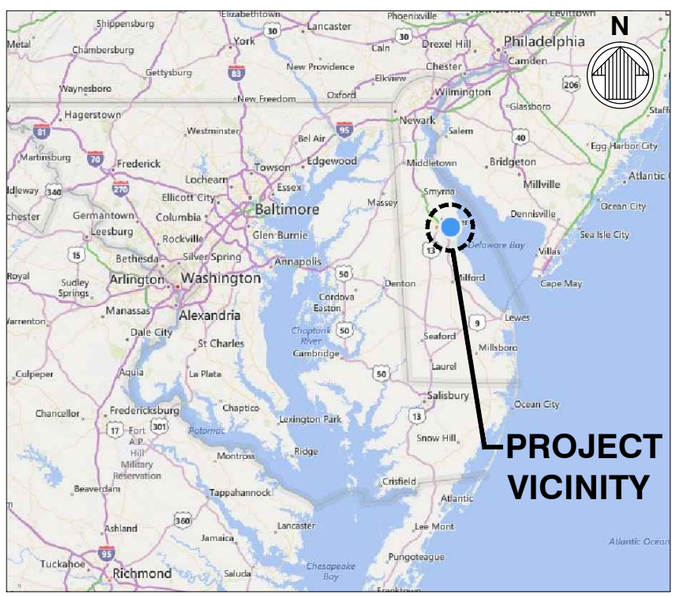
DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

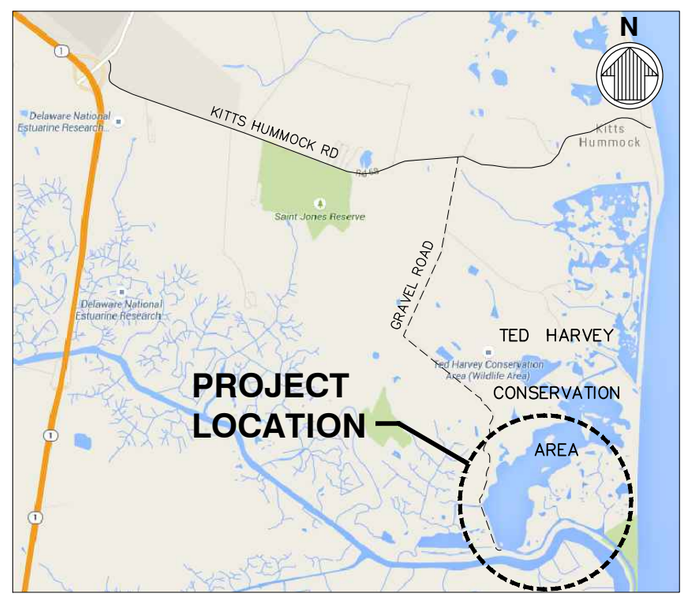
DOVER, DELAWARE

TED HARVEY CONSERVATION AREA LEVEE REHABILITATION PROJECT

CONTRACT No. NAT 201702/TED.HARVEY



VICINITY MAP
NTS



LOCATION MAP
NTS

Mark	Description	Date	Appr.

TED HARVEY CONSERVATION AREA
LEVEE REHABILITATION
DOVER, DELAWARE

TITLE SHEET WITH VICINITY AND LOCATION MAPS

Designed by: PWK
Dwn by: MSW
Ckd by: PWK
Reviewed by:
Submitted by: MOFFATT & NICHOL
Date: SEPT 2017
M&N Project No. 8482-03
Drawing code:
Drawing Scale:
Rev. –
Plot scale: 1:1 (D SHEET)

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

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

PETER WILLIAM KOTULAK
LICENSE
No. 18765
DELAWARE
PROFESSIONAL ENGINEER

Sheet Reference No.
G-001
INDEX: 1 OF 18

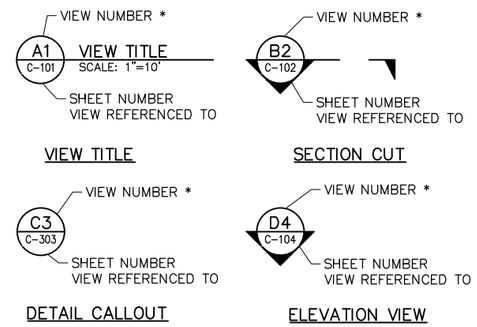
File: Q:\BA\8482-03\500 CADD_ACTIVE_LeveeRehab\848203LR_G-001; Plotted: 9/22/2017 3:22 PM by WILKINSON, MELISSA; Saved: 9/15/2017 11:11 AM by MWILKINSON

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

INDEX OF DRAWINGS

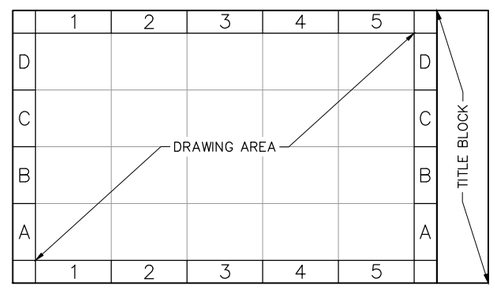
INDEX NO.	SHEET NO.	SHEET TITLE
		GENERAL
1	G-001	TITLE SHEET WITH VICINITY AND LOCATION MAPS
2	G-002	INDEX OF DRAWINGS, LEGEND, ABBREVIATIONS AND GENERAL NOTES
3	G-101	PLAN – GENERAL ARRANGEMENT AND SITE ACCESS
		CIVIL
4	C-101	PLAN – DIKE REPAIR SHEET 1 OF 7
5	C-102	PLAN – DIKE REPAIR SHEET 2 OF 7
6	C-103	PLAN – DIKE REPAIR SHEET 3 OF 7
7	C-104	PLAN – DIKE REPAIR SHEET 4 OF 7
8	C-105	PLAN – DIKE REPAIR SHEET 5 OF 7
9	C-106	PLAN – DIKE REPAIR SHEET 6 OF 7
10	C-107	PLAN – DIKE REPAIR SHEET 7 OF 7
11	C-301	SECTION – TYPICAL DIKE
12	C-302	DIKE CROSS SECTIONS SHEET 1 OF 7
13	C-303	DIKE CROSS SECTIONS SHEET 2 OF 7
14	C-304	DIKE CROSS SECTIONS SHEET 3 OF 7
15	C-305	DIKE CROSS SECTIONS SHEET 4 OF 7
16	C-306	DIKE CROSS SECTIONS SHEET 5 OF 7
17	C-307	DIKE CROSS SECTIONS SHEET 6 OF 7
18	C-308	DIKE CROSS SECTIONS SHEET 7 OF 7

LEGEND



* 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 NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). HORIZONTAL DATUM IS THE NORTH AMERICAN DATUM OF 1983 (NAD 83), DELAWARE STATE PLANE COORDINATE SYSTEM.

TIDAL DATUM	
MEAN HIGHER HIGH WATER (MHHW)	+3.1 FT
MEAN HIGH WATER (MHW)	+2.7 FT
NORTH AMERICAN VERTICAL DATUM (NAVD88)	+0.0 FT
MEAN LOW WATER (MLW)	–2.5 FT
MEAN LOWER LOW WATER (MLLW)	–2.6 FT

3. THE HYDROGRAPHIC SURVEY WAS PERFORMED BY MORRIS & RITCHIE, ASSOC DURING MAY–JUNE 2015. THE REFERENCE DATUM GPS K1A IS LOCATED AT N 404,689.27, E 643,087.42, ELEVATION 13.64' NAVD88.
4. THE CONTRACTOR SHALL ABIDE BY ALL APPLICABLE ENVIRONMENTAL PROTECTION STANDARDS, PERMITS, LAWS AND REGULATIONS. DISPOSAL OF DREDGED MATERIALS IN THE LITTLE RIVER IS NOT PERMITTED.
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
BOLL	—	BOLLARD
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
COL	—	COLUMN
CONC	—	CONCRETE
CONST	—	CONSTRUCTION
CONT	—	CONTINUOUS
CORR	—	CORRUGATED
CTS	—	CENTERS
CY	—	CUBIC YARDS
DBL	—	DOUBLE
DET	—	DETAIL
DIA	—	DIAMETER
DI	—	DUCTILE IRON
DISCON	—	DISCONTINUOUS
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
FRP	—	FIBERGLASS REINFORCED POLYMER
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
LLV	—	LONG LEG VERTICAL
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
NAVD88	—	NORTH AMERICAN VERTICAL DATUM 1988
NGVD	—	NATIONAL GEODETIC VERTICAL DATUM 1929
NIC	—	NOT IN CONTRACT
NTS	—	NOT TO SCALE
NO.	—	NUMBER
OC	—	ON CENTER
OD	—	OUTSIDE DIAMETER
OUTBD	—	OUTBOARD
OWS	—	OIL WATER SEPARATOR
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
SOE	—	SUPPORT OF EXCAVATION
SPA.	—	SPACES
SQ	—	SQUARE
SS	—	STAINLESS STEEL
SSP	—	STEEL SHEET PILE
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

Mark	Description	Date	Appr.

TED HARVEY CONSERVATION AREA
LEVEE REHABILITATION
DOVER, DELAWARE

INDEX OF DRAWINGS, LEGEND, ABBREVIATIONS AND GENERAL NOTES

Designed by: PWK
Dwn by: MSW
Cad by: PWK
Reviewed by:
Submitted by: MOFFATT & NICHOL
Date: SEPT 2017
M&N Project No. 8482-03
Drawing code:
Drawing Scale: Plot scale: 1:1 (0 SHEET)
Rev. –

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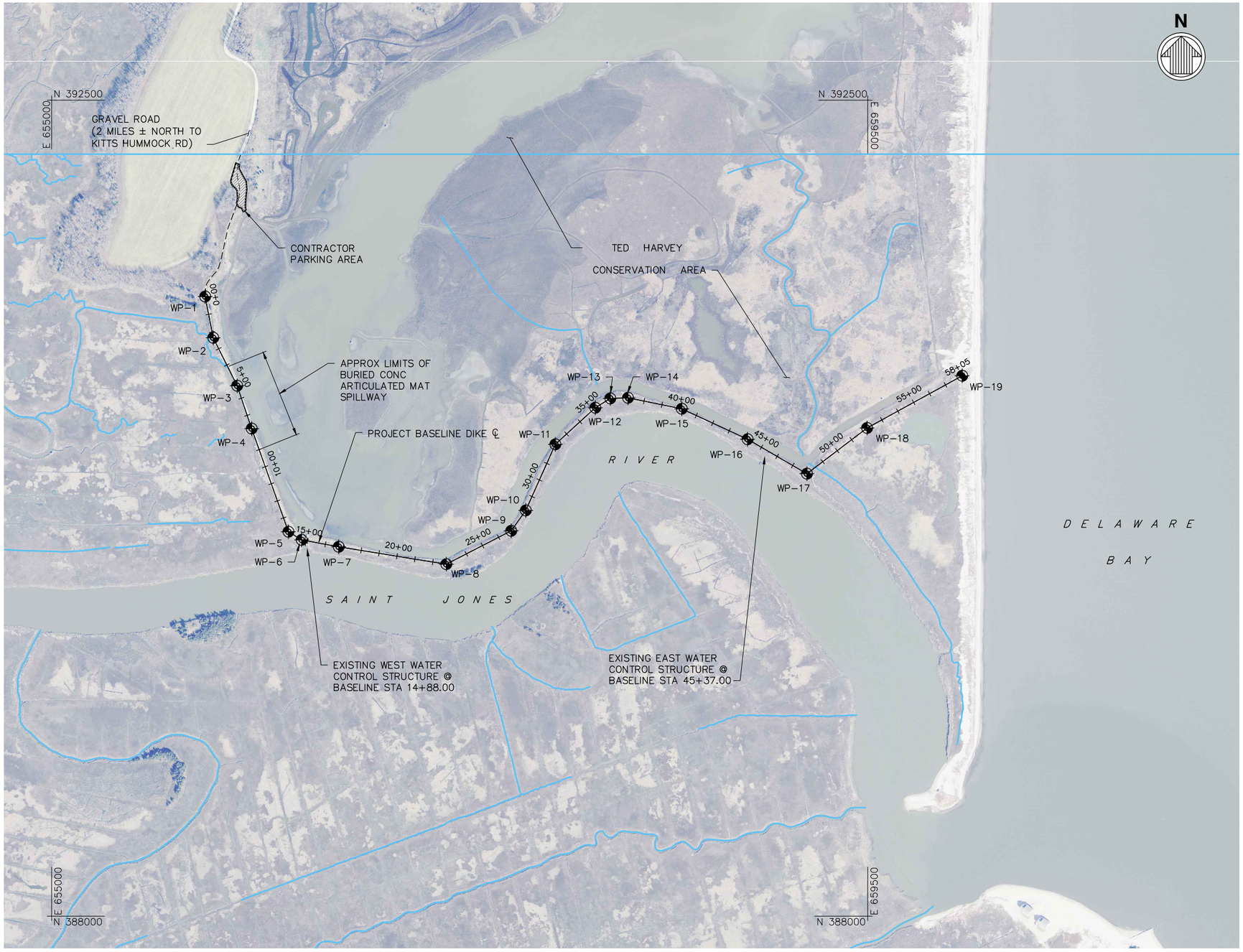
PETER WILLIAM KOTULAK LICENSE No. 18765 STATE OF DELAWARE PROFESSIONAL ENGINEER

