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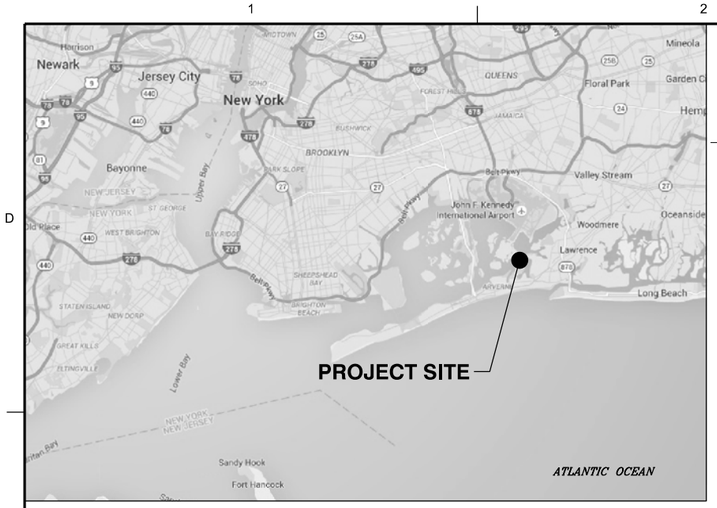
Integrated Hurricane Sandy General Reevaluation Report and Environmental Impact Statement

Atlantic Coast of New York

East Rockaway Inlet to Rockaway Inlet and Jamaica Bay

Sub Appendix A2-F: Plans and Sections for the Recommended Plan for Jamaica Bay

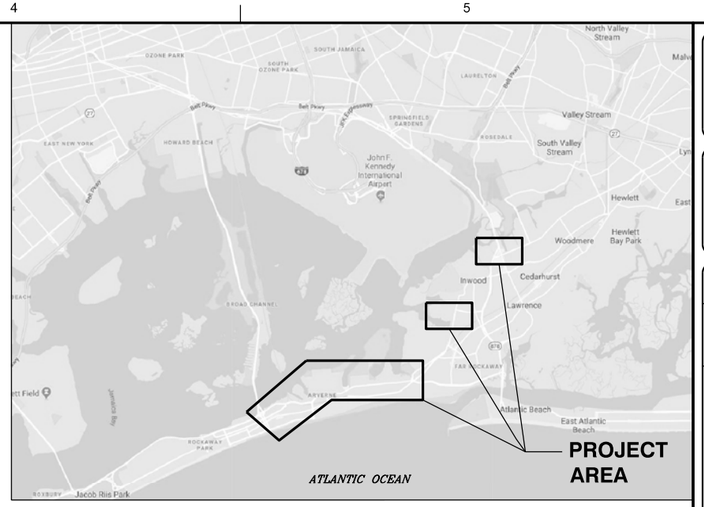
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VICINITY MAP
NTS

INTEGRATED HURRICANE SANDY GENERAL RE-EVALUATION REPORT AND ENVIRONMENTAL IMPACT STATEMENT

ATLANTIC COAST OF NEW YORK



LOCATION PLAN
NTS

JAMAICA BAY

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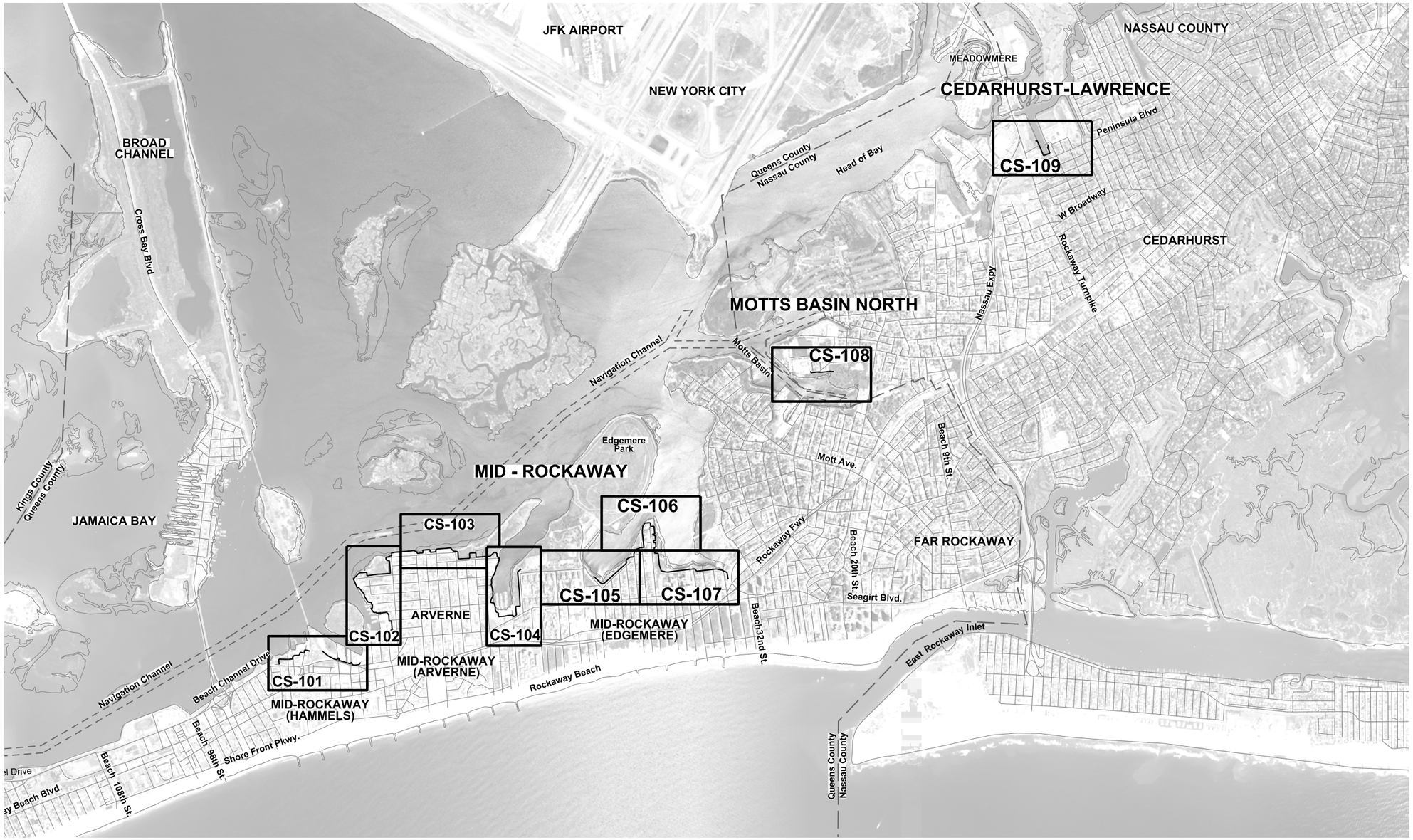
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COVER SHEET

SHEET ID
G-001

SHEET 1 OF 28



HIGH FREQUENCY FLOOD RISK REDUCTION FEATURES (HFFRRF) FOR JAMAICA BAY

PROJECT SITES:
1. MID - ROCKAWAY
2. MOTTS BASIN NORTH
3. CEDARHURST-LAWRENCE

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0 1500' 3000'
SCALE:1"=1500'

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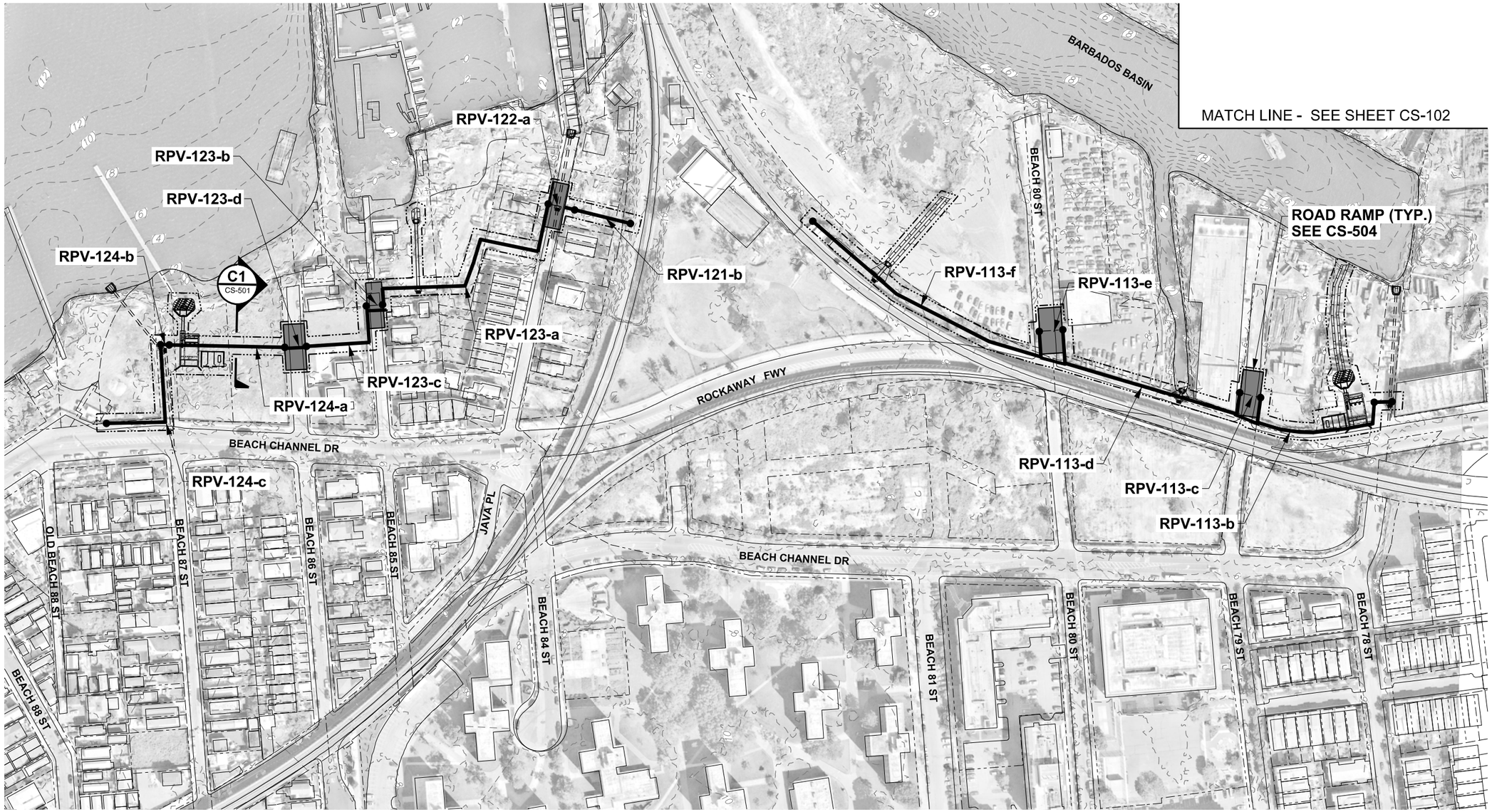
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SHEETS KEY PLAN

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G-101
SHEET 2 OF 28

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MID-ROCKAWAY - HAMMELS

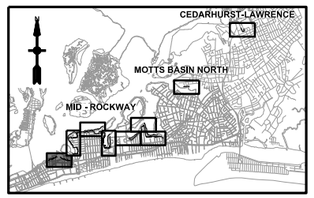
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1. ALL ELEVATIONS REFERENCED TO NAVD88.
2. ELEVATION CONTOURS BASED ON THE FOLLOWING SOURCES:
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   - 2013-2014 U.S. GEOLOGICAL SURVEY CMGP LIDAR: POST SANDY (NEW YORK CITY), 2018.

