&N Project No. 10248
Drawing code:
Drawing Scale: Plot scale: 1:1 (0 SHEET)
Designed by: PWK
Dwn by: HR
Cad by: PGV
Reviewed by: PWK
Submitted by: MOFFATT & NICHOL

moffatt & nichol
2780 LIGHTHOUSE POINT EAST, SUITE D
BALTIMORE, MD 21224
410-563-7300

DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
89 KINGS HIGHWAY
DOVER, DE 19901

PETER WILLIAM KOTULAK
LICENSE No. 18765
DELAWARE
PROFESSIONAL ENGINEER
SEAL

Sheet Reference No.
C-310
INDEX: 21 OF 40

File: Q:\BA\10248 DNREC NATT\007\10248-01 M-D Dredge\500 CADD_ACTIVE_Massey's Ditch (sheets)\10248010C-310; Plotted: 3/13/2019 4:45 PM by VDELKER, PAUL; Saved: 11/27/2018 4:07 PM by PVDELKER

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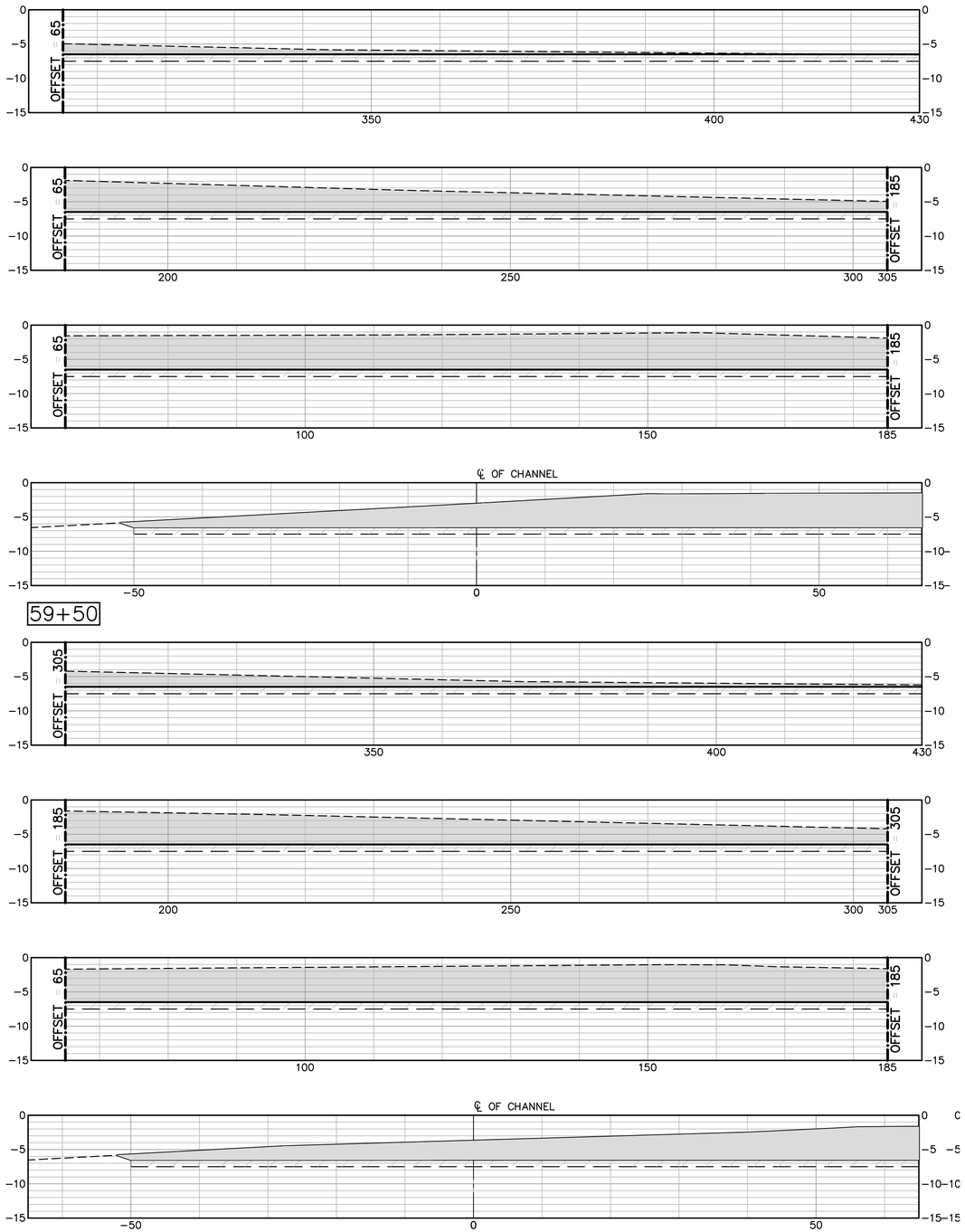
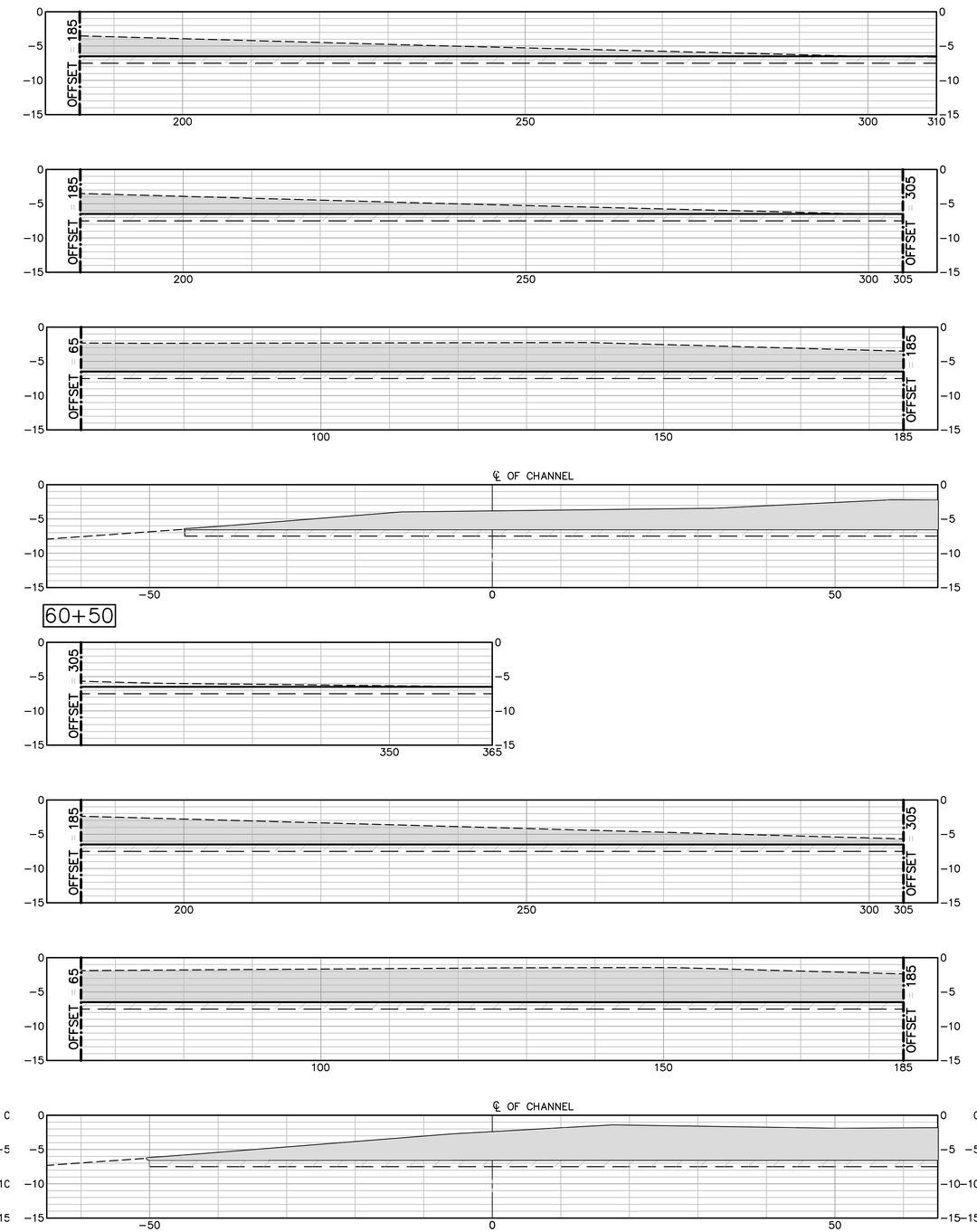




10' 0' 10' 20'

SCALE: 1"=10'

NOTES:

1. FOR LEGEND, ABBREVIATION, AND GENERAL NOTES SEE SHEET G-002.
2. FOR MAINTENANCE CHANNEL DREDGING PLANS, SEE SHEETS C-101 TO C-106.

LEGEND

DREDGE DEPTH -6.5

OVER DREDGE -7.5

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

Mark	Description	Date	Appr.

MASSEY'S DITCH
MAINETENANCE DREDGING
SUSSEX COUNTY, DELAWARE

SECTION - DREDGING -
SHEET 10 OF 21

Designed by: PWK
Dwn by: HR
Ckd by: PGV
Reviewed by: PWK
Submitted by: MOFFATT & NICHOL
Date: MAY 01, 2019
Rev: –
M&N Project No. 10248
Drawing code:
Drawing Scale: Plot scale: 1:1 (0 SHEET)

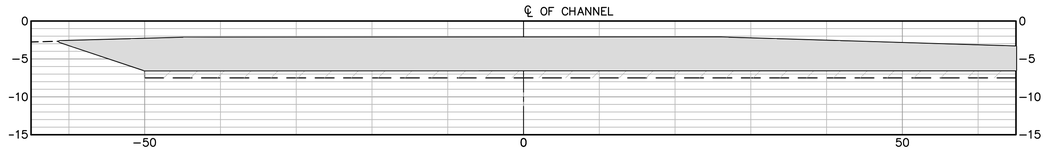
moffatt & nichol
2780 LIGHTHOUSE POINT EAST, SUITE D
BALTIMORE, MD 21224
410-563-7300

DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
89 KINGS HIGHWAY
DOVER, DE 19901

PETER WILLIAM KOTULAK JR.
LICENSE No. 18765
DELAWARE
PROFESSIONAL ENGINEER
SEAL

Sheet Reference No.
C-311
INDEX: 22 OF 40

File: G:\LBA\10248 DNREC NAT\7007\10248-01 M-D Dredge\500 CADD_ACTIVE_Massey's Ditch (sheets)\1024801C-311; Plotted: 3/13/2019 4:46 PM by VDELKER, PAUL; Saved: 11/27/2018 4:07 PM by PVDELKER



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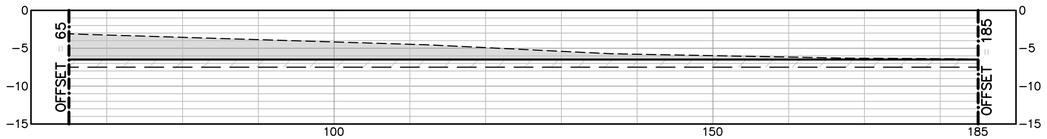

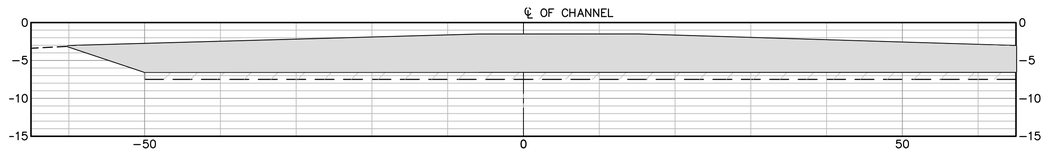

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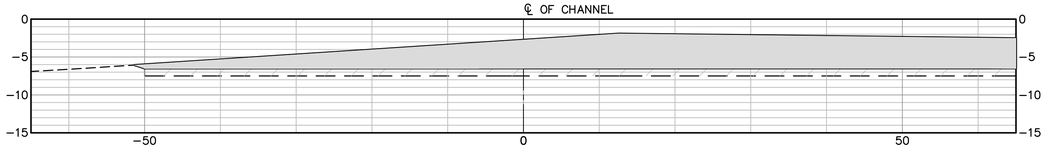

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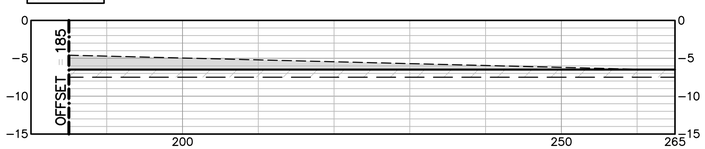

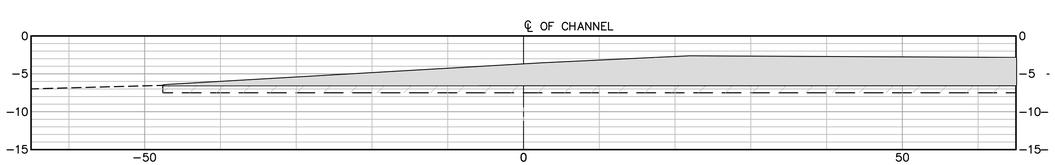

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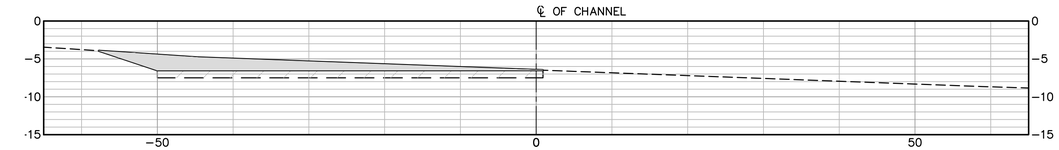

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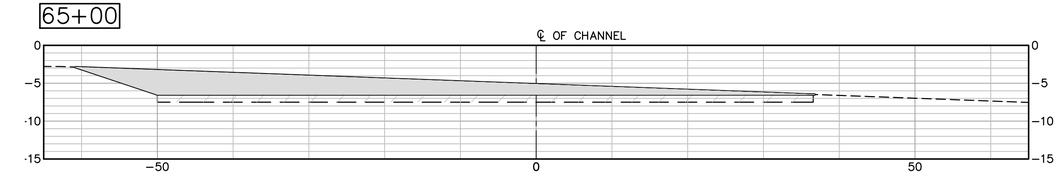

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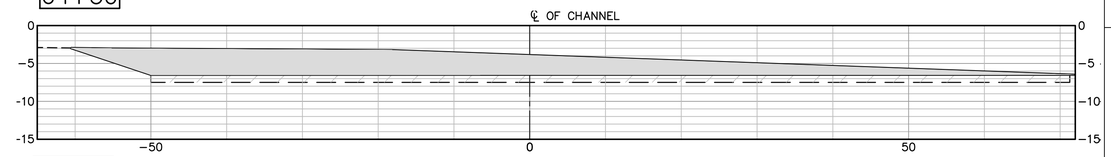

