

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, NYSDEC, NYSDOT, NYSITS GPO, NYSITS GIS,

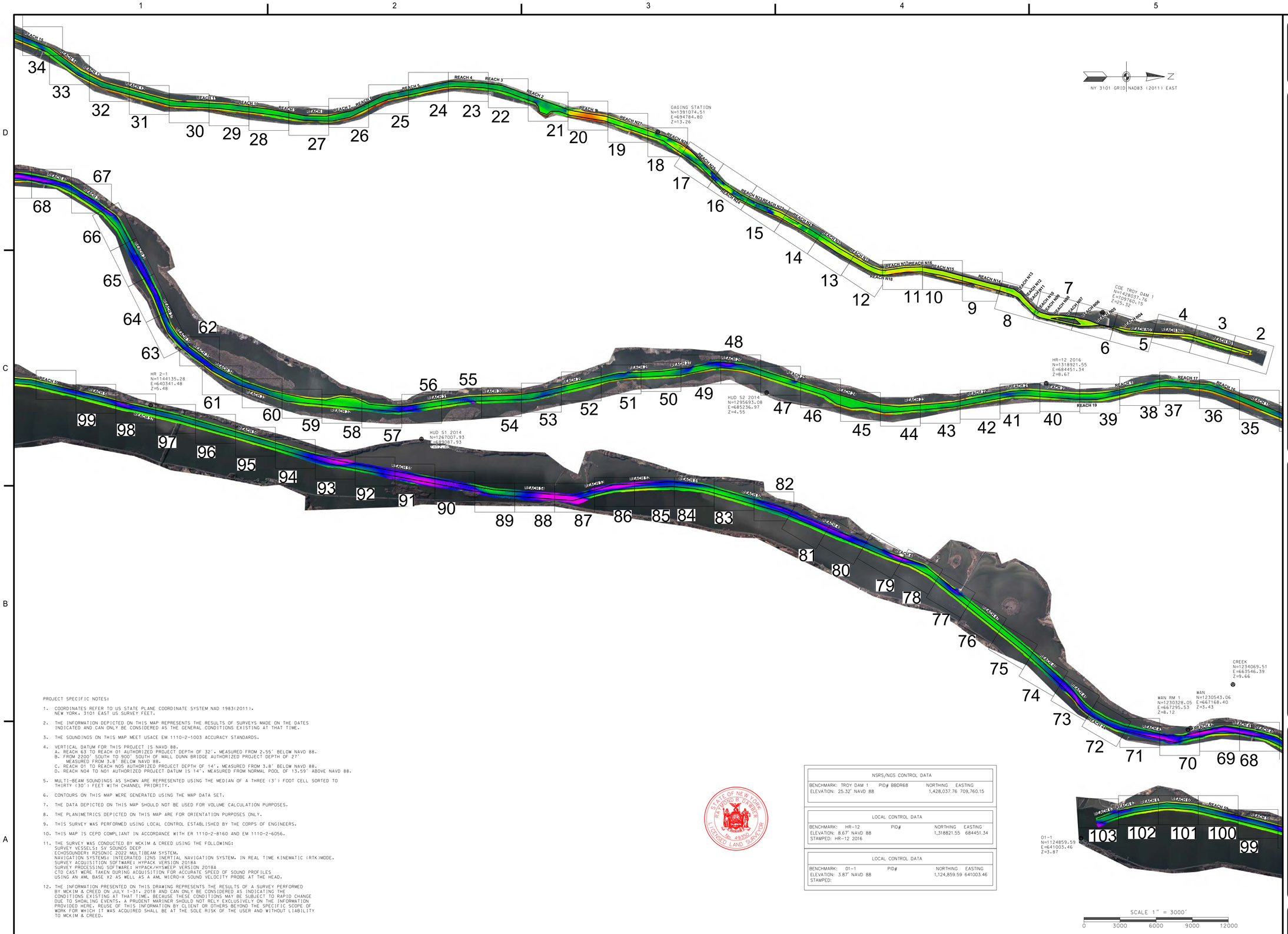
Service Layer Credits: USGS The National Map: 3D Elevation Program. Data refreshed April, 2017. Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the

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/ AFO_District_Projects.pdf

Hudson River
Kingston to Waterford, NY
Survey Reach Key Map

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

0 0.375 0.75 1.5 2.25 3 Miles



PROJECT SPECIFIC NOTES:

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 O1 AUTHORIZED PROJECT DEPTH OF 32'. MEASURED FROM 2.55' BELOW NAVD 88.
   B. FROM 2200' SOUTH TO 900' SOUTH OF MALL DUNN BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' BELOW NAVD 88.
   C. REACH O1 TO REACH N05 AUTHORIZED PROJECT DEPTH OF 14'. MEASURED FROM 3.8' BELOW NAVD 88.
   D. REACH N04 TO N01 AUTHORIZED PROJECT DATUM IS 14'. MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS, A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

STATE OF NEW YORK
RAYMOND B. OLIVER
090450
LICENSED LAND SURVEYOR

NSRS/NGS CONTROL DATA

BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA

BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA

BENCHMARK: O1-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

US Army Corps of Engineers
New York District

MARK	DESCRIPTION	DATE	APPR.

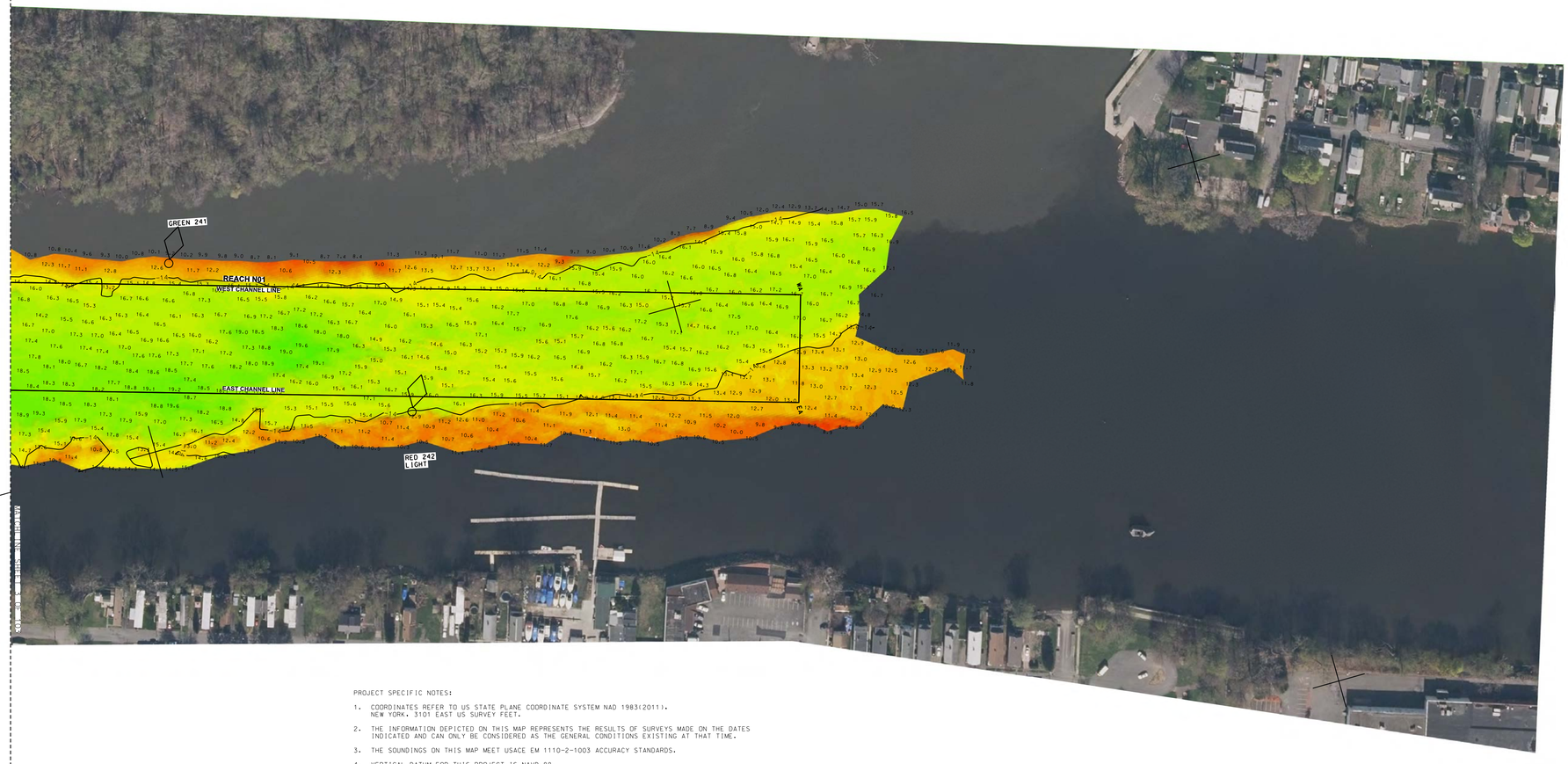
DESIGNED BY: DIG
DRAWN BY: MBH
SUBMITTED BY: DLJ
CKD BY: RBD
DATE: JULY 31, 2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
PLOT SCALE: 1" = 2000'
ISSUE DATE: NOV 2018
SIZE: ANSI F
FILE NAME: V4101-058890053_HUDSON_MB.DGN

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 254-0568
FAX: (910) 254-4282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL BETWEEN KINGSTON TO WATERFORD, NY REACH 63 TO REACH N01 KINGSTON, NY TO ABOVE THE FEDERAL DAM IN TROY

SHEET IDENTIFICATION
VH-101
SHEET 1 OF 103



NY 3101 GRID NAD83 (2011)EAST

PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14'. MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS, A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

STATE OF NEW YORK
RAYMOND E. PARKER
LICENSED LAND SURVEYOR
No. 49350

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.	MARK	DESCRIPTION	DATE	APPR.

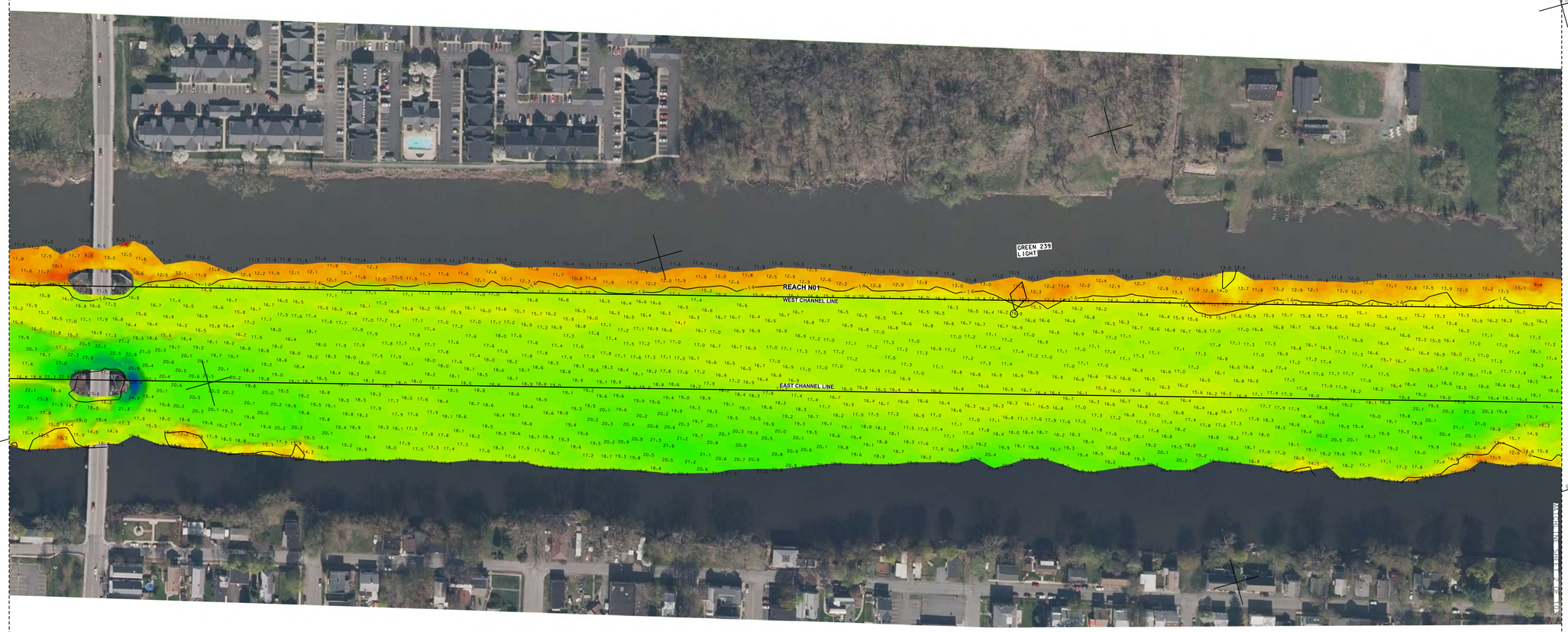
DATE: JULY 31, 2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
ISSUE DATE: NOV 2018
FILE NAME: VH101-056890063_HUDSON_MB.DGN
DESIGNED BY: DMA
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1" = 100'
SIZE: ANSI F

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 341-0048
FAX: (910) 251-8282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH N01

SHEET IDENTIFICATION
VH-102
SHEET 2 OF 103



NY 3101 GRID NAD83 (2011) EAST

PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27'. MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14'. MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED IXNS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS, A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

NSRS/NGS CONTROL DATA		
BENCHMARK: TROY DAM 1 PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88	1,428,037.76	709,760.15

LOCAL CONTROL DATA		
BENCHMARK: HR-12 PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88	1,318821.55	684451.34
STAMPED: HR-12 2016		

LOCAL CONTROL DATA		
BENCHMARK: 01-1 PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88	1,124,859.59	641003.46
STAMPED:		

STATE OF NEW YORK
RAYMOND B. STAGER
No. 49290
LICENSED LAND SURVEYOR

SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.	MARK	DESCRIPTION	DATE	APPR.

DESIGNED BY: DEJ
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DEJ
PLOT SCALE: 1" = 100'
ISSUE DATE: NOV 2018
SIZE: ANSI F
FILE NUMBER:
FILE NAME: VH101-056890053_HUDSON_MB.DGN

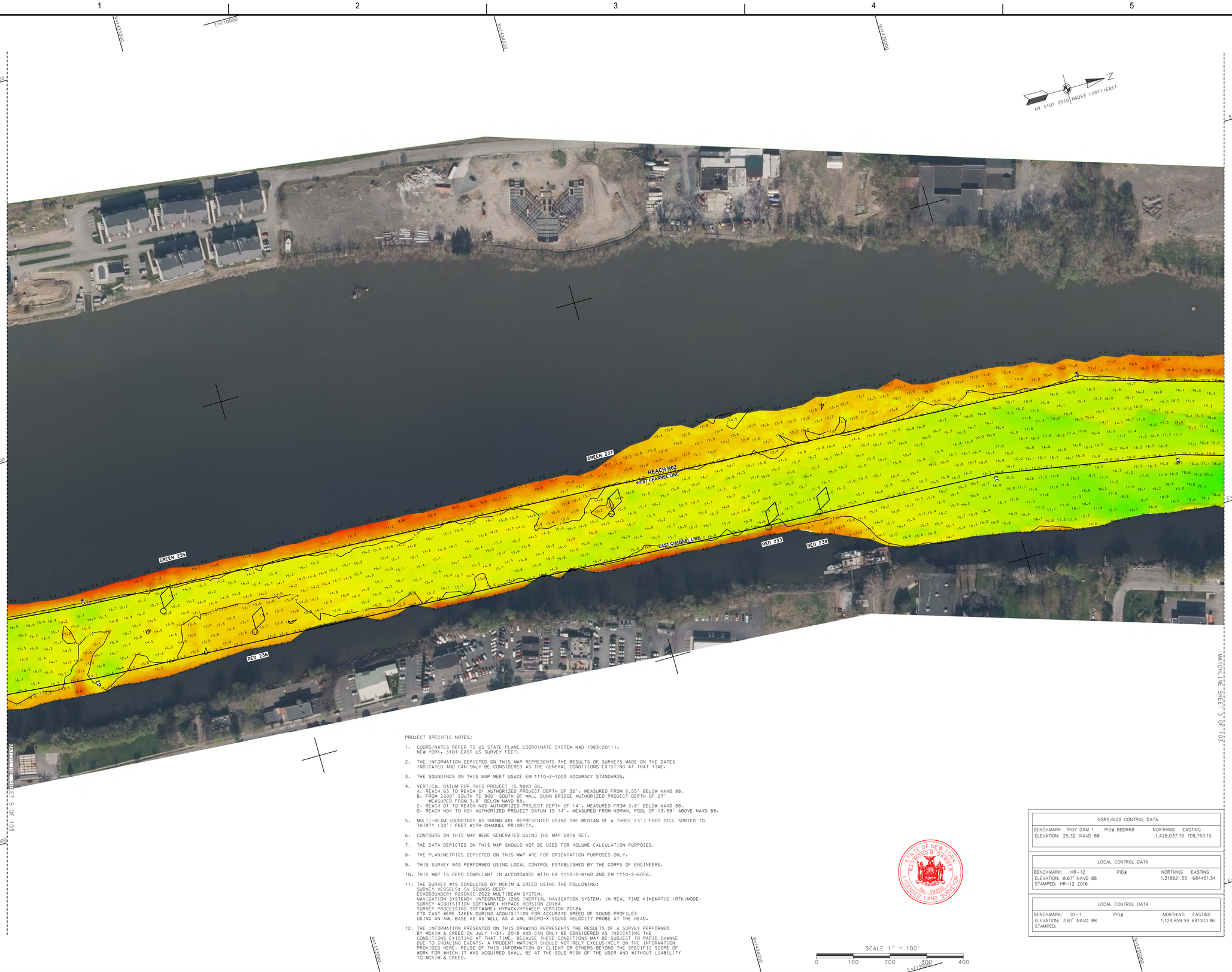
U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-0046
FAX: (910) 251-8282

DATE: JULY 1-31, 2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH N01

SHEET IDENTIFICATION
VH-103
SHEET 3 OF 103



PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14'. MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED IINS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES
    USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS. A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

SCALE 1" = 100'
0 100 200 300 400

STATE OF NEW YORK
RAYMOND B. OTTBER
No. 49350
LICENSED LAND SURVEYOR

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.	MARK	DESCRIPTION	DATE	APPR.

DESIGNED BY: DGW
DRWN BY: MBH
SUBMITTED BY: DLJ
PLOT SCALE: 1:100
SIZE: ANSI F
CKD BY: RBD
ISSUE DATE: NOV 2018
FILE NAME: VH101-058890083_HUDSON_MB.DGN

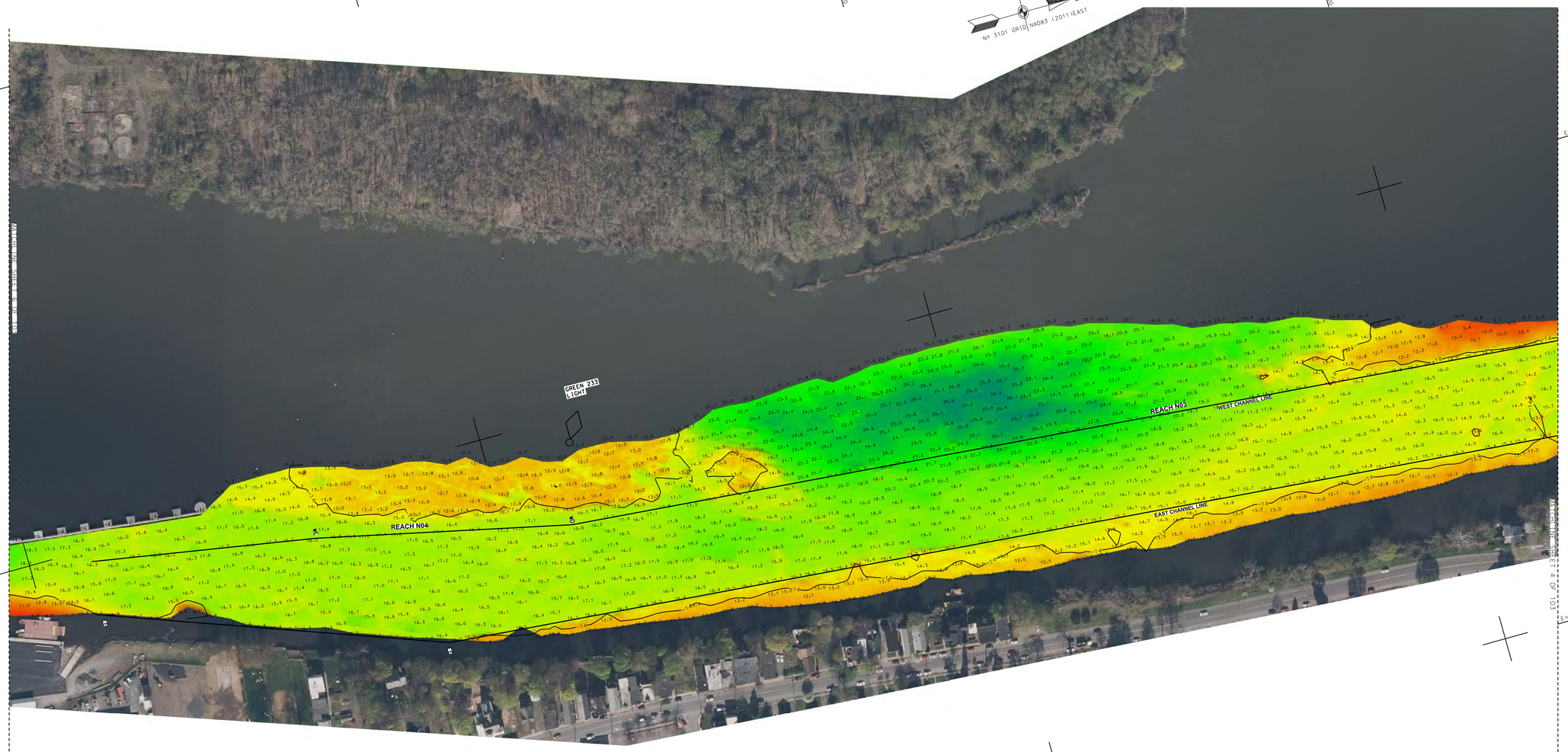
U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-8348
FAX: (910) 251-4262

DATE: JULY 31, 2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:

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

SHEET IDENTIFICATION
VH-104
SHEET 4 OF 103



PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14'. MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDERS R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS. A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

STATE OF NEW YORK
RAYMOND B. DWYER
No. 49329
LICENSED LAND SURVEYOR

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

DESIGNED BY: DGM
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1" = 100'
SIZE: ANSI F
DATE: JULY 31, 2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
ISSUE DATE: NOVEMBER 2018
FILE NUMBER:
FILE NAME: VH101-058890083_HUDSON_MB.DGN

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-8848
FAX: (910) 251-4262

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH N03-N04

SHEET IDENTIFICATION
VH-105
SHEET 5 OF 103

PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14'. MEASURED FROM NORMAL POOL OF 13.59' 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.

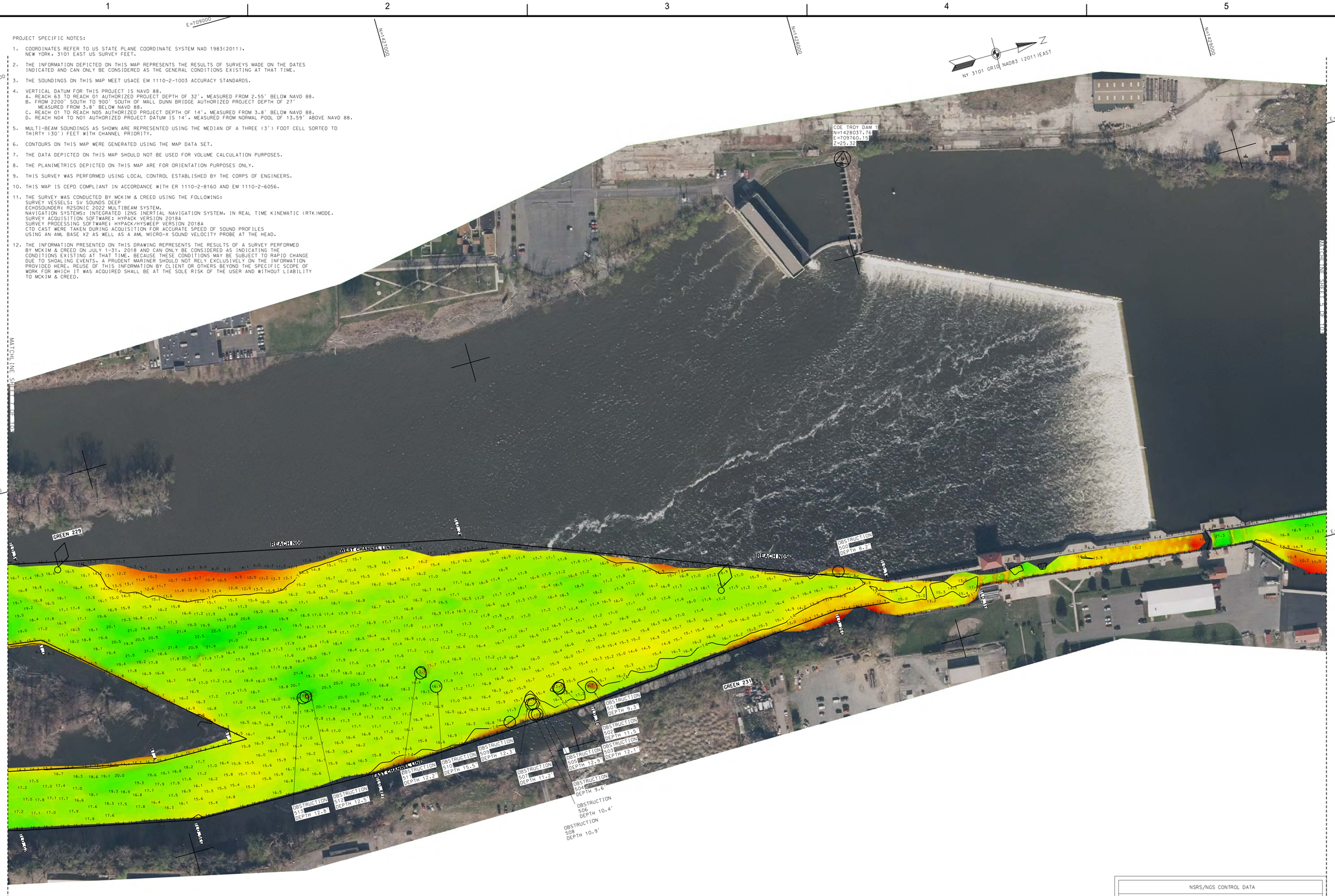
8. THE PLANIMETRICS DEPICTED ON THIS MAP ARE FOR ORIENTATION PURPOSES ONLY.

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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.

12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS, A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.



NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

STATE OF NEW YORK
RAYMOND B. DWYER
No. 49350
LICENSED LAND SURVEYOR

SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.	MARK	DESCRIPTION	DATE	APPR.

DESIGNED BY: DLJ	DATE: JUL 31, 2018		
DWN BY: MBH	CKD BY: RBD	SOLICITATION NO.:	
SUBMITTED BY: DLJ		CONTRACT NO.: W912DS-14-D-0004	
PLOT SCALE: 1" = 100'	ISSUE DATE: AUG 2018	FILE NUMBER:	
SIZE: ANSI F	FILE NAME: VH101-c058890063_HUDSON_MB.DGN		

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-8444
FAX: (910) 251-8282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH N05-N06

SHEET IDENTIFICATION
VH-106
SHEET 6 OF 103

PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14'. MEASURED FROM NORMAL POOL OF 13.59' 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.

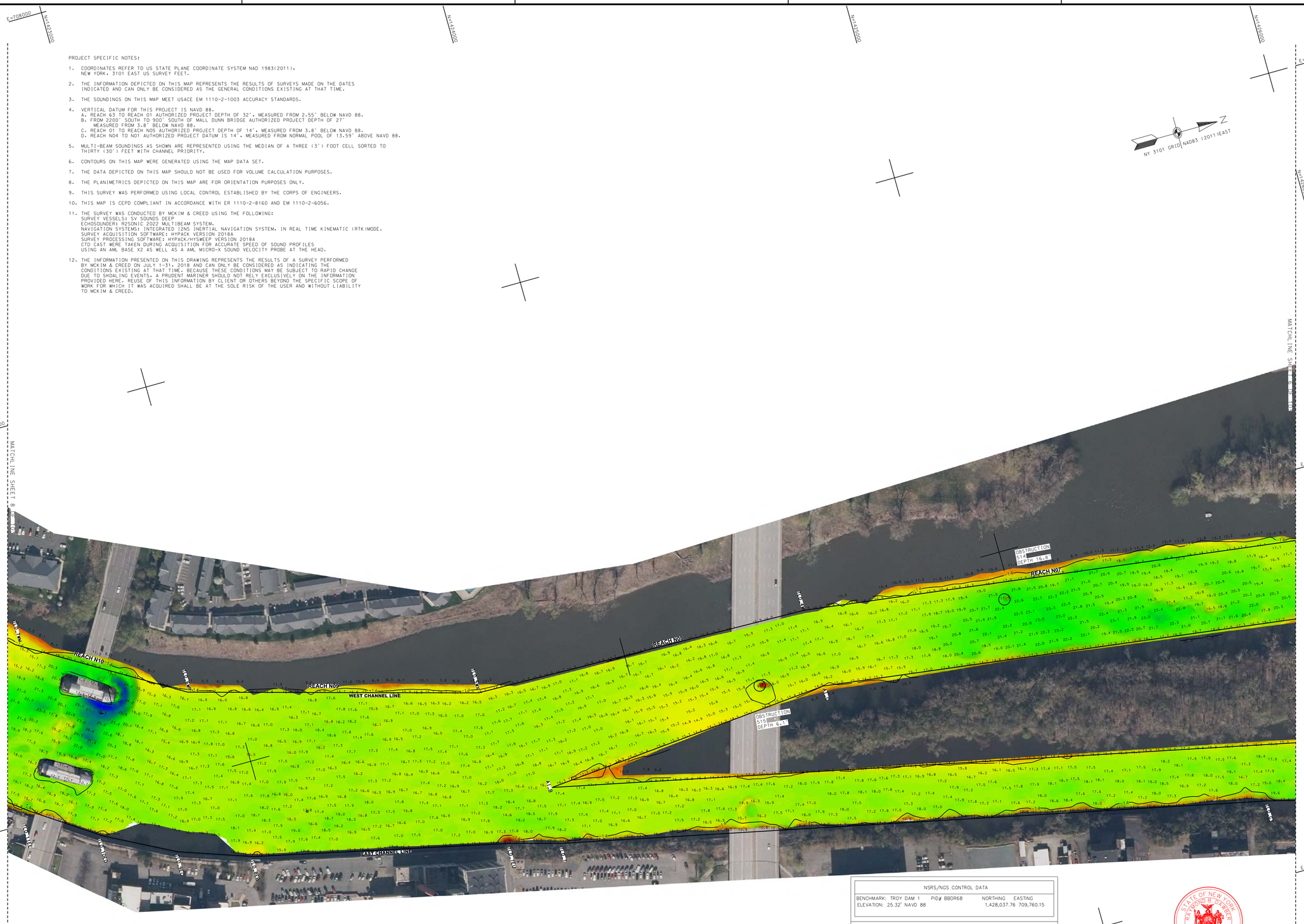
8. THE PLANIMETRICS DEPICTED ON THIS MAP ARE FOR ORIENTATION PURPOSES ONLY.

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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED IXNS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.

12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS, A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.



NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

STATE OF NEW YORK
RAYMOND B. DOWER
No. 49350
LICENSED LAND SURVEYOR

SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.	MARK	DESCRIPTION	DATE	APPR.

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

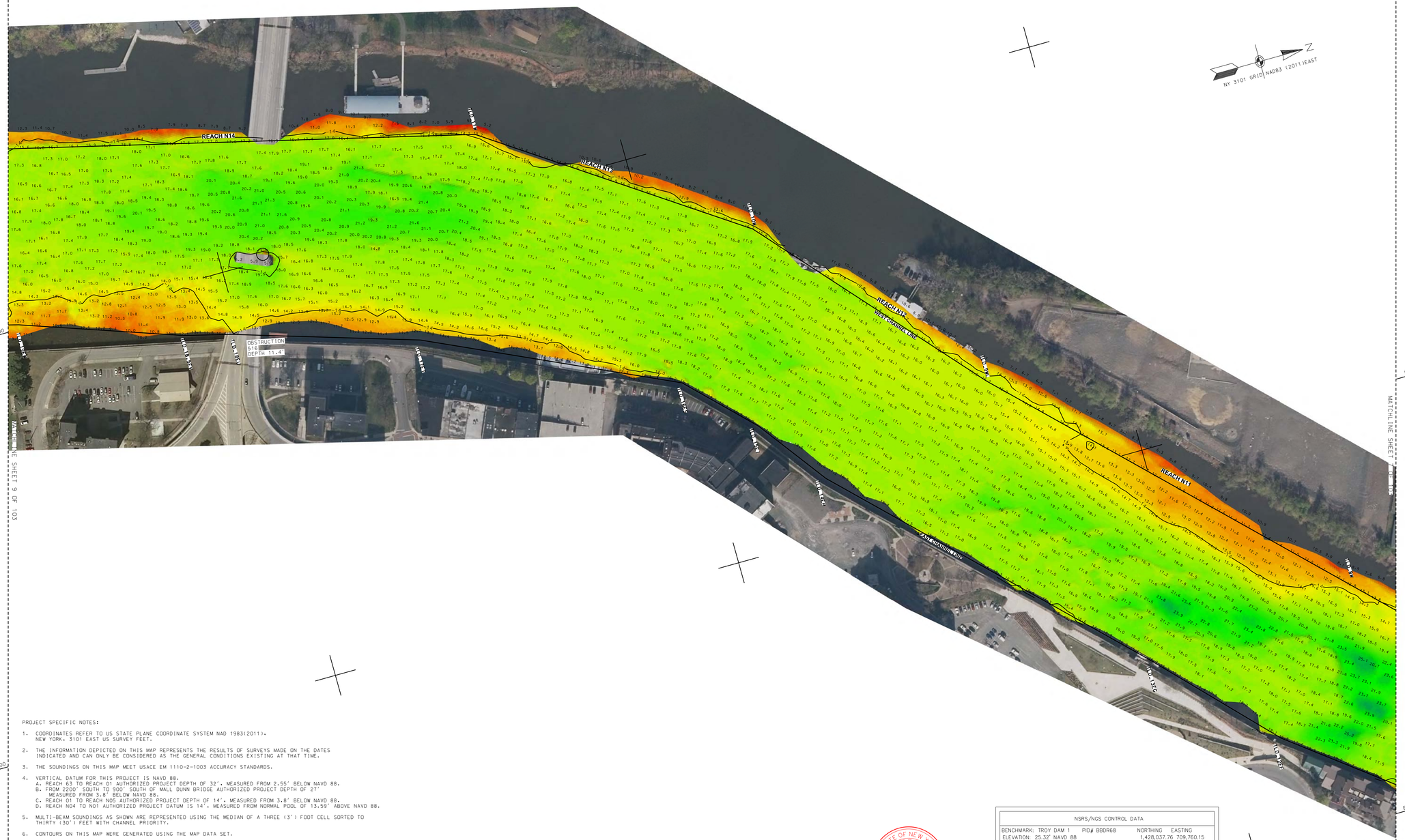
DESIGNED BY: DLJ
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1:100
PLOT DATE: 1:100
SIZE: ANSI F

DATE: JULY 31, 2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
ISSUE DATE: NOVEMBER 2018
FILE NUMBER:
FILE NAME: VH101-058890053_HUDSON_MBLOGN

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-8848
FAX: (910) 251-8282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACHES N07-N10

SHEET IDENTIFICATION
VH-107
SHEET 7 OF 103



PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14'. MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK) MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS, A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

STATE OF NEW YORK
RAYMOND B. DYER
049328
LICENSED LAND SURVEYOR

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	64003.46
STAMPED:			

SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

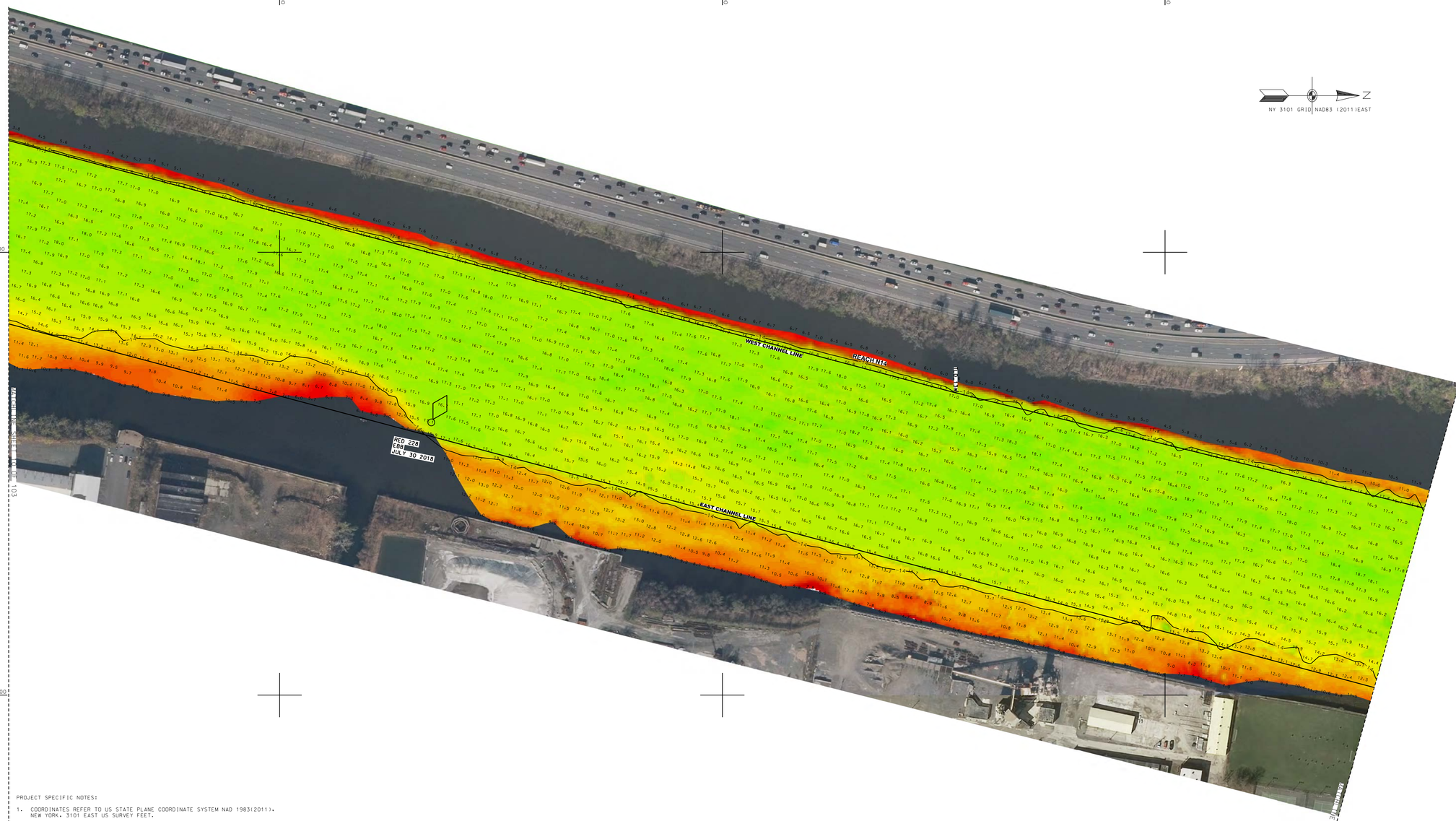
U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-0406
FAX: (910) 251-4282

DESIGNED BY: DSL
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1" = 100'
PLOT DATE: 10/29/2018
SIZE: ANSI F
DATE: JULY 31, 2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
ISSUE DATE: NOVEMBER 2018
FILE NAME: VH101-056890003_HUDSON_MB.DGN

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACHES N11-N14

SHEET IDENTIFICATION
VH-108
SHEET 8 OF 103



PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14'. MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED IXNS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS, A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

STATE OF NEW YORK
RAYMOND B. BAKER
No. 49350
LICENSED LAND SURVEYOR

SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.	MARK	DESCRIPTION	DATE	APPR.