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LEGEND

- FLOODWALL
- BULKHEAD
- REVETMENT
- BERM
- TOE OF BERM
- FLOOD PROTECTION LEVEE EASEMENT
- BANK PROTECTION EASEMENT
- TAX LOT PROPERTY LINE
- RPV-### REACH ID
- 4 EXISTING CONTOURS (LANDSIDE)
- (4) EXISTING CONTOURS (BATHYMETRY)
- INTERTIDAL MARSH SALTMEADOW HAY
- INTERTIDAL MARSH SMOOTH CORDGRASS
- HIGH MARSH SCRUB-SHRUB
- MARITIME FOREST



KEY PLAN

N

0 100' 200'

SCALE:1"=100'

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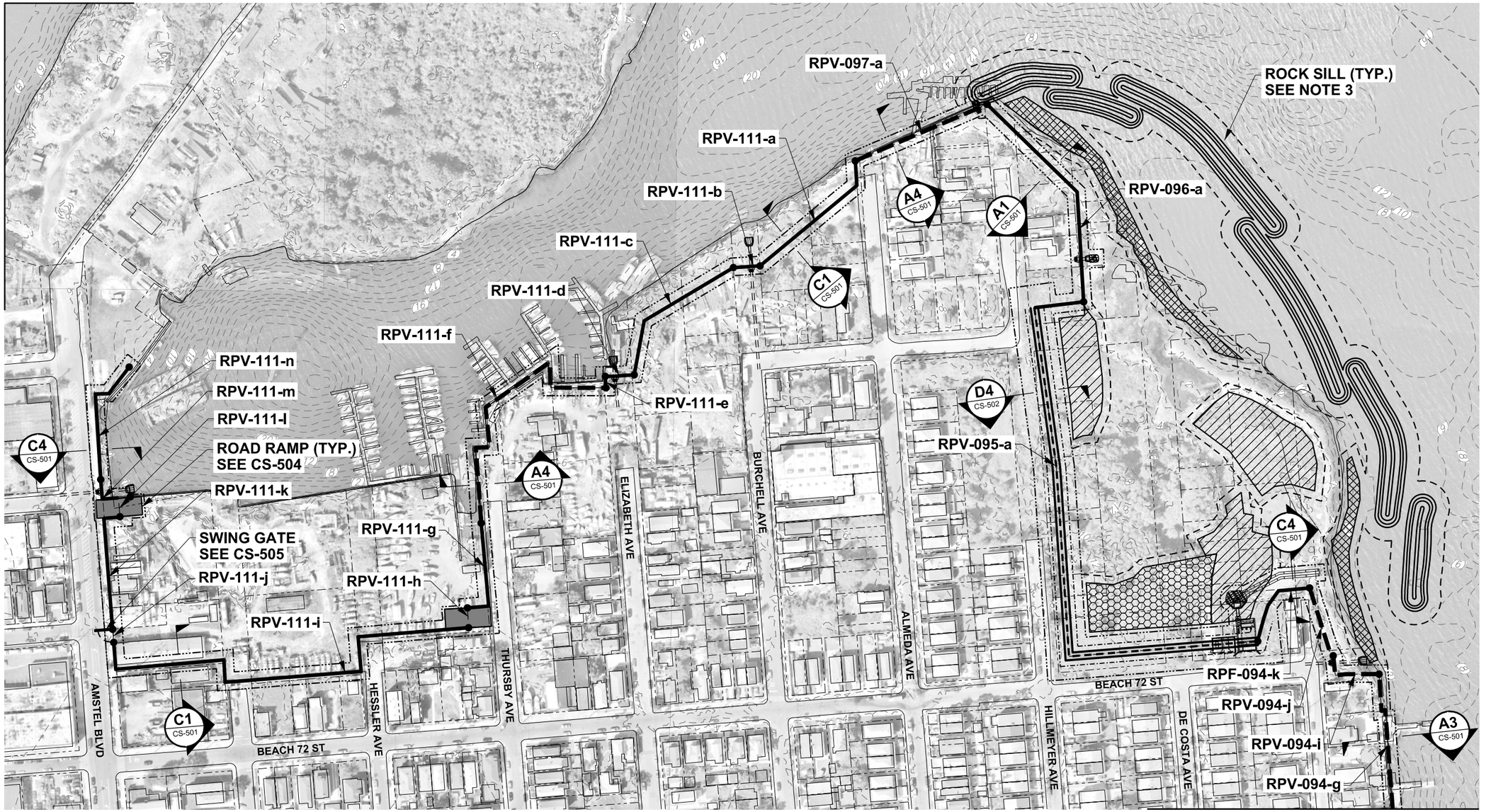
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SITE PLAN (1 OF 9)

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SHEET 3 OF 28

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MID-ROCKAWAY - ARVERNE (SHEET 1)

SCALE: 1" = 100'

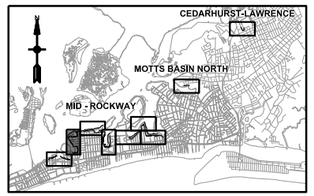
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PRELIMINARY
NOT FOR CONSTRUCTION

LEGEND

- FLOODWALL
- BULKHEAD
- REVETMENT
- BERM
- TOE OF BERM
- FLOOD PROTECTION LEVEE EASEMENT
- BANK PROTECTION EASEMENT
- TAX LOT PROPERTY LINE
- RPV-### REACH ID
- EXISTING CONTOURS (LANDSIDE)
- EXISTING CONTOURS (BATHYMETRY)
- INTERTIDAL MARSH SALTMEADOW HAY
- INTERTIDAL MARSH SMOOTH CORDGRASS
- HIGH MARSH SCRUB-SHRUB
- MARITIME FOREST



KEY PLAN

0 100' 200'

SCALE:1"=100'

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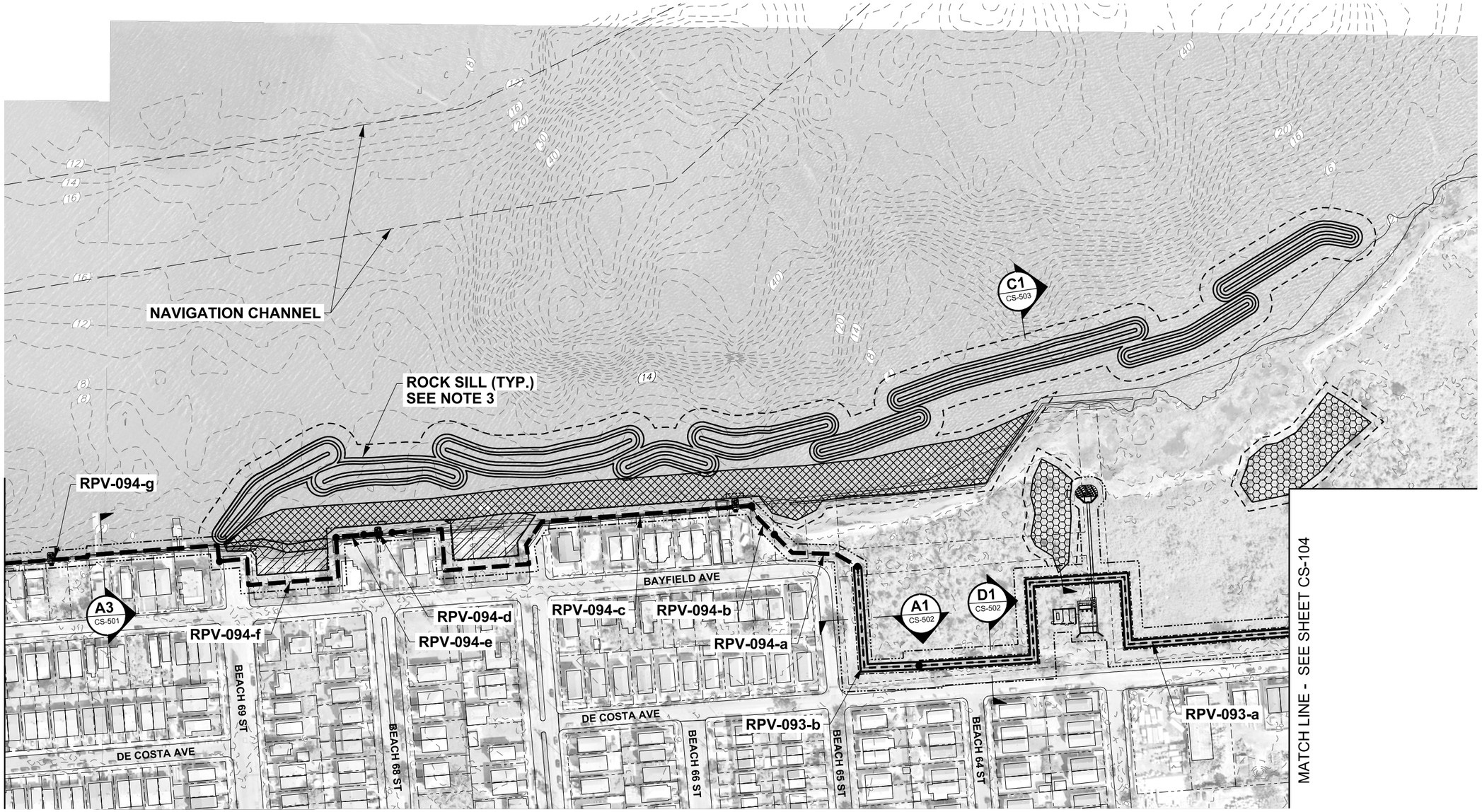
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MID-ROCKAWAY - ARVERNE (SHEET 2)

SCALE: 1" = 100'

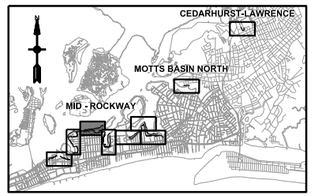
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PRELIMINARY
NOT FOR CONSTRUCTION

LEGEND

- FLOODWALL
- BULKHEAD
- REVETMENT
- BERM
- TOE OF BERM
- FLOOD PROTECTION LEVEE EASEMENT
- BANK PROTECTION EASEMENT
- TAX LOT PROPERTY LINE
- RPV-### REACH ID
- 4 EXISTING CONTOURS (LANDSIDE)
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- HIGH MARSH SCRUB-SHRUB
- MARITIME FOREST



KEY PLAN

N

0 100' 200'

SCALE:1"=100'