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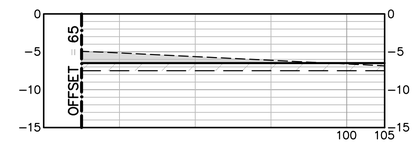

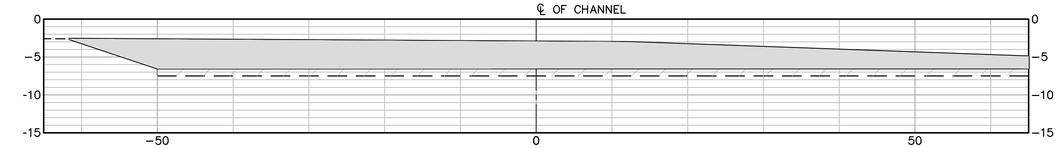

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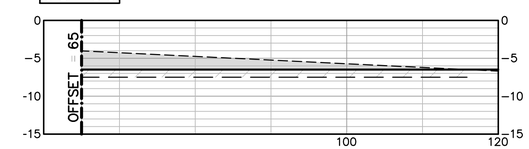

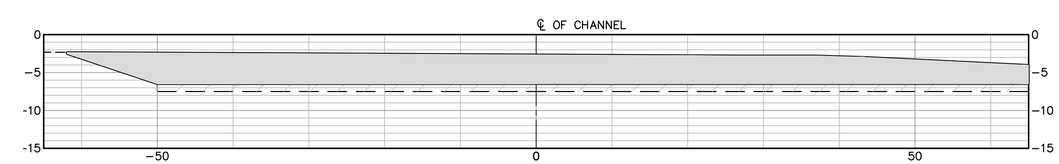

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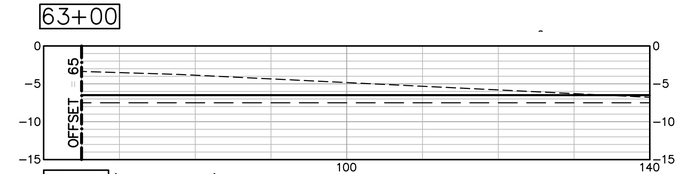


62+50 (CONTINUED)

10' 0' 10' 20'

SCALE: 1"=10'

NOTES:

1. FOR LEGEND, ABBREVIATION, AND GENERAL NOTES SEE SHEET G-002.
2. FOR MAINTENANCE CHANNEL DREDGING PLANS, SEE SHEETS C-101 TO C-106.

LEGEND

DREDGE DEPTH -6.5

OVER DREDGE -7.5

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

Mark	Description	Date	Appr.

MASSEY'S DITCH
MAINETENANCE DREDGING
SUSSEX COUNTY, DELAWARE

SECTION - DREDGING -
SHEET 11 OF 21

Designed by: PWK	Date: MAY 01, 2019		Rev. –
Dwn by: HR	Cxd by: PGV	M&N Project No. 10248	
Revised by: PWK		Drawing code:	
Submitted by: MOFFATT & NICHOL		Drawing Scale: Plot scale: 1:1 (D SHEET)	

moffatt & nichol
2780 LIGHTHOUSE POINT EAST,
SUITE D
BALTIMORE, MD 21224
410-563-7300

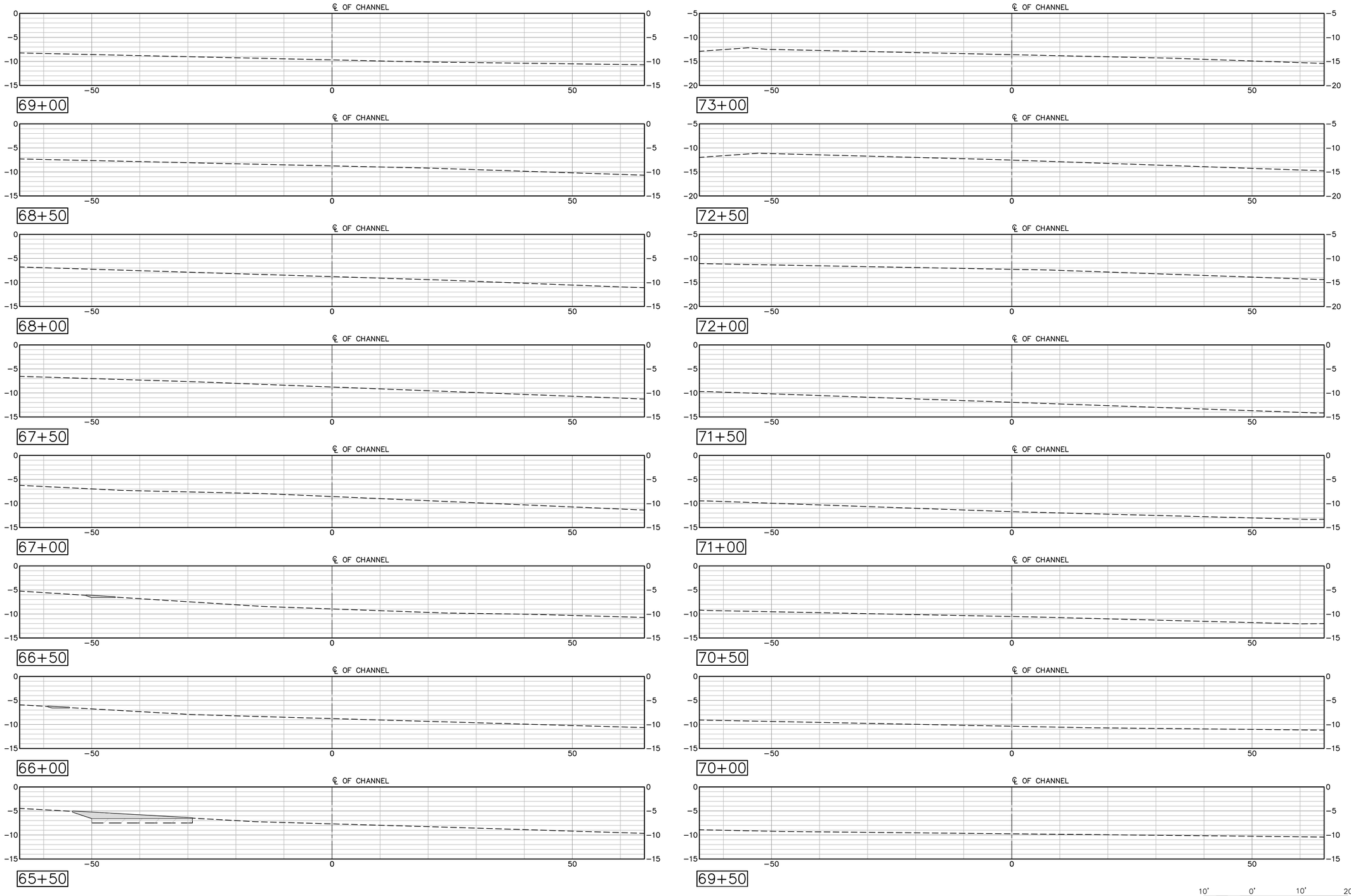
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
89 KINGS HIGHWAY
DOVER, DE 19901

PETER WILLIAM KOULAK
LICENSE No. 18765
DELAWARE
PROFESSIONAL ENGINEER

SEAL

Sheet Reference No.
C-312
INDEX: 23 OF 40

File: Q:\BA\10248 DNREC NAT\70021\10248-01 M-D Dredge\500 CADD_ACTIVE_Massey's Ditch (sheets)\10248010-312; Plotted: 3/13/2019 4:48 PM by VOELKER, PAUL; Saved: 11/27/2018 4:07 PM by PVOELKER



NOTES:

1. FOR LEGEND, ABBREVIATION, AND GENERAL NOTES SEE SHEET G-002.
2. FOR MAINTENANCE CHANNEL DREDGING PLANS, SEE SHEETS C-101 TO C-106.

LEGEND

DREDGE DEPTH -6.5

OVER DREDGE -7.5

Mark	Description	Date	Appr.

MASSEY'S DITCH
MAINETENANCE DREDGING
SUSSEX COUNTY, DELAWARE

SECTION - DREDGING - SHEET 12 OF 21

Designed by: PWK
Dwn by: HR
Ckd by: PGV
Reviewed by: PWK
Submitted by: MOFFATT & NICHOL
Date: MAY 01, 2019
Rev. –
M&N Project No. 10248
Drawing code:
Drawing Scale:
Plot scale: 1:1 (0 SHEET)

moffatt & nichol
2780 LIGHTHOUSE POINT EAST, SUITE 1
BALTIMORE, MD 21224
410-563-7300

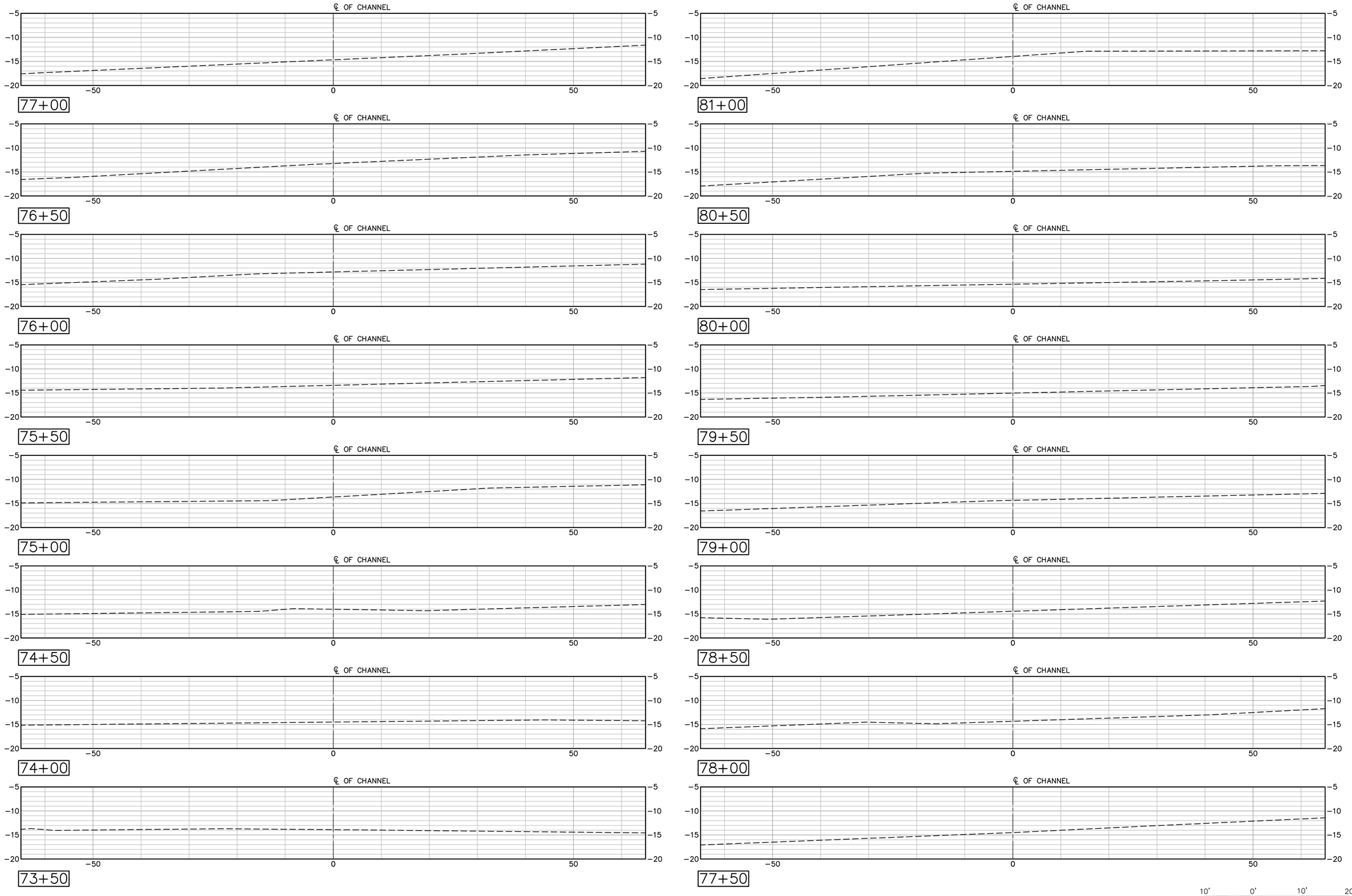
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
89 KINGS HIGHWAY
DOVER, DE 19901

PETER WILLIAM KOTULAK
LICENSE No. 18765
DELAWARE PROFESSIONAL ENGINEER
SEAL

Sheet Reference No.
C-313
INDEX: 24 OF 40

File: Q:\BA\10248 DNREC NAT17007\10248-01 M-D Dredge\500 CADD_ACTIVE_Massey's Ditch (sheets)\1024801C-313; Plotted: 3/13/2019 4:49 PM by VOELKER, PAUL; Saved: 11/27/2018 4:06 PM by PVOELKER

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



NOTES:

1. FOR LEGEND, ABBREVIATION, AND GENERAL NOTES SEE SHEET G-002.
2. FOR MAINTENANCE CHANNEL DREDGING PLANS, SEE SHEETS C-101 TO C-106.

LEGEND

DREDGE DEPTH −6.5

OVER DREDGE −7.5

Mark	Description	Date	Appr.