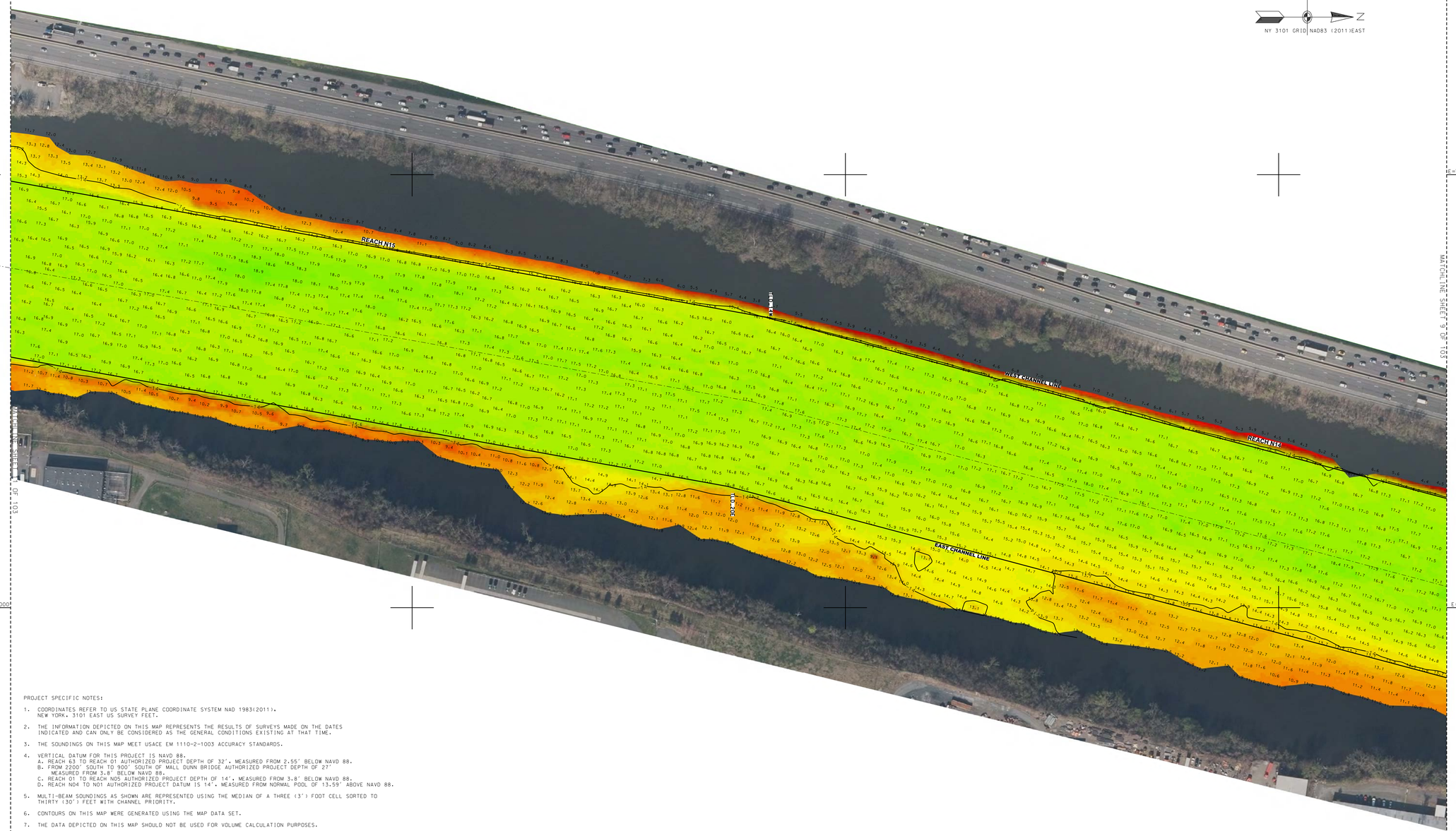
DESIGNED BY:
DWN BY: MBH
SUBMITTED BY: DLJ
PLOT SCALE: 1:100
SIZE: ANSI F
DATE: JULY 31, 2018
SOLICITATION NO.:
CKD BY: RBD
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
ISSUE DATE: NOVEMBER 2018
FILE NAME: V:\101\-058890053_HUDSON_MB\DGN

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
245 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-0468
FAX: (910) 251-4282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH N14

SHEET IDENTIFICATION
VH-109
SHEET 9 OF 103



PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14'. MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM, IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS, A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

STATE OF NEW YORK
RICHARD B. BARKER
LICENSED LAND SURVEYOR
NO. 49350

SCALE 1" = 100'
0 100 200 300 400

MATCHLINE SHEET 9 OF 103
MATCHLINE SHEET 11 OF 103

US Army Corps of Engineers
New York District

MARK	DESCRIPTION	DATE	APPR.
MARK	DESCRIPTION	DATE	APPR.

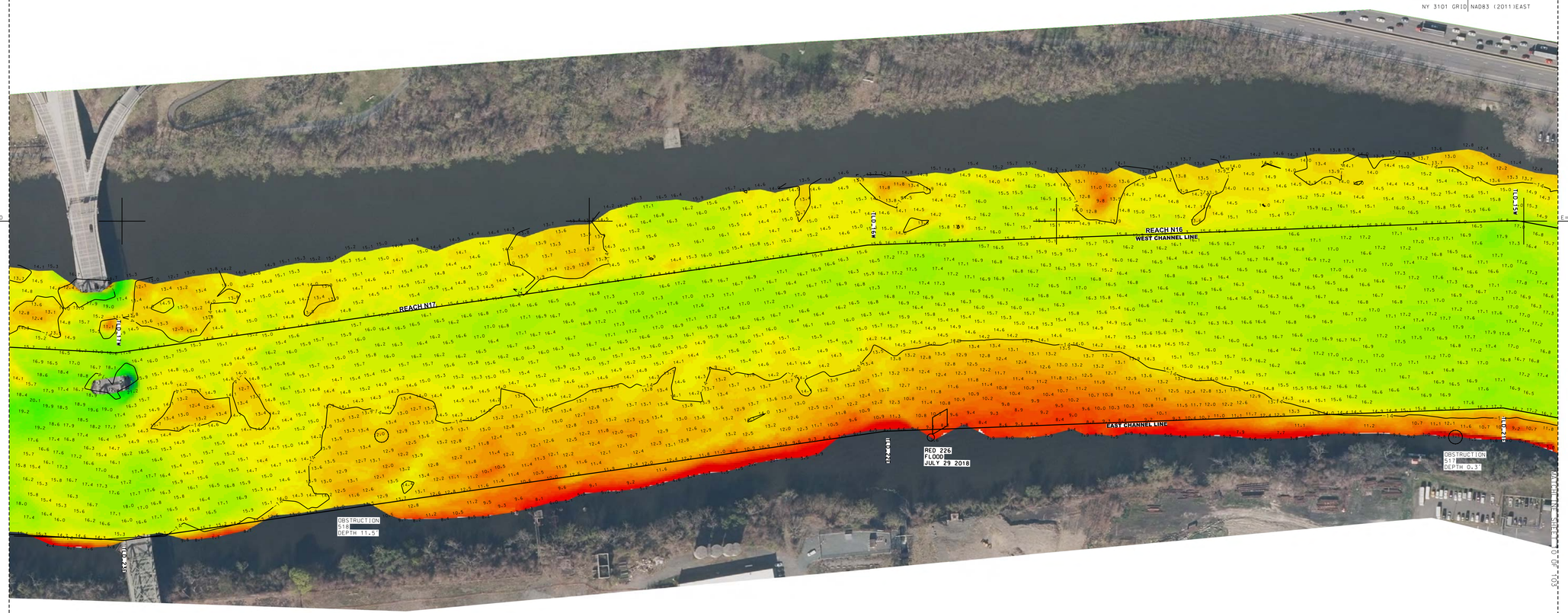
DESIGNED BY: DMA
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1:50'
PLOT DATE: NONE
SIZE: ANSI F
DATE: JUL 31, 2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
ISSUE DATE:
FILE NUMBER:
FILE NAME: VH101-0588890063_HUDSON_MB.DGN

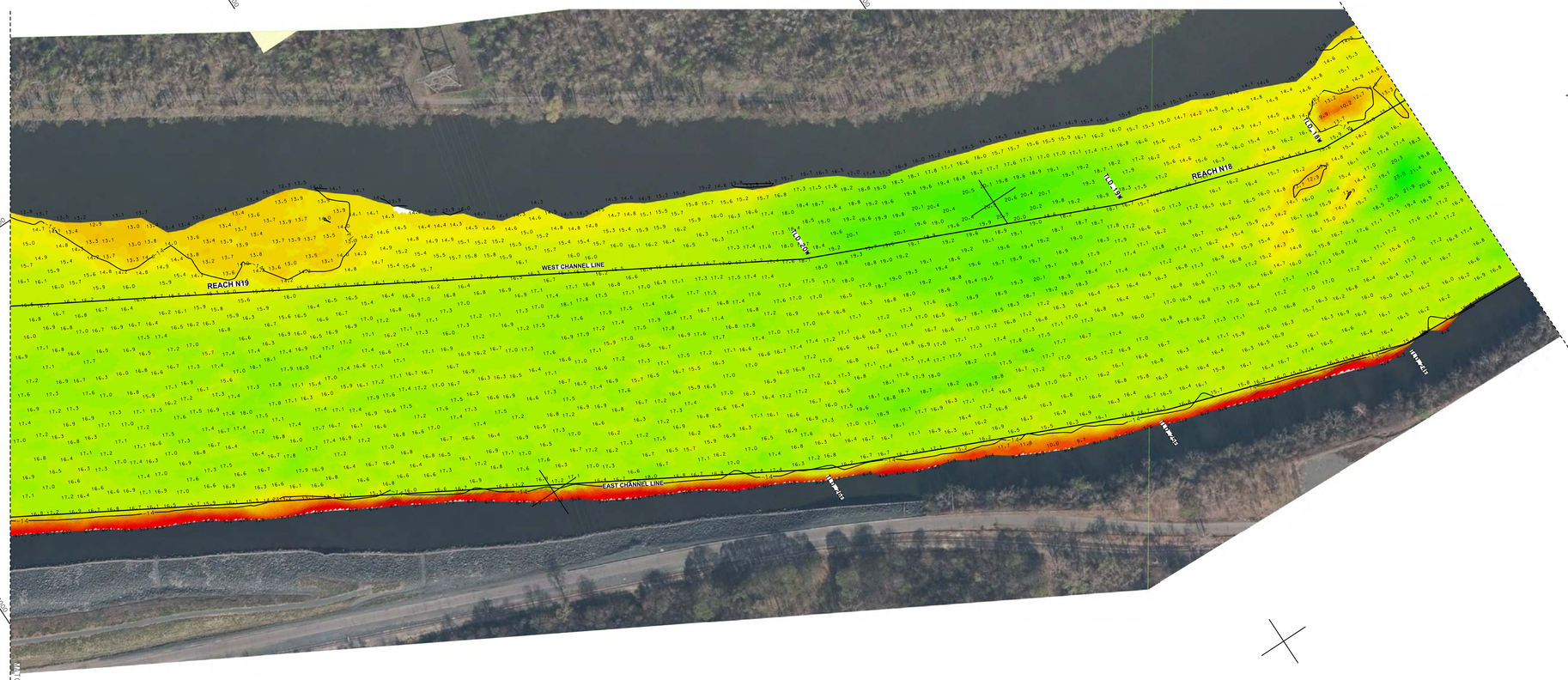
U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-8448
FAX: (910) 251-8282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 14-15

SHEET IDENTIFICATION
VH-110
SHEET 10 OF 103


NY 3101 GRID NAD83 (2011) EAST
N
REACH N16
WEST CHANNEL LINE
REACH N17
EAST CHANNEL LINE
RED 226
FLOOD
JULY 29 2018
OBSTRUCTION
DEPTH 11.5'
OBSTRUCTION
DEPTH 0.3'
N=410000
N=411000
N=412000
N=413000
E=706000
E=707000
01-01
01-02
01-03
01-04
01-05
01-06
01-07
01-08
01-09
01-10
01-11
01-12
01-13
01-14
01-15
01-16
01-17
01-18
01-19
01-20
01-21
01-22
01-23
01-24
01-25
01-26
01-27
01-28
01-29
01-30
01-31
01-32
01-33
01-34
01-35
01-36
01-37
01-38
01-39
01-40
01-41
01-42
01-43
01-44
01-45
01-46
01-47
01-48
01-49
01-50
01-51
01-52
01-53
01-54
01-55
01-56
01-57
01-58
01-59
01-60
01-61
01-62
01-63
01-64
01-65
01-66
01-67
01-68
01-69
01-70
01-71
01-72
01-73
01-74
01-75
01-76
01-77
01-78
01-79
01-80
01-81
01-82
01-83
01-84
01-85
01-86
01-87
01-88
01-89
01-90
01-91
01-92
01-93
01-94
01-95
01-96
01-97
01-98
01-99
01-100
01-101
01-102
01-103
01-104
01-105
01-106
01-107
01-108
01-109
01-110
01-111
01-112
01-113
01-114
01-115
01-116
01-117
01-118
01-119
01-120
01-121
01-122
01-123
01-124
01-125
01-126
01-127
01-128
01-129
01-130
01-131
01-132
01-133
01-134
01-135
01-136
01-137
01-138
01-139
01-140
01-141
01-142
01-143
01-144
01-145
01-146
01-147
01-148
01-149
01-150
01-151
01-152
01-153
01-154
01-155
01-156
01-157
01-158
01-159
01-160
01-161
01-162
01-163
01-164
01-165
01-166
01-167
01-168
01-169
01-170
01-171
01-172
01-173
01-174
01-175
01-176
01-177
01-178
01-179
01-180
01-181
01-182
01-183
01-184
01-185
01-186
01-187
01-188
01-189
01-190
01-191
01-192
01-193
01-194
01-195
01-196
01-197
01-198
01-199
01-200
01-201
01-202
01-203
01-204
01-205
01-206
01-207
01-208
01-209
01-210
01-211
01-212
01-213
01-214
01-215
01-216
01-217
01-218
01-219
01-220
01-221
01-222
01-223
01-224
01-225
01-226
01-227
01-228
01-229
01-230
01-231
01-232
01-233
01-234
01-235
01-236
01-237
01-238
01-239
01-240
01-241
01-242
01-243
01-244
01-245
01-246
01-247
01-248
01-249
01-250
01-251
01-252
01-253
01-254
01-255
01-256
01-257
01-258
01-259
01-260
01-261
01-262
01-263
01-264
01-265
01-266
01-267
01-268
01-269
01-270
01-271
01-272
01-273
01-274
01-275
01-276
01-277
01-278
01-279
01-280
01-281
01-282
01-283
01-284
01-285
01-286
01-287
01-288
01-289
01-290
01-291
01-292
01-293
01-294
01-295
01-296
01-297
01-298
01-299
01-300
01-301
01-302
01-303
01-304
01-305
01-306
01-307
01-308
01-309
01-310
01-311
01-312
01-313
01-314
01-315
01-316
01-317
01-318
01-319
01-320
01-321
01-322
01-323
01-324
01-325
01-326
01-327
01-328
01-329
01-330
01-331
01-332
01-333
01-334
01-335
01-336
01-337
01-338
01-339
01-340
01-341
01-342
01-343
01-344
01-345
01-346
01-347
01-348
01-349
01-350
01-351
01-352
01-353
01-354
01-355
01-356
01-357
01-358
01-359
01-360
01-361
01-362
01-363
01-364
01-365
01-366
01-367
01-368
01-369
01-370
01-371
01-372
01-373
01-374
01-375
01-376
01-377
01-378
01-379
01-380
01-381
01-382
01-383
01-384
01-385
01-386
01-387
01-388
01-389
01-390
01-391
01-392
01-393
01-394
01-395
01-396
01-397
01-398
01-399
01-400
01-401
01-402
01-403
01-404
01-405
01-406
01-407
01-408
01-409
01-410
01-411
01-412
01-413
01-414
01-415
01-416
01-417
01-418
01-419
01-420
01-421
01-422
01-423
01-424
01-425
01-426
01-427
01-428
01-429
01-430
01-431
01-432
01-433
01-434
01-435
01-436
01-437
01-438
01-439
01-440
01-441
01-442
01-443
01-444
01-445
01-446
01-447
01-448
01-449
01-450
01-451
01-452
01-453
01-454
01-455
01-456
01-457
01-458
01-459
01-460
01-461
01-462
01-463
01-464
01-465
01-466
01-467
01-468
01-469
01-470
01-471
01-472
01-473
01-474
01-475
01-476
01-477
01-478
01-479
01-480
01-481
01-482
01-483
01-484
01-485
01-486
01-487
01-488
01-489
01-490
01-491
01-492
01-493
01-494
01-495
01-496
01-497
01-498
01-499
01-500
01-501
01-502
01-503
01-504
01-505
01-506
01-507
01-508
01-509
01-510
01-511
01-512
01-513
01-514
01-515
01-516
01-517
01-518
01-519
01-520
01-521
01-522
01-523
01-524
01-525
01-526
01-527
01-528
01-529
01-530
01-531
01-532
01-533
01-534
01-535
01-536
01-537
01-538
01-539
01-540
01-541
01-542
01-543
01-544
01-545
01-546
01-547
01-548
01-549
01-550
01-551
01-552
01-553
01-554
01-555
01-556
01-557
01-558
01-559
01-560
01-561
01-562
01-563
01-564
01-565
01-566
01-567
01-568
01-569
01-570
01-571
01-572
01-573
01-574
01-575
01-576
01-577
01-578
01-579
01-580
01-581
01-582
01-583
01-584
01-585
01-586
01-587
01-588
01-589
01-590
01-591
01-592
01-593
01-594
01-595
01-596
01-597
01-598
01-599
01-600
01-601
01-602
01-603
01-604
01-605
01-606
01-607
01-608
01-609
01-610
01-611
01-612
01-613
01-614
01-615
01-616
01-617
01-618
01-619
01-620
01-621
01-622
01-623
01-624
01-625
01-626
01-627
01-628
01-629
01-630
01-631
01-632
01-633
01-634
01-635
01-636
01-637
01-638
01-639
01-640
01-641
01-642
01-643
01-644
01-645
01-646
01-647
01-648
01-649
01-650
01-651
01-652
01-653
01-654
01-655
01-656
01-657
01-658
01-659
01-660
01-661
01-662
01-663
01-664
01-665
01-666
01-667
01-668
01-669
01-670
01-671
01-672
01-673
01-674
01-675
01-676
01-677
01-678
01-679
01-680
01-681
01-682
01-683
01-684
01-685
01-686
01-687
01-688
01-689
01-690
01-691
01-692
01-693
01-694
01-695
01-696
01-697
01-698
01-699
01-700
01-701
01-702
01-703
01-704
01-705
01-706
01-707
01-708
01-709
01-710
01-711
01-712
01-713
01-714
01-715
01-716
01-717
01-718
01-719
01-720
01-721
01-722
01-723
01-724
01-725
01-726
01-727
01-728
01-729
01-730
01-731
01-732
01-733
01-734
01-735
01-736
01-737
01-738
01-739
01-740
01-741
01-742
01-743
01-744
01-745
01-746
01-747
01-748
01-749
01-750
01-751
01-752
01-753
01-754
01-755
01-756
01-757
01-758
01-759
01-760
01-761
01-762
01-763
01-764
01-765
01-766
01-767
01-768
01-769
01-770
01-771
01-772
01-773
01-774
01-775
01-776
01-777
01-778
01-779
01-780
01-781
01-782
01-783
01-784
01-785
01-786
01-787
01-788
01-789
01-790
01-791
01-792
01-793
01-794
01-795
01-796
01-797
01-798
01-799
01-800
01-801
01-802
01-803
01-804
01-805
01-806
01-807
01-808
01-809
01-810
01-811
01-812
01-813
01-814
01-815
01-816
01-817
01-818
01-819
01-820
01-821
01-822
01-823
01-824
01-825
01-826
01-827
01-828
01-829
01-830
01-831
01-832
01-833
01-834
01-835
01-836
01-837
01-838
01-839
01-840
01-841
01-842
01-843
01-844
01-845
01-846
01-847
01-848
01-849
01-850
01-851
01-852
01-853
01-854
01-855
01-856
01-857
01-858
01-859
01-860
01-861
01-862
01-863
01-864
01-865
01-866
01-867
01-868
01-869
01-870
01-871
01-872
01-873
01-874
01-875
01-876
01-877
01-878
01-879
01-880
01-881
01-882
01-883
01-884
01-885
01-886
01-887
01-888
01-889
01-890
01-891
01-892
01-893
01-894
01-895
01-896
01-897
01-898
01-899
01-900
01-901
01-902
01-903
01-904
01-905
01-906
01-907
01-908
01-909
01-910
01-911
01-912
01-913
01-914
01-915
01-916
01-917
01-918
01-919
01-920
01-921
01-922
01-923
01-924
01-925
01-926
01-927
01-928
01-929
01-930
01-931
01-932
01-933
01-934
01-935
01-936
01-937
01-938
01-939
01-940
01-941
01-942
01-943
01-944
01-945
01-946
01-947
01-948
01-949
01-950
01-951
01-952
01-953
01-954
01-955
01-956
01-957
01-958
01-959
01-960
01-961
01-962
01-963
01-964
01-965
01-966
01-967
01-968
01-969
01-970
01-971
01-972
01-973
01-974
01-975
01-976
01-977
01-978
01-979
01-980
01-981
01-982
01-983
01-984
01-985
01-986
01-987
01-988
01-989
01-990
01-991
01-992
01-993
01-994
01-995
01-996
01-997
01-998
01-999
01-1000
01-1001
01-1002
01-1003
01-1004
01-1005
01-1006
01-1007
01-1008
01-1009
01-1010
01-1011
01-1012
01-1013
01-1014
01-1015
01-1016
01-1017
01-1018
01-1019
01-1020
01-1021
01-1022
01-1023
01-1024
01-1025
01-1026
01-1027
01-1028
01-1029
01-1030
01-1031
01-1032
01-1033
01-1034
01-1035
01-1036
01-1037
01-1038
01-1039
01-1040
01-1041
01-1042
01-1043
01-1044
01-1045
01-1046
01-1047
01-1048
01-1049
01-1050
01-1051
01-1052
01-1053
01-1054
01-1055
01-1056
01-1057
01-1058
01-1059
01-1060
01-1061
01-1062
01-1063
01-1064
01-1065
01-1066
01-1067
01-1068
01-1069
01-1070
01-1071
01-1072
01-1073
01-1074
01-1075
01-1076
01-1077
01-1078
01-1079
01-1080
01-1081
01-1082
01-1083
01-1084
01-1085
01-1086
01-1087
01-1088
01-1089
01-1090
01-1091
01-1092
01-1093
01-1094
01-1095
01-1096
01-1097
01-1098
01-1099
01-1100
01-1101
01-1102
01-1103
01-1104
01-1105
01-1106
01-1107
01-1108
01-1109
01-1110
01-1111
01-1112
01-1113
01-1114
01-1115
01-1116
01-1117
01-1118
01-1119
01-1120
01-1121
01-1122
01-1123
01-1124
01-1125
01-1126
01-1127
01-1128
01-1129
01-1130
01-1131
01-1132
01-1133
01-1134
01-1135
01-1136
01-1137
01-1138
01-1139
01-1140
01-1141
01-1142
01-1143
01-1144
01-1145
01-1146
01-1147
01-1148
01-1149
01-1150
01-1151
01-1152
01-1153
01-1154
01-1155
01-1156
01-1157
01-1158
01-1159
01-1160
01-1161
01-1162
01-1163
01-1164
01-1165
01-1166
01-1167
01-1168
01-1169
01-1170
01-1171
01-1172
01-1173
01-1174
01-1175
01-1176
01-1177
01-1178
01-1179
01-1180
01-1181
01-1182
01-1183
01-1184
01-1185
01-1186
01-1187
01-1188
01-1189
01-1190
01-1191
01-1192
01-1193
01-1194
01-1195
01-1196
01-1197
01-1198
01-1199
01-1200
01-1201
01-1202
01-1203
01-1204
01-1205
01-1206
01-1207
01-1208
01-1209
01-1210
01-1211
01-1212
01-1213
01-1214
01-1215
01-1216
01-1217
01-1218
01-1219
01-1220
01-1221
01-1222
01-1223
01-1224
01-1225
01-1226
01-1227
01-1228
01-1229
01-1230
01-1231
01-1232
01-1233
01-1234
01-1235
01-1236
01-1237
01-1238
01-1239
01-1240
01-1241
01-1242
01-1243
01-1244
01-1245
01-1246
01-1247
01-1248
01-1249
01-1250
01-1251
01-1252
01-1253
01-1254
01-1255
01-1256
01-1257
01-1258
01-1259
01-1260
01-1261
01-1262
01-1263
01-1264
01-1265
01-1266
01-1267
01-1268
01-1269
01-1270
01-1271
01-1272
01-1273
01-1274
01-1275
01-1276
01-1277
01-1278
01-1279
01-1280
01-1281
01-1282
01-1283
01-1284
01-1285
01-1286
01-1287
01-1288
01-1289
01-1290
01-1291
01-1292
01-1293
01-1294
01-1295
01-1296
01-1297
01-1298
01-1299
01-1300
01-1301
01-1302
01-1303
01-1304
01-1305
01-1306
01-1307
01-1308
01-1309
01-1310
01-1311
01-1312
01-1313
01-1314
01-1315
01-1316
01-1317
01-1318
01-1319
01-1320
01-1321
01-1322
01-1323
01-1324
01-1325
01-1326
01-1327
01-1328
01-1329
01-1330
01-1331
01-1332
01-1333
01-1334
01-1335
01-1336
01-1337
01-1338
01-1339
01-1340
01-1341
01-1342
01-1343
01-1344
01-1345
01-1346
01-1347
01-1348
01-1349
01-1350
01-1351
01-1352
01-1353
01-1354
01-1355
01-1356
01-1357
01-1358
01-1359
01-1360
01-1361
01-1362
01-1363
01-1364
01-1365
01-1366
01-1367
01-1368
01-1369
01-1370
01-1371
01-1372
01-1373
01-1374
01-1375
01-1376
01-1377
01-1378
01-1379
01-1380
01-1381
01-1382
01-1383
01-1384
01-1385
01-1386
01-1387
01-1388
01-1389
01-1390
01-1391
01-1392
01-1393
01-1394
01-1395
01-1396
01-1397
01-1398
01-1399
01-1400
01-1401
01-1402
01-1403
01-1404
01-1405
01-1406
01-1407
01-1408
01-1409
01-1410
01-1411
01-1412
01-1413
01-1414
01-1415
01-1416
01-1417
01-1418
01-1419
01-1420
01-1421
01-1422
01-1423
01-1424
01-1425
01-1426
01-1427
01-1428
01-1429
01-1430
01-1431
01-1432
01-1433
01-1434
01-1435
01-1436
01-1437
01-1438
01-1439
01-1440
01-1441
01-1442
01-1443
01-1444
01-1445
01-1446
01-1447
01-1448
01-1449
01-1450
01-1451
01-1452
01-1453
01-1454
01-1455
01-1456
01-1457
01-1458
01-1459
01-1460
01-1461
01-1462
01-1463
01-1464
01-1465
01-1466
01-1467
01-1468
01-1469
01-1470
01-1471
01-1472
01-1473
01-1474
01-1475
01-1476
01-1477
01-1478
01-1479
01-1480
01-1481
01-1482
01-1483
01-1484
01-1485
01-1486
01-1487
01-1488
01-1489
01-1490
01-1491
01-1492
01-1493
01-1494
01-1495
01-1496
01-1497
01-1498
01-1499
01-1500
01-1501
01-1502
01-1503
01-1504
01-1505
01-1506
01-1507
01-1508
01-1509
01-1510
01-1511
01-1512
01-1513
01-1514
01-1515
01-1516
01-1517
01-1518
01-1519
01-1520
01-1521
01-1522
01-1523
01-1524
01-1525
01-1526
01-1527
01-1528
01-1529
01-1530
01-1531
01-1532
01-1533
01-1534
01-1535
01-1536
01-1537
01-1538
01-1539
01-1540
01-1541
01-1542
01-1543
01-1544
01-1545
01-1546
01-1547
01-1548
01-1549
01-1550
01-1551
01-1552
01-1553
01-1554
01-1555
01-1556
01-1557
01-1558
01-1559
01-1560
01-1561
01-1562
01-1563
01-1564
01-1565
01-1566
01-1567
01-1568
01-1569
01-1570
01-1571
01-1572
01-1573
01-1574
01-1575
01-1576
01-1577
01-1578
01-1579
01-1580
01-1581
01-1582
01-1583
01-1584
01-1585
01-1586
01-1587
01-1588
01-1589
01-1590
01-1591
01-1592
01-1593
01-1594
01-1595
01-1596
01-1597
01-1598
01-1599
01-1600
01-1601
01-1602
01-1603
01-1604
01-1605
01-1606
01-1607
01-1608
01-1609
01-1610
01-1611
01-1612
01-1613
01-1614
01-1615
01-1616
01-1617
01-1618
01-1619
01-1620
01-1621
01-1622
01-1623
01-1624
01-1625
01-1626
01-1627
01-1628
01-1629
01-1630
01-1631
01-1632
01-1633
01-1634
01-1635
01-1636
01-1637
01-1638
01-1639
01-1640
01-1641
01-1642
01-1643
01-1644
01-1645
01-1646
01-1647
01-1648
01-1649
01-1650
01-1651
01-1652
01-1653
01-1654
01-1655
01-1656
01-1657
01-1658
01-1659
01-1660
01-1661
01-1662
01-1663
01-1664
01-1665
01-1666
01-1667
01-1668
01-1669
01-1670
01-1671
01-1672
01-1673
01-1674
01-1675
01-1676
01-1677
01-1678
01-1679
01-1680
01-1681
01-1682
01-1683
01-1684
01-1685
01-1686
01-1687
01-1688
01-1689
01-1690
01-1691
01-1692
01-1693
01-1694
01-1695
01-1696
01-1697
01-1698
01-1699
01-1700
01-1701
01-1702
01-1703
01-1704
01-1705
01-1706
01-1707
01-1708
01-1709
01-1710
01-1711
01-1712
01-1713
01-1714
01-1715
01-1716
01-1717
01-1718
01-1719
01-1720
01-1721
01-1722
01-1723
01-1724
01-1725
01-1726
01-1727
01-1728
01-1729
01-1730
01-1731
01-1732
01-1733
01-1734
01-1735
01-1736
01-1737
01-1738
01-1739
01-1740
01-1741
01-1742
01-1743
01-1744
01-1745
01-1746
01-1747
01-1748
01-1749
01-1750
01-1751
01-1752
01-1753
01-1754
01-1755
01-1756
01-1757
01-1758
01-1759
01-1760
01-1761
01-1762
01-1763
01-1764
01-1765
01-1766
01-1767
01-1768
01-1769
01-1770
01-1771
01-1772
01-1773
01-1774
01-1775
01-1776
01-1777
01-1778
01-1779
01-1780
01-1781
01-1782
01-1783
01-1784
01-1785
01-1786
01-1787
01-1788
01-1789
01-1790
01-1791
01-1792
01-1793
01-1794
01-1795
01-1796
01-1797
01-1798
01-1799
01-1800
01-1801
01-1802
01-1803
01-1804
01-1805
01-1806
01-1807
01-1808
01-1809
01-1810
01-1811
01-1812
01-1813
01-1814
01-1815
01-1816
01-1817
01-1818
01-1819
01-1820
01-1821
01-1822
01-1823
01-1824
01-1825
01-1826
01-1827
01-1828
01-1829
01-1830
01-1831
01-1832
01-1833
01-1834
01-1835
01-1836
01-1837
01-1838
01-1839
01-1840
01-1841
01-1842
01-1843
01-1844
01-1845
01-1846
01-1847
01-1848
01-1849
01-1850
01-1851
01-1852
01-1853
01-1854
01-1855
01-1856
01-1857
01-1858
01-1859
01-1860
01-1861
01-1862
01-1863
01-1864
01-1865
01-1866
01-1867
01-1868
01-1869
01-1870
01-1871
01-1872
01-1873
01-1874
01-1875
01-1876
01-1877
01-1878
01-1879
01-1880
01-1881
01-1882
01-1883
01-1884
01-1885
01-1886
01-1887
01-1888
01-1889
01-1890
01-1891
01-1892
01-1893
01-1894
01-1895
01-1896
01-1897
01-1898
01-1899
01-1900
01-1901
01-1902
01-1903
01-1904
01-1905
01-1906
01-1907
01-1908
01-1909
01-1910
01-1911
01-1912
01-1913
01-1914
01-1915
01-1916
01-1917
01-1918
01-1919
01-1920
01-1921
01-1922
01-1923
01-1924
01-1925
01-1926
01-1927
01-1928
01-1929
01-1930
01-1931
01-1932
01-1933
01-1934
01-1935
01-1936
01-1937
01-1938
01-1939
01-1940
01-1941
01-1942
01-1943
01-1944
01-1945
01-1946
01-1947
01-1948
01-1949
01-1950
01-1951
01-1952
01-1953
01-1954
01-1955
01-1956
01-1957
01-1958
01-1959
01-1960
01-1961
01-1962
01-1963
01-1964
01-1965
01-1966
01-1967
01-1968
01-1969
01-1970
01-1971
01-1972
01-1973
01-1974
01-1975
01-1976
01-1977
01-1978
01-1979
01-1980
01-1981
01-1982
01-1983
01-1984
01-1985
01-1986
01-1987
01-1988
01-1989
01-1990
01-1991
01-1992
01-1993
01-1994
01-1995
01-1996
01-1997
01-1998
01-1999
01-2000
01-2001
01-2002
01-2003
01-2004
01-2005
01-2006
01-2007
01-2008
01-2009
01-2010
01-2011
01-2012
01-2013
01-2014
01-2015
01-2016
01-2017
01-2018
01-2019
01-2020
01-2021
01-2022
01-2023
01-2024
01-2025
01-2026
01-2027
01-2028
01-2029
01-2030
01-2031
01-2032
01-2033
01-2034
01-2035
01-2036
01-2037
01-2038
01-2039
01-2040
01-2041
01-2042
01-2043
01-2044
01-2045
01-2046
01-2047
01-2048
01-2049
01-2050
01-2051
01-2052
01-2053
01-2054
01-2055
01-2056
01-2057
01-2058
01-2059
01-2060
01-2061
01-2062
01-2063
01-2064
01-2065
01-2066
01-2067
01-2068
01-2069
01-2070
01-2071
01-2072
01-2073
01-2074
01-2075
01-2076
01-2077
01-2078
01-2079
01-2080
01-2081
01-2082
01-2083
01-2084
01-2085
01-2086
01-2087
01-2088
01-2089
01-2090
01-2091
01-2092
01-2093
01-2094
01-2095
01-2096
01-2097
01-2098
01-2099
01-2100
01-2101
01-2102
01-2103
01-2104
01-2105
01-2106
01-2107
01-2108
01-2109
01-2110
01-2111
01-2112
01-2113
01-2114
01-2115
01-2116
01-2117
01-2118
01-2119
01-2120
01-2121
01-2122
01-2123
01-2124
01-2125
01-2126
01-2127
01-2128
01-2129
01-2130
01-2131
01-2132
01-2133
01-2134
01-2135
01-2136
01-2137
01-2138
01-2139
01-2140
01-2141
01-2142
01-2143
01-2144
01-2145
01-2146
01-2147
01-2148
01-2149
01-2150
01-2151
01-2152
01-2153
01-2154
01-2155
01-2156
01-2157
01-2158
01-2159
01-2160
01-2161
01-2162
01-2163
01-2164
01-2165
01-2166
01-2167
01-2168
01-2169
01-2170
01-2171
01-2172
01-2173
01-2174
01-2175
01-2176
01-2177
01-2178
01-2179
01-2180
01-2181
01-2182
01-2183
01-2184
01-2185
01-2186
01-2187
01-2188
01-2189
01-2190
01-2191
01-2192
01-2193
01-2194
01-2195
01-2196
01-2197
01-2198
01-2199
01-2200
01-2201
01-2202
01-2203
01-2204
01-2205
01-2206
01-2207
01-2208
01-2209
01-2210
01-2211
01-2212
01-2213
01-2214
01-2215
01-2216
01-2217
01-2218
01-2219
01-2220
01-2221
01-2222
01-2223
01-2224
01-2225
01-2226
01-2227
01-2228
01-2229
01-2230
01-2231
01-2232
01-2233
01-2234
01-2235
01-2236
01-2237
01-2238
01-2239
01-2240
01-2241
01-2242
01-2243
01-2244
01-2245
01-2246
01-2247
01-2248
01-2249
01-2250
01-2251
01-2252
01-2253
01-2254
01-2255
01-2256
01-2257
01-2258
01-2259
01-2260
01-2261
01-2262
01-2263
01-2264
01-2265
01-2266
01-2267
01-2268
01-2269
01-2270
01-2271
01-2272
01-2273
01-2274
01-2275
01-2276
01-2277
01-2278
01-2279
01-2280
01-2281
01-2282
01-2283
01-2284
01-2285
01-2286
01-2287
01-2288
01-2289
01-2290
01-2291
01-2292
01-2293
01-2294
01-2295
01-2296
01-2297
01-2298
01-2299
01-2300
01-2301
01-2302
01-2303
01-2304
01-2305
01-2306
01-2307
01-2308
01-2309
01-2310
01-2311
01-2312
01-2313
01-2314
01-2315
01-2316
01-2317
01-2318
01-2319
01-2320
01-2321
01-2322
01-2323
01-2324
01-2325
01-2326
01-2327
01-2328
01-2329
01-2330
01-2331
01-2332
01-2333
01-2334
01-2335
01-2336
01-2337
01-2338
01-2339
01-2340
01-2341
01-2342
01-2343
01-2344
01-2345
01-2346
01-2347
01-2348
01-2349
01-2350
01-2351
01-2352
01-2353
01-2354
01-2355
01-2356
01-2357
01-2358
01-2359
01-2360
01-2361
01-2362
01-2363
01-2364
01-2365
01-2366
01-2367
01-2368
01-2369
01-2370
01-2371
01-2372
01-2373
01-2374
01-2375
01-2376
01-2377
01-2378
01-2379
01-2380
01-2381
01-2382
01-2383
01-2384
01-2385
01-2386
01-2387
01-2388
01-2389
01-2390
01-2391
01-2392
01-2393
01-2394
01-2395
01-2396
01-2397
01-2398
01-2399
01-2400
01-2401
01-2402
01-2403
01-2404
01-2405
01-2406
01-2407
01-2408
01-2409
01-2410
01-2411
01-2412
01-2413
01-2414
01-2415
01-2416
01-2417
01-2418
01-2419
01-2420
01-2421
01-2422
01-2423
01-2424
01-2425
01-2426
01-2427
01-2428
01-2429
01-2430
01-2431
01-2432
01-2433
01-2434
01-2435
01-2436
01-2437
01-2438
01-2439
01-2440
01-2441
01-2442
01-2443
01-2444
01-2445
01-2446
01-2447
01-2448
01-2449
01-2450
01-2451
01-2452
01-2453
01-2454
01-2455
01-2456
01-2457
01-2458
01-2459
01-2460
01-2461
01-2462
01-2463
01-2464
01-2465
01-2466
01-2467
01-2468
01-2469
01-2470
01-2471
01-2472
01-2473
01-2474
01-2475
01-2476
01-2477
01-2478
01-2479
01-2480
01-2481
01-2482
01-2483
01-2484
01-2485
01-2486
01-2487
01-2488
01-2489
01-2490
01-2491
01-2492
01-2493
01-2494
01-2495
01-2496
01-2497
01-2498
01-2499
01-2500
01-2501
01-2502
01-2503
01-2504
01-2505
01-2506
01-2507
01-2508
01-2509
01-2510
01-2511
01-2512
01-2513
01-2514
01-2515
01-2516
01-2517
01-2518
01-2519
01-2520
01-2521
01-2522
01-2523
01-2524
01-2525
01-2526
01-2527
01-2528
01-2529
01-2530
01-2531
01-2532
01-2533
01-2534
01-2535
01-2536
01-2537
01-2538
01-2539
01-2540
01-2541
01-2542
01-2543
01-2544
01-2545
01-2546
01-2547
01-2548
01-2549
01-2550
01-2551
01-2552
01-2553
01-2554
01-2555
01-2556
01-2557
01-2558
01-2559
01-2560
01-2561
01-2562
01-2563
01-2564
01-2565
01-2566
01-2567
01-2568
01-2569
01-2570
01-2571
01-2572
01-2573
01-2574
01-2575
01-2576
01-2577
01-2578
01-2579
01-2580
01-2581
01-2582
01-2583
01-2584
01-2585
01-2586
01-2587
01-2588
01-2589
01-2590
01-2591
01-2592
01-2593
01-2594
01-2595
01-2596
01-2597
01-2598
01-2599
01-2600
01-2601
01-2602
01-2603
01-2604
01-2605
01-2606
01-2607
01-2608
01-2609
01-2610
01-2611
01-2612
01-2613
01-2614
01-2615
01-2616
01-2617
01-2618
01-2619
01-2620
01-2621
01-2622
01-2623
01-2624
01-2625
01-2626
01-2627
01-2628
01-2629
01-2630
01-2631
01-2632
01-2633
01-2634
01-2635
01-2636
01-2637
01-2638
01-2639
01-2640
01-2641
01-2642
01-2643
01-2644
01-2645
01-2646
01-2647
01-2648
01-2649
01-2650
01-2651
01-2652
01-2653
01-2654
01-2655
01-2656
01-2657
01-2658
01-2659
01-2660
01-2661
01-2662
01-2663
01-2664
01-2665
01-2666
01-2667
01-2668
01-2669
01-2670
01-2671
01-2672
01-2673
01-2674
01-2675
01-2676
01-2677
01-2678
01-2679
01-2680
01-2681
01-2682
01-2683
01-2684
01-2685
01-2686
01-2687
01-2688
01-2689
01-2690
01-2691
01-2692
01-2693
01-2694
01-2695
01-2696
01-2697
01-2698
01-2699
01-2700
01-2701
01-2702
01-2703
01-2704
01-2705
01-2706
01-2707
01-2708
01-2709
01-2710
01-2711
01-2712
01-2713
01-2714
01-2715
01-2716
01-2717
01-2718
01-2719
01-2720
01-2721
01-2722
01-2723
01-2724
01-2725
01-2726
01-2727
01-2728
01-2729
01-2730
01-2731
01-2732
01-2733
01-2734
01-2735
01-2736
01-2737
01-2738
01-2739
01-2740
01-2741
01-2742
01-2743
01-2744
01-2745
01-2746
01-2747
01-2748
01-2749
01-2750
01-2751
01-2752
01-2753
01-2754
01-2755
01-2756
01-2757
01-2758
01-2759
01-2760
01-2761
01-2762
01-2763
01-2764
01-2765
01-2766
01-2767
01-2768
01-2769
01-2770
01-2771
01-2772
01-2773
01-2774
01-2775
01-2776
01-2777
01-2778
01-2779
01-2780
01-2781
01-2782
01-2783
01-2784
01-2785
01-2786
01-2787
01-2788
01-2789
01-2790
01-2791
01-2792
01-2793
01-2794
01-2795
01-2796
01-2797
01-2798
01-2799
01-2800
01-2801
01-2802
01-2803
01-2804
01-2805
01-2806
01-2807
01-2808
01-2809
01-2810
01-2811
01-2812
01-2813
01-2814
01-2815
01-2816
01-2817
01-2818
01-2819
01-2820
01-2821
01-2822
01-2823
01-2824
01-2825
01-2826
01-2827
01-2828
01-2829
01-2830
01-2831
01-2832
01-2833
01-2834
01-2835
01-2836
01-2837
01-2838
01-2839
01-2840
01-2841
01-2842
01-2843
01-2844
01-2845
01-2846
01-2847
01-2848
01-2849
01-2850
01-2851
01-2852
01-2853
01-2854
01-2855
01-2856
01-2857
01-2858
01-2859
01-2860
01-2861
01-2862
01-2863
01-2864
01-2865
01-2866
01-2867
01-2868
01-2869
01-2870
01-2871
01-2872
01-2873
01-2874
01-2875
01-2876
01-2877
01-2878
01-2879
01-2880
01-2881
01-2882
01-2883
01-2884
01-2885
01-2886
01-2887
01-2888
01-2889
01-2890
01-2891
01-2892
01-2893
01-2894
01-2895
01-2896
01-2897
01-2898
01-2899
01-2900
01-2901
01-2902
01-2903
01-2904
01-2905
01-2906
01-2907
01-2908
01-2909
01-2910
01-2911
01-2912
01-2913
01-2914
01-2915
01-2916
01-2917
01-2918
01-2919
01-2920
01-2921
01-2922
01-2923
01-2924
01-2925
01-2926
01-2927
01-2928
01-2929
01-2930
01-2931
01-2932
01-2933
01-2934
01-2935
01-2936
01-2937
01-2938
01-2939
01-2940
01-2941
01-2942
01-2943
01-2944
01-2945
01-2946
01-2947
01-2948
01-2949
01-2950
01-2951
01-2952
01-2953
01-2954
01-2955
01-2956
01-2957
01-2958
01-2959
01-2960
01-2961
01-2962
01-2963
01-2964
01-2965
01-2966
01-2967
01-2968
01-2969
01-2970
01-2971
01-2972
01-2973
01-2974
01-2975
01-2976
01-2977
01-2978
01-2979
01-2980
01-2981
01-2982
01-2983
01-2984
01-2985
01-2986
01-2987
01-2988
01-2989
01-2990
01-2991
01-2992
01-2993
01-2994
01-2995
01-2996
01-2997
01-2998
01-2999
01-3000
01-3001
01-3002
01-3003
01-3004
01-3005
01-3006
01-3007
01-3008
01-3009
01-3010
01-3011
01-3012
01-3013
01-3014
01-3015
01-3016
01-3017
01-3018
01-3019
01-3020
01-3021
01-3022
01-3023
01-3024
01-3025
01-3026
01-3027
01-3028
01-3029
01-3030
01-3031
01-3032
01-3033
01-3034
01-3035
01-3036
01-3037
01-3038
01-3039
01-3040
01-3041
01-3042
01-3043
01-3044
01-3045
01-3046
01-3047
01-3048
01-3049
01-3050
01-3051
01-3052
01-3053
01-3054
01-3055
01-3056
01-3057
01-3058
01-3059
01-3060
01-3061
01-3062
01-3063
01-3064
01-3065
01-3066
01-3067
01-3068
01-3069
01-3070
01-3071
01-3072
01-3073
01-3074
01-3075
01-3076
01-3077
01-3078
01-3079
01-3080
01-3081
01-3082
01-3083
01-3084
01-3085
01-3086
01-3087
01-3088
01-3089
01-3090
01-3091
01-3092
01-3093
01-3094
01-3095
01-3096
01-3097
01-3098
01-3099
01-3100
01-3101
01-3102
01-3103
01-3104
01-3105
01-3106
01-3107
01-3108
01-3109
01-3110
01-3111
01-3112
01-3113
01-3114
01-3115
01-3116
01-3117
01-3118
01-3119
01-3120
01-3121
01-3122
01-3123
01-3124
01-3125
01-3126
01-3127
01-3128
01-3129
01-3130
01-3131
01-3132
01-3133
01-3134
01-3135
01-3136
01-3137
01-3138
01-3139
01-3140
01-3141
01-3142
01-3143
01-3144
01-3145
01-3146
01-3147
01-3148
01-3149
01-3150
01-3151
01-3152
01-3153
01-3154
01-3155
01-3156
01-3157
01-3158
01-3159
01-3160
01-3161
01-3162
01-3163
01-3164
01-3165
01-3166
01-3167
01-3168
01-3169
01-3170
01-3171
01-3172
01-3173
01-3174
01-3175
01-3176
01-3177
01-3178
01-3179
01-3180
01-3181
01-3182
01-3183
01-3184
01-3185
01-3186
01-3187
01-3188
01-3189
01-3190
01-3191
01-3192
01-3193
01-3194
01-3195
01-3196
01-3197
01-3198
01-3199
01-3200
01-3201
01-3202
01-3203
01-3204
01-3205
01-3206
01-3207
01-3208
01-3209
01-3210
01-3211
01-3212
01-3213
01-3214
01-3215
01-3216
01-3217
01-3218
01-3219
01-3220
01-3221
01-3222
01-3223
01-3224
01-3225
01-3226
01-3227
01-3228
01-3229
01-3230
01-3231
01-3232
01-3233
01-3234
01-3235
01-3236
01-3237
01-3238
01-3239
01-3240
01-3241
01-3242
01-3243
01-3244
01-3245
01-3246
01-3247
01-3248
01-3249
01-3250
01-3251
01-3252
01-3253
01-3254
01-3255
01-3256
01-3257
01-3258
01-3259
01-3260
01-3261
01-3262
01-3263
01-3264
01-3265
01-3266
01-3267
01-3268
01-3269
01-3270
01-3271
01-3272
01-3273
01-3274
01-3275
01-3276
01-3277
01-3278
01-3279
01-3280
01-3281
01-3282
01-3283
01-3284
01-3285
01-3286
01-3287
01-3288
01-3289
01-3290
01-3291
01-3292
01-3293
01-3294
01-3295
01-3296
01-3297
01-3298
01-3299
01-3300
01-3301
01-3302
01-3303
01-3304
01-3305
01-3306
01-3307
01-3308
01-3309
01-3310
01-3311
01-3312
01-3313
01-3314
01-3315
01-3316
01-3317
01-3318
01-3319
01-3320
01-3321
01-3322
01-3323
01-3324
01-3325
01-3326
01-3327
01-3328
01-3329
01-3330
01-3331
01-3332
01-3333
01-3334
01-3335
01-3336
01-3337
01-3338
01-3339
01-3340
01-3341
01-3342
01-3343
01-3344
01-3345
01-3346
01-3347
01-3348
01-3349
01-3350
01-3351
01-3352
01-3353
01-3354
01-3355
01-3356
01-



