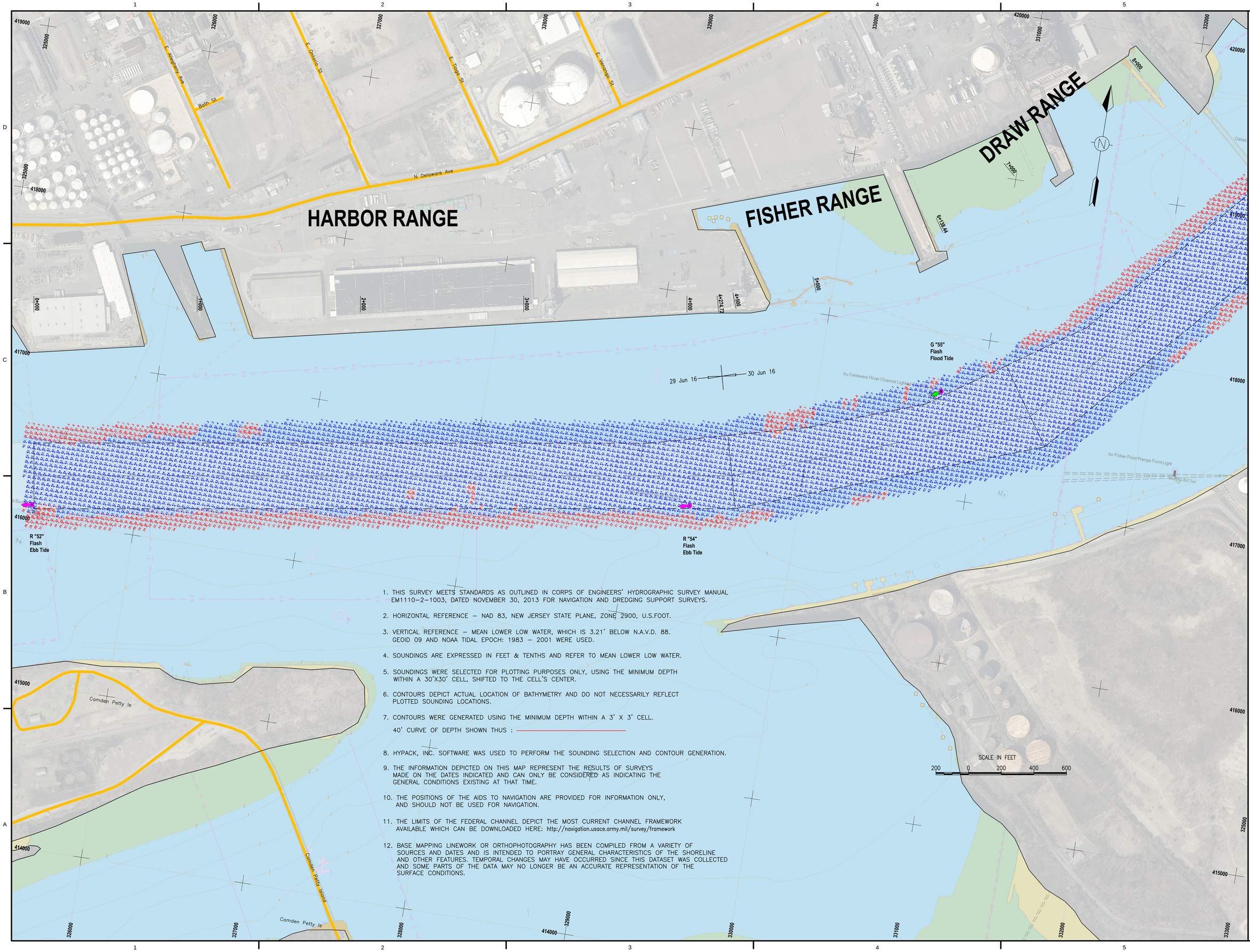


1. THIS SURVEY MEETS STANDARDS AS OUTLINED IN CORPS OF ENGINEERS' HYDROGRAPHIC SURVEY MANUAL EM1110-2-1003, DATED NOVEMBER 30, 2013 FOR NAVIGATION AND DREDGING SUPPORT SURVEYS.
2. HORIZONTAL REFERENCE – NAD 83, NEW JERSEY STATE PLANE, ZONE 2900, U.S.FOOT.
3. VERTICAL REFERENCE – MEAN LOWER LOW WATER, WHICH IS 3.21' BELOW N.A.V.D. 88. GEOID 09 AND NOAA TIDAL EPOCH: 1983 – 2001 WERE USED.
4. SOUNDINGS ARE EXPRESSED IN FEET & TENTHS AND REFER TO MEAN LOWER LOW WATER.
5. SOUNDINGS WERE SELECTED FOR PLOTTING PURPOSES ONLY, USING THE MINIMUM DEPTH WITHIN A 30'X30' CELL, SHIFTED TO THE CELL'S CENTER.
6. CONTOURS DEPICT ACTUAL LOCATION OF BATHYMETRY AND DO NOT NECESSARILY REFLECT PLOTTED SOUNDING LOCATIONS.
7. CONTOURS WERE GENERATED USING THE MINIMUM DEPTH WITHIN A 3' X 3' CELL.
   40' CURVE OF DEPTH SHOWN THUS :
