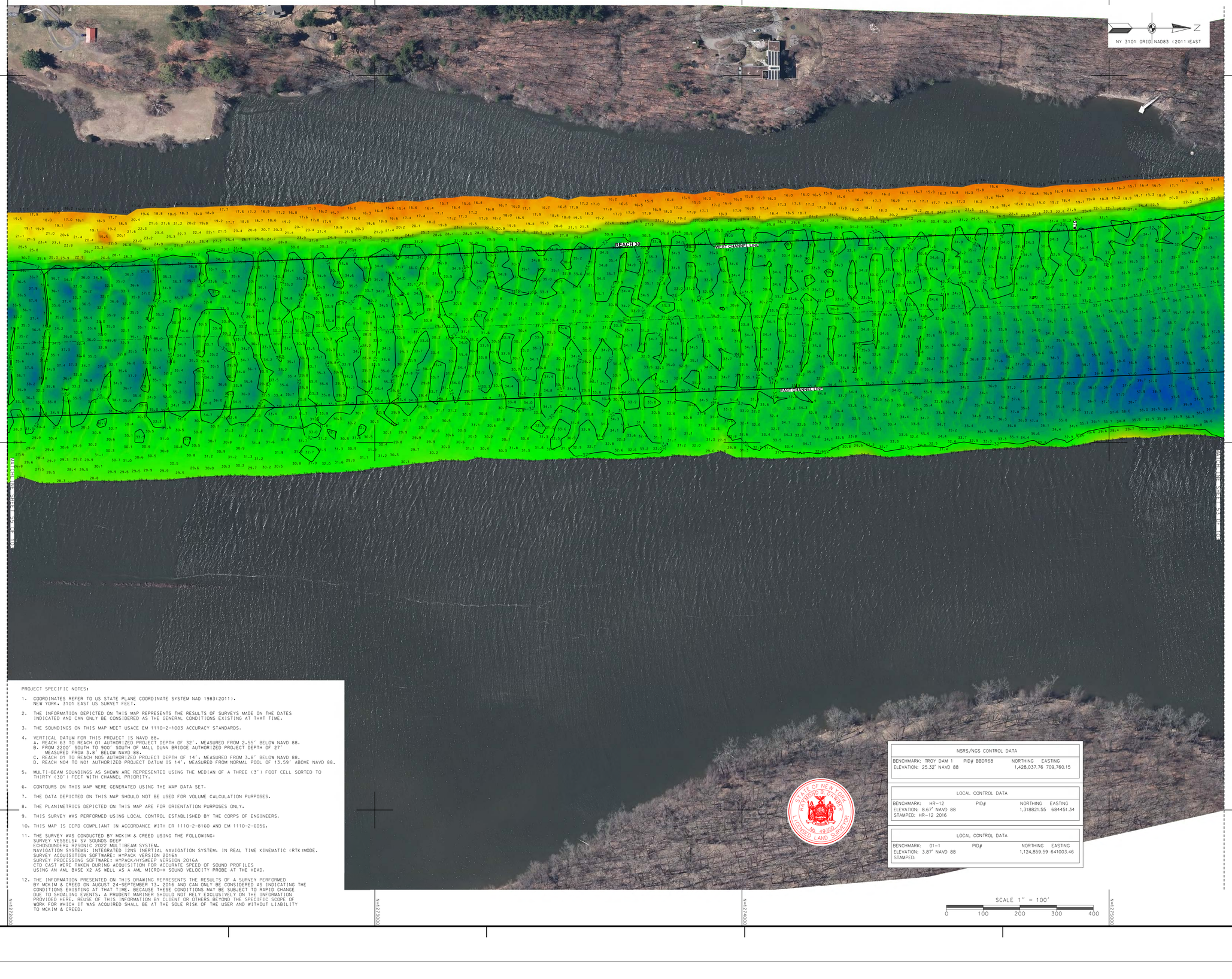


PROJECT SPECIFIC NOTES:

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 2016A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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 AUGUST 24-SEPTEMBER 13, 2016 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. MYRES
049350
LICENSED LAND SURVEYOR

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.
MARK	DESCRIPTION	DATE	APPR.