NY 3101 GRID | NAD83 (2011) EAST

PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14', MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM, IN REAL TIME KINEMATIC (RTK) MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS, A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

SCALE 1" = 100'
0 100 200 300 400

STATE OF NEW YORK
RAYMOND B. SNYDER
No. 49290
LICENSED LAND SURVEYOR

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

DATE: JULY 31, 2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:

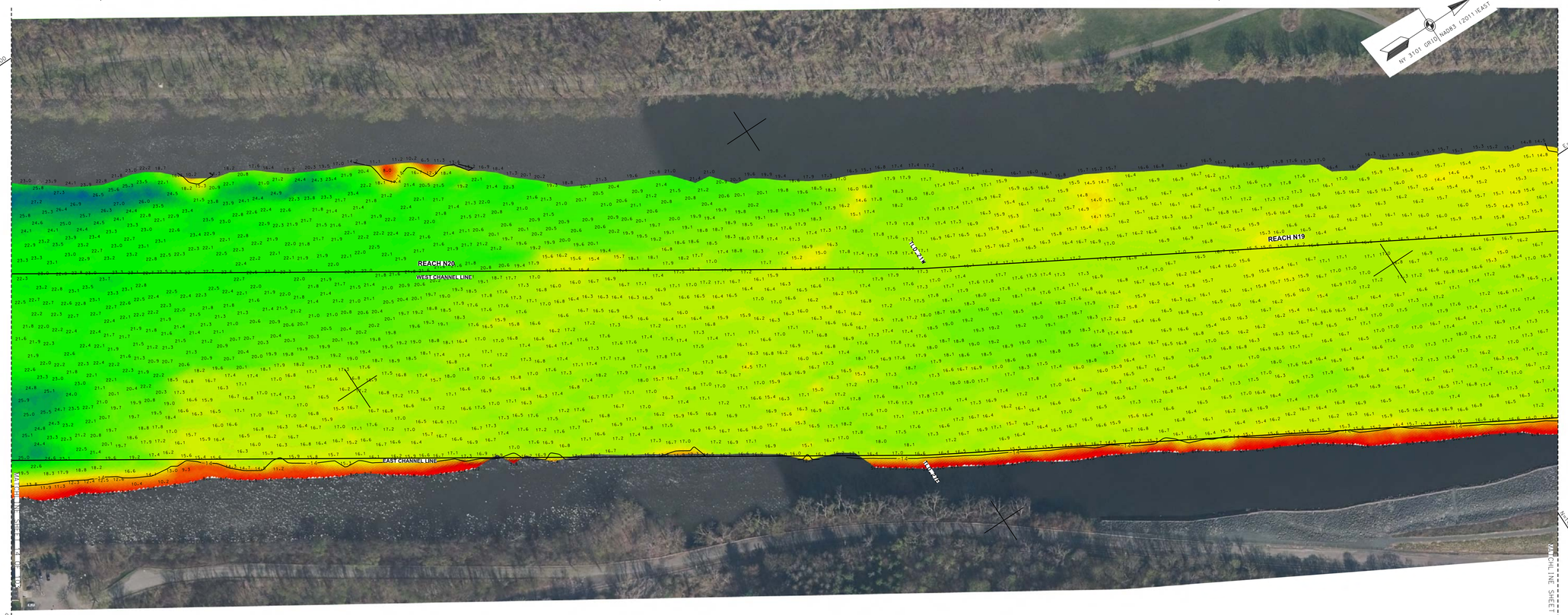
DESIGNED BY: DBS
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1" = 100'
ISSUE DATE: NOVEMBER 2018
SIZE: ANSI F
FILE NAME: VH101-058890063_HUDSON_MB.DGN

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE (910) 251-8448
FAX: (910) 251-8282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH N18-N19

SHEET IDENTIFICATION
VH-112
SHEET 12 OF 103



PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14'. MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.

12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS. A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

STATE OF NEW YORK
RICHARD B. DAVIES
LICENSED LAND SURVEYOR
NO. 49350

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

SCALE 1" = 100'
0 100 200 300 400

MAP CONTINUED ON SHEET 12 OF 103

US Army Corps of Engineers
New York District

MARK	DESCRIPTION	DATE	APPR.	MARK	DESCRIPTION	DATE	APPR.

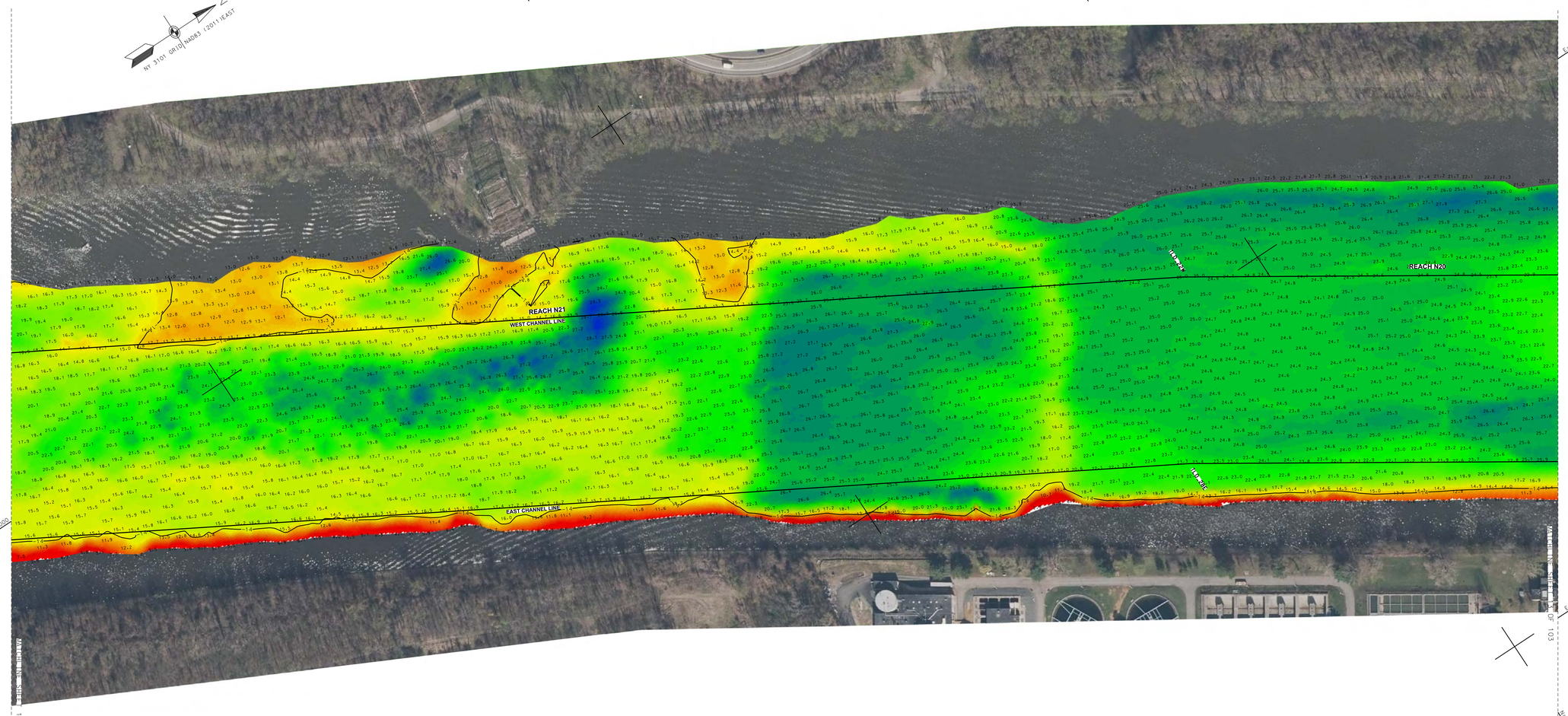
DESIGNED BY: DBA
DWN BY: MBH
SUBMITTED BY: DLJ
PLOT SCALE: 1" = 100'
ISSUE DATE: NOV 2018
SIZE: ANSI F
FILE NAME: VH101-056890043_HUDSON_MB.DGN
DATE: JULY 31, 2018
SOLICITATION NO.:
CKD BY: RBD
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE (910) 251-8444
FAX (910) 251-8282

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

SHEET IDENTIFICATION
VH-113
SHEET 13 OF 103



PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14'. MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.

12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS. A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

STATE OF NEW YORK
RAYMOND B. BARBER
No. 49350
LICENSED LAND SURVEYOR

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

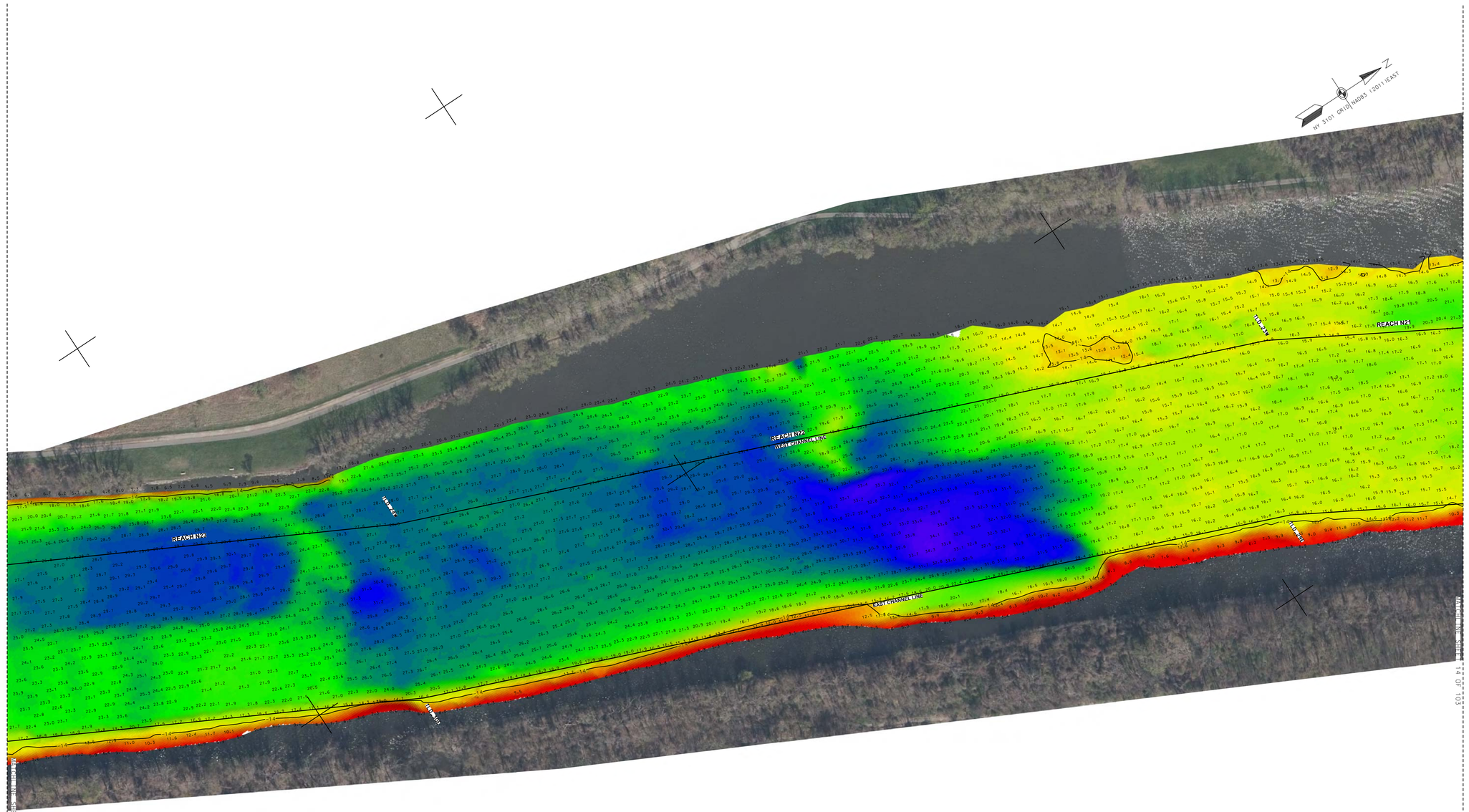
DESIGNED BY: MBH
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1" = 100'
ISSUE DATE: NOV 2018
SIZE: ANSI F
FILE NAME: VH101-058890063_HUDSON_MB.DGN
DATE: JULY 31, 2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-8444
FAX: (910) 251-8282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH N20-N21

SHEET IDENTIFICATION
VH-114
SHEET 14 OF 103



PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14', MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.

12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS, A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

NSRS/NGS CONTROL DATA		
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76 709,760.15

LOCAL CONTROL DATA		
BENCHMARK: HR-12	PID#	NORTHING EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55 684451.34
STAMPED: HR-12 2016		

LOCAL CONTROL DATA		
BENCHMARK: 01-1	PID#	NORTHING EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59 641003.46
STAMPED:		

STATE OF NEW YORK
RAYMOND B. DARBER
No. 49350
LICENSED LAND SURVEYOR

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.	MARK	DESCRIPTION	DATE	APPR.

DESIGNED BY:
DWN BY: MBH
SUBMITTED BY: DJ
PLOT SCALE: 100.000000
PLOT BY:
SIZE: ANSI F
DATE: JULY 31, 2018
SOLICITATION NO.:
CKD BY: RBD
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
ISSUE DATE: NOVEMBER 2018
FILE NAME: V:\101\05880\053_HUDSON_MB.DGN

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
245 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-8444
FAX: (910) 251-8282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACHES N21-N23

SHEET IDENTIFICATION
VH-115
SHEET 15 OF 103

PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14'. MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.

12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS. A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

NY 3101 GRID | NAD83 (2011) EAST

REACH N24 | REACH N23 | WEST CHANNEL LINE | REACH N22 | EAST CHANNEL LINE | REACH N21

MARGUN STREET

CONTINUED SHEET 17 OF 103

CONTINUED SHEET 15 OF 103

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

STATE OF NEW YORK
RICHARD B. BAKER
No. 49350
LICENSED LAND SURVEYOR

SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.
MARK	DESCRIPTION	DATE	APPR.

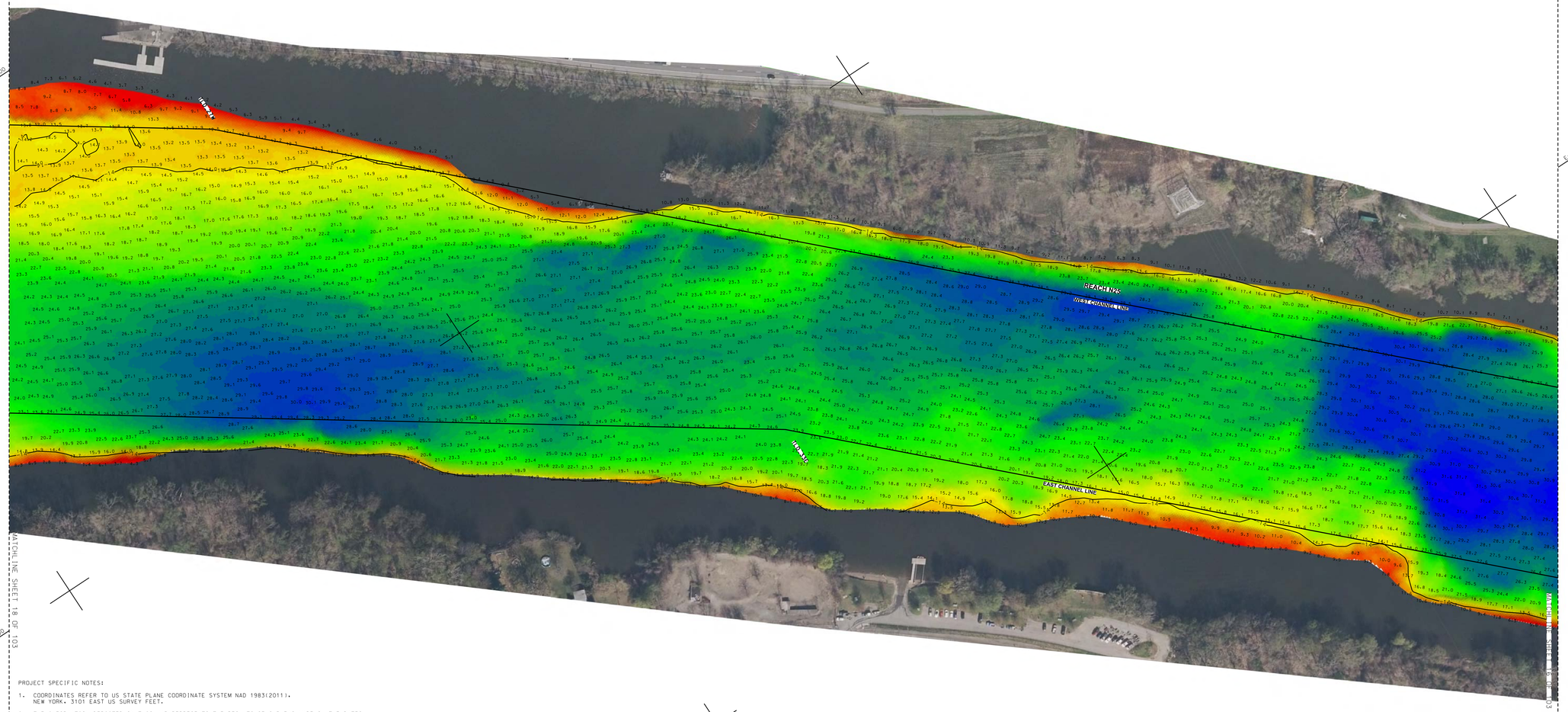
U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-8348
FAX: (910) 251-4362

DESIGNED BY: DGW
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1:100'
PLOT DATE: 1:1
SIZE: ANSI F
DATE: JANUARY 31, 2019
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
ISSUE DATE: NOVEMBER 2018
FILE NUMBER:
FILE NAME: VH101-DS880903_HUDSON_MB.DGN

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH N23-N25

SHEET IDENTIFICATION
VH-116
SHEET 16 OF 103



PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14'. MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED IXNS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS, A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

STATE OF NEW YORK
RAYMOND E. PAWER
049358
LICENSED LAND SURVEYOR

SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.

