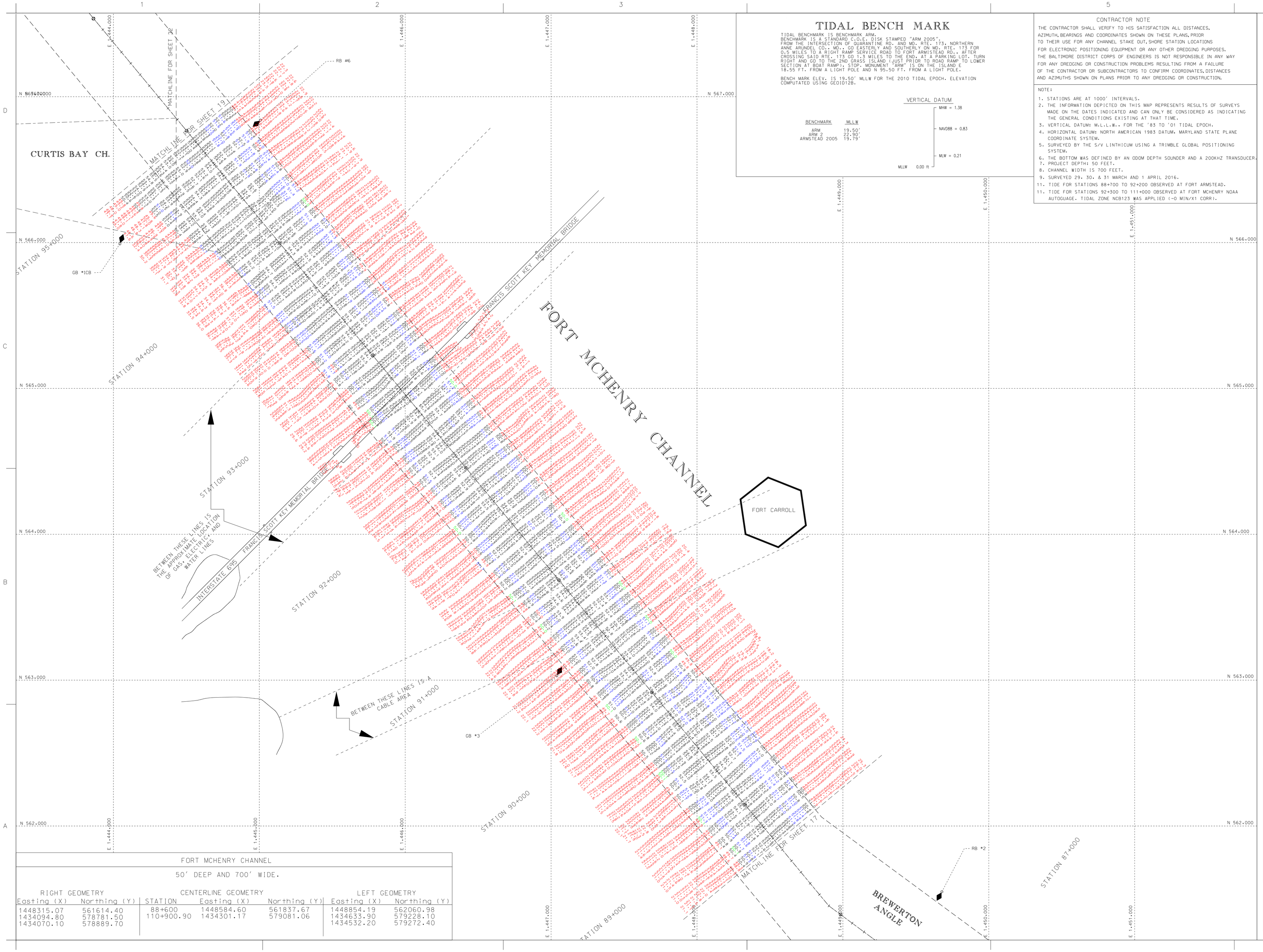

TIDAL BENCH MARK

TIDAL BENCHMARK IS BENCHMARK ARM.
BENCHMARK IS A STANDARD C.O.E. DISK STAMPED "ARM 2005".
FROM THE INTERSECTION OF QUARANTINE RD. AND MD. RTE. 173, NORTHERN ANNE ARUNDEL CO., MD., GO EASTERLY AND SOUTHERLY ON MD. RTE. 173 FOR 0.5 MILES TO A RIGHT RAMP SERVICE ROAD TO FORT ARMISTEAD RD., AFTER CROSSING SAID RTE. 173 GO 1.3 MILES TO THE END. AT A PARKING LOT. TURN RIGHT AND GO TO THE 2ND GRASS ISLAND (JUST PRIOR TO ROAD RAMP TO LOWER SECTION AT BOAT RAMP). STOP. MONUMENT "ARM" IS ON THE ISLAND E 18.55 FT. FROM A LIGHT POLE AND N 95.50 FT. FROM A LIGHT POLE.