DATE: AUGUST-SEPTEMBER 2017
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
ISSUE DATE: DEC 2017
FILE NAME: VH101-058890043_HUDSON_MB.DGN
PLOT SCALE: 1:100'
SIZE: ANSI F

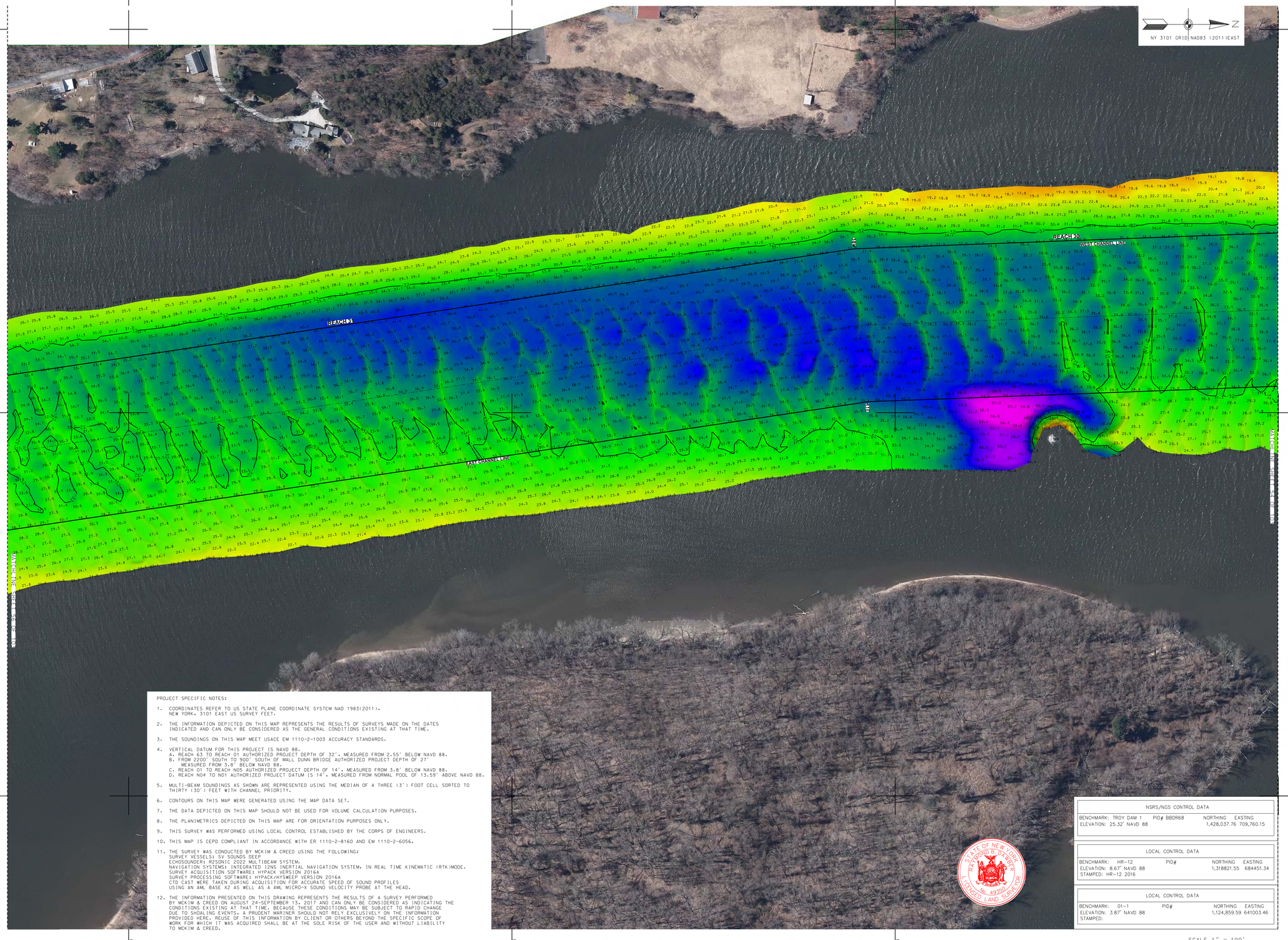
DESIGNED BY: DGT
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ

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

MCKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-0046
FAX: (910) 251-4262

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 2016A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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 AUGUST 24-SEPTEMBER 13, 2017 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
049100
LICENSED LAND SURVEYOR

SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.