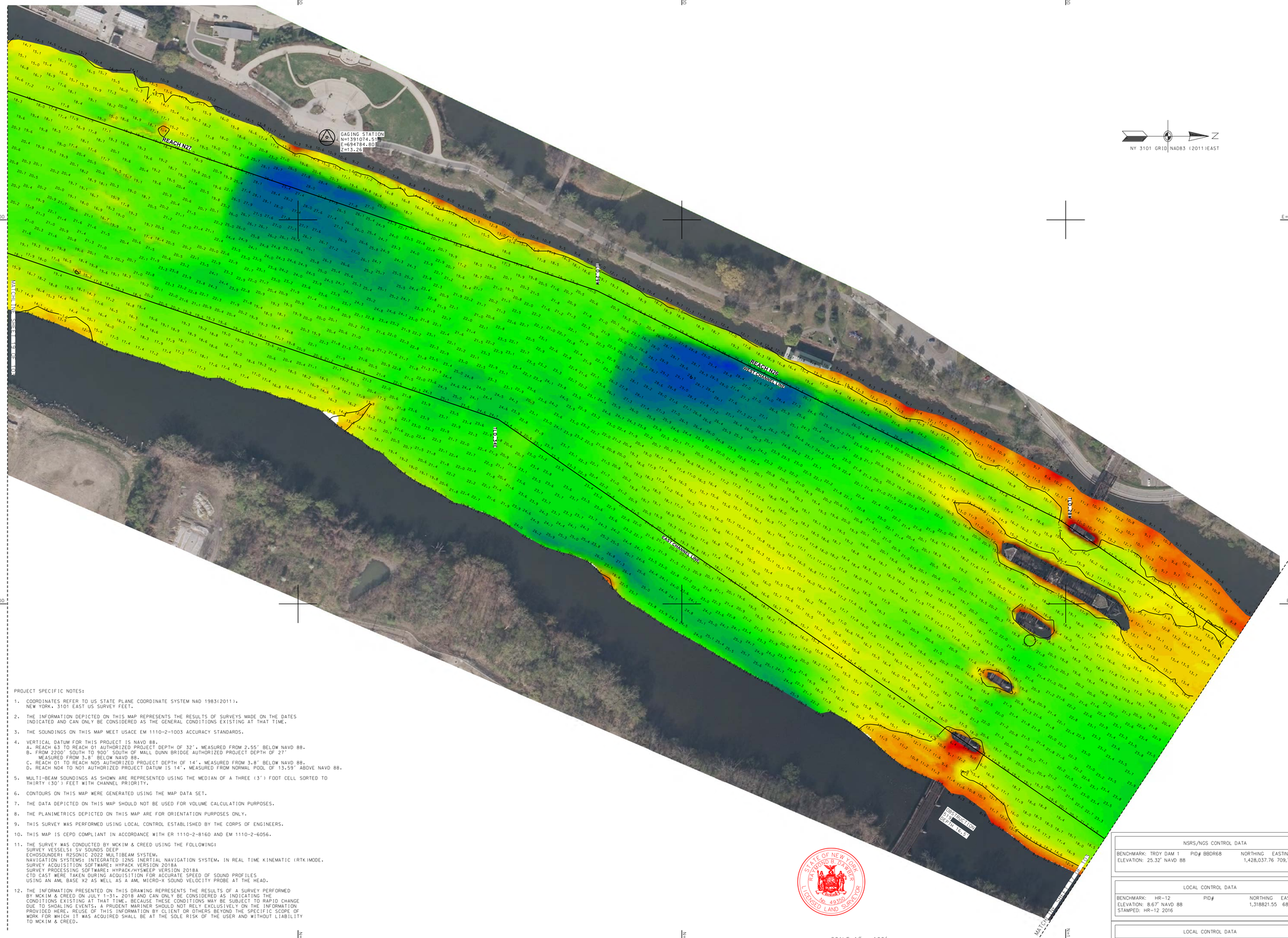
DESIGNED BY: DLJ
DRWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1:100
SIZE: ANSI F
DATE: AUG 31, 2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004 TO 0005
ISSUE DATE: NOV 2018
FILE NUMBER:
FILE NAME: VH101-0268990063_HUDSON-MB.DGN

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-8444
FAX: (910) 251-8282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH N25

SHEET IDENTIFICATION
VH-117
SHEET 17 OF 103



PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14', MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS, A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

STATE OF NEW YORK
RAYMOND B. DARBY
No. 49350
LICENSED LAND SURVEYOR

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.	MARK	DESCRIPTION	DATE	APPR.

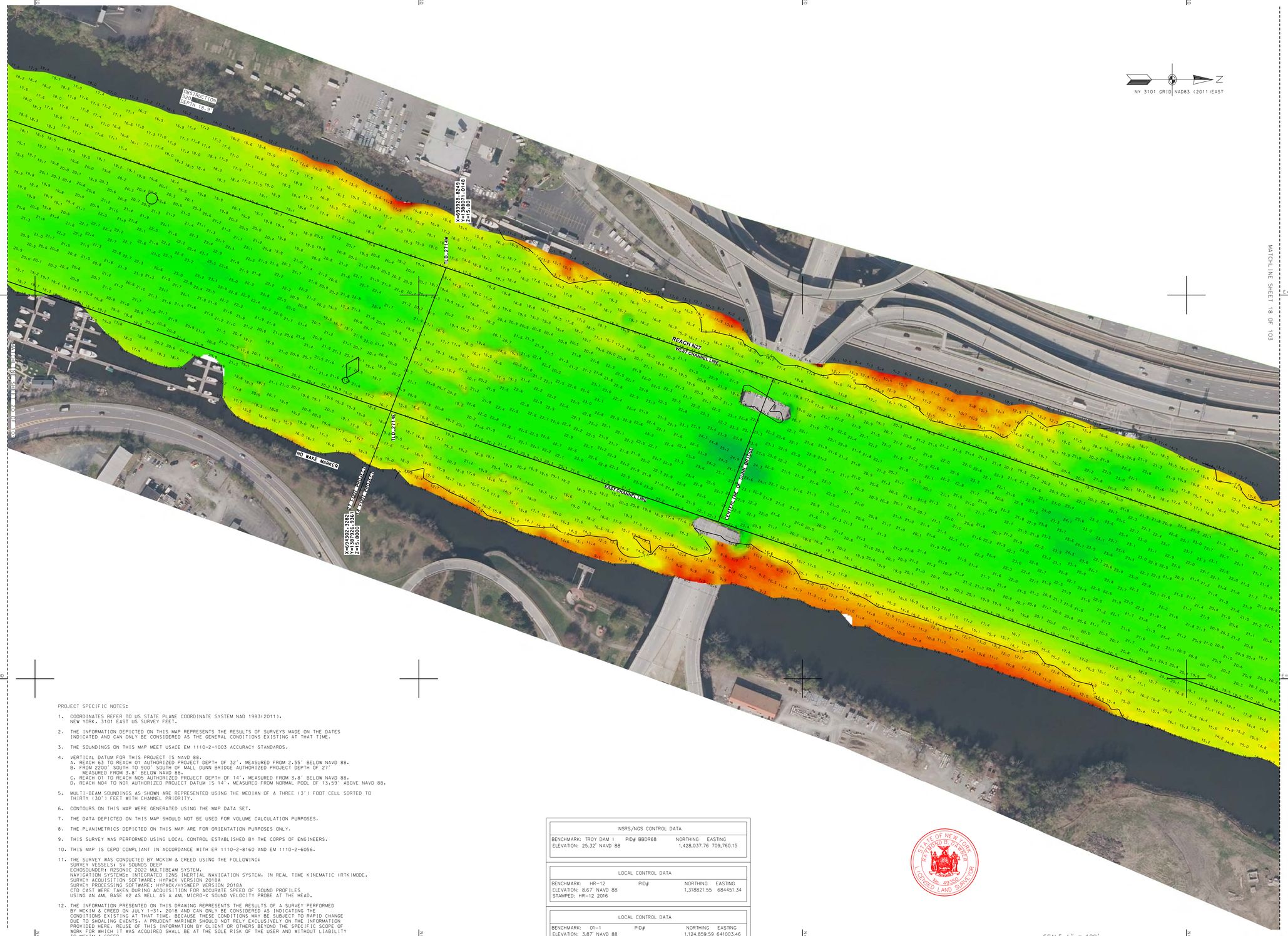
DESIGNED BY: DLJ
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1:100'
PLOT DATE: 10/4/2018
SIZE: ANSI F
DATE: JULY 31, 2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
FILE NAME: VH101-056890063_HUDSON_MB.DGN

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-8444
FAX: (910) 251-8282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH N26-N27

SHEET IDENTIFICATION
VH-118
SHEET 18 OF 103



PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14', MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED IXNS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS, A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

STATE OF NEW YORK
RAYMOND B. GARBER
090 49350
LICENSED LAND SURVEYOR

SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

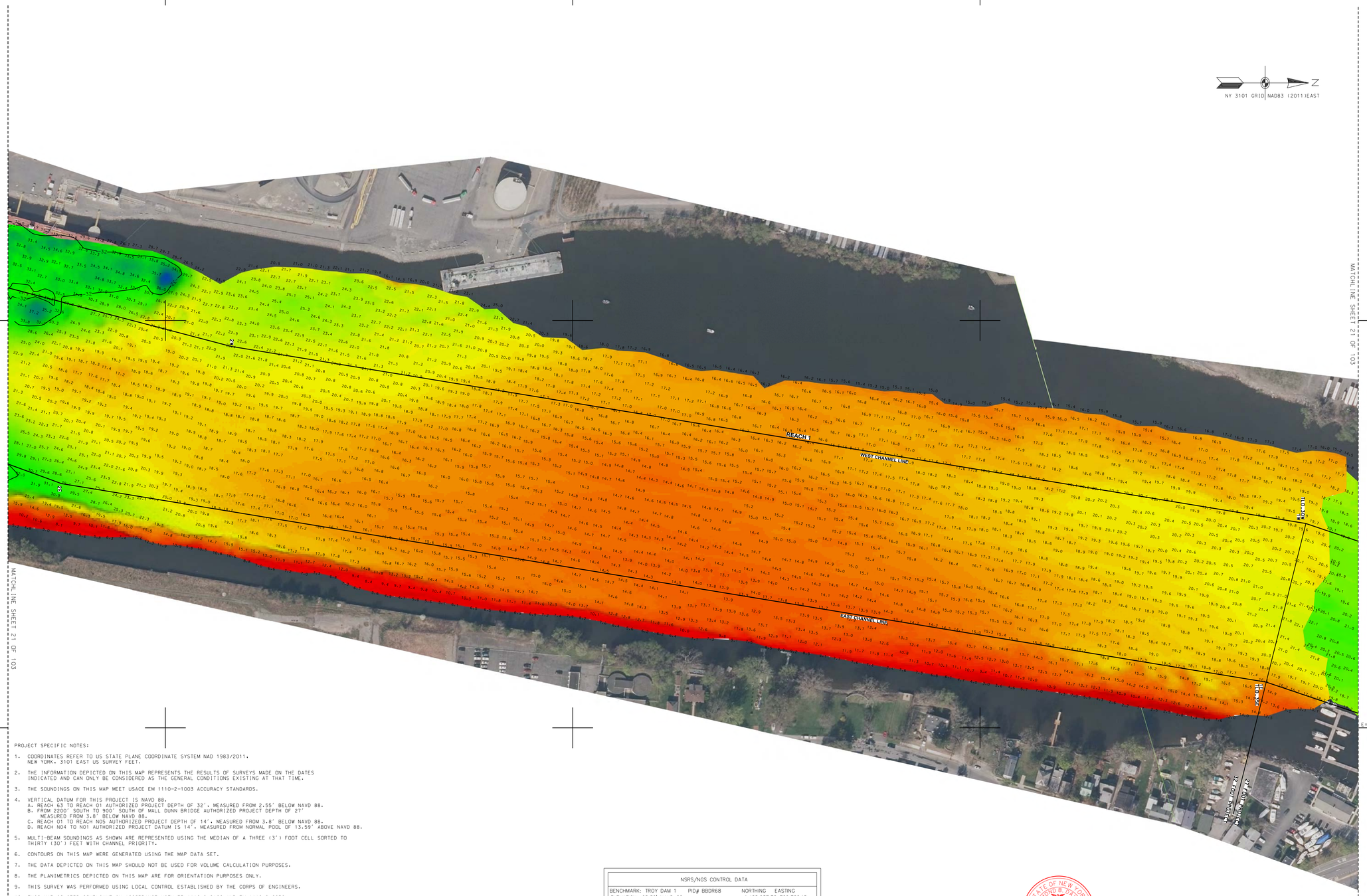
U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-8648
FAX: (910) 251-4262

DESIGNED BY: DGM
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1:100'
PLOT DATE: NOV 2018
SIZE: ANSI F
DATE: JULY 31, 2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
ISSUE DATE: NOV 2018
FILE NUMBER:
FILE NAME: VH101-DS889080B3_HUDSON_MB.DGN

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH N27

SHEET IDENTIFICATION
VH-119
SHEET 19 OF 103



PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14'. MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES
    USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS. A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

STATE OF NEW YORK
PATRICIO B. DAWES
No. 49350
LICENSED LAND SURVEYOR

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.

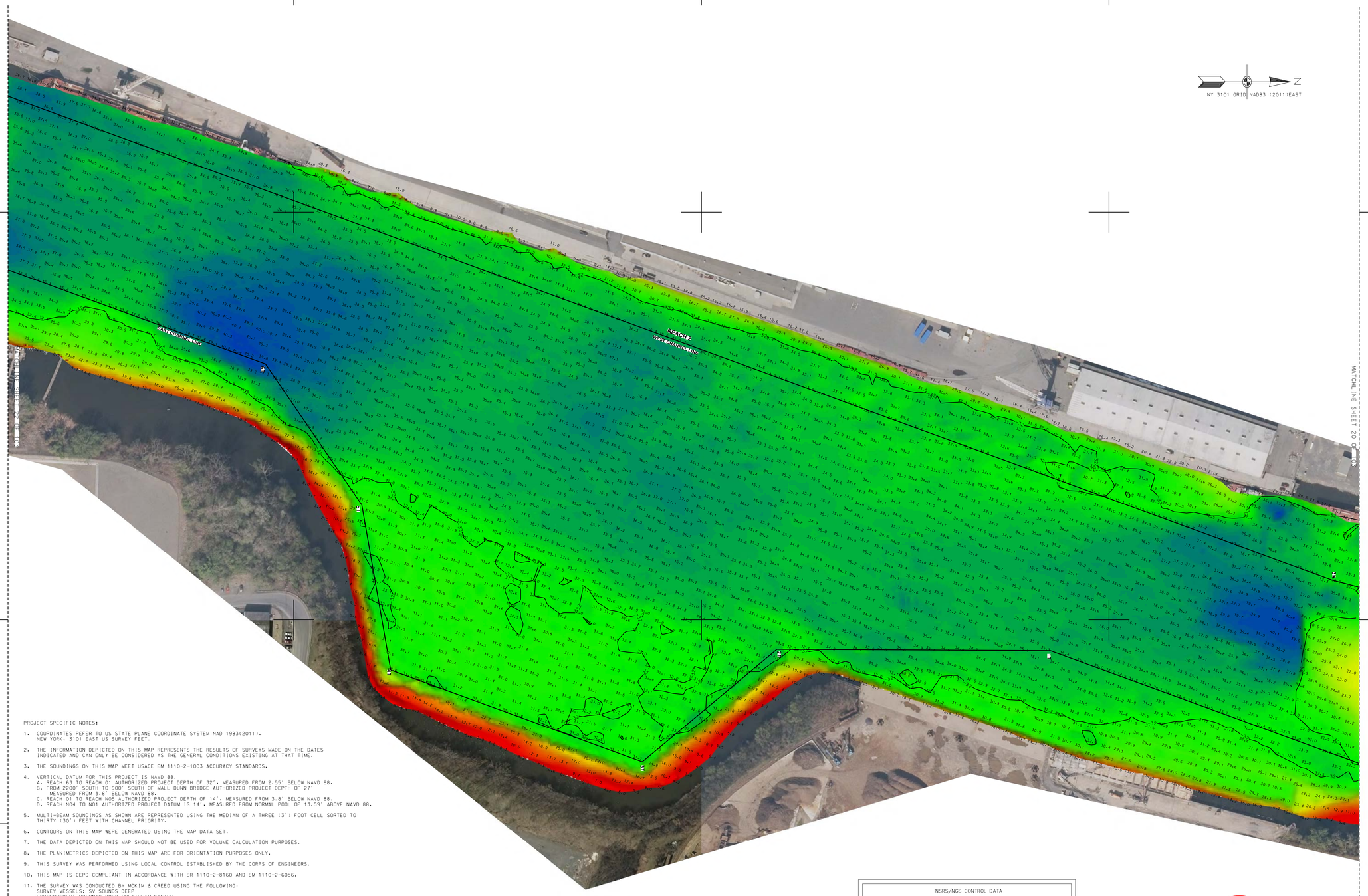
U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-0048
FAX: (910) 251-4262

DESIGNED BY: DWM
DRWN BY: MBH
CKD BY: REID
SUBMITTED BY: DLJ
PLOT SCALE: 1:100
PLOT DATE: AUG 16
SIZE: ANSI F
DATE: JULY 31, 2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
ISSUE DATE:
FILE NUMBER:
FILE NAME: VH101-DS880083_HUDSON_MB.DGN

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 01

SHEET IDENTIFICATION
VH-120
SHEET 20 OF 103



PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14'. MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK) MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS. A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

STATE OF NEW YORK
RAYMOND E. DARBY
No. 49350
LICENSED LAND SURVEYOR

SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.

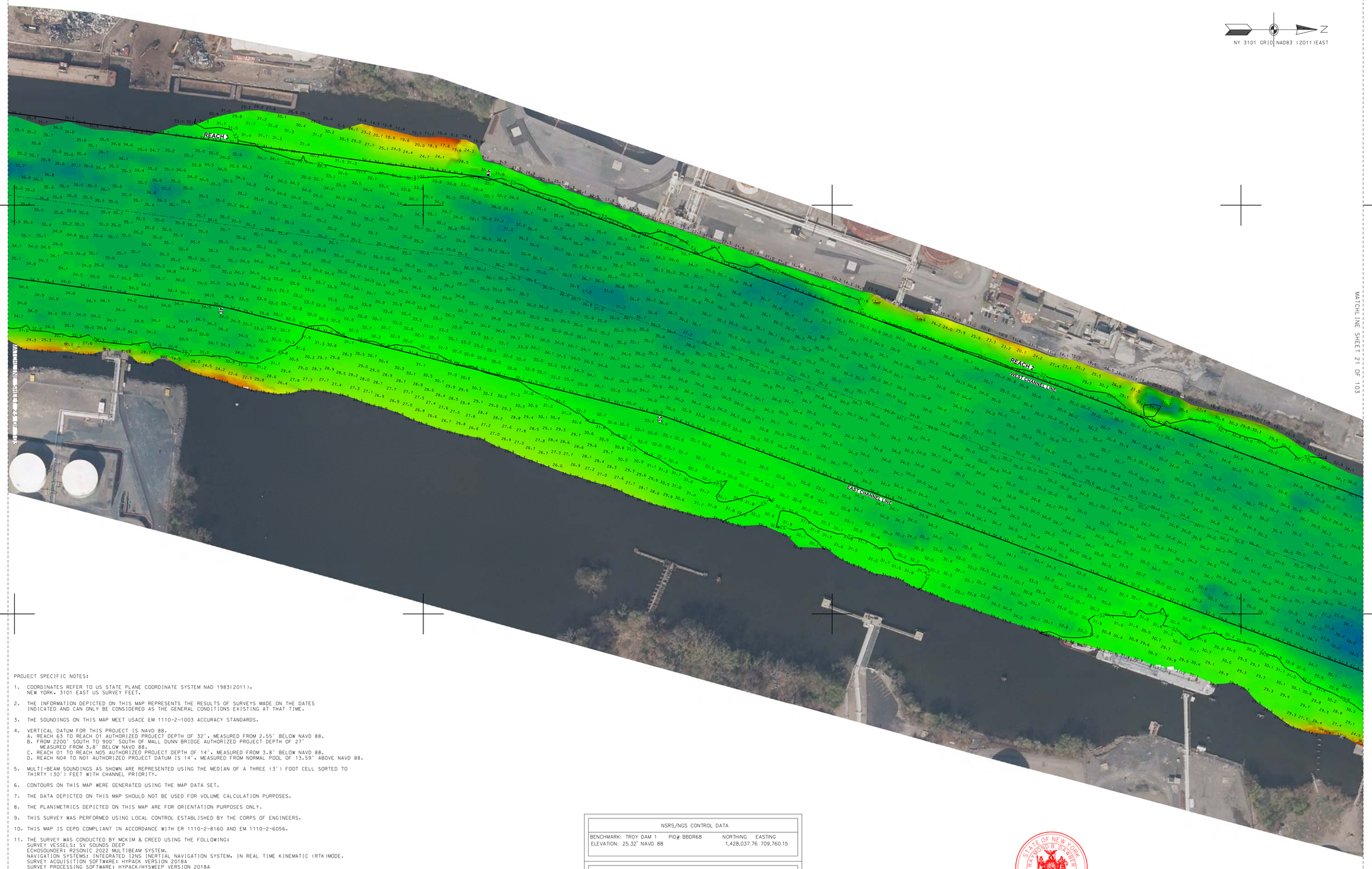
U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 341-0646
FAX: (910) 251-8282

DESIGNED BY:
DWN BY: MBH
CKD BY: RED
SUBMITTED BY: DLJ
PLOT SCALE: 1:1.000
SIZE: ANSI F
ISSUE DATE: NOVEMBER 2018
FILE NAME: V:\110\-058980053_HUDSON_MB.DGN
DATE: JANUARY 31, 2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 02

SHEET IDENTIFICATION
VH-121
SHEET 21 OF 103



PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14', MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED 12NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ONJULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS, A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

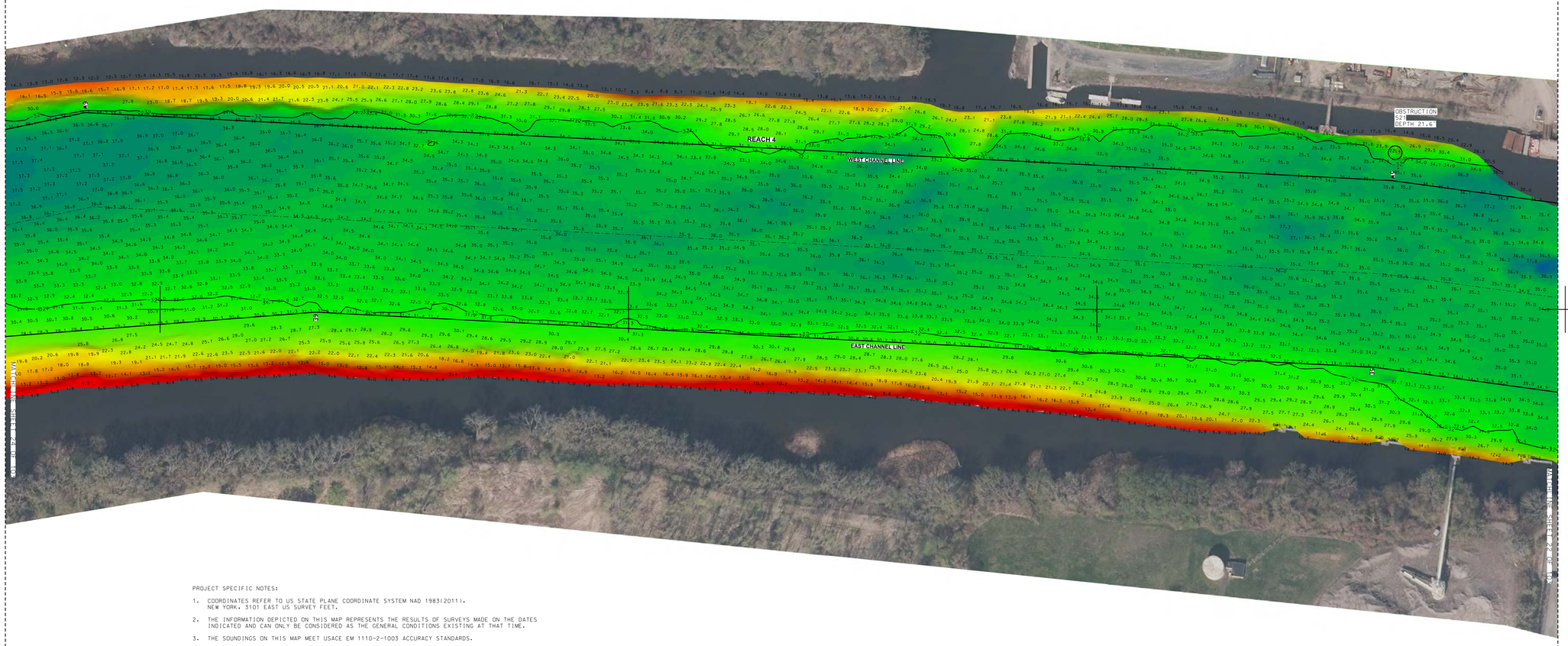
LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

STATE OF NEW YORK
RAYMOND E. BAKER
049350
LICENSED LAND SURVEYOR

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.



PROJECT SPECIFIC NOTES:

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 220' SOUTH TO 900' SOUTH OF MALL DUNN BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14'. MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES
    USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS. A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

STATE OF NEW YORK
RAYMOND B. BAKER
No. 49351
LICENSED LAND SURVEYOR

SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.

DESIGNED BY:	DATE:
DES: MBH	JULY 31, 2018
DWN BY: MBH	CKD BY: RBD
SUBMITTED BY: DLJ	SOLICITATION NO.:
PLOT SCALE: 1" = 100'	CONTRACT NO.: W912DS-14-D-0004
SIZE: ANSI F	ISSUE DATE: AUGUST 2018
	FILE NUMBER:
	FILE NAME: VH101-056890063_HUDSON_MB.DGN

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-8444
FAX: (910) 251-8282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 04

SHEET IDENTIFICATION
VH-123
SHEET 23 OF 103

PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14'. MEASURED FROM NORMAL POOL OF 13.59' 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.

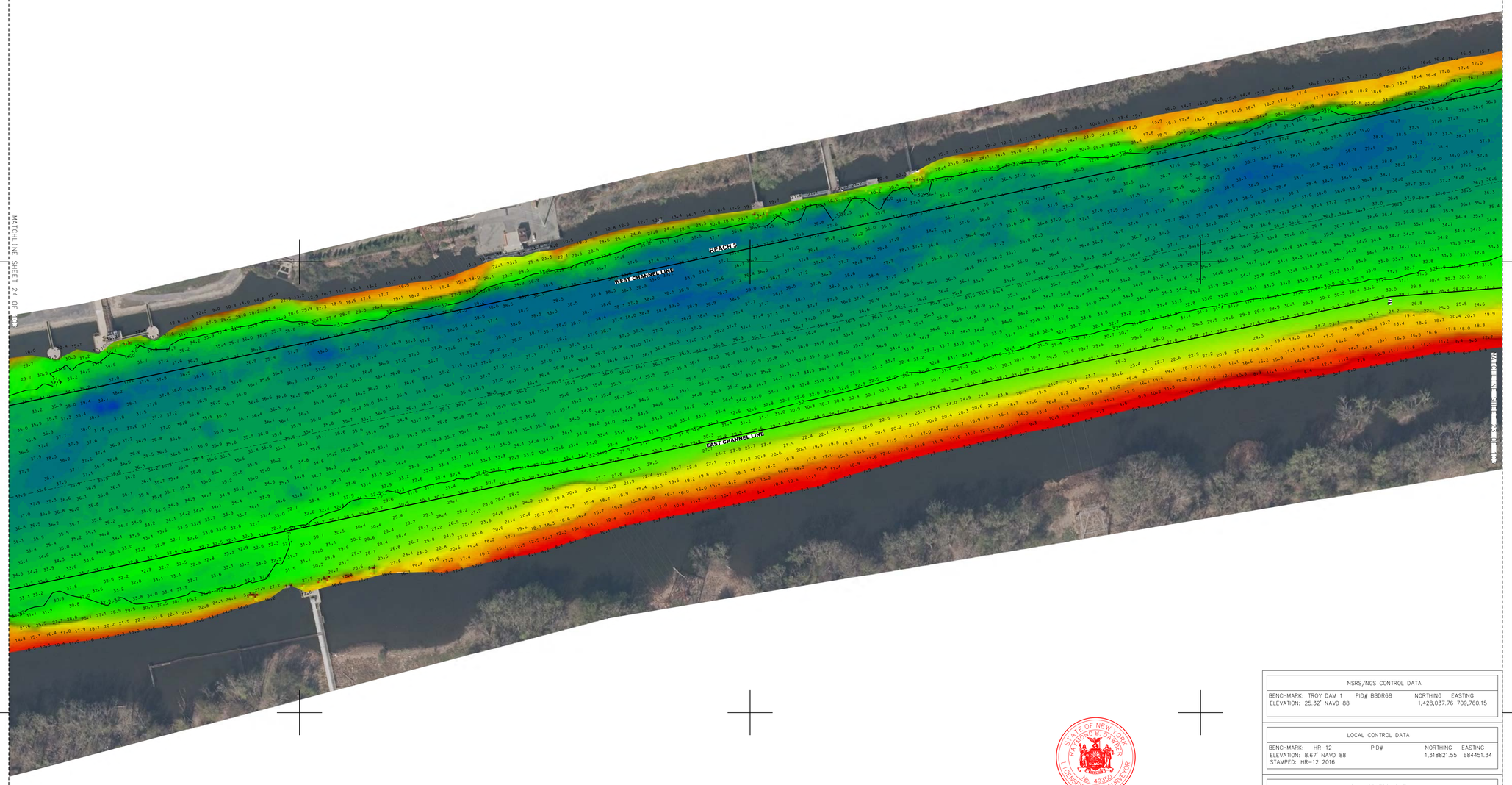
8. THE PLANIMETRICS DEPICTED ON THIS MAP ARE FOR ORIENTATION PURPOSES ONLY.

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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.

12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS, A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.



N
NY 3101 GRID NAD83 (2011) EAST

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

STATE OF NEW YORK
RICHARD B. PARKER
049350
LICENSED LAND SURVEYOR

SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.

DATE: JULY 31, 2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
ISSUE DATE: NOVEMBER 2018
FILE NAME: VH101-058890053_HUDSON_MB.DGN

DESIGNED BY:
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1:50
PLOT DATE:
SIZE: ANSI F

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-8348
FAX: (910) 251-8352

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 05

SHEET IDENTIFICATION
VH-124
SHEET 24 OF 103

PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14'. MEASURED FROM NORMAL POOL OF 13.59' 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.

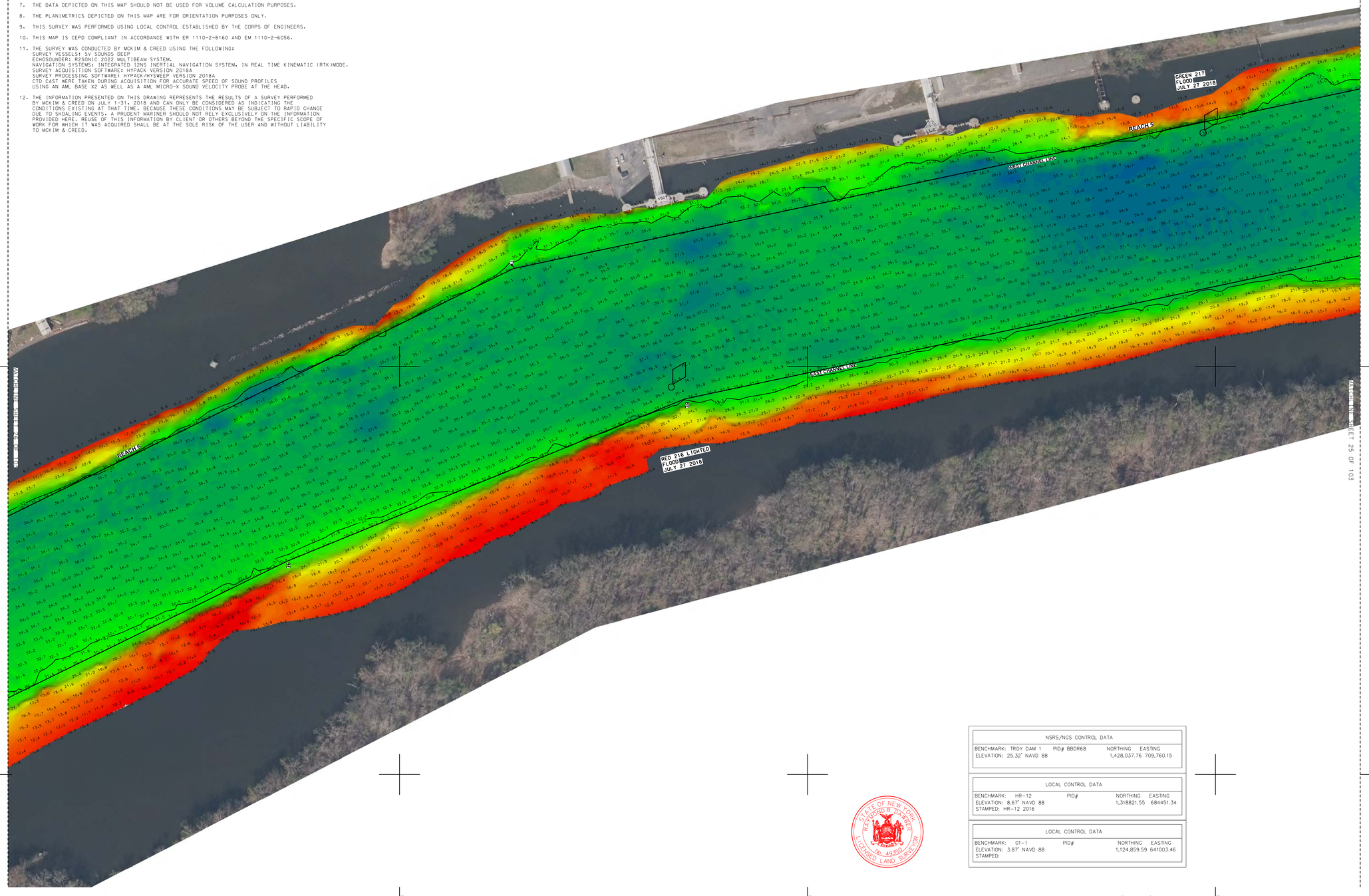
8. THE PLANIMETRICS DEPICTED ON THIS MAP ARE FOR ORIENTATION PURPOSES ONLY.

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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.

12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS, A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.



NY 3101 GRID NAD83 (2011)EAST

N

E=691000 E=692000 E=693000

N=1568000 N=1568000 N=1572000

N=1564000 N=1564000 N=1570000

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

RAYMOND E. LAWLER
STATE OF NEW YORK
No. 49350
LICENSED LAND SURVEYOR

SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.	MARK	DESCRIPTION	DATE	APPR.

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-1646
FAX: (910) 251-8282

DESIGNED BY: DBA
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1" = 100'
PLOT DATE: 11/5/2018
SIZE: ANSI F
DATE: JULY 31, 2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
FILE NAME: VH101-058890063_HUDSON_MB.DGN

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 05-06

SHEET IDENTIFICATION
VH-125
SHEET 25 OF 103

PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14', MEASURED FROM NORMAL POOL OF 13.59' 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.