Sheet Reference No.
G-002
INDEX: 2 OF 18

File: Q:\BA\8482-03\500 CADD_ACTIVE_LeveeRehab\8482031R_G-002; Plotted: 9/22/2017 3:22 PM by WILKINSON, MELISSA; Saved: 9/22/2017 11:56 AM by MWILKINSON

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



A1 / G-101 PLAN – GENERAL ARRANGEMENT AND SITE ACCESS
SCALE: 1" = 300'

WORKING POINT TABLE		
WP NO.	NORTHING	EASTING
WP–1	391417.0407	655846.4448
WP–2	391189.3702	655890.8187
WP–3	390924.9140	656022.7213
WP–4	390688.6700	656102.7100
WP–5	390119.7600	656305.3400
WP–6	390075.1200	656378.3800
WP–7	390037.0800	656583.1400
WP–8	389940.7638	657175.9109
WP–9	390124.7900	657533.8200
WP–10	390237.5500	657614.3400
WP–11	390602.1500	657777.3300
WP–12	390803.3600	657997.2100
WP–13	390855.0800	658080.1600
WP–14	390858.3200	658177.9500
WP–15	390797.8667	658474.2705
WP–16	390630.0269	658837.4384
WP–17	390401.2541	659153.7578
WP–18	390692.0600	659496.1300
WP–19	390980.0100	660020.8700

300' 0' 300' 600'
SCALE: 1"=300'

Mark	Description	Date	Appr.

TED HARVEY CONSERVATION AREA
LEVEE REHABILITATION
DOVER, DELAWARE

PLAN - GENERAL ARRANGEMENT AND SITE ACCESS

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

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

Designed by: PWK		Date: SEPT 2017	Rev. –
Dwn by: MSW	Ckd by: PWK	M&N Project No. 8482-03	
Reviewed by:		Drawing code:	
Submitted by: MOFFATT & NICHOL		Drawing Scale: Plot scale: 1:1 (D SHEET)	

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LICENSE
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PROFESSIONAL ENGINEER

Sheet
Reference No.
G-101
INDEX: 3 OF 18

Files: Q:\BA\8482-03\500 CADD_ACTIVE_Levee\Rehab\8482203LR_G-101; Plotted: 9/22/2017 3:22 PM by WILKINSON, MELISSA; Saved: 9/22/2017 11:55 AM by MWILKINSON

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING

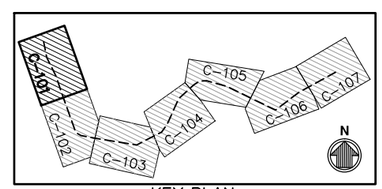
A1 / C-101 PLAN – DIKE REPAIR SHEET 1 OF 7
SCALE: 1" = 40'

GENERAL NOTES

1. FOR GENERAL NOTES SEE SHEET G-002.
2. FOR WORKING POINT TABLE SEE SHEET G-101.
3. FOR TYPICAL DIKE SECTION SEE SHEET C-301.
4. FOR DIKE CROSS SECTIONS SEE SHEETS C-302 THRU C-308.

LEGEND

- DIKE BASELINE
- 5 MAJOR CONTOURS
- 4 MINOR CONTOURS



KEY PLAN

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

Mark	Description	Date	Appr.

TED HARVEY CONSERVATION AREA
LEVEE REHABILITATION
DOVER, DELAWARE

PLAN - DIKE REPAIR
SHEET 1 OF 7

Designed by: PWK
Dwn by: MSW
Cad by: PWK
Date: SEPT 2017
Rev. –
M&N Project No. 8482-03
Drawing code:
Reviewed by:
Submitted by: MOFFATT & NICHOL
Drawing Scale: Plot scale: 1:1 (0 SHEET)

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Sheet Reference No.
C-101
INDEX: 4 OF 18

File: G:\B4\8482-03\500 CADD_ACTIVE_LeveeRehab\8482203LP_C-101; Plotted: 9/22/2017 3:25 PM by WILKINSON
Saved: 9/22/2017 2:30 PM by WILKINSON, MELISSA;

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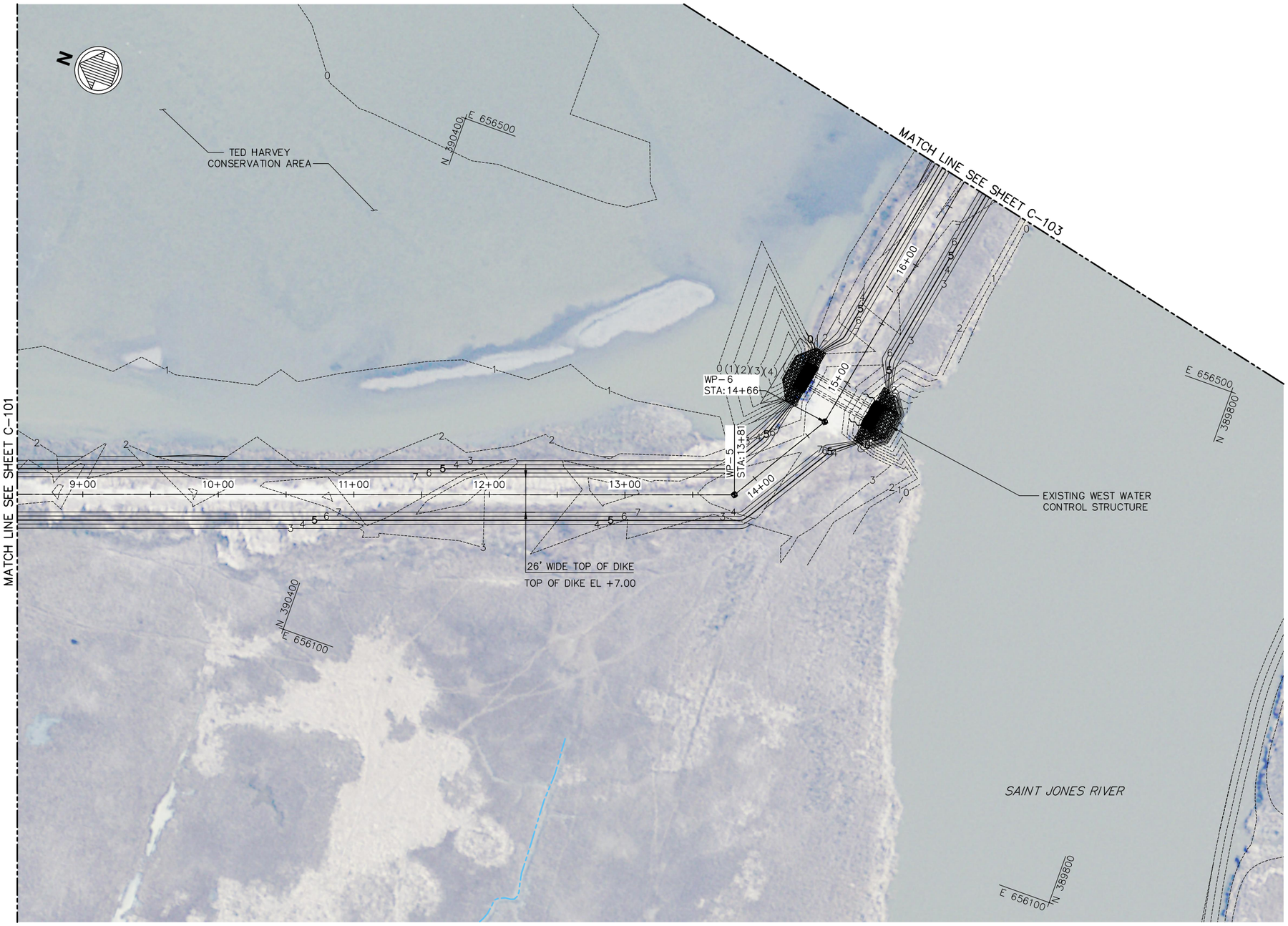


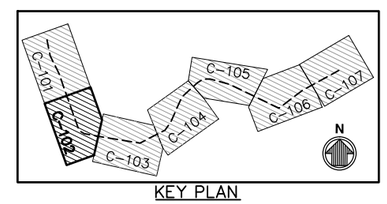
A1 / C-102 PLAN – DIKE REPAIR SHEET 2 OF 7
SCALE: 1" = 40'

GENERAL NOTES

1. FOR GENERAL NOTES SEE SHEET G-002.
2. FOR WORKING POINT TABLE SEE SHEET G-101.
3. FOR TYPICAL DIKE SECTION SEE SHEET C-301.
4. FOR DIKE CROSS SECTIONS SEE SHEETS C-302 THRU C-308.

LEGEND

- DIKE BASELINE
- 5 MAJOR CONTOURS
- 4 MINOR CONTOURS



KEY PLAN

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

Mark	Description	Date	Appr.

