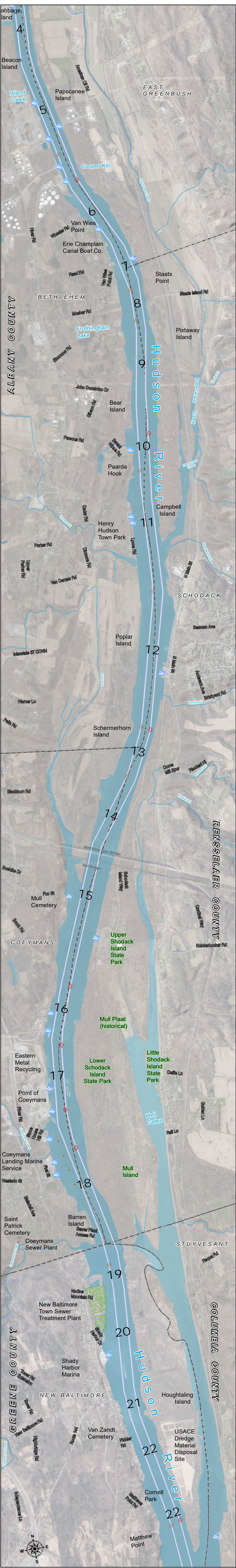
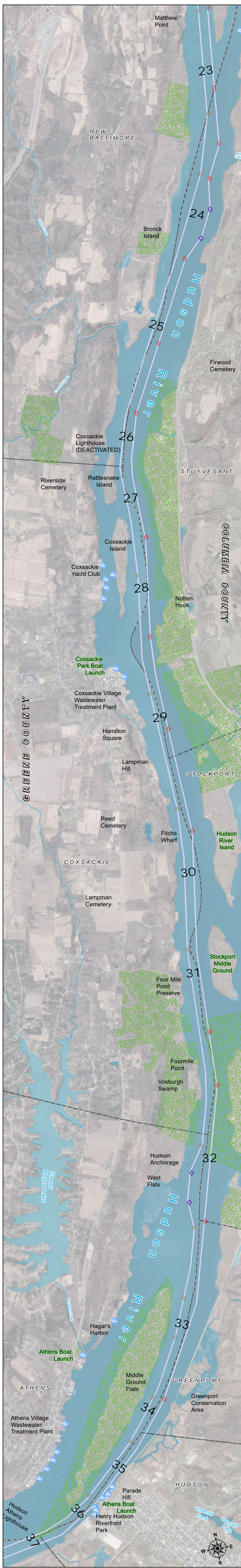


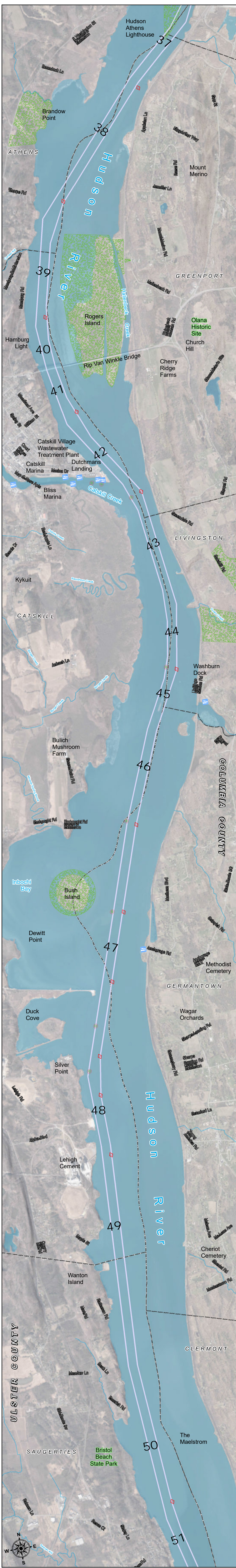
Map A: Reach 1N - 2



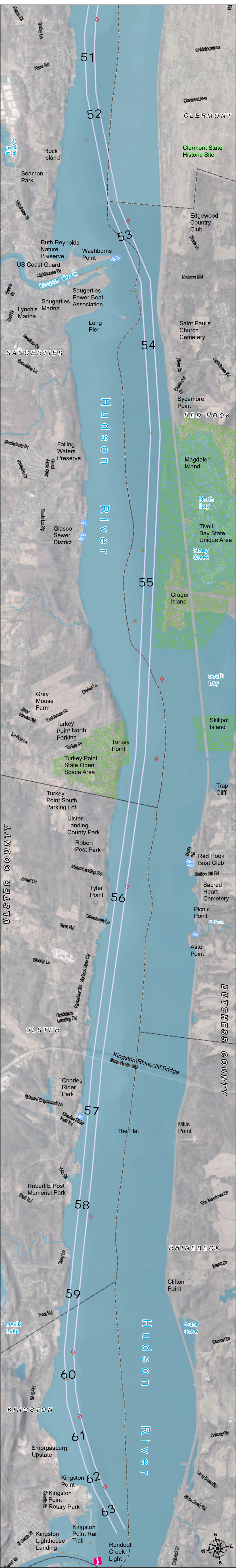
Map B: Reach 3 - 21



Map C: Reach 22 - 37



Map D: Reach 37 - 51



Map E: Reach 51 - 63

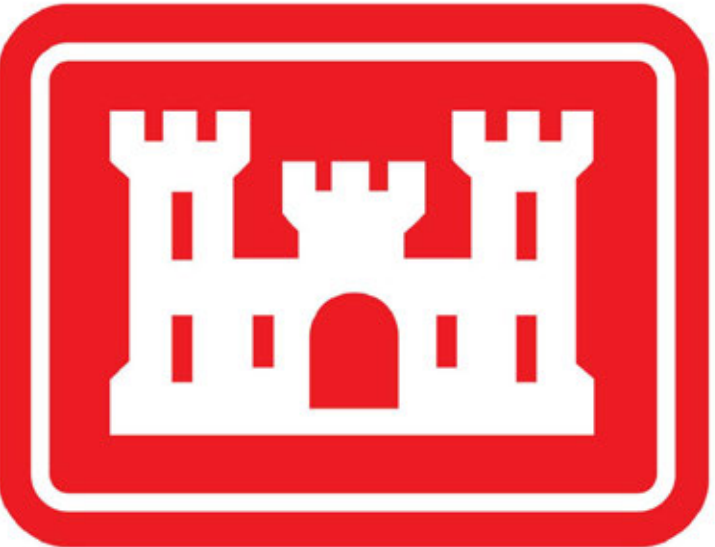
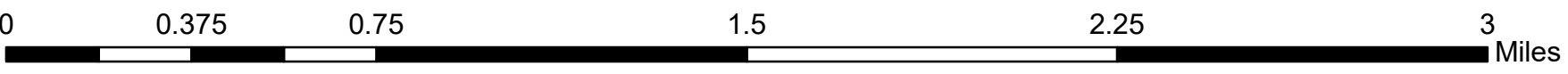
Not to be used for navigation

Disclaimer - While the United States Army Corps of Engineers (hereinafter referred to as USACE) has made every reasonable effort to ensure the accuracy of the maps and associated data, it should be explicitly noted that USACE makes no warranty, representation, or guarantee, either expressed or implied, as to the content, sequence, accuracy, timeliness, or completeness of any of the data provided herein. The USACE, its officers, agents, employees, or servants shall assume no liability of any nature for any errors, omissions, or inaccuracies in the information provided regardless of the cause. The USACE, its officers, agents, employees, or servants shall assume no liability for any decisions made or actions taken or not taken by the user of the maps and associated data in reliance upon any information or data furnished here. By using these maps and associated data the user does so entirely at their own risk and explicitly acknowledges that he/she is aware of and agrees to be bound by this disclaimer and agrees not to present any claim or demand of any nature against the USACE, its officers, agents, employees, or servants in any forum whatsoever for any damages of any nature whatsoever that may result from or be caused in any way by the use of the maps and associated data.

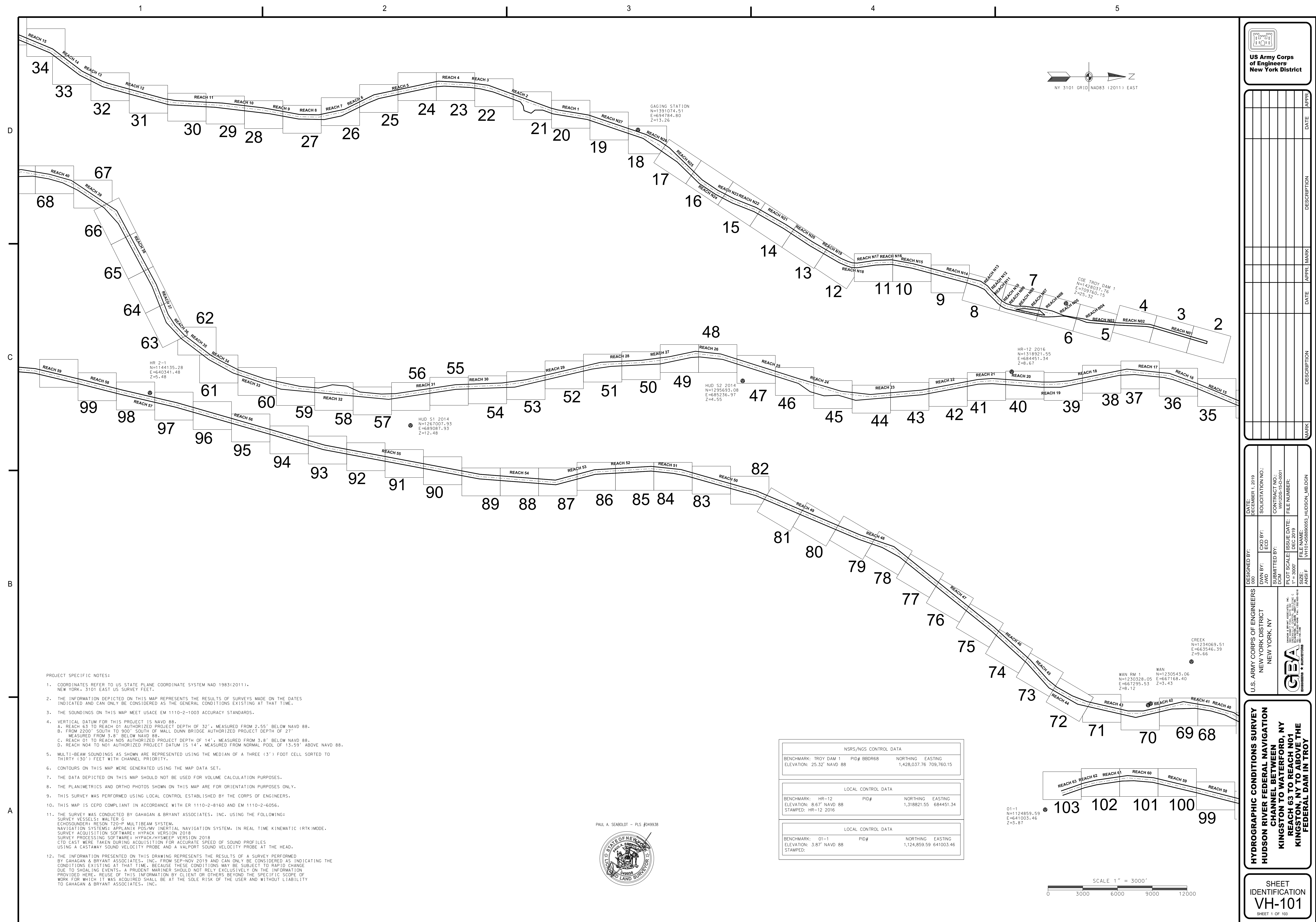
Sources: ESRI, USACE, NYSDOT, NYSITS GPO, NYSITS GIS, Service Layer Credits, USGS The National Map: 3D Elevation Program, Data refreshed April, 2017. Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the Coordinate system used is NAD 1927 State Plane New York East. Basemap courtesy of ESRI. Bathymetry information is expressed in meters courtesy of ESRI. 1 Meter = 3.2808 Feet. Local map location: L:\Project Maps\400\_District\_Protects.pdf

