ATLANTIC COAST OF MARYLAND
SHORELINE PROTECTION PROJECT

PLANS FOR

REPAIR/RESTORATION 2017

TOWN OF OCEAN CITY, WORCESTER COUNTY, MD

DEPARTMENT OF THE ARMY

BALTIMORE DISTRICT, CORPS OF ENGINEERS

BALTIMORE, MARYLAND

ATLANTIC COAST OF MARYLAND
SHORELINE PROTECTION PROJECT
TOWN OF OCEAN CITY, WORCESTER COUNTY, MD

REPAIR/RESTORATION 2017

GENERAL NOTES:

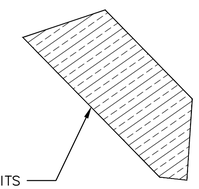
1. THE LIMIT OF WORK, UNLESS OTHERWISE INDICATED, SHALL BE THE AREA SEAWARD OF THE CONSTRUCTION BASELINE BETWEEN THE NORTHERN AND SOUTHERN LIMITS OF THE PROJECT. THE CONTRACTOR SHALL CONFINE HIS WORK TO THIS AREA.

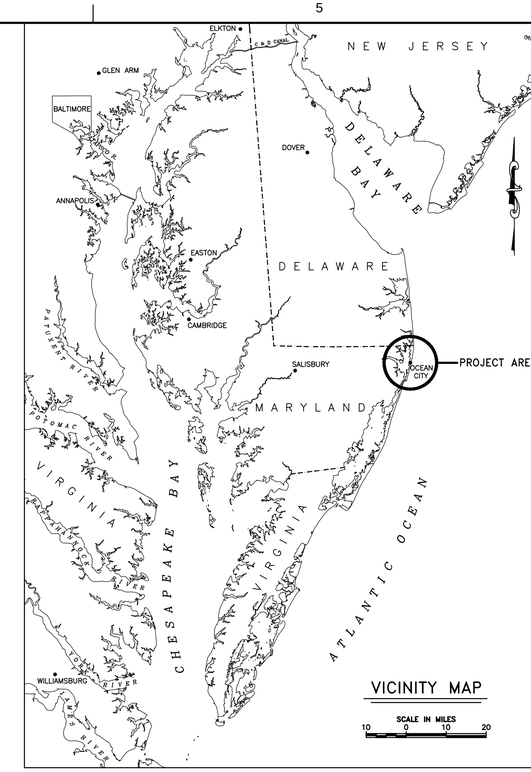
2. ACCESS ROUTES AND STAGING AREAS REQUIRED TO PERFORM THE WORK SHALL BE OBTAINED BY AND AT THE EXPENSE OF THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE ACCESS TO THE WORK AREA AND LOCATION OF STAGING AREAS WITH THE CONTRACTING OFFICER AND THE CITY ENGINEER OF THE TOWN OF OCEAN CITY.