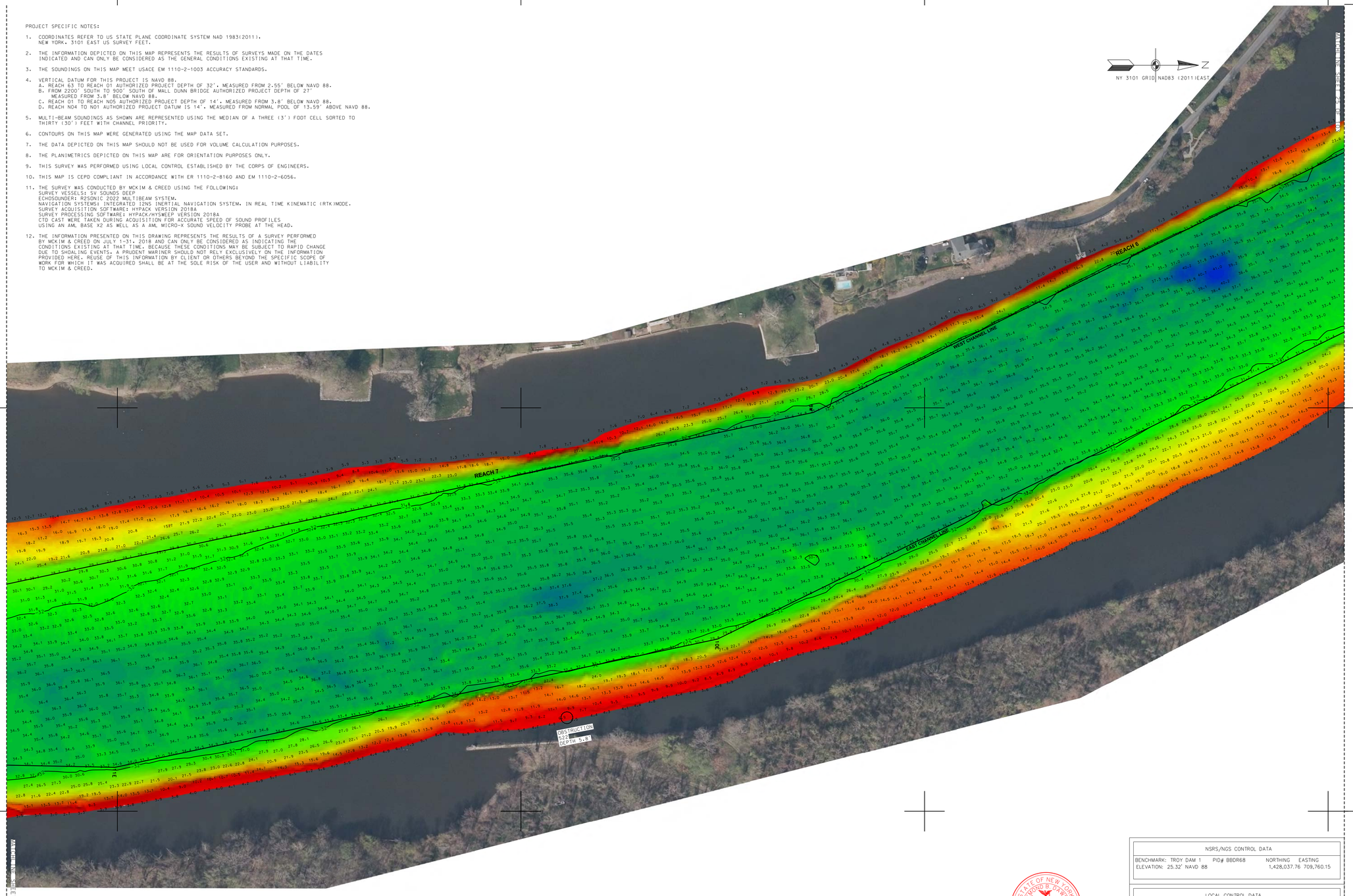
8. THE PLANIMETRICS DEPICTED ON THIS MAP ARE FOR ORIENTATION PURPOSES ONLY.

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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.

12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS, A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.



NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

SCALE 1" = 100'
0 100 200 300 400

STATE OF NEW YORK
RAYMOND R. DAMBER
LICENSED LAND SURVEYOR
No. 49350

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.

DATE: JULY 31, 2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
ISSUE DATE: 2019
PLOT SCALE: 1=100'
SIZE: ANSI F
FILE NAME: V:\101-058890063_HUDSON_MB.DGN

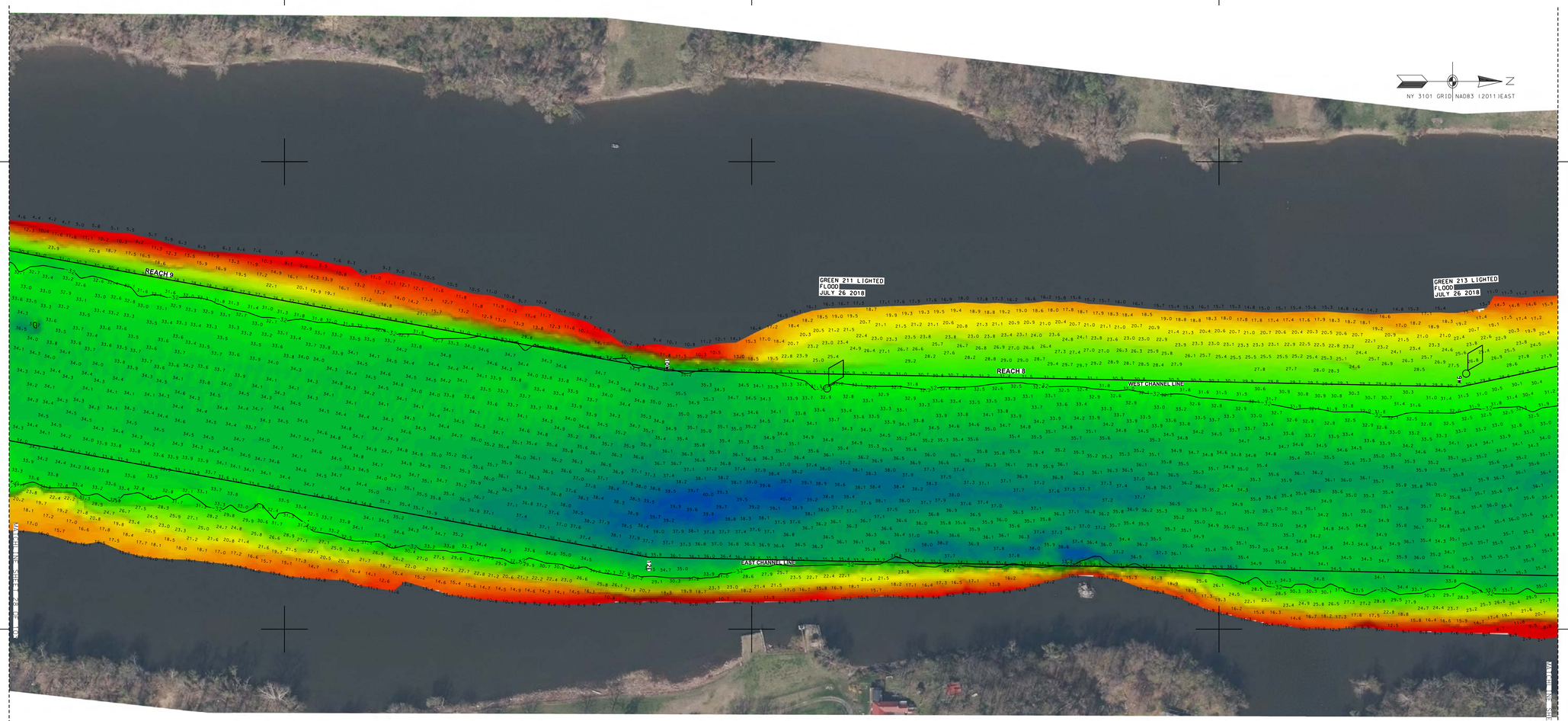
DESIGNED BY: DLJ
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-8444
FAX: (910) 251-8282

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

SHEET IDENTIFICATION
VH-126
SHEET 26 OF 103



SHEET 26 OF 103

PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14', MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS, A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

RAYMOND B. OWEN
STATE OF NEW YORK
LICENSED LAND SURVEYOR
No. 49330

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.	MARK	DESCRIPTION	DATE	APPR.

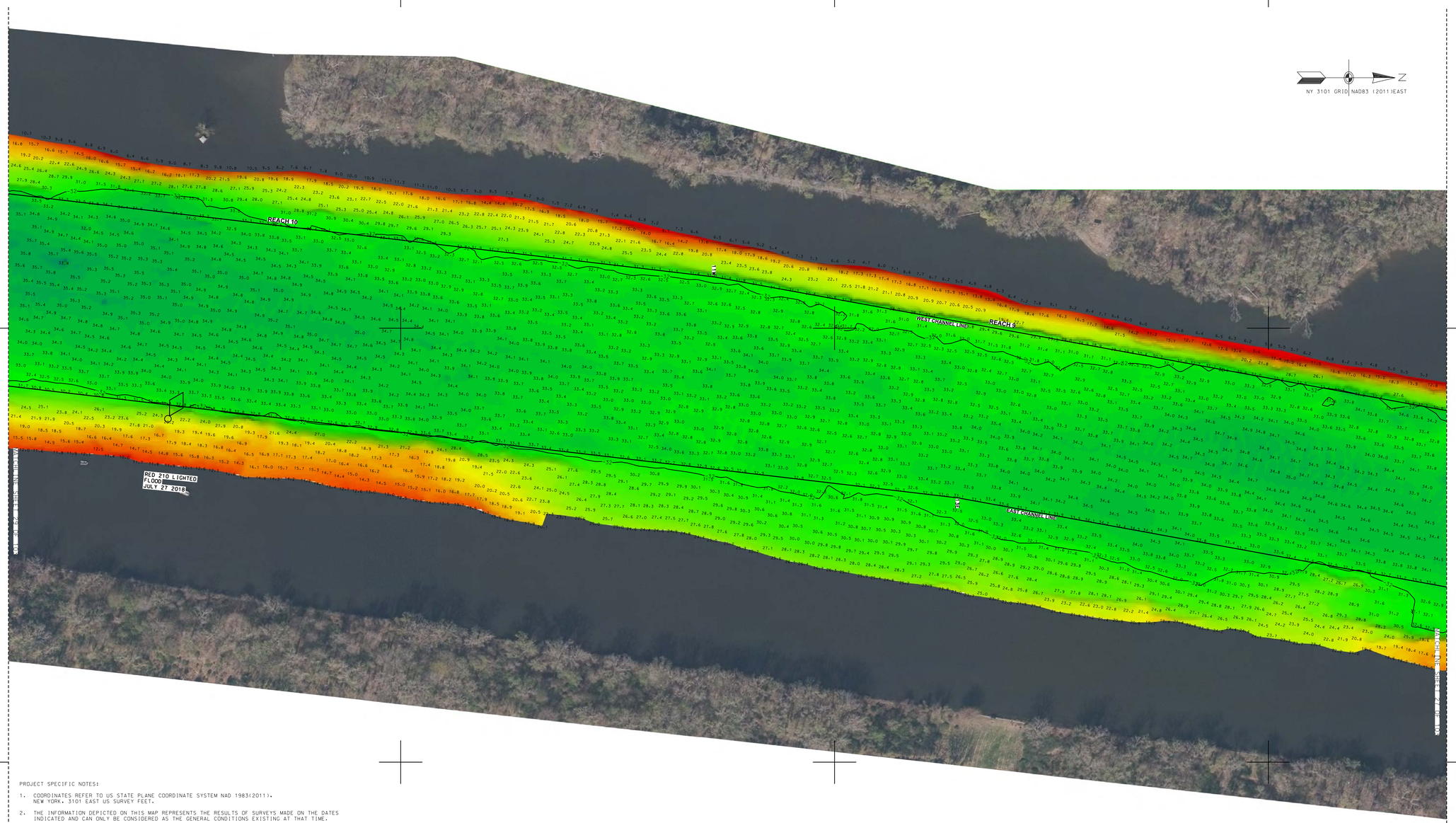
DATE: JULY 31, 2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
DESIGNED BY: DEJ
DWN BY: MBH
CKD BY: RED
SUBMITTED BY: DEJ
PLOT SCALE: 1" = 100'
ISSUE DATE: NOV 2018
SIZE: ANSI F
FILE NAME: VH101-056880053_HUDSON_MB.DGN

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-8444
FAX: (910) 251-8282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 08-09

SHEET IDENTIFICATION
VH-127
SHEET 27 OF 103



PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14'. MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES
    USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31. 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS, A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

STATE OF NEW YORK
RAYMOND B. PARKER
090 49300
LICENSED LAND SURVEYOR

SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.

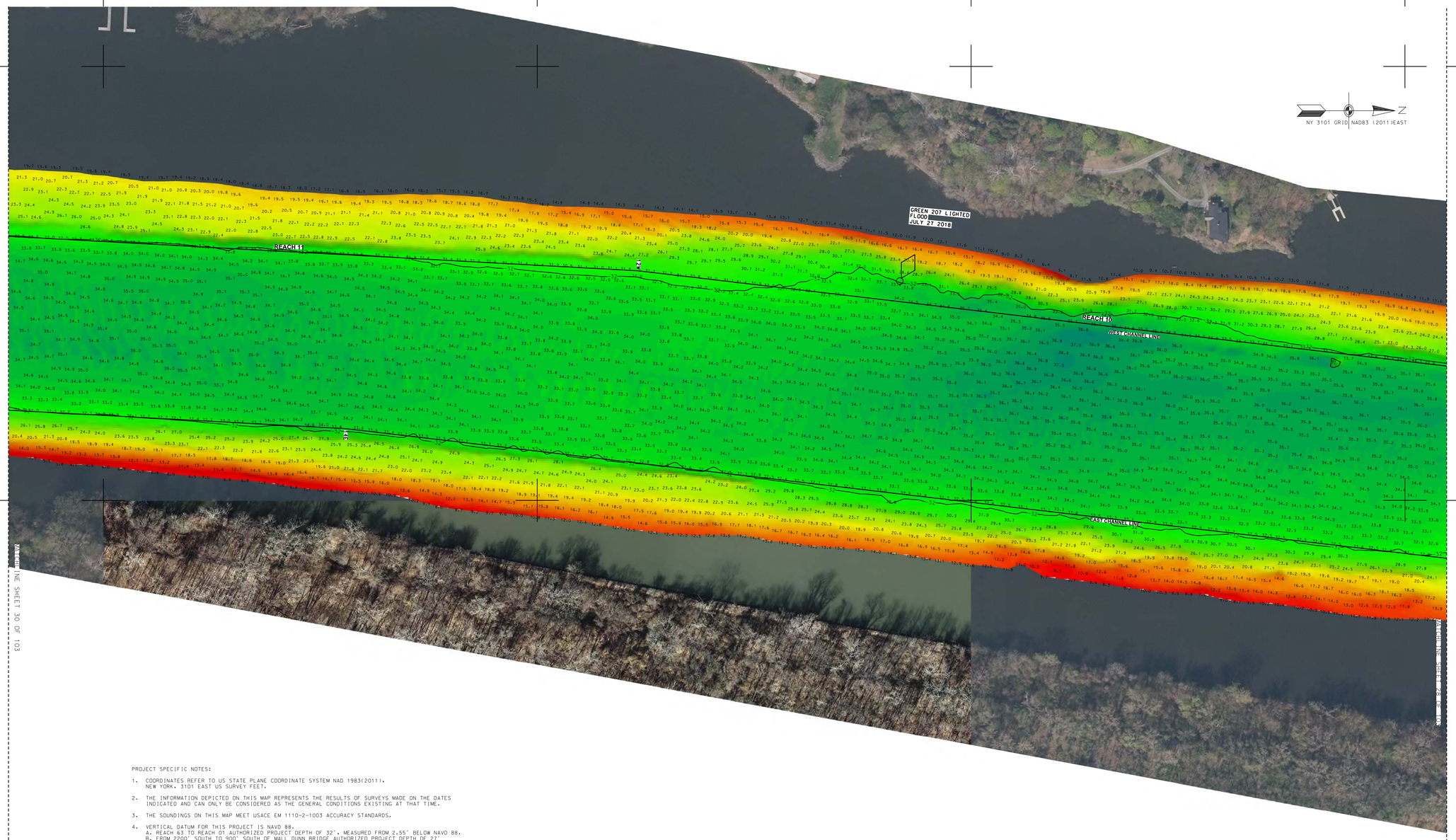
DATE: JULY 31, 2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
DESIGNED BY: DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DeJ
ISSUE DATE: NOVEMBER 2018
PLOT SCALE: 1:1
PLOT BY:
SIZE: ANSI F
FILE NAME: VH101-058890053_HUDSON_MB.DGN

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
245 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-8444
FAX: (910) 251-8282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 09-10

SHEET IDENTIFICATION
VH-128
SHEET 28 OF 103



PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14', MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.

12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS. A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

STATE OF NEW YORK
RAYMOND E. OSTRER
No. 49350
LICENSED LAND SURVEYOR

SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers
New York District

MARK	DESCRIPTION	DATE	APPR.	MARK	DESCRIPTION	DATE	APPR.

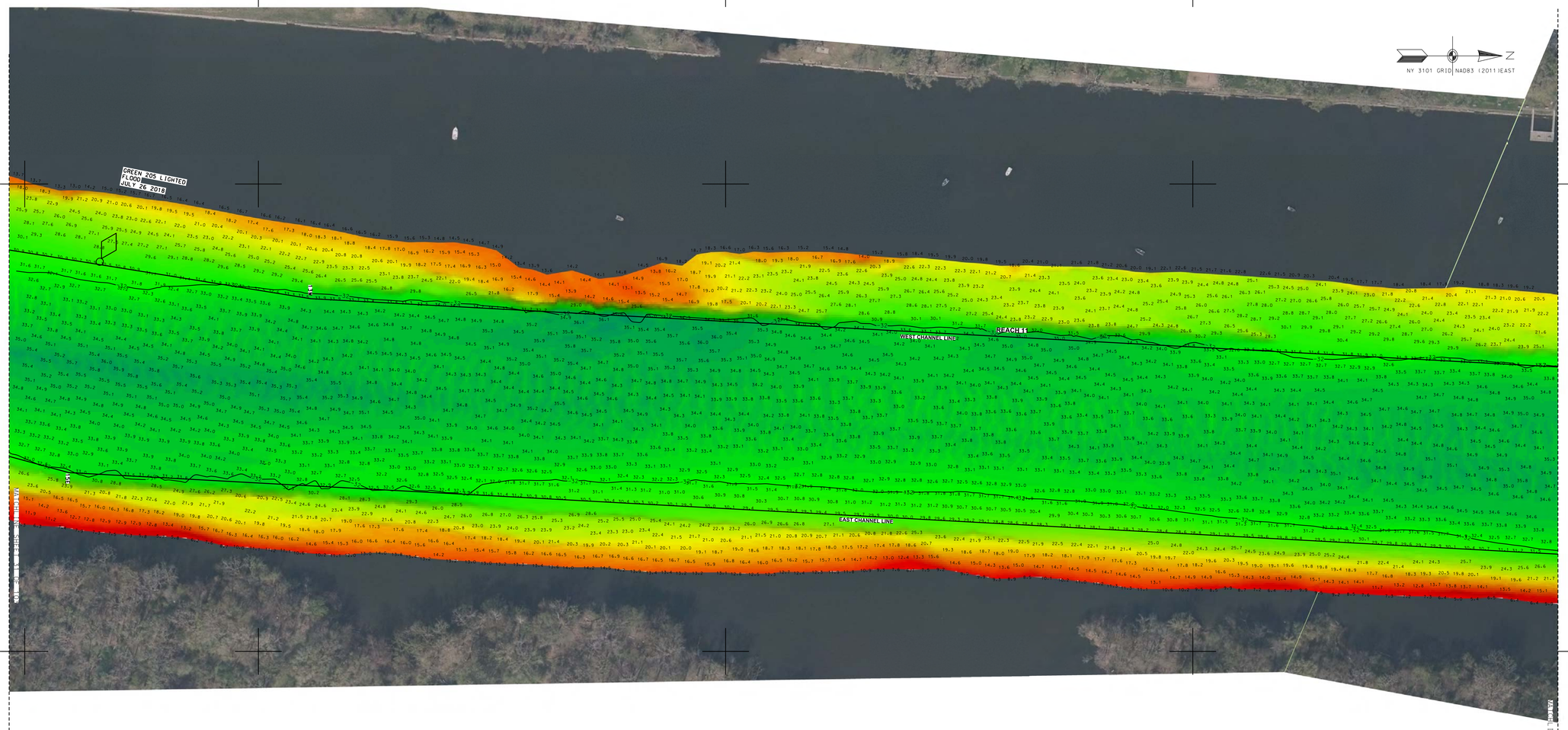
DESIGNED BY:
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1:100
SIZE: ANSI F
ISSUE DATE: NOVEMBER 2018
FILE NAME: VH101-058890053_HUDSON_MB.DGN
DATE: JULY 31, 2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 341-0646
FAX: (910) 251-8282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 10-11

SHEET IDENTIFICATION
VH-129
SHEET 29 OF 103



PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14'. MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK) MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.

12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS. A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

STATE OF NEW YORK
RAYMOND B. PAYNE
049350
LICENSED LAND SURVEYOR

NSRS/NGS CONTROL DATA		
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76 709,760.15

LOCAL CONTROL DATA		
BENCHMARK: HR-12	PID#	NORTHING EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55 684451.34
STAMPED: HR-12 2016		

LOCAL CONTROL DATA		
BENCHMARK: 01-1	PID#	NORTHING EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59 641003.46
STAMPED:		

SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.

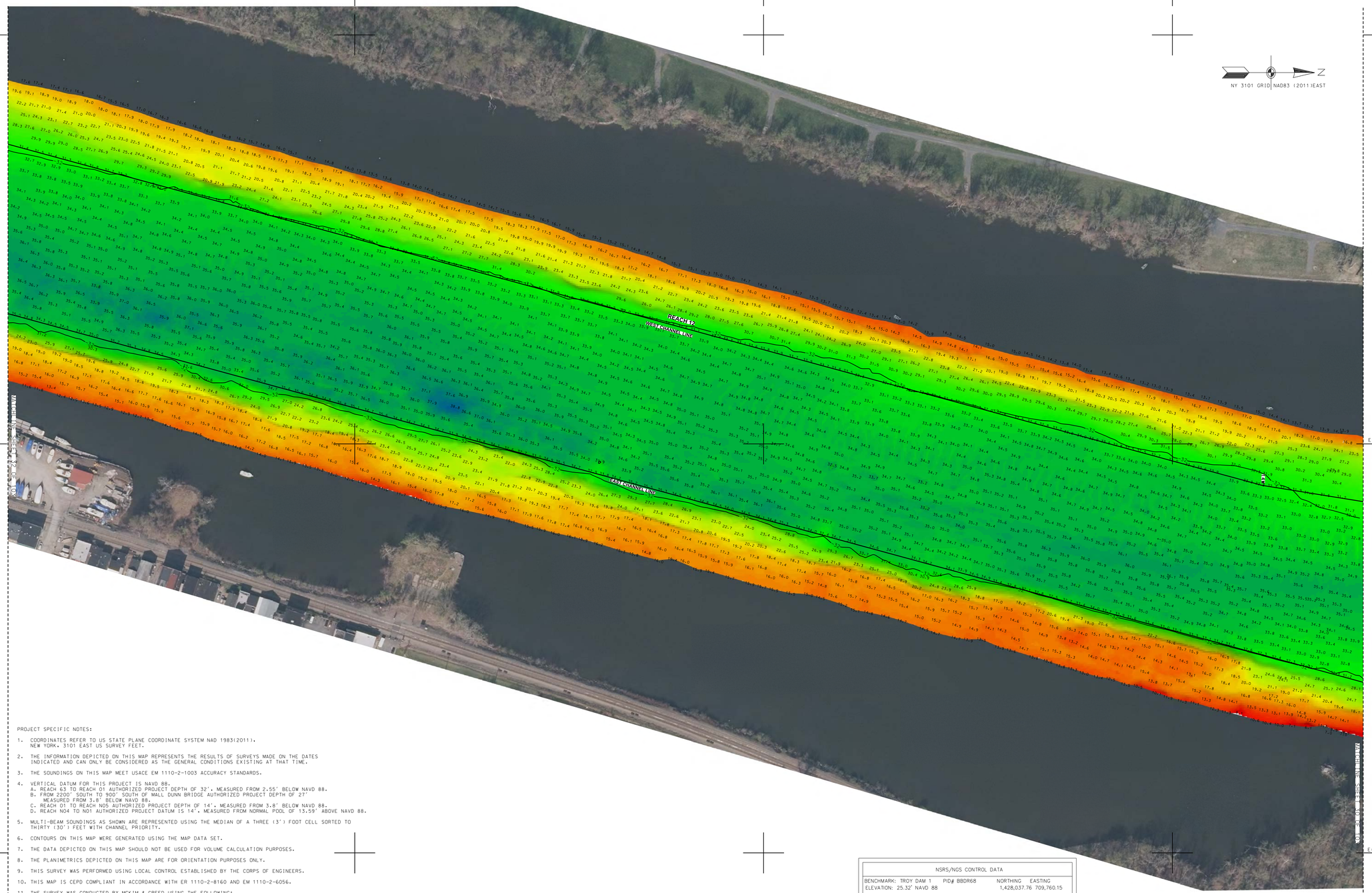
DESIGNED BY: DBG
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1" = 100'
SIZE: ANSI F
DATE: JULY 31, 2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
ISSUE DATE: NOV 2018
FILE NAME: VH101-056890063_HUDSON_MB.DGN

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE (910) 341-1048
FAX: (910) 251-8282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 11

SHEET IDENTIFICATION
VH-130
SHEET 30 OF 103



PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 TO N01 AUTHORIZED PROJECT DATUM IS 14', MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS, A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

STATE OF NEW YORK
RAYMOND B. BAKER
049250
LICENSED LAND SURVEYOR

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.
MARK	DESCRIPTION	DATE	APPR.

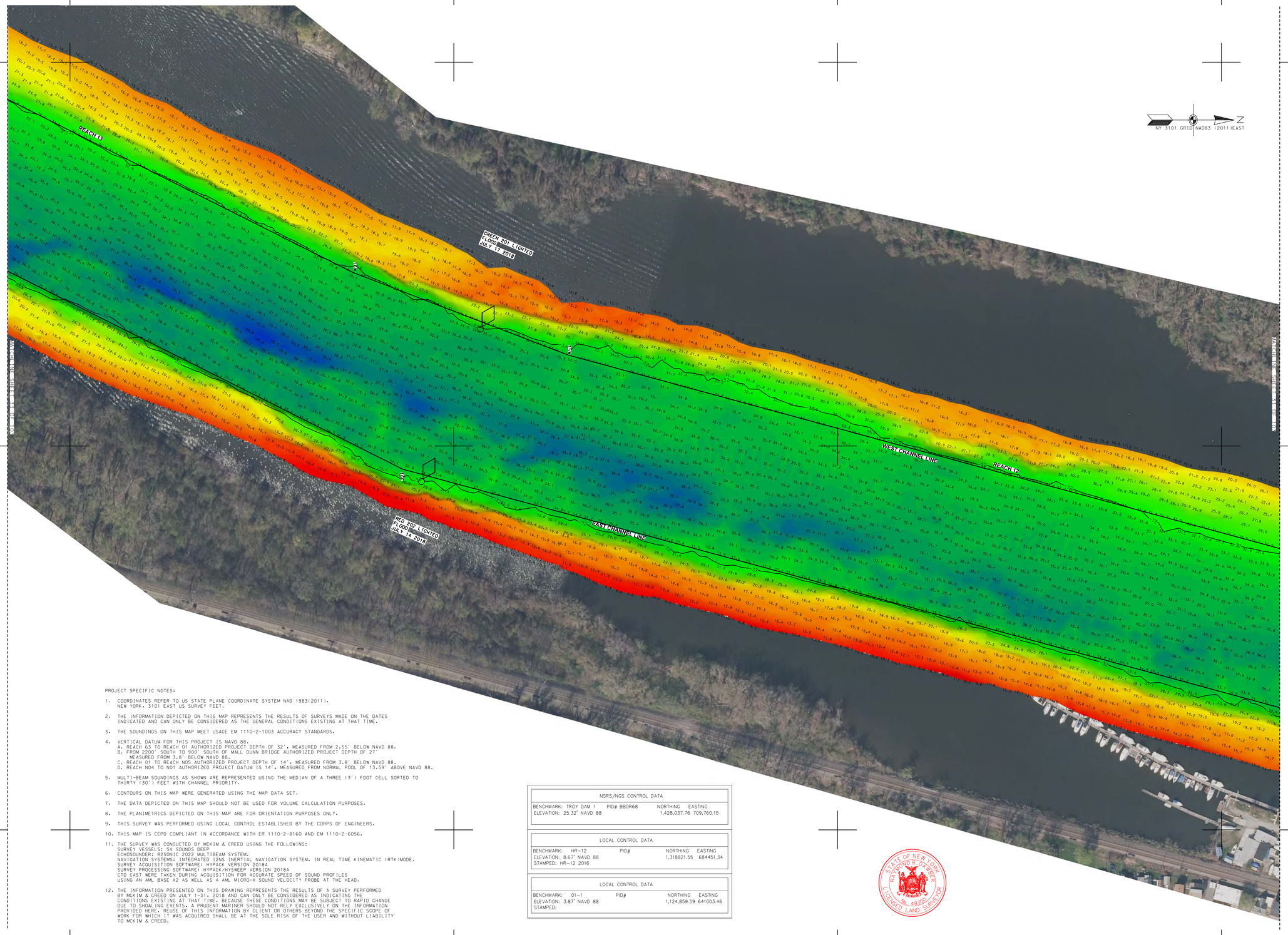
DESIGNED BY:
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DJJ
PLOT SCALE: 1" = 60'
SIZE: ANSI F
ISSUE DATE: NOVEMBER 2020
FILE NAME: VH101-058890053_HUDSON_MB.DGN
DATE: JULY 31, 2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-8486
FAX: (910) 251-8282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 12

SHEET IDENTIFICATION
VH-131
SHEET 31 OF 103



PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14'. MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS, A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BB0R68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

STATE OF NEW YORK
RAYMOND B. DARBY
No. 49350
LICENSED LAND SURVEYOR

SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

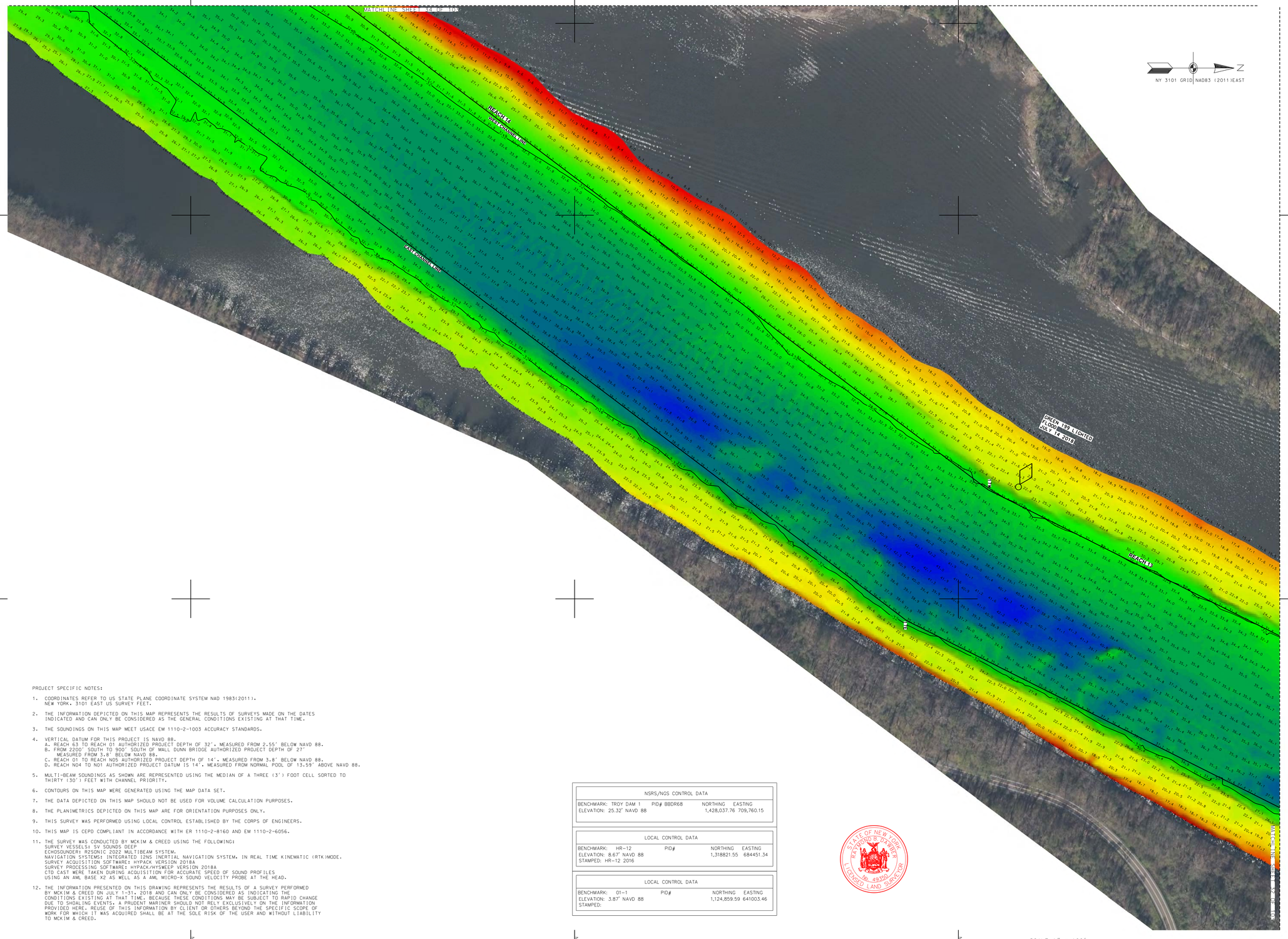
U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-8444
FAX: (910) 251-8282

DESIGNED BY: DLJ	CKD.BY: RBD	DATE: JULY 31, 2018	SOLICITATION NO.:
DWN BY: MBH	SUBMITTED BY: DLJ	CONTRACT NO.: W912DS-14-D-0004	
PLOT SCALE: 1=100'	ISSUE DATE: AUGUST 2018	FILE NUMBER:	
SIZE: ANSI F	FILE NAME: VH101-056890063_HUDSON_MB.DGN		

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 12-13

SHEET IDENTIFICATION
VH-132
SHEET 32 OF 103



PROJECT SPECIFIC NOTES:

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 O1 AUTHORIZED PROJECT DEPTH OF 32', MEASURED FROM 2.55' BELOW NAVD 88.
   B. FROM 2200' SOUTH TO 900' SOUTH OF MALL DUNN BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' BELOW NAVD 88.
   C. REACH O1 TO REACH N05 AUTHORIZED PROJECT DEPTH OF 14', MEASURED FROM 3.8' BELOW NAVD 88.
   D. REACH N04 TO N01 AUTHORIZED PROJECT DATUM IS 14', MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS, A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

STATE OF NEW YORK
RAYMOND B. D'AMBER
049501
LICENSED LAND SURVEYOR

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.