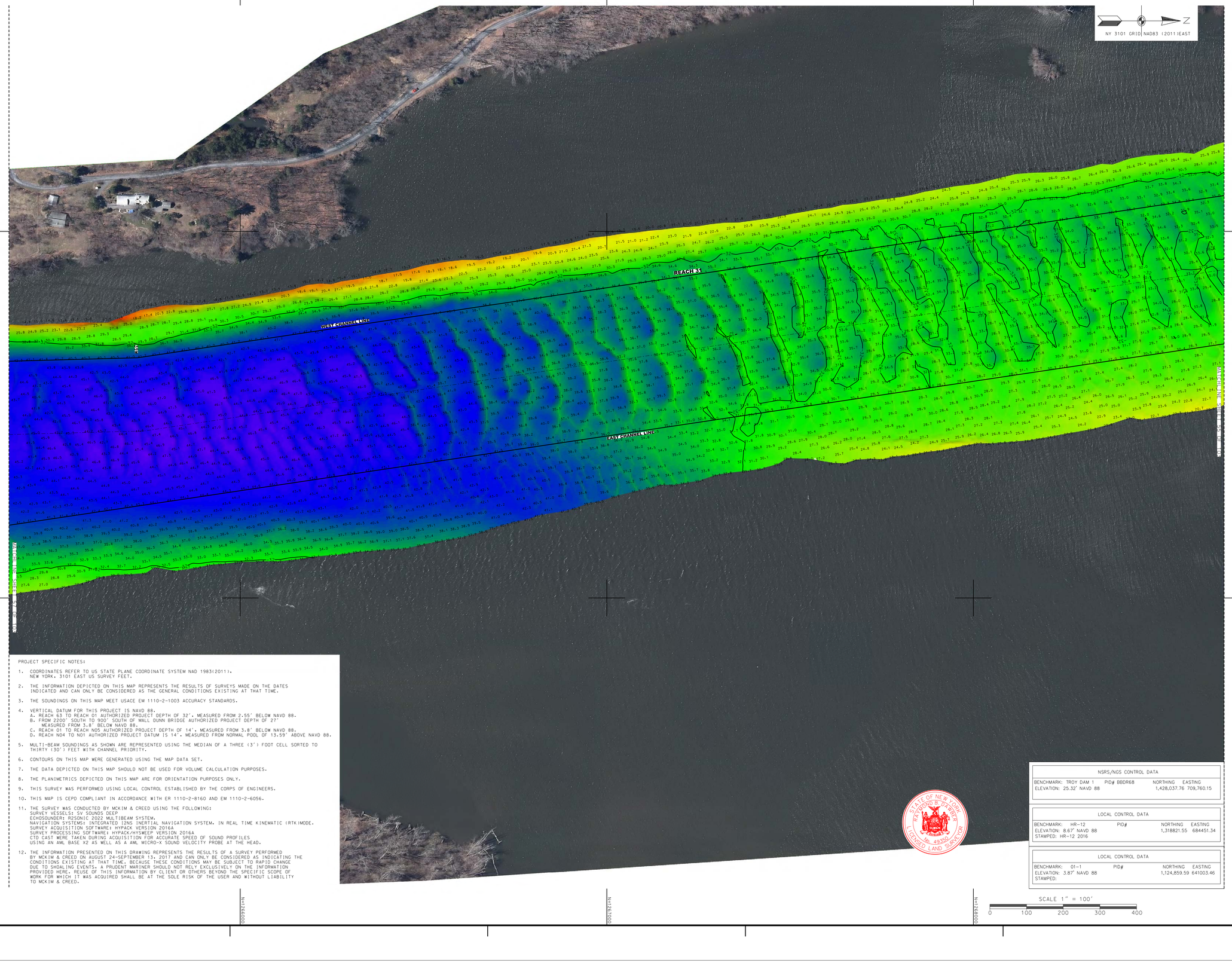
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DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1" = 100'
PLOT DATE: 2017
SIZE: ANSI F
DATE: AUGUST-SEPTEMBER 2017
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
FILE NAME: VH101-056890043_HUDSON_MB.DGN

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

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

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 30-31

SHEET IDENTIFICATION
VH-155
SHEET 55 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 2016A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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 AUGUST 24-SEPTEMBER 13, 2017 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
LICENSED LAND SURVEYOR
No. 49391

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.	MARK	DESCRIPTION	DATE	APPR.