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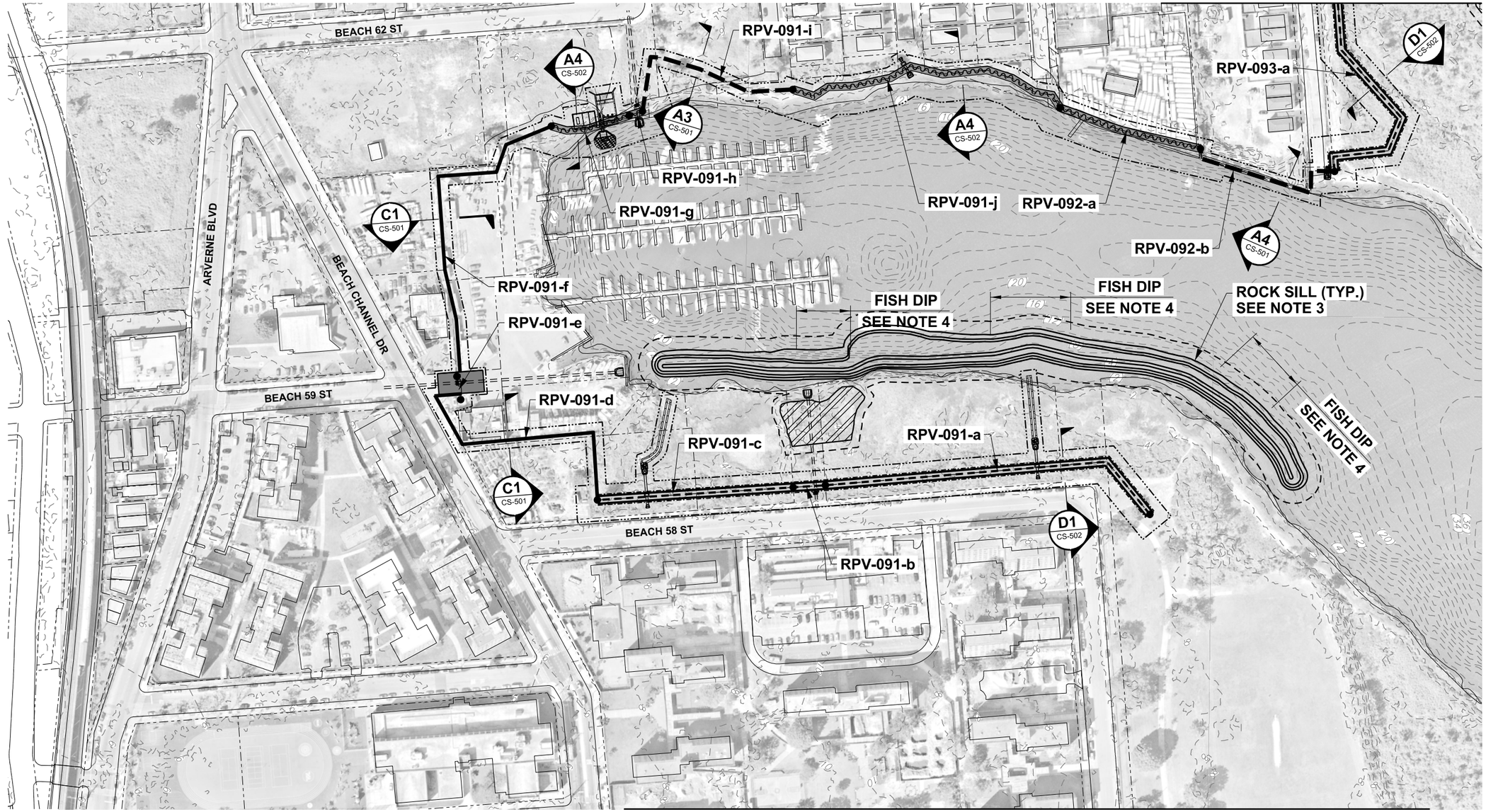
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SITE PLAN (3 OF 9)

SHEET ID
CS-103
SHEET 5 OF 28

MATCH LINE - SEE SHEET CS-103



MATCH LINE - SEE SHEET CS-105

MID-ROCKAWAY - ARVERNE (SHEET 3)

SCALE: 1" = 100'

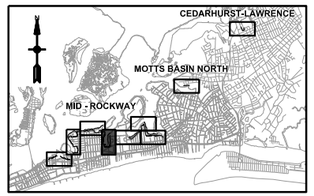
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4. IN LOCATIONS WHERE THE BATHYMETRY PROFILE DOES NOT ALLOW FOR OVERLAP, TO PROVIDE FOR SUFFICIENT HYDRAULIC COMMUNICATION AND ORGANISM EXCHANGE BEHIND THE ROCK SILLS, THE PLACEMENT OF PERIODIC LOWERED ROCK SILL ELEVATIONS (FISH DIPS) OF 0.0 FEET MSL OF 100 FEET ARE PROVIDED.

PRELIMINARY
NOT FOR CONSTRUCTION

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KEY PLAN

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0 100' 200'

SCALE:1"=100'

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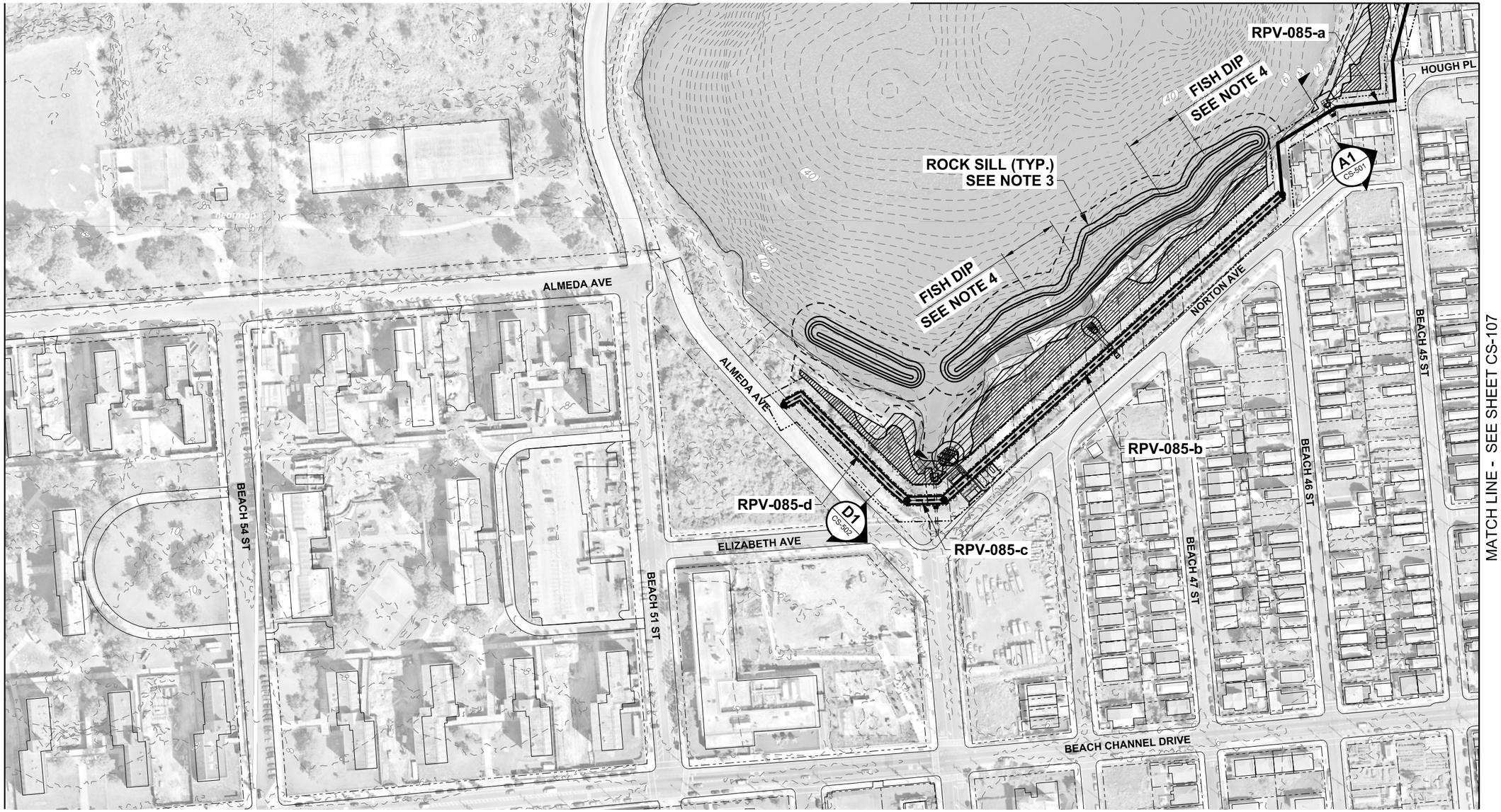
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MATCH LINE - SEE SHEET CS-106



MATCH LINE - SEE SHEET CS-104

MATCH LINE - SEE SHEET CS-107

MID-ROCKAWAY - EDGEMERE (SHEET 1)

SCALE: 1" = 100'

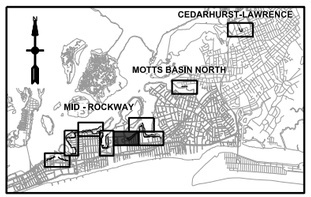
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- INTERTIDAL MARSH SMOOTH CORDGRASS
- HIGH MARSH SCRUB-SHRUB
- MARITIME FOREST



KEY PLAN

N

0 100' 200'

SCALE:1"=100'

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PLOT DATE: 8/28/2018
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CONTRACT NO.: W91-22
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MATCH LINE - SEE SHEET CS-105

MATCH LINE - SEE SHEET CS-107

MID-ROCKAWAY - EDGEMERE (SHEET 2)

SCALE: 1" = 100'

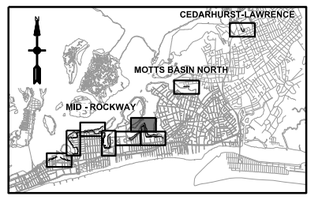
NOTES

1. ALL ELEVATIONS REFERENCED TO NAVD88.
2. ELEVATION CONTOURS BASED ON THE FOLLOWING SOURCES:
   - NATIONAL GEOPHYSICAL DATA CENTER (NGDC) HURRICANE SANDY DIGITAL ELEVATION MODELS, 2014.
   - NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA) DIGITAL COAST, 2014.
   - 2013-2014 U.S. GEOLOGICAL SURVEY CMGP LIDAR: POST SANDY (NEW YORK CITY), 2018.
3. THE OVERLAP IN ROCK SILL DESIGN IS TO ALLOW FOR EXCHANGE OF WATER AND AQUATIC ORGANISMS DURING TIDAL CYCLES. THE OVERLAP DESIGN ALLOWS FOR THE TRANSFER BUT ALSO PROVIDES CONTINUOUS SHORELINE PROTECTION.
4. IN LOCATIONS WHERE THE BATHYMETRY PROFILE DOES NOT ALLOW FOR OVERLAP, TO PROVIDE FOR SUFFICIENT HYDRAULIC COMMUNICATION AND ORGANISM EXCHANGE BEHIND THE ROCK SILLS, THE PLACEMENT OF PERIODIC LOWERED ROCK SILL ELEVATIONS (FISH DIPS) OF 0.0 FEET MSL OF 100 FEET ARE PROVIDED.