DESIGNED BY:
DWN BY: MBH
SUBMITTED BY: DLJ
PLOT SCALE: 1" = 100'
SIZE: ANSI F
DATE: JULY 31, 2018
SOLICITATION NO.:
CKD BY: RBD
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
ISSUE DATE: NOV 2018
FILE NAME: V1410-058890063_HUDSON_MB.DGN

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 254-0568
FAX: (910) 251-8282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 13-14

SHEET IDENTIFICATION
VH-133
SHEET 33 OF 103

PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14', MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED INS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS, A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

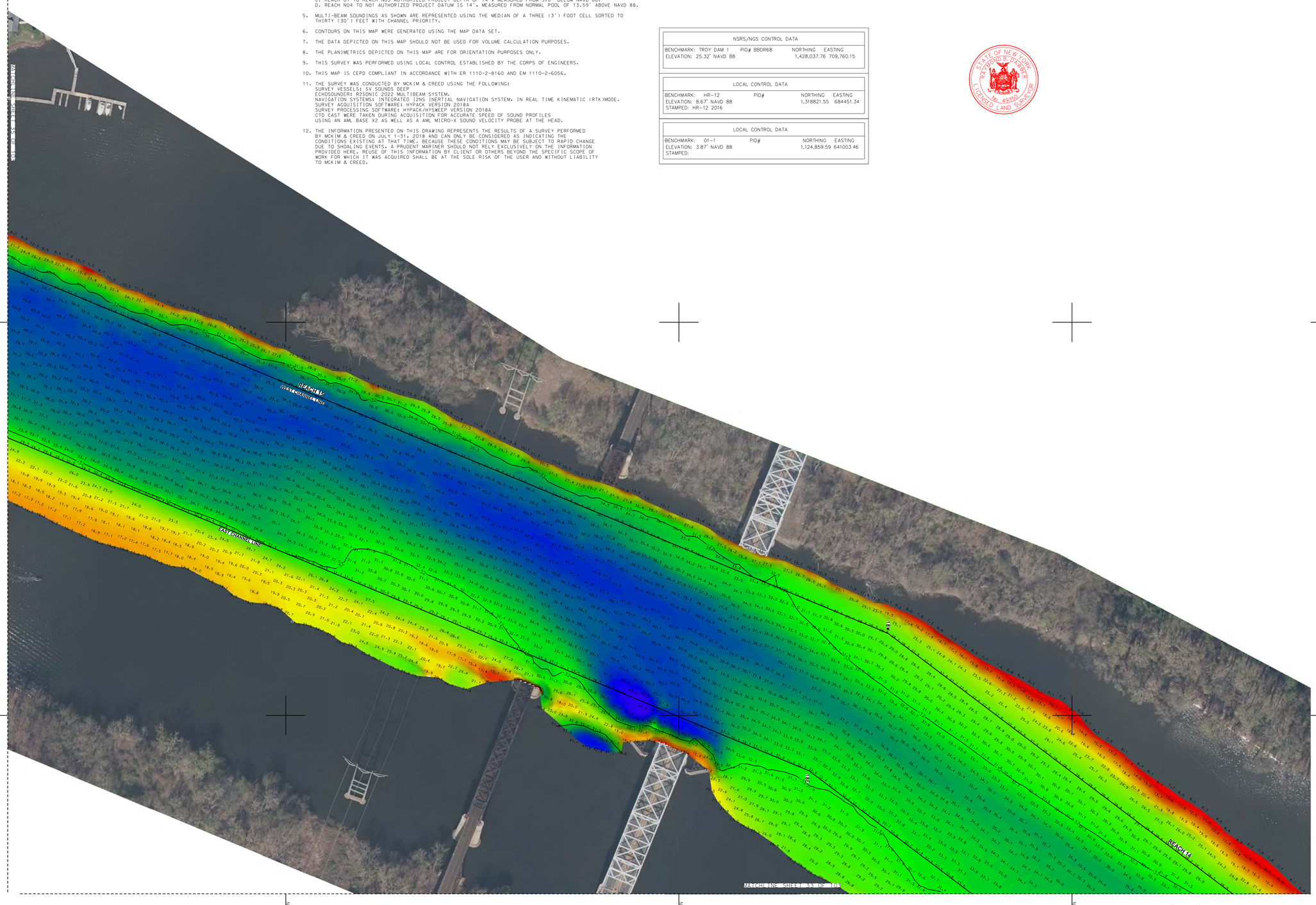
NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

STATE OF NEW YORK
RAYMOND B. D'AMBRA
No. 49350
LICENSED LAND SURVEYOR

NY 3101 GRID NAD83 (2011) EAST



SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-1848
FAX: (910) 251-8282

DESIGNED BY: JDJ
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1:100
PLOT DATE: NOVEMBER 2018
SIZE: ANSI F

DATE: JULY 31, 2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
ISSUE DATE:
FILE NUMBER:
FILE NAME: VH101-058890053_HUDSON_MBLOGN

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 14-15

SHEET IDENTIFICATION
VH-134
SHEET 34 OF 103

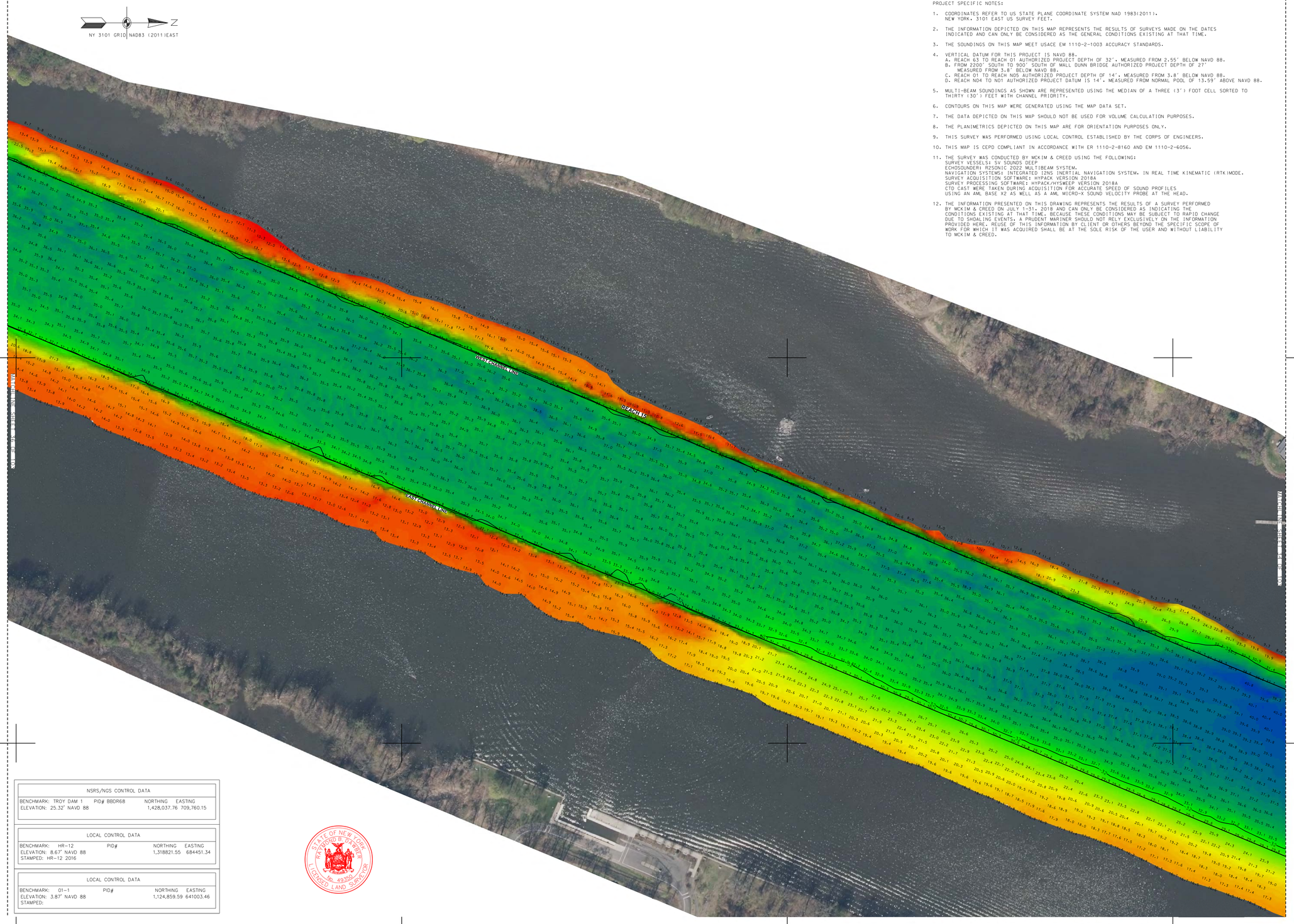
1 2 3 4 5

D C B A

E=685000 E=686000 E=687000

N=1337000 N=1338000

NY 3101 GRID NAD83 (2011) EAST



PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' BELOW NAVD 88.
   C. REACH 01 TO REACH N05 AUTHORIZED PROJECT DEPTH OF 14', MEASURED FROM 3.8' BELOW NAVD 88.
   D. REACH NO4 TO NO1 AUTHORIZED PROJECT DATUM IS 14'. MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31. 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS, A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

NSRS/NGS CONTROL DATA		
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76 709,760.15

LOCAL CONTROL DATA		
BENCHMARK: HR-12	PID#	NORTHING EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55 684451.34
STAMPED: HR-12 2016		

LOCAL CONTROL DATA		
BENCHMARK: 01-1	PID#	NORTHING EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59 641003.46
STAMPED:		

STATE OF NEW YORK
RICHARD B. BAKER JR
LICENSED LAND SURVEYOR
No. 49350

SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

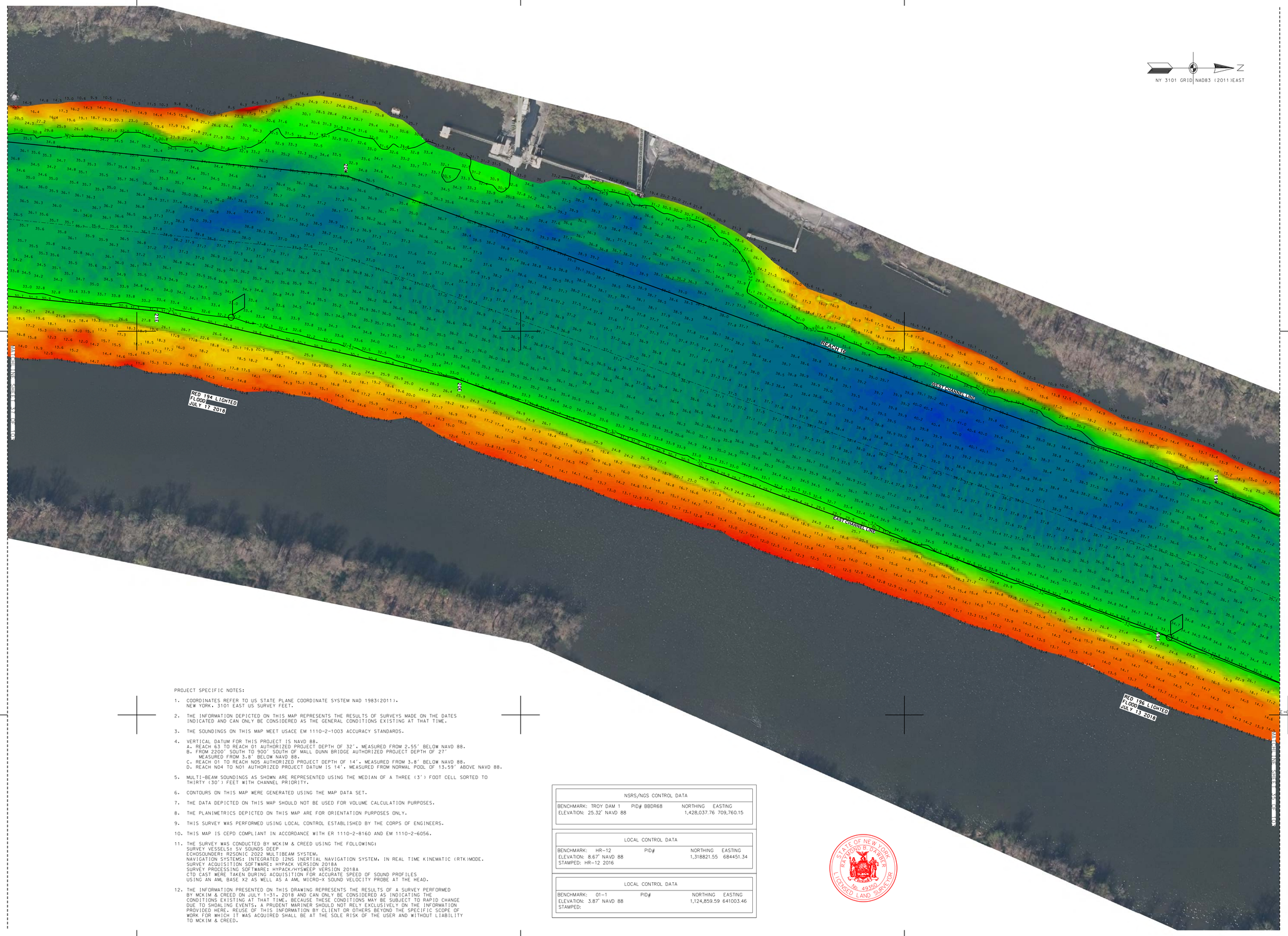
U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

DESIGNED BY: DWM
DRAWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1:100
PLOT DATE: NOV 2018
SIZE: ANSI F
DATE: JULY 31, 2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
ISSUE DATE: NOV 2018
FILE NAME: VH101-DS880083_HUDSON_MB.DGN

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-8246
FAX: (910) 251-4262

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 15

SHEET IDENTIFICATION
VH-135
SHEET 35 OF 103



PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14', MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES
    USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS, A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

STATE OF NEW YORK · RICHARD B. BAYER · LICENSED LAND SURVEYOR · No. 49350

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.	MARK	DESCRIPTION	DATE	APPR.

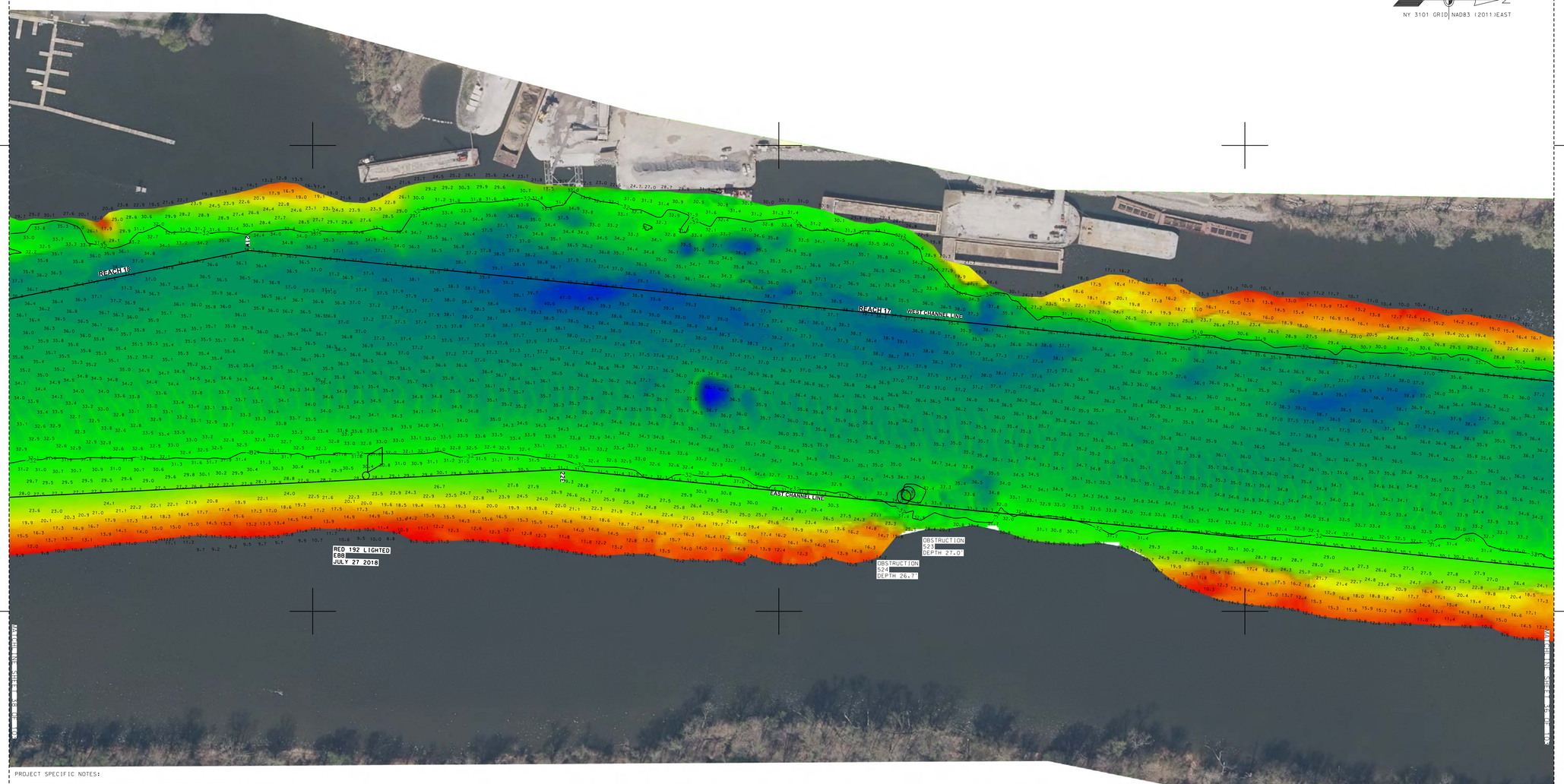
DESIGNED BY: DBJ
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1" = 100'
PLOT DATE: 10/5/2018
DATE: JULY 31 - AUG 31, 2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
ISSUE DATE: NOVEMBER 2018
SIZE: ANSI F
FILE NAME: VH101-056890053_HUDSON_MB.DGN

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-0046
FAX: (910) 251-8282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 16

SHEET IDENTIFICATION
VH-136
SHEET 36 OF 103



PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14'. MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS, A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

STATE OF NEW YORK
RAYMOND B. PARKER
LICENSED LAND SURVEYOR
NO. 49350

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

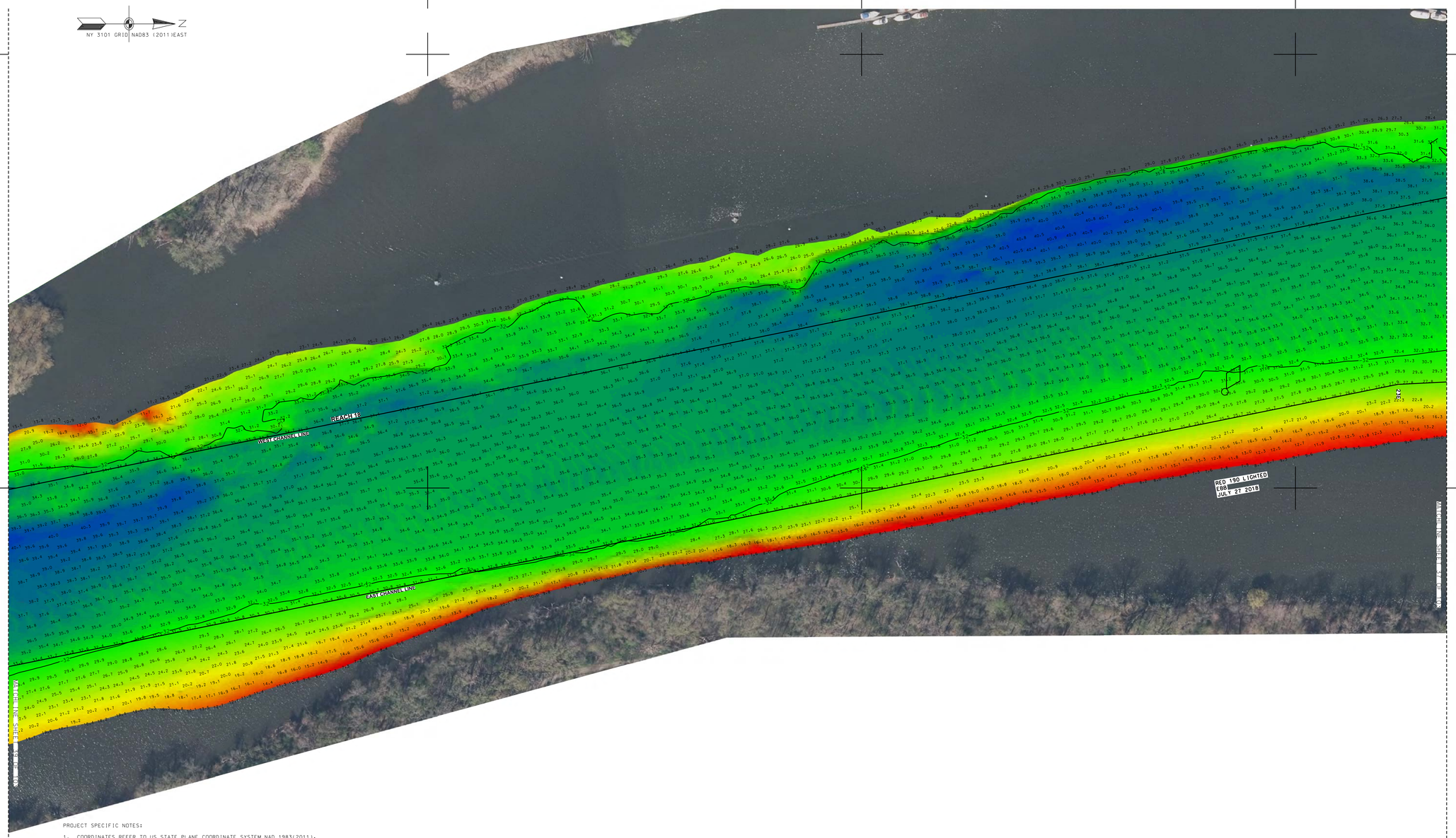
DESIGNED BY:
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1:600
SIZE: ANSI F
DATE: JANUARY 31, 2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
ISSUE DATE: NOVEMBER 2018
FILE NUMBER:
FILE NAME: V:\101\1-058900053_HUDSON_MB.DGN

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-8444
FAX: (910) 251-8282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 17-18

SHEET IDENTIFICATION
VH-137
SHEET 37 OF 103



PROJECT SPECIFIC NOTES:

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 WALL DUNN BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14', MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM, IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS, A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

STATE OF NEW YORK
RAYMOND B. PARKER
No. 49350
LICENSED LAND SURVEYOR

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.	MARK	DESCRIPTION	DATE	APPR.

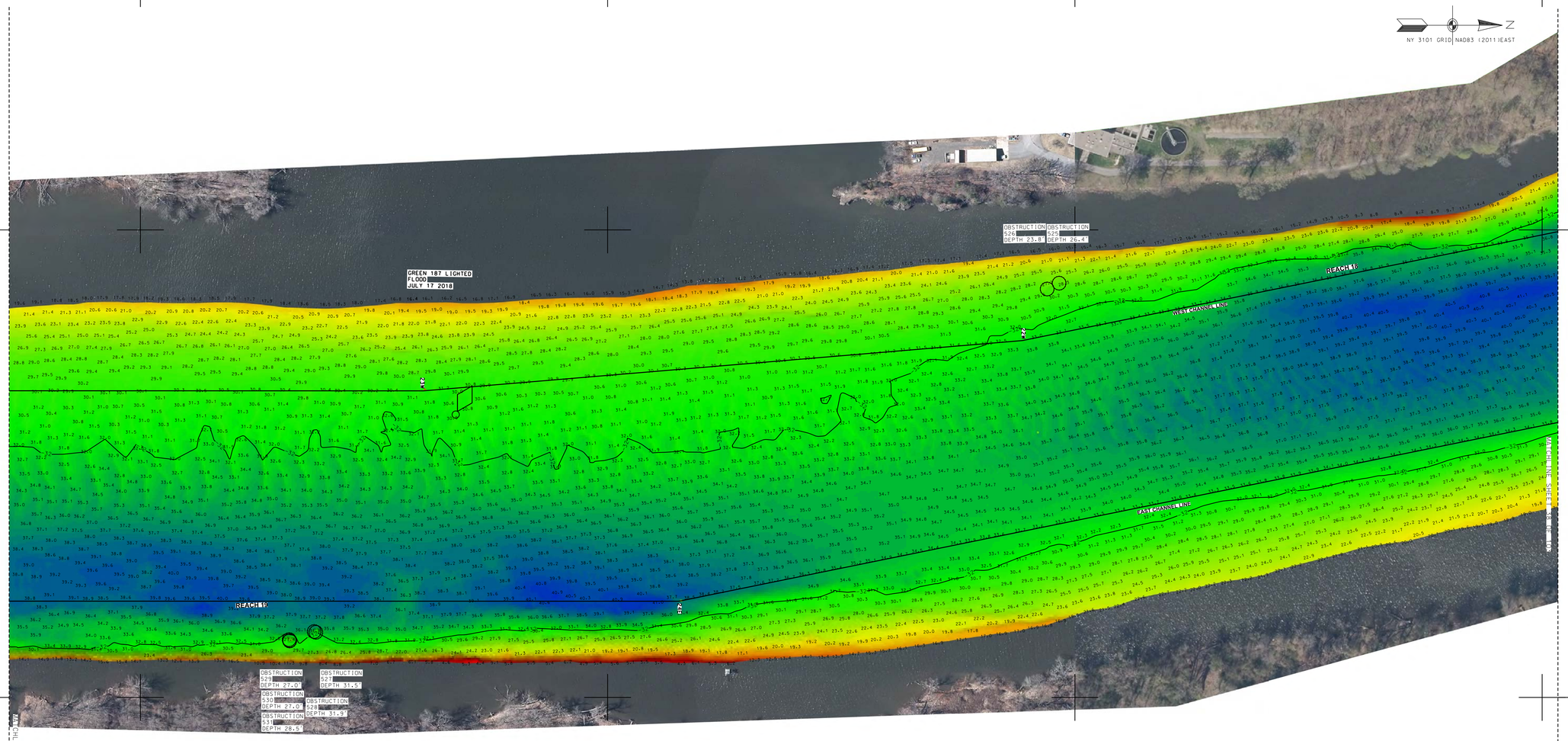
U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

DESIGNED BY: DGW
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1:100'
SIZE: ANSI F
ISSUE DATE: NOV 2018
FILE NAME: VH101-058890083_HUDSON_MB.DGN
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
SOLICITATION NO.:
DATE: JAN 31, 2018

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-8848
FAX: (910) 251-4362

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 18

SHEET IDENTIFICATION
VH-138
SHEET 38 OF 103



PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14'. MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS. A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

STATE OF NEW YORK
RAYMOND B. BARBER
LICENSED LAND SURVEYOR
No. 49350

SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

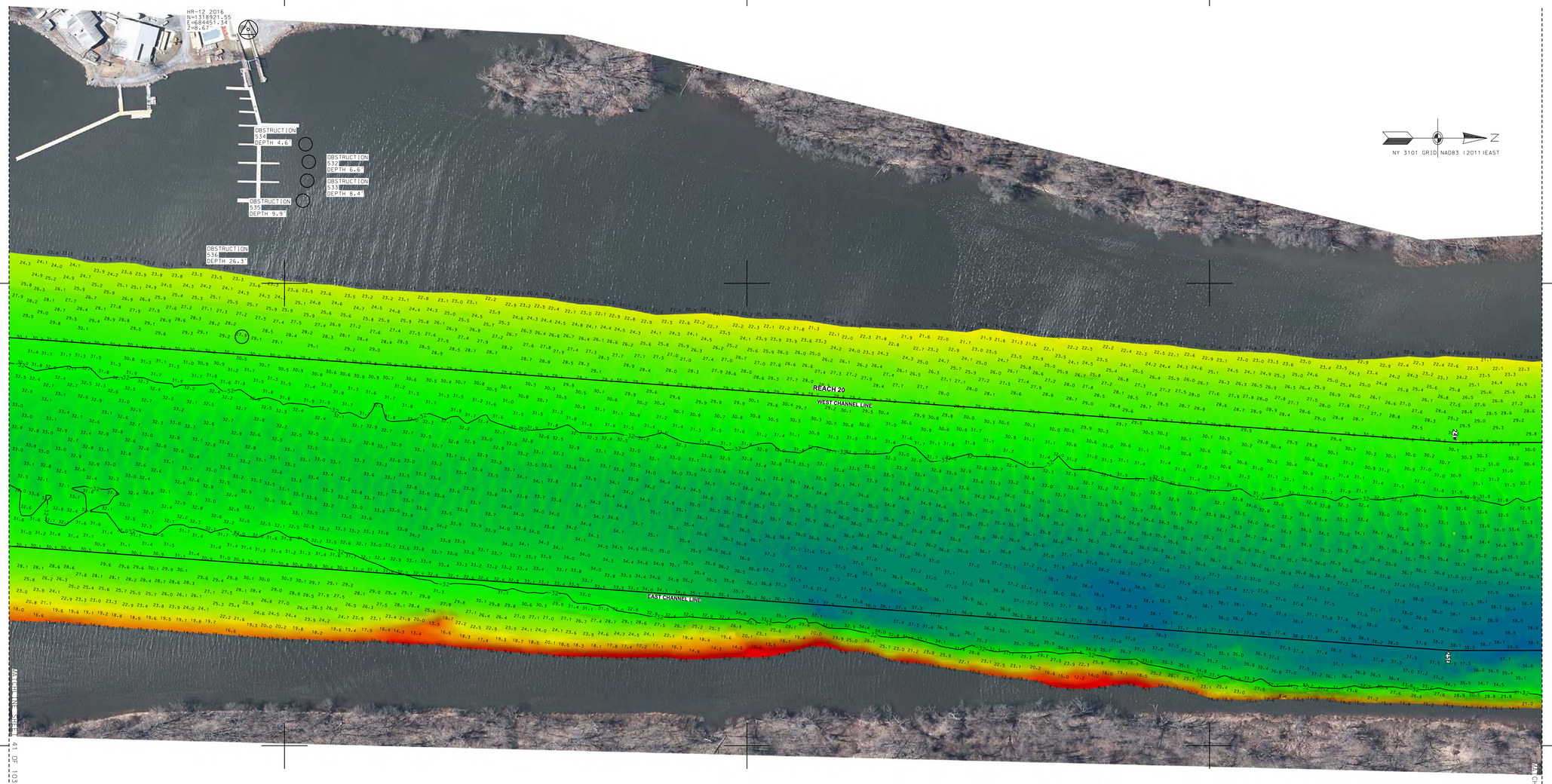
DESIGNED BY: DLJ
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1 = 100'
SIZE: ANSI F
DATE: JUL 31, 2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
ISSUE DATE: NOV 2018
FILE NUMBER:
FILE NAME: VH101-056890063_HUDSON_MB.DGN

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-8444
FAX: (910) 251-8282

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

SHEET IDENTIFICATION
VH-139
SHEET 39 OF 103



PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14'. MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK) MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31. 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS. A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

STATE OF NEW YORK
RAYMOND B. OWEN
LICENSED LAND SURVEYOR
No. 49330

SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers
New York District

MARK	DESCRIPTION	DATE	APPR.

DESIGNED BY:	
DWN BY: MBH	CKD BY: RBD
SUBMITTED BY: DLJ	
PLOT SCALE: 1:100	ISSUE DATE: NOV 2019
SIZE: ANSI F	FILE NAME: V:\110\-058890053_HUDSON_MB.DGN

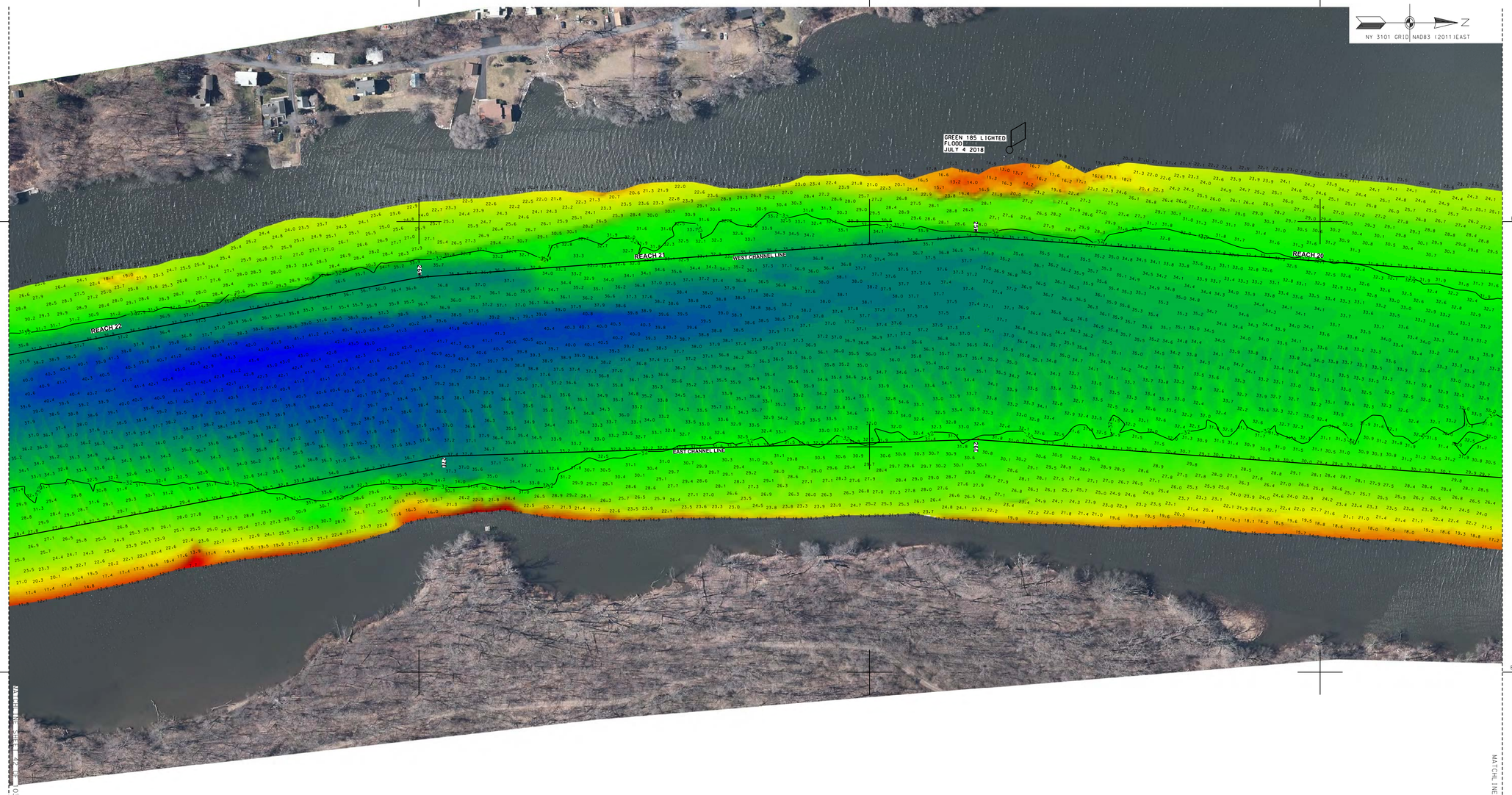
DATE: JULY 31, 2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-0486
FAX: (910) 251-4282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 20

SHEET IDENTIFICATION
VH-140
SHEET 40 OF 103



PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14'. MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES
    USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.

12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS. A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

STATE OF NEW YORK
RAYMOND B. BARBER
No. 49301
LICENSED LAND SURVEYOR

SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.	MARK	DESCRIPTION	DATE	APPR.

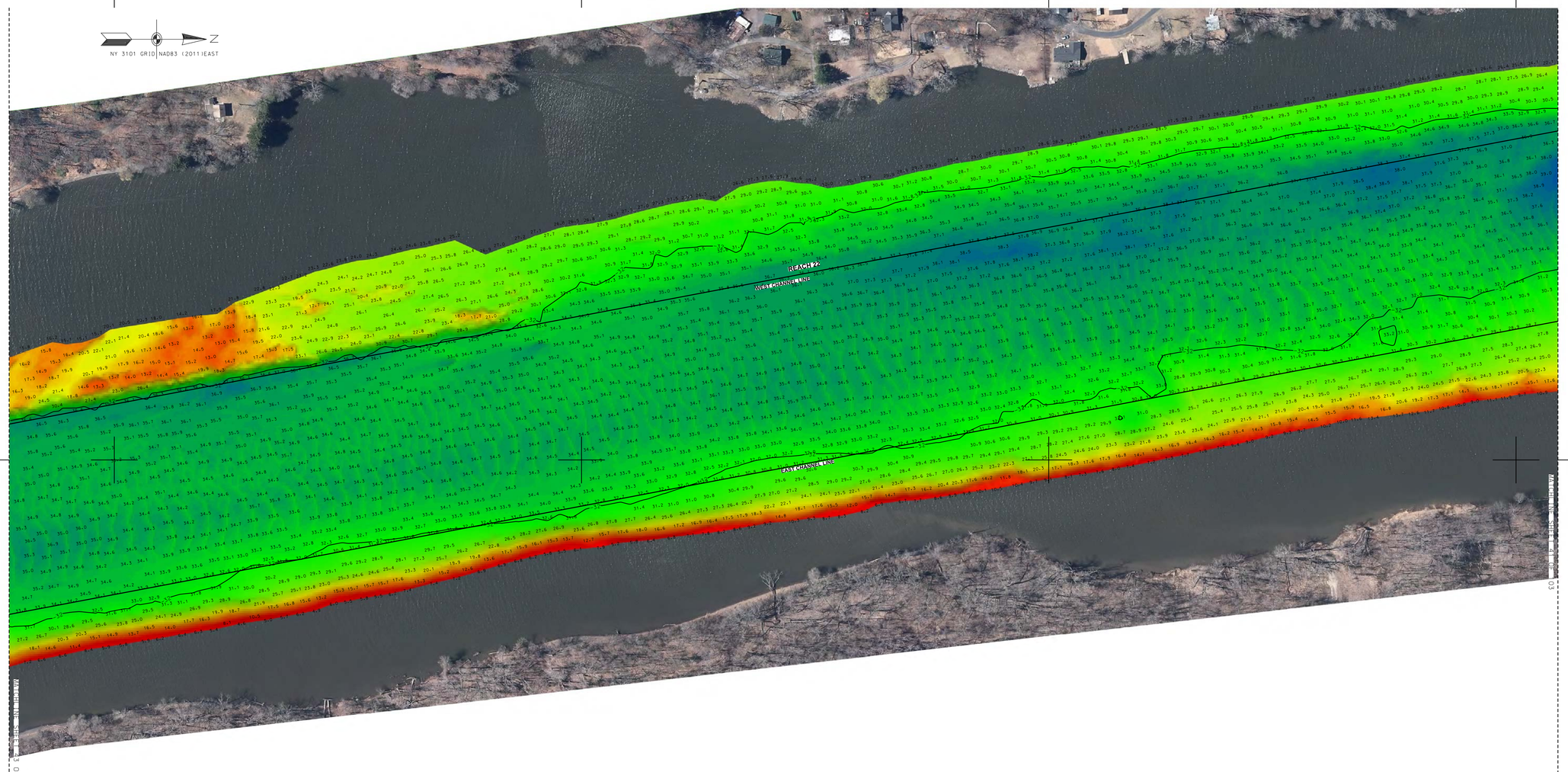
DESIGNED BY:
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1" = 100'
SIZE: ANSI F
ISSUE DATE: NOVEMBER 2018
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
FILE NAME: V:\110\-058890053_HUDSON_MB.DGN
DATE: JULY 31, 2018
SOLICITATION NO.:

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 341-0646
FAX: (910) 251-8282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 20-22

SHEET IDENTIFICATION
VH-141
SHEET 41 OF 103



PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14'. MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED IXNS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK) MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS, A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

RAYMOND B. DWYER — STATE OF NEW YORK — LICENSED LAND SURVEYOR — No. 49356

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.
MARK	DESCRIPTION	DATE	APPR.