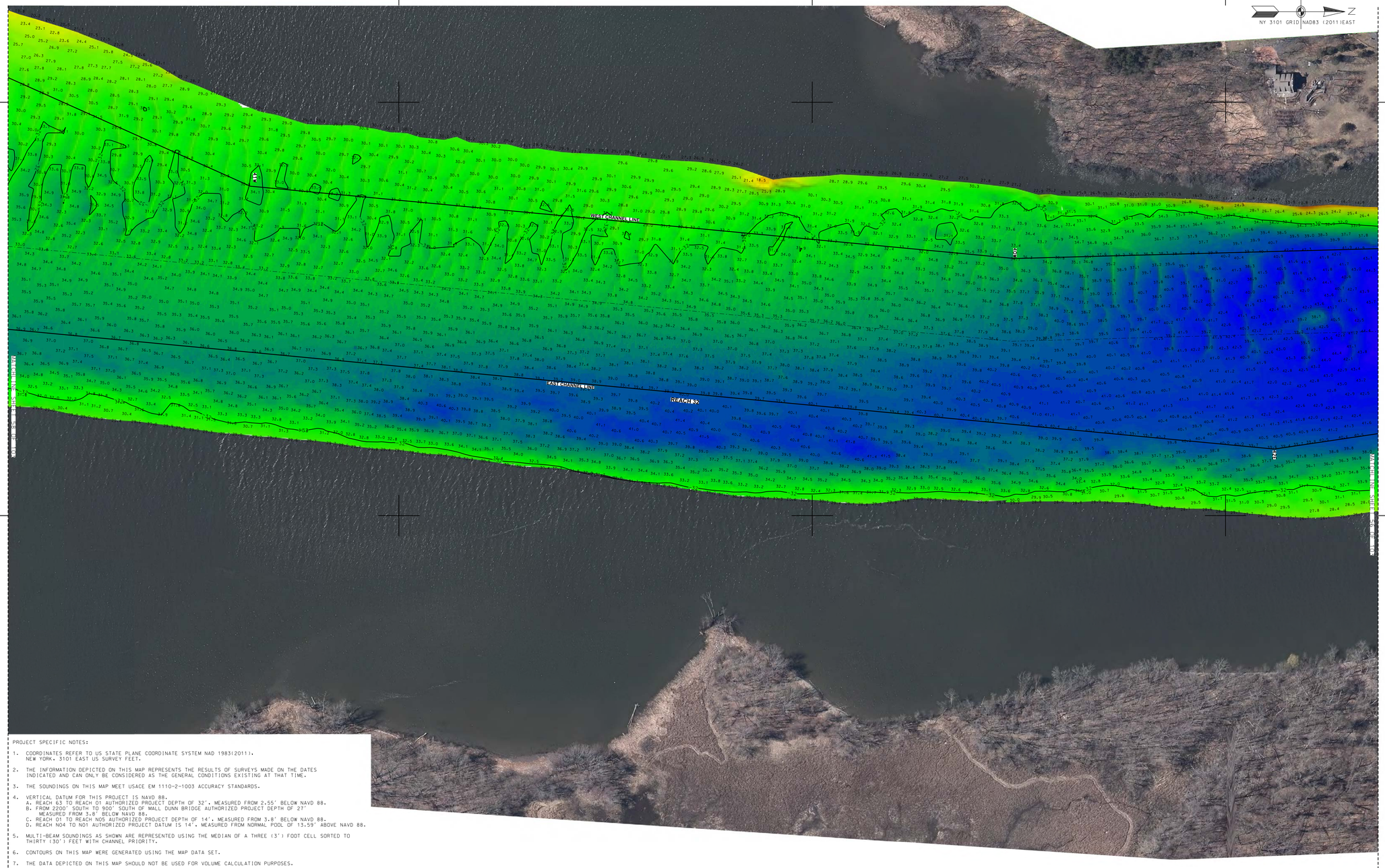
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DWN BY: MBH
SUBMITTED BY: DLJ
PLOT SCALE: 1" = 100'
SIZE: ANSI F
DATE: AUGUST - SEPTEMBER 2017
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
ISSUE DATE:
SHEET
FILE NAME: VH101-056890043_HUDSON_MB.DGN

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

McKIM & CREED
241 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-8246
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 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 2016A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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 AUGUST 24-SEPTEMBER 13, 2017 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. DUNN III — 49350 — LICENSED LAND SURVEYOR — STATE OF NEW YORK

SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers ® New York District

MARK	DESCRIPTION	DATE	APPR.