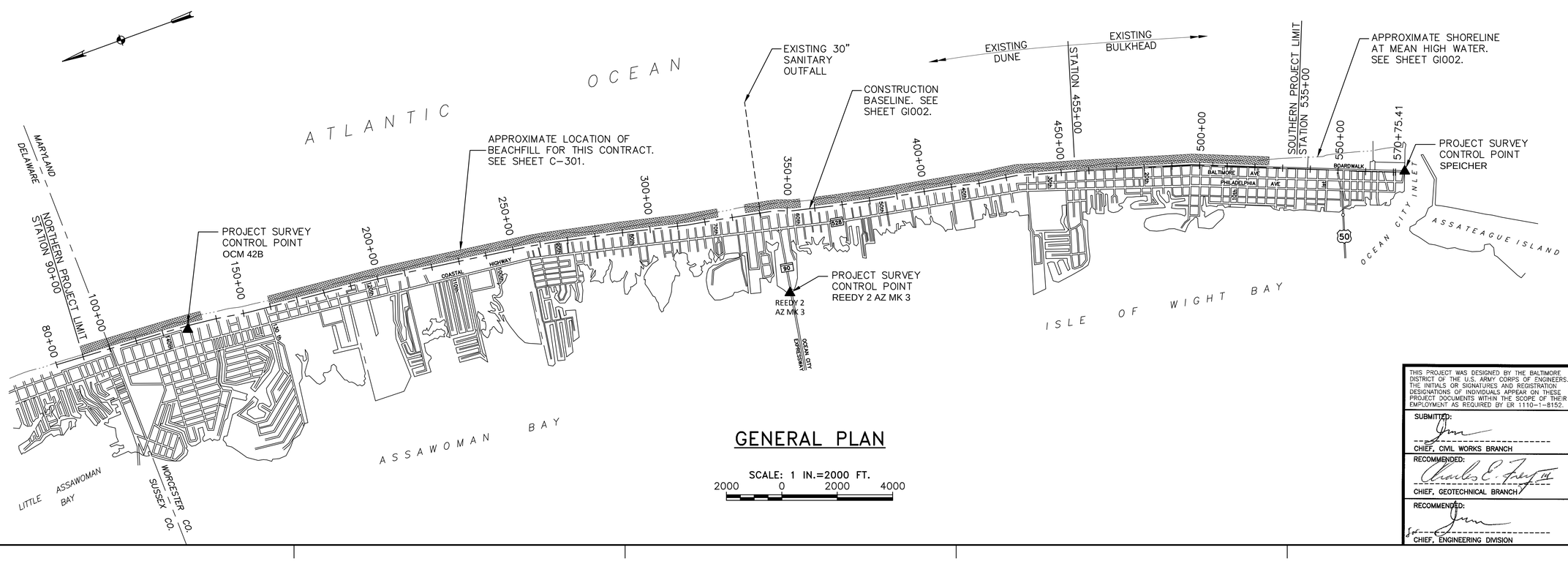
3. WORK SHOWN ON THESE PLANS MAY NOT OCCUR DURING THE TIME PERIOD DESIGNATED IN THE SPECIFICATIONS.

INDEX OF DRAWINGS

PLATE NO.	TITLE	SHEET NO.	CADD FILENAME
	COVER SHEET	GI000	COVERXXX
1	INDEX OF DRAWINGS, GENERAL PLAN & VICINITY MAP	GI001	GI001XXX
2	SURVEY INFORMATION & CONSTRUCTION BASELINE DATA	GI002	GI002XXX
3	BORROW AREA PLAN	B-101	B-101XXX
4	BEACHFILL SECTIONS, DUNE SECTION & QUANTITY TABLE	C-301	C-301XXX







GENERAL PLAN

SCALE: 1 IN.=2000 FT.
2000 0 2000 4000

THIS PROJECT WAS DESIGNED BY THE BALTIMORE DISTRICT OF THE U.S. ARMY CORPS OF ENGINEERS. THE INITIALS OR SIGNATURES AND REGISTRATION DESIGNATIONS OF INDIVIDUALS APPEAR ON THESE PROJECT DOCUMENTS WITHIN THE SCOPE OF THEIR EMPLOYMENT AS REQUIRED BY ER 1110-1-8152.

SUBMITTED:
CHIEF, CIVIL WORKS BRANCH

RECOMMENDED:
CHIEF, GEOTECHNICAL BRANCH

RECOMMENDED:
for
CHIEF, ENGINEERING DIVISION

US Army Corps of Engineers ®
Baltimore District

MARK	DESCRIPTION	DATE	APPR.	MARK	DESCRIPTION	DATE	APPR.

U.S. ARMY CORPS OF ENGINEERS
BALTIMORE DISTRICT
BALTIMORE, MARYLAND

DESIGNED BY: | DATE: MARCH 2017
DWN BY: | CKD BY: | SOLICITATION NO.: W912DR-17-B-0004
SUBMITTED BY: | CONTRACT NO.:
PLOT SCALE: | PLOT DATE: | FILE NUMBER: FILE: S3 MAP: 17-004
SIZE: ANSI D | FILE NAME: GI001XXX.DWG

ATLANTIC COAST OF MARYLAND
SHORELINE PROTECTION PROJECT
TOWN OF OCEAN CITY, WORCESTER CO., MD
REPAIR/RESTORATION 2017
INDEX OF DRAWINGS
GENERAL PLAN & VICINITY MAP