# Hudson River Kingston to Waterford, NY Survey Reach Key Map

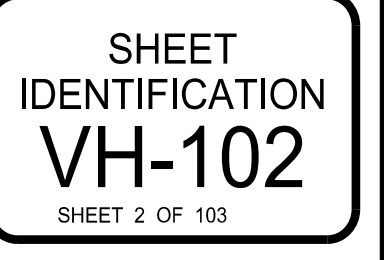
Light House	Tributaries & Streams
Unmarked Buoys	Dikes
Green Buoys	Federal Navigation Channel Line
Red Buoys	DEC Lands
Boat Launch	Cities and Towns
	Counties
	Hydrographic Features



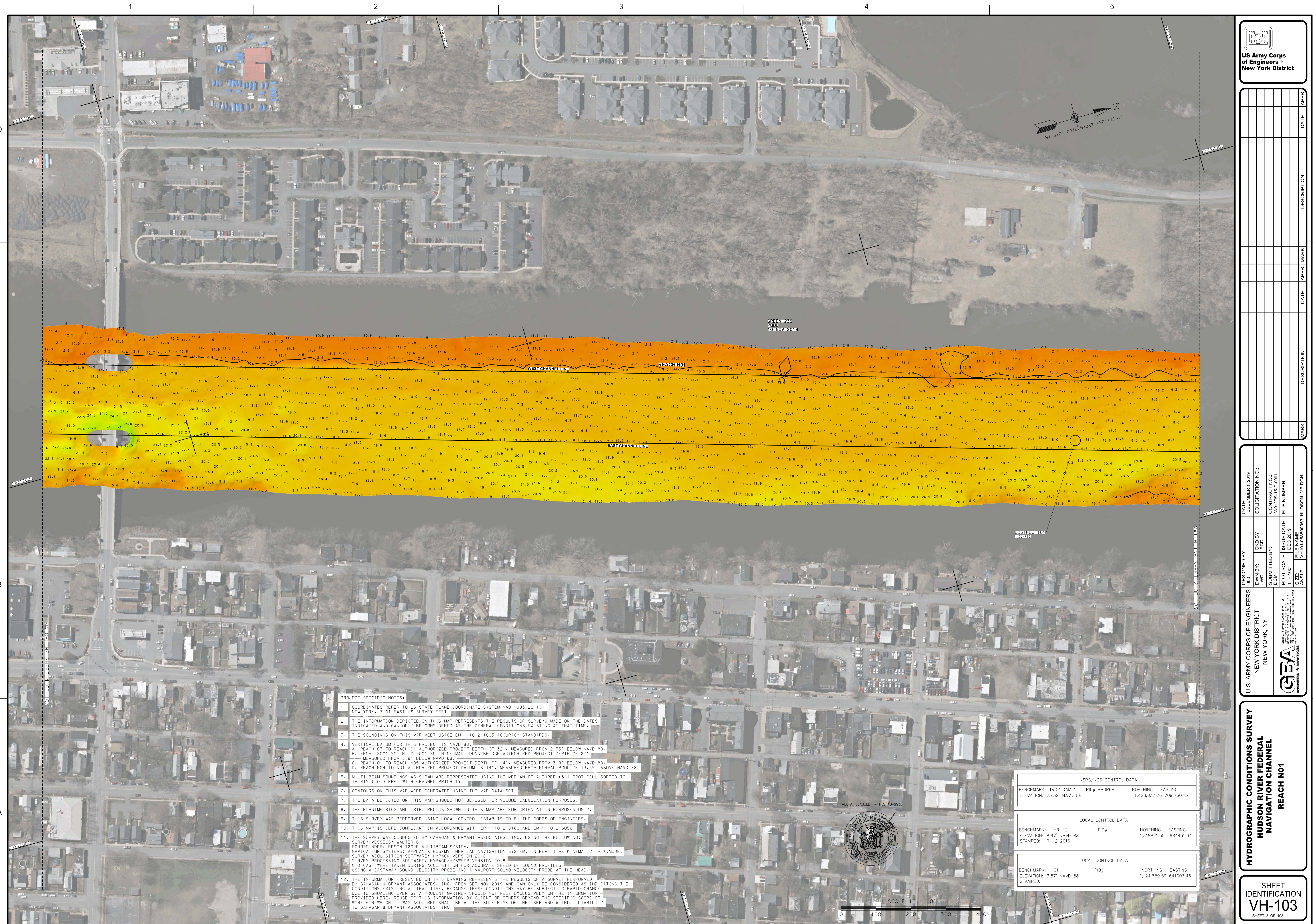




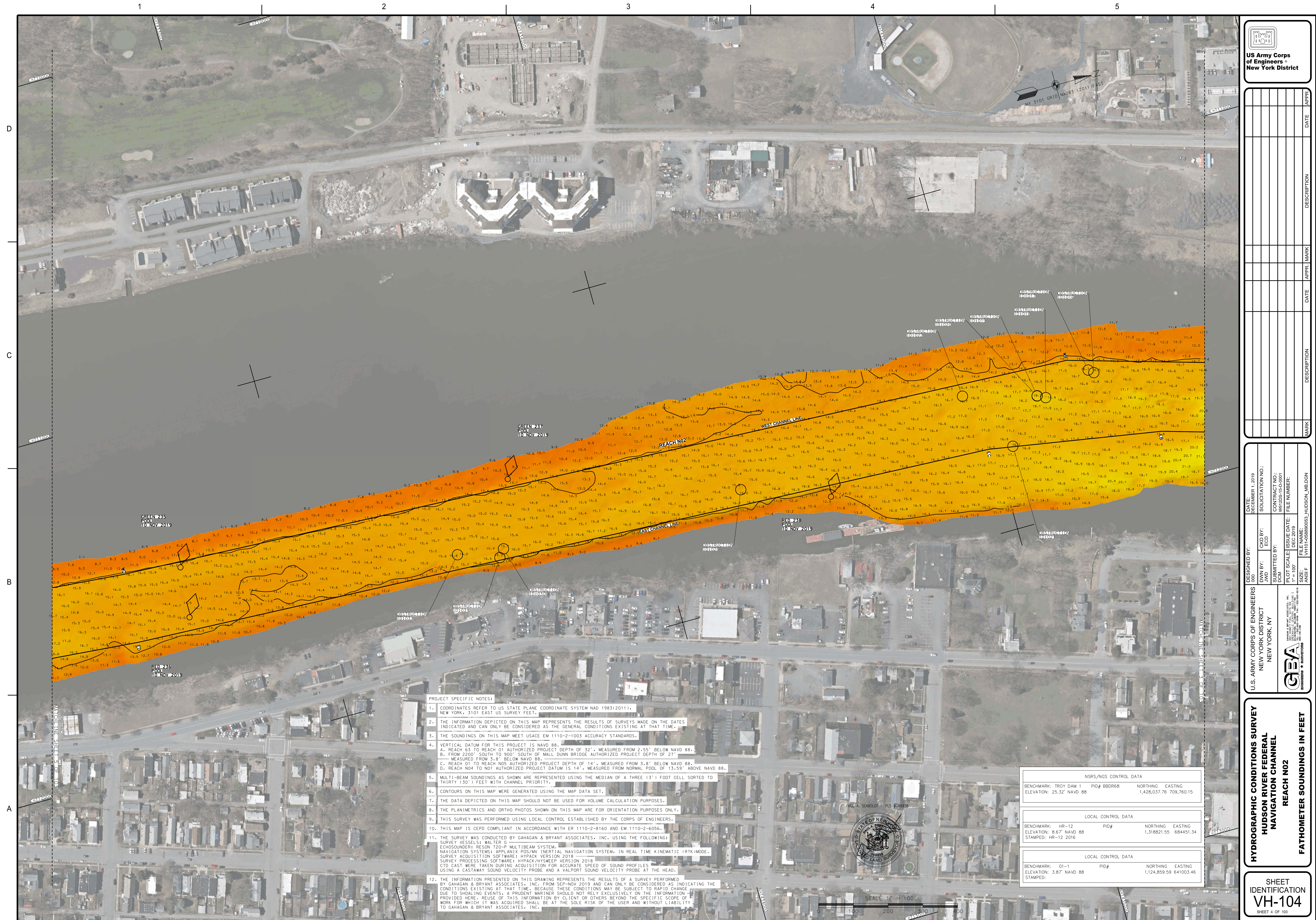











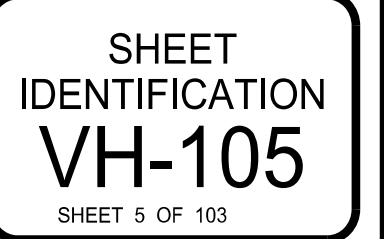
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 <b>GENERAL SERVICES ADMINISTRATION</b> <b>U.S. DEPARTMENT OF COMMERCE</b>	SPECIAL AGT. IN CHARGE, ASST. DIR. FOR ACQUISITION FEDERAL BUREAU OF INVESTIGATION 400 ANDERSON DRIVE, S.W. ATLANTA, GEORGIA 30334-0001 (404) 556-1600		U.S. ARMY CORPS OF ENGINEERS NEW YORK DISTRICT NEW YORK, NY		DESIGNED BY: DEC 2019
	DOW BY: JWD ECD	CXC BY: JWD ECD	SOLICITATION NO.: 1919	CONTRACT NO.: 1919	FILE NUMBER: 1919
SUBMITTED BY: 1919		PILOT SCALE 1919	ISSUE DATE: DEC 2019	FILE NAME: 1919	1919

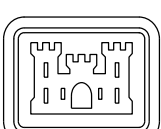
**HYDROGRAPHIC CONDITIONS SURVEY  
HUDSON RIVER FEDERAL  
NAVIGATION CHANNEL  
REACH N02  
FATHOMETER SOUNDINGS IN FEET**

SHEET  
IDENTIFICATION  
**VH-104**  
SHEET 4 OF 103










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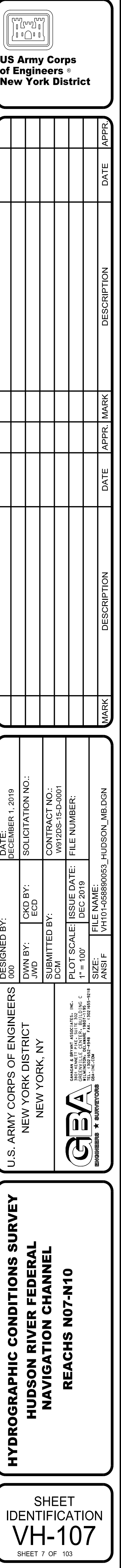
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 <b>GBCA</b> <small>GENERAL BUILDING CONTRACTORS ASSOCIATION OF AMERICA</small>	U.S. ARMY CORPS OF ENGINEERS NEW YORK DISTRICT NEW YORK, NY		DESIGNED BY: 000	DATE: DECEMBER 1, 2019
	PLOT SCALE: 1" = 40' (1" = 20' & 1" = 80')		ISSUE DATE: 12/01/19	
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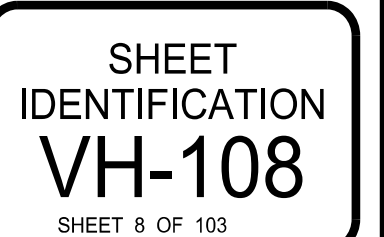
**HYDROGRAPHIC CONDITIONS SURVEY  
HUDSON RIVER FEDERAL  
NAVIGATION CHANNEL  
REACH N05-N06**