BENCH MARK ELEV. IS 19.50' MLLW FOR THE 2010 TIDAL EPOCH. ELEVATION COMPUTATED USING GEOID12B.

BENCHMARK	MLLW
ARM	19.50'
ARM 2	22.90'
ARMSTEAD 2005	19.79'

VERTICAL DATUM

MHW = 1.38
NAVD88 = 0.83
MLW = 0.21
MLLW 0.00 ft

CONTRACTOR NOTE

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NOTE:

1. STATIONS ARE AT 1000' INTERVALS.
2. THE INFORMATION DEPICTED ON THIS MAP REPRESENTS RESULTS OF SURVEYS MADE ON THE DATES INDICATED AND CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.
3. VERTICAL DATUM: MLL.L.W. FOR THE '83 TO '01 TIDAL EPOCH.
4. HORIZONTAL DATUM: NORTH AMERICAN 1983 DATUM, MARYLAND STATE PLANE COORDINATE SYSTEM.
5. SURVEYED BY THE S/V LINTHICUM USING A TRIMBLE GLOBAL POSITIONING SYSTEM.
6. THE BOTTOM WAS DEFINED BY AN ODOM DEPTH SOUNDER AND A 200KHZ TRANSDUCER.
7. PROJECT DEPTH: 50 FEET.
8. CHANNEL WIDTH IS 700 FEET.
9. SURVEYED 29, 30, & 31 MARCH AND 1 APRIL 2016.
11. TIDE FOR STATIONS 88+700 TO 92+200 OBSERVED AT FORT ARMSTEAD.
11. TIDE FOR STATIONS 92+300 TO 111+000 OBSERVED AT FORT MCHENRY NOAA AUTOGUAGE. TIDAL ZONE NCB123 WAS APPLIED (-0 MIN/X1 CORR).

FORT MCHENRY CHANNEL

50' DEEP AND 700' WIDE.

RIGHT GEOMETRY		CENTERLINE GEOMETRY			LEFT GEOMETRY	
Easting (X)	Northing (Y)	STATION	Easting (X)	Northing (Y)	Easting (X)	Northing (Y)
1448315.07	561614.40	88+600	1448584.60	561837.67	1448854.19	562060.98
1434094.80	578781.50	110+900.90	1434301.17	579081.06	1434633.90	579228.10
1434070.10	578889.70				1434532.20	579272.40

US Army Corps of Engineers
Baltimore District

Mark	Description	Date	Appr.