8. HYPACK, INC. SOFTWARE WAS USED TO PERFORM THE SOUNDING SELECTION AND CONTOUR GENERATION.
9. THE INFORMATION DEPICTED ON THIS MAP REPRESENT THE RESULTS OF SURVEYS MADE ON THE DATES INDICATED AND CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.
10. THE POSITIONS OF THE AIDS TO NAVIGATION ARE PROVIDED FOR INFORMATION ONLY, AND SHOULD NOT BE USED FOR NAVIGATION.
11. THE LIMITS OF THE FEDERAL CHANNEL DEPICT THE MOST CURRENT CHANNEL FRAMEWORK AVAILABLE WHICH CAN BE DOWNLOADED HERE: http://navigation.usace.army.mil/survey/framework
12. BASE MAPPING LINEWORK OR ORTHOPHOTOGRAPHY HAS BEEN COMPILED FROM A VARIETY OF SOURCES AND DATES AND IS INTENDED TO PORTRAY GENERAL CHARACTERISTICS OF THE SHORELINE AND OTHER FEATURES. TEMPORAL CHANGES MAY HAVE OCCURRED SINCE THIS DATASET WAS COLLECTED AND SOME PARTS OF THE DATA MAY NO LONGER BE AN ACCURATE REPRESENTATION OF THE SURFACE CONDITIONS.