SHEET  
IDENTIFICATION  
**VH-106**  
SHEET 6 OF 103

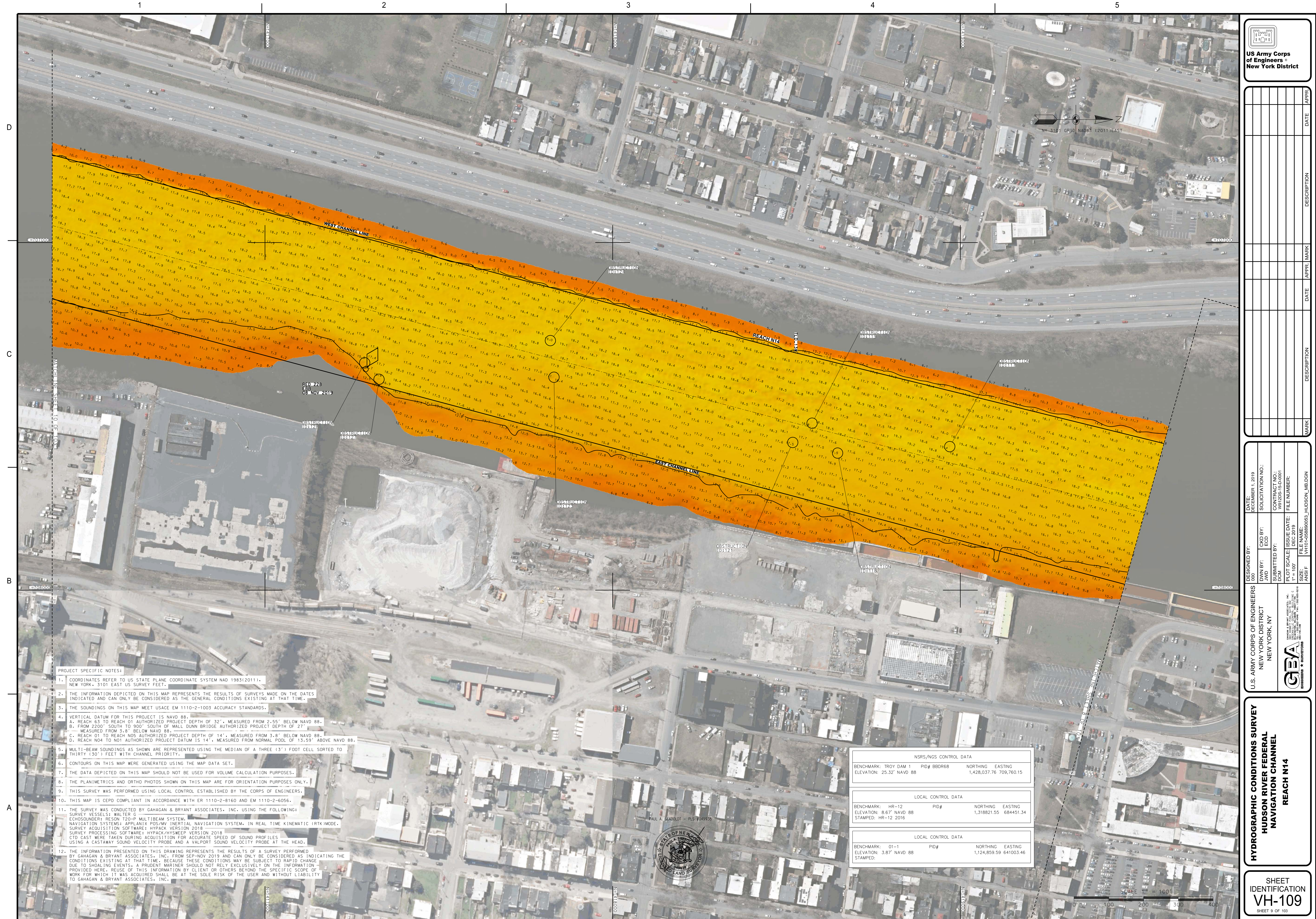




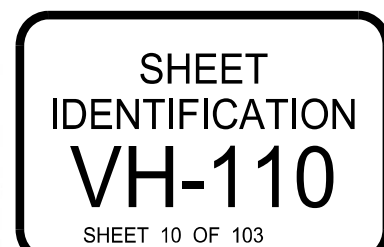




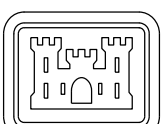
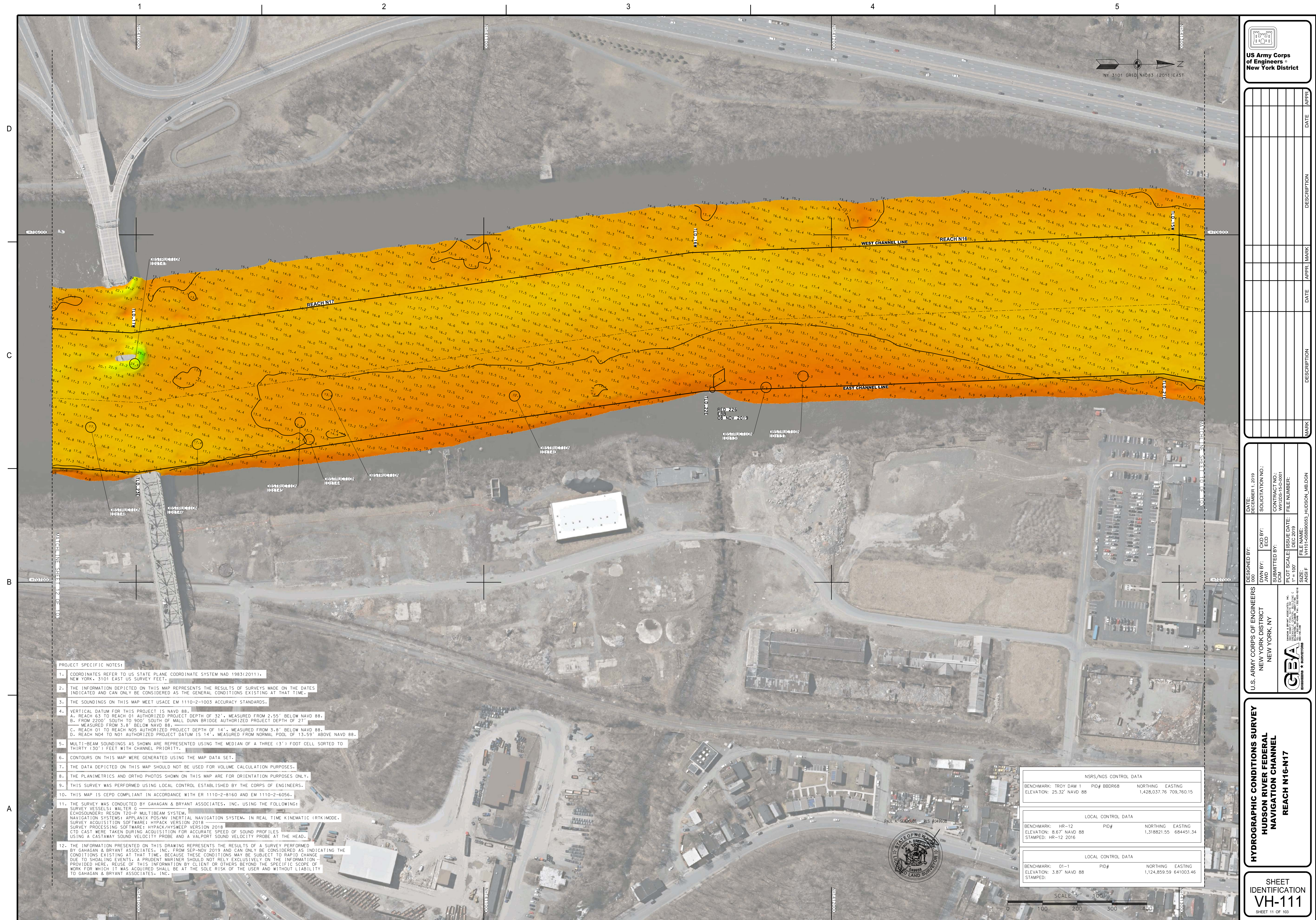













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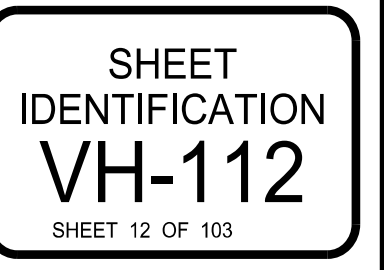
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 <b>GENERAL SERVICES ADMINISTRATION</b> <b>U.S. DEPARTMENT OF COMMERCE</b>	SPECIAL AGT. IN CHARGE, ASST. DIR. FOR ACQUISITION FEDERAL BUREAU OF INVESTIGATION U.S. DEPARTMENT OF JUSTICE 400 ANDOVER ST., N.W. WASHINGTON, D.C. 20535-0001		ORDERED BY: U.S. ARMY CORPS OF ENGINEERS NEW YORK DISTRICT NEW YORK, NY		DATE: 12/19/91 TIME: 10:00 AM
	DOW BY: JWD	CXC BY: ECD	SOLICITATION NO.: 1919	CONTRACT NO.: 1919	FILE NAME: 1919
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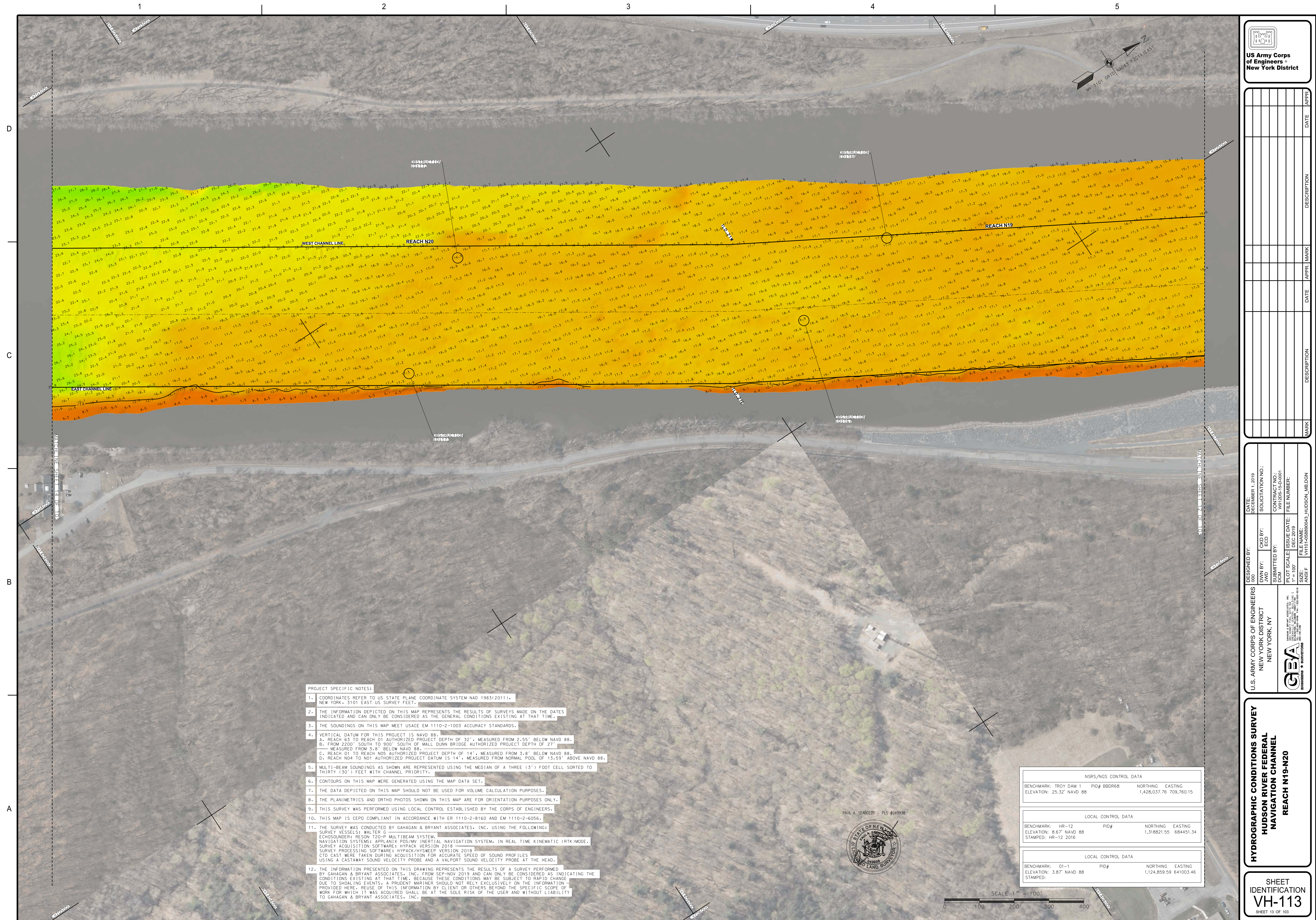
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HUDSON RIVER FEDERAL  
NAVIGATION CHANNEL  
REACH N16-N17**