SHEET IDENTIFICATION
GI001

CONSTRUCTION BASELINE P.I. TABLE

P.I.	STATION	NORTHING	EASTING	P.I.	STATION	NORTHING	EASTING
1	80+00.00	293,664.435	1,870,860.741	16	366+96.16	265,339.381	1,866,653.953
2	121+56.63	289,514.818	1,870,619.445	17	379+79.78	264,083.950	1,866,386.418
3	129+71.00	288,702.522	1,870,561.280	18	391+29.78	262,952.318	1,866,181.655
4	139+56.03	287,722.832	1,870,458.913	19	397+29.79	262,362.209	1,866,073.140
5	151+38.11	286,555.217	1,870,274.547	20	414+29.06	260,692.803	1,865,755.946
6	202+28.14	281,489.287	1,869,779.794	21	418+80.83	260,254.883	1,865,644.954
7	219+25.39	279,808.067	1,869,547.070	22	421+30.83	260,009.003	1,865,599.740
8	256+81.11	276,088.339	1,869,028.385	23	427+82.08	259,362.915	1,865,517.929
9	263+39.62	275,440.751	1,868,908.936	24	433+92.02	258,760.267	1,865,423.862
10	289+39.49	272,898.485	1,868,364.692	25	441+26.67	258,056.718	1,865,212.384
11	313+39.50	270,561.844	1,867,816.805	26	454+76.28	256,757.179	1,864,848.165
12	325+41.01	269,379.825	1,867,601.279	27	497+43.49	252,673.377	1,863,610.567
13	343+28.99	267,625.354	1,867,256.731	28	552+13.32	247,602.180	1,861,560.694
14	346+42.19	267,320.201	1,867,186.196	29	557+29.03	247,132.652	1,861,347.400
15	351+96.15	266,799.782	1,866,996.382	30	570+75.41	245,876.769	1,860,862.106

PROJECT SURVEY CONTROL

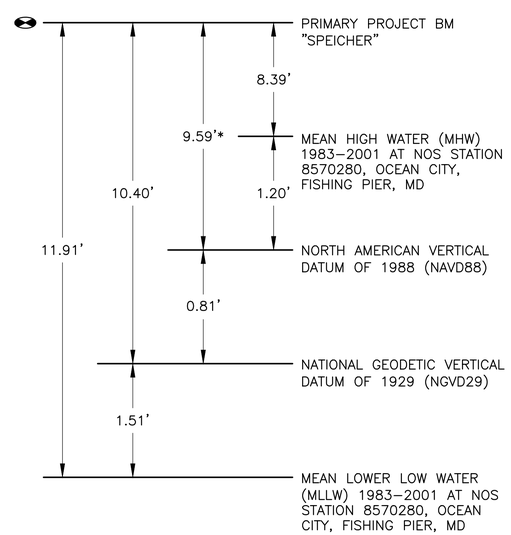
DESIGNATION	NORTHING	EASTING	ELEVATION	TYPE
SPEICHER	245,551.06	1,860,780.13	9.59	SURVEY DISK
REEDY 2 AZ MK 3	267,904.09	1,864,244.95	9.68	SURVEY DISK
OCM 42B	288,781.27	1,870,438.82	13.08	SURVEY DISK

CONSTRUCTION BASELINE BEARING & DISTANCE TABLE

P.I. – P.I.	BEARING	DISTANCE
1 – 2	S03°19'41"W	4156.63
2 – 3	S04°05'45"W	814.38
3 – 4	S05°57'55"W	985.02
4 – 5	S08°58'22"W	1182.08
5 – 6	S05°34'41"W	5090.00
6 – 7	S07°52'52"W	1697.25
7 – 8	S07°56'18"W	3755.72
8 – 9	S10°27'03"W	658.51
9 – 10	S12°05'00"W	2599.87
10 – 11	S13°11'46"W	2400.02
11 – 12	S10°20'01"W	1201.51
12 – 13	S11°06'38"W	1787.98
13 – 14	S13°00'54"W	313.20
14 – 15	S20°02'19"W	553.95
15 – 16	S13°11'46"W	1500.01
16 – 17	S12°01'48"W	1283.62
17 – 18	S10°15'23"W	1150.01
18 – 19	S10°25'11"W	600.00
19 – 20	S10°45'29"W	1699.27
20 – 21	S14°13'20"W	451.77
21 – 22	S10°25'10"W	250.00
22 – 23	S07°13'00"W	651.25
23 – 24	S08°52'18"W	609.95
24 – 25	S16°43'48"W	734.65
25 – 26	S15°39'23"W	1349.61
26 – 27	S16°51'34"W	4267.21
27 – 28	S22°00'34"W	5469.83
28 – 29	S24°25'52"W	515.70
29 – 30	S21°07'38"W	1346.39

VERTICAL DATUM DIAGRAM

NOT TO SCALE



*NAVD88 ELEVATION DETERMINED BY STATIC GPS OBSERVATIONS. SEE SURVEY NOTES ON THIS SHEET.