US Army Corps of Engineers Philadelphia District

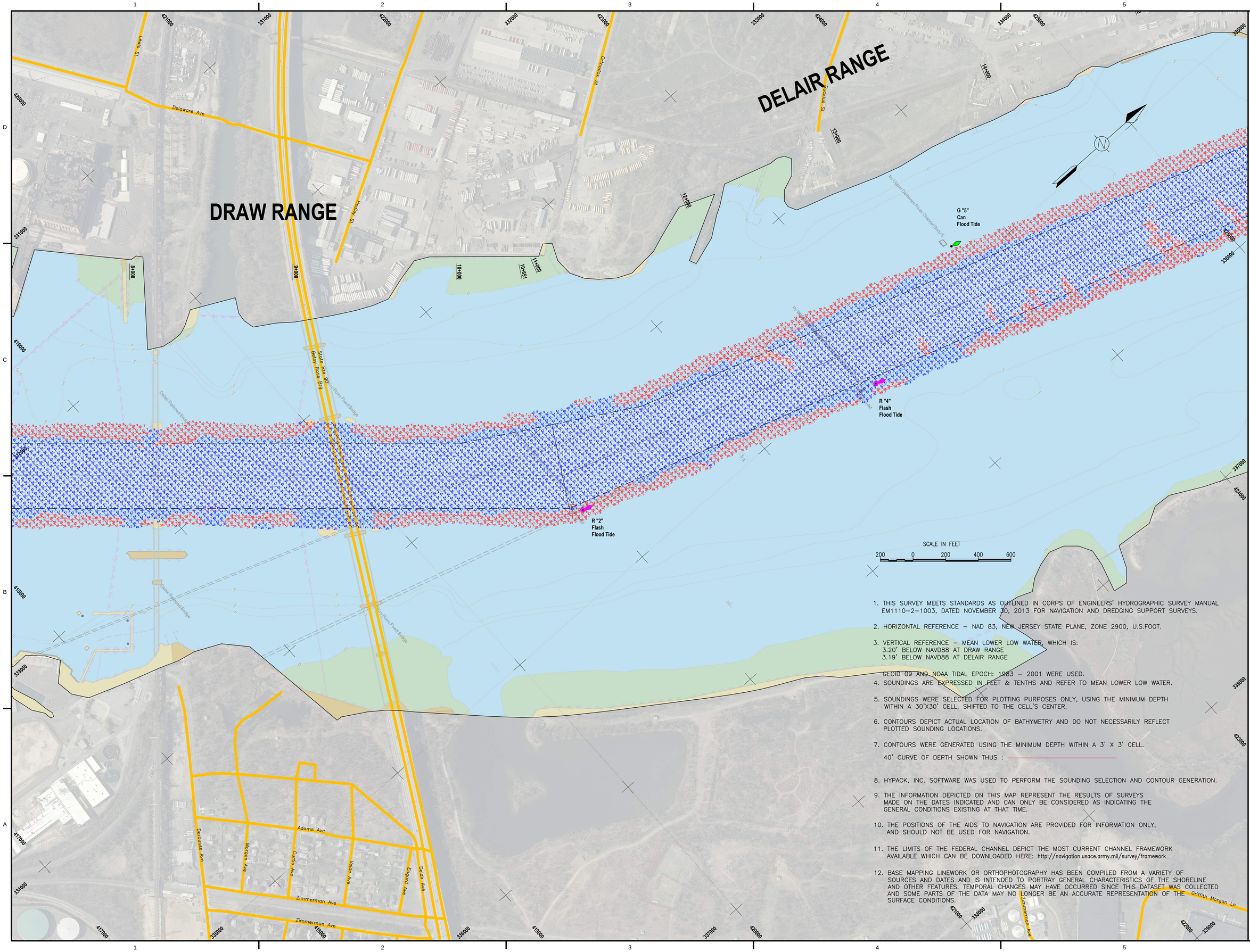
MARK	ACTION	DESCRIPTION	DATE	BY

PROCESSED BY: C.Kocherchenko
DWN BY: WMM
CKD BY:
REVIEWED BY:
SURVEY DATE: As Shown
VESSEL: Duarfless
DWG SCALE: 1"=200'
FILE NAME: 65721
PLOT DATE: 27 Jul 16
REVISION REV
CONTRACT NUMBER:
APPROVED BY:
PLOTTED BY: W.Miller

U.S. ARMY CORPS OF ENGINEERS
PHILADELPHIA DISTRICT
PHILADELPHIA, PA 19107-3390
www.nap.usace.army.mil

DELAWARE RIVER
PHILADELPHIA TO TRENTON
HARBOR, FISHER AND DRAW RANGES
STATION 0+000 TO 7+000

SHEET NUMBER
V-100



1. THIS SURVEY MEETS STANDARDS AS OUTLINED IN CORPS OF ENGINEERS' HYDROGRAPHIC SURVEY MANUAL EM1110-2-1003, DATED NOVEMBER 30, 2013 FOR NAVIGATION AND DREDGING SUPPORT SURVEYS.
2. HORIZONTAL REFERENCE – NAD 83, NEW JERSEY STATE PLANE, ZONE 2900, U.S.FOOT.
3. VERTICAL REFERENCE – MEAN LOWER LOW WATER, WHICH IS:
   3.20' BELOW NAVD88 AT DRAW RANGE
   3.19' BELOW NAVD88 AT DELAIR RANGE