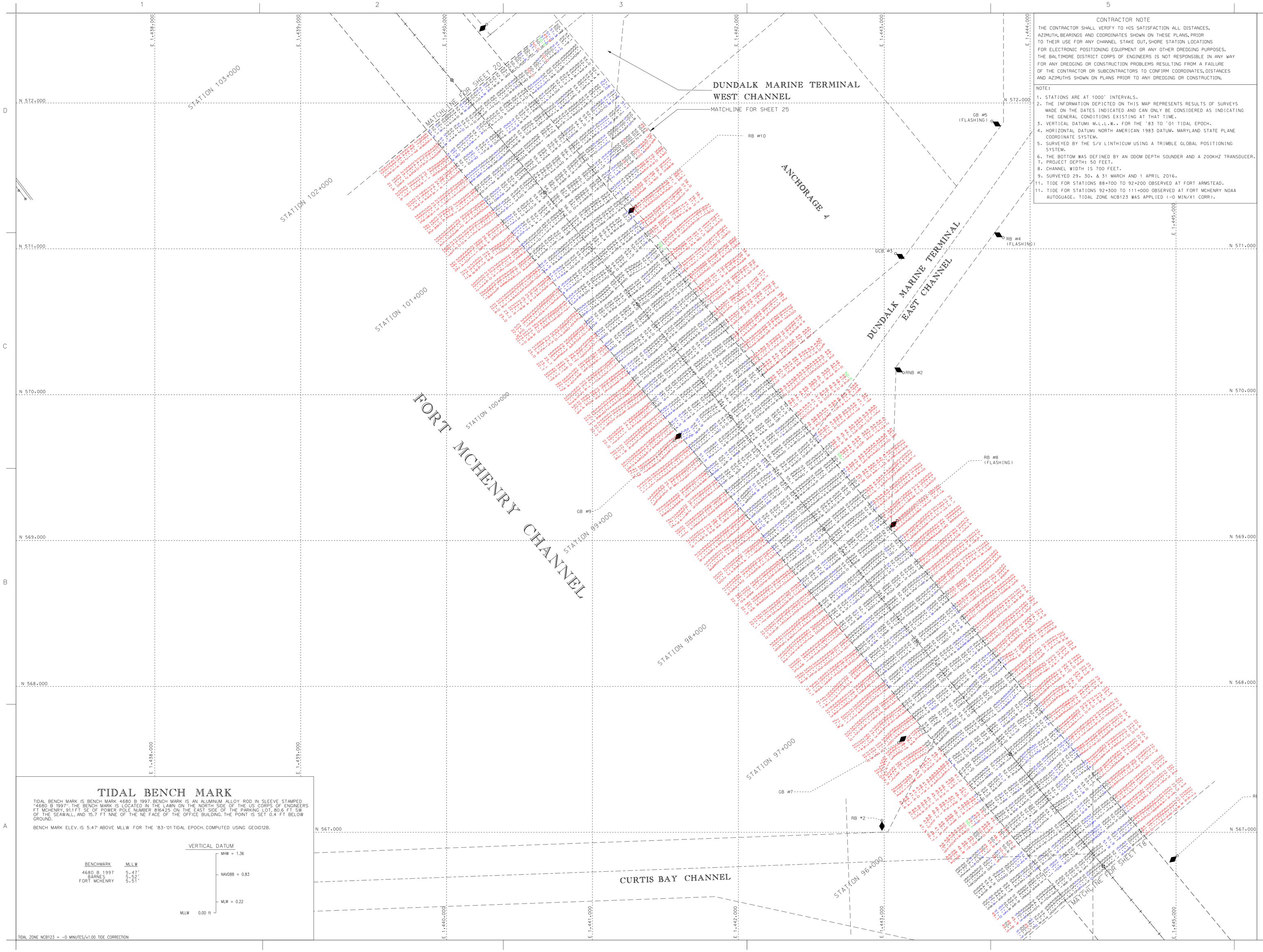
U.S. ARMY CORPS OF ENGINEERS
BALTIMORE DISTRICT

Designed by: JJW
Date by: JJW
Checked by: SMC
Reviewed by: SMC
Submitted by:
Date: JANUARY 16
Scale: 1"=1000'
Project file no: 2016-01-01-10-064
Drawing code:
File name: Rec_Ch_FC_CONDITION
Plot date:
Plot scale:
Data Acc. Group:
Rev.

BALTIMORE HARBOR
MARYLAND

CONDITION SURVEY
FORT MCHENRY CHANNEL
STATION 88+700 TO 94+900

Sheet reference number:
V-118
Sheet 18 of 59



CONTRACTOR NOTE

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NOTE:

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3. VERTICAL DATUM: M.L.L.W. FOR THE '83 TO '01 TIDAL EPOCH.
4. HORIZONTAL DATUM: NORTH AMERICAN 1983 DATUM. MARYLAND STATE PLANE COORDINATE SYSTEM.
5. SURVEYED BY THE S/V LINTHICUM USING A TRIMBLE GLOBAL POSITIONING SYSTEM.
6. THE BOTTOM WAS DEFINED BY AN ODOM DEPTH SOUNDER AND A 200KHZ TRANSDUCER.
7. PROJECT DEPTH: 50 FEET.
8. CHANNEL WIDTH IS 700 FEET.
9. SURVEYED 29, 30, & 31 MARCH AND 1 APRIL 2016.
11. TIDE FOR STATIONS 88+700 TO 92+200 OBSERVED AT FORT ARMSTEAD.
11. TIDE FOR STATIONS 92+300 TO 111+000 OBSERVED AT FORT MCHENRY NOAA AUTOGUAGE. TIDAL ZONE NCB123 WAS APPLIED (-0 MIN/X1 CORR).