SURVEY NOTES:

1. ALL COORDINATE VALUES ARE IN U.S. SURVEY FEET AND REFERENCE THE MARYLAND STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM OF 1983 (NAD83).

2. ALL ELEVATIONS AND DEPTHS ARE IN U.S. SURVEY FEET AND REFERENCE THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

3. BEACH PROFILES (SURVEYED ELEVATIONS EXTENDING SEAWARD FROM THE CONSTRUCTION BASELINE TO A DEPTH > 25') WERE COLLECTED BY USACE IN MAY 2016. WADING CROSS SECTIONS (SURVEYED ELEVATIONS EXTENDING SEAWARD FROM THE DUNE/BULKHEAD INTO THE SURF ZONE) WERE COMPLETED BY USACE IN MARCH 2016. THESE SURVEY DATA CAN BE MADE AVAILABLE TO THE CONTRACTOR IF REQUESTED.

4. ALL VOLUME ESTIMATES CONTAINED IN THE QUANTITY TABLE ON SHEET C–301 WERE BASED UPON BEACH PROFILE AND WADING CROSS SECTION DATA.

5. DUE TO SIGNIFICANT SUBSIDENCE WITHIN THE REGION, ONLY THE CONTROL POINTS LISTED ON THIS SHEET SHALL BE USED BY THE CONTRACTOR FOR CONSTRUCTION SURVEYS. THE COORDINATES AND ELEVATIONS FOR THESE CONTROL POINTS AS SHOWN ON THIS SHEET REPRESENT THE RESULTS OF GPS CONTROL SURVEYS CONDUCTED BY THE BALTIMORE DISTRICT OF THE U.S. ARMY CORPS OF ENGINEERS IN OCTOBER 2009.

6. DESCRIPTIONS FOR THE CONTROL POINTS LISTED ON THIS SHEET ARE AVAILABLE UPON REQUEST FROM THE U.S. ARMY CORPS OF ENGINEERS.

US Army Corps of Engineers ®
Baltimore District

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

U.S. ARMY CORPS OF ENGINEERS
BALTIMORE DISTRICT
BALTIMORE, MARYLAND

DESIGNED BY: | DATE: MARCH 2017
DWN BY: | CKD BY: | SOLICITATION NO.: W912DR-17-B-0004
SUBMITTED BY: | CONTRACT NO.:
PLOT SCALE | PLOT DATE: | FILE NUMBER: FILE: S3 MAP 17-005
SIZE: ANSI D | FILE NAME: GI002CX.DWG