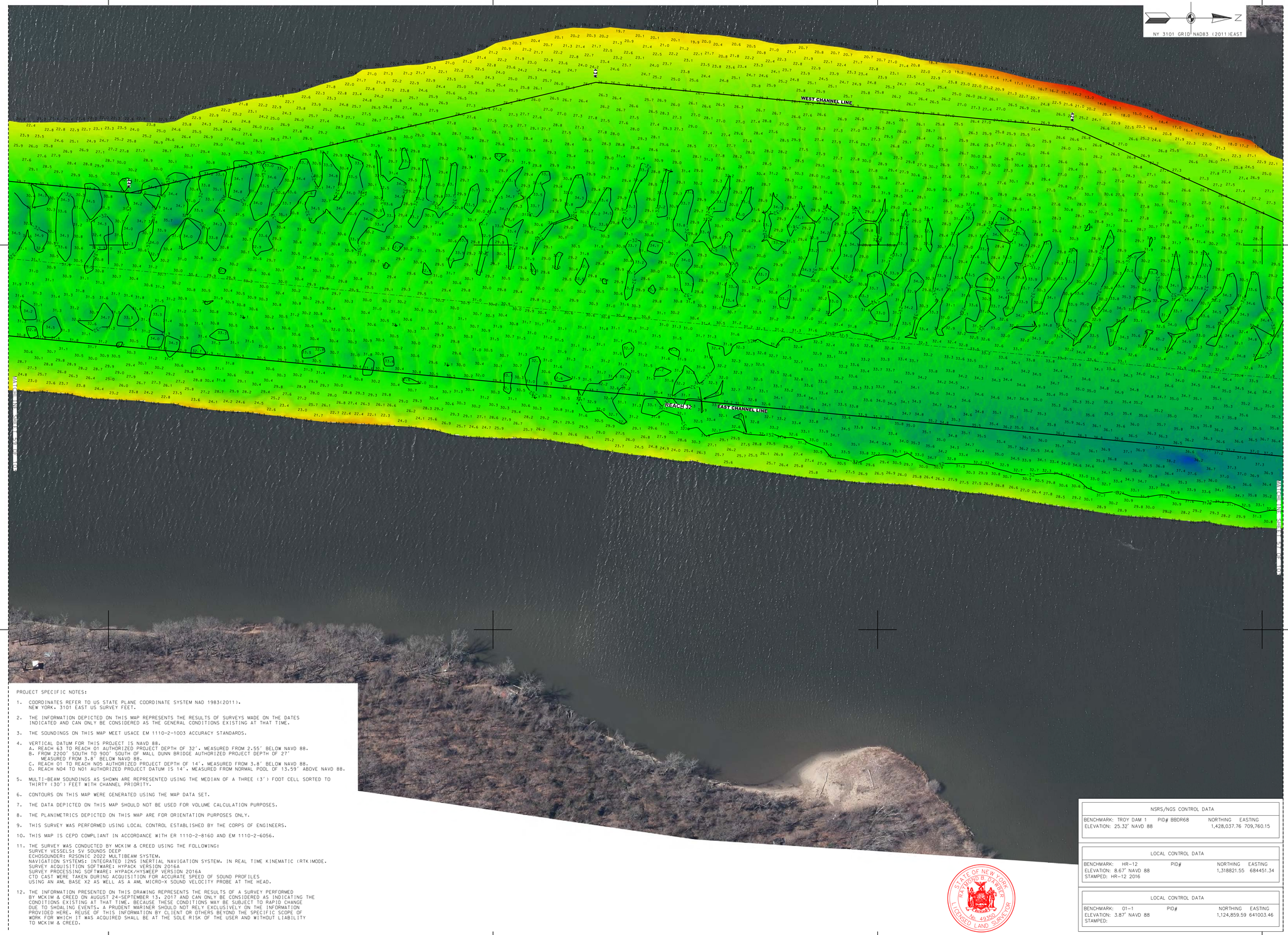
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DRAWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1:100
PLOT DATE: 12/6/2017
SIZE: ANSI F
DATE: AUGUST-SEPTEMBER 2017
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
ISSUE DATE:
FILE NUMBER:
FILE NAME: VH101-058890043_HUDSON_MB.DGN

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

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

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 2016A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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 AUGUST 24-SEPTEMBER 13, 2017 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. WARNER
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.