TIDAL BENCH MARK

TIDAL BENCH MARK IS BENCH MARK 4680 B 1997. BENCH MARK IS AN ALUMINUM ALLOY ROD IN SLEEVE STAMPED "4680 B 1997". THE BENCH MARK IS LOCATED IN THE LAWN ON THE NORTH SIDE OF THE US CORPS OF ENGINEERS FT MCHENRY, 911 FT SE OF POWER POLE NUMBER 816425 ON THE EAST SIDE OF THE PARKING LOT, 80.6 FT SW OF THE SEAWALL, AND 15.7 FT NNE OF THE NE FACE OF THE OFFICE BUILDING. THE POINT IS SET 0.4 FT BELOW GROUND.

BENCH MARK ELEV. IS 5.47' ABOVE MLLW FOR THE '83-'01 TIDAL EPOCH. COMPUTED USING GEOID12B.

BENCHMARK	MLLW
4680 B 1997	5.47'
BARNES	5.52'
FORT MCHENRY	5.51'

VERTICAL DATUM

- MHW = 1.36
- NAVD88 = 0.83
- MLW = 0.22
- MLLW 0.00 ft

TIDAL ZONE NCB123 = -0 MINUTES/x1.00 TIDE CORRECTION

US Army Corps of Engineers
Baltimore District

Mark	Appr.	Date	Description	Mark	Appr.	Date	Description

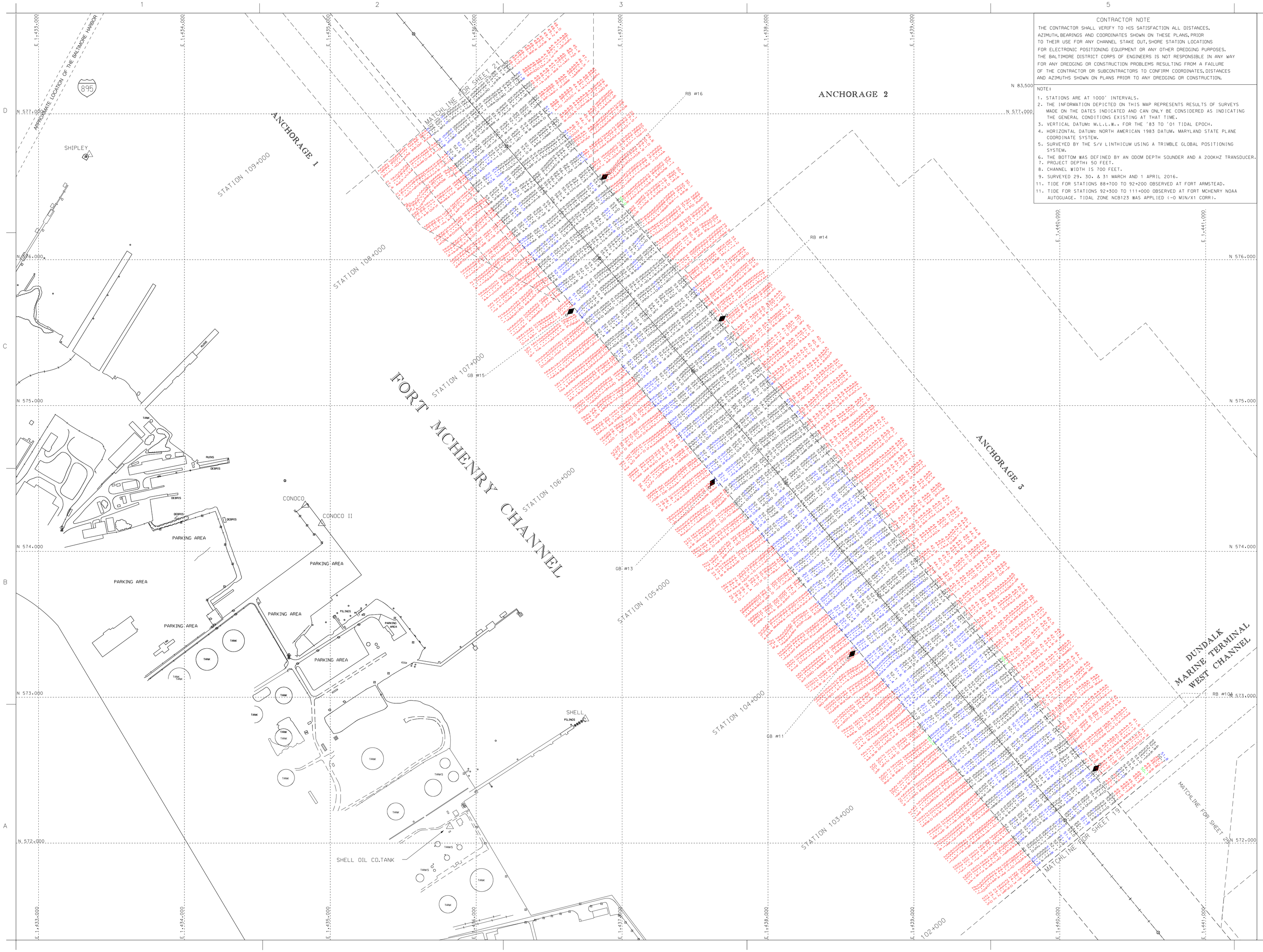
U.S. ARMY CORPS OF ENGINEERS
BALTIMORE DISTRICT