PRELIMINARY
NOT FOR CONSTRUCTION

LEGEND

- FLOODWALL
- BULKHEAD
- REVETMENT
- BERM
- TOE OF BERM
- FLOOD PROTECTION LEVEE EASEMENT
- BANK PROTECTION EASEMENT
- TAX LOT PROPERTY LINE
- RPV-### REACH ID
- 4 EXISTING CONTOURS (LANDSIDE)
- (4) EXISTING CONTOURS (BATHYMETRY)
- INTERTIDAL MARSH SALTMEADOW HAY
- INTERTIDAL MARSH SMOOTH CORDGRASS
- HIGH MARSH SCRUB-SHRUB
- MARITIME FOREST



KEY PLAN

N

0 100' 200'

SCALE:1"=100'

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C	DRAFT FINAL GRR - APPENDIX A2.E	08.30.18	MK
B	DRAFT FINAL GRR - APPENDIX A2.E	08.20.18	MK
A	DRAFT FINAL GRR - APPENDIX A2.E	07.19.18	MK

DESIGNED BY: IK | DRWN BY: ME | SUBMITTED BY: SA | PLOT SCALE: 1=100' | SIZE: ANSI D | DATE: 08.30.18 | SOLICITATION NO.: | CONTRACT NO.: W912-02 | FILE NUMBER: | PLOT DATE: 8/28/2018 | FILE NAME: W912DS_A2_CS-106.dgn | CKD BY: MK

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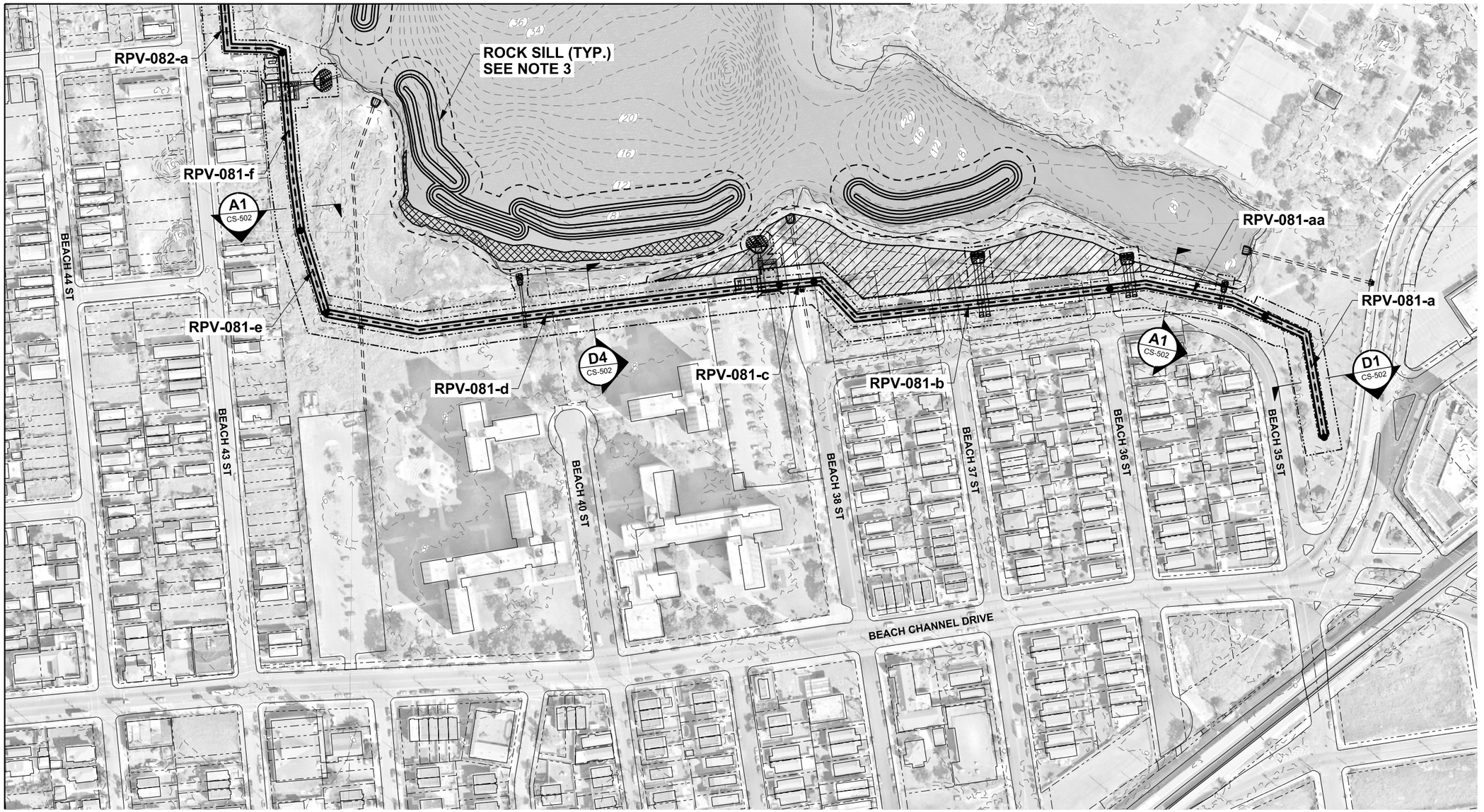
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212-768-7454

INTEGRATED HURRICANE SANDY GENERAL RE-EVALUATION REPORT AND ENVIRONMENTAL IMPACT STATEMENT

SITE PLAN (6 OF 9)

SHEET ID
CS-106
SHEET 8 OF 28

MATCH LINE - SEE SHEET CS-106



MATCH LINE - SEE SHEET CS-105

MID-ROCKAWAY - EDGEMERE (SHEET 3)

SCALE: 1" = 100'

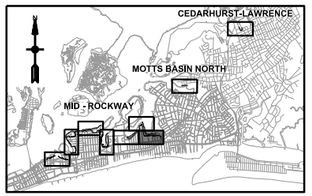
NOTES

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PRELIMINARY
NOT FOR CONSTRUCTION

LEGEND

- FLOODWALL
- BULKHEAD
- REVETMENT
- BERM
- TOE OF BERM
- FLOOD PROTECTION LEVEE EASEMENT
- BANK PROTECTION EASEMENT
- TAX LOT PROPERTY LINE
- RPV-### REACH ID
- – – 4 – – EXISTING CONTOURS (LANDSIDE)
- – – (4) – – EXISTING CONTOURS (BATHYMETRY)
- INTERTIDAL MARSH SALTMEADOW HAY
- INTERTIDAL MARSH SMOOTH CORDGRASS
- HIGH MARSH SCRUB-SHRUB
- MARITIME FOREST



KEY PLAN

N

0 100' 200'

SCALE: 1"=100'

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A	DRAFT FINAL GRR - APPENDIX A2.E	07.19.18	MK

DESIGNED BY: JK
DRWN BY: ME
SUBMITTED BY: SA
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PLOT DATE: 08.30.18
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DATE: 08.30.18
SOLICITATION NO.:
CONTRACT NO.: W912-02
FILE NUMBER:

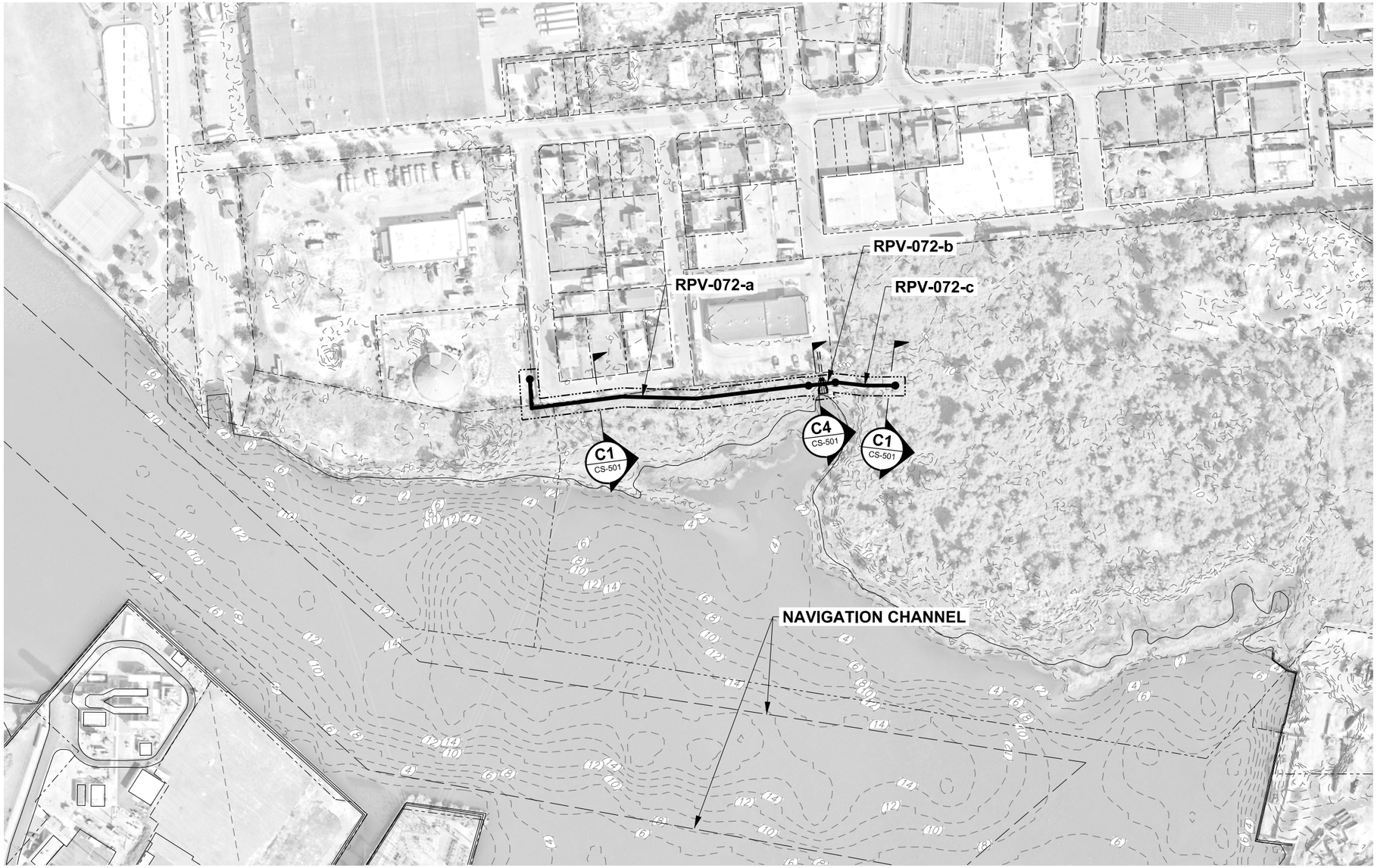
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SITE PLAN (7 OF 9)

SHEET ID
CS-107
SHEET 9 OF 28



MOTTS BASIN NORTH
SCALE: 1" = 100'

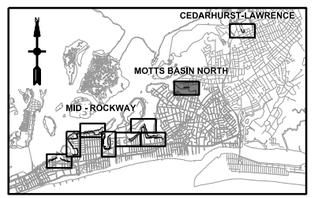
NOTES

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   - 2013-2014 U.S. GEOLOGICAL SURVEY CMGP LIDAR: POST SANDY (NEW YORK CITY), 2018.

PRELIMINARY
NOT FOR CONSTRUCTION

LEGEND

- FLOODWALL
- BULKHEAD
- REVETMENT
- BERM
- TOE OF BERM
- FLOOD PROTECTION LEVEE EASEMENT
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- RPV-### REACH ID
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- INTERTIDAL MARSH SMOOTH CORDGRASS
- HIGH MARSH SCRUB-SHRUB
- MARITIME FOREST



KEY PLAN

N

0 100' 200'

SCALE:1"=100'

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C	DRAFT FINAL GRR - APPENDIX A2.E	08.30.18	MK
B	DRAFT FINAL GRR - APPENDIX A2.E	08.20.18	MK
A	DRAFT FINAL GRR - APPENDIX A2.E	07.19.18	MK