SHEET  
IDENTIFICATION  
**VH-111**  
SHEET 11 OF 103





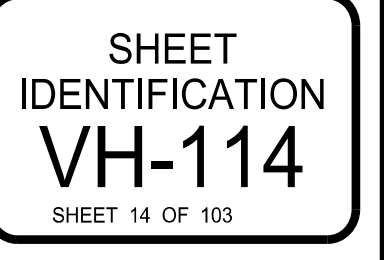


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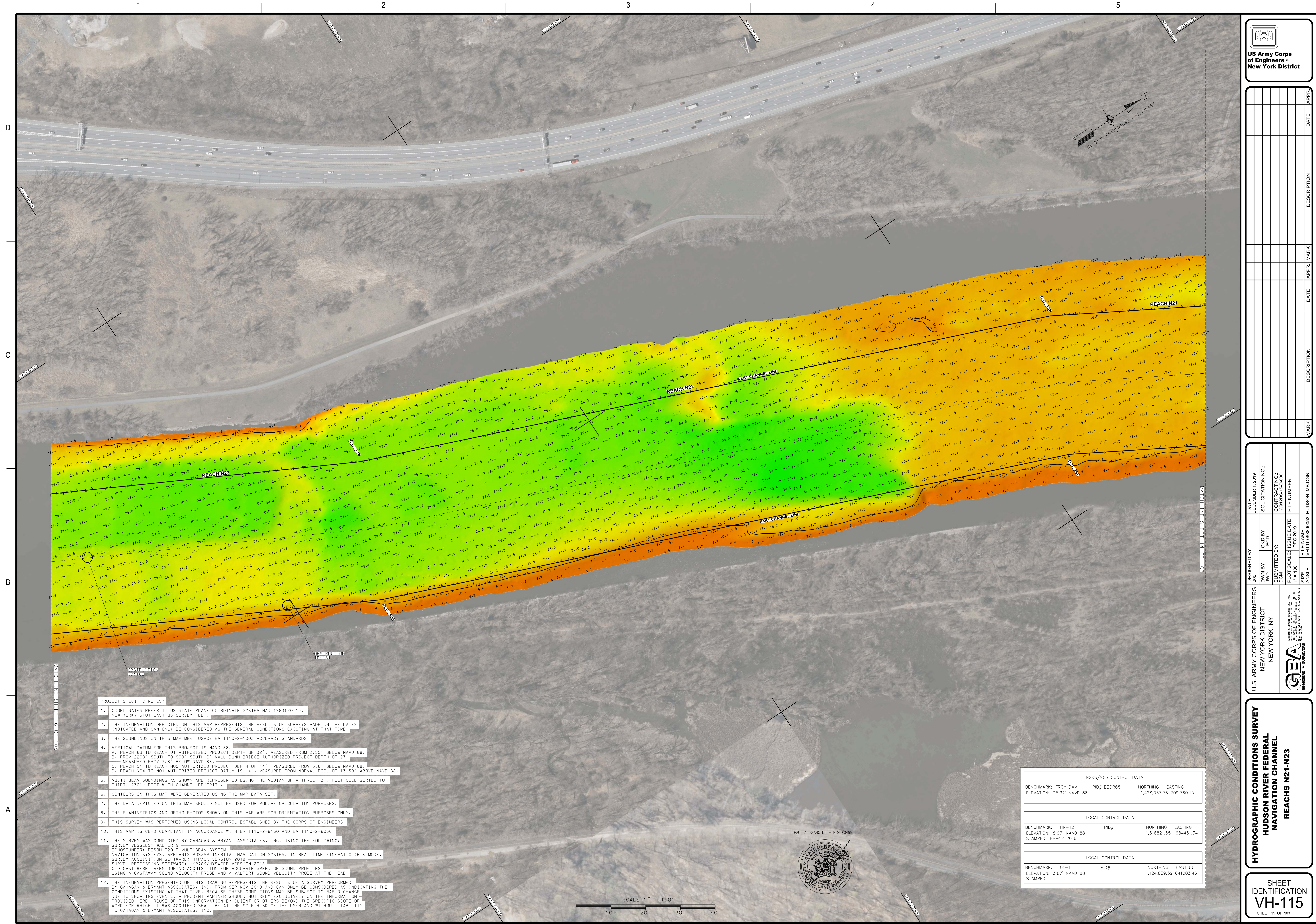
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	T = 100'	DEC 2019			
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	WAXED	WWW.FEDSPRING.HUDSON.MIL.DON			