TED HARVEY CONSERVATION AREA
LEVEE REHABILITATION
DOVER, DELAWARE

PLAN - DIKE REPAIR
SHEET 2 OF 7

Designed by: PWK
Date: SEPT 2017
Rev. –
Dwn by: MSW
Ckd by: PWK
M&N Project No. 8482-03
Reviewed by:
Drawing code:
Submitted by: MOFFATT & NICHOL
Drawing Scale:
Plot scale: 1:1 (D SHEET)

moffatt & nichol
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LICENSE
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Sheet Reference No.
C-102
INDEX: 5 OF 18

File: Q:\BA\8482-03\500 CADD_ACTIVE_LeveeRehab\848203LR_C-102; Plotted: 9/22/2017 3:28 PM by WILKINSON, MELISSA; Saved: 9/22/2017 2:30 PM by WILKINSON

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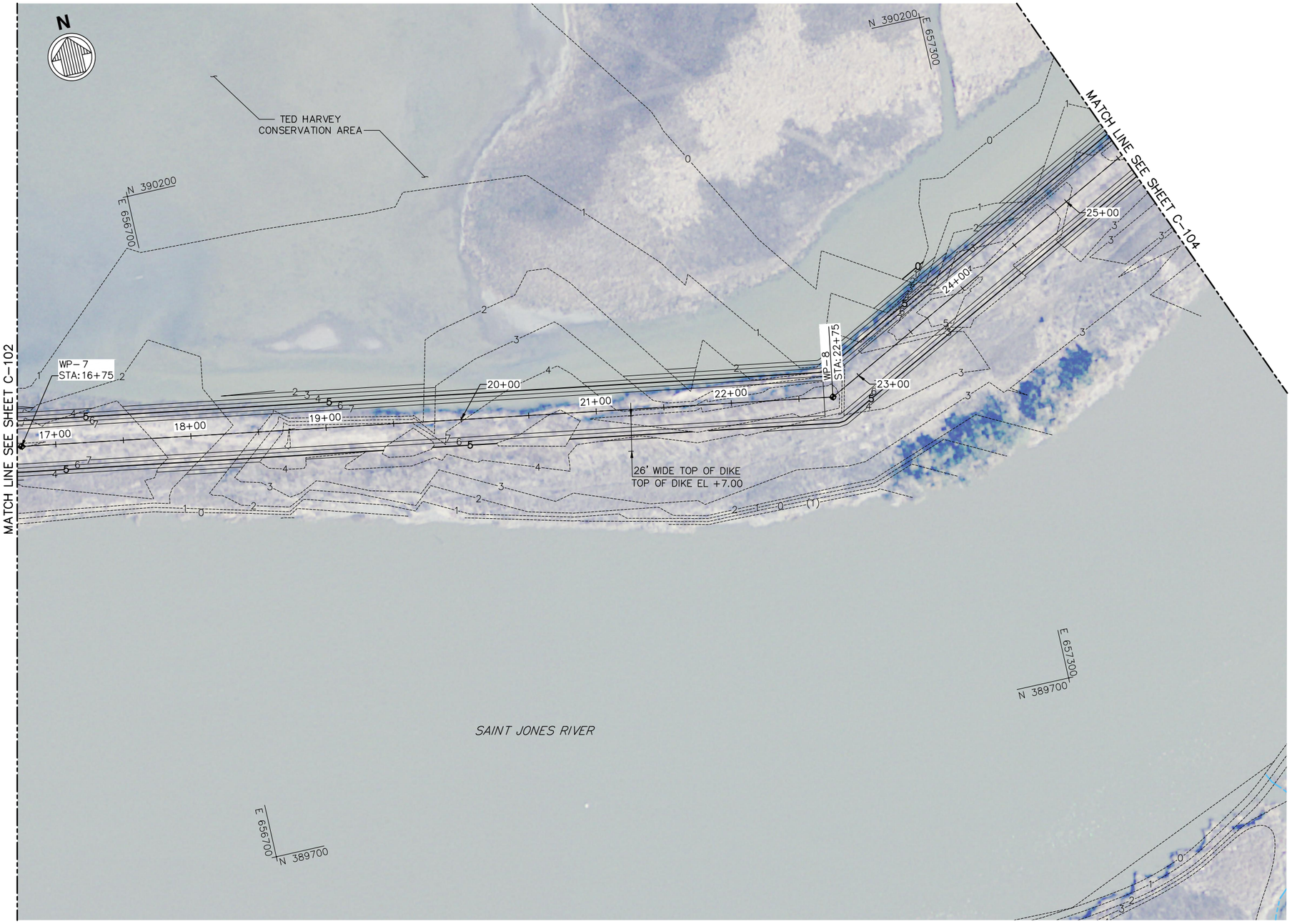


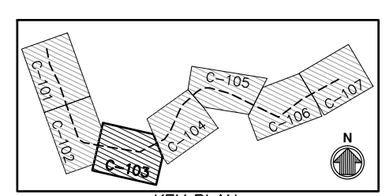
A1 C-103 PLAN – DIKE REPAIR SHEET 3 OF 7
SCALE: 1" = 40'

GENERAL NOTES

1. FOR GENERAL NOTES SEE SHEET G-002.
2. FOR WORKING POINT TABLE SEE SHEET G-101.
3. FOR TYPICAL DIKE SECTION SEE SHEET C-301.
4. FOR DIKE CROSS SECTIONS SEE SHEETS C-302 THRU C-308.

LEGEND

- DIKE BASELINE
- 5 MAJOR CONTOURS
- 4 MINOR CONTOURS



KEY PLAN

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

Mark	Description	Date	Appr.

TED HARVEY CONSERVATION AREA
LEVEE REHABILITATION
DOVER, DELAWARE

PLAN - DIKE REPAIR
SHEET 3 OF 7

Designed by: PWK
Date: SEPT 2017
Rev. –
Dwn by: MSW
Cad by: PWK
M&N Project No. 8482-03
Reviewed by:
Drawing code:
Submitted by: MOFFATT & NICHOL
Drawing Scale: Plot scale: 1:1 (D SHEET)

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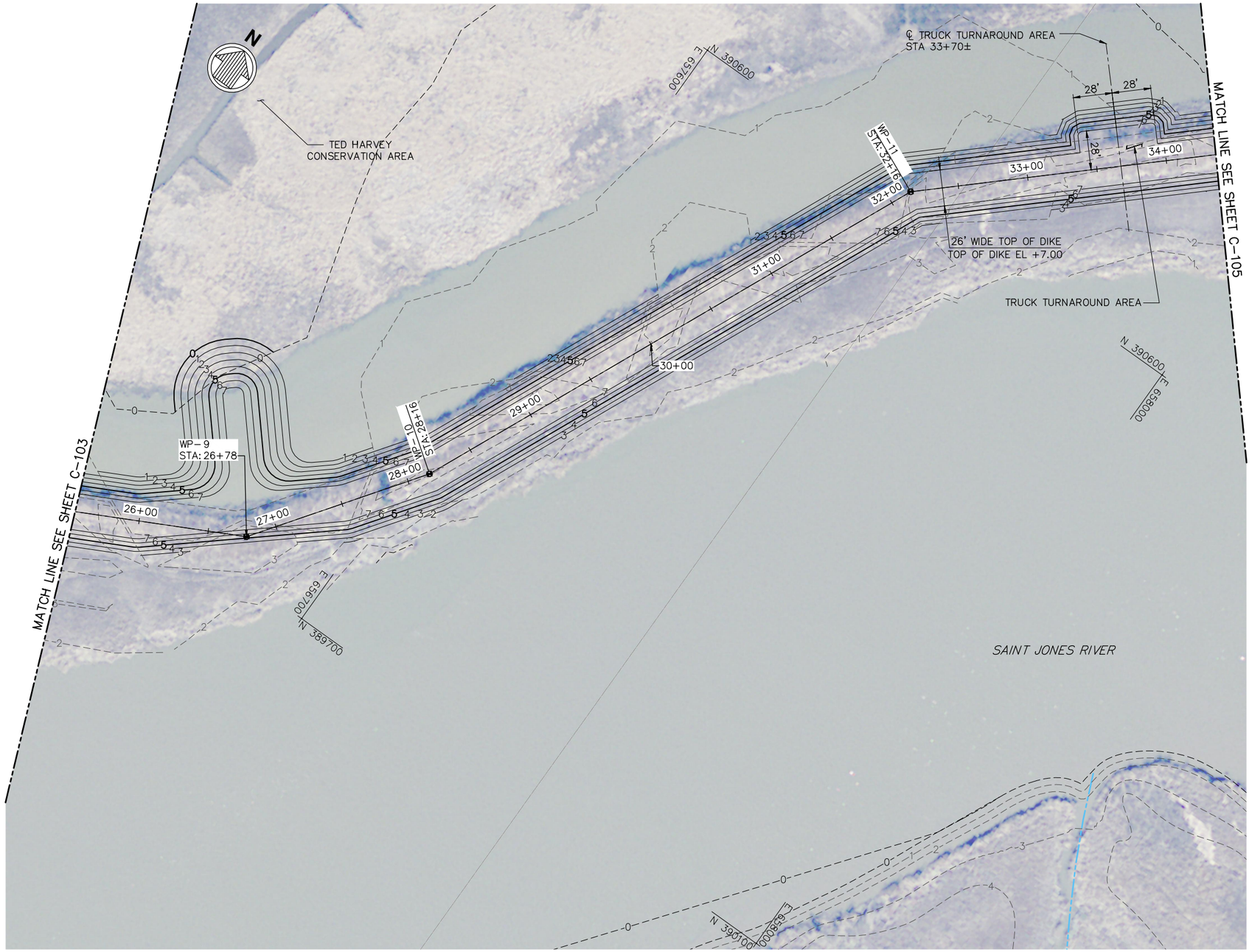
Sheet Reference No.
C-103
INDEX: 6 OF 18

File: Q:\8A\8482-03\500 CADD_ACTIVE_LeveeRehab\848203LR_C-103; Plotted: 9/22/2017 3:31 PM by WILKINSON, MELISSA; Saved: 9/22/2017 2:14 PM by WWILKINSON

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



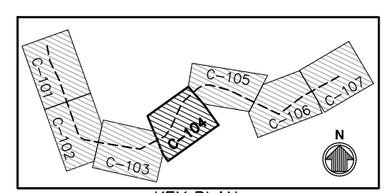
GENERAL NOTES

1. FOR GENERAL NOTES SEE SHEET G-002.
2. FOR WORKING POINT TABLE SEE SHEET G-101.
3. FOR TYPICAL DIKE SECTION SEE SHEET C-301.
4. FOR DIKE CROSS SECTIONS SEE SHEETS C-302 THRU C-308.

A1 C-104 PLAN – DIKE REPAIR SHEET 4 OF 7
SCALE: 1" = 40'

LEGEND

- DIKE BASELINE
- 5 MAJOR CONTOURS
- 4 MINOR CONTOURS



KEY PLAN

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

Mark	Description	Date	Appr.

TED HARVEY CONSERVATION AREA
LEVEE REHABILITATION
DOVER, DELAWARE

PLAN - DIKE REPAIR SHEET 4 OF 7

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Designed by: PWK		Date: SEPT 2017	Rev. –
Dwn by: MSW	Ckd by: PWK	M&N Project No. 8482-03	
Reviewed by:		Drawing code:	
Submitted by: MOFFATT & NICHOL		Drawing Scale: Plot scale: 1:1 (D SHEET)	