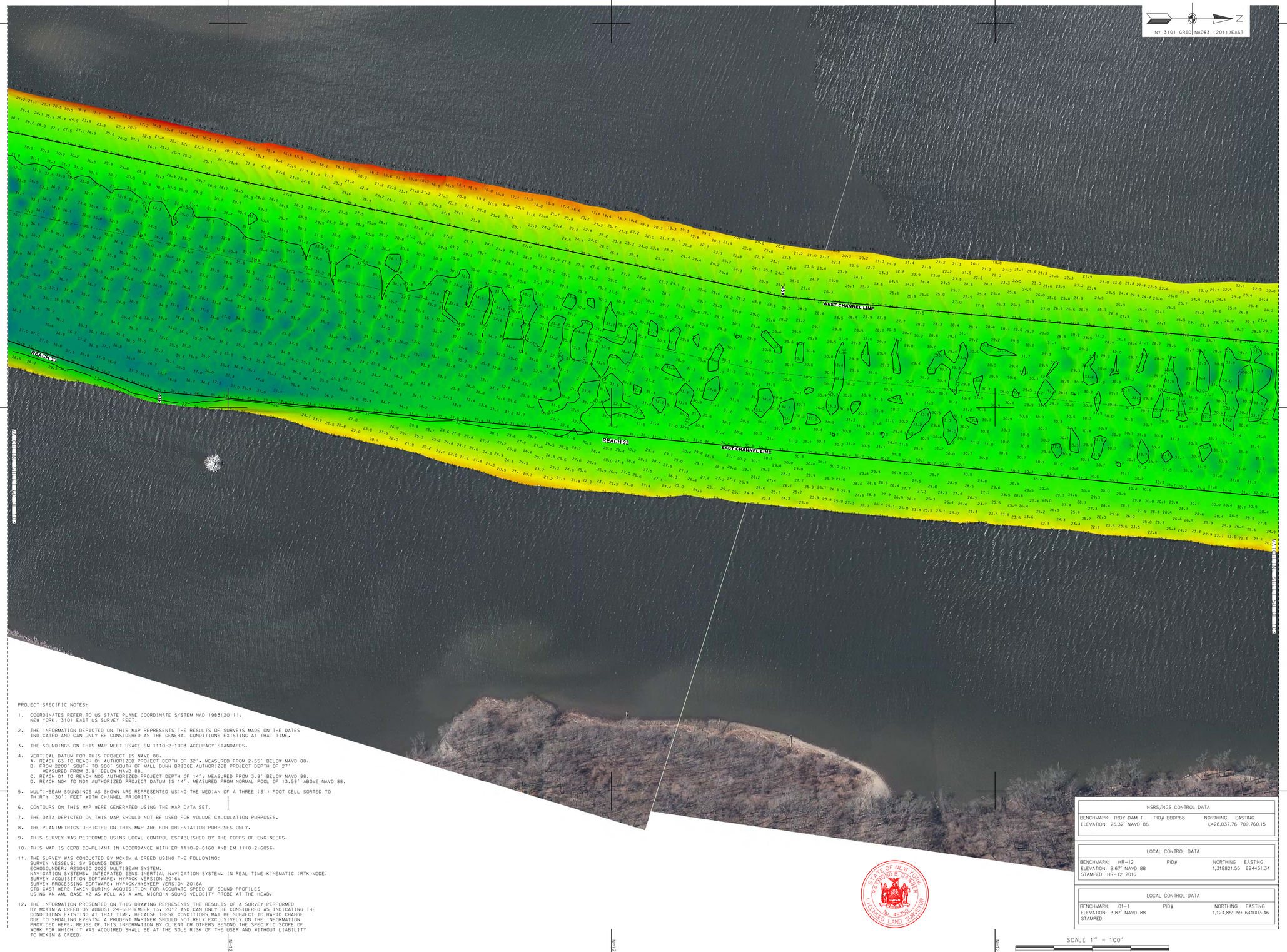
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SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
DESIGNED BY: DLJ
DRAWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
ISSUE DATE: DECEMBER 2017
PLOT SCALE: 1:100'
SIZE: ANSI F
FILE NAME: VH101-058890043_HUDSON_MB.DGN

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

MCKIM & CREED
243 NORTH FRONT STREET
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HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 32

SHEET IDENTIFICATION
VH-158
SHEET 58 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 2016A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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 AUGUST 24-SEPTEMBER 13, 2017 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.