**HYDROGRAPHIC CONDITIONS SURVEY  
HUDSON RIVER FEDERAL  
NAVIGATION CHANNEL  
REACH N19-N20**





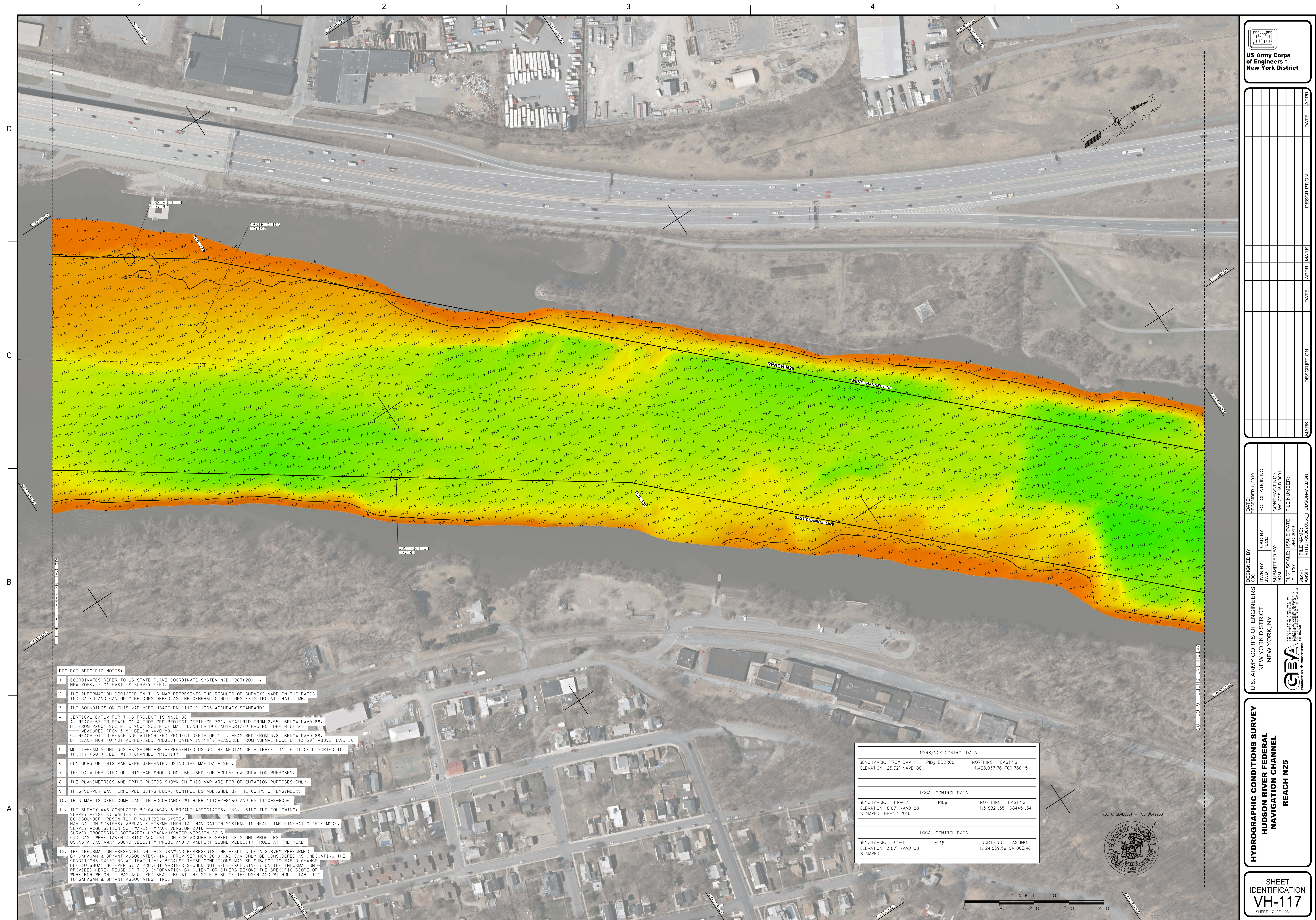




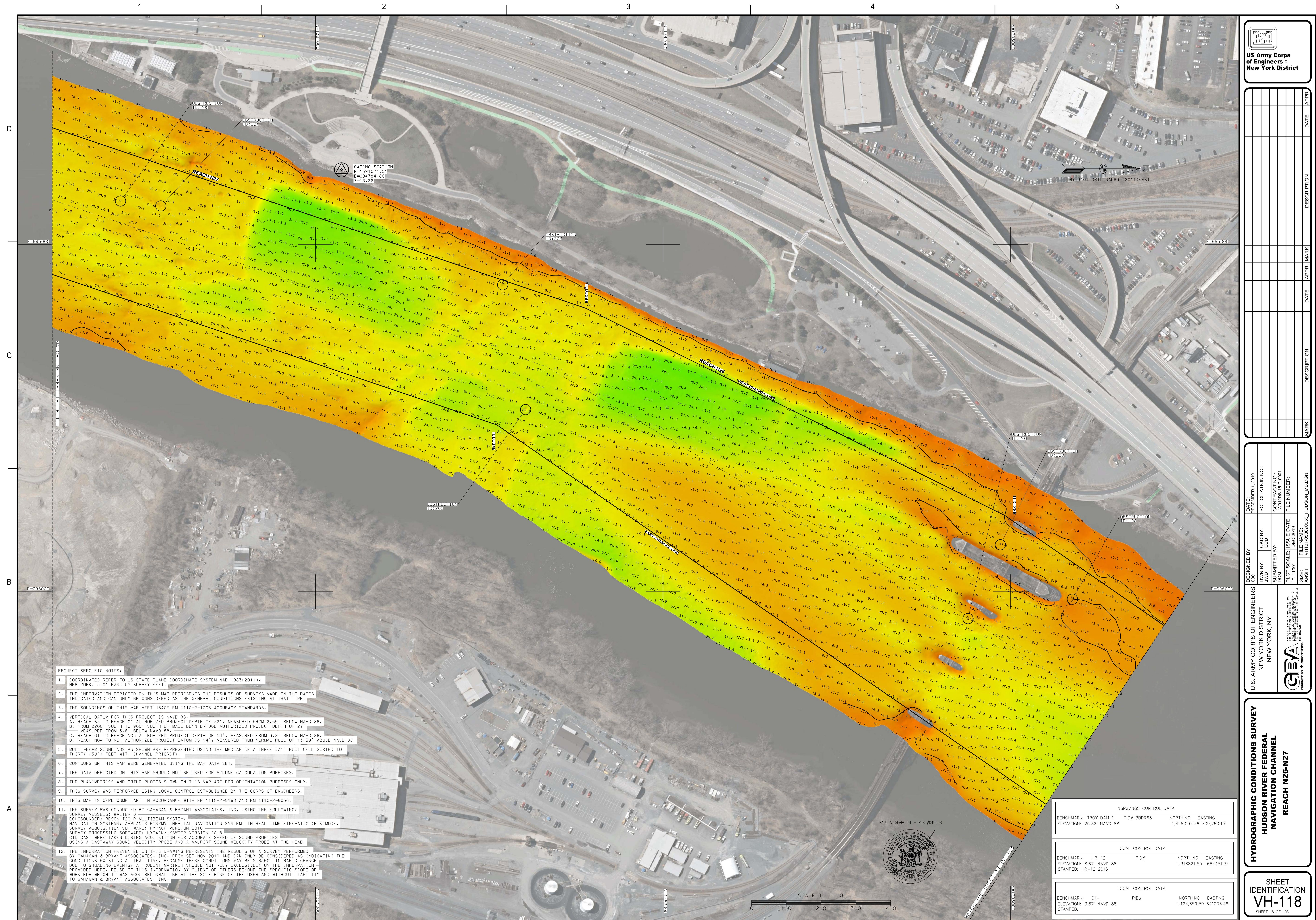




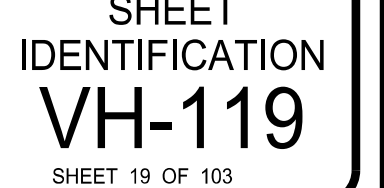
















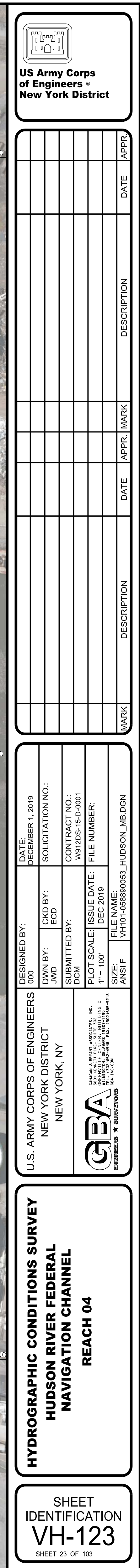




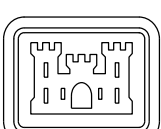
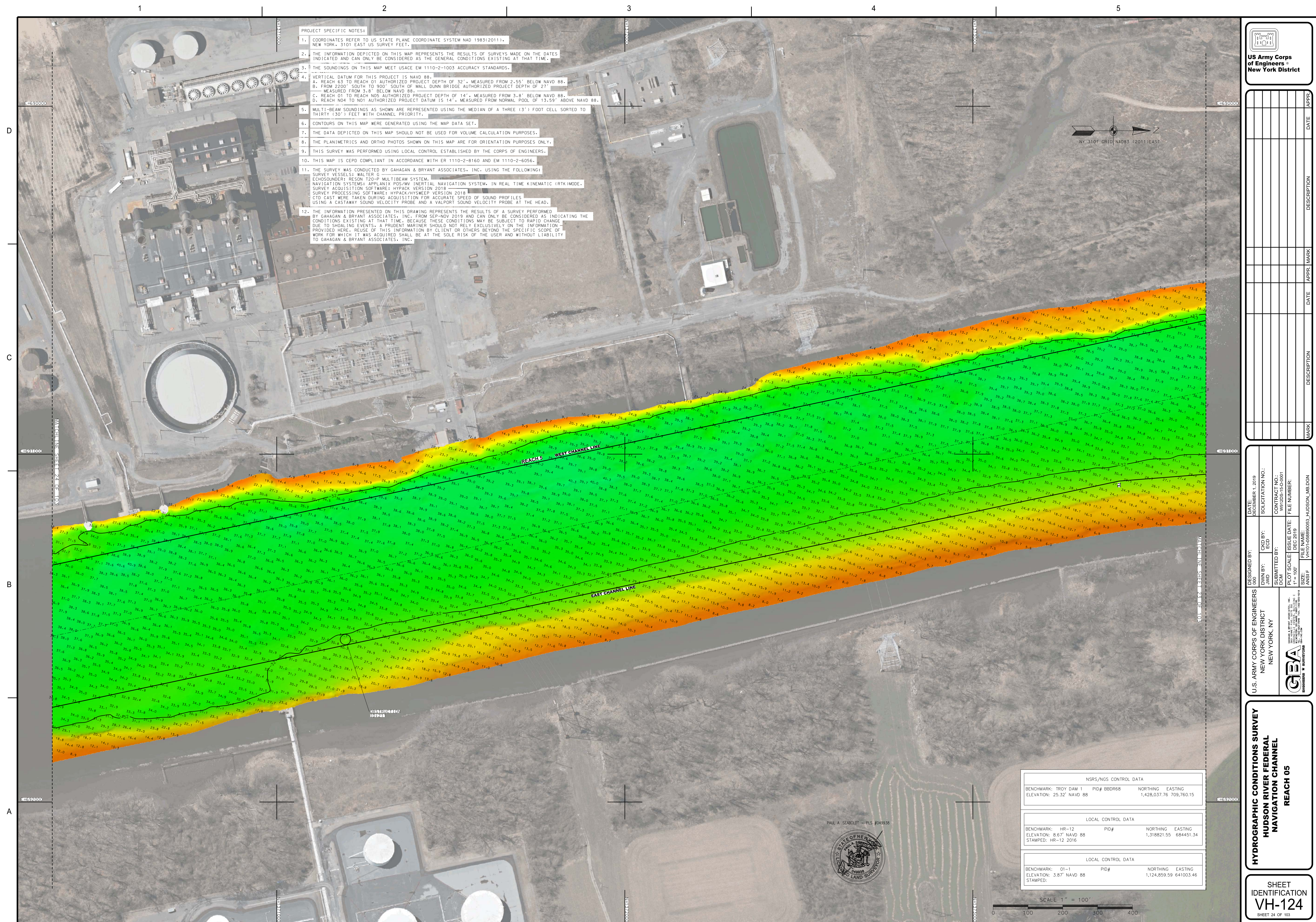






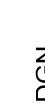
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**US Army Corps  
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New York District**

[illegible]

 GOVERNMENT SUPPLY ADMINISTRATION	U.S. ARMY CORPS OF ENGINEERS NEW YORK DISTRICT NEW YORK, NY		DESIGNED BY: 0001	DATE: DECEMBER 1, 2019
	DRAWN BY: JWD	CHK BY: ECD	SOLICITATION NO.: W91205-15-D-0001	CONTRACT NO.: W91205-15-D-0001
	SUBMITTED BY: DCM		FILE NUMBER:	
	PLOT SCALE: 1" = 100'	ISSUE DATE: DEC 2019	FILE NAME: ANSIF	
	SIZE: 14104-03550653, HUDSON, MB DGN			

**HYDROGRAPHIC CONDITIONS SURVEY  
HUDSON RIVER FEDERAL  
NAVIGATION CHANNEL**

SHEET  
IDENTIFICATION  
**VH-124**  
SHEET 24 OF 103



1. COORDINATES REFER TO US STATE PLANE COORDINATE SYSTEM NAD 1983(2011), NEW YORK, 3101 EAST US SURVEY FEET.
2. THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATES INDICATED AND CAN ONLY BE CONSIDERED AS THE GENERAL CONDITIONS EXISTING AT THAT TIME.
3. THE SOUNDINGS ON THIS MAP MEET USACE EM 1110-2-1003 ACCURACY STANDARDS.
4. VERTICAL DATUM FOR THIS PROJECT IS NAVD 88.
  - A. REACH 63 TO REACH 01 AUTHORIZED PROJECT DEPTH OF 32', MEASURED FROM 2.55' BELOW NAVD 88.
  - B. FROM 2200' SOUTH TO 900' SOUTH OF MALL DUNN BEACH AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 2.55' BELOW NAVD 88.
  - C. REACH 01 TO REACH N05 AUTHORIZED PROJECT DEPTH OF 14', MEASURED FROM 3.8' BELOW NAVD 88.
  - D. REACH N04 TO NOT AUTHORIZED PROJECT DATUM IS 14', MEASURED FROM NORMAL POOL OF 13.59' ABOVE NAVD
5. MULTI-BEAM SOUNDINGS AS SHOWN ARE REPRESENTED USING THE MEDIAN OF A THREE (3') FOOT CELL SORTED TO THIRTY (30') FEET WITH CHANNEL PRIORITY.
6. CONTOURS ON THIS MAP WERE GENERATED USING THE MAP DATA SET.
7. THE DATA DEPICTED ON THIS MAP SHOULD NOT BE USED FOR VOLUME CALCULATION PURPOSES.
8. THE PLANIMETRICS AND ORTHO PHOTOS SHOWN ON THIS MAP ARE FOR ORIENTATION PURPOSES ONLY.
9. THIS SURVEY WAS PERFORMED USING LOCAL CONTROL ESTABLISHED BY THE CORPS OF ENGINEERS.
10. THIS MAP IS CEPD COMPLIANT IN ACCORDANCE WITH ER 1110-2-8160 AND EM 1110-2-6056.
11. THE SURVEY WAS CONDUCTED BY GAGAHAN & BRYANT ASSOCIATES, INC. USING THE FOLLOWING:
  - SURVEY VESSEL: 30' RIBBOAT
  - ECHOSOUNDER: RESON 720-M 2P-MULTIBEAM SYSTEM
  - NAVIGATION SYSTEMS: APPLANIX PLUS/MPX INERTIAL NAVIGATION SYSTEM, IN REAL TIME KINEMATIC (RTK) MODE.
  - SURVEY ACQUISITION SOFTWARE: HYPMACK SYSTEM 2018
  - SURVEY PROCESSING SOFTWARE: HYPMACK/HYMMER NAVIGATION SYSTEM 2018
  - C/D CORRECTION TABLES: HYPMACK/HYMMER NAVIGATION SYSTEM 2018
  - USING A CASTAWAY SOUND VELOCITY PROBE AND A VALPOD SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY GAGAHAN & BRYANT ASSOCIATES, INC. FROM SEP-NOV 2019 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO CHANGING INLET CONDITIONS, THE USER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WHICH IT WAS OBTAINED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO GAGAHAN & BRYANT ASSOCIATES, INC.

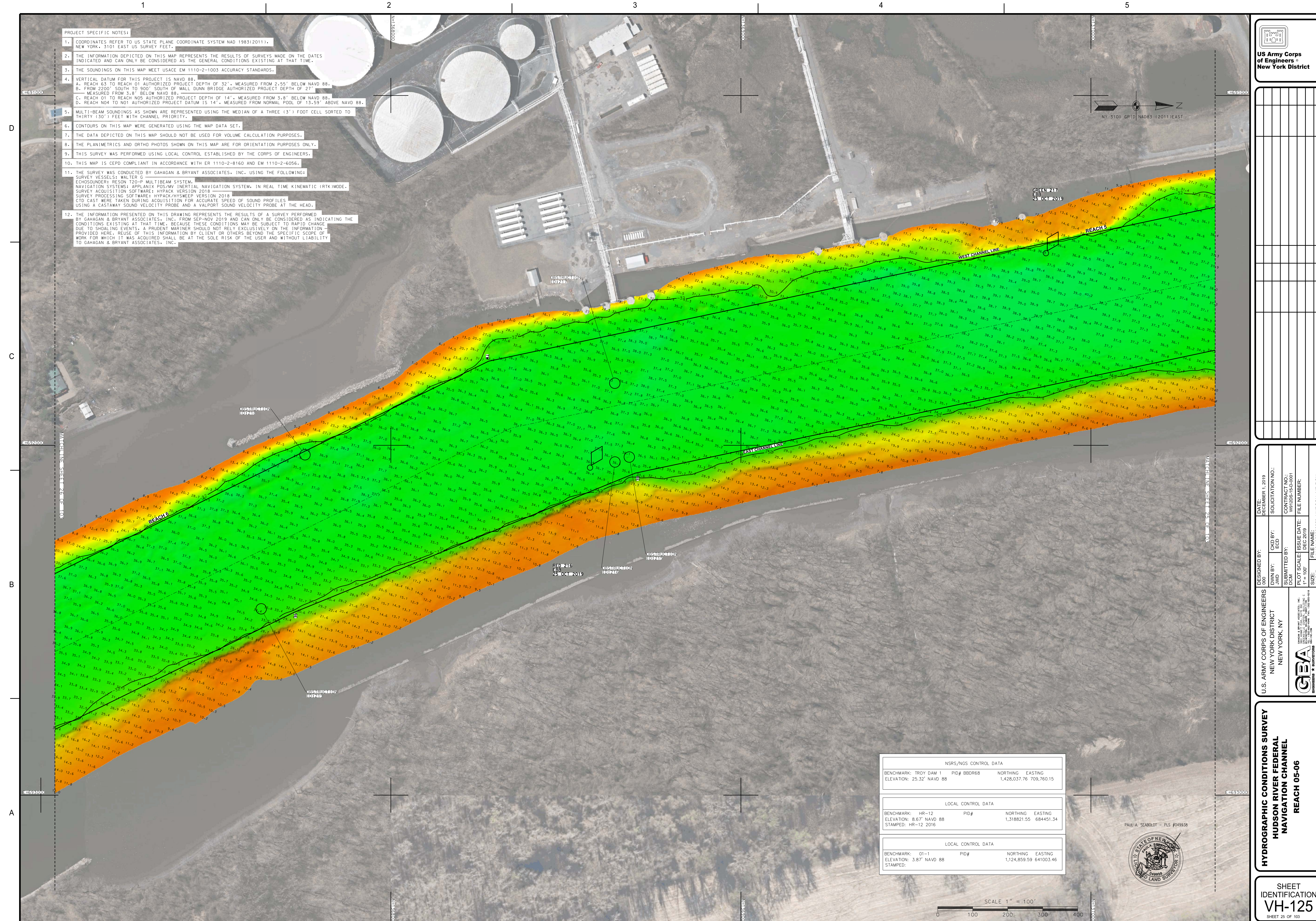
**US Army Corps  
of Engineers®  
New York Distr**