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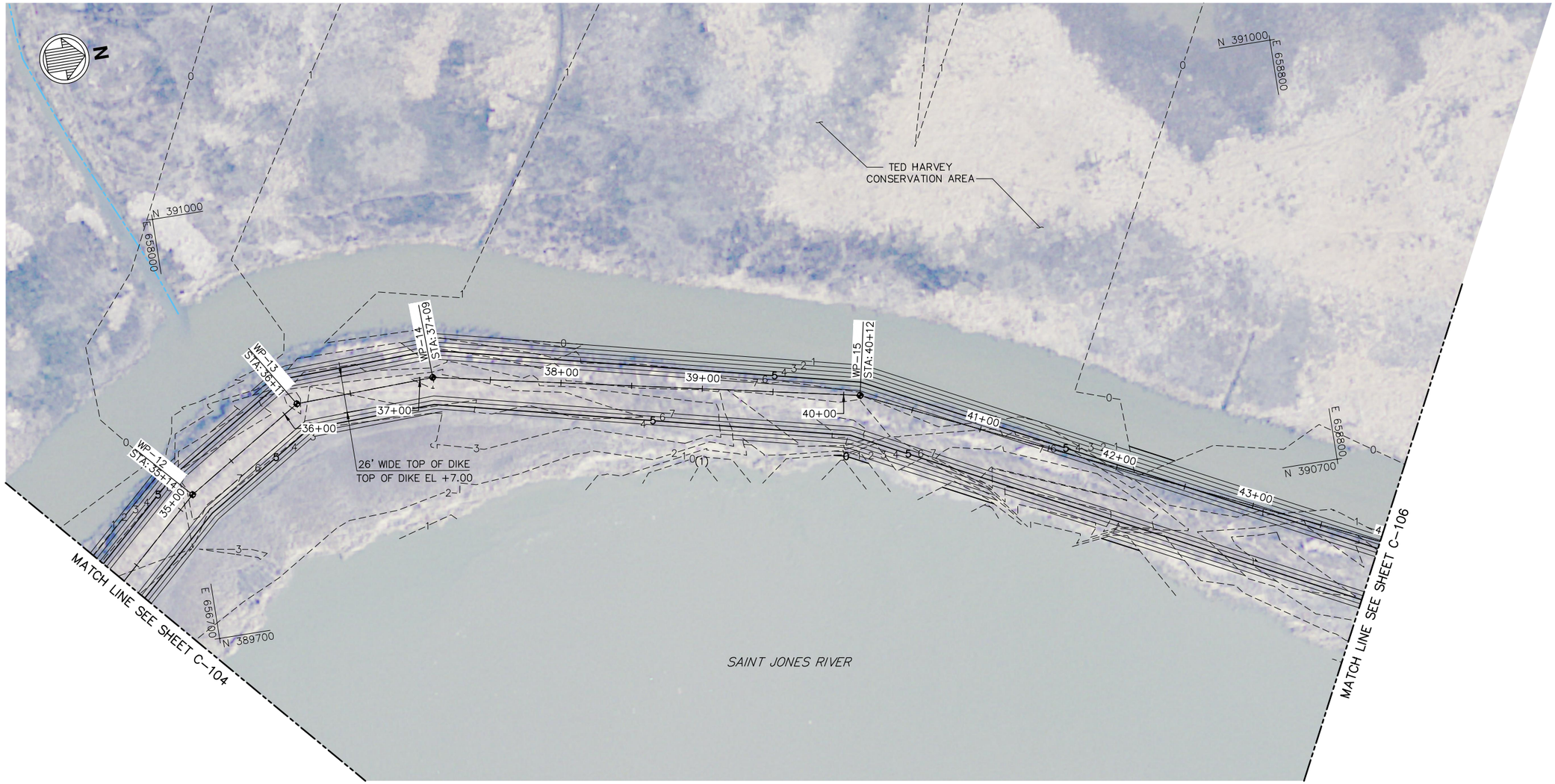
Sheet Reference No.
C-104
INDEX: 7 OF 18

Files: Q:\BA\8482-03\500 CADD_ACTIVE_Levee\Rehab\8482D3_R_C-104; Plotted: 9/22/2017 3:32 PM by MWILKINSON
Saved: 9/22/2017 3:21 PM by MWILKINSON

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



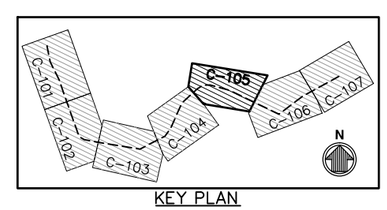
A1 C-105 PLAN – DIKE REPAIR SHEET 5 OF 7
SCALE: 1" = 40'

GENERAL NOTES

1. FOR GENERAL NOTES SEE SHEET G-002.
2. FOR WORKING POINT TABLE SEE SHEET G-101.
3. FOR TYPICAL DIKE SECTION SEE SHEET C-301.
4. FOR DIKE CROSS SECTIONS SEE SHEETS C-302 THRU C-308.

LEGEND

- DIKE BASELINE
- 5 MAJOR CONTOURS
- 4 MINOR CONTOURS



KEY PLAN

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

Mark	Description	Date	Appr.

TED HARVEY CONSERVATION AREA
LEVEE REHABILITATION
DOVER, DELAWARE

PLAN - DIKE REPAIR
SHEET 5 OF 7

Designed by: PWK
Dwn by: MSW
Cad by: PWK
Reviewed by:
Submitted by: MOFFATT & NICHOL
Date: SEPT 2017
M&N Project No. 8482-03
Drawing code:
Drawing Scale:
Plot scale: 1:1 (D SHEET)
Rev. -

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

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

PETER WILLIAM KOTULAK
No. 18765
DELAWARE
PROFESSIONAL ENGINEER

Sheet Reference No.
C-105
INDEX: 8 OF 18

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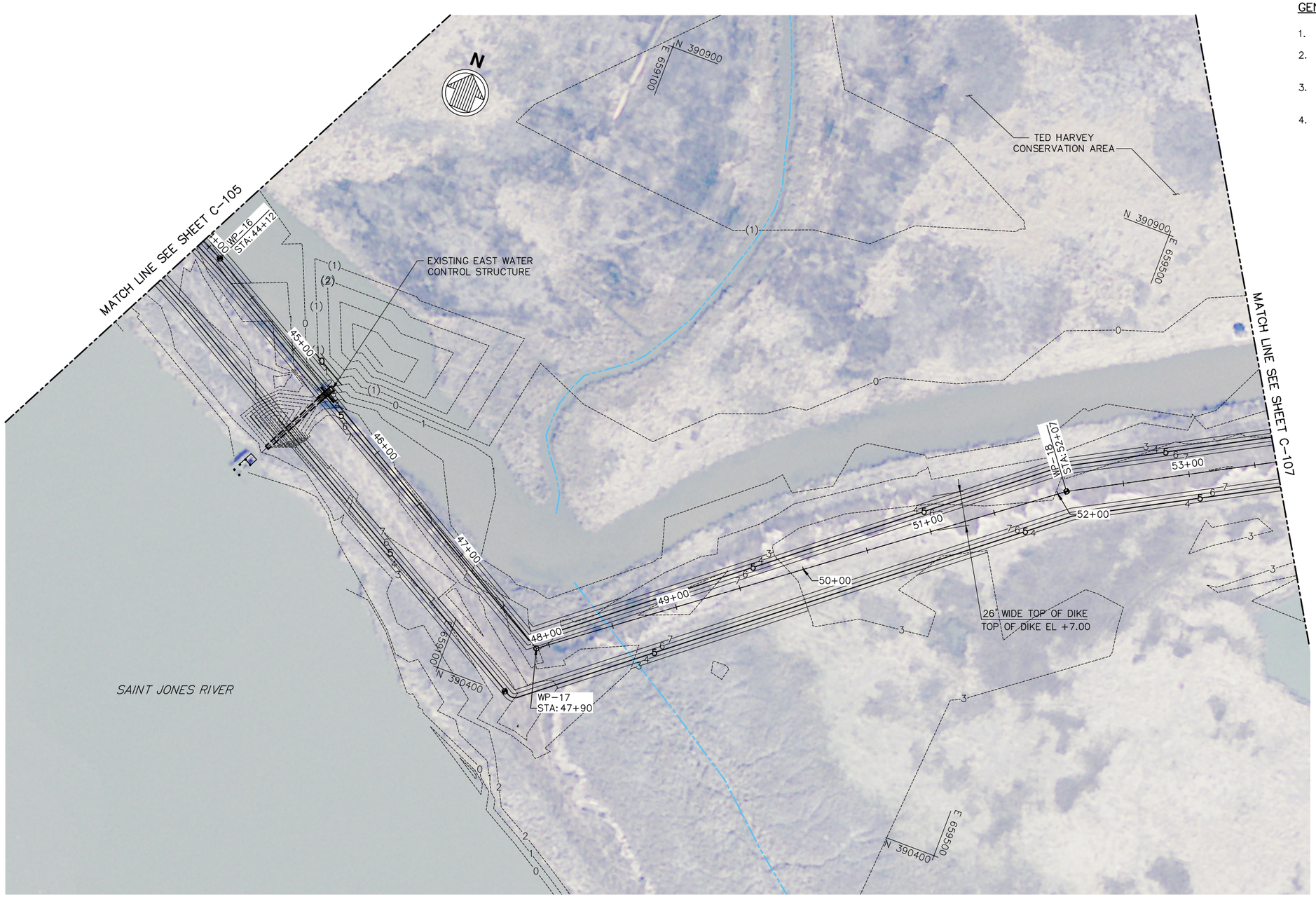
DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



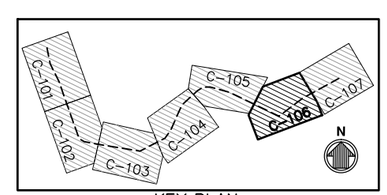
GENERAL NOTES

1. FOR GENERAL NOTES SEE SHEET G-002.
2. FOR WORKING POINT TABLE SEE SHEET G-101.
3. FOR TYPICAL DIKE SECTION SEE SHEET C-301.
4. FOR DIKE CROSS SECTIONS SEE SHEETS C-302 THRU C-308.

LEGEND

- DIKE BASELINE
- 5 — MAJOR CONTOURS
- 4 — MINOR CONTOURS

A1 / C-106 PLAN – DIKE REPAIR SHEET 6 OF 7
SCALE: 1" = 40'



KEY PLAN

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

Mark	Description	Date	Appr.

TED HARVEY CONSERVATION AREA
LEVEE REHABILITATION
DOVER, DELAWARE

PLAN - DIKE REPAIR
SHEET 6 OF 7

Designed by: PWK
Dwn by: MSW
Ckd by: PWK
Reviewed by:
Submitted by: MOFFATT & NICHOL
Date: SEPT 2017
Rev. –
M&N Project No. 8482-03
Drawing code:
Drawing Scale:
Plot scale: 1:1 (0 SHEET)

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

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

PETER WILLIAM KOTULAK
LICENSE No. 18765
DELAWARE PROFESSIONAL ENGINEER

Sheet Reference No.
C-106
INDEX: 9 OF 18

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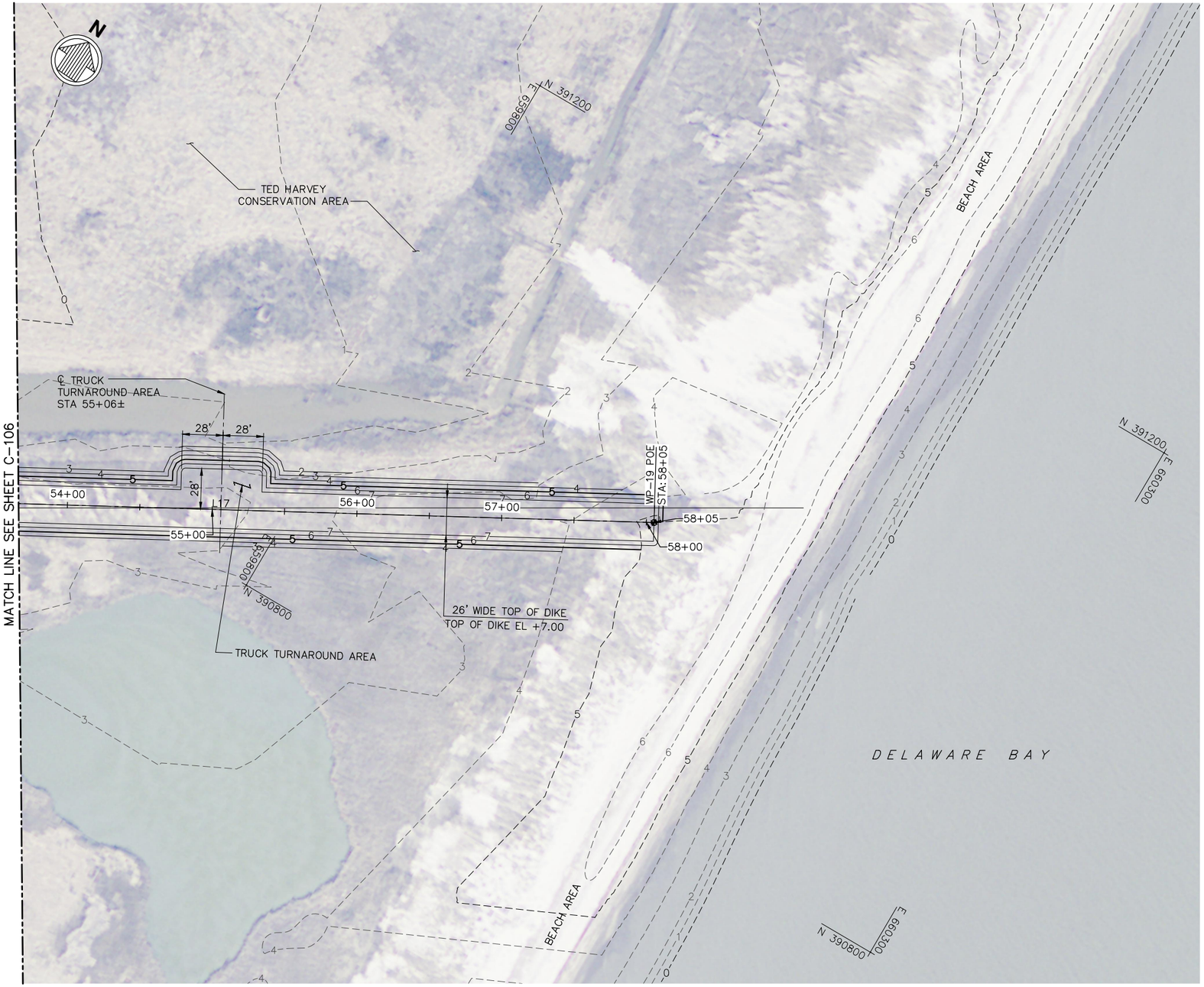
DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