Designed by:
Dwn by: SMC
Ckd by: SMC
Reviewed by: SMC
Submitted by:
Date: JUNE, '16
Scale: 1" = 1000'
Project No. 96-015-065
Contract Code:
File Name: FM_FT_CHANNEL
Plot date:
Plot scale:
Chief, Nav. Branch
Rev:

BALTIMORE HARBOR
MARYLAND

CONDITION SURVEY
FORT MCHENRY CHANNEL
STATION 95+000 TO 101+800

Sheet reference number:
V-119
Sheet 19 of 59



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NOTE:

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4. HORIZONTAL DATUM: NORTH AMERICAN 1983 DATUM. MARYLAND STATE PLANE COORDINATE SYSTEM.
5. SURVEYED BY THE S/V LINTHICUM USING A TRIMBLE GLOBAL POSITIONING SYSTEM.
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7. PROJECT DEPTH: 50 FEET.
8. CHANNEL WIDTH IS 700 FEET.
9. SURVEYED 29, 30, & 31 MARCH AND 1 APRIL 2016.
11. TIDE FOR STATIONS 88+700 TO 92+200 OBSERVED AT FORT ARMSTEAD.
11. TIDE FOR STATIONS 92+300 TO 111+000 OBSERVED AT FORT MCHENRY NOAA AUTOGUAGE. TIDAL ZONE NCB123 WAS APPLIED (-0 MIN/X1 CORR).

US Army Corps of Engineers
Baltimore District

Mark	Description	Date	Appr.

Mark	Description	Date	Appr.

U.S. ARMY CORPS OF ENGINEERS
BALTIMORE DISTRICT

Designed by:
Date for plot: 1/1/2001
Drawn by: CSAC
Date for plot: 2/3/2
Reviewed by: CSAC
Submitted by:
Date, Sec. Branch:

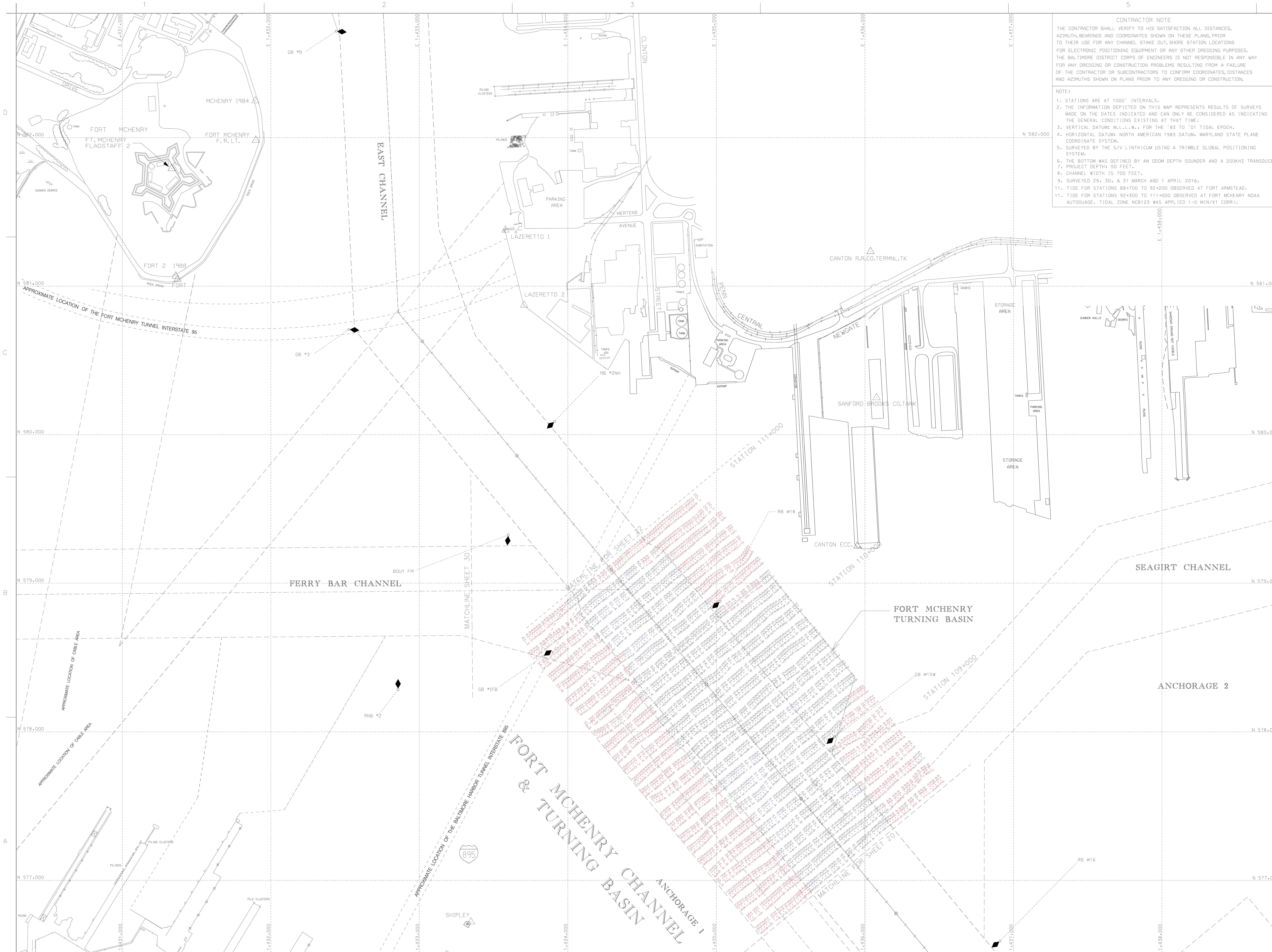
Date: APRIL, '16
Dwg. No. 1:1000 SHEET 1-6
Drawing under
File name: Dch_FtC_CHANNEL
Plot date:
Plot scale:

Rev.

BALTIMORE HARBOR
MARYLAND

CONDITION SURVEY
FORT MCHENRY CHANNEL
STATION 101+900 TO 108+400

Sheet reference number:
V-120
Sheet 20 of 59



CONTRACTOR NOTE

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NOTE:

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4. HORIZONTAL DATUM: NORTH AMERICAN 1983 DATUM, MARYLAND STATE PLANE COORDINATE SYSTEM.
5. SURVEYED BY THE S/V LINTHICUM USING A TRIMBLE GLOBAL POSITIONING SYSTEM.
6. THE BOTTOM WAS DEFINED BY AN ODOM DEPTH SOUNDER AND A 200KHZ TRANSDUCER.
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8. CHANNEL WIDTH IS 700 FEET.
9. SURVEYED 29, 30, & 31 MARCH AND 1 APRIL 2016.
11. TIDE FOR STATIONS 88+700 TO 92+200 OBSERVED AT FORT ARMSTEAD.
11. TIDE FOR STATIONS 92+300 TO 111+000 OBSERVED AT FORT MCHENRY NOAA AUTOGUAGE. TIDAL ZONE NCB123 WAS APPLIED (-0 MIN/X1 CORR).

Mark	Description	Date	Appr.	Mark	Description	Date	Appr.

US Army Corps of Engineers
Baltimore District

U.S. ARMY CORPS OF ENGINEERS
BALTIMORE DISTRICT

Designed by:		Date: APRIL '16	Rev.
Dwn by: JAH	Ckd by: SMG	Design file no. FILE:17 MAP:16-067	
Reviewed by: SMG		Drawing code:	
Submitted by: Chief, Nav. Branch		File name: BH_05_1FC_20160401 Plot date: Plot scale:	

BALTIMORE HARBOR
MARYLAND

CONDITION SURVEY
FORT MCHENRY CHANNEL/TURNING BASIN
STATION 108+500 TO 111+000

Sheet reference number:
V-121
Sheet 21 of 59