ATLANTIC COAST OF MARYLAND
SHORELINE PROTECTION PROJECT
TOWN OF OCEAN CITY, WORCESTER CO., MD
REPAIR/RESTORATION 2017

SURVEY INFORMATION & CONSTRUCTION BASELINE DATA

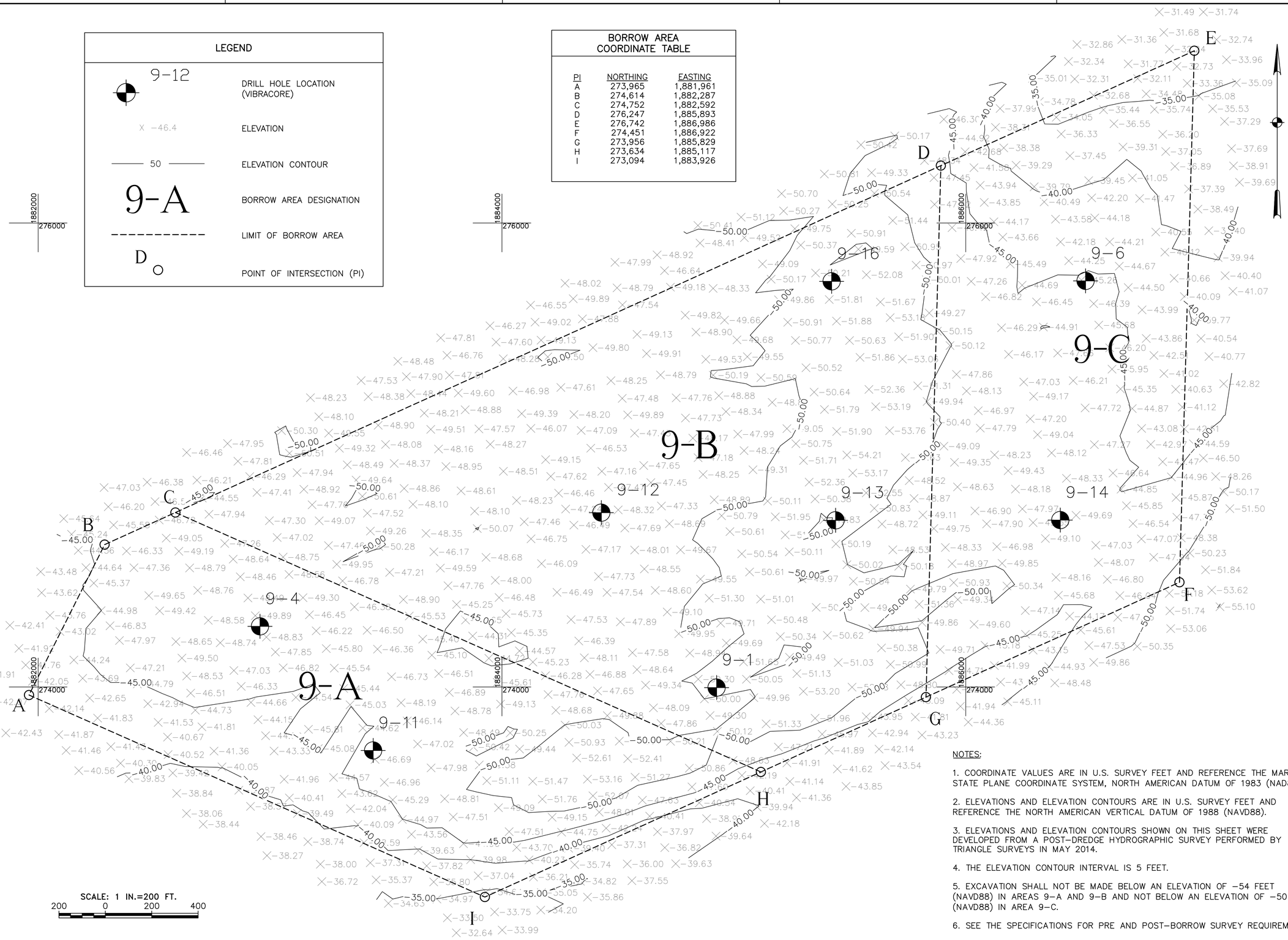
SHEET IDENTIFICATION
GI002

LEGEND

9-12	DRILL HOLE LOCATION (VIBRACORE)
X −46.4	ELEVATION
50	ELEVATION CONTOUR
9-A	BORROW AREA DESIGNATION
- - - - - - - -	LIMIT OF BORROW AREA
D	POINT OF INTERSECTION (PI)

BORROW AREA COORDINATE TABLE

PI	NORTHING	EASTING
A	273,965	1,881,961
B	274,614	1,882,287
C	274,752	1,882,592
D	276,247	1,885,893
E	276,742	1,886,986
F	274,451	1,886,922
G	273,956	1,885,829
H	273,634	1,885,117
I	273,094	1,883,926



NOTES:

1. COORDINATE VALUES ARE IN U.S. SURVEY FEET AND REFERENCE THE MARYLAND STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM OF 1983 (NAD83).

2. ELEVATIONS AND ELEVATION CONTOURS ARE IN U.S. SURVEY FEET AND REFERENCE THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

3. ELEVATIONS AND ELEVATION CONTOURS SHOWN ON THIS SHEET WERE DEVELOPED FROM A POST−DREDGE HYDROGRAPHIC SURVEY PERFORMED BY TRIANGLE SURVEYS IN MAY 2014.

4. THE ELEVATION CONTOUR INTERVAL IS 5 FEET.

5. EXCAVATION SHALL NOT BE MADE BELOW AN ELEVATION OF −54 FEET (NAVD88) IN AREAS 9−A AND 9−B AND NOT BELOW AN ELEVATION OF −50 FEET (NAVD88) IN AREA 9−C.