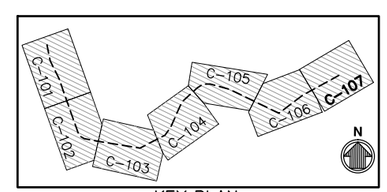
A1 C-107 PLAN – DIKE REPAIR SHEET 7 OF 7
SCALE: 1" = 40'

GENERAL NOTES

1. FOR GENERAL NOTES SEE SHEET G-002.
2. FOR WORKING POINT TABLE SEE SHEET G-101.
3. FOR TYPICAL DIKE SECTION SEE SHEET C-301.
4. FOR DIKE CROSS SECTIONS SEE SHEETS C-302 THRU C-308.

LEGEND

—+—	DIKE BASELINE
—5—	MAJOR CONTOURS
—4—	MINOR CONTOURS



KEY PLAN

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

Mark	Description	Date	Appr.

TED HARVEY CONSERVATION AREA
LEVEE REHABILITATION
DOVER, DELAWARE

PLAN - DIKE REPAIR SHEET 7 OF 7

Designed by: PWK
Dwn by: MSW
Cad by: PWK
Reviewed by:
Submitted by: MOFFATT & NICHOL
Date: SEPT 2017
M&N Project No. 8482-03
Drawing code:
Drawing Scale: Plot scale: 1:1 (0 SHEET)
Rev. –

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

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

PETER WILLIAM KOTULAK
LICENSE No. 18765
DELAWARE PROFESSIONAL ENGINEER

Sheet Reference No.
C-107
INDEX: 10 OF 18

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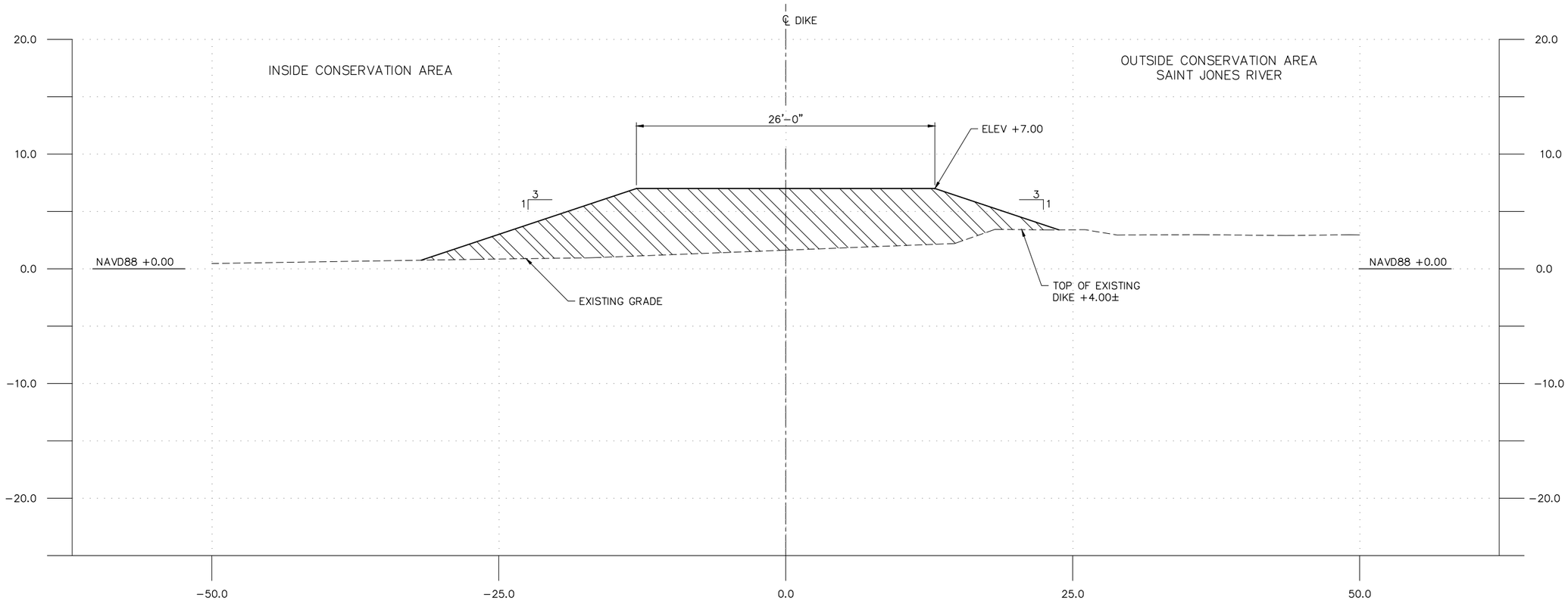

B1 / C-301 SECTION – TYPICAL DIKE
SCALE: 1" = 5'

5' 0' 5' 10'
SCALE: 1"=5'

Mark	Description	Date	Appr.

TED HARVEY CONSERVATION AREA
LEVEE REHABILITATION
DOVER, DELAWARE

SECTION - TYPICAL DIKE

Designed by: PWK
Dwn by: MSW
Cad by: PWK
Reviewed by:
Submitted by: MOFFATT & NICHOL
Date: SEPT 2017
M&N Project No. 8482-03
Drawing code:
Drawing Scale:
Plot scale: 1:1 (0 SHEET)
Rev. -

moffatt & nichol
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410-563-7300

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

PETER WILLIAM KOTULAK
LICENSE
No. 18765
STATE OF DELAWARE
PROFESSIONAL ENGINEER

Sheet Reference No.
C-301
INDEX: 11 OF 18

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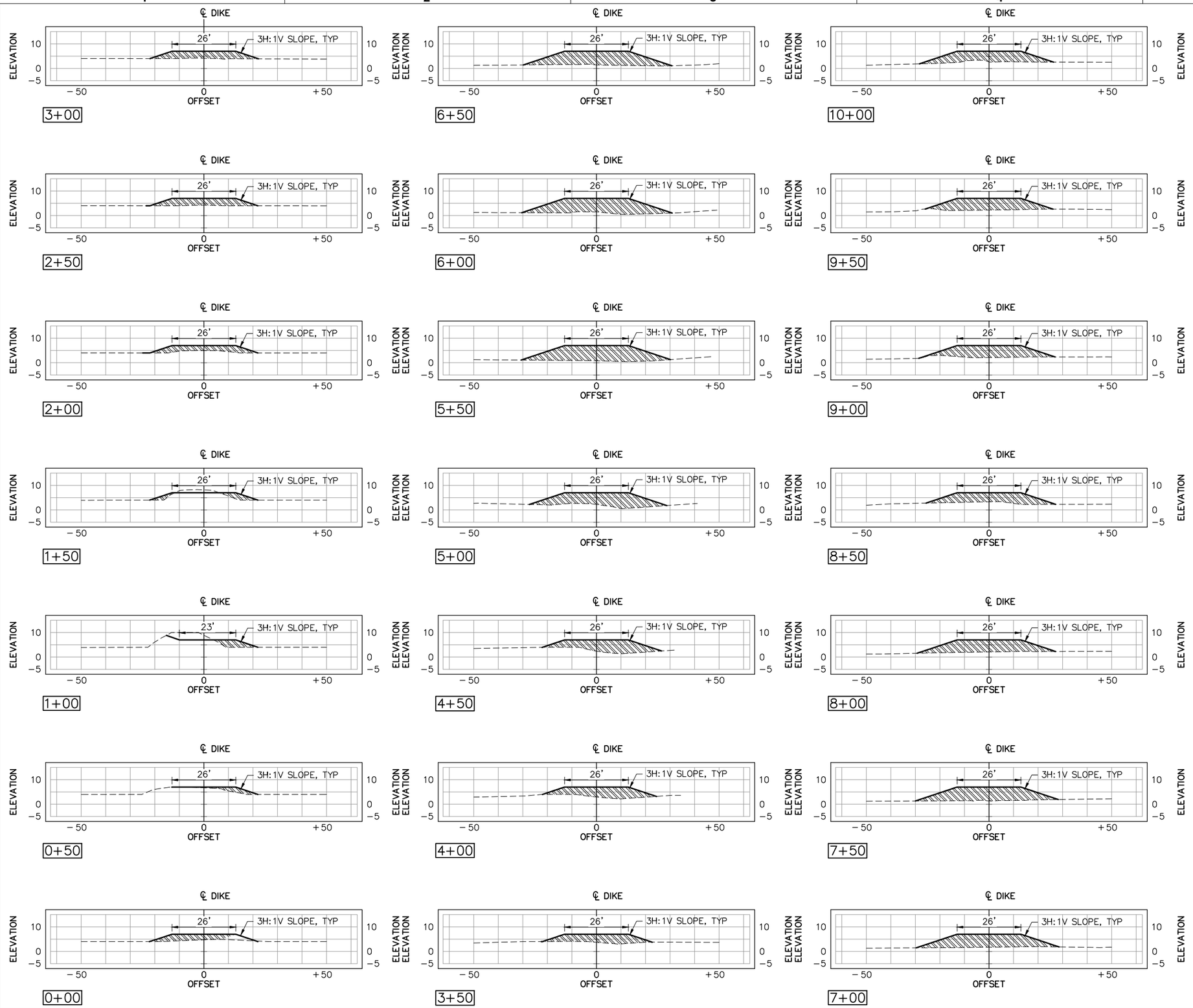


LEGEND:

- EXISTING GRADE
- PROPOSED GRADE
- OFFSITE SELECT BORROW TOP OF DIKE ELEV +7.00

NOTES:

1. THE EXISTING GRADE SHOWN ON THE SECTIONS WAS BASED ON A TOPOGRAPHIC SURVEY PERFORMED BY MORRIS & RITCHIE ASSOCIATES BETWEEN MAY 2015 AND JUNE 2015. DNREC HAS ADDED MATERIAL TO THE DIKE TO RAISE THE ELEVATIONS THROUGH BOTH A PREVIOUS CONTRACT AND WITH THEIR OWN EQUIPMENT AND PERSONNEL.
2. THE QUANTITIES ESTIMATED FOR THIS CONTRACT ARE BASED ON A DRY TON WEIGHT OF MATERIAL BROUGHT TO THE SITE, INCORPORATING INFORMATION FROM THE PREVIOUS LEVEE RAISING WORK.