MASSEY'S DITCH
MAINETENANCE DREDGING
SUSSEX COUNTY, DELAWARE

SECTION - DREDGING -
SHEET 13 OF 21

Designed by: PWK
Dwn by: HR
Ckd by: PGV
Reviewed by: PWK
Submitted by: MOFFATT & NICHOL
Date: MAY 01, 2019
M&N Project No. 10248
Rev. –
Drawing code:
Drawing Scale:
Plot scale: 1:1 (D SHEET)

moffatt & nichol
2780 LIGHTHOUSE POINT EAST,
SUITE 1
BALTIMORE, MD 21224
410-563-7300

DEPARTMENT OF NATURAL RESOURCES AND
ENVIRONMENTAL CONTROL
89 KINGS HIGHWAY
DOVER, DE 19901

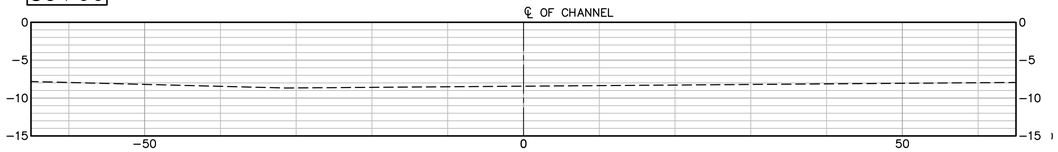
PETER WILLIAM KOTULAK JR.
LICENSE
No. 18765
DELAWARE
PROFESSIONAL ENGINEER
SEAL

Sheet
Reference No.
C-314
INDEX: 25 OF 40

File: Q:\BA\10248 DNREC NAT17007\10248-01 M-D Dredge\500 CADD_ACTIVE_Massey's Ditch (sheets)\1024801C-314; Plotted: 3/13/2019 4:49 PM by VOELKER, PAUL; Saved: 11/27/2018 4:06 PM by PVOELKER

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

85+00



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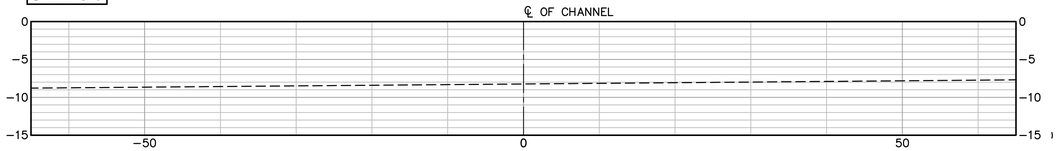
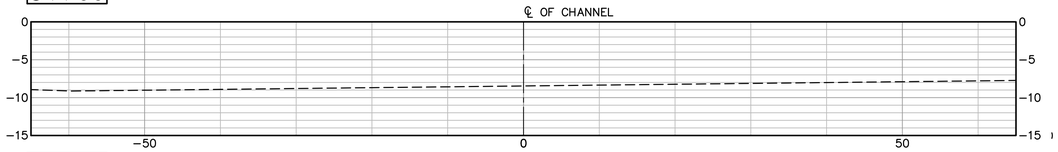
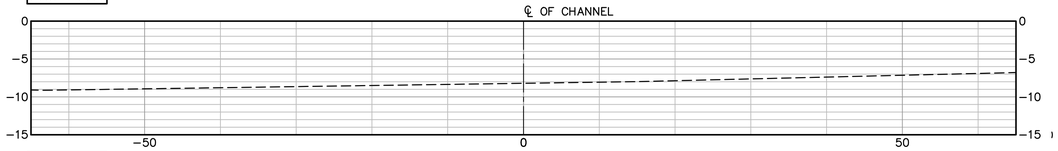


84+00



83+50



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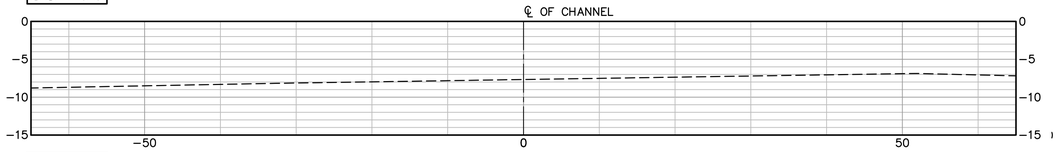

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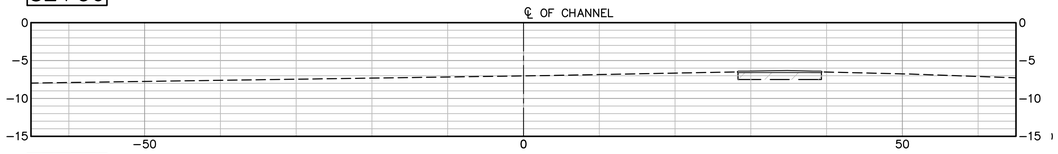

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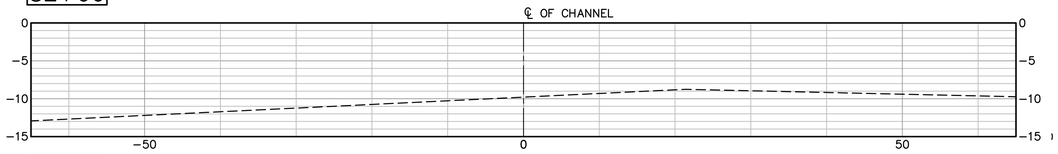

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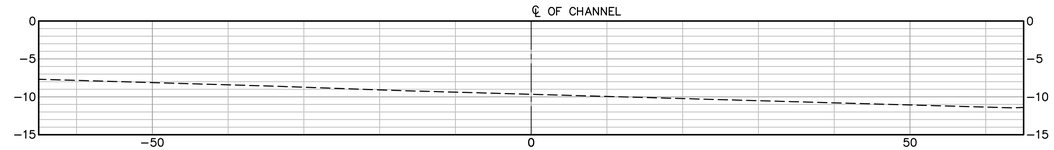

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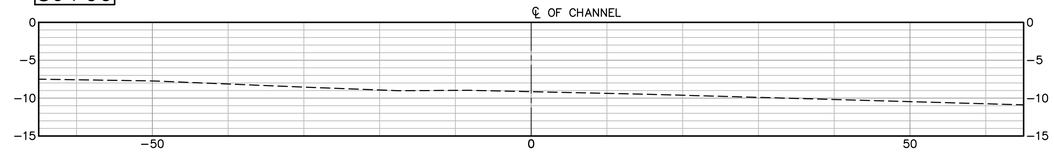

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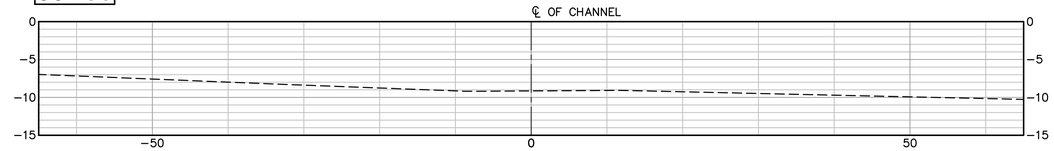

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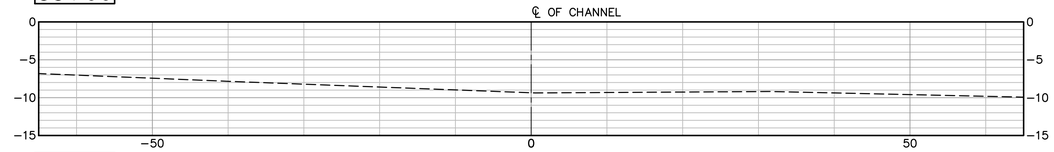

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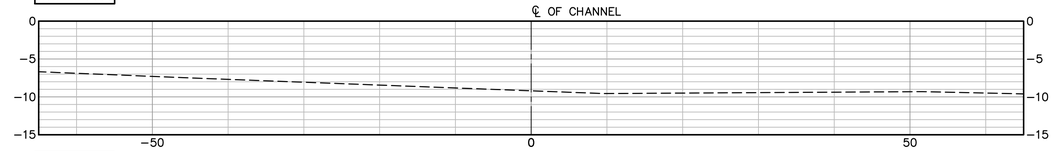

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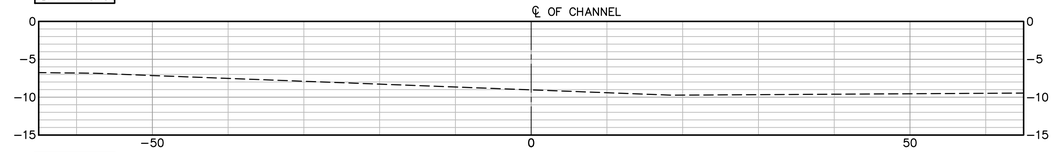

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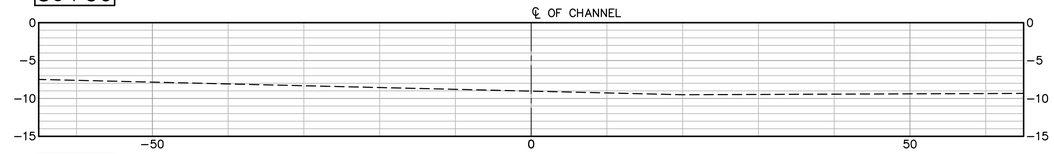

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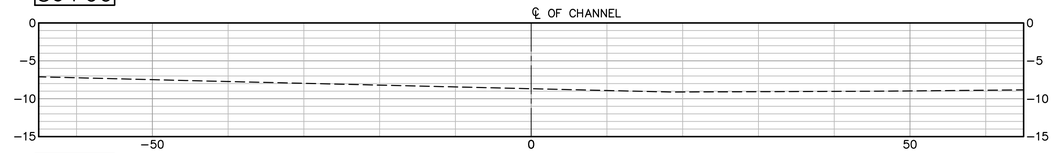


85+50

10' 0' 10' 20'

SCALE: 1"=10'

NOTES:

1. FOR LEGEND, ABBREVIATION, AND GENERAL NOTES SEE SHEET G-002.
2. FOR MAINTENANCE CHANNEL DREDGING PLANS, SEE SHEETS C-101 TO C-106.

LEGEND

DREDGE DEPTH −6.5

OVER DREDGE −7.5

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

Mark	Description	Date	Appr.

MASSEY'S DITCH
MAINETENANCE DREDGING
SUSSEX COUNTY, DELAWARE

SECTION - DREDGING -
SHEET 14 OF 21

moffatt & nichol
2780 LIGHTHOUSE POINT EAST,
SUITE 1
BALTIMORE, MD 21224
410-563-7300

DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
89 KINGS HIGHWAY
DOVER, DE 19901

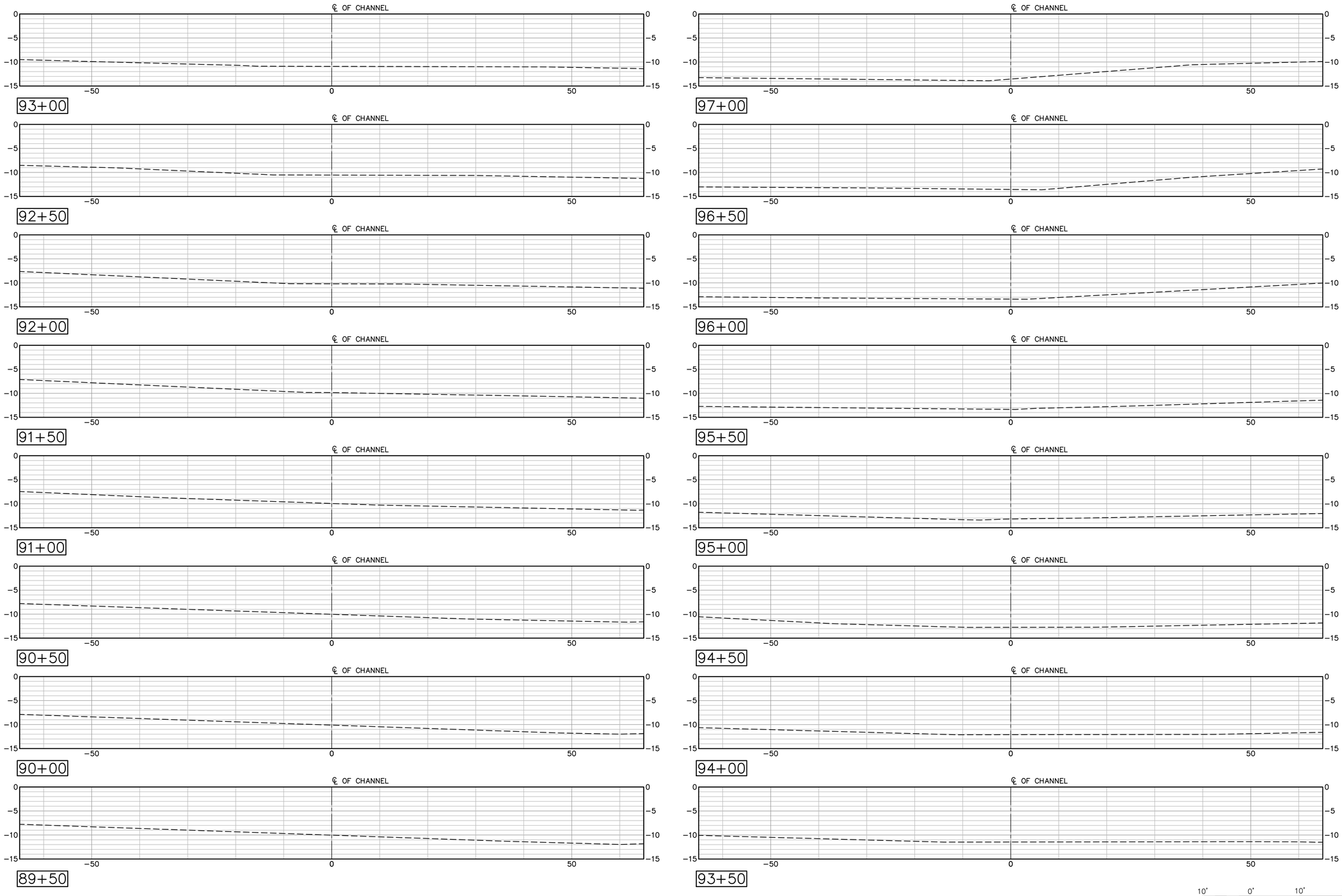
Designed by: PWK		Date: MAY 01, 2019	Rev. –
Dwn by: HR	Ckd by: PGV	M&N Project No. 10248	
Reviewed by: PWK		Drawing code:	
Submitted by: MOFFATT & NICHOL		Drawing Scale: Plot scale: 1:1 (D SHEET)	

PETER WILLIAM KOTULAK
LICENSE
No. 18765
DELAWARE
PROFESSIONAL ENGINEER
SEAL

Sheet
Reference No.
C-315
INDEX: 26 OF 40

File: Q:\BA\10248 DNREC NAT17007\10248-01 M-D Dredge\500 CADD_ACTIVE_Massey's Ditch (sheets)\1024801C-315; Plotted: 3/13/2019 4:50 PM by VOELKER, PAUL; Saved: 11/27/2018 4:07 PM by PVOELKER

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



NOTES:

1. FOR LEGEND, ABBREVIATION, AND GENERAL NOTES SEE SHEET G-002.
2. FOR MAINTENANCE CHANNEL DREDGING PLANS, SEE SHEETS C-101 TO C-106.

LEGEND

DREDGE DEPTH −6.5

OVER DREDGE −7.5

Mark	Description	Date	Appr.