   GEOID 09 AND NOAA TIDAL EPOCH: 1983 – 2001 WERE USED.
4. SOUNDINGS ARE EXPRESSED IN FEET & TENTHS AND REFER TO MEAN LOWER LOW WATER.
5. SOUNDINGS WERE SELECTED FOR PLOTTING PURPOSES ONLY, USING THE MINIMUM DEPTH WITHIN A 30'X30' CELL, SHIFTED TO THE CELL'S CENTER.
6. CONTOURS DEPICT ACTUAL LOCATION OF BATHYMETRY AND DO NOT NECESSARILY REFLECT PLOTTED SOUNDING LOCATIONS.
7. CONTOURS WERE GENERATED USING THE MINIMUM DEPTH WITHIN A 3' X 3' CELL.

   40' CURVE OF DEPTH SHOWN THUS :
8. HYPACK, INC. SOFTWARE WAS USED TO PERFORM THE SOUNDING SELECTION AND CONTOUR GENERATION.
9. THE INFORMATION DEPICTED ON THIS MAP REPRESENT THE RESULTS OF SURVEYS MADE ON THE DATES INDICATED AND CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.
10. THE POSITIONS OF THE AIDS TO NAVIGATION ARE PROVIDED FOR INFORMATION ONLY, AND SHOULD NOT BE USED FOR NAVIGATION.
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12. BASE MAPPING LINEWORK OR ORTHOPHOTOGRAPHY HAS BEEN COMPILED FROM A VARIETY OF SOURCES AND DATES AND IS INTENDED TO PORTRAY GENERAL CHARACTERISTICS OF THE SHORELINE AND OTHER FEATURES. TEMPORAL CHANGES MAY HAVE OCCURRED SINCE THIS DATASET WAS COLLECTED AND SOME PARTS OF THE DATA MAY NO LONGER BE AN ACCURATE REPRESENTATION OF THE SURFACE CONDITIONS.