20' 0' 20' 40'

SCALE: 1"=20'

Mark	Description	Date	Appr.

TED HARVEY CONSERVATION AREA
LEVEE REHABILITATION
DOVER, DELAWARE

DIKE CROSS SECTIONS
SHEET 1 OF 7

Designed by: PWK
Dwn by: MSW
Ckd by: PWK
Reviewed by:
Submitted by: MOFFATT & NICHOL
Date: SEPT 2017
M&N Project No. 8482-03
Drawing code:
Drawing Scale:
Plot scale: 1:1 (0 SHEET)
Rev. -

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

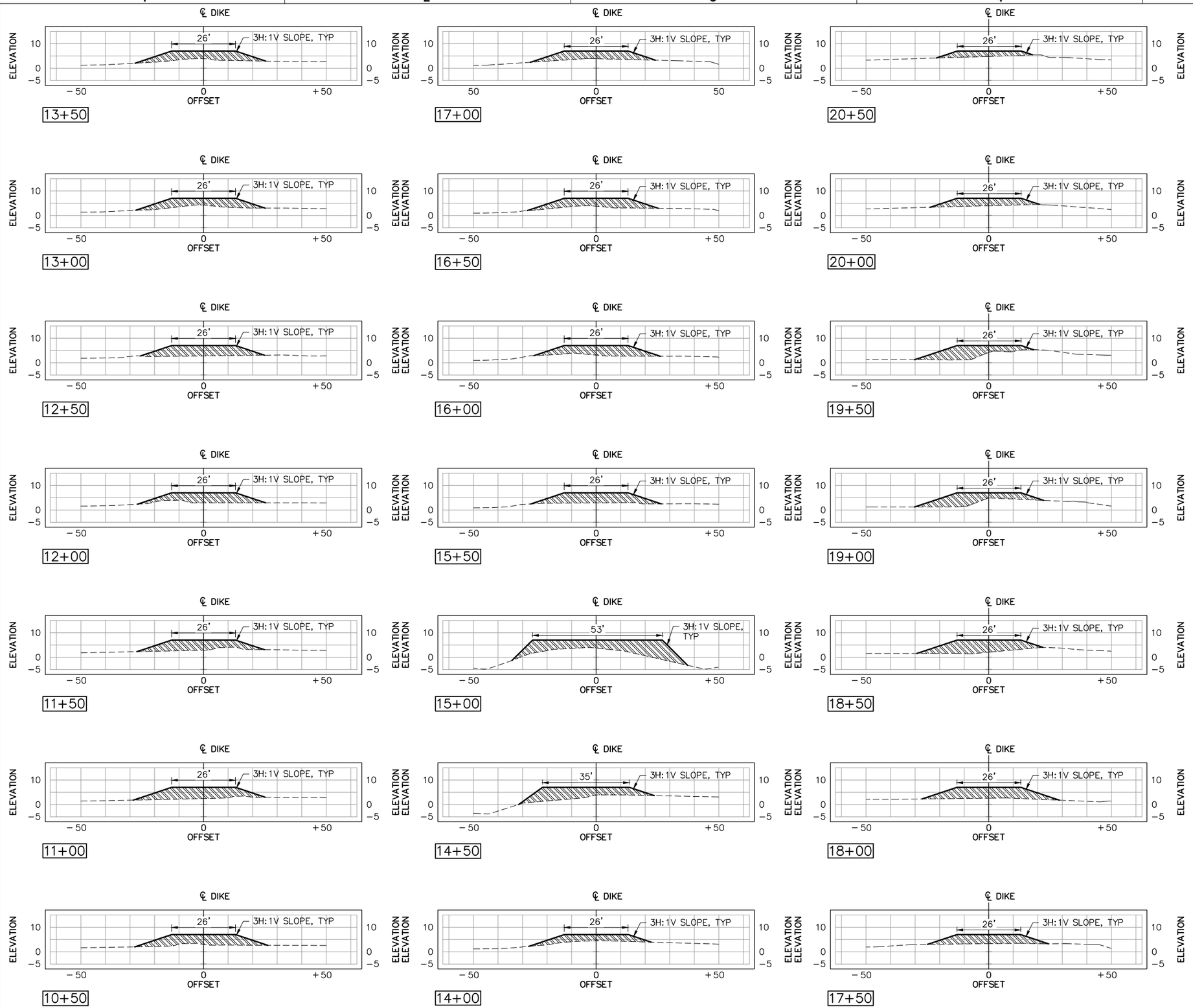
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

PETER WILLIAM KOTULAK
LICENSE No. 18765
STATE OF DELAWARE
PROFESSIONAL ENGINEER

Sheet Reference No.
C-302
INDEX: 12 OF 18

File: O:\BA\8482-03\500 CADD_ACTIVE_LeveeRehab\8482C3LP_C-302; Plotted: 9/22/2017 3:40 PM by WILKINSON, MELISSA; Saved: 9/22/2017 1:30 PM by WILKINSON

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



LEGEND:

- EXISTING GRADE
- PROPOSED GRADE
- OFFSITE SELECT BORROW TOP OF DIKE ELEV +7.00

NOTES:

1. THE EXISTING GRADE SHOWN ON THE SECTIONS WAS BASED ON A TOPOGRAPHIC SURVEY PERFORMED BY MORRIS & RITCHIE ASSOCIATES BETWEEN MAY 2015 AND JUNE 2015. DNREC HAS ADDED MATERIAL TO THE DIKE TO RAISE THE ELEVATIONS THROUGH BOTH A PREVIOUS CONTRACT AND WITH THEIR OWN EQUIPMENT AND PERSONNEL.
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20' 0' 20' 40'
SCALE: 1"=20'

Mark	Description	Date	Appr.

TED HARVEY CONSERVATION AREA
LEVEE REHABILITATION
DOVER, DELAWARE

DIKE CROSS SECTIONS
SHEET 2 OF 7

Designed by: PWK
Dwn by: MSW
Cad by: PWK
Reviewed by:
Submitted by: MOFFATT & NICHOL
Date: SEPT 2017
M&N Project No. 8482-03
Drawing code:
Drawing Scale:
Plot scale: 1:1 (D SHEET)
Rev. -

moffatt & nichol
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BALTIMORE, MARYLAND 21224
410-563-7300

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

PETER WILLIAM KOTULAK LICENSE No. 18765 STATE OF DELAWARE PROFESSIONAL ENGINEER

Sheet Reference No.
C-303
INDEX: 13 OF 18

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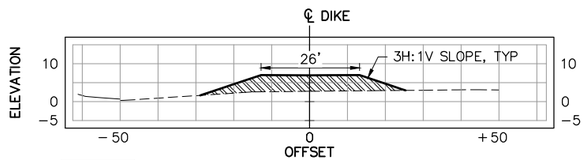

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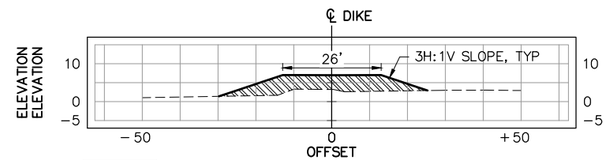

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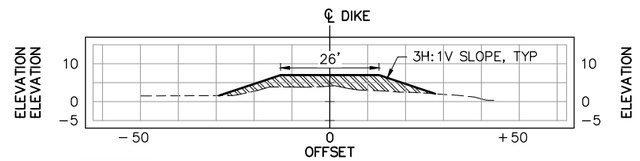

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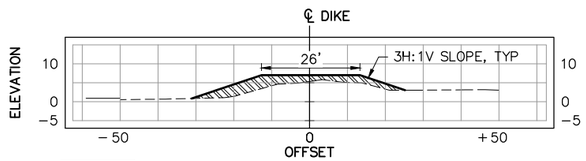

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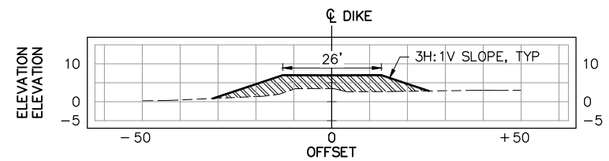

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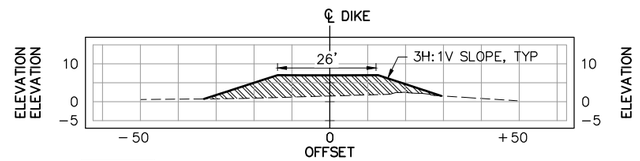

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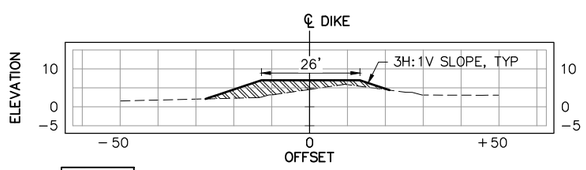

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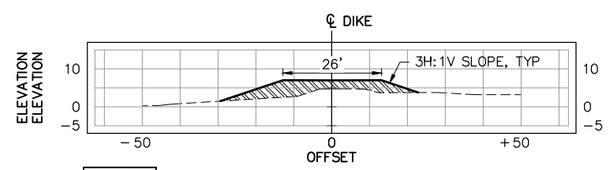

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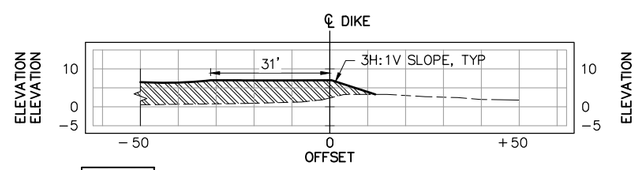

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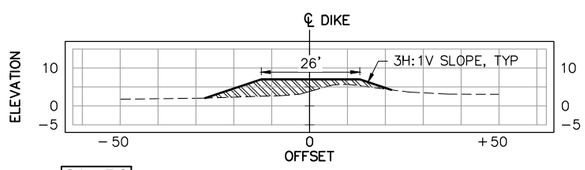

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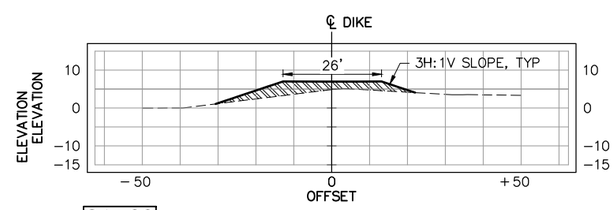

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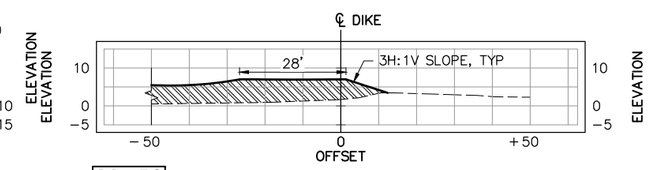

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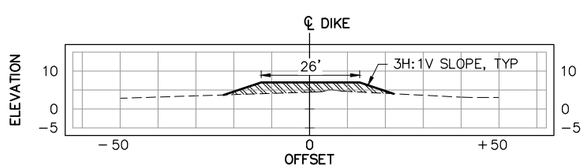

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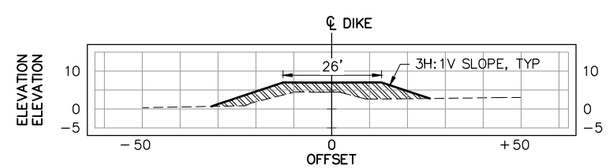

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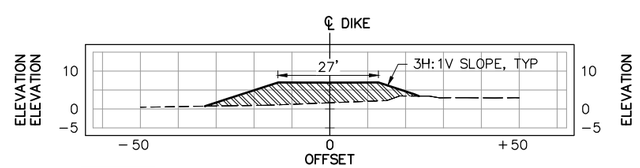


26+00

LEGEND:

- EXISTING GRADE
- PROPOSED GRADE
- OFFSITE SELECT BORROW TOP OF DIKE ELEV +7.00

NOTES:

1. THE EXISTING GRADE SHOWN ON THE SECTIONS WAS BASED ON A TOPOGRAPHIC SURVEY PERFORMED BY MORRIS & RITCHIE ASSOCIATES BETWEEN MAY 2015 AND JUNE 2015. DNREC HAS ADDED MATERIAL TO THE DIKE TO RAISE THE ELEVATIONS THROUGH BOTH A PREVIOUS CONTRACT AND WITH THEIR OWN EQUIPMENT AND PERSONNEL.
2. THE QUANTITIES ESTIMATED FOR THIS CONTRACT ARE BASED ON A DRY TON WEIGHT OF MATERIAL BROUGHT TO THE SITE, INCORPORATING INFORMATION FROM THE PREVIOUS LEVEE RAISING WORK.