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DWN BY: ME
CKD BY: MK
SUBMITTED BY: SA
PLOT SCALE: 1:1
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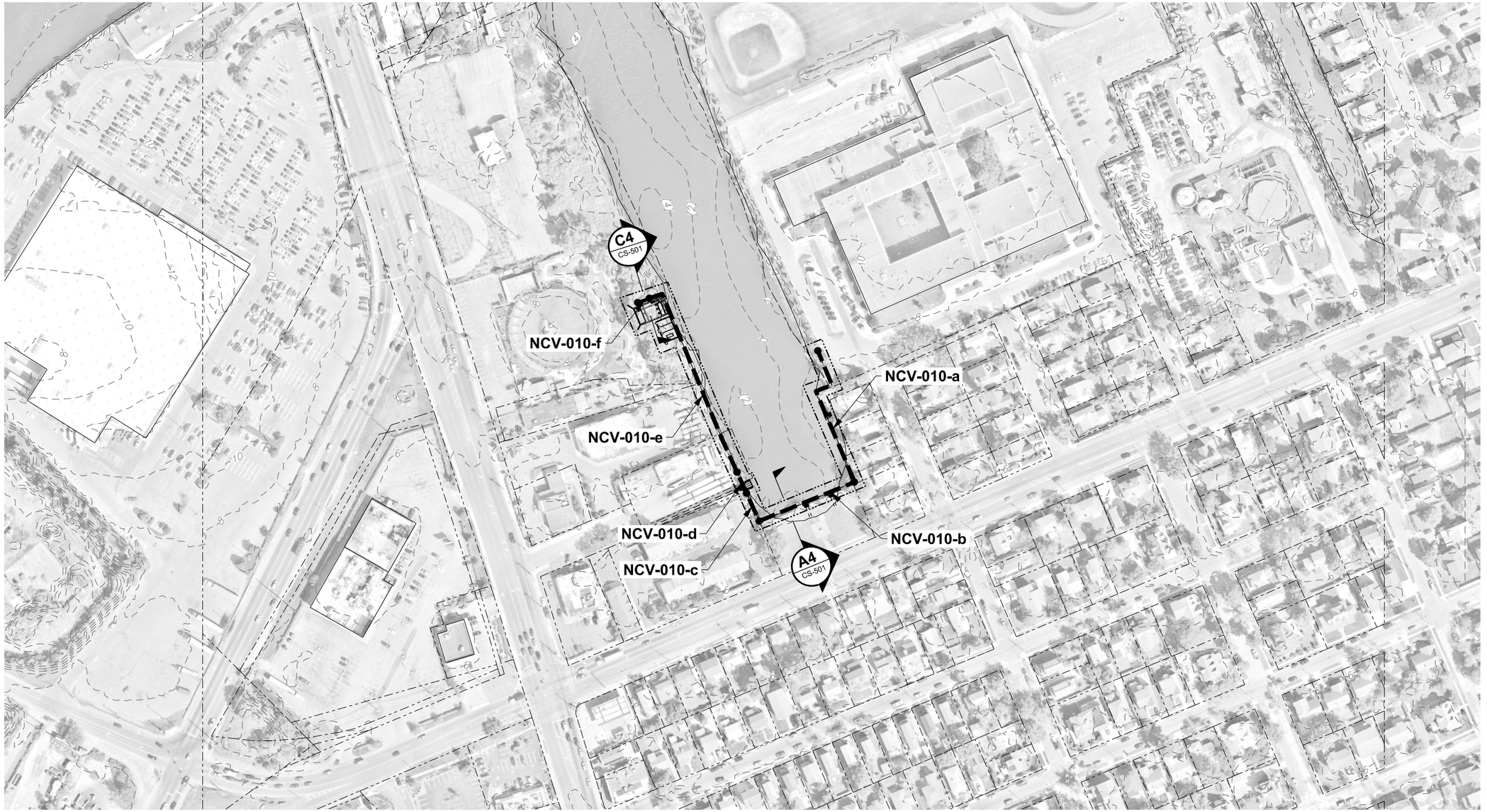
INTEGRATED HURRICANE SANDY GENERAL RE-EVALUATION REPORT AND ENVIRONMENTAL IMPACT STATEMENT

SITE PLAN (8 OF 9)

SHEET ID
CS-108
SHEET 10 OF 28

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CEDARHURST-LAWRENCE

SCALE: 1" = 100'

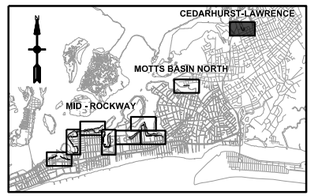
NOTES

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   - 2013-2014 U.S. GEOLOGICAL SURVEY CMGP LIDAR: POST SANDY (NEW YORK CITY), 2018.

PRELIMINARY
NOT FOR CONSTRUCTION

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- HIGH MARSH SCRUB-SHRUB
- MARITIME FOREST



KEY PLAN

N

0 100' 200'

SCALE:1"=100'

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MARK	DESCRIPTION	DATE	APPR.
C	DRAFT FINAL GRR - APPENDIX A2.E	08.30.18	MK
B	DRAFT FINAL GRR - APPENDIX A2.E	08.20.18	MK
A	DRAFT FINAL GRR - APPENDIX A2.E	07.19.18	MK

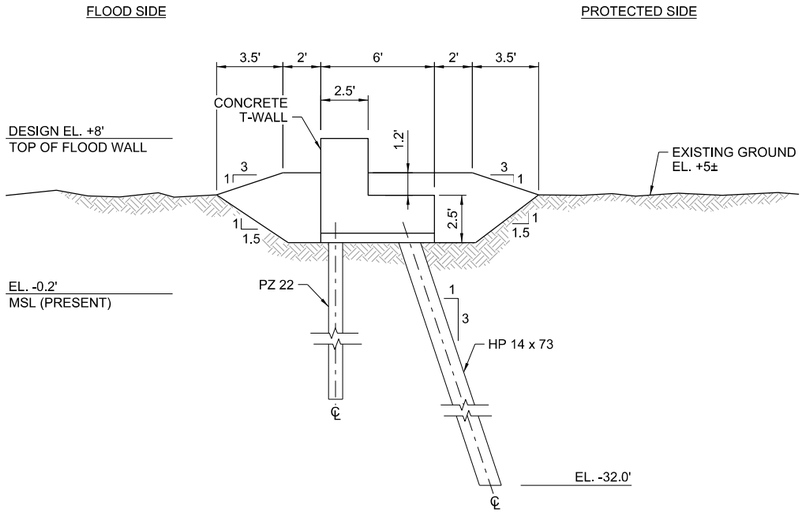
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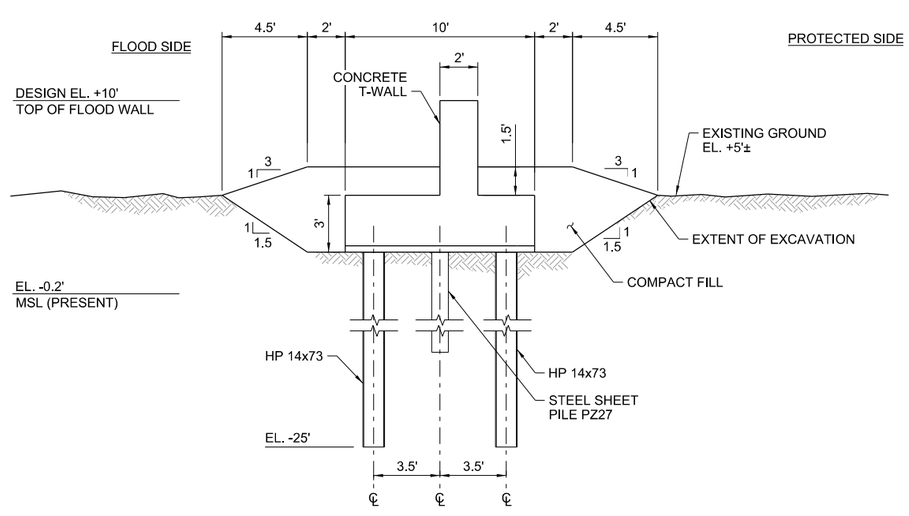
INTEGRATED HURRICANE SANDY GENERAL RE-EVALUATION REPORT AND ENVIRONMENTAL IMPACT STATEMENT

SITE PLAN (9 OF 9)

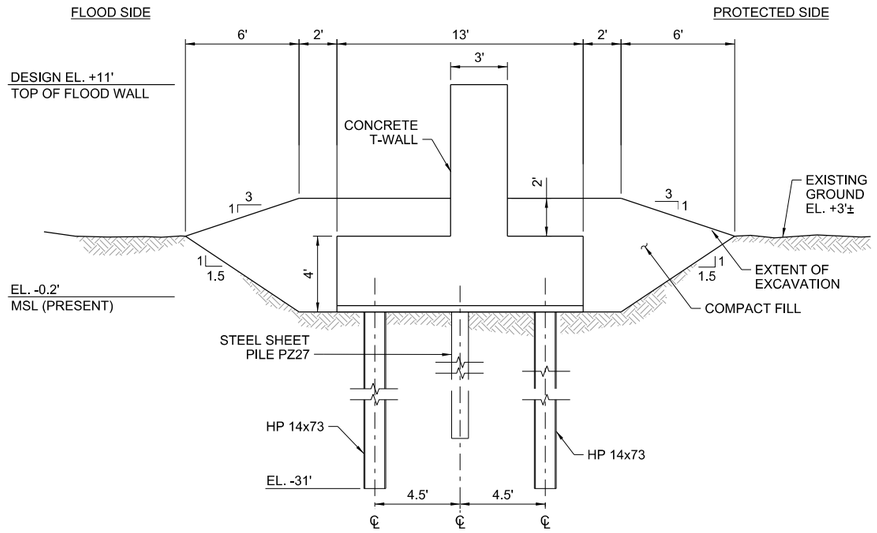
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CS-109
SHEET 11 OF 28



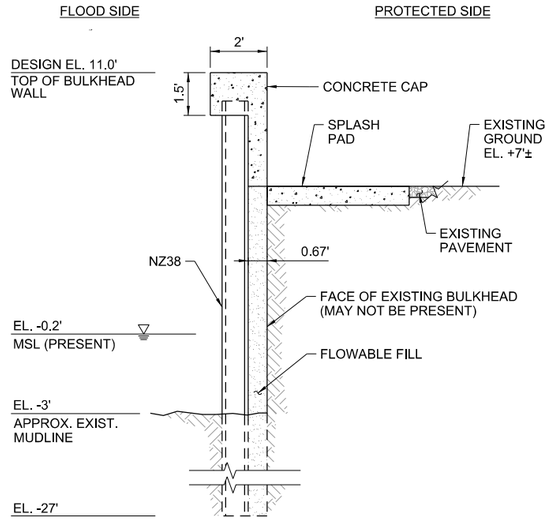
C1 LOW FLOODWALL
SCALE: 1/4" = 1'-0"
CS-101, CS-102, CS-104, CS-108



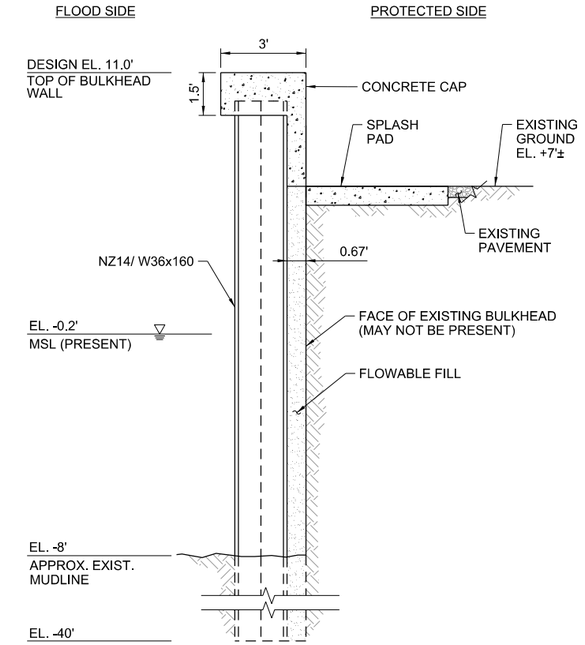
C4 MEDIUM FLOODWALL
SCALE: 1/4" = 1'-0"
CS-102, CS-106, CS-108, CS-109