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
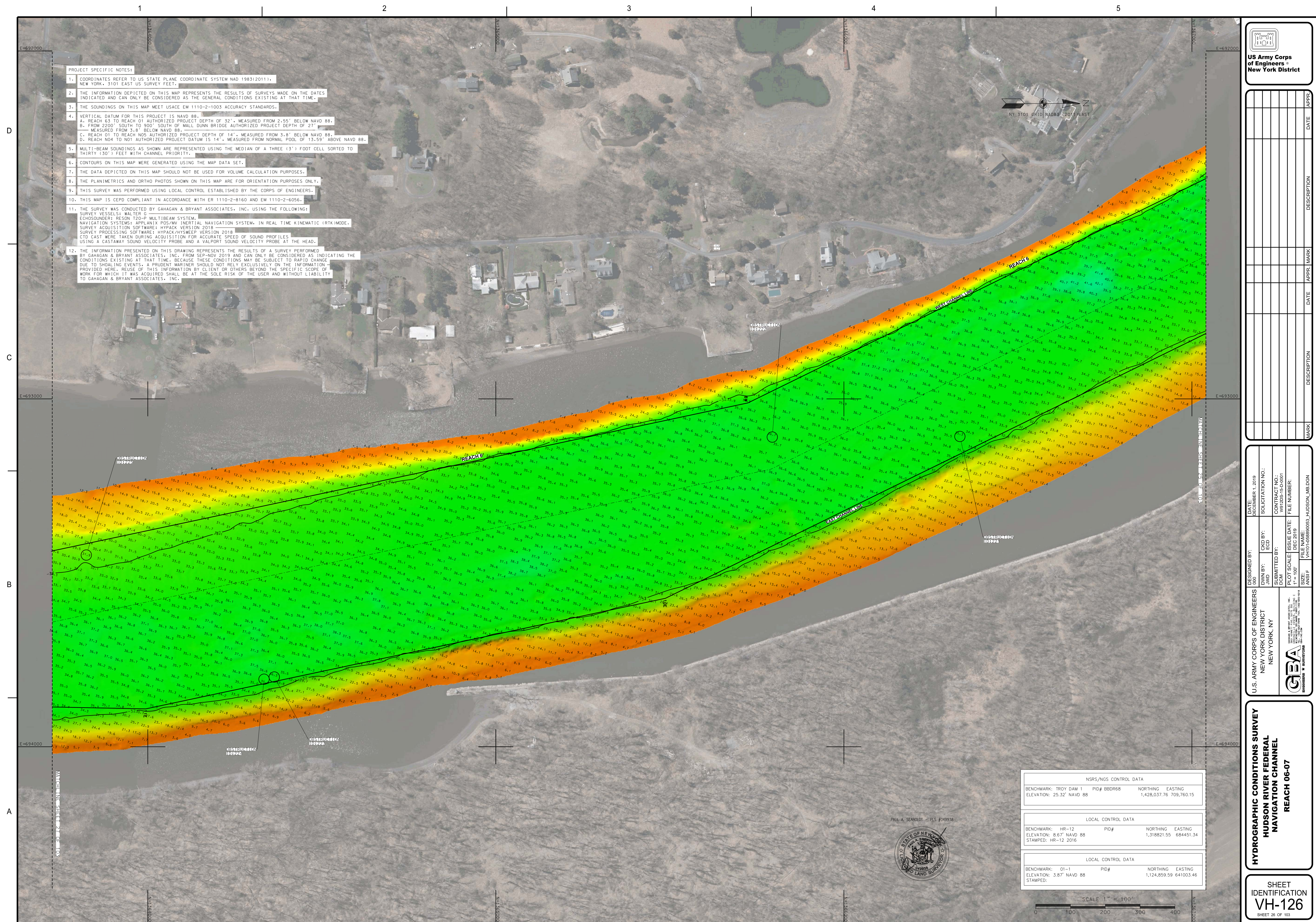
<b>U.S. ARMY CORPS OF ENGINEERS</b> NEW YORK DISTRICT NEW YORK, NY		DESIGNED BY: _____ CHECKED BY: _____ JWD BY: _____ DCM		Q&S BY: _____ TCD SUBMITTED BY: _____ CONTRACT NO.: _____ CONTRACT NO.: _____ WJ1205-1-0-0001		DATE: _____ DECEMBER 1, 2019 FILE NUMBER: _____ ISSUE DATE: _____ DEC 2019 FILE NAME: _____ SIZE: _____ T = 100"	
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HYDROGRAPHIC CONDITIONS SURVEY  
HUDSON RIVER FEDERAL  
NAVIGATION CHANNEL  
REACH 05-06

SHEET  
IDENTIFICATION  
**VH-125**  
SHEET 25 OF 103







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New York District**


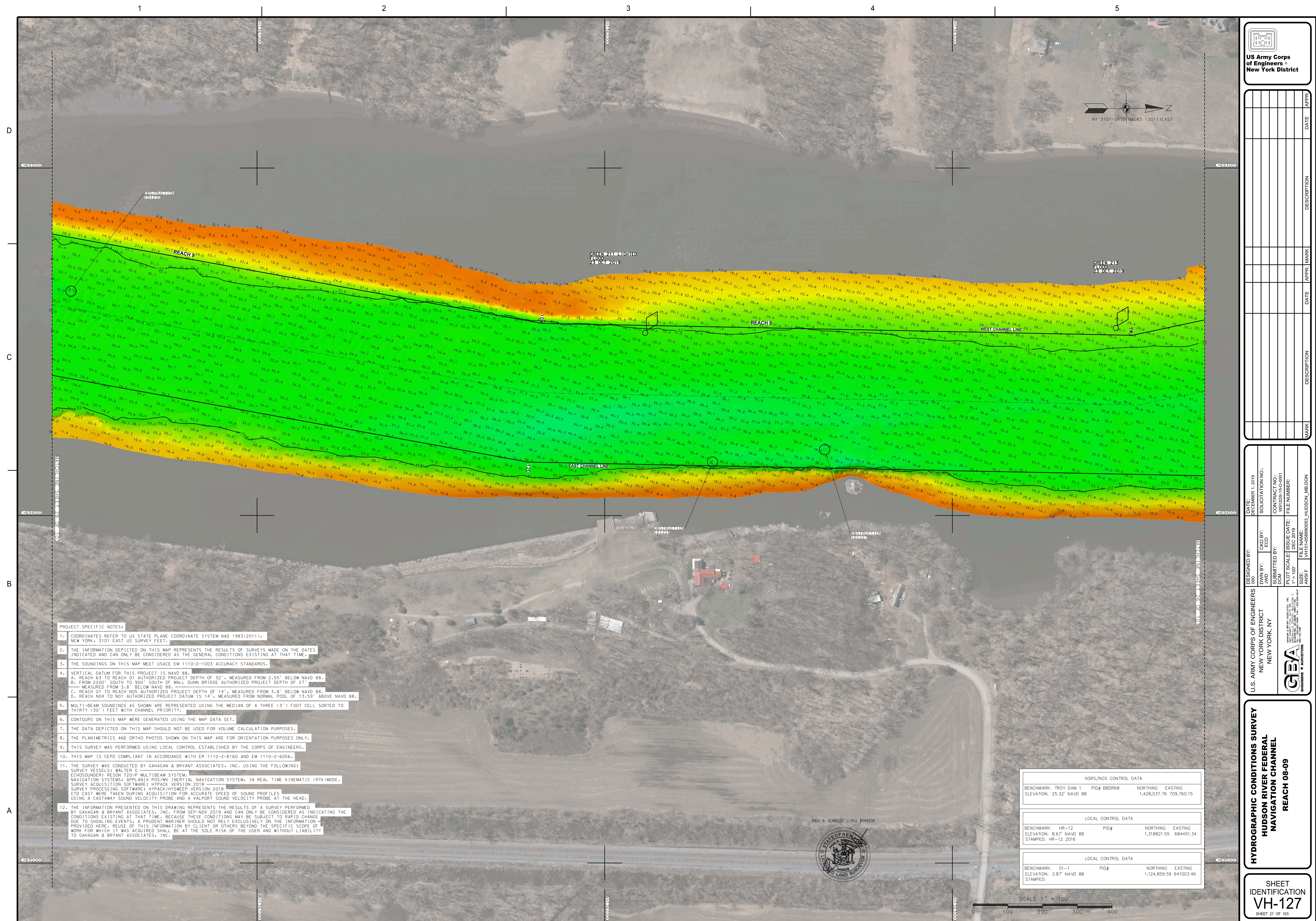
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<b>U.S. ARMY CORPS OF ENGINEERS</b> NEW YORK DISTRICT NEW YORK, NY		SHOWN UP: DECEMBER 1, 1919	
SOLICITATION NO.: JMD		CONTRACT NO.: JMD	
CND BY: ECD		FILE NUMBER: 17 = 1001	
SUBMITTED BY: JMD		ISSUE DATE: DEC 2019	
PLOT SCALE: 1" = 100'		FILE NAME: VMT01-05680005_HUDSON_MID.DGN	
SIZE: A3		ANSP: VMT01-05680005_HUDSON_MID.DGN	

**HYDROGRAPHIC CONDITIONS SURVEY  
HUDSON RIVER FEDERAL  
NAVIGATION CHANNEL  
REACH 06-07**

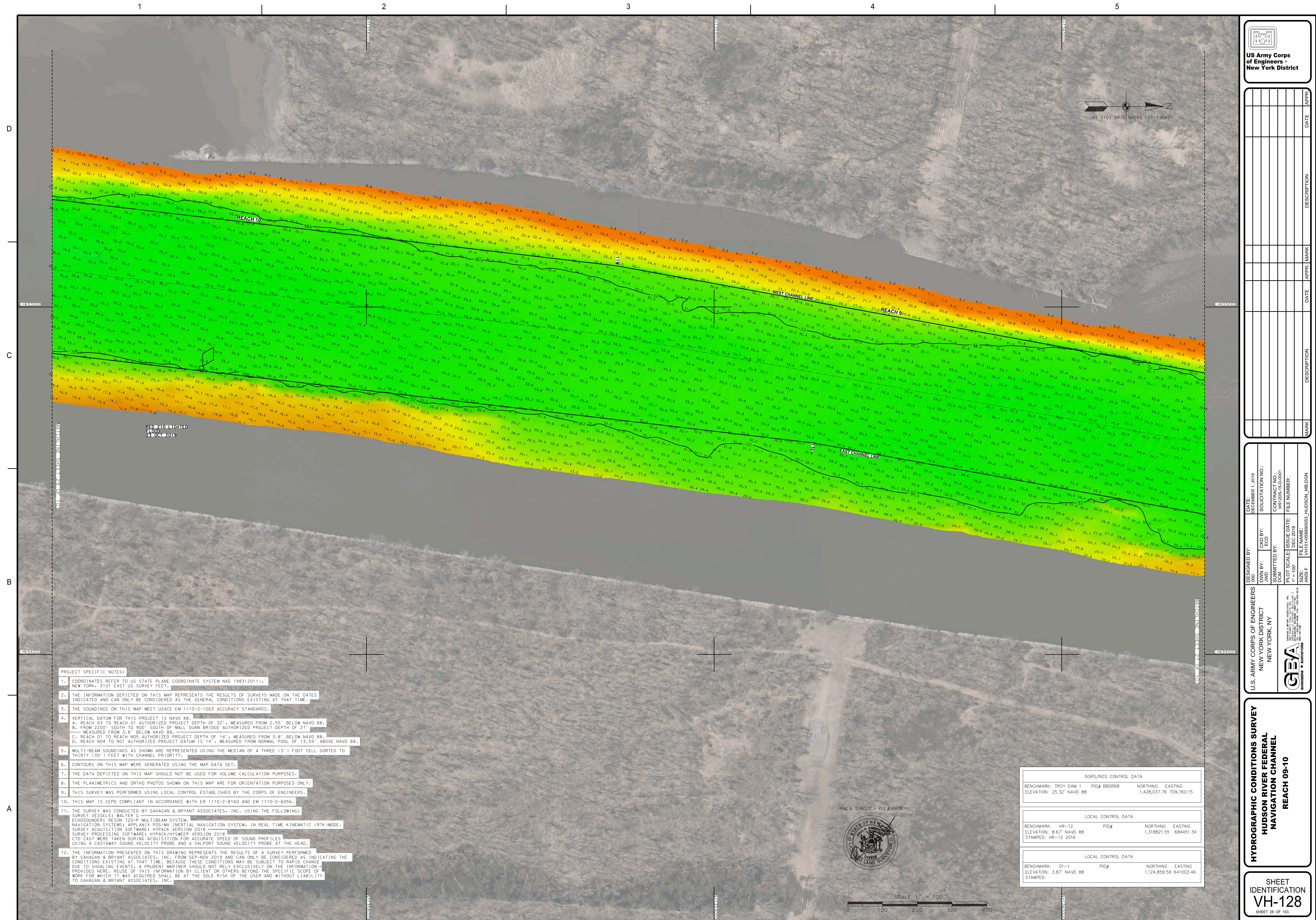
SHEET  
IDENTIFICATION  
**VH-126**  
SHEET 26 OF 103