20' 0' 20' 40'

SCALE: 1"=20'

Mark	Description	Date	Appr.

TED HARVEY CONSERVATION AREA
LEVEE REHABILITATION
DOVER, DELAWARE

DIKE CROSS SECTIONS
SHEET 3 OF 7

Designed by: PWK
Dwn by: MSW
Ckd by: PWK
Reviewed by:
Submitted by: MOFFATT & NICHOL
Date: SEPT 2017
M&N Project No. B482-03
Drawing code:
Drawing Scale:
Plot scale: 1:1 (0 SHEET)
Rev. -

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

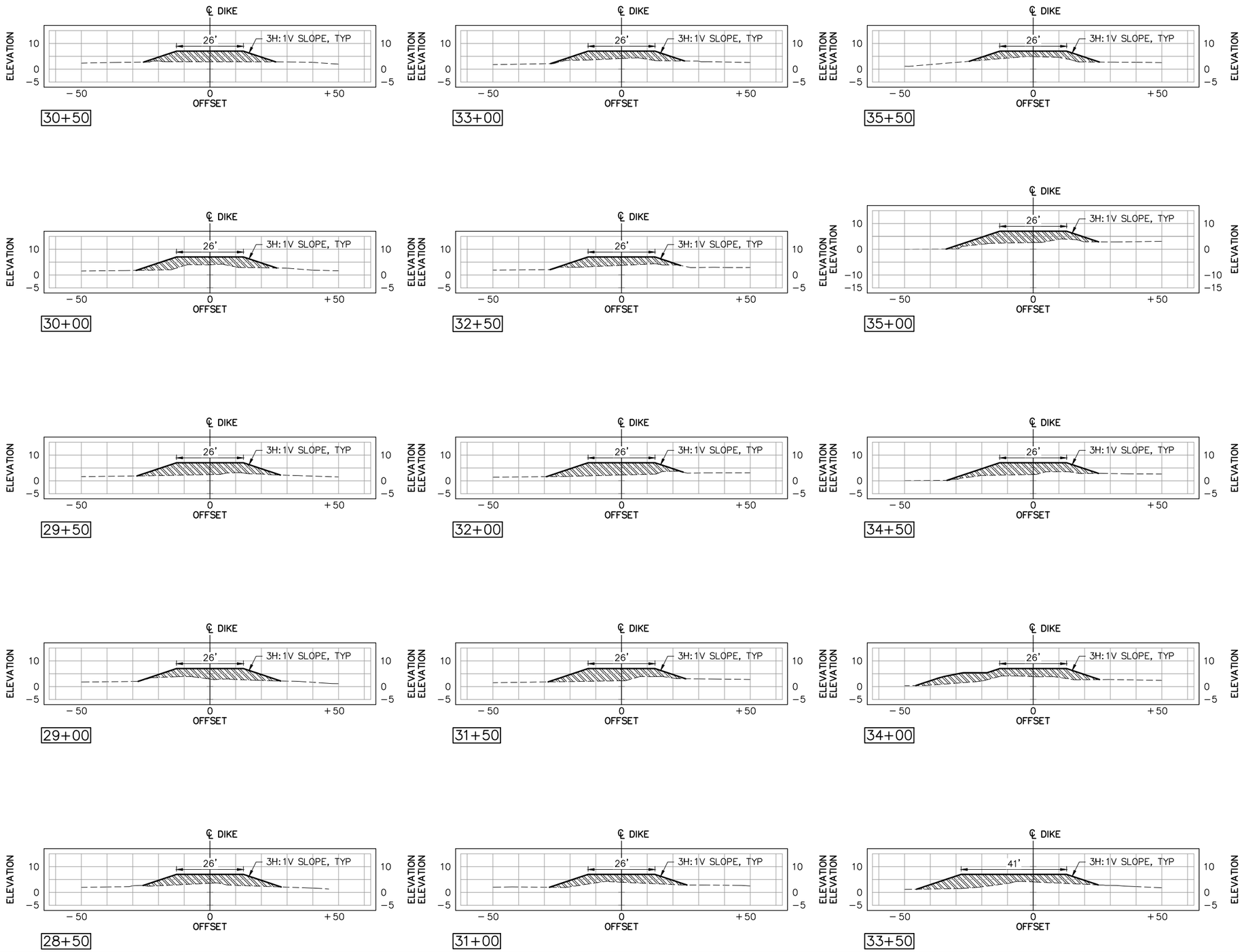
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

PETER WILLIAM KOTULAK
LICENSE
No. 18765
STATE OF DELAWARE
PROFESSIONAL ENGINEER

Sheet Reference No.
C-304
INDEX: 14 OF 18

File: O:\BA\B482-03\500 CADD_ACTIVE_LeveeRehab\B482-03LR_C-304; Plotted: 9/22/2017 3:41 PM by WILKINSON, MELISSA; Saved: 9/22/2017 12:06 PM by WILKINSON

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



LEGEND:

- EXISTING GRADE
- PROPOSED GRADE
- OFFSITE SELECT BORROW TOP OF DIKE ELEV +7.00

NOTES:

1. THE EXISTING GRADE SHOWN ON THE SECTIONS WAS BASED ON A TOPOGRAPHIC SURVEY PERFORMED BY MORRIS & RITCHIE ASSOCIATES BETWEEN MAY 2015 AND JUNE 2015. DNREC HAS ADDED MATERIAL TO THE DIKE TO RAISE THE ELEVATIONS THROUGH BOTH A PREVIOUS CONTRACT AND WITH THEIR OWN EQUIPMENT AND PERSONNEL.
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20' 0' 20' 40'
SCALE: 1"=20'

Mark	Description	Date	Appr.

TED HARVEY CONSERVATION AREA
LEVEE REHABILITATION
DOVER, DELAWARE

DIKE CROSS SECTIONS
SHEET 4 OF 7

Designed by: PWK
Dwn by: MSW
Ckd by: PWK
Reviewed by:
Submitted by: MOFFATT & NICHOL
Date: SEPT 2017
M&N Project No. 8482-03
Drawing code:
Drawing Scale:
Plot scale: 1:1 (0 SHEET)
Rev. -

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

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

PETER WILLIAM KOTULAK
LICENSE
No. 18765
STATE OF DELAWARE
PROFESSIONAL ENGINEER

Sheet Reference No.
C-305
INDEX: 15 OF 18

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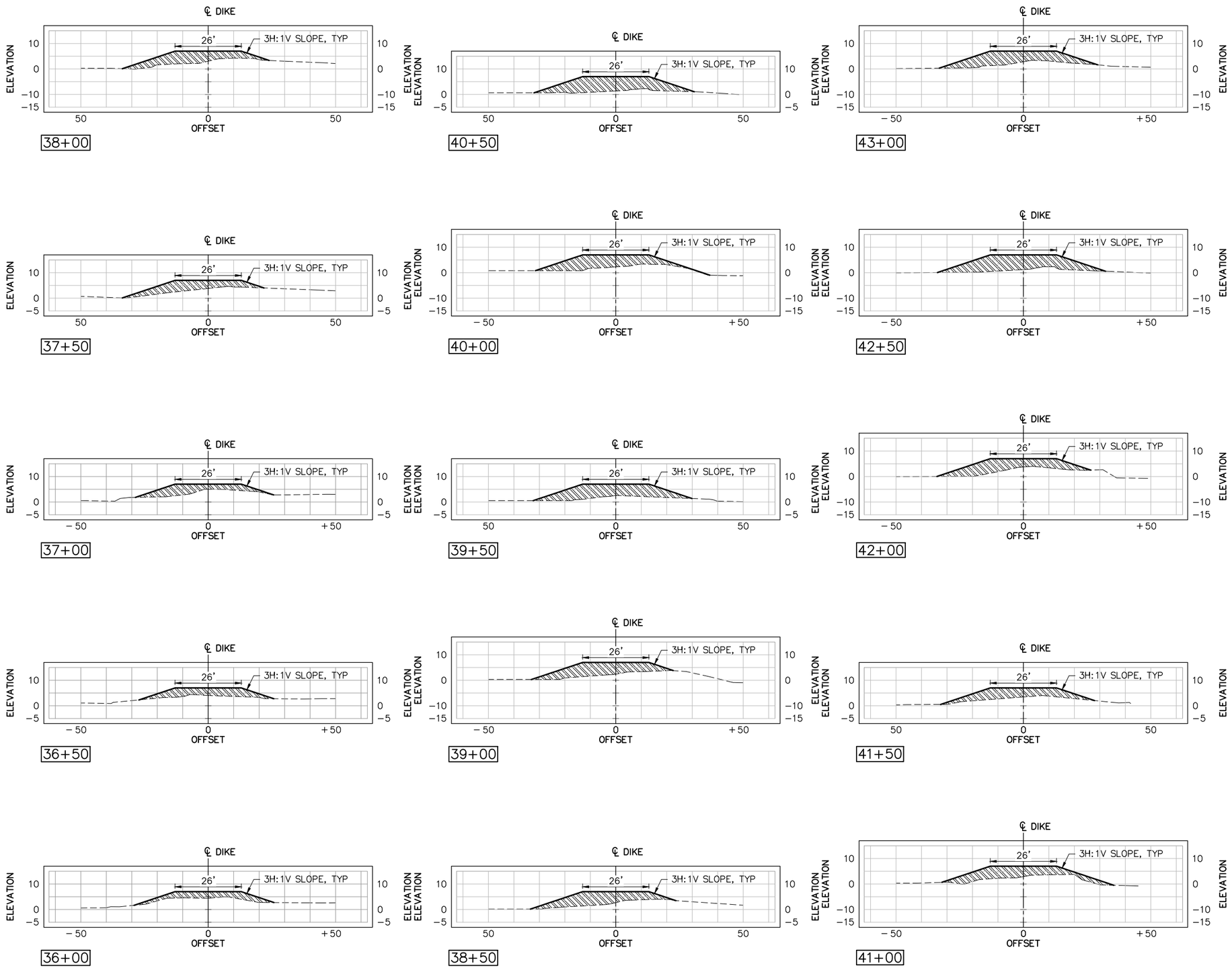
DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



LEGEND:

- EXISTING GRADE
- PROPOSED GRADE
- OFFSITE SELECT BORROW TOP OF DIKE ELEV +7.00

NOTES:

1. THE EXISTING GRADE SHOWN ON THE SECTIONS WAS BASED ON A TOPOGRAPHIC SURVEY PERFORMED BY MORRIS & RITCHIE ASSOCIATES BETWEEN MAY 2015 AND JUNE 2015. DNREC HAS ADDED MATERIAL TO THE DIKE TO RAISE THE ELEVATIONS THROUGH BOTH A PREVIOUS CONTRACT AND WITH THEIR OWN EQUIPMENT AND PERSONNEL.
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20' 0' 20' 40'
SCALE: 1"=20'

Mark	Description	Date	Appr.