MASSEY'S DITCH
MAINETENANCE DREDGING
SUSSEX COUNTY, DELAWARE

SECTION - DREDGING - SHEET 15 OF 21

Designed by: PWK
Dwn by: HR
Ckd by: PGV
Date: MAY 01, 2019
Rev. –
M&N Project No. 10248
Reviewed by: PWK
Drawing code:
Submitted by: MOFFATT & NICHOL
Drawing Scale:
Plot scale: 1:1 (D SHEET)

moffatt & nichol
2780 LIGHTHOUSE POINT EAST, SUITE 1
BALTIMORE, MD 21224
410-563-7300

DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
89 KINGS HIGHWAY
DOVER, DE 19901

PETER WILLIAM KOTULAK JR.
LICENSE No. 18765
DELAWARE PROFESSIONAL ENGINEER
SEAL

Sheet Reference No.
C-316
INDEX: 27 OF 40

File: Q:\BA\10248 DNREC NAT17007\10248-01 M-D Dredge\500 CADD_ACTIVE_Massey's Ditch (sheets)\1024801C-316; Plotted: 3/13/2019 4:50 PM by VDELKER, PAUL; Saved: 11/27/2018 4:07 PM by PVDELKER

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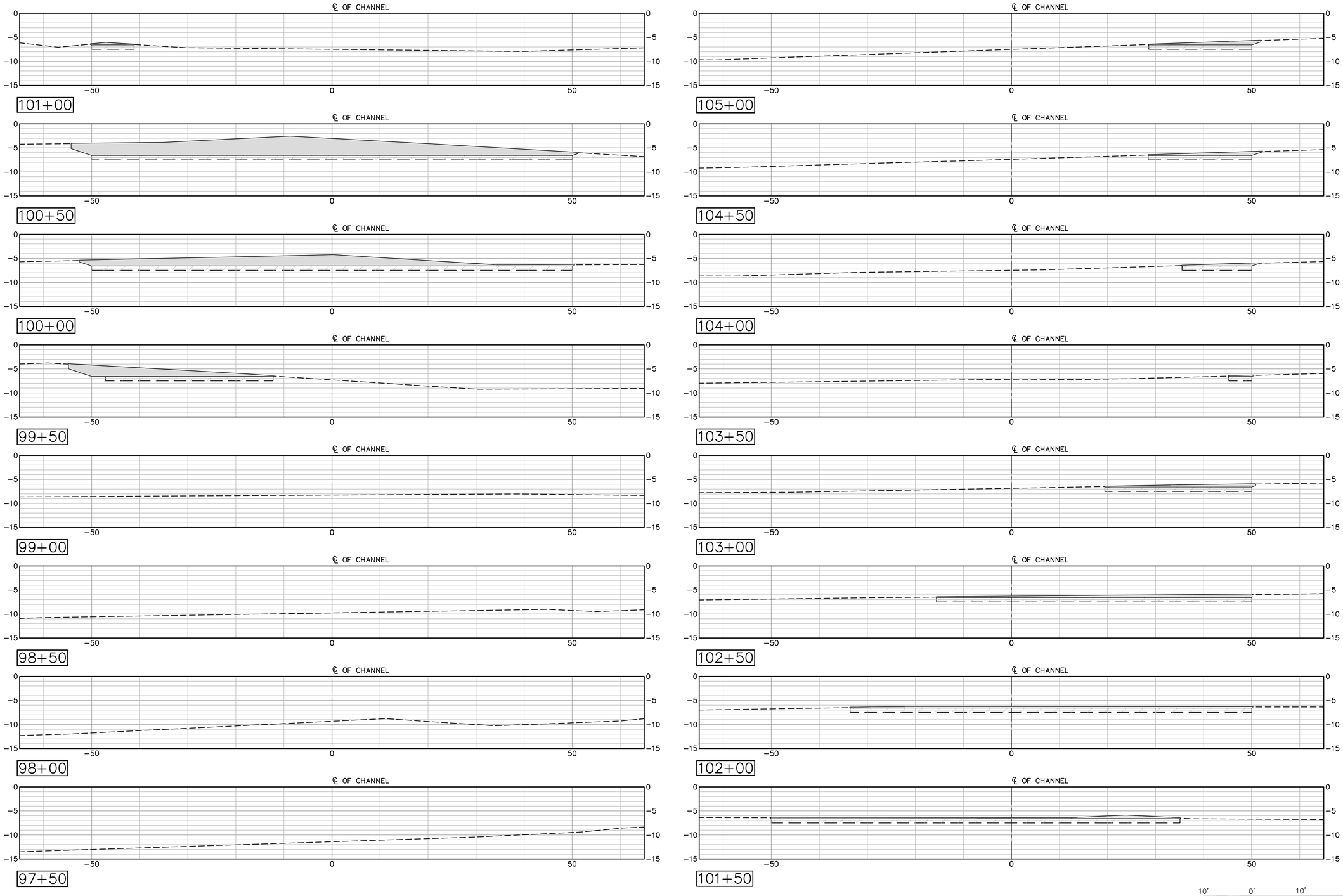

NOTES:

1. FOR LEGEND, ABBREVIATION, AND GENERAL NOTES SEE SHEET G-002.
2. FOR MAINTENANCE CHANNEL DREDGING PLANS, SEE SHEETS C-101 TO C-106.

LEGEND

DREDGE DEPTH −6.5

OVER DREDGE −7.5

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

Mark	Description	Date	Appr.

MASSEY'S DITCH
MAINETENANCE DREDGING
SUSSEX COUNTY, DELAWARE

SECTION - DREDGING - SHEET 16 OF 21

Designed by: PWK		Date: MAY 01, 2019	Rev. –
Dwn by: HR	Ckd by: PGV	M&N Project No. 10248	
Reviewed by: PWK		Drawing code:	
Submitted by: MOFFATT & NICHOL		Drawing Scale: Plot scale: 1:1 (0 SHEET)	

moffatt & nichol
2780 LIGHTHOUSE POINT EAST, SUITE 1
BALTIMORE, MD 21224
410-563-7300

DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
89 KINGS HIGHWAY
DOVER, DE 19901

PETER WILLIAM KOTULAK
LICENSE No. 18765
DELAWARE
PROFESSIONAL ENGINEER
SEAL

Sheet Reference No.
C-317
INDEX: 28 OF 40

File: Q:\BA\10248 DNREC NAT17007\10248-01 M-D Dredge\500 CADD_ACTIVE_Massey's Ditch (sheets)\102480IC-317; Plotted: 3/13/2019 4:50 PM by VOELKER, PAUL; Saved: 11/27/2018 4:07 PM by PVOELKER

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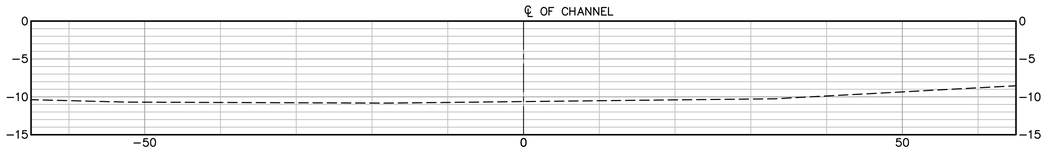

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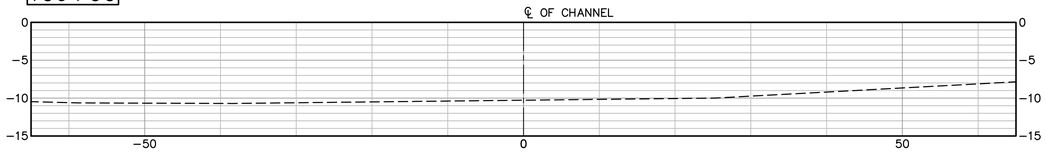

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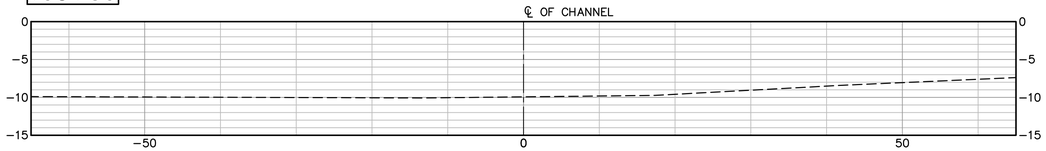

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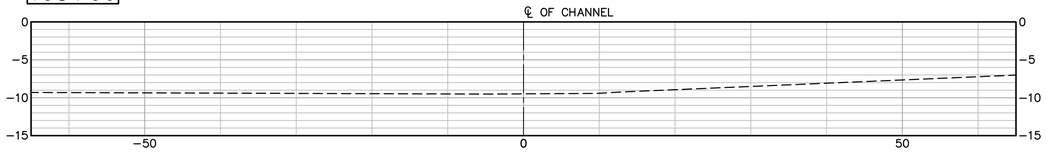

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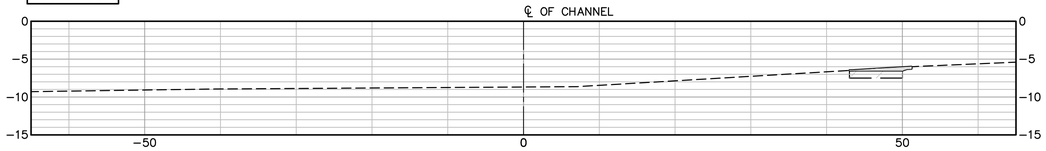

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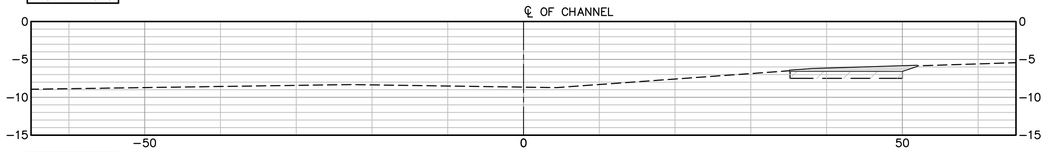

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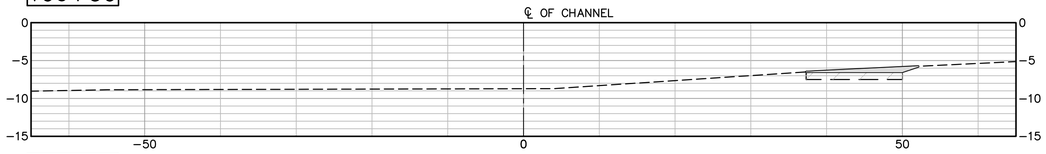

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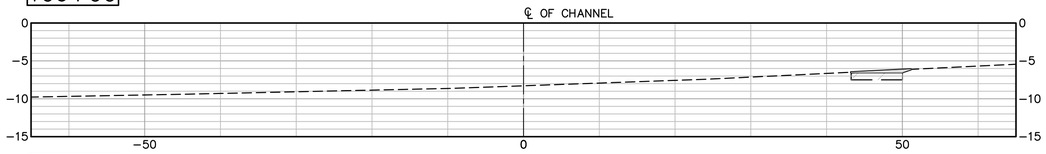

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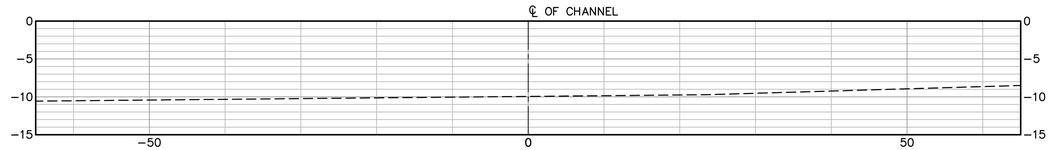

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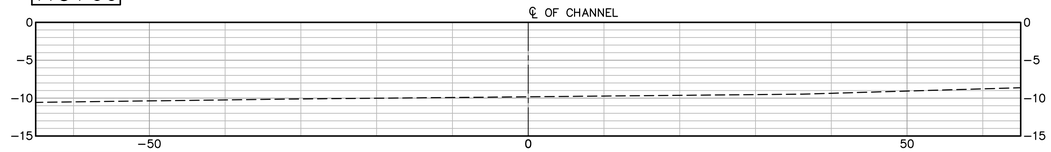

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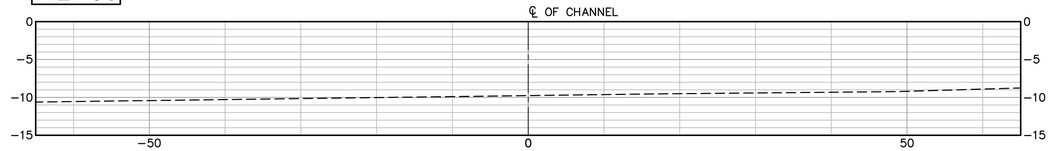

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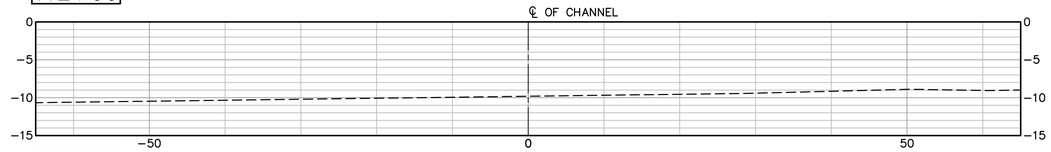

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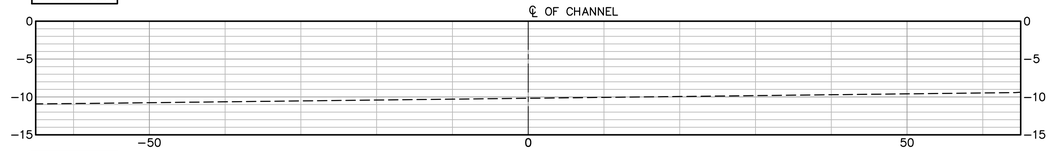

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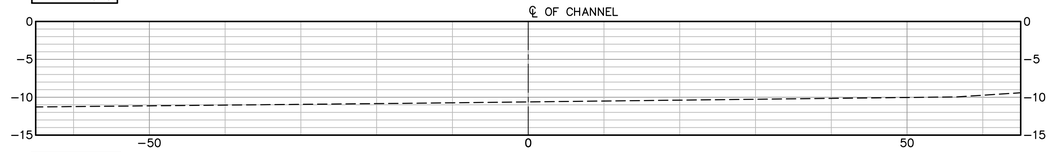

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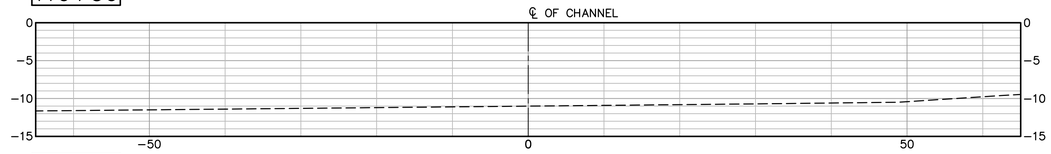

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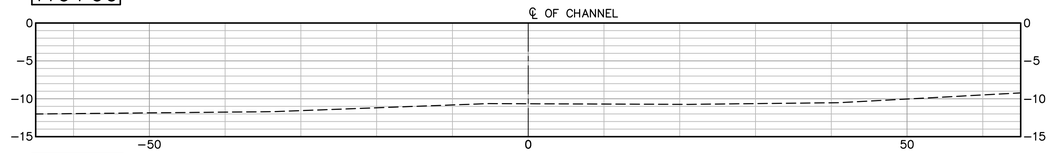


109+50

10' 0' 10' 20'

SCALE: 1"=10'

NOTES:

1. FOR LEGEND, ABBREVIATION, AND GENERAL NOTES SEE SHEET G-002.
2. FOR MAINTENANCE CHANNEL DREDGING PLANS, SEE SHEETS C-101 TO C-106.