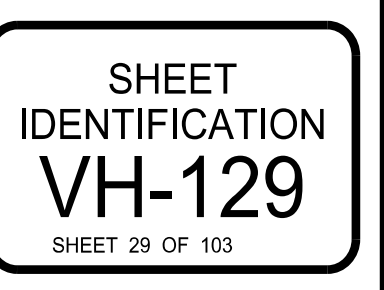


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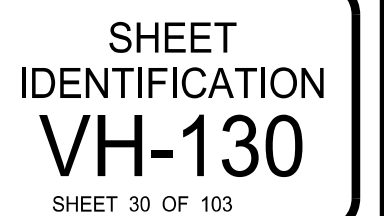














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<b>U.S. ARMY CORPS OF ENGINEERS</b> NEW YORK DISTRICT NEW YORK, NY		DONOR: 1910 DOW BY: JWD ECD		CRD BY: JWD SOLICITATION NO.: 1910 DECEMBER 1, 1919	
SUBMITTED BY:		CONTRACT NO.:		FILE NUMBER:	
PLOT SCALE: 1" = 100'		ISSUE DATE: DEC 2019		FILE NAME:	
SIZE:		VNTD-05680005		HUDSON, MID DON	

**HYDROGRAPHIC CONDITIONS SURVEY  
HUDSON RIVER FEDERAL  
NAVIGATION CHANNEL  
REACH 12**

SHEET  
IDENTIFICATION  
**VH-131**  
SHEET 31 OF 103

1. COORDINATES REFER TO U.S. STATE PLANE COORDINATE SYSTEM MAP 1983(2011), NEW YORK, 3101 EAST US SURVEY FIELD.
2. THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATES INDICATED AND CAN ONLY BE CONSIDERED AS THE GENERAL CONDITIONS EXISTING AT THAT TIME.
3. THE SOUNDINGS ON THIS MAP MEET USACE EM 1110-2-1003 ACOUSTIC STANDARDS.
4. VERTICAL DATUM FOR THIS PROJECT IS NAVD 88.
  - A. REACH 63 TO REACH 01 AUTHORIZED PROJECT DEPTH OF 32', MEASURED FROM 2.55' BELOW NAVD 88.
  - B. REACH 2200' SOUTH TO REACH 01 AUTHORIZED PROJECT DEPTH OF 27', MEASURED FROM 3.8' BELOW NAVD 88.
  - C. REACH 01 TO REACH NOS AUTHORIZED PROJECT DEPTH OF 14', MEASURED FROM 3.8' BELOW NAVD 88.
  - D. 2204 TO NOT REACH 01 AUTHORIZED PROJECT DEPTH OF 14', MEASURED FROM NOS 13'-13.57' ABOVE NAVD 88.
5. MULTI-BEAM SOUNDINGS AS SHOWN ARE REPRESENTED USING THE MEDIAN OF A THREE (3') FOOT CELL SORTED TO THIRTY (30') FEET WITH CHANNEL PRIORITY.
6. CONTOURS ON THIS MAP WERE GENERATED USING THE MAP DATA SET.
7. THE DATA DEPICTED ON THIS MAP SHOULD NOT BE USED FOR VOLUME CALCULATION PURPOSES.
8. THE PLANIMETRICS AND ORTHO PHOTOS SHOWN ON THIS MAP ARE FOR ORIENTATION PURPOSES ONLY.
9. THIS SURVEY WAS PERFORMED USING LOCAL CONTROL ESTABLISHED BY THE CORPS OF ENGINEERS.
10. THIS MAP IS CECP COMPLETED IN ACCORDANCE WITH ER 1110-2-8160 AND EM 1110-2-6056.
11. THE SURVEY WAS CONDUCTED BY GAGHAN & BRYANT ASSOCIATES, INC. USING THE FOLLOWING:
  - SURVEY VESSELS: WALTER G. ECHOSOUNDER: RESON T20-P MULTIBEAM SYSTEM.
  - NAVIGATION SYSTEMS: APPLINKA FDS/PMV INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK) MODE.
  - SURVEY ACQUISITION SOFTWARE: HYDRAVIEW 2018
  - SURVEY PROCESSING SOFTWARE: HYPAACK/HYDREVIEW 2018
  - DATA CASTS WERE TAKEN USING DATA ACQUISITION FOR ACCURATE SETTING OF SOUND PROFILES USING A CASTAWAY SOUND VELOCITY PROBE AND A VALPORT SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED IN THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY GAGHAN & BRYANT ASSOCIATES, INC. FROM SEP-NOV 2019 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE. THE USER SHALL BE RESPONSIBLE FOR OBTAINING THE LATEST AVAILABLE DATA AND SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF THE PROJECT FOR WHICH IT WAS OBTAINED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO GAGHAN & BRYANT ASSOCIATES, INC.

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BDDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

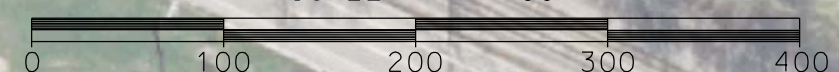
  

LOCAL CONTROL DATA			
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ELEVATION: 8.67' NAVD 88		1,318621.55	684451.34
STAMPED: HR-12 2016			

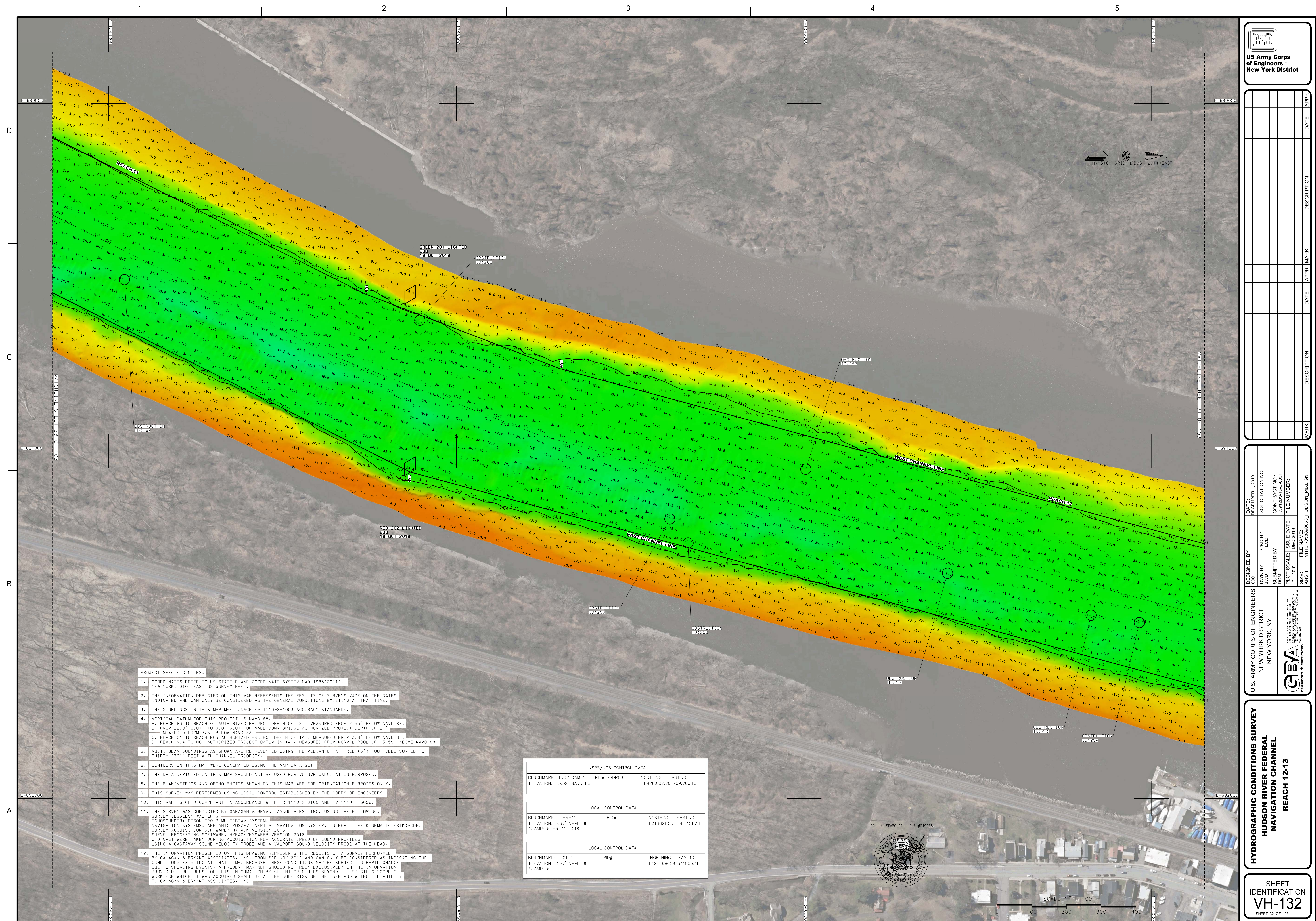
  

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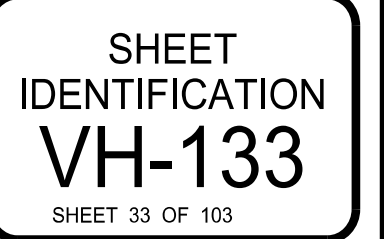
SCALE 1" = 100'



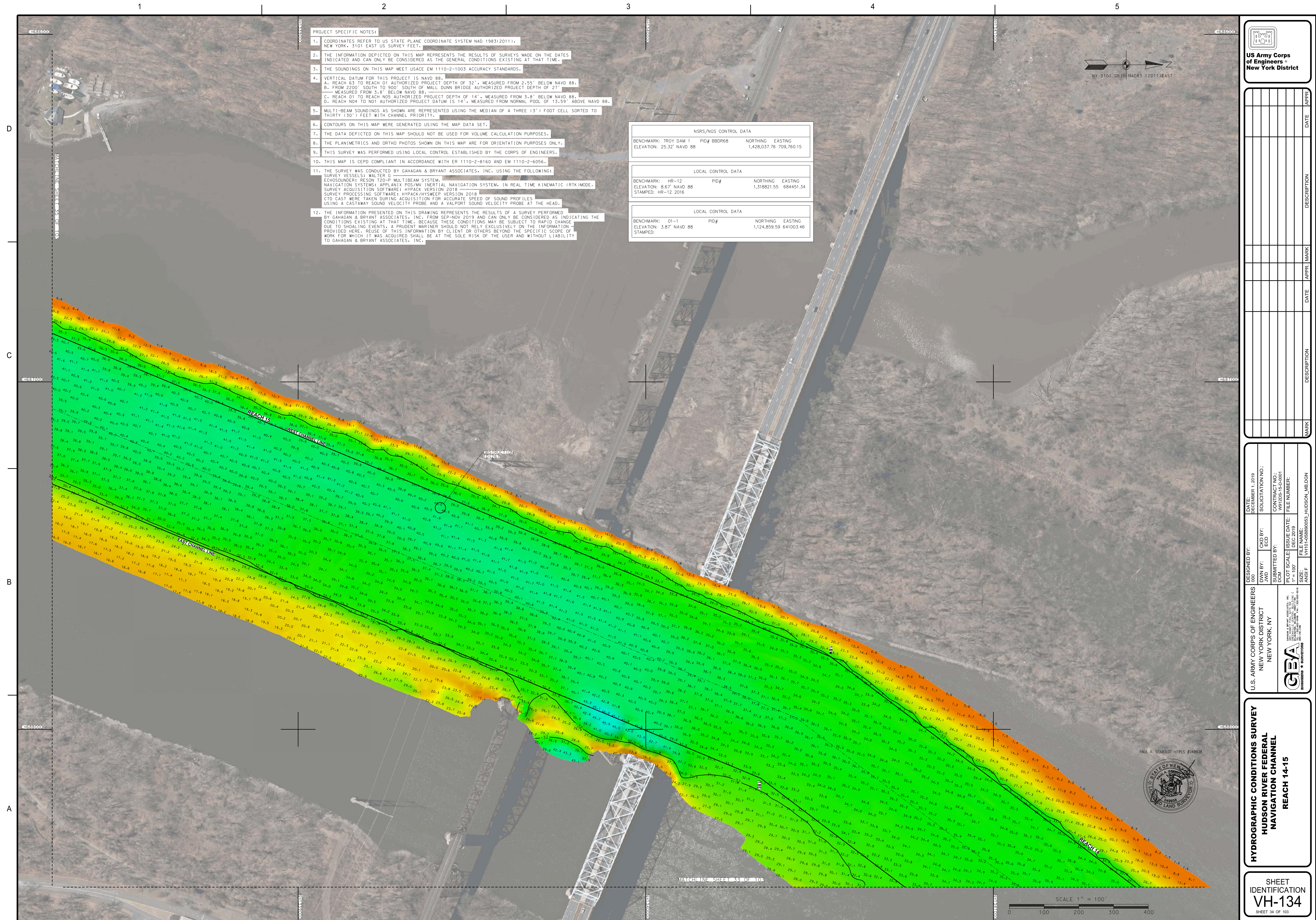
















NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,765.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318,821.55	684,451.34
STAMPED: HR-12 2016			