US Army Corps of Engineers Philadelphia District

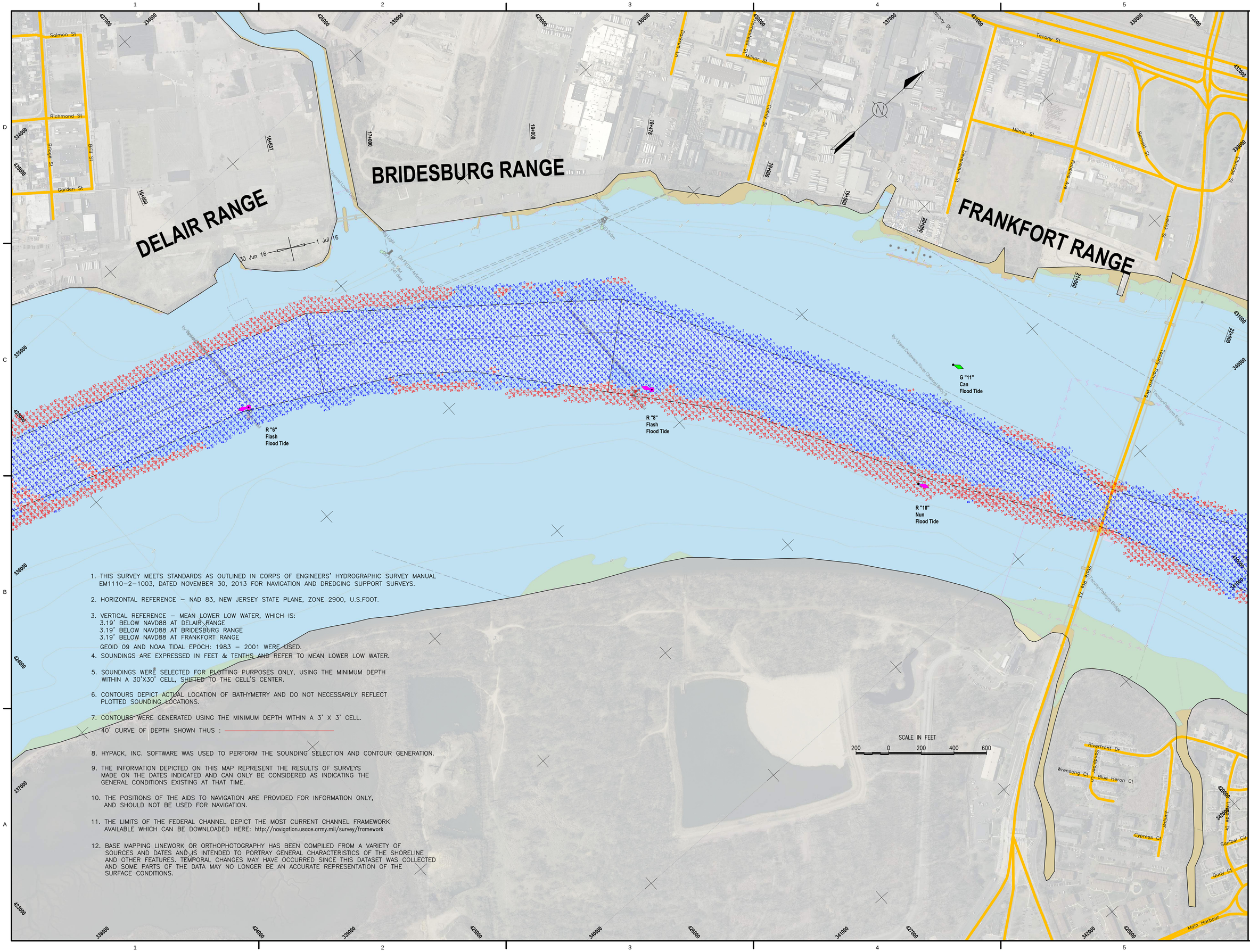
MARK	ACTION	DESCRIPTION	DATE	BY

U.S. ARMY CORPS OF ENGINEERS
PHILADELPHIA DISTRICT
PHILADELPHIA, PA 19107-3390
www.nap.usace.army.mil

PROCESSED BY: W.Miller
DWN BY: WHM
CKD BY:
REVIEWED BY:
SURVEY DATE: 30 Jun 16
VESSEL: Dauntless
DWG SCALE: 1"=200'
PLOT DATE: 27 Jun 16
REVISION REV
CONTRACT NUMBER:
APPROVED BY:
PLOTTED BY: W.Miller
FILE NAME: 65722

DELAWARE RIVER
PHILADELPHIA TO TRENTON
DRAW AND DELAIR RANGES
STATION 7+000 TO 14+500

SHEET NUMBER
V-101



1. THIS SURVEY MEETS STANDARDS AS OUTLINED IN CORPS OF ENGINEERS' HYDROGRAPHIC SURVEY MANUAL EM1110–2–1003, DATED NOVEMBER 30, 2013 FOR NAVIGATION AND DREDGING SUPPORT SURVEYS.

2. HORIZONTAL REFERENCE – NAD 83, NEW JERSEY STATE PLANE, ZONE 2900, U.S.FOOT.

3. VERTICAL REFERENCE – MEAN LOWER LOW WATER, WHICH IS:
   3.19' BELOW NAVD88 AT DELAIR RANGE
   3.19' BELOW NAVD88 AT BRIDESBURG RANGE
   3.19' BELOW NAVD88 AT FRANKFORT RANGE
   GEOID 09 AND NOAA TIDAL EPOCH: 1983 – 2001 WERE USED.

4. SOUNDINGS ARE EXPRESSED IN FEET & TENTHS AND REFER TO MEAN LOWER LOW WATER.

5. SOUNDINGS WERE SELECTED FOR PLOTTING PURPOSES ONLY, USING THE MINIMUM DEPTH WITHIN A 30'X30' CELL, SHIFTED TO THE CELL'S CENTER.