LEGEND

DREDGE DEPTH −6.5

OVER DREDGE −7.5

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

Mark	Description	Date	Appr.

MASSEY'S DITCH
MAINETENANCE DREDGING
SUSSEX COUNTY, DELAWARE

SECTION - DREDGING -
SHEET 17 OF 21

Designed by: PWK
Dwn by: HR
Ckd by: PGV
Reviewed by: PWK
Submitted by: MOFFATT & NICHOL
Date: MAY 01, 2019
Rev. –
M&N Project No. 10248
Drawing code:
Drawing Scale:
Plot scale: 1:1 (D SHEET)

moffatt & nichol
2780 LIGHTHOUSE POINT EAST,
SUITE 1
BALTIMORE, MD 21224
410-563-7300

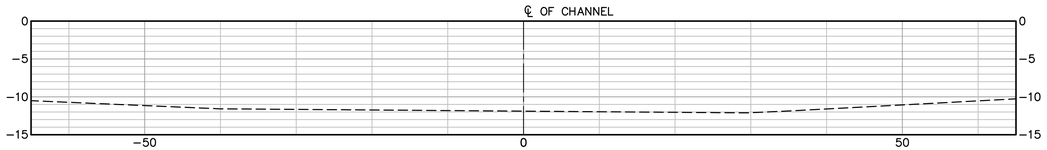
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
89 KINGS HIGHWAY
DOVER, DE 19901

PETER WILLIAM KOTULAK, JR.
LICENSE
No. 18765
DELAWARE
PROFESSIONAL ENGINEER
SEAL

Sheet Reference No.
C-318
INDEX: 29 OF 40

File: Q:\BA\10248 DNREC NAT17007\10248-01 M-D Dredge\500 CADD_ACTIVE_Massey's Ditch (sheets)\1024801C-318; Plotted: 3/13/2019 4:51 PM by VOELKER, PAUL; Saved: 11/27/2018 4:07 PM by PVOELKER

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



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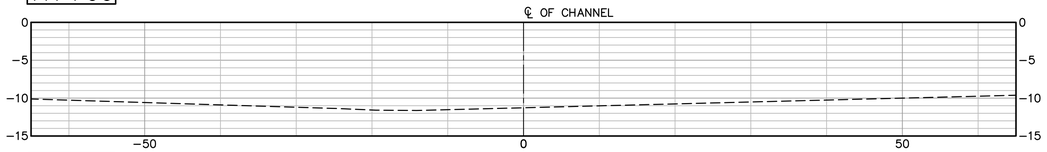

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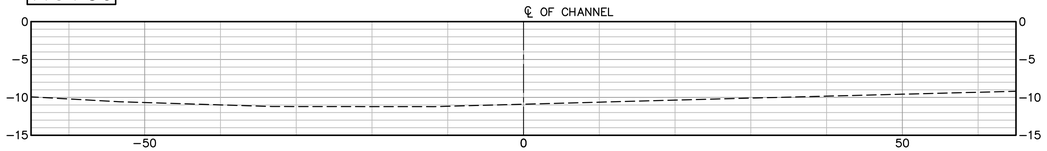

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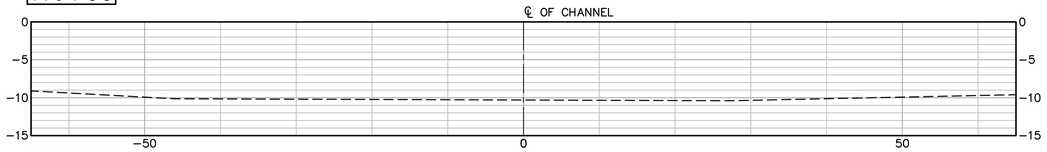

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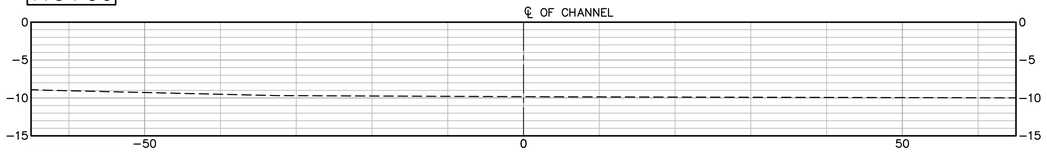

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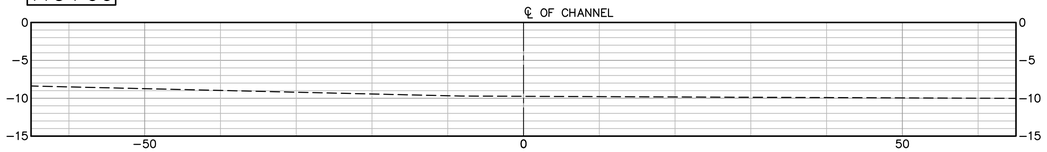

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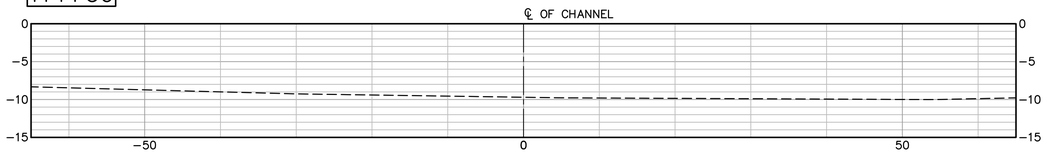

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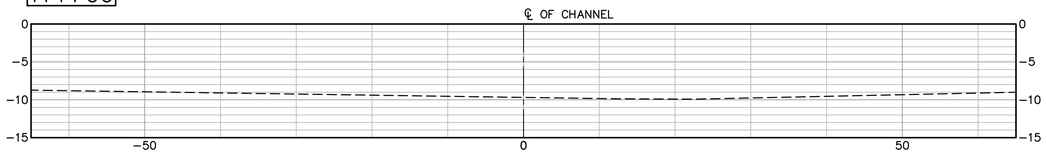

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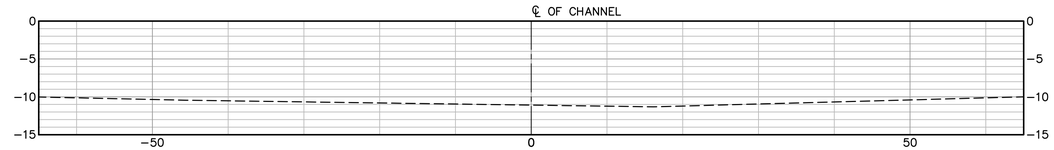

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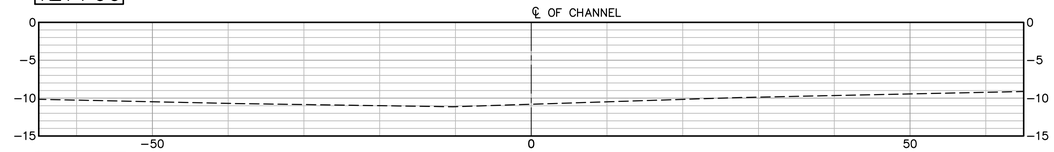

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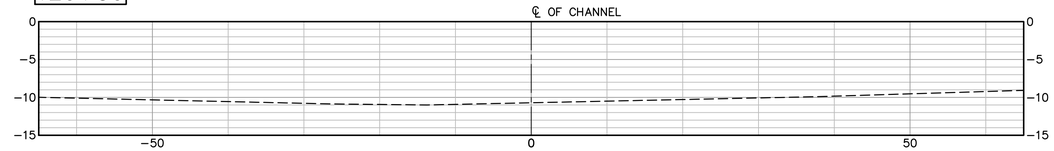

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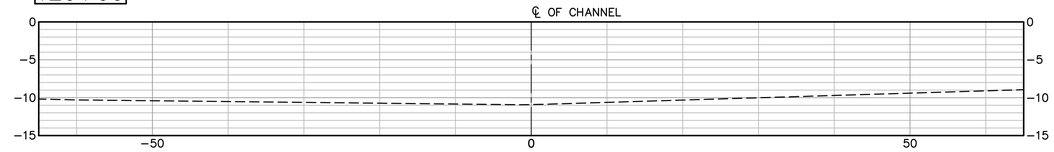

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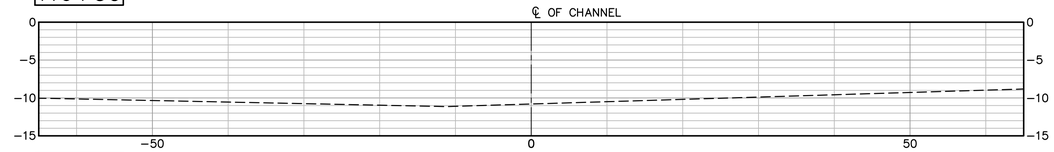

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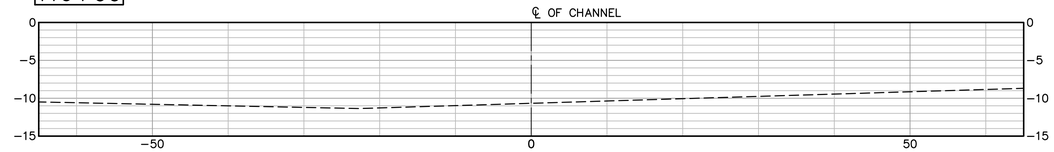

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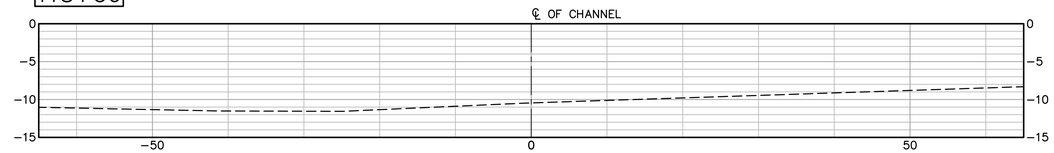

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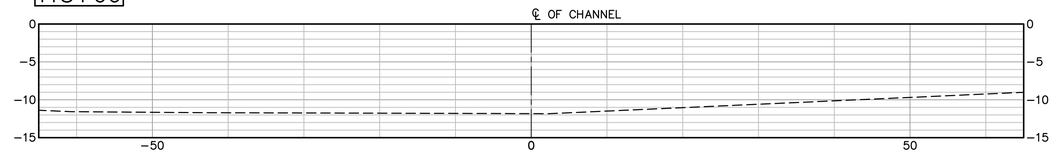


117+50

10' 0' 10' 20'

SCALE: 1"=10'

NOTES:

1. FOR LEGEND, ABBREVIATION, AND GENERAL NOTES SEE SHEET G-002.
2. FOR MAINTENANCE CHANNEL DREDGING PLANS, SEE SHEETS C-101 TO C-106.

LEGEND

DREDGE DEPTH −6.5

OVER DREDGE −7.5

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

Mark	Description	Date	Appr.

MASSEY'S DITCH
MAINETENANCE DREDGING
SUSSEX COUNTY, DELAWARE

SECTION - DREDGING -
SHEET 18 OF 21

moffatt & nichol
2780 LIGHTHOUSE POINT EAST,
SUITE 1
BALTIMORE, MD 21224
410-563-7300

DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
89 KINGS HIGHWAY
DOVER, DE 19901

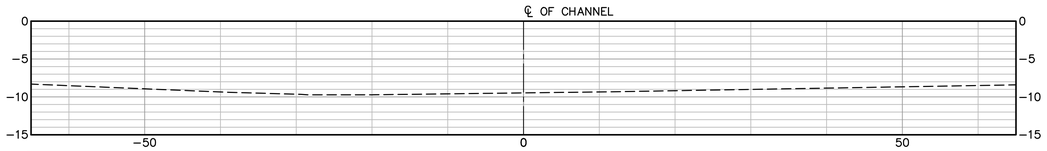
Designed by: PWK		Date: MAY 01, 2019	Rev. –
Dwn by: HR	Ckd by: PGV	M&N Project No. 10248	
Reviewed by: PWK		Drawing code:	
Submitted by: MOFFATT & NICHOL		Drawing Scale: Plot scale: 1:1 (D SHEET)	

PETER WILLIAM KOTULAK
LICENSE
No. 18765
DELAWARE
PROFESSIONAL ENGINEER
SEAL

Sheet
Reference No.
C-319
INDEX: 30 OF 40

File: Q:\BA\10248 DNREC NAT17007\10248-01 M-D Dredge\500 CADD_ACTIVE_Massey's Ditch (sheets)\1024801C-319; Plotted: 3/13/2019 4:52 PM by VOELKER, PAUL; Saved: 11/27/2018 4:07 PM by PVOELKER

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



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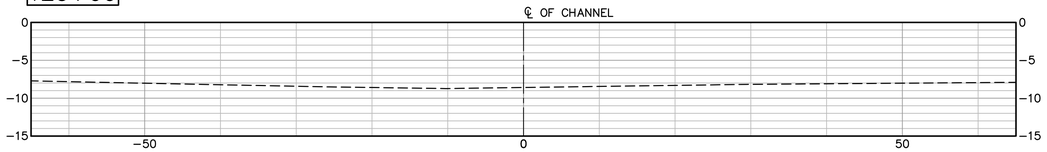

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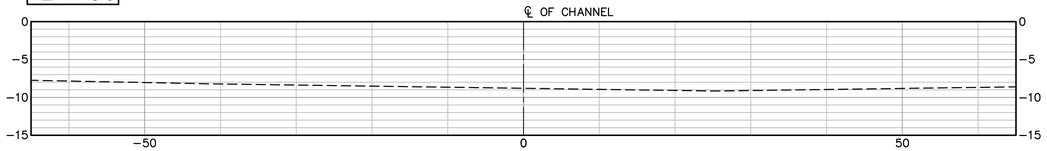

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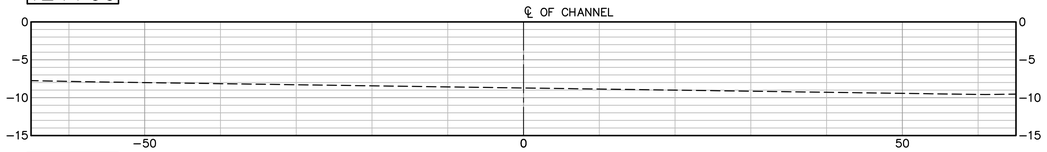

