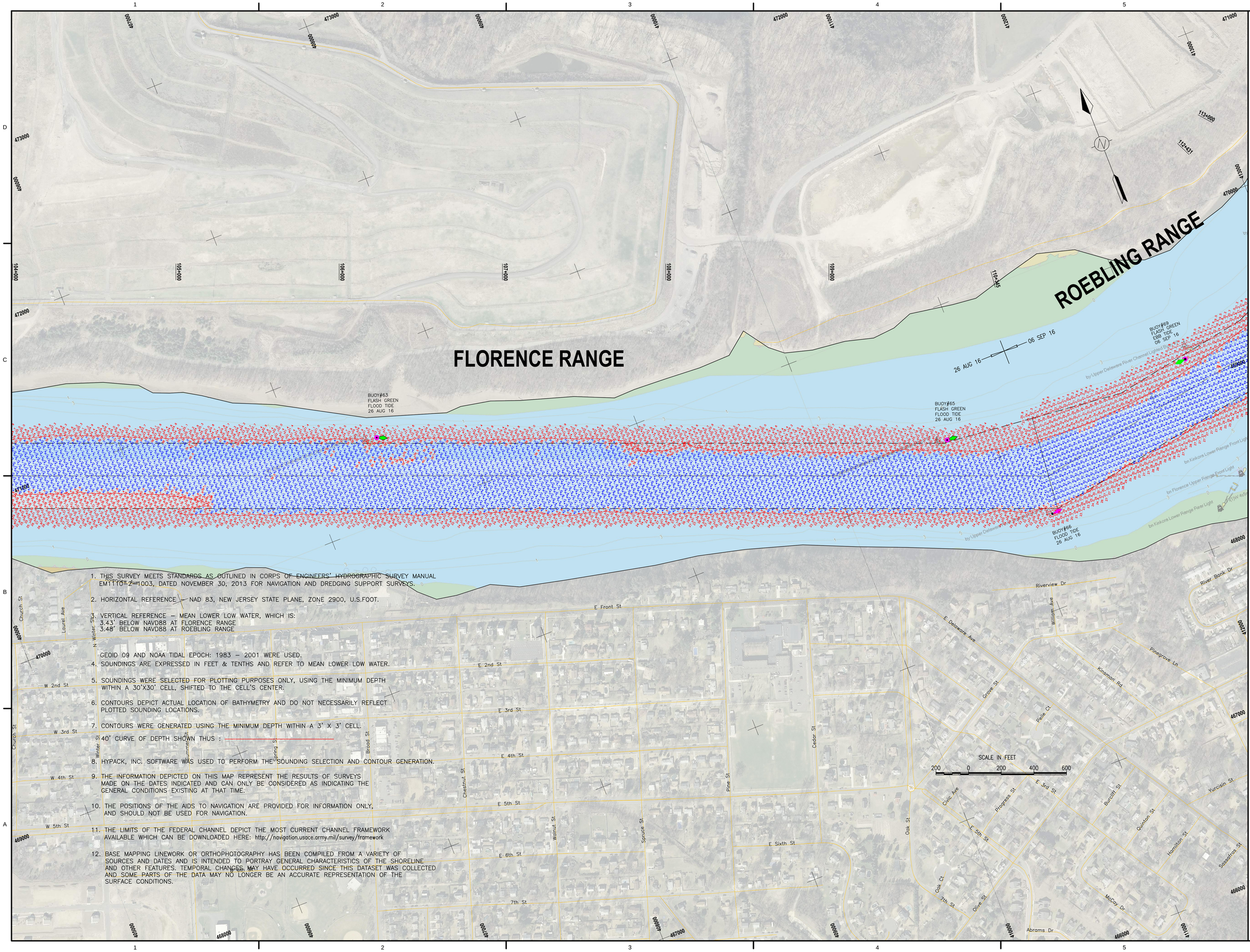


1. THIS SURVEY MEETS STANDARDS AS OUTLINED IN CORPS OF ENGINEERS' HYDROGRAPHIC SURVEY MANUAL EM1110-2-1003, DATED NOVEMBER 30, 2013 FOR NAVIGATION AND DREDGING SUPPORT SURVEYS.
2. HORIZONTAL REFERENCE – NAD 83, NEW JERSEY STATE PLANE, ZONE 2900, U.S.FOOT.
3. VERTICAL REFERENCE – MEAN LOWER LOW WATER,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