6. CONTOURS DEPICT ACTUAL LOCATION OF BATHYMETRY AND DO NOT NECESSARILY REFLECT PLOTTED SOUNDING LOCATIONS.

7. CONTOURS WERE GENERATED USING THE MINIMUM DEPTH WITHIN A 3' X 3' CELL.
   40' CURVE OF DEPTH SHOWN THUS : ———

8. HYPACK, INC. SOFTWARE WAS USED TO PERFORM THE SOUNDING SELECTION AND CONTOUR GENERATION.

9. THE INFORMATION DEPICTED ON THIS MAP REPRESENT THE RESULTS OF SURVEYS MADE ON THE DATES INDICATED AND CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.

10. THE POSITIONS OF THE AIDS TO NAVIGATION ARE PROVIDED FOR INFORMATION ONLY, AND SHOULD NOT BE USED FOR NAVIGATION.

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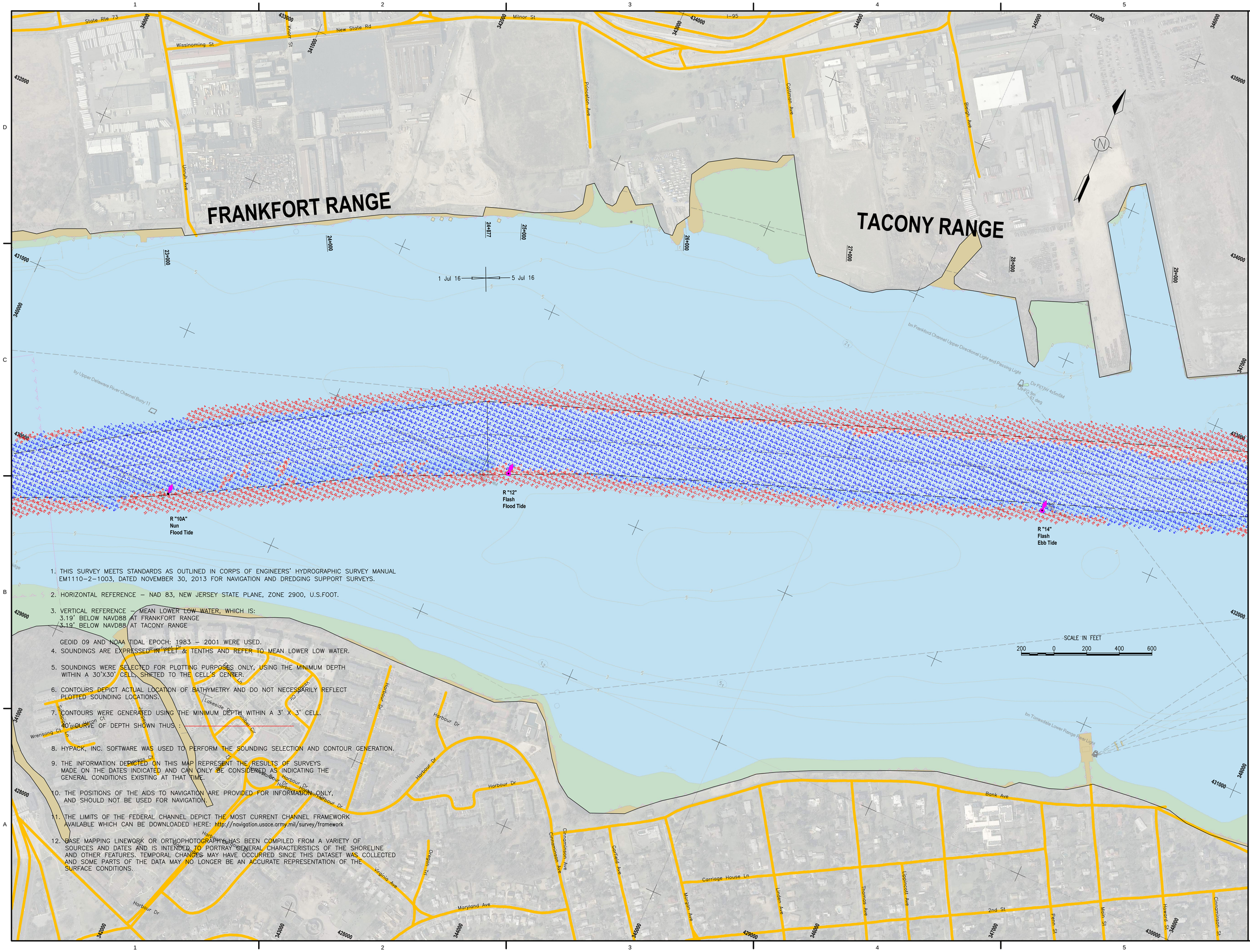
MARK	ACTION	DESCRIPTION	DATE	BY