A1 HIGH FLOODWALL
SCALE: 1/4" = 1'-0"
CS-102, CS-105, CS-106



A3 SHALLOW BULKHEAD
SCALE: 3/8" = 1'-0"
CS-102, CS-103, CS-104, CS-106



A4 DEEP BULKHEAD
SCALE: 3/8" = 1'-0"
CS-102, CS-104, CS-109

PRELIMINARY
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DESIGNED BY: IK
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CKD BY: MK
SUBMITTED BY: SA
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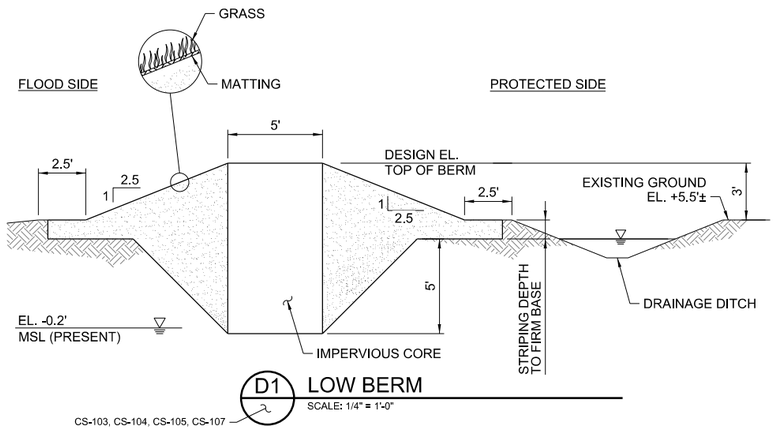
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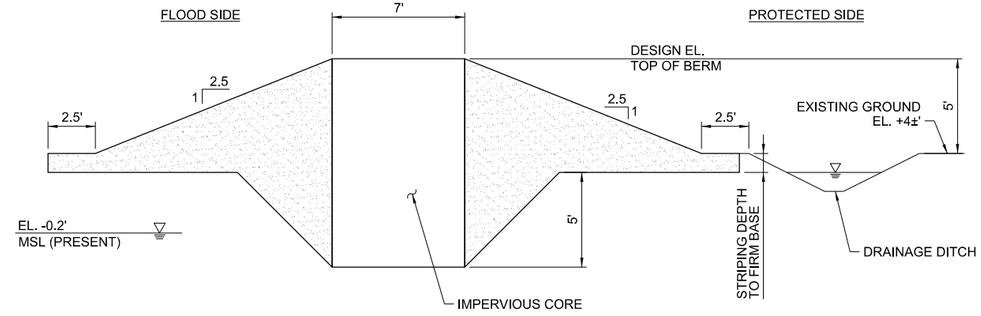
INTEGRATED HURRICANE SANDY GENERAL RE-EVALUATION REPORT AND ENVIRONMENTAL IMPACT STATEMENT

FLOODWALL AND BULKHEAD TYPICAL SECTIONS

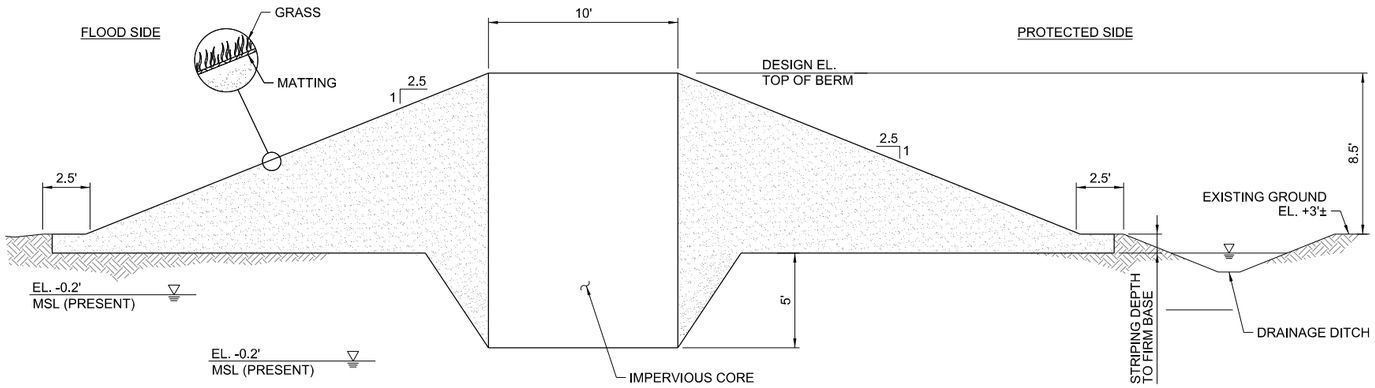
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CS-501
SHEET 12 OF 28



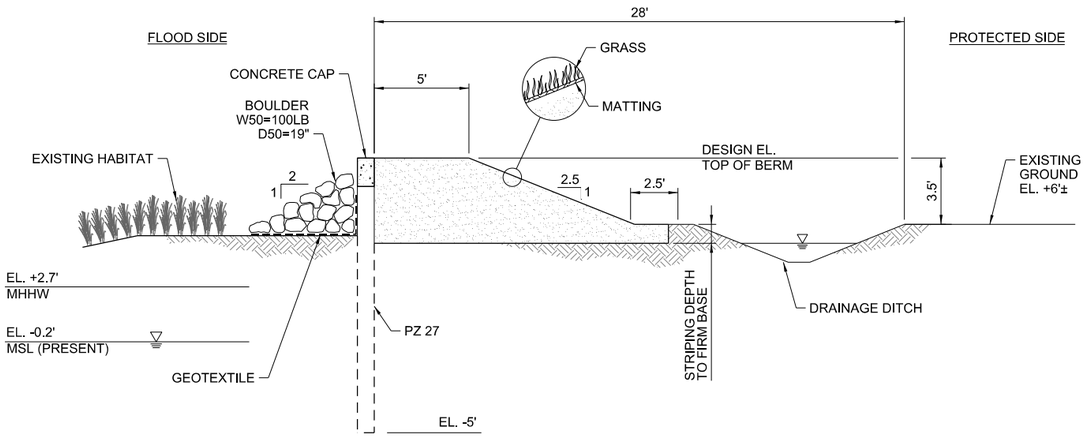
D1 LOW BERM
SCALE: 1/4" = 1'-0"
CS-103, CS-104, CS-105, CS-107



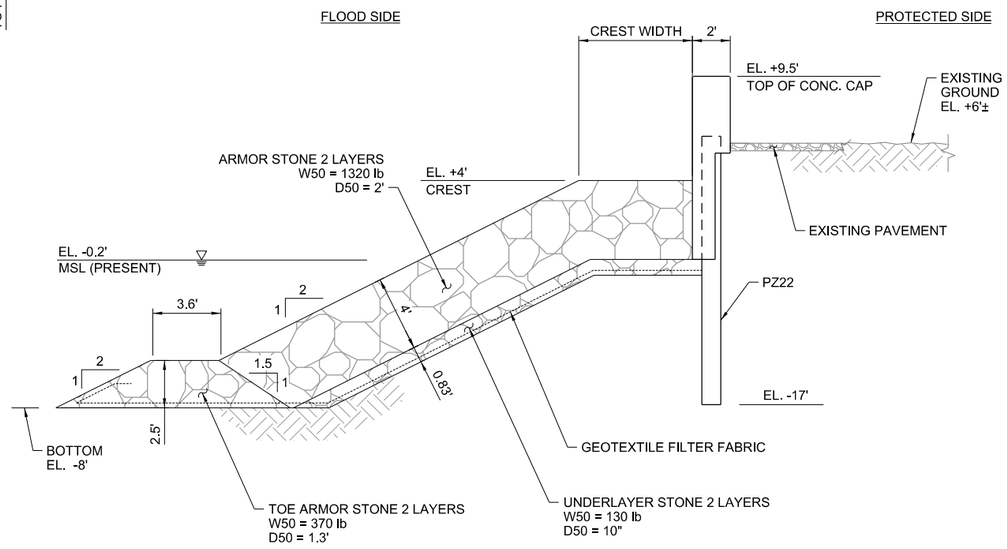
D4 MEDIUM BERM
SCALE: 1/4" = 1'-0"
CS-102, CS-106



B1 HIGH BERM
CS-106
SCALE: 1/4" = 1'-0"



A1 HYBRID BERM
SCALE: 1/4" = 1'-0"
CS-103, CS-106, CS-107



A4 REVETMENT WITH FLOODWALL
CS-104
SCALE: 1/4" = 1'-0"

PRELIMINARY
NOT FOR CONSTRUCTION

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A	DRAFT FINAL GRR - APPENDIX A2.E	07.19.18	MK

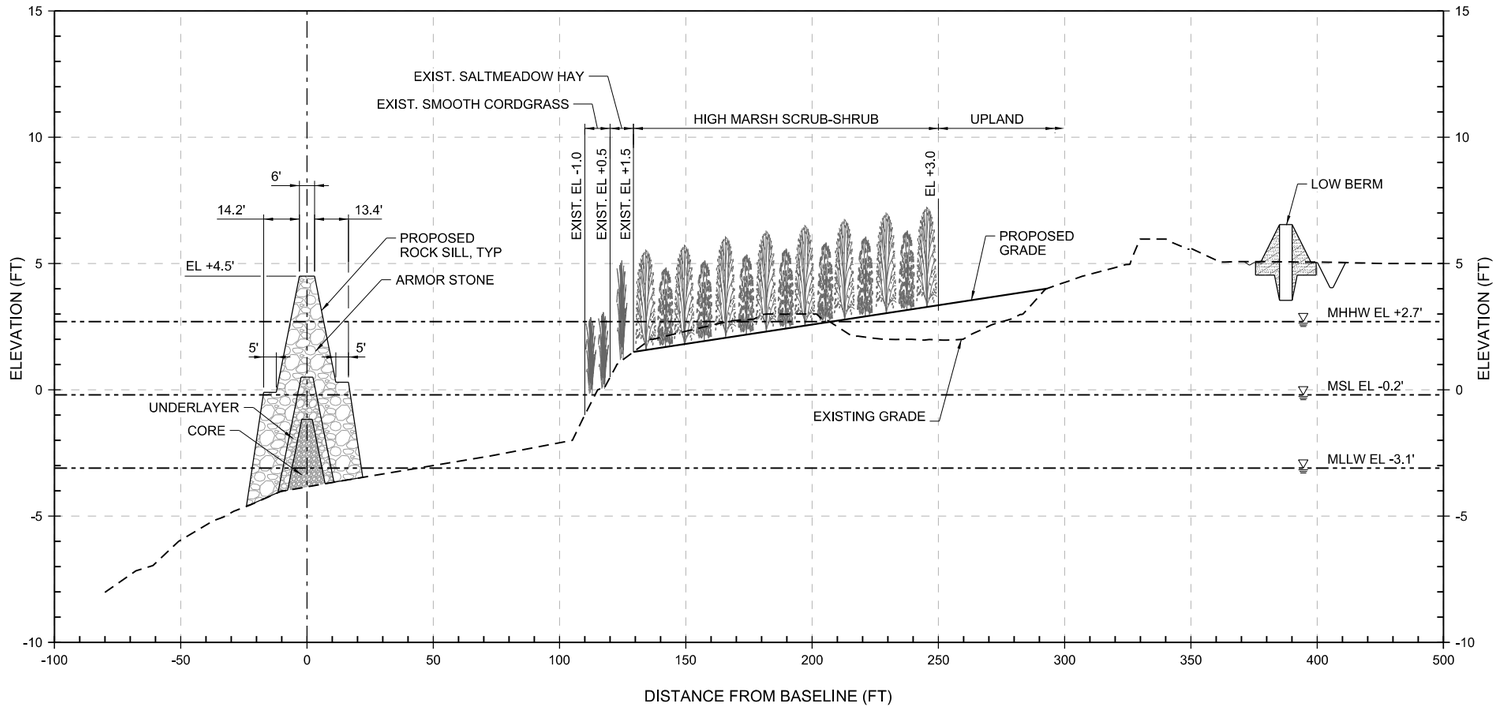
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RE-EVALUATION REPORT AND ENVIRONMENTAL
IMPACT STATEMENT

BERM AND REVETMENT WITH FLOODWALL TYPICAL SECTIONS

SHEET ID
CS-502
SHEET 13 OF 28



C1 / CS-103 NATURAL AND NATURE BASED FEATURES (NNBF) TYPICAL SECTION

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

NOTE

1. ALL ELEVATIONS REFERENCED TO NAVD88.

PLANTING PLAN

1. REMOVE ALL STRUCTURES AND DEBRIS.
2. REGRADE SHORELINE SLOPES TO MINIMIZE EXCAVATION AND/OR FILL ACTIVITIES AND TO PROVIDE OPTIMAL HABITAT SPECIFIC ELEVATIONS:
   A. LOW MARSH (COMMON CORDGRASS) -1.0 TO +0.5
   B. INTERMEDIATE MARSH (SALTMEADOW HAY/BLACKGRASS) +0.5 TO + 1.5
   C. HIGH MARSH – SCRUB SHRUB (MARSH ELDER/GROUNDSEL BUSH) + 1.5 TO +3.0
   D. UPLANDS HABITAT + 3.0 AND GREATER
3. SEED OR PLANT (PLUG/POT) WITH APPROPRIATE SPECIES. PLANTING OF PLUGS FOR COMMON CORDGRASS AND SALTMEADOW HAY SHOULD BE PLANTED ON 3 FT. CENTERS. MARSH ELDER/GROUNDSEL POTS SHOULD BE PLANTED ON 5 FT. CENTERS.