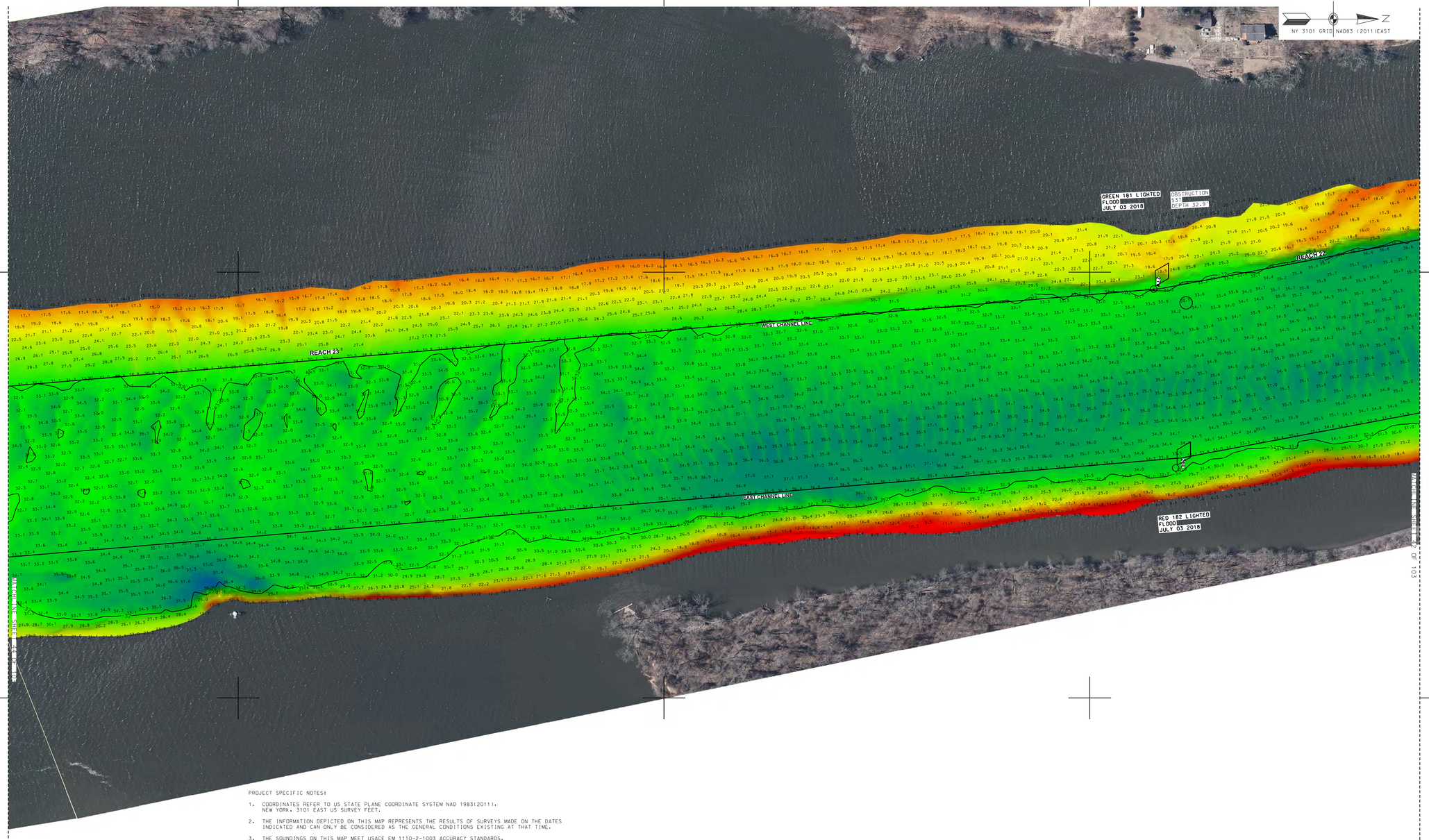
DESIGNED BY: DBA
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1" = 100'
SIZE: ANSI F
DATE: MAY 31, 2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
TASK ORDER:
ISSUE DATE: MAY 2018
FILE NUMBER:
FILE NAME: VH101-056890053_HUDSON_MB.DGN

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-8444
FAX: (910) 251-8282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 22

SHEET IDENTIFICATION
VH-142
SHEET 42 OF 103



PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14'. MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED IXNS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES
    USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.

12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS, A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

STATE OF NEW YORK
RAYMOND B. BARBER
No. 49350
LICENSED LAND SURVEYOR

NSRS/NGS CONTROL DATA		
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76 709,760.15

LOCAL CONTROL DATA		
BENCHMARK: HR-12	PID#	NORTHING EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55 684451.34
STAMPED: HR-12 2016		

LOCAL CONTROL DATA		
BENCHMARK: 01-1	PID#	NORTHING EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59 641003.46
STAMPED:		

SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.

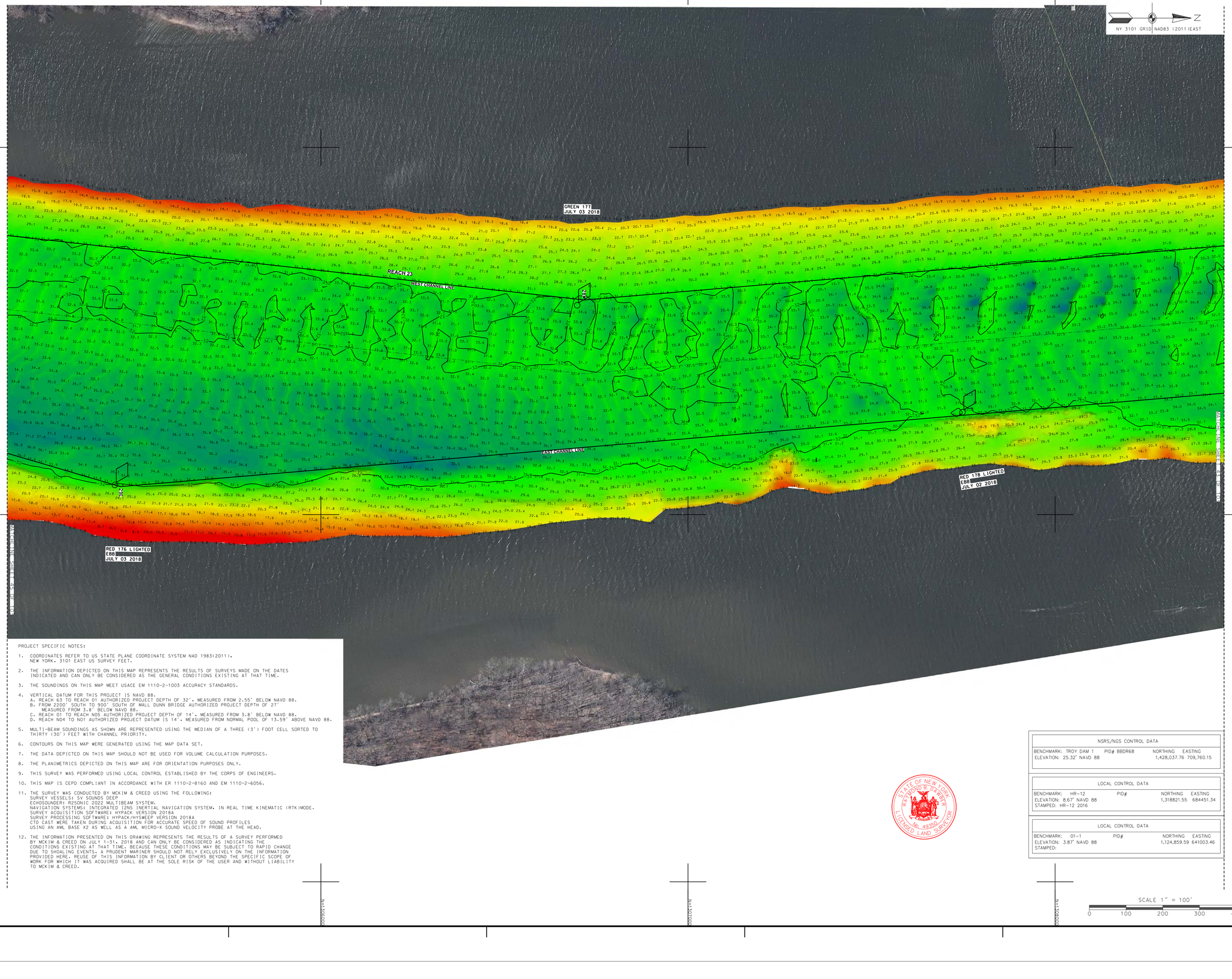
DESIGNED BY: DBA
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1" = 100'
SIZE: ANSI F
DATE: JULY 31, 2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
ISSUE DATE: NOVEMBER 2018
FILE NAME: VH101-056890063_HUDSON_MB.DGN

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-8444
FAX: (910) 251-8282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 22-23

SHEET IDENTIFICATION
VH-143
SHEET 43 OF 103



PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14', MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.

12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS, A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

RAYMOND B. TARVER
No. 49326
LICENSED LAND SURVEYOR
STATE OF NEW YORK

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.

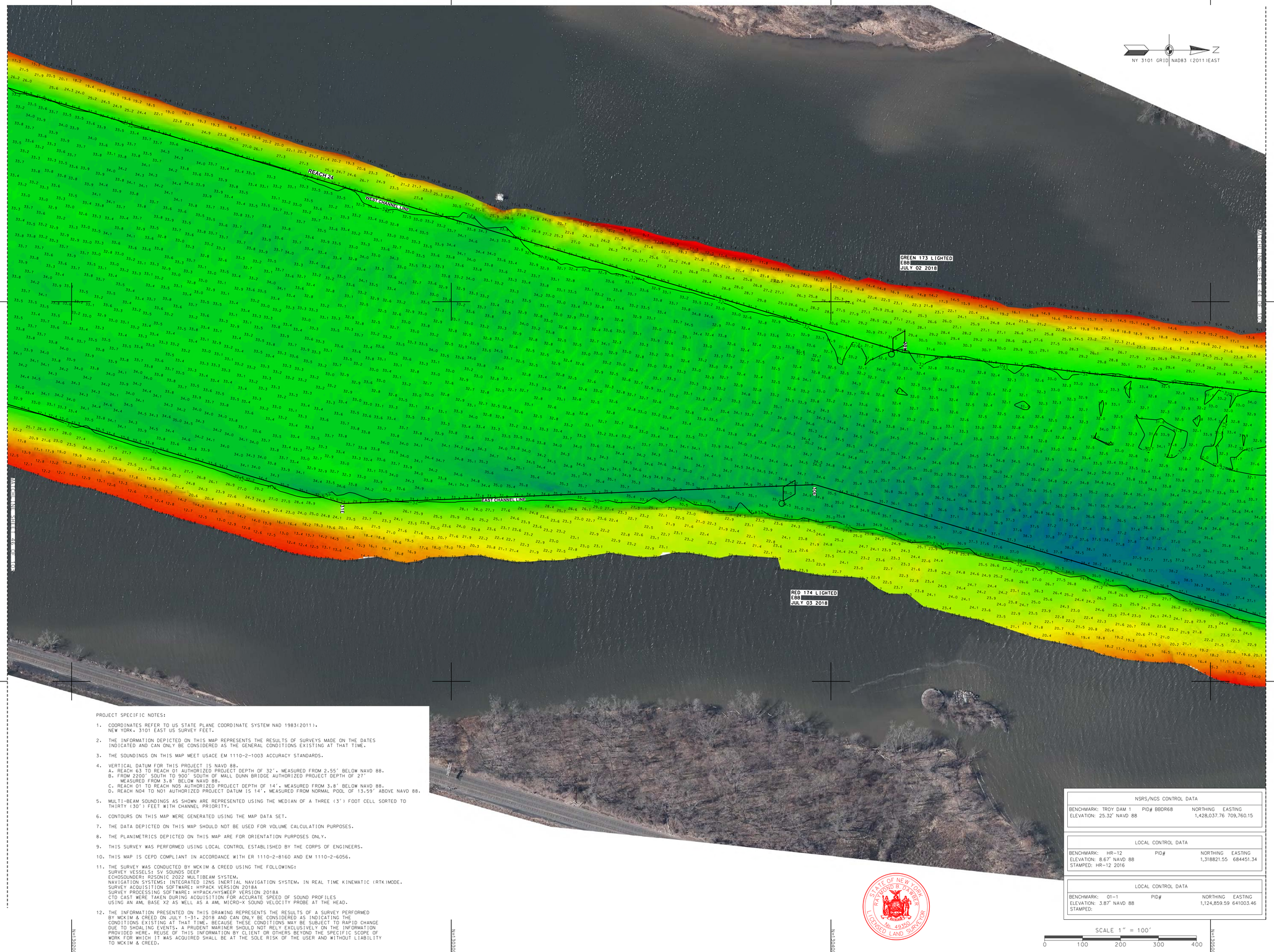
DESIGNED BY: MBH
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
DATE: JULY 31, 2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
PLOT SCALE: 1:100
ISSUE DATE: 8/30/2018
SIZE: ANSI F
FILE NAME: VH101-056890063_HUDSON_MB.DGN

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-8444
FAX: (910) 251-8282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 23

SHEET IDENTIFICATION
VH-144
SHEET 44 OF 103



PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14', MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE XZ AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS, A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

STATE OF NEW YORK
RAYMOND B. BARKER
LICENSED LAND SURVEYOR
No. 49350

SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

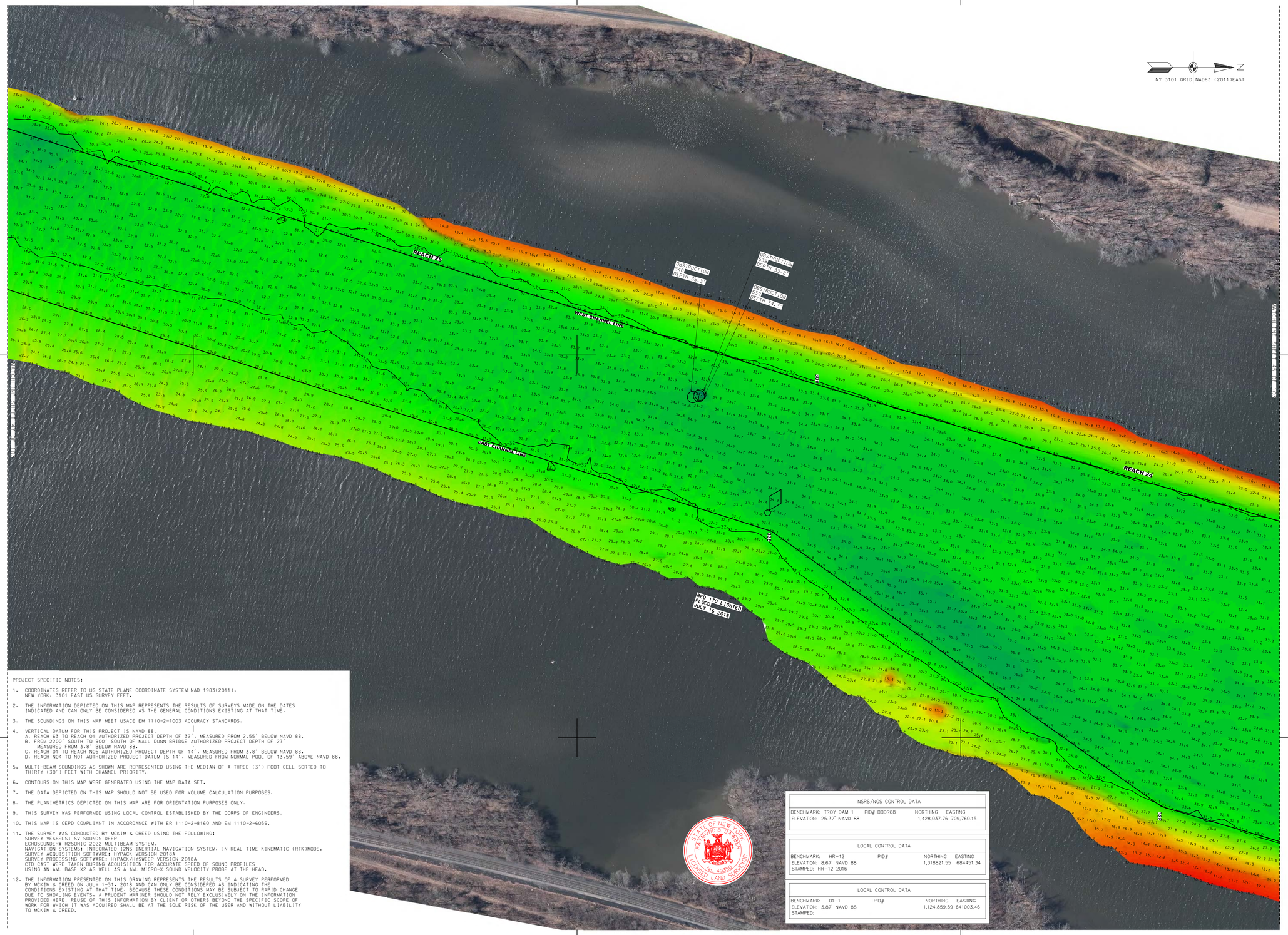
DESIGNED BY: MBH
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1:100
SIZE: ANSI F
DATE: JUL 31, 2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
TO/DO NO.: 0005
FILE NUMBER:
ISSUE DATE: NOV 2018
FILE NAME: V:\101-058890063_HUDSON_MB.DGN

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-8444
FAX: (910) 251-8282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 24

SHEET IDENTIFICATION
VH-145
SHEET 45 OF 103



PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14', MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED 12NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK) MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS, A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

STATE OF NEW YORK
RAYMOND E. DAWES
No. 49359
LICENSED LAND SURVEYOR

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.	MARK	DESCRIPTION	DATE	APPR.

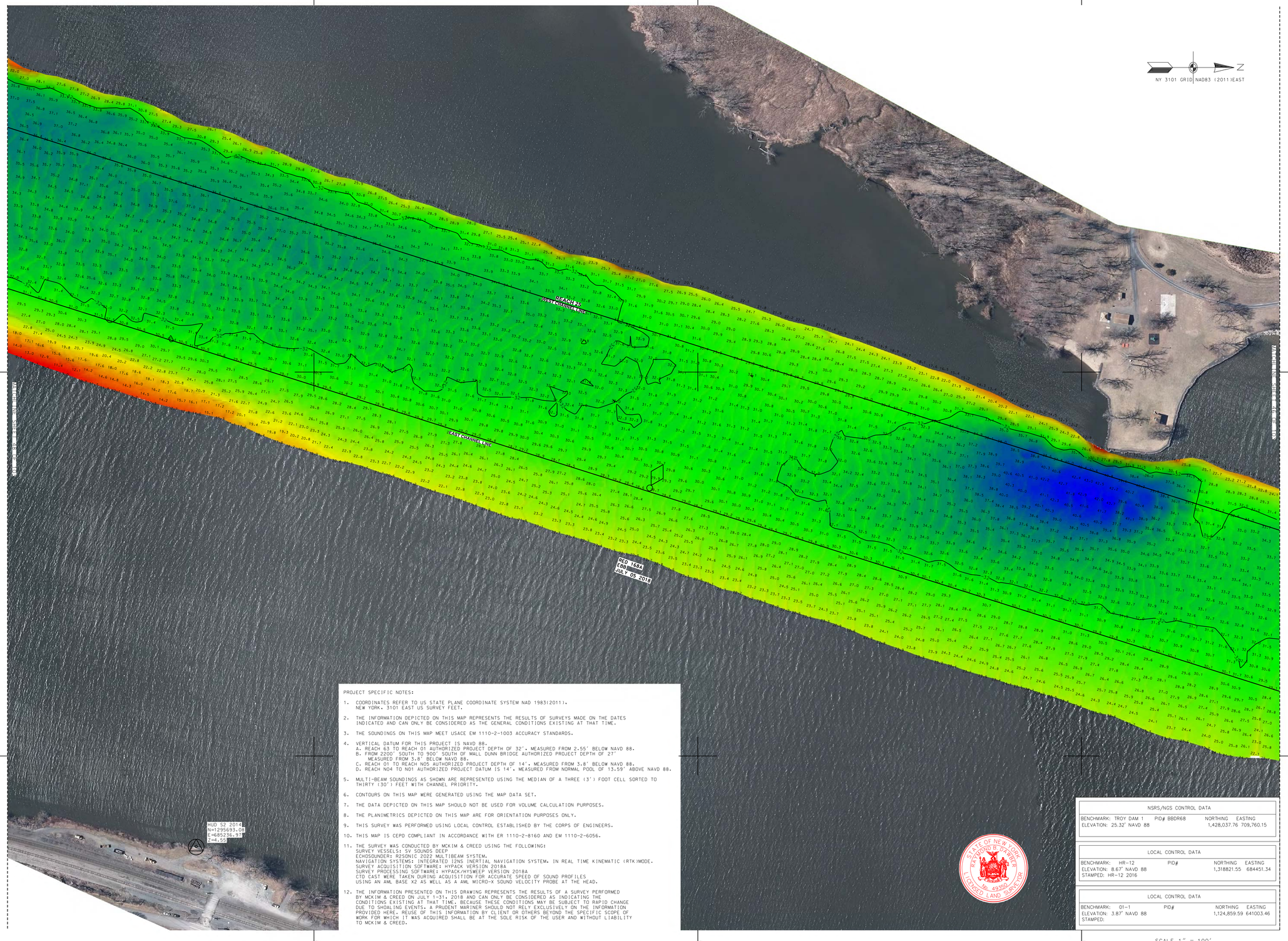
DESIGNED BY:
DWN BY: MBH
CKD BY: RED
SUBMITTED BY: DLJ
DATE: JULY 31, 2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
PLOT SCALE: 1:100
PLOT DATE: 1:1
ISSUE DATE: NOVEMBER 2018
SIZE: ANSI F
FILE NAME: VH101-058890953_HUDSON_MB.DGN

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-8348
FAX: (910) 251-4362

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 24-25

SHEET IDENTIFICATION
VH-146
SHEET 46 OF 103



PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14'. MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 CEPO COMPLIANT IN ACCORDANCE WITH ER 1110-2-8160 AND EM 1110-2-6056.
11. THE SURVEY WAS CONDUCTED BY MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS, A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

STATE OF NEW YORK · RICHARD B. KEYES · LICENSED LAND SURVEYOR · NO. 49350

SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

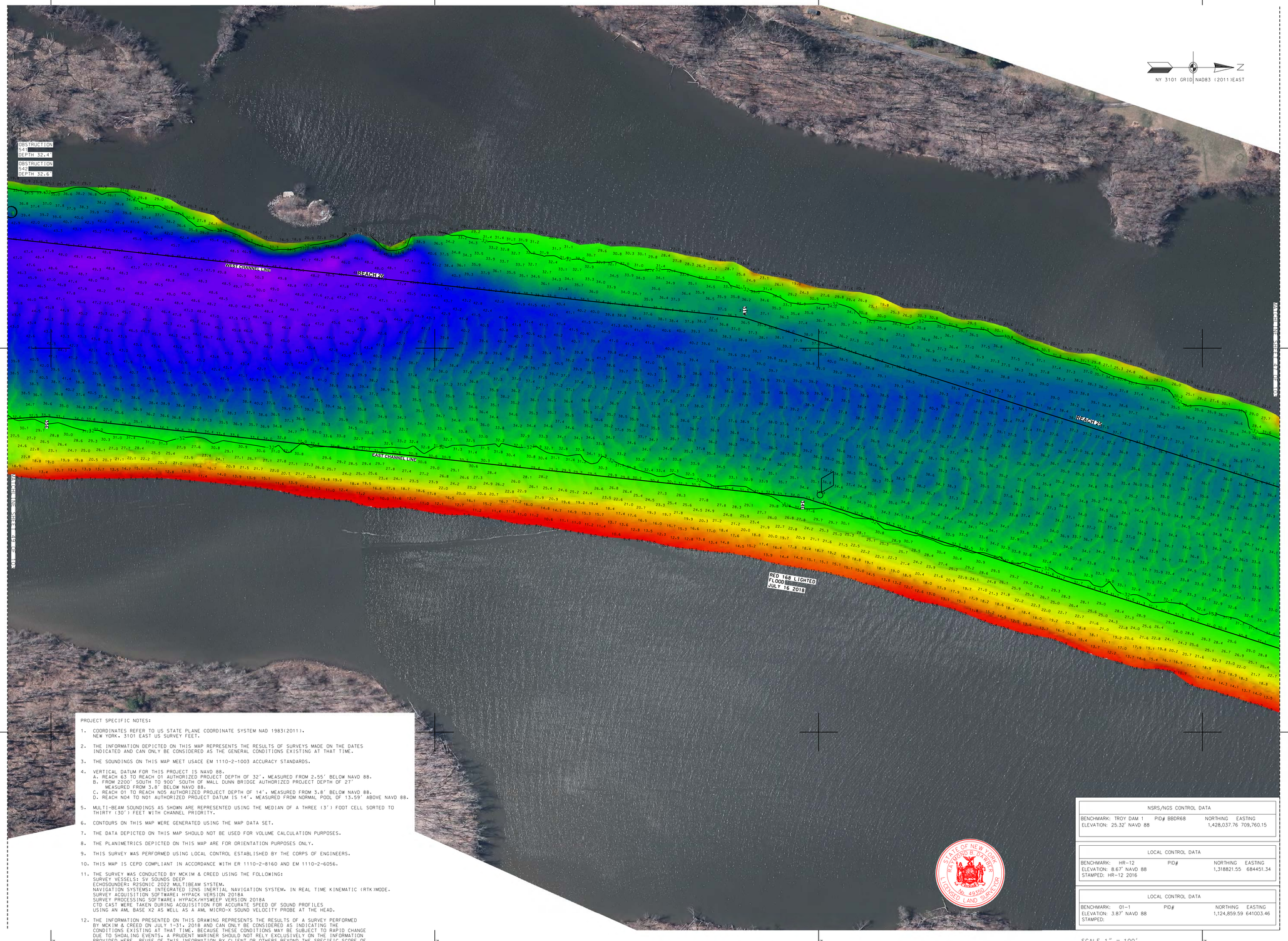
DESIGNED BY: DLJ
DRAWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1" = 100'
SIZE: ANSI F
DATE: JULY 31, 2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
ISSUE DATE: NOVEMBER 2018
FILE NAME: VH101-0268990063_HUDSON_MB.DGN

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-8444
FAX: (910) 251-8282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 25

SHEET IDENTIFICATION
VH-147
SHEET 47 OF 103



PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14', MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS. A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

STATE OF NEW YORK
RAYMOND B. DABER
No. 49350
LICENSED LAND SURVEYOR

SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

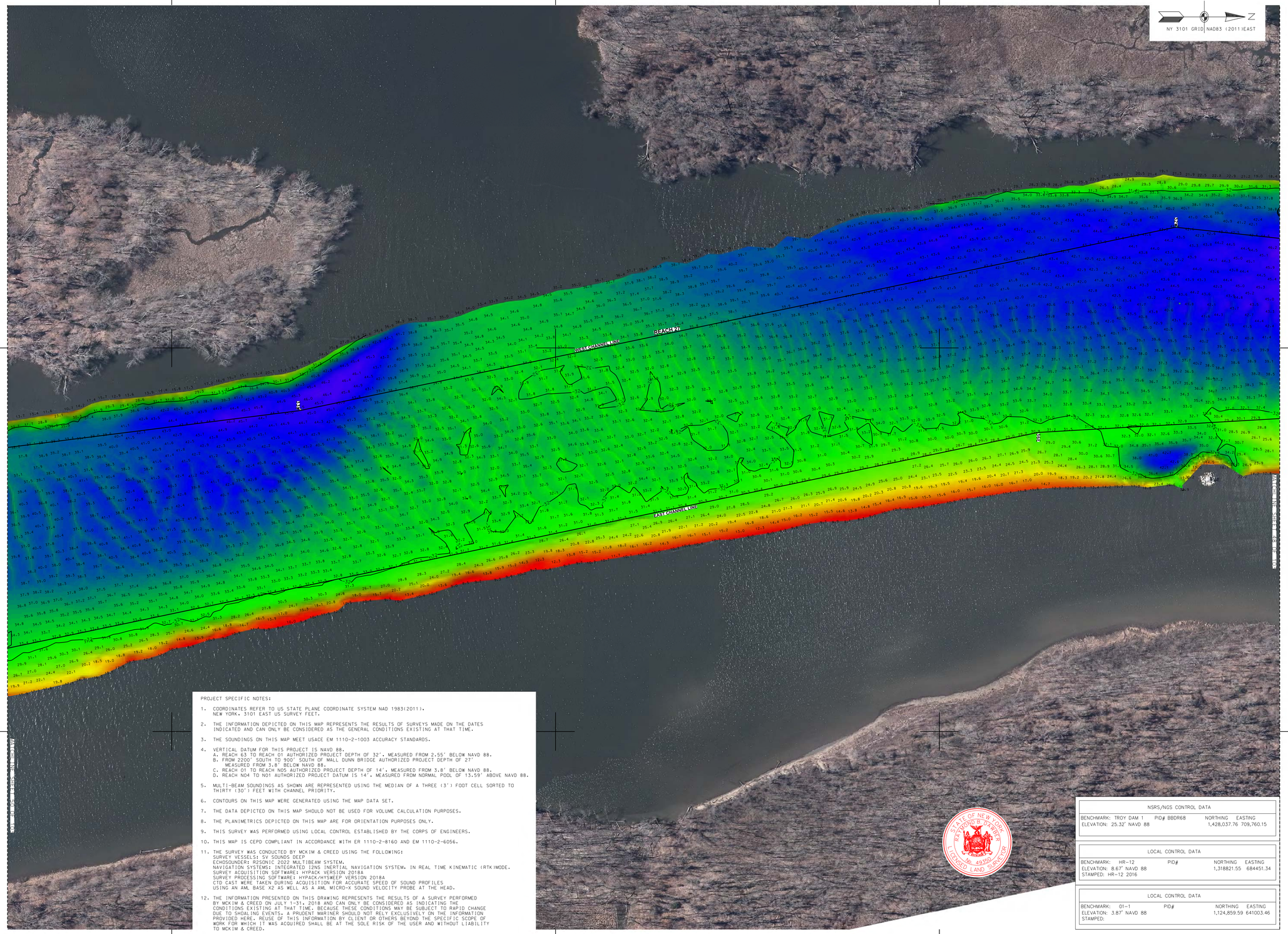
U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-8444
FAX: (910) 251-8282

DESIGNED BY: MBH	CKD BY: RBD	DATE: JULY 31, 2018	SOLICITATION NO.:
DWN BY: MBH			
SUBMITTED BY: DLJ		CONTRACT NO.: W912DS-14-D-0004	
PLOT SCALE: 1=100'	ISSUE DATE: NOVEMBER 2018	FILE NUMBER:	
SIZE: ANSI F	FILE NAME: VH101-0268990063_HUDSON_MB.DGN		

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 25-26

SHEET IDENTIFICATION
VH-148
SHEET 48 OF 103



PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14', MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK) MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS, A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

NSRS/NGS CONTROL DATA		
BENCHMARK: TROY DAM 1 PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88	1,428,037.76	709,760.15

LOCAL CONTROL DATA		
BENCHMARK: HR-12 PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88	1,318821.55	684451.34
STAMPED: HR-12 2016		

LOCAL CONTROL DATA		
BENCHMARK: 01-1 PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88	1,124,859.59	641003.46
STAMPED:		

STATE OF NEW YORK · RICHARD B. STAYER · 49290 · LICENSED LAND SURVEYOR

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.	MARK	DESCRIPTION	DATE	APPR.

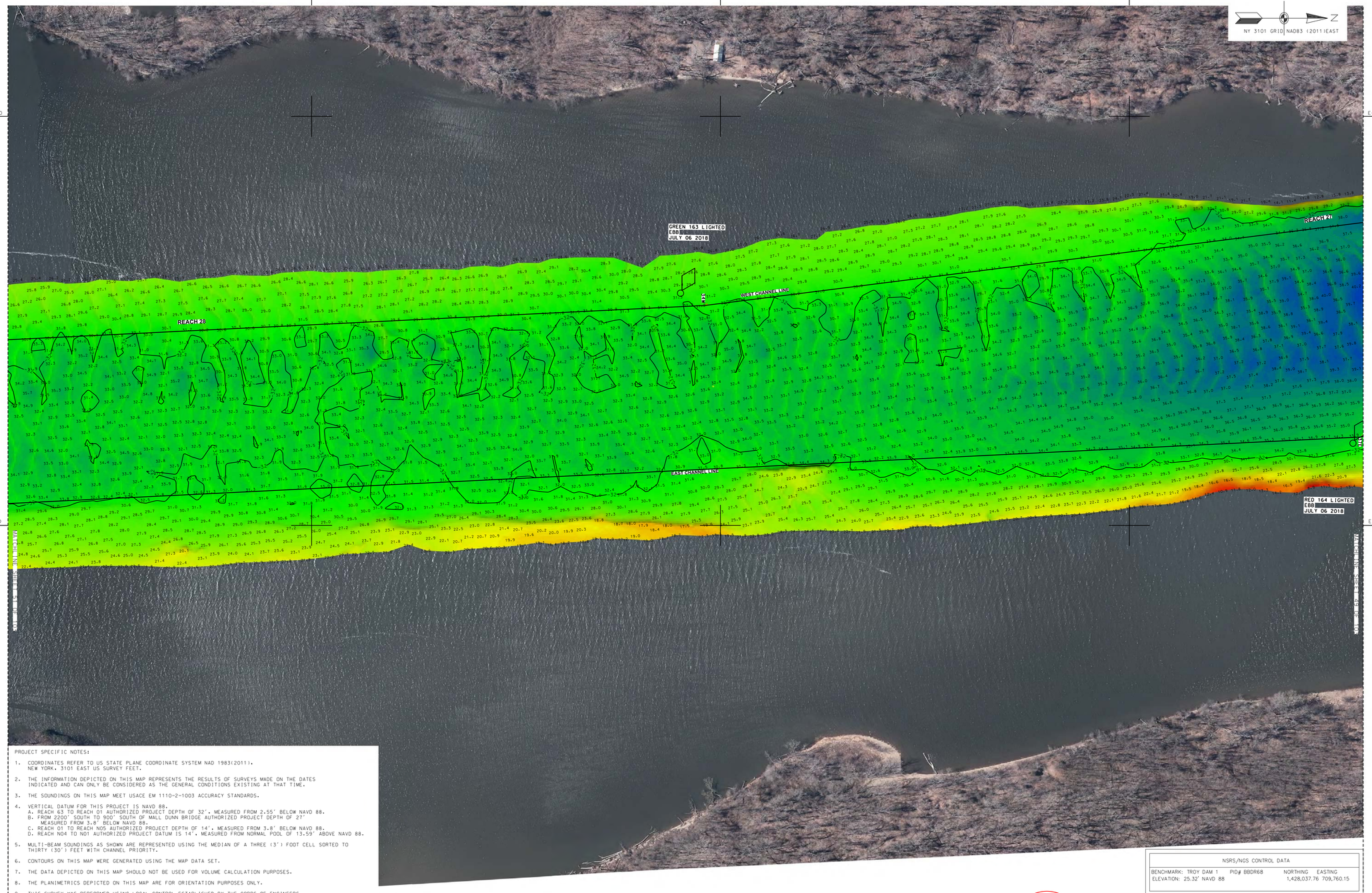
DESIGNED BY: DEJ
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DEJ
PLOT SCALE: 1" = 100'
SIZE: ANSI F
DATE: JULY 31, 2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
ISSUE DATE:
NOT FOR NAVIGATION
FILE NAME: VH101-056890053_HUDSON_MB.DGN

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-8444
FAX: (910) 251-8282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 27

SHEET IDENTIFICATION
VH-149
SHEET 49 OF 103



PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14'. MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS, A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

STATE OF NEW YORK
RAYMOND R. DANNER
LICENSED LAND SURVEYOR
NO. 49350

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

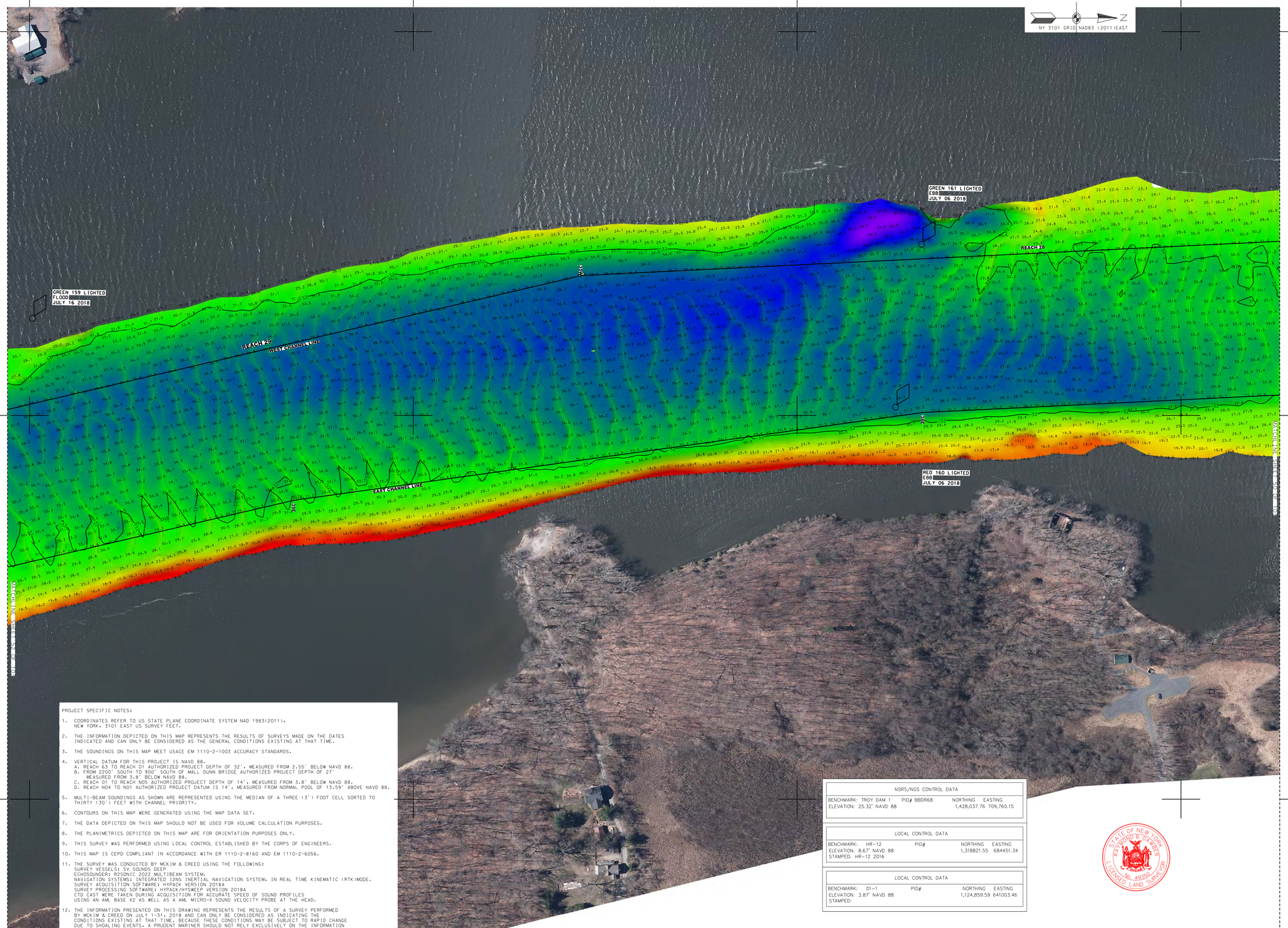
DESIGNED BY:
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1:600
SIZE: ANSI F
DATE: JANUARY 31, 2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
ISSUE DATE: NOVEMBER 2020
FILE NUMBER:
FILE NAME: VH101-058980053_HUDSON_MB.DGN

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 341-0646
FAX: (910) 251-8282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 27-28

SHEET IDENTIFICATION
VH-150
SHEET 50 OF 103



PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14'. MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.