PROCESSED BY: W.Miller	PLOT DATE: 27 Jul 16
DWN BY: W.Miller	REVISION: REV
CKD BY:	CONTRACT NUMBER:
REVIEWED BY:	APPROVED BY:
SURVEY DATE: 16 Dec 15	VESSEL: Dauphinais
PLOTTED BY: W.Miller	
DWG SCALE: As Shown	FILE NAME: 65232
1" = 300'	

U.S. ARMY CORPS OF ENGINEERS
PHILADELPHIA DISTRICT
PHILADELPHIA, PA 19107-3390
www.nap.usace.army.mil

DELAWARE RIVER
PHILADELPHIA TO TRENTON
DRAW AND DELAIR RANGES
STATION 14+500 TO 22+000

SHEET NUMBER
V-102



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2. HORIZONTAL REFERENCE – NAD 83, NEW JERSEY STATE PLANE, ZONE 2900, U.S.FOOT.

3. VERTICAL REFERENCE – MEAN LOWER LOW WATER, WHICH IS:
   3.19' BELOW NAVD88 AT FRANKFORT RANGE
   3.19' BELOW NAVD88 AT TACONY RANGE

   GEOID 09 AND NOAA TIDAL EPOCH: 1983 – 2001 WERE USED.

4. SOUNDINGS ARE EXPRESSED IN FEET & TENTHS AND REFER TO MEAN LOWER LOW WATER.

5. SOUNDINGS WERE SELECTED FOR PLOTTING PURPOSES ONLY, USING THE MINIMUM DEPTH WITHIN A 30'X30' CELL, SHIFTED TO THE CELL'S CENTER.

6. CONTOURS DEPICT ACTUAL LOCATION OF BATHYMETRY AND DO NOT NECESSARILY REFLECT PLOTTED SOUNDING LOCATIONS.

7. CONTOURS WERE GENERATED USING THE MINIMUM DEPTH WITHIN A 3' X 3' CELL.
   40' CURVE OF DEPTH SHOWN THUS :

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9. THE INFORMATION DEPICTED ON THIS MAP REPRESENT THE RESULTS OF SURVEYS MADE ON THE DATES INDICATED AND CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS EXISTING AT THAT TIME.

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US Army Corps of Engineers
Philadelphia District

MARK	ACTION	DESCRIPTION	DATE	BY

PROCESSED BY: CAzebenhenko
PLOT DATE: 27 Jul 16
REVISION: REV
DWN BY: WM
CKD BY: WMiller
CONTRACT NUMBER:
REVIEWED BY:
APPROVED BY:
SURVEY DATE: As Shown
VESSEL: Dauntless
PLOTTED BY: W Miller
DWG SCALE: 1:300
FILE NAME: 22-29

U.S. ARMY CORPS OF ENGINEERS
PHILADELPHIA DISTRICT
PHILADELPHIA, PA 19107-3390
www.nap.usace.army.mil

DELAWARE RIVER
PHILADELPHIA TO TRENTON
FRANKFORT AND TACONY RANGES
STATION 22+000 TO 29+000

SHEET NUMBER
V-103