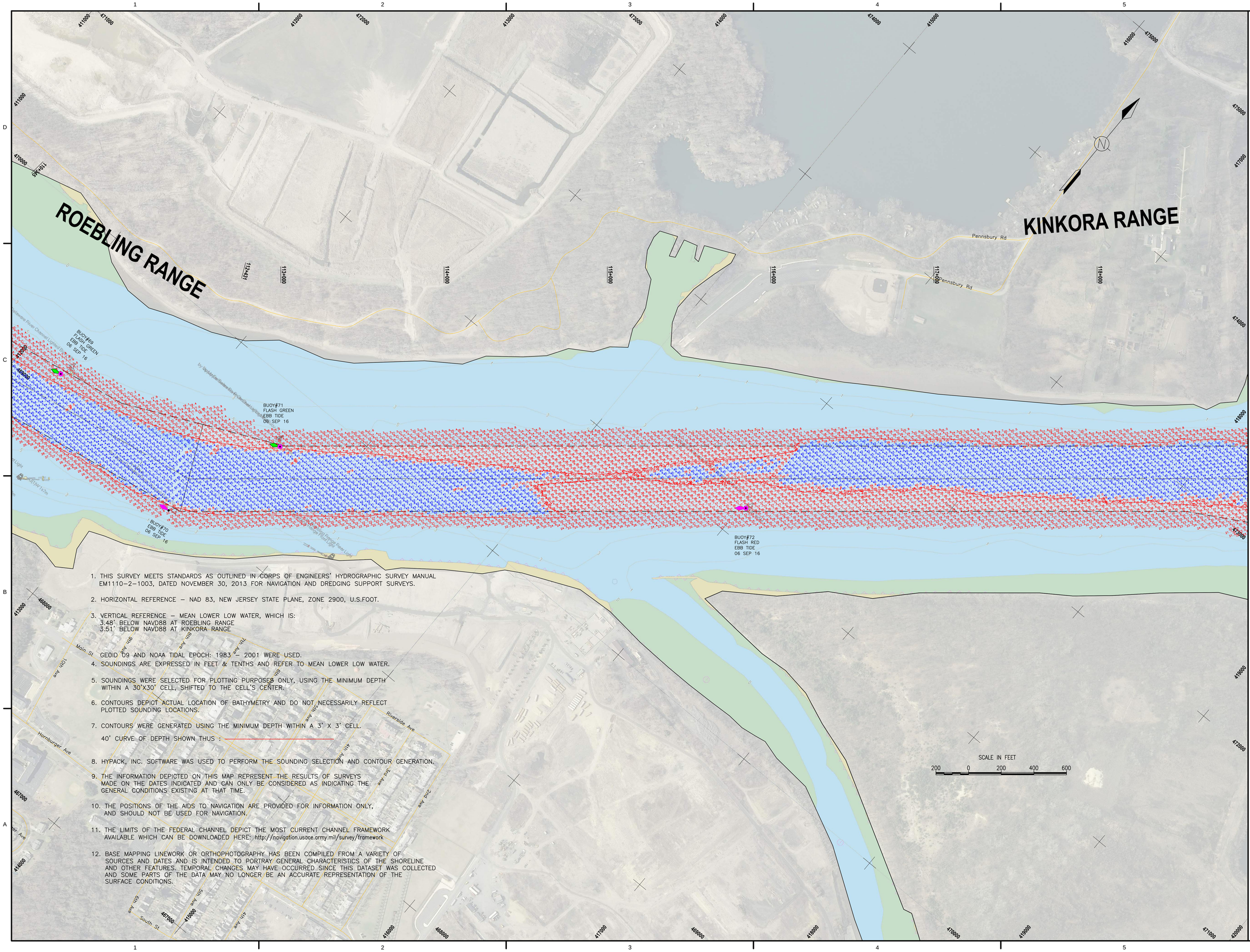
PROCESSED BY: MAG
DWN BY: WHM
CKD BY:
REVIEWED BY:
SURVEY DATE: AS SHOWN
VESSEL: DAUNTLESS
DWG SCALE: 1"=200'
FILE NAME: 65784.dwg
PLOT DATE: 20 OCT 16
REVISION
CONTRACT NUMBER:
APPROVED BY:
PLOTTED BY: MAG

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

DELAWARE RIVER
PHILADELPHIA TO TRENTON
FLORENCE TO ROEBLING RANGES
STATION 104+000 TO 112+431

CHANNEL EXAMINATION

SHEET NUMBER
V-114



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:
   3.48' BELOW NAVD88 AT ROEBLING RANGE
   3.51' BELOW NAVD88 AT KINKORA 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.
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