6. SEE THE SPECIFICATIONS FOR PRE AND POST−BORROW SURVEY REQUIREMENTS.

US Army Corps of Engineers ®
Baltimore District

MARK	DESCRIPTION	DATE	APPR.	MARK	DESCRIPTION	DATE	APPR.

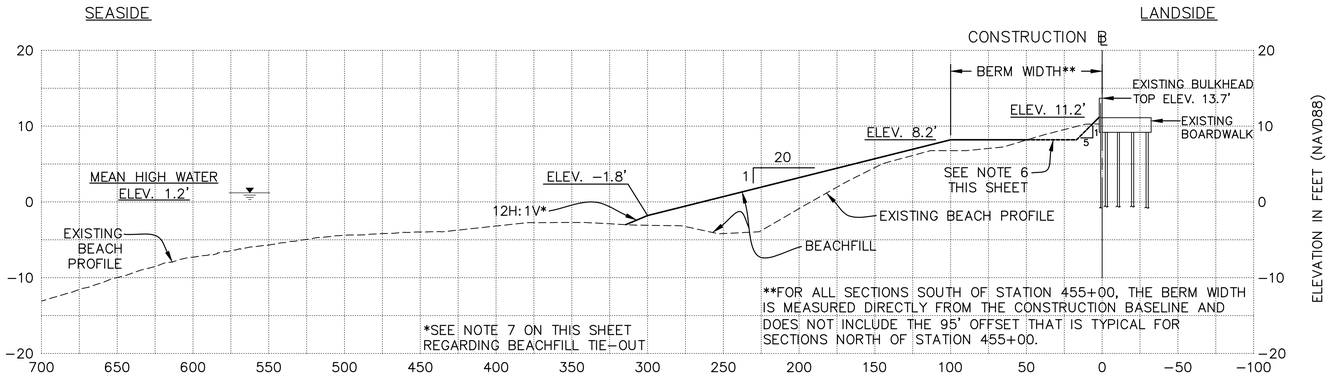
U.S. ARMY CORPS OF ENGINEERS
BALTIMORE DISTRICT
BALTIMORE, MARYLAND

DESIGNED BY: | DATE: MARCH 2017
DWN BY: | CKD BY: | SOLICITATION NO.: W912DR-17-B-0004
SUBMITTED BY: | CONTRACT NO.:
PLOT SCALE | PLOT DATE: | FILE NUMBER: FILE: 53 MAP 17-006
SIZE: ANSI D | FILE NAME: B101XX.DWG

ATLANTIC COAST OF MARYLAND
SHORELINE PROTECTION PROJECT
TOWN OF OCEAN CITY, WORCESTER CO., MD
REPAIR/RESTORATION 2017

BORROW AREA PLAN

SHEET IDENTIFICATION
B-101

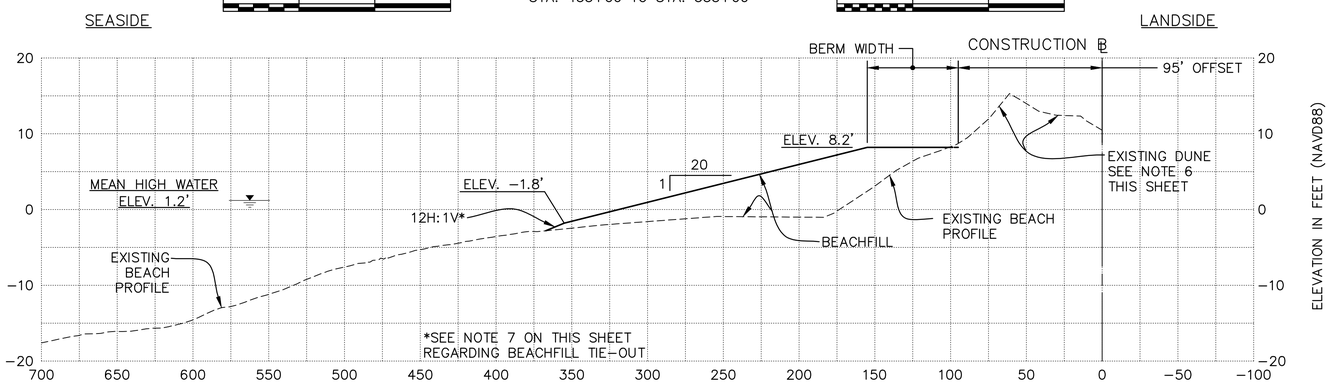


BEACHFILL SECTION AT BULKHEAD

STA. 455+00 TO STA. 535+00

HORIZONTAL SCALE: 1 IN.=50 FT.
50 0 50 100

VERTICAL SCALE: 1 IN.=10 FT.
10 0 10 20



BEACHFILL SECTION AT DUNE

STA. 90+00 TO STA. 455+00

NOTES:

1. BEACHFILL SHALL BE PLACED IN ACCORDANCE WITH THE BERM WIDTHS AND SLOPES SPECIFIED ON THIS SHEET.

2. QUANTITIES SHOWN IN THE TABLE ON THIS SHEET ARE BASED ON A BEACH PROFILE SURVEY CONDUCTED IN MAY 2016 AND A WADING SURVEY CONDUCTED IN MARCH 2016. THE BEACH PROFILE SURVEY CONSISTED OF PROFILES TAKEN AT INTERVALS RANGING FROM 900' TO 3000', AND THE WADING SURVEY CONSISTED OF CROSS SECTIONS TAKEN AT 500' INTERVALS. THE QUANTITY TABLE REPRESENTS CONDITIONS FOUND AT THE TIME OF THE TWO SURVEYS. THEREFORE, THE QUANTITIES ARE FOR BIDDING PURPOSES ONLY.

3. THE ESTIMATED BEACHFILL QUANTITIES DO NOT INCLUDE TOLERANCE.

4. THE BERM WIDTHS ARE ESTIMATED BASED ON THE ADDITION OF THE BASE AND THE OPTION QUANTITY OF SAND.

5. THE BERM WIDTHS AND QUANTITIES WITHIN ACCEPTANCE REACHES ARE SUBJECT TO CHANGE AT THE DISCRETION OF THE CONTRACTING OFFICER.

6. EXISTING SAND ABOVE DESIGN LINES AND GRADES SHALL NOT BE DISTURBED.

7. IF THE 20H:1V SLOPE OF THE BEACHFILL TEMPLATE TIES OUT TO THE EXISTING OCEAN BOTTOM, THE 12H:1V TIE-OUT IS NOT REQUIRED.