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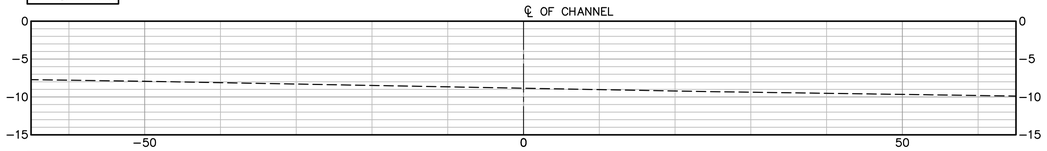

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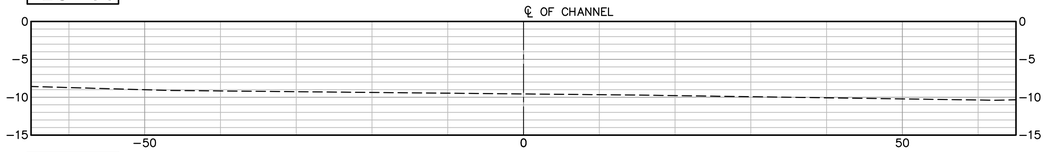

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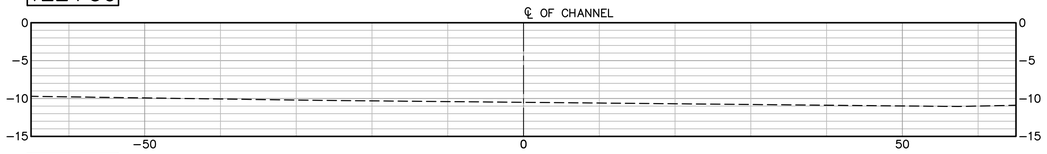

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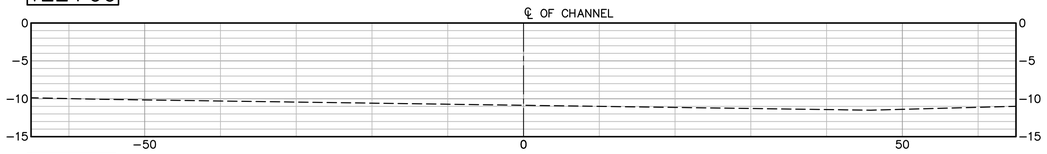

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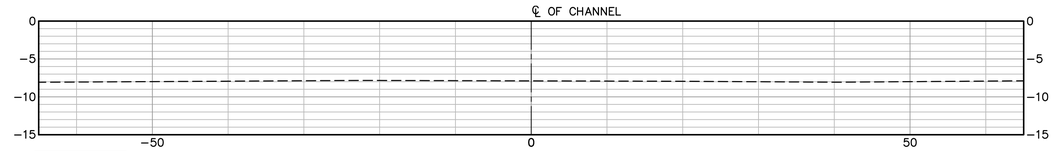

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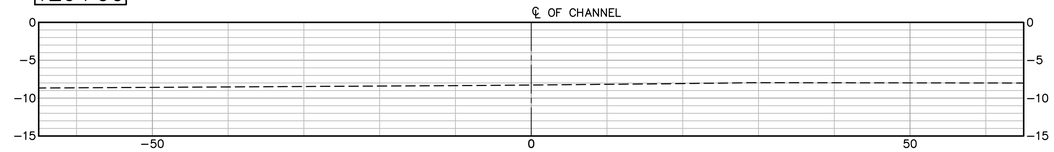

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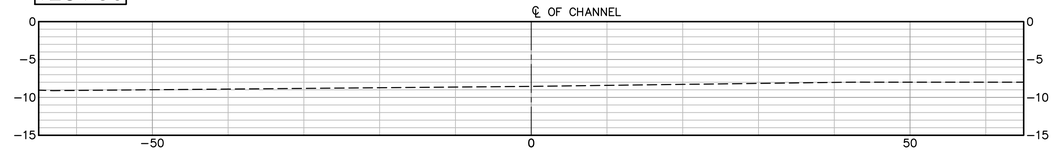

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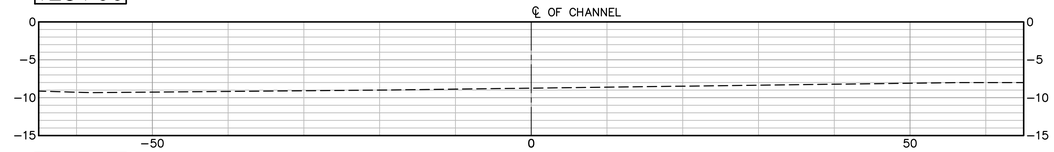

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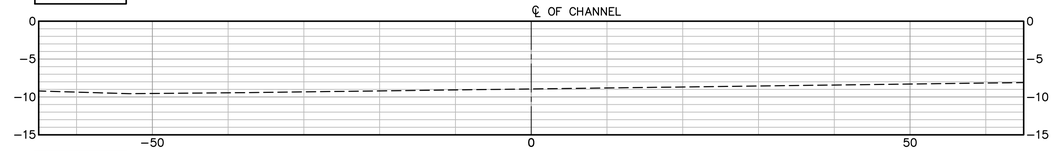

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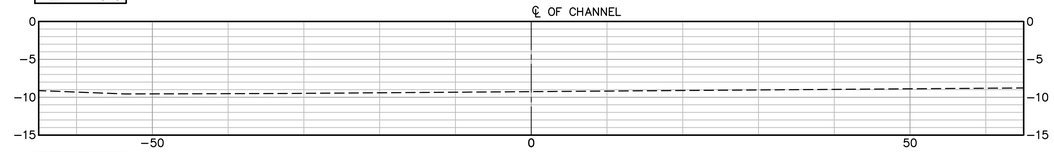

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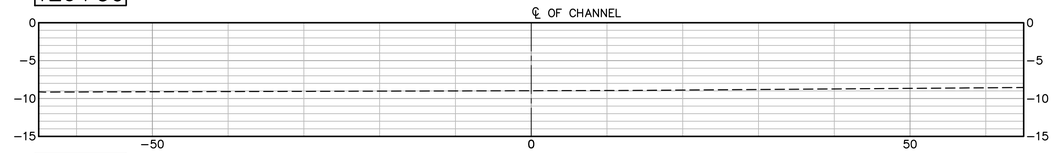

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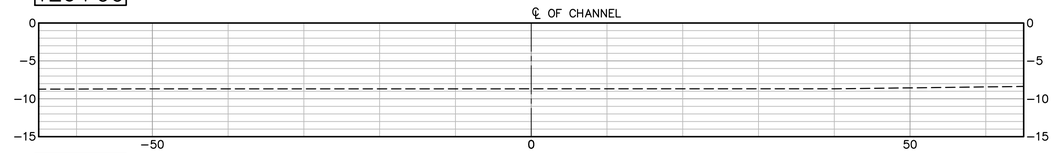


125+50

10' 0' 10' 20'

SCALE: 1"=10'

NOTES:

1. FOR LEGEND, ABBREVIATION, AND GENERAL NOTES SEE SHEET G-002.
2. FOR MAINTENANCE CHANNEL DREDGING PLANS, SEE SHEETS C-101 TO C-106.

LEGEND

DREDGE DEPTH −6.5

OVER DREDGE −7.5

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

Mark	Description	Date	Appr.

MASSEY'S DITCH
MAINETENANCE DREDGING
SUSSEX COUNTY, DELAWARE

SECTION - DREDGING - SHEET 19 OF 21

moffatt & nichol
2780 LIGHTHOUSE POINT EAST, SUITE 1
BALTIMORE, MD 21224
410-563-7300

DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
89 KINGS HIGHWAY
DOVER, DE 19901

Designed by: PWK		Date: MAY 01, 2019	Rev. –
Dwn by: HR	Ckd by: PGV	M&N Project No. 10248	
Reviewed by: PWK		Drawing code:	
Submitted by: MOFFATT & NICHOL		Drawing Scale: Plot scale: 1:1 (D SHEET)	

PETER WILLIAM KOTULAK JR. LICENSE No. 18765 DELAWARE PROFESSIONAL ENGINEER

SEAL

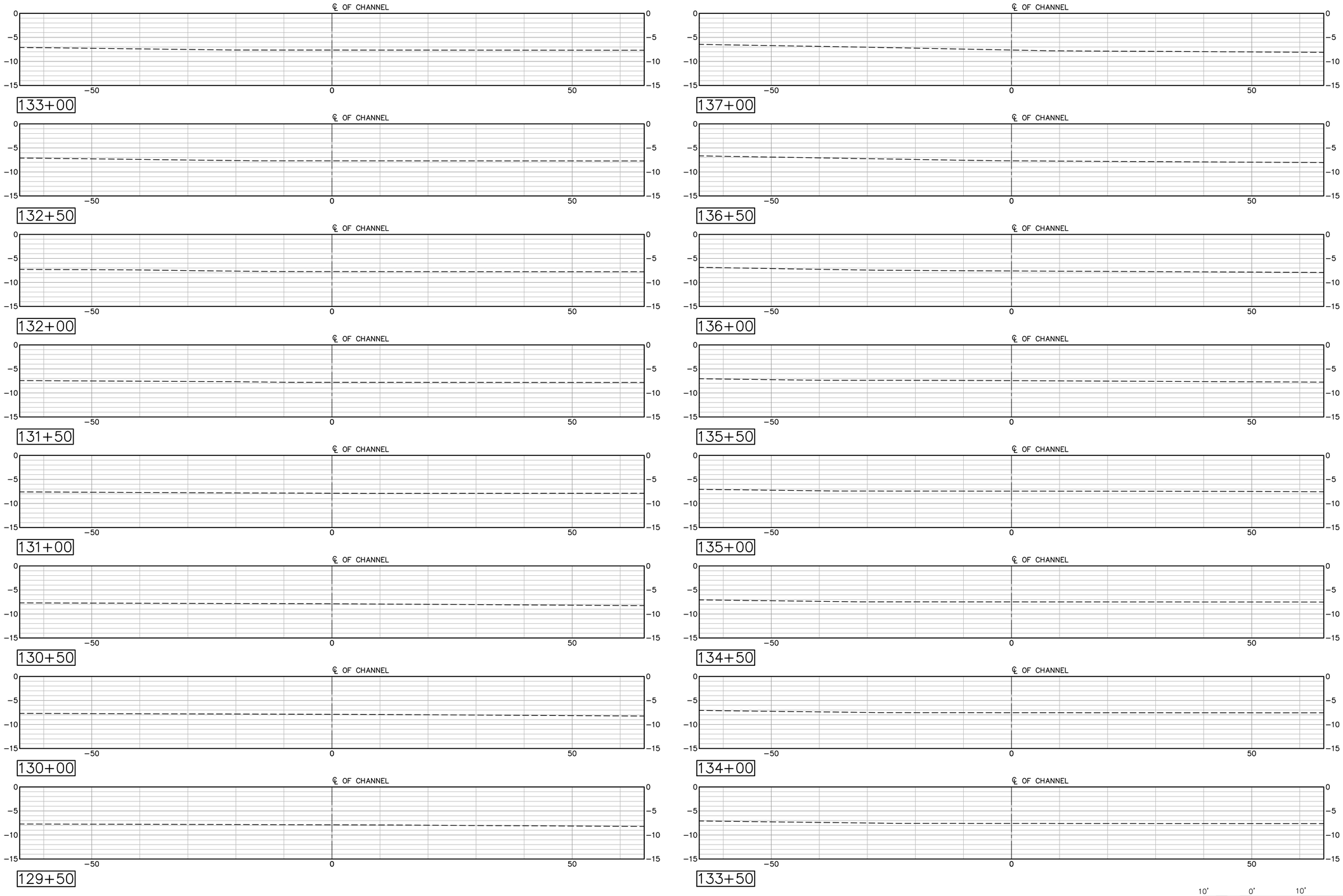
Sheet Reference No.

C-320

INDEX: 31 OF 40

File: Q:\BA\10248 DNREC NAT17007\10248-01 M-D Dredge\500 CADD_ACTIVE_Massey's Ditch (sheets)\1024801C-320; Plotted: 3/13/2019 4:52 PM by VOELKER, PAUL; Saved: 11/27/2018 4:07 PM by PVOELKER

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



NOTES:

1. FOR LEGEND, ABBREVIATION, AND GENERAL NOTES SEE SHEET G-002.
2. FOR MAINTENANCE CHANNEL DREDGING PLANS, SEE SHEETS C-101 TO C-106.

LEGEND

DREDGE DEPTH −6.5

OVER DREDGE −7.5

Mark	Description	Date	Appr.

MASSEY'S DITCH
MAINETENANCE DREDGING
SUSSEX COUNTY, DELAWARE

SECTION - DREDGING -
SHEET 20 OF 21

Designed by: PWK
Dwn by: HR
Ckd by: PGV
Reviewed by: PWK
Submitted by: MOFFATT & NICHOL
Date: MAY 01, 2019
M&N Project No. 10248
Rev. –
Drawing code:
Drawing Scale:
Plot scale: 1:1 (D SHEET)

2780 LIGHTHOUSE POINT EAST,
SUITE 1
BALTIMORE, MD 21224
410-563-7300
moffatt & nichol

DEPARTMENT OF NATURAL RESOURCES AND
ENVIRONMENTAL CONTROL
89 KINGS HIGHWAY
DOVER, DE 19901

PETER WILLIAM KOTULAK JR.
LICENSE
No. 18765
DELAWARE
PROFESSIONAL ENGINEER
SEAL

Sheet
Reference No.
C-321
INDEX: 32 OF 40

File: Q:\BA\10248 DNREC NAT17007\10248-01 M-D Dredge\500 CADD_ACTIVE_Massey's Ditch (sheets)\1024801C-321; Plotted: 3/13/2019 4:53 PM by VDELKER, PAUL; Saved: 11/27/2018 4:07 PM by PVDELKER

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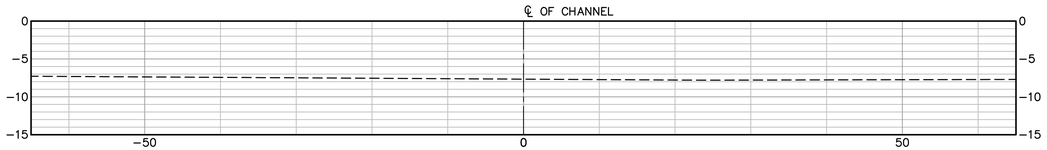

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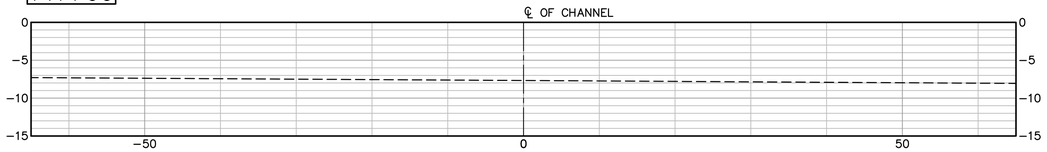