TED HARVEY CONSERVATION AREA
LEVEE REHABILITATION
DOVER, DELAWARE

DIKE CROSS SECTIONS
SHEET 5 OF 7

Designed by: PWK
Dwn by: MSW
Ckd by: PWK
Reviewed by:
Submitted by: MOFFATT & NICHOL
Date: SEPT 2017
Rev. -
M&N Project No. 8482-03
Drawing code:
Drawing Scale:
Plot scale: 1:1 (0 SHEET)

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

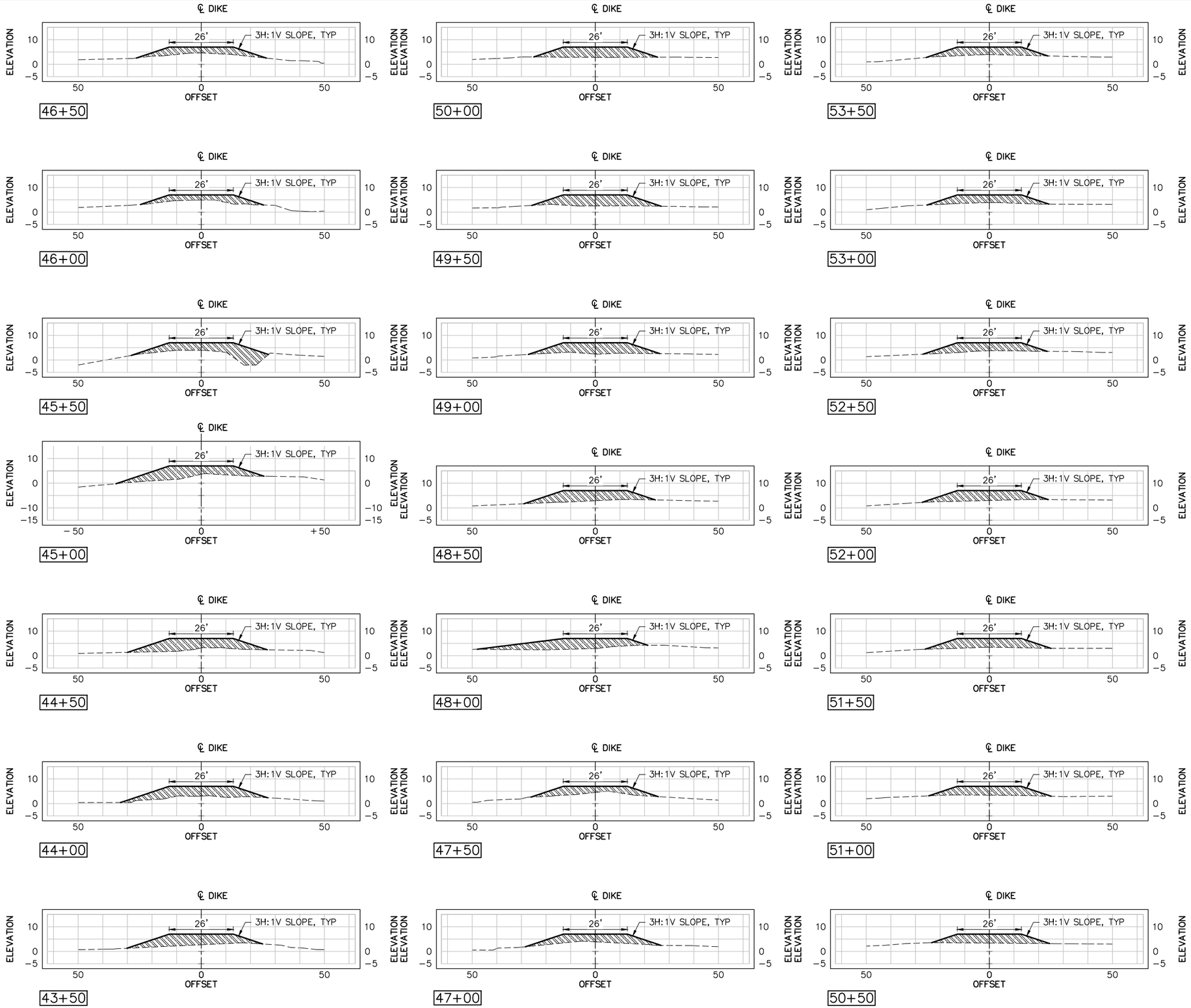
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

PETER WILLIAM KOTULAK
LICENSE
No. 18765
STATE OF DELAWARE
PROFESSIONAL ENGINEER

Sheet Reference No.
C-306
INDEX: 16 OF 18

File: Q:\BA\8482-03\500 CADD_ACTIVE_LeveeRehab\8482O3LR_C-306; Plotted: 9/22/2017 3:41 PM by WILKINSON, MELISSA; Saved: 9/22/2017 12:07 PM by WILKINSON

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



LEGEND:

- EXISTING GRADE
- PROPOSED GRADE
- OFFSITE SELECT BORROW TOP OF DIKE ELEV +7.00

NOTES:

1. THE EXISTING GRADE SHOWN ON THE SECTIONS WAS BASED ON A TOPOGRAPHIC SURVEY PERFORMED BY MORRIS & RITCHIE ASSOCIATES BETWEEN MAY 2015 AND JUNE 2015. DNREC HAS ADDED MATERIAL TO THE DIKE TO RAISE THE ELEVATIONS THROUGH BOTH A PREVIOUS CONTRACT AND WITH THEIR OWN EQUIPMENT AND PERSONNEL.
2. THE QUANTITIES ESTIMATED FOR THIS CONTRACT ARE BASED ON A DRY TON WEIGHT OF MATERIAL BROUGHT TO THE SITE, INCORPORATING INFORMATION FROM THE PREVIOUS LEVEE RAISING WORK.

20' 0' 20' 40'
SCALE: 1"=20'

Mark	Description	Date	Appr.

TED HARVEY CONSERVATION AREA
LEVEE REHABILITATION
DOVER, DELAWARE

DIKE CROSS SECTIONS
SHEET 6 OF 7

Designed by: PWK
Dwn by: MSW
Cad by: PWK
Reviewed by:
Submitted by: MOFFATT & NICHOL
Date: SEPT 2017
M&N Project No. 8482-03
Drawing code:
Drawing Scale: Plot scale: 1:1 (0 SHEET)
Rev. –

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

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

PETER WILLIAM KOTULAK LICENSE No. 18765 STATE OF DELAWARE PROFESSIONAL ENGINEER

Sheet Reference No.
C-307
INDEX: 17 OF 18

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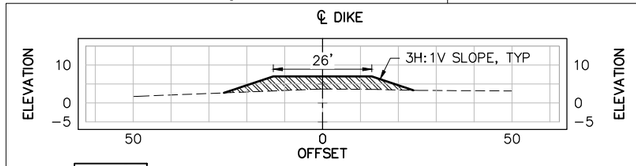
DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING



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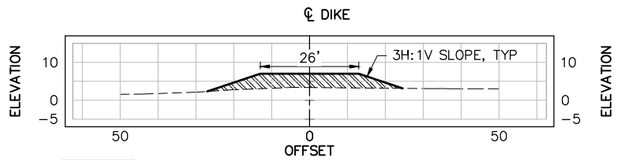

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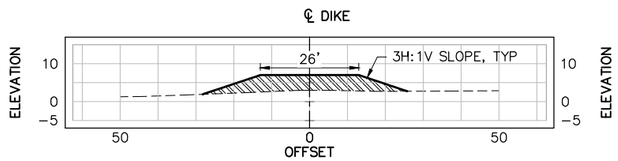

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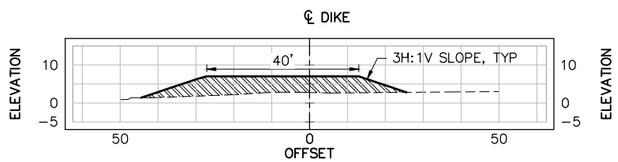

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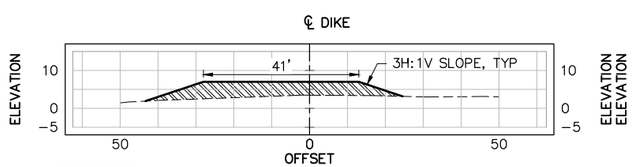

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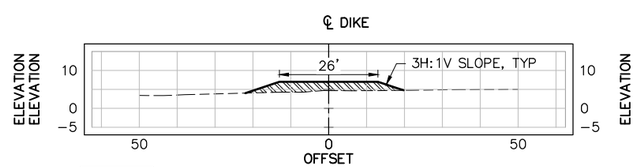

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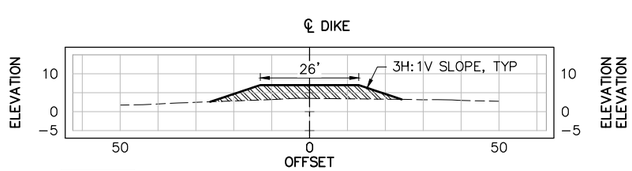

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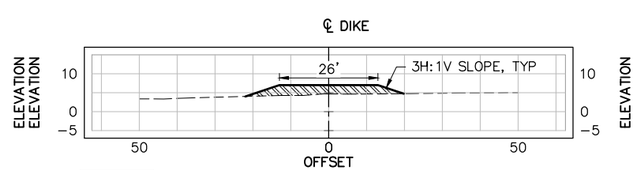

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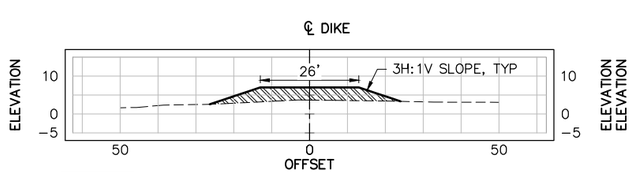

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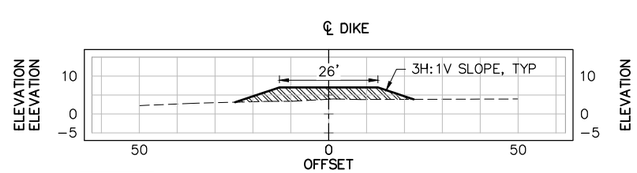

57+50

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TED HARVEY CONSERVATION AREA
LEVEE REHABILITATION
DOVER, DELAWARE

DIKE CROSS SECTIONS
SHEET 7 OF 7

Designed by: PWK
Dwn by: MSW
Cad by: PWK
Reviewed by:
Submitted by: MOFFATT & NICHOL
Date: SEPT 2017
M&N Project No. 8482-03
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PETER WILLIAM KOTULAK
LICENSE
No. 18765
PROFESSIONAL ENGINEER

Sheet Reference No.
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File: G:\BA\8482-03\500 CADD_ACTIVE_LeveeRehab\848203LR_C-308; Plotted: 9/22/2017 3:41 PM by WILKINSON, MELISSA; Saved: 9/22/2017 12:07 PM by MWILKINSON

DRAWING SCALES SHOWN BASED ON 22"x34" DRAWING