PRELIMINARY
NOT FOR CONSTRUCTION

0 3' 6'
HOR. SCALE: 1"=3'

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

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B	DRAFT FINAL GRR - APPENDIX A2.E	08.20.18	MK
A	DRAFT FINAL GRR - APPENDIX A2.E	07.19.18	MK

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NEW YORK
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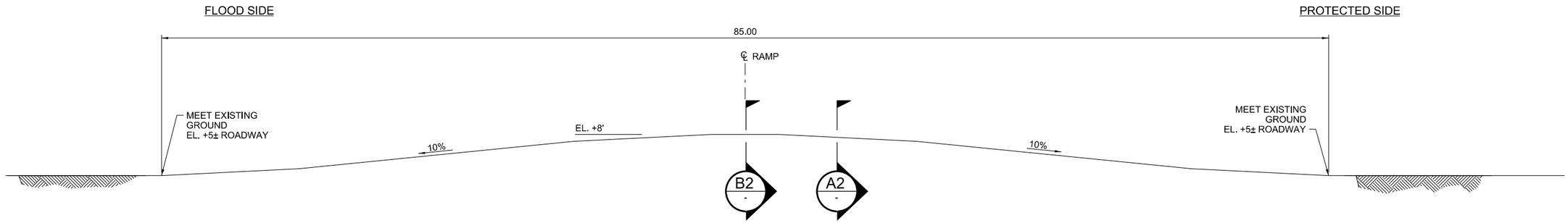
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NEW YORK, NY 10017
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DESIGNED BY: MK
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SUBMITTED BY: SA
PLOT SCALE: 12
PLOT DATE: 08/30/18
SIZE: ANSI D
DATE: 08/30/18
SOLICITATION NO.:
CONTRACT NO.: W912-02
FILE NUMBER:
FILE NAME: W912DS_A2_CS-503.dgn

INTEGRATED HURRICANE SANDY GENERAL RE-EVALUATION REPORT AND ENVIRONMENTAL IMPACT STATEMENT

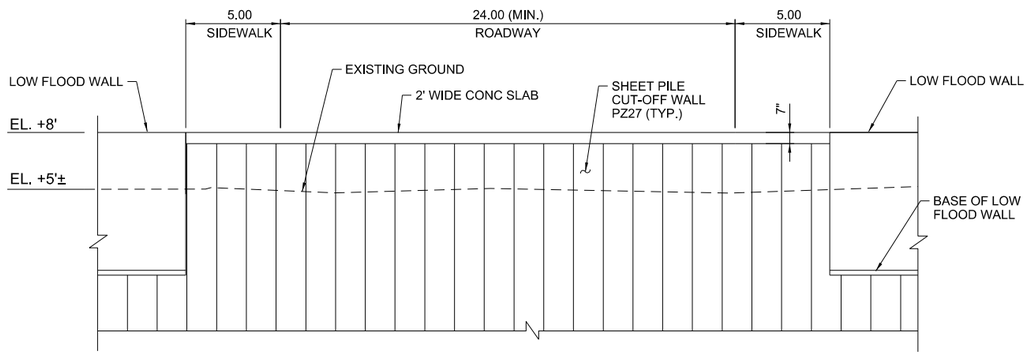
NATURAL AND NATURE BASED FEATURES (NNBF) SECTION

SHEET ID
CS-503
SHEET 14 OF 28



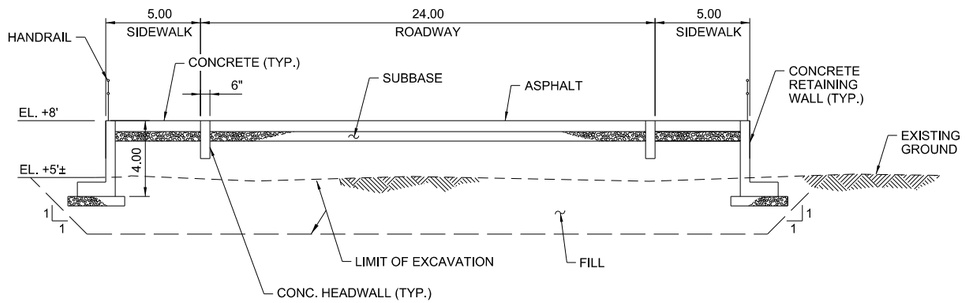
D1 - SECTION - CENTER OF ROAD RAMP

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



B2 - SECTION - CENTER OF ROAD RAMP

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



A2 - SECTION - PROTECTED SIDE

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

PRELIMINARY
NOT FOR CONSTRUCTION

0 2' 4' 8'

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

LAST PLOTTED BY: mestimable 8/27/2018 5:19:17 PM FILE: W912DS_A2_CS-504.dgn PATH: Q:\NY\9781-02\500_CADD_Active_HFFRRF Report-App A2\

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C	DRAFT FINAL GRR - APPENDIX A2.E	08.30.18	MK
B	DRAFT FINAL GRR - APPENDIX A2.E	08.20.18	MK
A	DRAFT FINAL GRR - APPENDIX A2.E	07.19.18	MK

DESIGNED BY: MK
DWN BY: ME
SUBMITTED BY: SA
PLOT SCALE: 1.000000'
SIZE: ANSI D
DATE: 08.30.18
CKD BY: MK
PLOT DATE: 8/27/2018
FILE NAME: W912DS_A2_CS-504.dgn
SOLICITATION NO.:
CONTRACT NO.: W781-02
FILE NUMBER:

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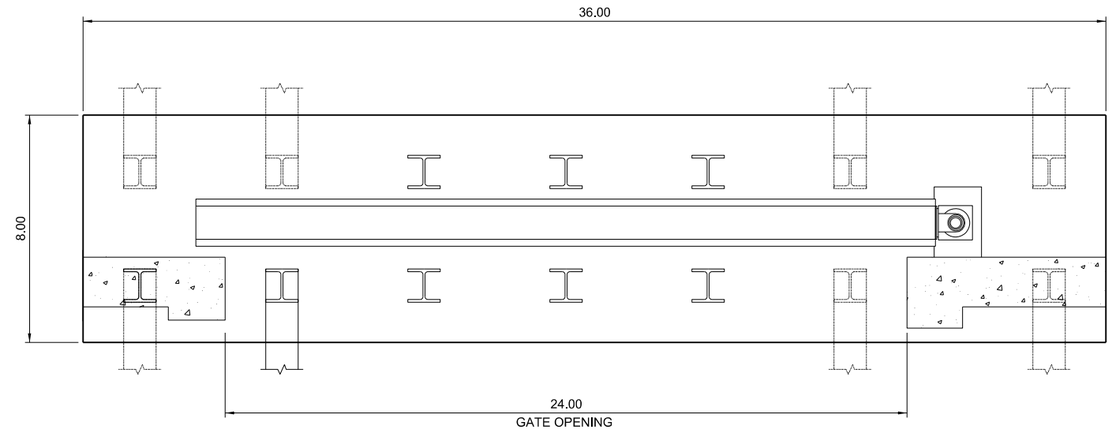
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ROAD RAMP SECTIONS

SHEET ID
CS-504
SHEET 15 OF 28

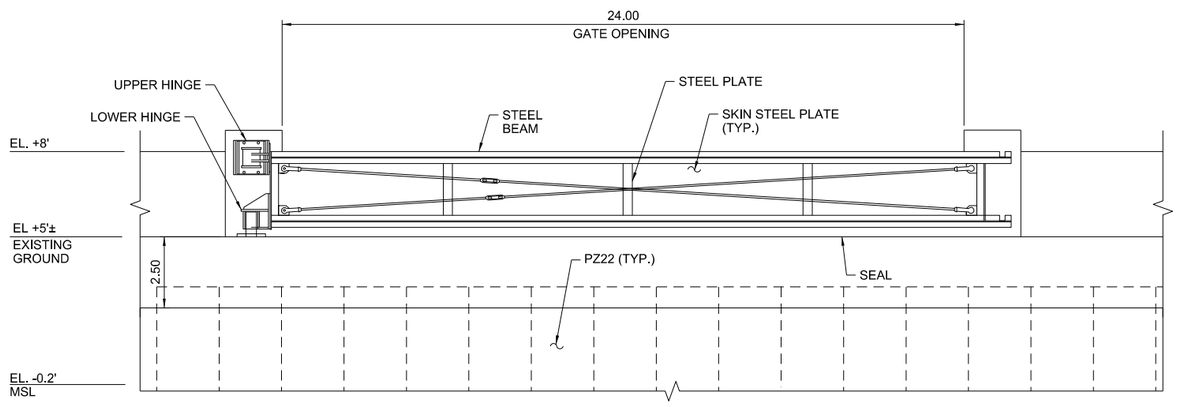
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FILE: W912DS_A2_CS-505.dgn
8/27/2018
5:19:30 PM
LAST PLOTTED BY: mestimable

FLOOD SIDE



PROTECTED SIDE

C1 - PLAN - SWING GATE
SCALE: 3/8" = 1'-0"



A1 - ELEVATION - SWING GATE
SCALE: 3/8" = 1'-0"

PRELIMINARY
NOT FOR CONSTRUCTION

0 2' 4' 8'
SCALE: 3/8" = 1'-0"

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B	DRAFT FINAL GRR - APPENDIX A2.E	08.20.18	MK
A	DRAFT FINAL GRR - APPENDIX A2.E	07.19.18	MK

DESIGNED BY: MK
DRWN BY: ME
CKD BY: MK
SUBMITTED BY: SA
PLOT SCALE: 1=1
PLOT DATE: 8/27/2018
SIZE: ANSI D
DATE: 08.30.18
SOLICITATION NO.:
CONTRACT NO.: W912DS-18-D-0002
FILE NUMBER:
FILE NAME: W912DS_A2_CS-505.dgn