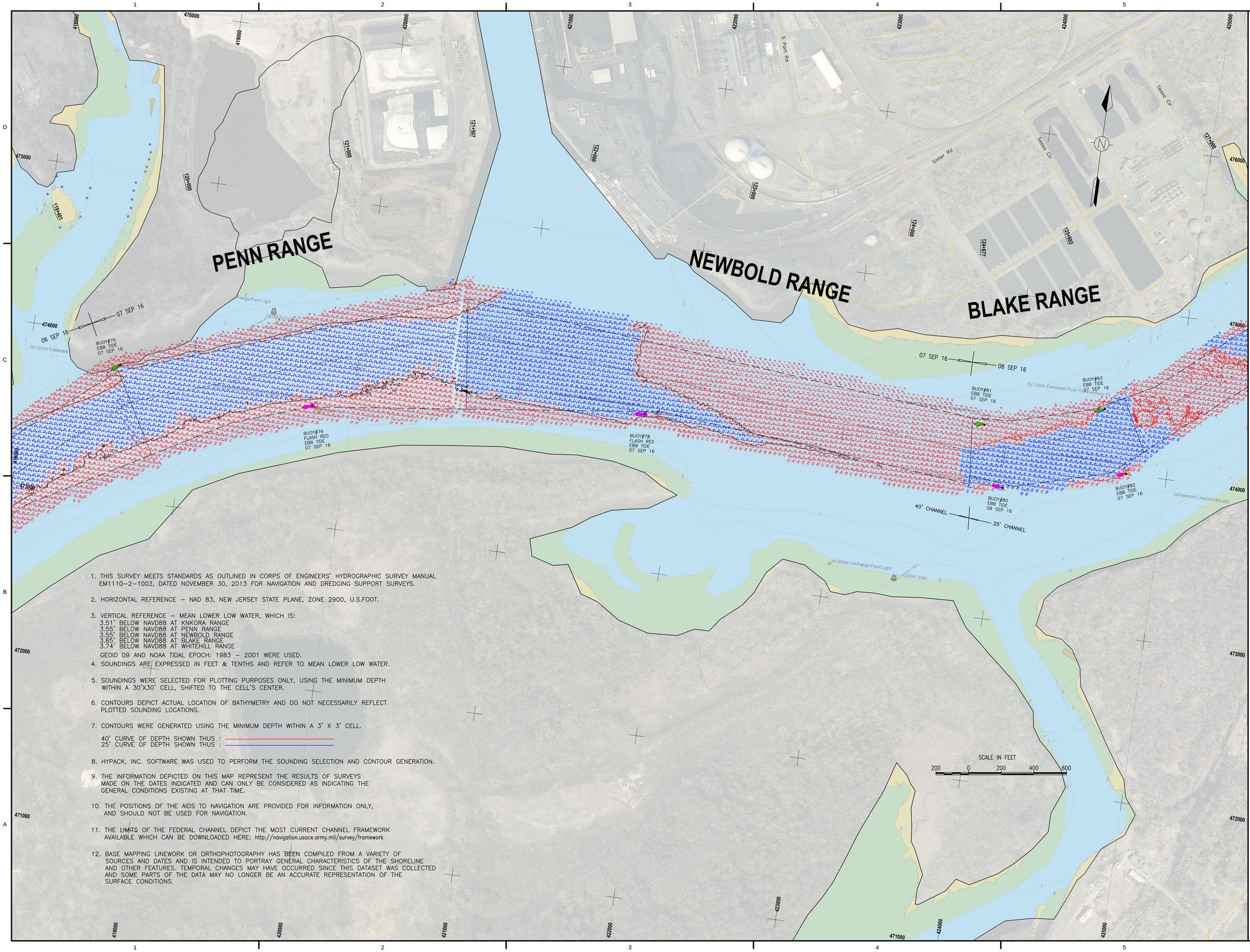
U.S. ARMY CORPS OF ENGINEERS
PHILADELPHIA DISTRICT
PHILADELPHIA, PA 19107-3390
www.nap.usace.army.mil

PROCESSED BY: MAG
DWN BY: WHM
CKD BY:
REVIEWED BY:
SURVEY DATE: 06 SEP 16
VESSEL: DAUNTLESS
DWG SCALE: 1"=200'
PLOT DATE: 20 OCT 16
REVISION
CONTRACT NUMBER:
APPROVED BY:
PLOTTED BY: MAG
FILE NAME: 65785.dwg

DELAWARE RIVER
PHILADELPHIA TO TRENTON
ROEBLING AND KINKORA RANGES
STATION 112+431 TO 118+200

CHANNEL EXAMINATION

SHEET NUMBER
V-115



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:
   3.51' BELOW NAVD88 AT KNKORA RANGE
   3.55' BELOW NAVD88 AT PENN RANGE
   3.55' BELOW NAVD88 AT NEWBOLD RANGE
   3.65' BELOW NAVD88 AT BLAKE RANGE
   3.74' BELOW NAVD88 AT WHITEHILL 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 :
   25' 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: MAG
DWN BY: WWM
CKD BY:
REVIEWED BY:
SURVEY DATE: AS SHOWN
VESSEL: DAUNTLESS
DWG SCALE: 1"=200'
FILE NAME: 05786.dwg
PLOT DATE: 20 OCT 16
REVISION
CONTRACT NUMBER:
APPROVED BY:
PLOTTED BY: MAG

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

DELAWARE RIVER
PHILADELPHIA TO TRENTON
KINKORA TO WHITEHILL RANGES
STATION 118+200 TO 126+000

CHANNEL EXAMINATION

SHEET NUMBER
V-116