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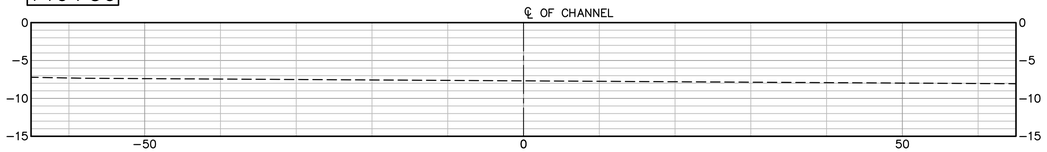

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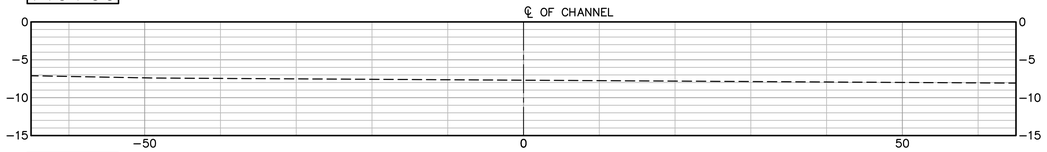

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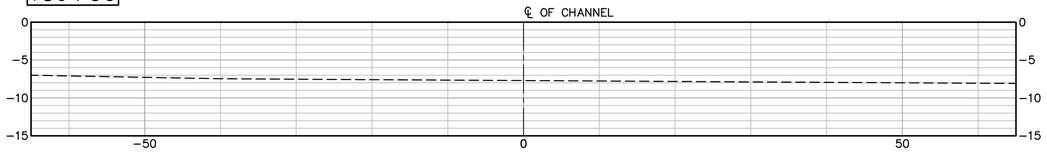

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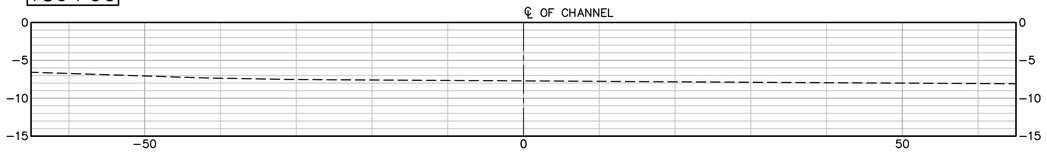

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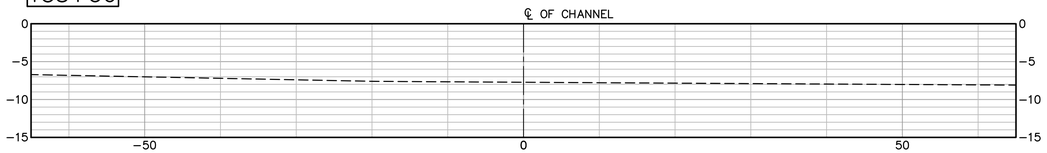

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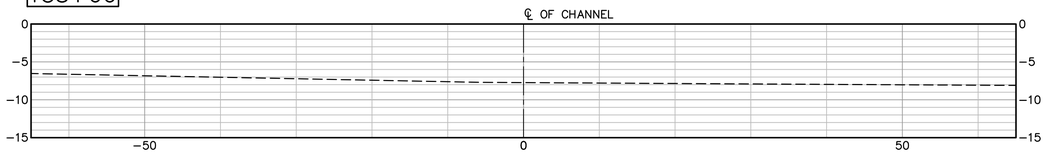

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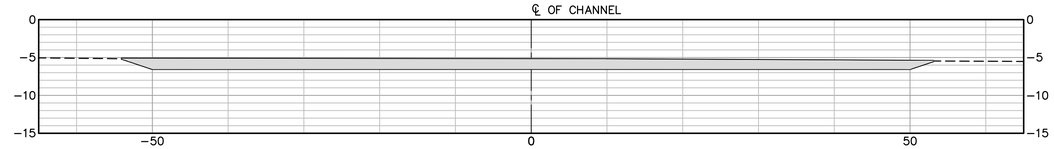

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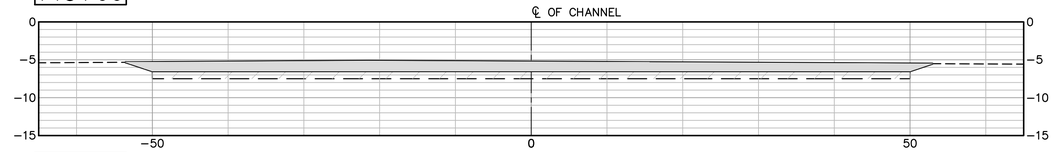

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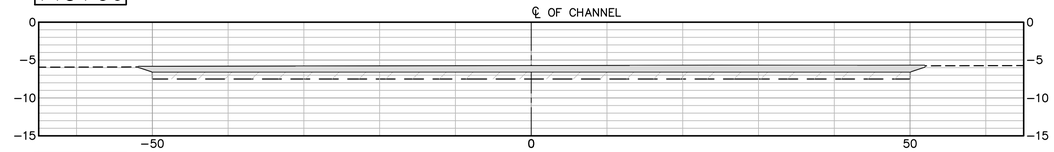

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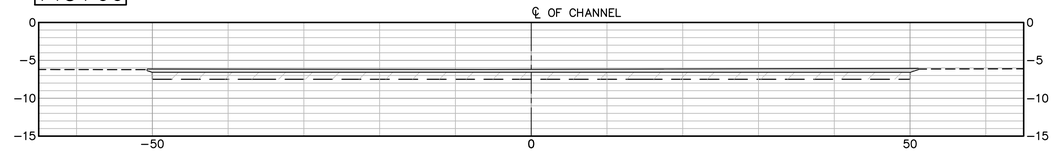

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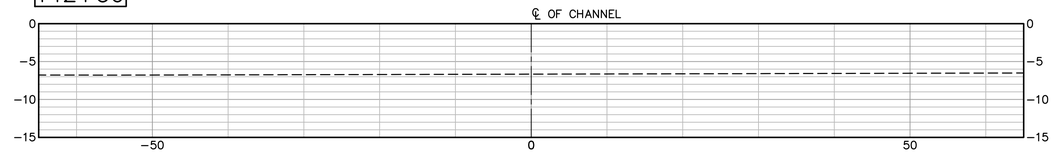

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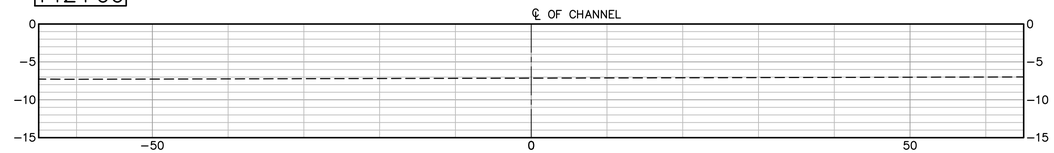

141+50

10' 0' 10' 20'

SCALE: 1"=10'

NOTES:

1. FOR LEGEND, ABBREVIATION, AND GENERAL NOTES SEE SHEET G-002.
2. FOR MAINTENANCE CHANNEL DREDGING PLANS, SEE SHEETS C-101 TO C-106.

LEGEND

DREDGE DEPTH −6.5

OVER DREDGE −7.5

Mark	Description	Date	Appr.

MASSEY'S DITCH
MAINETENANCE DREDGING
SUSSEX COUNTY, DELAWARE

SECTION - DREDGING -
SHEET 21 OF 21

Designed by: PWK
Dwn by: HR
Ckd by: PGV
Reviewed by: PWK
Submitted by: MOFFATT & NICHOL
Date: MAY 01, 2019
Rev. –
M&N Project No. 10248
Drawing code:
Drawing Scale:
Plot scale: 1:1 (D SHEET)

2780 LIGHTHOUSE POINT EAST,
SUITE 1
BALTIMORE, MD 21224
410-563-7300

moffatt & nichol

DEPARTMENT OF NATURAL RESOURCES AND
ENVIRONMENTAL CONTROL
89 KINGS HIGHWAY
DOVER, DE 19901

PETER WILLIAM KOTULAK JR.
LICENSE
No. 18765
DELAWARE
PROFESSIONAL ENGINEER

SEAL

Sheet
Reference No.

C-322

INDEX: 33 OF 40

File: Q:\BA\10248 DNREC NAT17007\10248-01 M-D Dredge\500 CADD_ACTIVE_Massey's Ditch (sheets)\1024801C-322; Plotted: 3/13/2019 4:53 PM by VOELKER, PAUL; Saved: 11/27/2018 4:07 PM by PVOELKER

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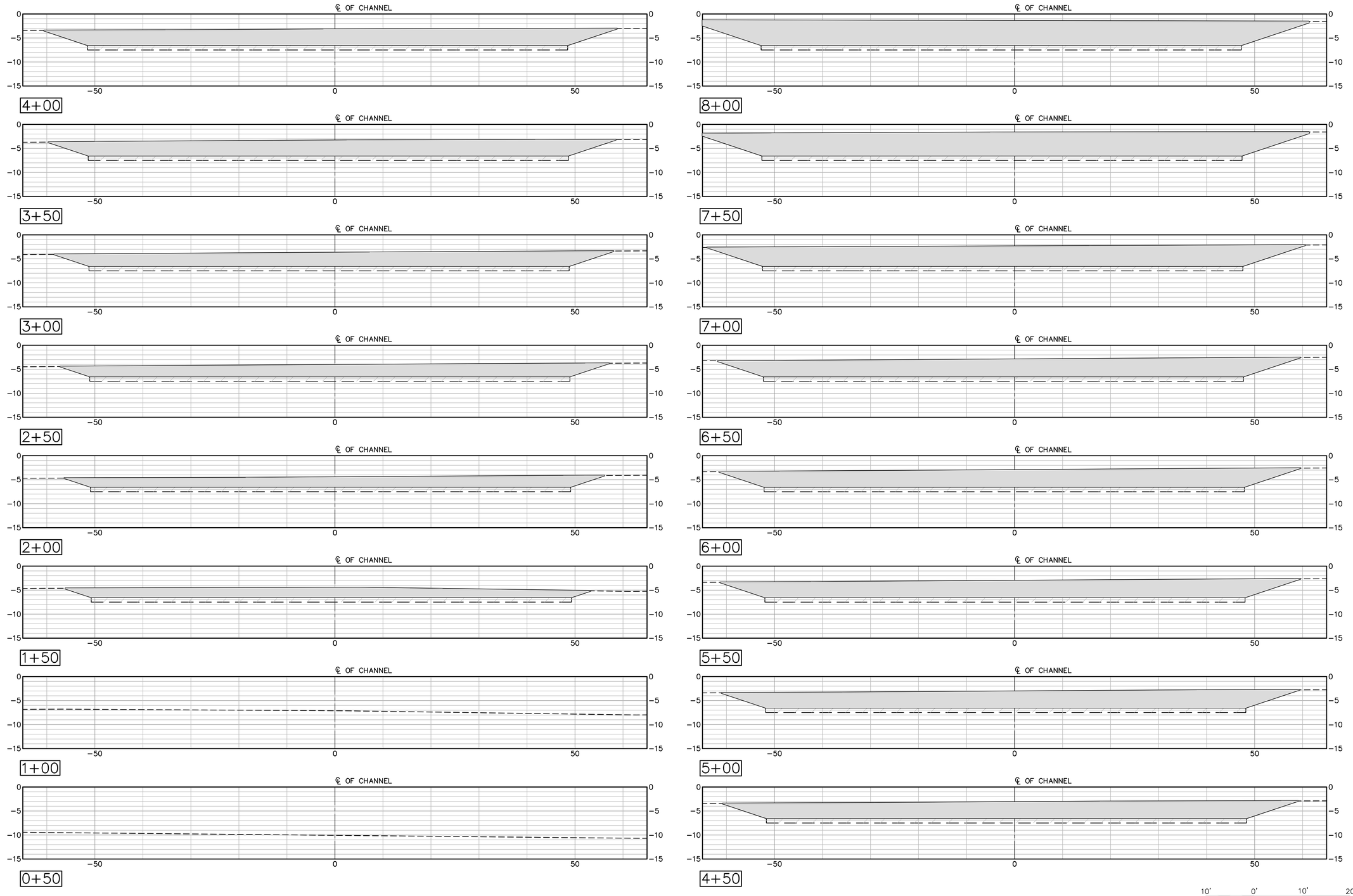

NOTES:

1. FOR LEGEND, ABBREVIATION, AND GENERAL NOTES SEE SHEET G-002.
2. FOR MAINTENANCE CHANNEL DREDGING PLANS, SEE SHEETS C-101 TO C-106.

LEGEND

DREDGE DEPTH −6.5

OVER DREDGE −7.5

Mark	Description	Date	Appr.

MASSEY'S DITCH
MAINETENANCE DREDGING
SUSSEX COUNTY, DELAWARE

SECTION - DREDGING EAST STA 110+50 0+00 - SHEET 1 OF 2

Designed by: PWK
Dwn by: HR
Ckd by: PGV
Reviewed by: PWK
Submitted by: MOFFATT & NICHOL
Date: MAY 01, 2019
M&N Project No. 10248
Rev. –
Drawing code:
Drawing Scale:
Plot scale: 1:1 (D SHEET)

moffatt & nichol
2780 LIGHTHOUSE POINT EAST,
SUITE 1
BALTIMORE, MD 21224
410-563-7300

DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
89 KINGS HIGHWAY
DOVER, DE 19901

PETER WILLIAM KOTULAK
LICENSE
No. 18765
DELAWARE
PROFESSIONAL ENGINEER
SEAL

Sheet Reference No.
C-323
INDEX: 34 OF 40

File: Q:\BA\10248 DNREC NAT17007\10248-01 M-D Dredge\500 CADD_ACTIVE_Massey's Ditch (sheets)\1024801C-323; Plotted: 3/13/2019 4:54 PM by VOELKER, PAUL; Saved: 11/27/2018 4:07 PM by PVOELKER