DATE: AUGUST-SEPTEMBER 2017
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
ISSUE DATE: DEC 2017
FILE NAME: VH101-005880043_HUDSON_MB.DGN

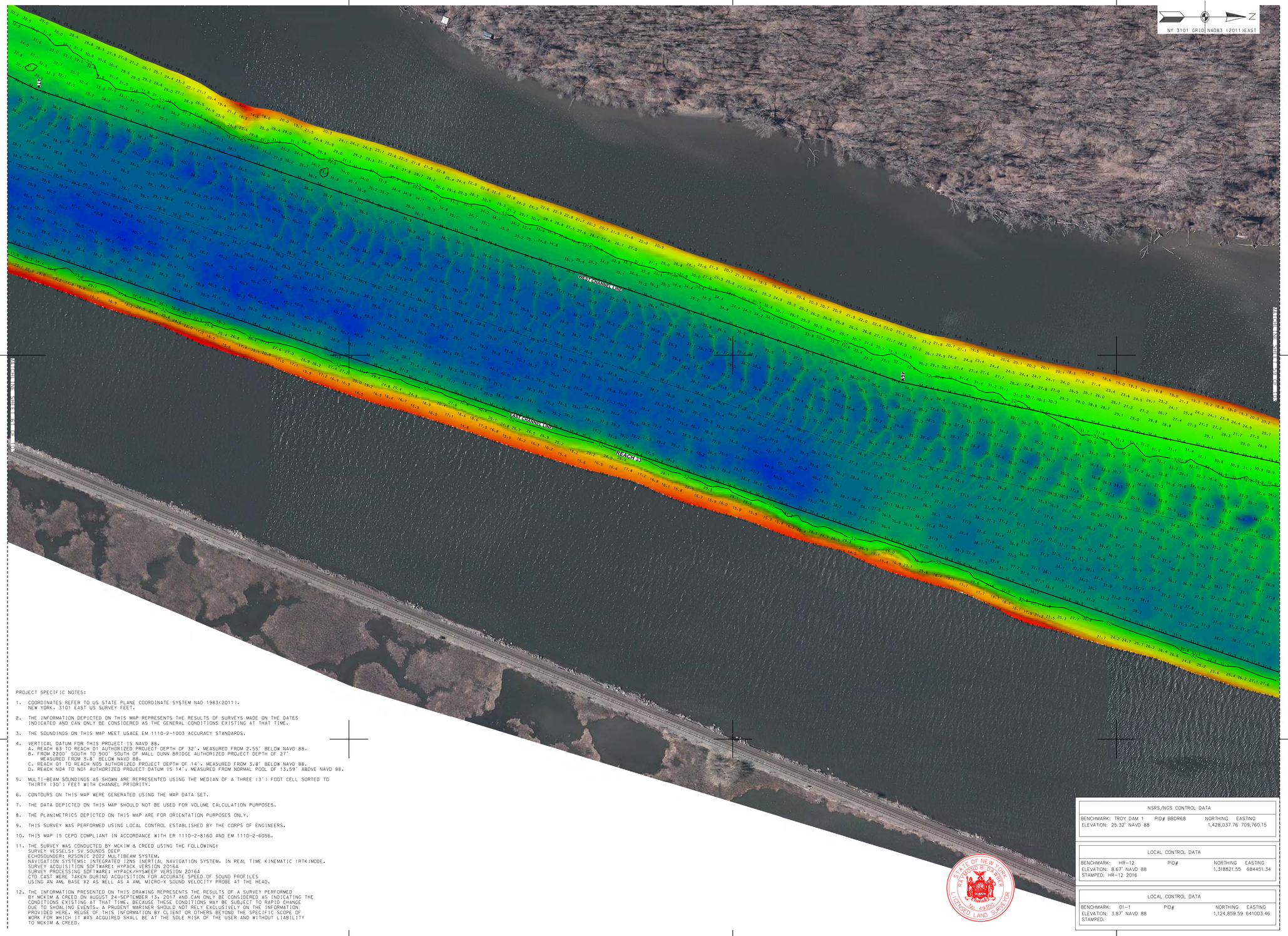
DESIGNED BY: DB
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1" = 100'
SIZE: ANSI F