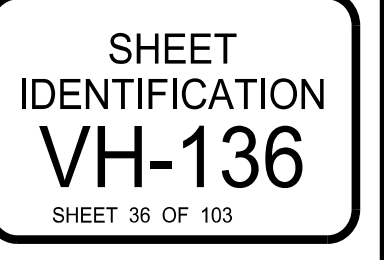
LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641,003.46
STAMPED:			

PAUL A. SEABOLDT - PLS #049938

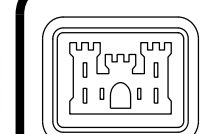
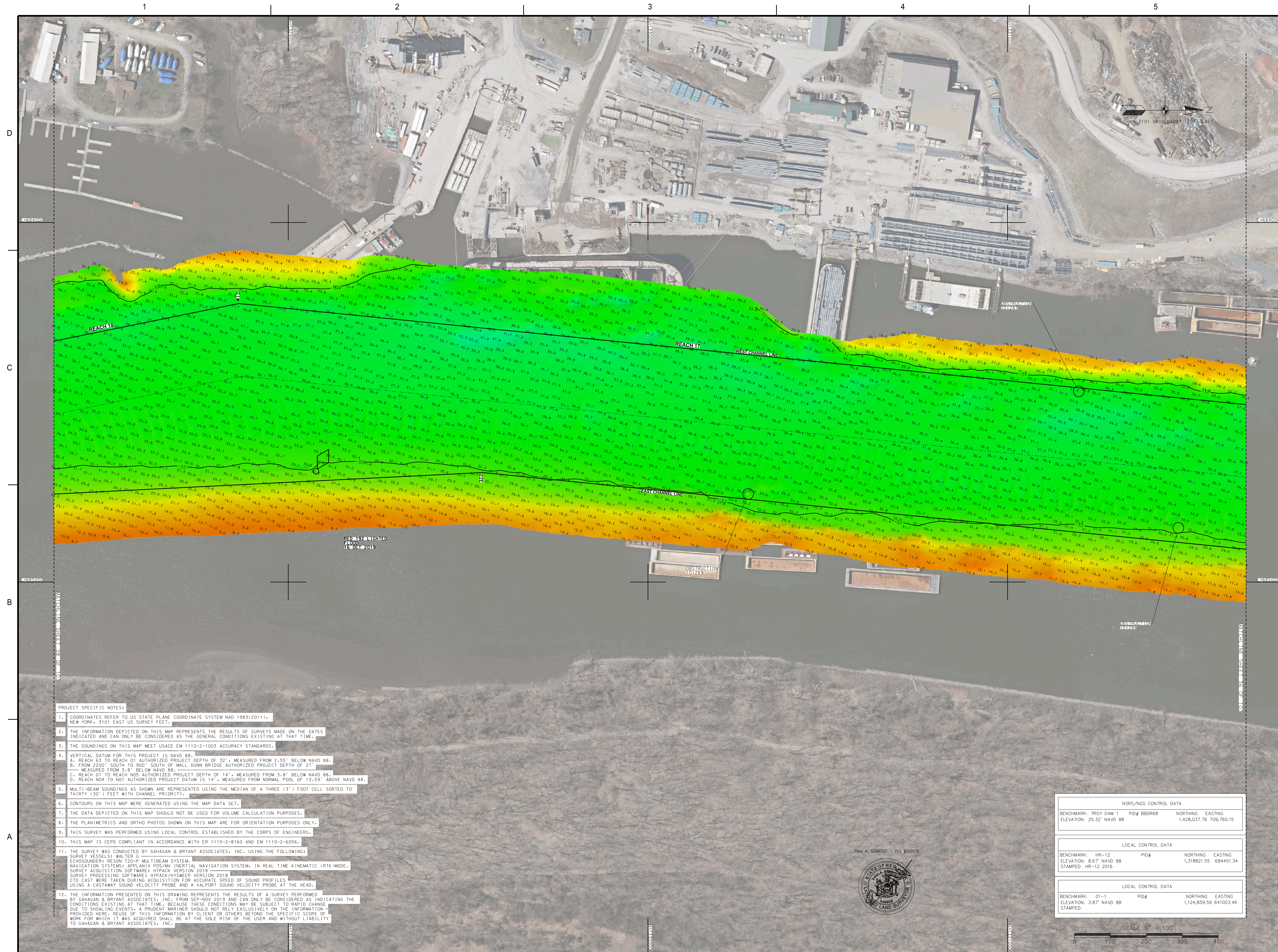
SCALE 1" = 100'

A horizontal scale bar with a black and white alternating pattern. It is marked with numbers 0, 100, 200, 300, and 400 at regular intervals.







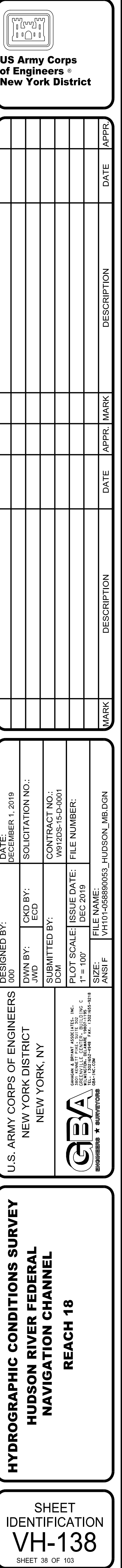


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
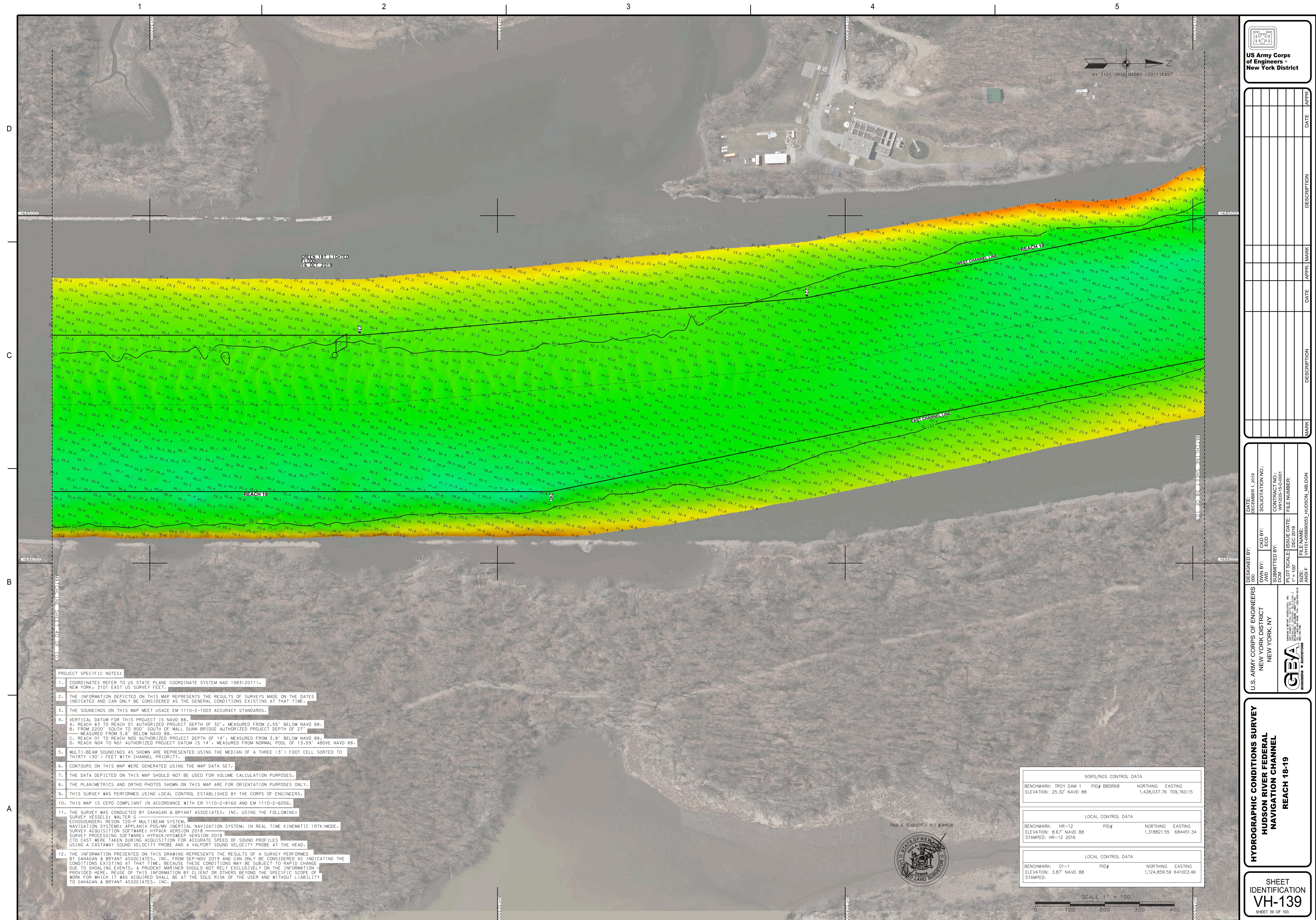
[illegible][illegible]HYDROGRAPHIC CONDITIONS SURVEY  
HUDSON RIVER FEDERAL  
NAVIGATION CHANNEL

SHEET  
IDENTIFICATION  
**VH-137**  
SHEET 37 OF 103










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[illegible]

 <b>GENERAL SERVICES ADMINISTRATION</b> <b>U.S. DEPARTMENT OF COMMERCE</b>	SPECIAL AGENT, NEW YORK, N.Y. OFFICE 1000 PENNSYLVANIA AVENUE, N.W. WASHINGTON, D.C. 20540-0001 (202) 512-2000		ORDERED BY: DECEMBER 1, 1919	
	U.S. ARMY CORPS OF ENGINEERS NEW YORK DISTRICT NEW YORK, NY		SOLICITATION NO.: DWN BY: JWD ECD	
			CONTRACT NO.: ORDER NO.: SUBMITTED BY:	
			PILOT SCALE: ISSUE DATE: DEC 1919	
			FILE NAME: WTTW-HUDSON003-HUDSON.MIB.DGN	
		SIZE: T = 100"		FILE NAME: WTTW-HUDSON003-HUDSON.MIB.DGN

**HYDROGRAPHIC CONDITIONS SURVEY  
HUDSON RIVER FEDERAL  
NAVIGATION CHANNEL  
REACH 18-19**

SHEET  
IDENTIFICATION  
**VH-139**  
SHEET 39 OF 103