12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS, A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

STATE OF NEW YORK
RAYMOND B. BARBER
049350
LICENSED LAND SURVEYOR

SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers
New York District

MARK	DESCRIPTION	DATE	APPR.	MARK	DESCRIPTION	DATE	APPR.

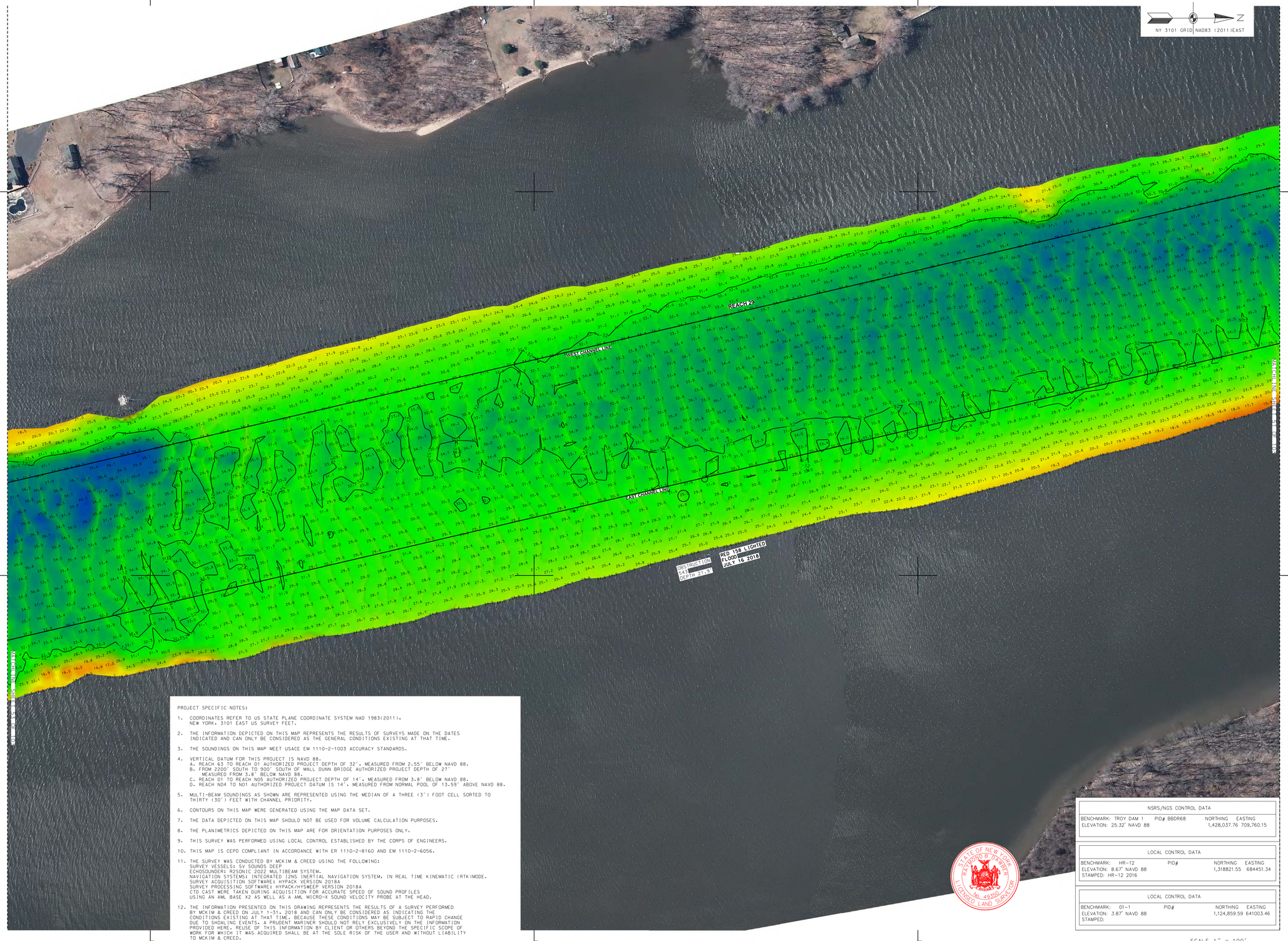
DESIGNED BY: DMA
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
DATE: JULY 31, 2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
PLOT SCALE: 1:100
PLOT DATE: NOV 2018
FILE NUMBER:
FILE NAME: VH101-0588890083_HUDSON_MB.DGN
SIZE: ANSI F

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-8848
FAX: (910) 251-8282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 28-29

SHEET IDENTIFICATION
VH-151
SHEET 51 OF 103



PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14', MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS, A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

STATE OF NEW YORK
RICHARD B. BAKER
LICENSED No. 49359
LICENSED LAND SURVEYOR

SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

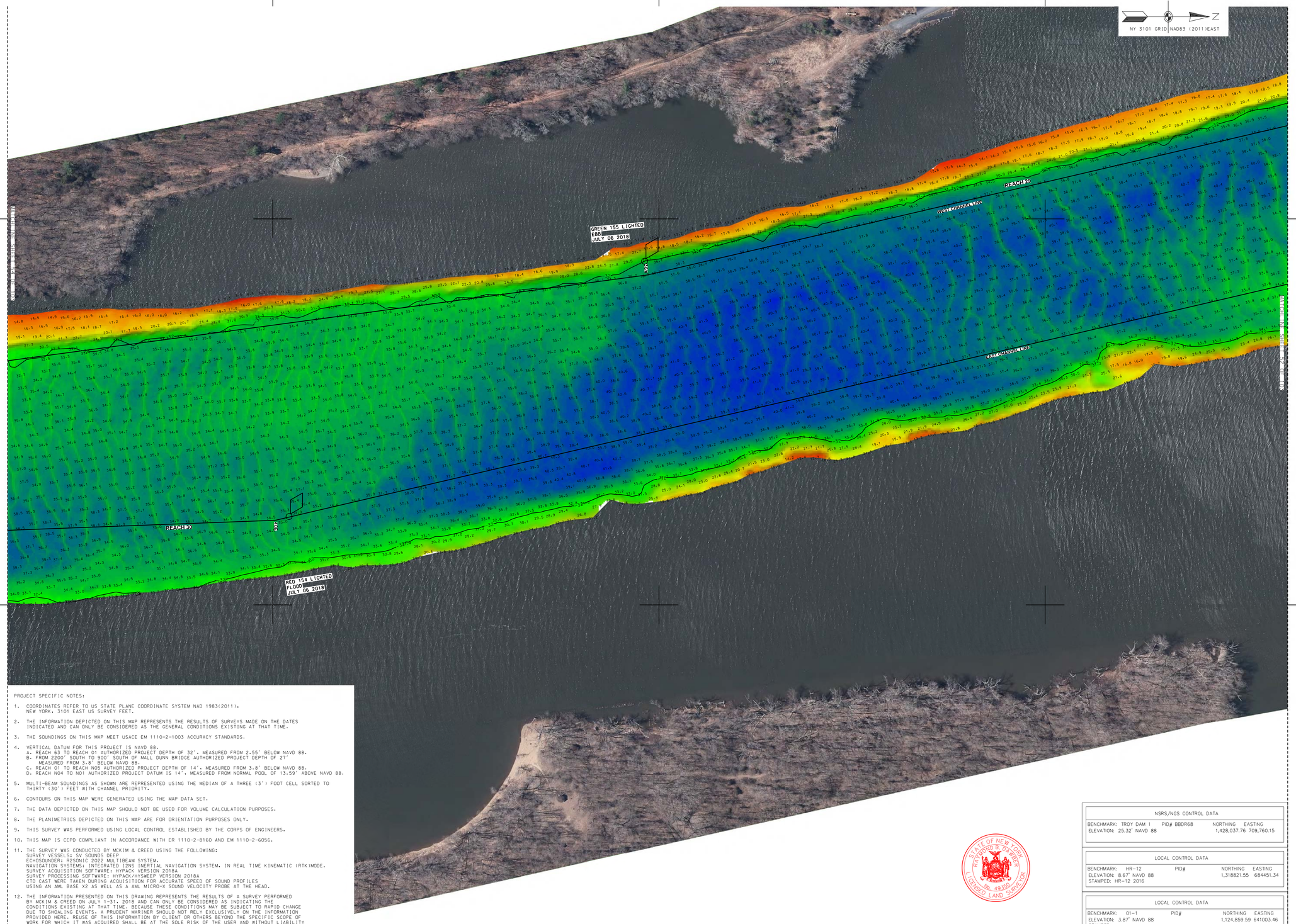
DESIGNED BY: MBH
DRWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1" = 100'
SIZE: ANSI F
DATE: MAY 31, 2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
ISSUE DATE: AUGUST 2018
FILE NUMBER:
FILE NAME: VH101-0268900063_HUDSON_MB.DGN

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-8444
FAX: (910) 251-8282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 29

SHEET IDENTIFICATION
VH-152
SHEET 52 OF 103



PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' BELOW NAVD 88.
   C. REACH 01 TO REACH NO5 AUTHORIZED PROJECT DEPTH OF 14'. MEASURED FROM 3.8' BELOW NAVD 88.
   D. REACH NO4 TO NO1 AUTHORIZED PROJECT DATUM IS 14'. MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS, A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

STATE OF NEW YORK
RAYMOND E. DOWNES
LICENSED LAND SURVEYOR
No. 49350

SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.

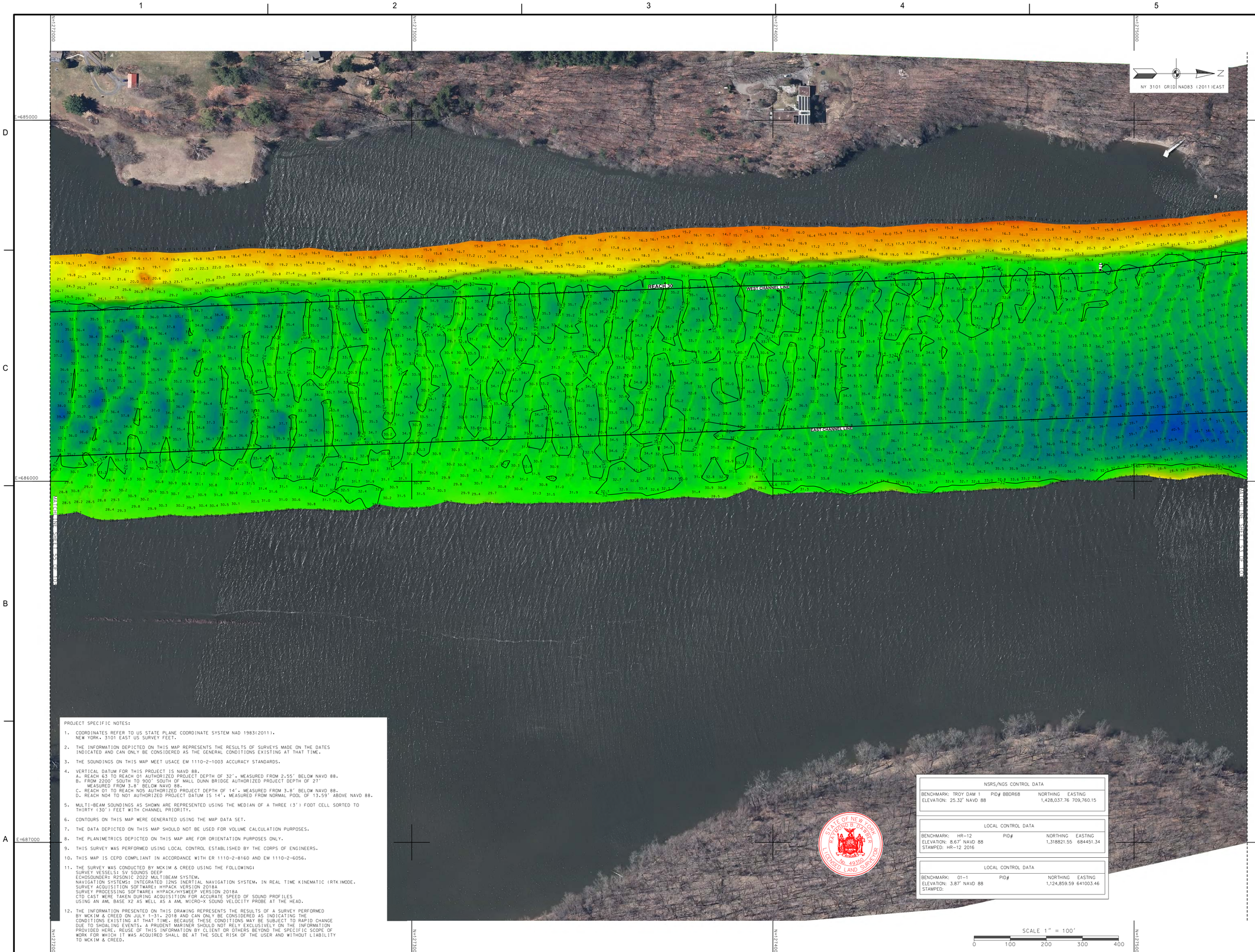
DESIGNED BY: DEA
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1" = 100'
SIZE: ANSI F
DATE: JULY 31, 2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
ISSUE DATE: NOVEMBER 2018
FILE NAME: VH101-056890063_HUDSON_MB.DGN

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-8444
FAX: (910) 251-8282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 29-30

SHEET IDENTIFICATION
VH-153
SHEET 53 OF 103



PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14', MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS, A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

STATE OF NEW YORK
PATRICK E. DWYER
No. 49355
LICENSED LAND SURVEYOR

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

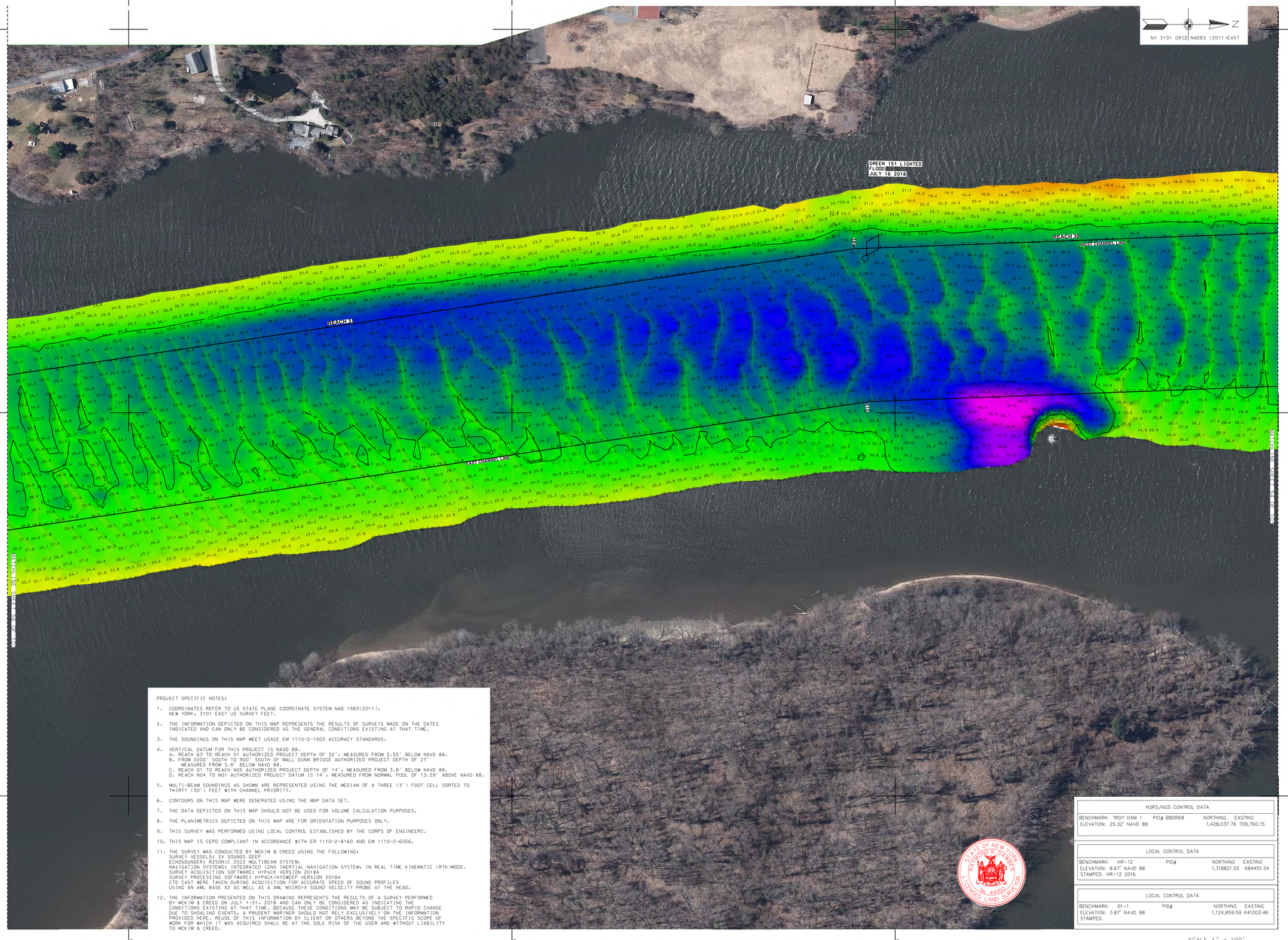
DESIGNED BY:
DRWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1:100
SIZE: ANSI F
DATE: JANUARY 31, 2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
ISSUE DATE: NOVEMBER 2018
FILE NUMBER:
FILE NAME: VH101-058980053_HUDSON_MB.DGN

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-8586
FAX: (910) 251-8282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 30

SHEET IDENTIFICATION
VH-154
SHEET 54 OF 103



PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14', MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS, A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

NSRS/NGS CONTROL DATA

BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA

BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA

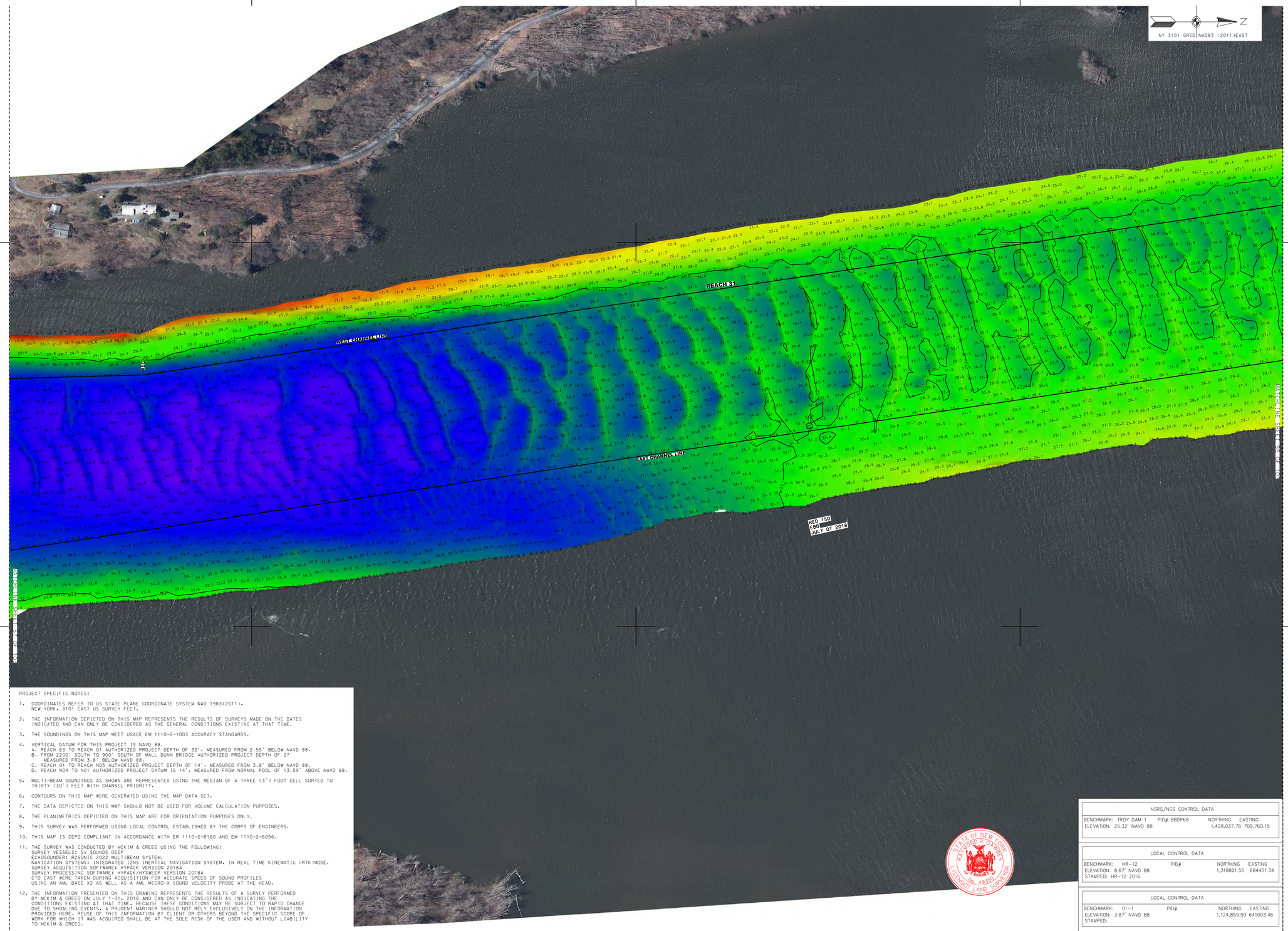
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

STATE OF NEW YORK
RAYMOND B. PARKER
No. 49350
LICENSED LAND SURVEYOR

SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.



PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14'. MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES
    USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS, A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

STATE OF NEW YORK
RAYMOND B. STAYER
049350
LICENSED LAND SURVEYOR

SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.	MARK	DESCRIPTION	DATE	APPR.

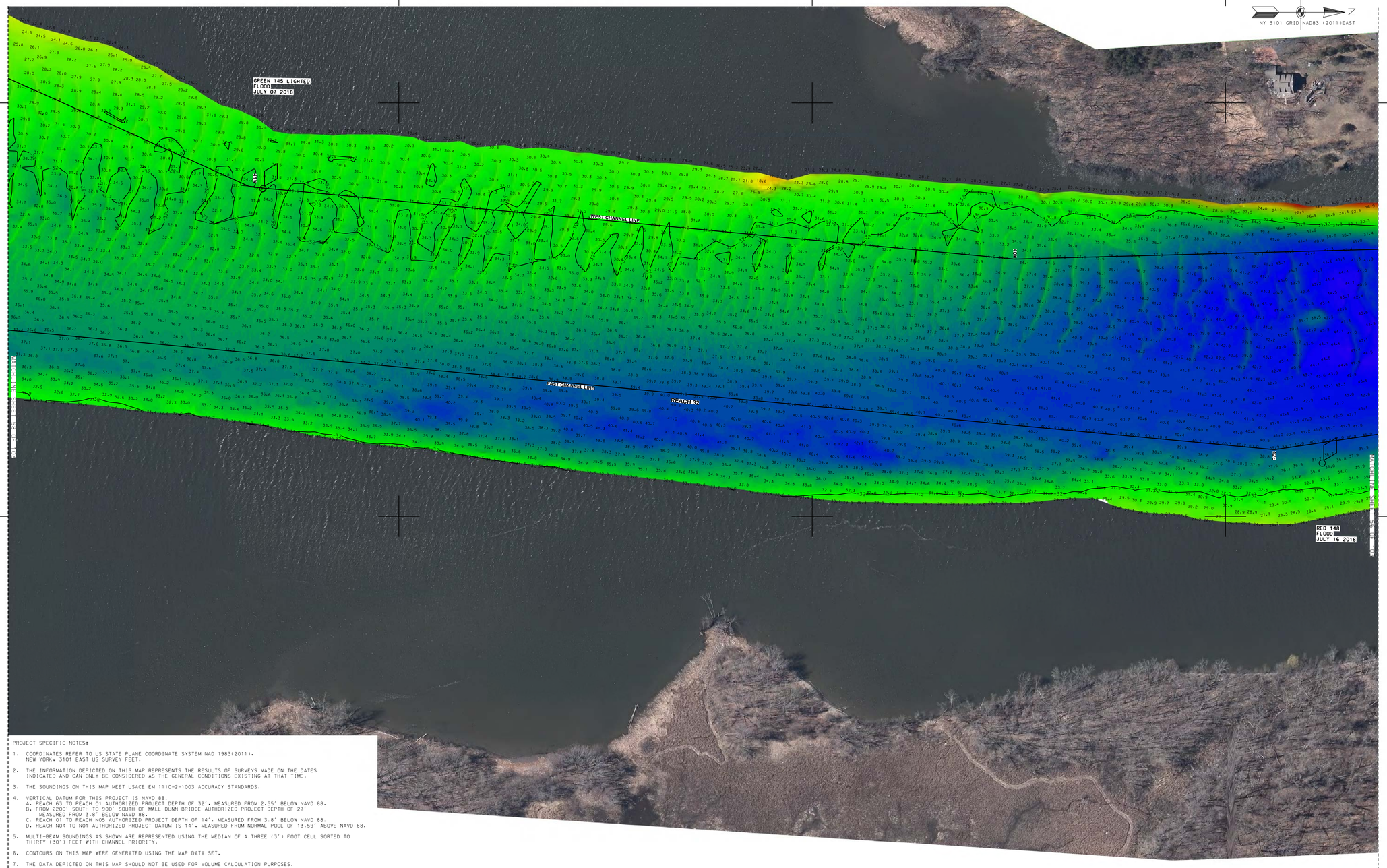
DESIGNED BY: DEJ
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DEJ
PLOT SCALE: 1" = 100'
ISSUE DATE: NOV 2018
SIZE: ANSI F
DATE: JULY 31, 2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
FILE NAME: VH101-056890053_HUDSON_MB.DGN

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-8444
FAX: (910) 251-8282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 31

SHEET IDENTIFICATION
VH-156
SHEET 56 OF 103



PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14'. MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK) MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS, A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

STATE OF NEW YORK
RAYMOND B. FARRER
LICENSED LAND SURVEYOR
No. 49350

SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.

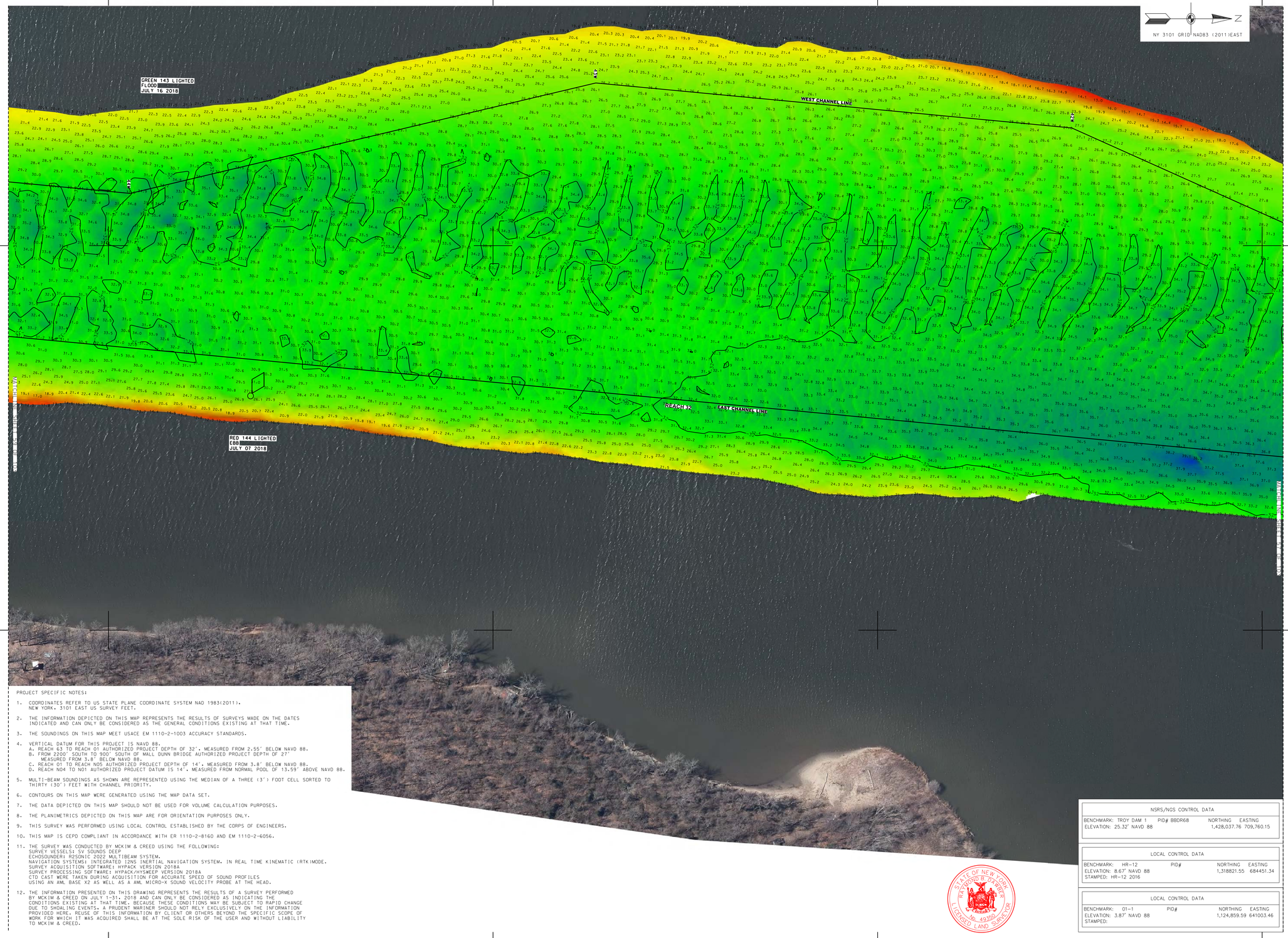
DESIGNED BY: DBA
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1" = 100'
SIZE: ANSI F
DATE: MAY 31, 2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
ISSUE DATE: AUG 2018
FILE NAME: V:\101-036890063_HUDSON_MB.DGN

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-8444
FAX: (910) 251-8282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 32

SHEET IDENTIFICATION
VH-157
SHEET 57 OF 103



PROJECT SPECIFIC NOTES:

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 BRIDGE AUTHORIZED PROJECT DEPTH OF 27' MEASURED FROM 3.8' 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 N01 AUTHORIZED PROJECT DATUM IS 14'. MEASURED FROM NORMAL POOL OF 13.59' 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 DEPICTED 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 MCKIM & CREED USING THE FOLLOWING:
    SURVEY VESSELS: SV SOUNDS DEEP
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM, IN REAL TIME KINEMATIC (RTK) MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2018A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2018A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES
    USING AN AML BASE X2 AS WELL AS A AML MICRO-X SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON JULY 1-31, 2018 AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME. BECAUSE THESE CONDITIONS MAY BE SUBJECT TO RAPID CHANGE DUE TO SHOALING EVENTS, A PRUDENT MARINER SHOULD NOT RELY EXCLUSIVELY ON THE INFORMATION PROVIDED HERE. REUSE OF THIS INFORMATION BY CLIENT OR OTHERS BEYOND THE SPECIFIC SCOPE OF WORK FOR WHICH IT WAS ACQUIRED SHALL BE AT THE SOLE RISK OF THE USER AND WITHOUT LIABILITY TO MCKIM & CREED.

NSRS/NGS CONTROL DATA			
BENCHMARK: TROY DAM 1	PID# BBDR68	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,428,037.76	709,760.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

LOCAL CONTROL DATA			
BENCHMARK: 01-1	PID#	NORTHING	EASTING
ELEVATION: 3.87' NAVD 88		1,124,859.59	641003.46
STAMPED:			

STATE OF NEW YORK
RAYMOND B. PARKER
No. 49385
LICENSED LAND SURVEYOR

SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.
MARK	DESCRIPTION	DATE	APPR.

DESIGNED BY: DBG
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DEJ
DATE: JULY 31, 2018
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
PLOT SCALE: 1" = 100'
ISSUE DATE: NOV 2018
SIZE: ANSI F
FILE NAME: VH101-056880053_HUDSON_MB.DGN

U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-0486
FAX: (910) 251-8282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 32

SHEET IDENTIFICATION
VH-158
SHEET 58 OF 103