ACCEPTANCE REACH BERM WIDTH AND BEACHFILL QUANTITY TABLE

ACCEPTANCE REACH	BERM WIDTH (FT) *SEE NOTE 4	BASE QUANTITY (CY)	OPTION QUANTITY (CY)
STA 90+00 TO 100+00	TRANSITION	27567	13481
STA 100+00 TO 105+00	120	26534	12976
STA 105+00 TO 110+00	TRANSITION	17293	8457
STA 110+00 TO 115+00	90	9832	4808
STA 115+00 TO 120+00	TRANSITION	10079	4929
STA 120+00 TO 125+00	TRANSITION	5712	2793
STA 125+00 TO 130+00	50	1480	724
STA 130+00 TO 135+00	TRANSITION	557	272
STA 135+00 TO 140+00	--	--	--
STA 140+00 TO 145+00	--	--	--
STA 145+00 TO 150+00	--	--	--
STA 150+00 TO 155+00	--	--	--
STA 155+00 TO 160+00	--	--	--
STA 160+00 TO 165+00	TRANSITION	494	242
STA 165+00 TO 170+00	40	1558	762
STA 170+00 TO 175+00	TRANSITION	4872	2383
STA 175+00 TO 180+00	60	8393	4104
STA 180+00 TO 185+00	TRANSITION	7842	3835
STA 185+00 TO 190+00	90	7605	3719
STA 190+00 TO 195+00	TRANSITION	13528	6616
STA 195+00 TO 200+00	TRANSITION	21276	10405
STA 200+00 TO 205+00	120	23999	11736
STA 205+00 TO 210+00	TRANSITION	21259	10397
STA 210+00 TO 215+00	110	20553	10051
STA 215+00 TO 220+00	110	18364	8981
STA 220+00 TO 225+00	TRANSITION	11058	5408
STA 225+00 TO 230+00	90	6207	3035
STA 230+00 TO 235+00	90	4960	2426
STA 235+00 TO 240+00	TRANSITION	4845	2369
STA 240+00 TO 245+00	60	6498	3178
STA 245+00 TO 250+00	60	6702	3278
STA 250+00 TO 255+00	60	5903	2887
STA 255+00 TO 260+00	60	6899	3374
STA 260+00 TO 265+00	60	7798	3814
STA 265+00 TO 270+00	TRANSITION	6097	2982
STA 270+00 TO 275+00	50	2987	1461
STA 275+00 TO 280+00	50	4141	2025
STA 280+00 TO 285+00	TRANSITION	10583	5175
STA 285+00 TO 290+00	TRANSITION	19696	9632
STA 290+00 TO 295+00	120	21740	10632
STA 295+00 TO 300+00	120	19692	9630
STA 300+00 TO 305+00	TRANSITION	16065	7856
STA 305+00 TO 310+00	80	11681	5712
STA 310+00 TO 315+00	TRANSITION	9054	4428
STA 315+00 TO 320+00	50	7003	3425
STA 320+00 TO 325+00	TRANSITION	3484	1704
STA 325+00 TO 330+00	--	--	--
STA 330+00 TO 335+00	--	--	--
STA 335+00 TO 340+00	TRANSITION	486	238
STA 340+00 TO 345+00	40	1768	865
STA 345+00 TO 350+00	40	1562	764
STA 350+00 TO 355+00	TRANSITION	279	137
STA 355+00 TO 360+00	--	--	--
STA 360+00 TO 365+00	TRANSITION	1316	644
STA 365+00 TO 370+00	50	2434	1190
STA 370+00 TO 375+00	50	5527	2703
STA 375+00 TO 380+00	50	7032	3439
STA 380+00 TO 385+00	50	6005	2937
STA 385+00 TO 390+00	50	6771	3311
STA 390+00 TO 395+00	50	6285	3074
STA 395+00 TO 400+00	TRANSITION	3779	1848
STA 400+00 TO 405+00	40	3073	1503
STA 405+00 TO 410+00	40	3881	1898
STA 410+00 TO 415+00	TRANSITION	4785	2340
STA 415+00 TO 420+00	50	5065	2477
STA 420+00 TO 425+00	50	2538	1241
STA 425+00 TO 430+00	50	6919	3383
STA 430+00 TO 435+00	50	10574	5171
STA 435+00 TO 440+00	50	10190	4983
STA 440+00 TO 445+00	50	8896	4351
STA 445+00 TO 450+00	50	8173	3997
STA 450+00 TO 455+00	50	11293	5523
STA 455+00 TO 460+00	TRANSITION	6781	3316
STA 460+00 TO 465+00	100	1840	900
STA 465+00 TO 470+00	100	1995	976
STA 470+00 TO 475+00	100	1853	906
STA 475+00 TO 480+00	100	2317	1133
STA 480+00 TO 485+00	100	2602	1273
STA 485+00 TO 490+00	100	2456	1201
STA 490+00 TO 495+00	100	3083	1508
STA 495+00 TO 500+00	100	3538	1730
STA 500+00 TO 505+00	100	2387	1167
STA 505+00 TO 510+00	100	1566	766
STA 510+00 TO 515+00	100	1139	557
STA 515+00 TO 520+00	100	609	298
STA 520+00 TO 525+00	TRANSITION	312	153
STA 525+00 TO 530+00	--	--	--
STA 530+00 TO 535+00	--	--	--
TOTALS		593000	290000

US Army Corps of Engineers ®
Baltimore District

MARK	DESCRIPTION	DATE	APPR.	MARK	DESCRIPTION	DATE	APPR.

DATE: MARCH 2017
SOLICITATION NO.: W912DR-17-B-0004
CONTRACT NO.:
FILE NUMBER: FILE: S3 MAP 17-007
DESIGNED BY:
DWN BY:
CKD BY:
SUBMITTED BY:
PLOT SCALE
PLOT DATE:
SIZE: ANSI D
FILE NAME: C-300-MAX.DWG

U.S. ARMY CORPS OF ENGINEERS
BALTIMORE DISTRICT
BALTIMORE, MARYLAND

ATLANTIC COAST OF MARYLAND
SHORELINE PROTECTION PROJECT
TOWN OF OCEAN CITY, WORCESTER CO., MD
REPAIR/RESTORATION 2017

BEACHFILL SECTIONS, DUNE SECTION & QUANTITY TABLE

SHEET IDENTIFICATION
C-301