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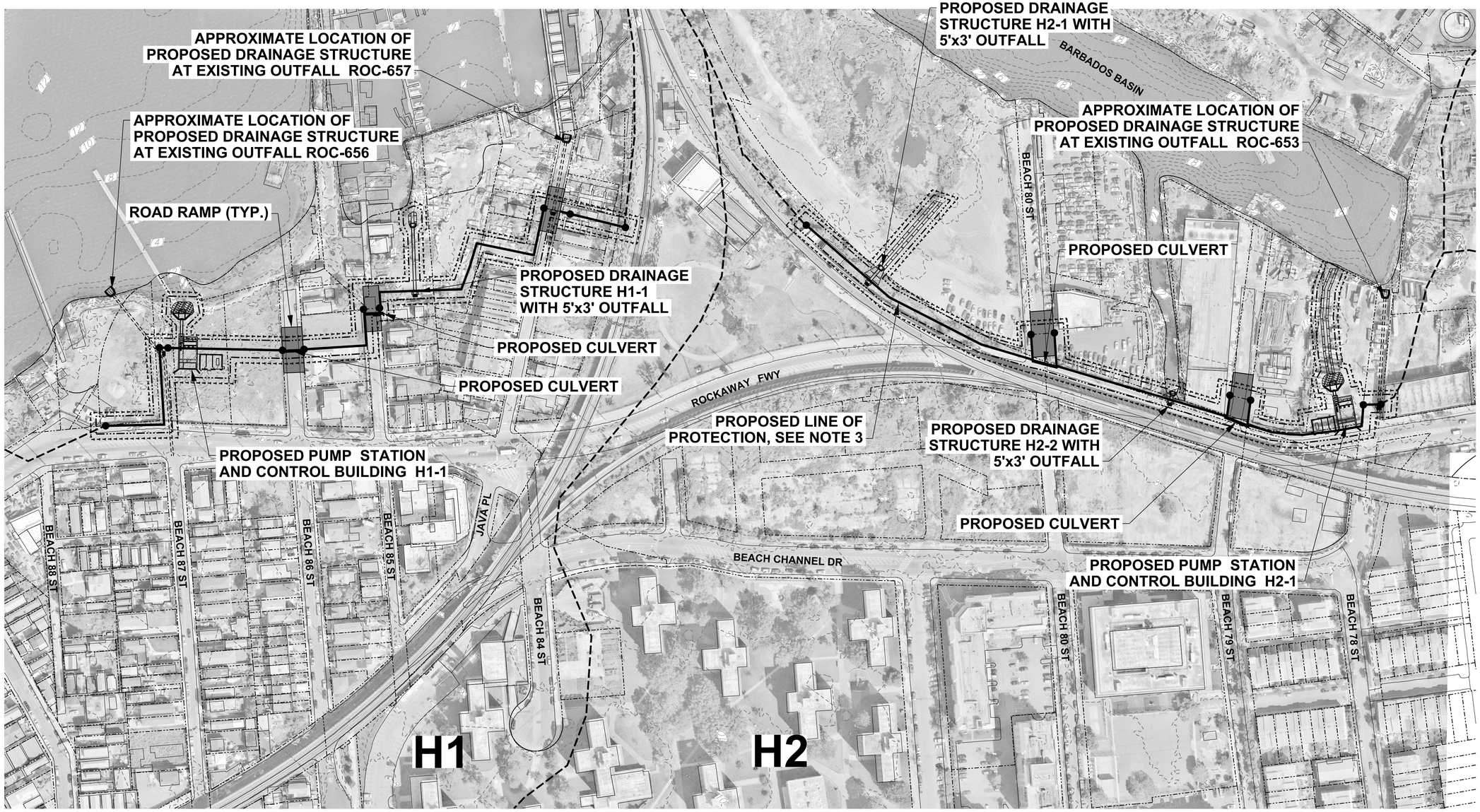
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SWING GATE PLAN AND ELEVATION

SHEET ID
CS-505
SHEET 16 OF 28

PATH: K:\60485269 - IDC 3006 DMA - Mabbett JV\999999999 Jamaica Bay HFFRRF\910-CAD\SHEETS\
LAST PLOTTED BY: Onsy.Moawad 9:54:15 AM 8/24/2018 FILE: W912DS_A2_CU-101.dgn



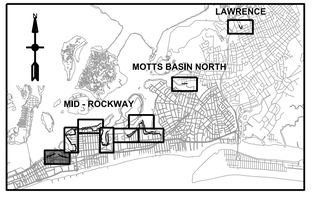
MID-ROCKAWAY - HAMMELS
SCALE: 1" = 100'

NOTES:

1. ALL ELEVATIONS REFERENCED TO NAVD88.
2. TYPICAL SECTIONS SHOWN ON SHEETS CU-501 TO CU-503.
3. LINE OF PROTECTION SHOWN ON SHEETS CS-101 TO CS-109.

LEGEND

- PROPOSED DRAINAGE AT EXISTING OUTFALL
- PROPOSED DRAINAGE AT BERM
- PROPOSED DRAINAGE AT FLOODWALL
- PROPOSED DRAINAGE AT BULKHEAD
- LIMIT OF DRAINAGE AREA
- A1 DRAINAGE AREA



KEY PLAN

N

0 100' 200'

SCALE:1"=100'

PRELIMINARY
NOT FOR CONSTRUCTION

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B	DRAFT FINAL GRR - APPENDIX A1.E	08.20.18	BU
A	DRAFT FINAL GRR - APPENDIX A2.E	07.19.18	BU

DESIGNED BY: BU
DRWN BY: OM
CKD BY: MJ
SUBMITTED BY: MC
PLOT SCALE: 1:1
PLOT STYLE TABLE: ANSI D
DATE: 08.30.18
SOLICITATION NO.:
CONTRACT NO.: W91-02
FILE NUMBER:
PLOT DATE:
FILE NAME: W912DS_A2_CU-101.dgn

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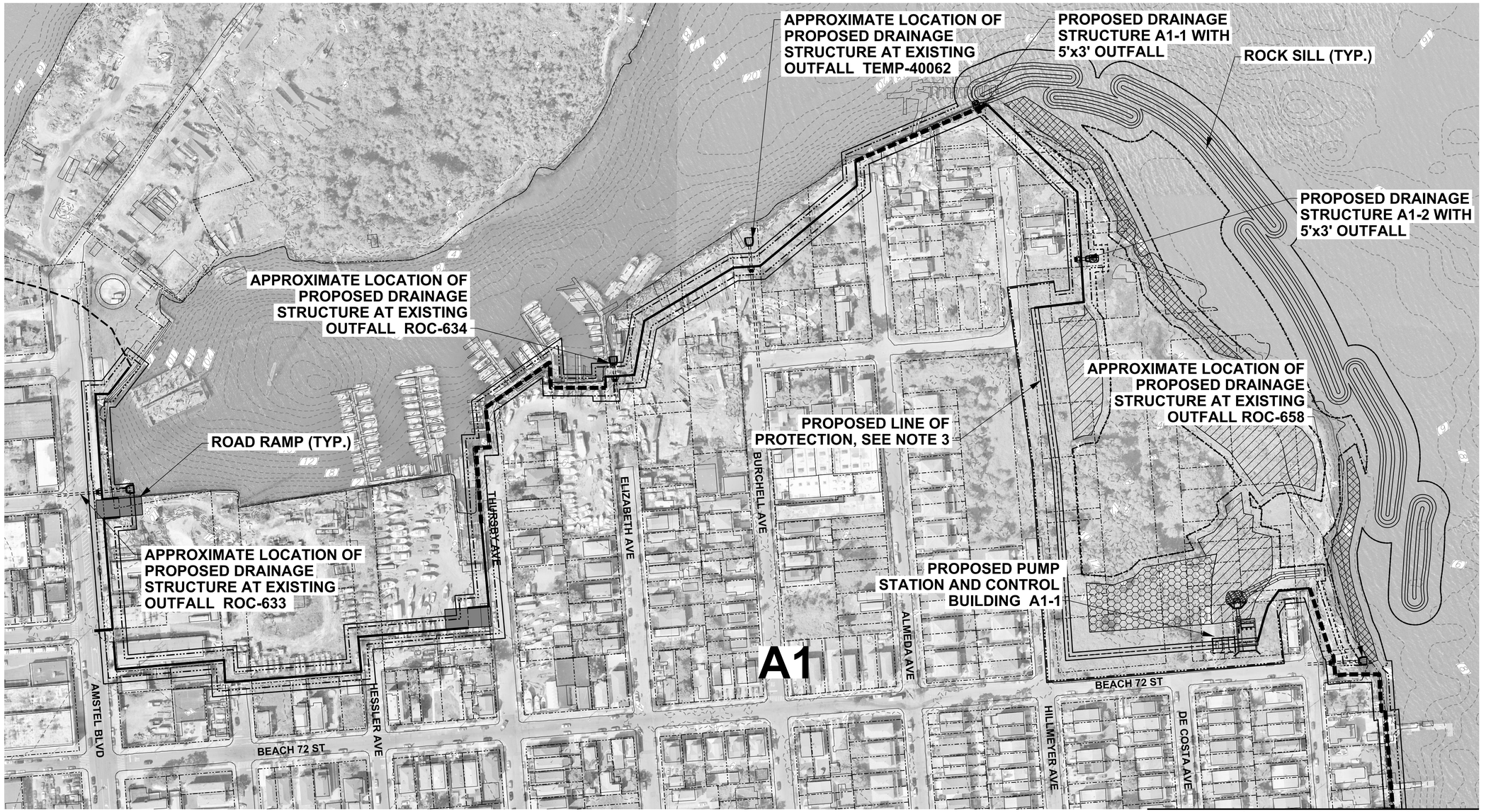
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INTERIOR DRAINAGE PLAN (1 OF 9)

SHEET ID
CU-101
SHEET 17 OF 28

PATH: K:\60485269 - IDC 3006 DMA - Mabbett JV\999999999 Jamaica Bay HFFRRF\910-CAD\SHEETS\
LAST PLOTTED BY: Onsy.Moawad10:08:34 AM 8/24/2018 FILE: W912DS_A2_CU-102.dgn



MATCH LINE - SEE SHEET CU-103

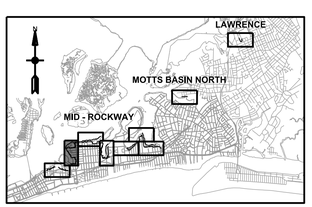
MID-ROCKAWAY - ARVERNE (SHEET 1)
SCALE: 1" = 100'

NOTES:

1. ALL ELEVATIONS REFERENCED TO NAVD88.
2. TYPICAL SECTIONS SHOWN ON SHEETS CU-501 TO CU-503.
3. LINE OF PROTECTION SHOWN ON SHEETS CS-101 TO CS-109.

LEGEND

- PROPOSED DRAINAGE AT EXISTING OUTFALL
- PROPOSED DRAINAGE AT BERM
- PROPOSED DRAINAGE AT FLOODWALL
- PROPOSED DRAINAGE AT BULKHEAD
- LIMIT OF DRAINAGE AREA
- A1 DRAINAGE AREA



KEY PLAN

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

PRELIMINARY
NOT FOR CONSTRUCTION

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C	DRAFT FINAL GRR - APPENDIX A2.E	08.30.18	BU
B	DRAFT FINAL GRR - APPENDIX A1.E	08.20.18	BU
A	DRAFT FINAL GRR - APPENDIX A2.E	07.19.18	BU

DESIGNED BY: BU
DRWN BY: OM
SUBMITTED BY: MC
PLOT SCALE: 1:1
PLOT STYLE TABLE: ACAD.ctb
SIZE: ANSI D
DATE: 08.30.18
SOLICITATION NO.:
CONTRACT NO.: W81-02
FILE NUMBER:
FILE NAME: W912DS_A2_CU-102.dgn

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INTEGRATED HURRICANE SANDY GENERAL RE-EVALUATION REPORT AND ENVIRONMENTAL IMPACT STATEMENT

INTERIOR DRAINAGE PLAN (2 OF 9)

SHEET ID
CU-102
SHEET 18 OF 28