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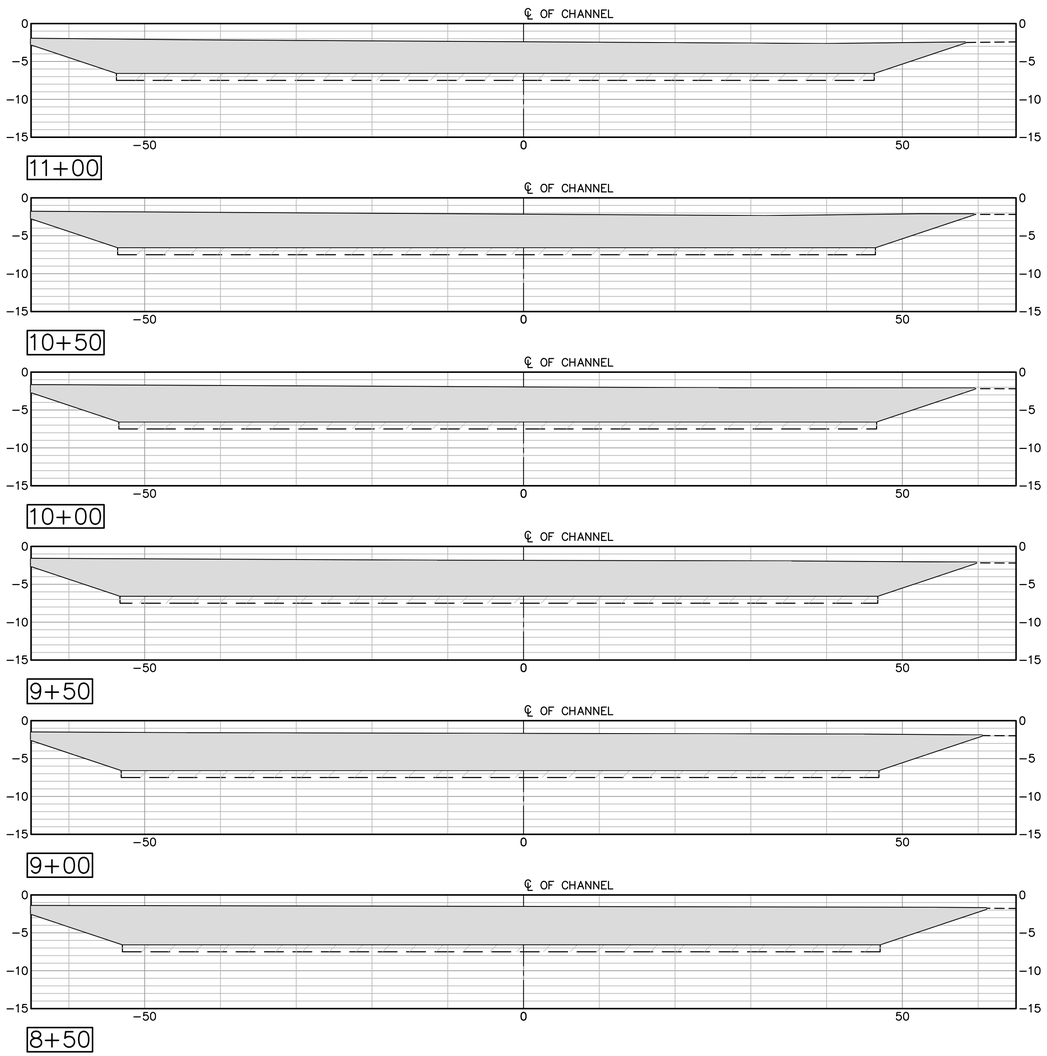

NOTES:

1. FOR LEGEND, ABBREVIATION, AND GENERAL NOTES SEE SHEET G-002.
2. FOR MAINTENANCE CHANNEL DREDGING PLANS, SEE SHEETS C-101 TO C-106.

LEGEND

DREDGE DEPTH −6.5

OVER DREDGE −7.5

10' 0' 10' 20'

SCALE: 1"=10'

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

Mark	Description	Date	Appr.

MASSEY'S DITCH
MAINETENANCE DREDGING
SUSSEX COUNTY, DELAWARE

SECTION - DREDGING EAST STA 110+50 0+00 - SHEET 2 OF 2

moffatt & nichol
2780 LIGHTHOUSE POINT EAST, SUITE D
BALTIMORE, MD 21224
410-563-7300

DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
89 KINGS HIGHWAY
DOVER, DE 19901

Designed by: PWK		Date: MAY 01, 2019	Rev: –
Dwn by: HR	Cad by: PGV	M&N Project No. 10248	
Reviewed by: PWK		Drawing code:	
Submitted by: MOFFATT & NICHOL		Drawing Scale: Plot scale: 1:1 (D SHEET)	

PETER WILLIAM KOTULAK
LICENSE No. 18765
DELAWARE
PROFESSIONAL ENGINEER
SEAL

Sheet Reference No.
C-324
INDEX: 35 OF 40

File: Q:\LBA\10248 DNREC NAT17007\10248-01 M-D Dredge\500 CADD_ACTIVE_Massey's Ditch (sheets)\1024801C-324; Plotted: 3/13/2019 4:54 PM by VOELKER, PAUL; Saved: 11/27/2018 4:07 PM by PVOELKER

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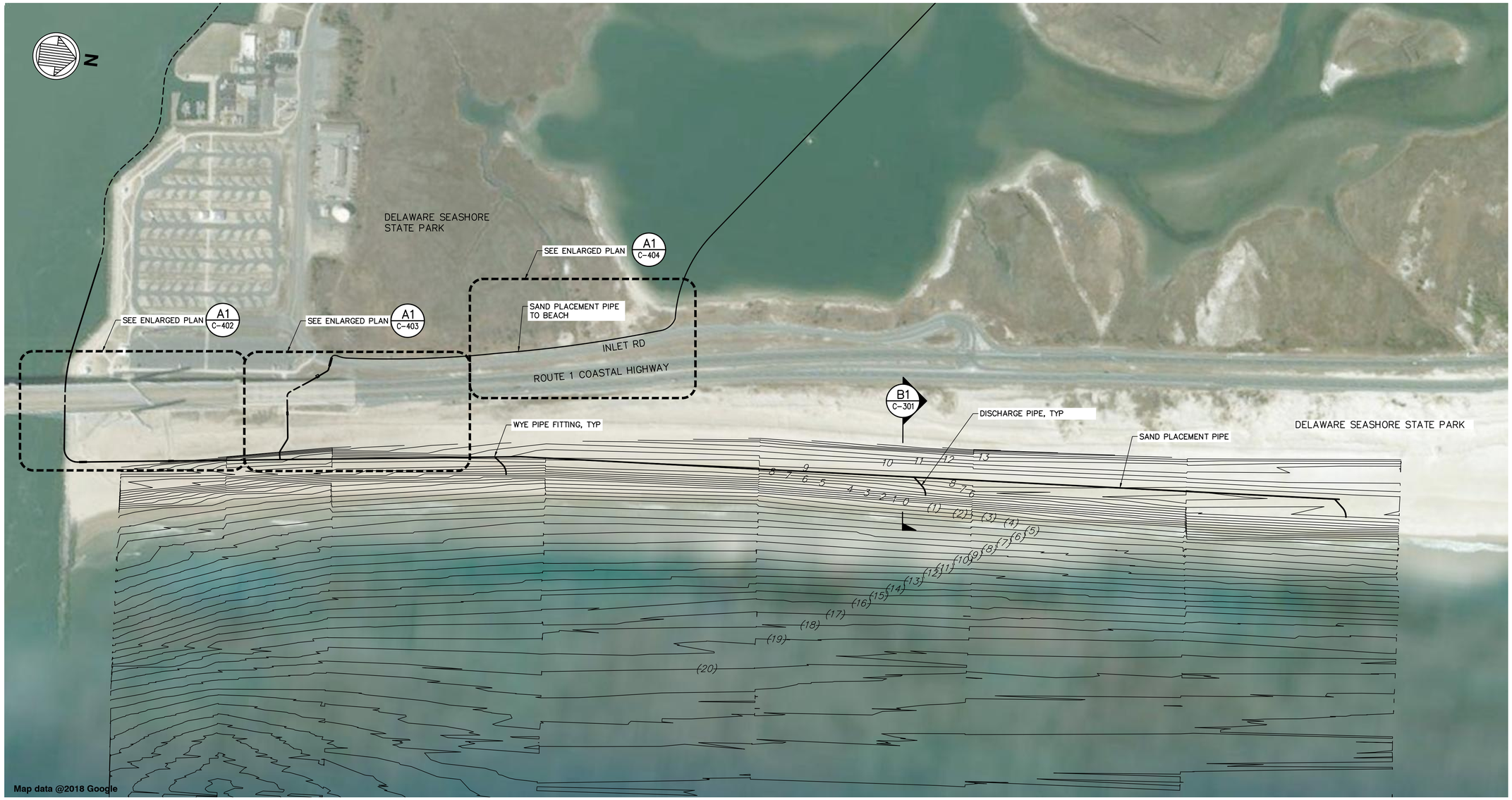

A1 C-401 ENLARGED PLAN – SAND PLACEMENT DISCHARGE PIPING LAYOUT
SCALE: 1" = 200'

160' 0' 160' 320'
SCALE: 1"=160'

Mark	Description	Date	Appr.

MASSEY'S DITCH
MAINETENANCE DREDGING
SUSSEX COUNTY, DELAWARE

ENLARGED PLAN - SAND PLACEMENT DISCHARGE PIPING LAYOUT

Designed by: PWK
Date: MAY 01, 2019
Rev. REVNO
Dwn by: HR
Ckd by: PVK
M&N Project No. 10248
Reviewed by: –
Drawing code:
Submitted by: MOFFATT & NICHOL
Drawing Scale:
Plot scale: 1:1 (0 SHEET)

moffatt & nichol
2780 LIGHTHOUSE POINT EAST, SUITE 1
BALTIMORE, MD 21224
410-563-7300

DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
89 KINGS HIGHWAY
DOVER, DE 19901

PETER WILLIAM KOTULAK JR. PROFESSIONAL ENGINEER LICENSE No. 18765 DELAWARE
SEAL

Sheet Reference No.
C-401
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File: Q:\BA\10248 DNREC NAT17007\10248-01 M-D Dredge\500 CADD_ACTIVE_Massey's Ditch (sheets)\1024801C-401; Plotted: 3/13/2019 4:55 PM by VDELKER, PAUL; Saved: 3/6/2019 2:53 PM by TOCOOPER

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

A1 / C-402 ENLARGED PLAN – INLET ROAD UNDER BRIDGE PIPELINE LAYOUT 1 OF 2
SCALE: 1" = 30'

30' 0' 30' 60'
SCALE: 1"=30'

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

Mark	Description	Date	Appr.

MASSEY'S DITCH
MAINETENANCE DREDGING
SUSSEX COUNTY, DELAWARE

ENLARGED PLAN - INLET ROAD UNDER BRIDGE PIPELINE LAYOUT 1 OF 2

moffatt & nichol
2780 LIGHTHOUSE POINT EAST, SUITE D
BALTIMORE, MD 21224
410-563-7300

DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
89 KINGS HIGHWAY
DOVER, DE 19901

Designed by: PWK
Dwn by: HR
Cad by: PGV
Reviewed by: –
Submitted by: MOFFATT & NICHOL
Date: MAY 01, 2019
Rev: REVNO
M&N Project No: 10248
Drawing code:
Drawing Scale: Plot scale: 1:1 (0 SHEET)

PROFESSIONAL ENGINEER PETER WILLIAM KOTULAK LICENSE No. 18765 DELAWARE
SEAL

Sheet Reference No.
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File: Q:\BA\10248 DNREC NAT17007\10248-01 M-D Dredge\500 CADD_ACTIVE_Massey's Ditch (sheets)\1024801C-402; Plotted: 3/13/2019 4:55 PM by VOELKER, PAUL; Saved: 3/6/2019 2:53 PM by TOCCOPER

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

A1 / C-403 ENLARGED PLAN – INLET ROAD UNDER BRIDGE PIPELINE LAYOUT 2 OF 2
SCALE: 1" = 30'

30' 0' 30' 60'
SCALE: 1"=30'

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

Mark	Description	Date	Appr.

MASSEY'S DITCH
MAINETENANCE DREDGING
SUSSEX COUNTY, DELAWARE

ENLARGED PLAN - INLET ROAD UNDER BRIDGE PIPELINE LAYOUT 2 OF 2

Designed by: PWK
Date: MAY 01, 2019
Rev. –
Dwn by: HR
Cad by: PGV
M&N Project No. 10248
Reviewed by: PWK
Drawing code:
Submitted by: MOFFATT & NICHOL
Drawing Scale: Plot scale: 1:1 (0 SHEET)

moffatt & nichol
2780 LIGHTHOUSE POINT EAST, SUITE D
BALTIMORE, MD 21224
410-563-7300

DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
89 KINGS HIGHWAY
DOVER, DE 19901

PROFESSIONAL ENGINEER PETER WILLIAM KOTULAK LICENSE No. 18765 DELAWARE
SEAL

Sheet Reference No.
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File: Q:\BA\10248 DNREC NAT17007\10248-01 M-D Dredge\500 CADD_ACTIVE_Massey's Ditch (sheets)\1024801C-403; Plotted: 3/13/2019 4:55 PM by VOELKER, PAUL; Saved: 3/1/2019 3:37 PM by TOCOOPER

A1 C-404 ENLARGED PLAN – BAY CROSSING INLET ROAD PIPELINE LAYOUT
SCALE: 1" = 30'

30' 0' 30' 60'
SCALE: 1"=30'

Mark	Description	Date	Appr.

MASSEY'S DITCH
MAINETENANCE DREDGING
SUSSEX COUNTY, DELAWARE

ENLARGED PLAN - BAY CROSSING INLET ROAD PIPELINE LAYOUT

Designed by: PWK
Date: MAY 01, 2019
Rev. –
Dwn by: HR
Ckd by: PWK
M&N Project No. 10248
Reviewed by: PGV
Drawing code:
Submitted by: MOFFATT & NICHOL
Drawing Scale: Plot scale: 1:1 (D SHEET)

moffatt & nichol
2780 LIGHTHOUSE POINT EAST,
SUITE 200
BALTIMORE, MD. 21224
410-563-7300

DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
89 KINGS HIGHWAY
DOVER, DE 19901

PETER WILLIAM KOTLAK
LICENSE
No. 18765
DELAWARE
PROFESSIONAL ENGINEER
SEAL

Sheet Reference No.
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File: Q:\BA\10248 DNREC NAT17007\10248-01 M-D Dredge\500 CADD_ACTIVE_Massey's Ditch (Sheets)\1024801C-404; Plotted: 3/13/2019 4:55 PM by VOELKER, PAUL; Saved: 3/1/2019 3:47 PM by TOCOOPER

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

B1 R-001 BENEFICIAL USE PLACEMENT AREA – LOOKING NORTH
SCALE: NTS

B3 R-001 BENEFICIAL USE PLACEMENT AREA – LOOKING SOUTH
SCALE: NTS

Mark	Description	Date	Appr.

MASSEY'S DITCH
MAINETENANCE DREDGING
SUSSEX COUNTY, DELAWARE

BEACH NOURISHMENT PLACEMENT SITE

Designed by: PWK
Dwn by: HR
Ckd by: PGV
Reviewed by: PWK
Submitted by: MOFFATT & NICHOL
Date: MAY 01, 2019
Rev. –
M&N Project No. 10248
Drawing code:
Drawing Scale:
Plot scale: 1:1 (0 SHEET)

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PETER WILLIAM KOTULAK
LICENSE No. 18765
DELAWARE
SEAL

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File: Q:\BA\10248 DNREC NAT17002\10248-01 M-D Dredge\500 CADD_ACTIVE_Massey's Ditch (sheets)\10248R-001; Plotted: 3/13/2019 4:55 PM by VDELKER, PAUL; Saved: 3/1/2019 2:44 PM by TOCOOPER

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