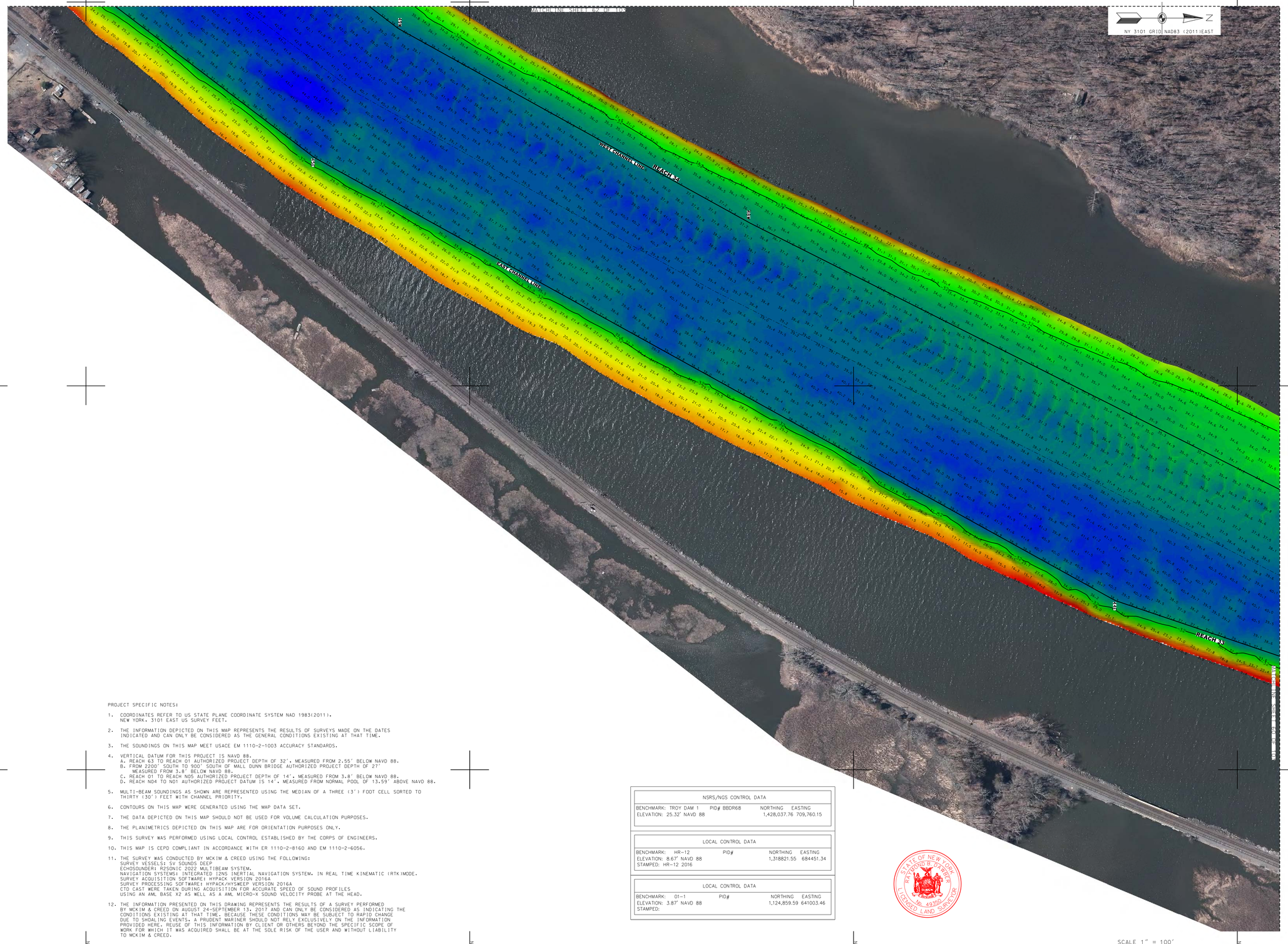
U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

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

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 32-33

SHEET IDENTIFICATION
VH-159
SHEET 59 OF 103


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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 2016A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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 AUGUST 24-SEPTEMBER 13, 2017 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 R. DARBY
No. 49350
LICENSED LAND SURVEYOR

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: DBA	DATE: AUGUST-SEPTEMBER 2017
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: DEC 2017
FILE NAME: VH101-056890043_HUDSON_MB.DGN	FILE NUMBER:

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 33-34

SHEET IDENTIFICATION
VH-161
SHEET 61 OF 103

1 2 3 4 5

D C B A

E=681000 E=682000 E=683000

N=1248000 N=1249000 N=1250000 N=1251000

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:			

MATCH LINE SHEET 61 OF 162

SCALE 1" = 100'
0 100 200 300 400

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 2016A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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 AUGUST 24-SEPTEMBER 13, 2017 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

Mean High Water (MHW) 5.59'
Mean Low Water (MLW) 0.00'
REACH 63
REACH 01
REACH N05
REACH N04

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

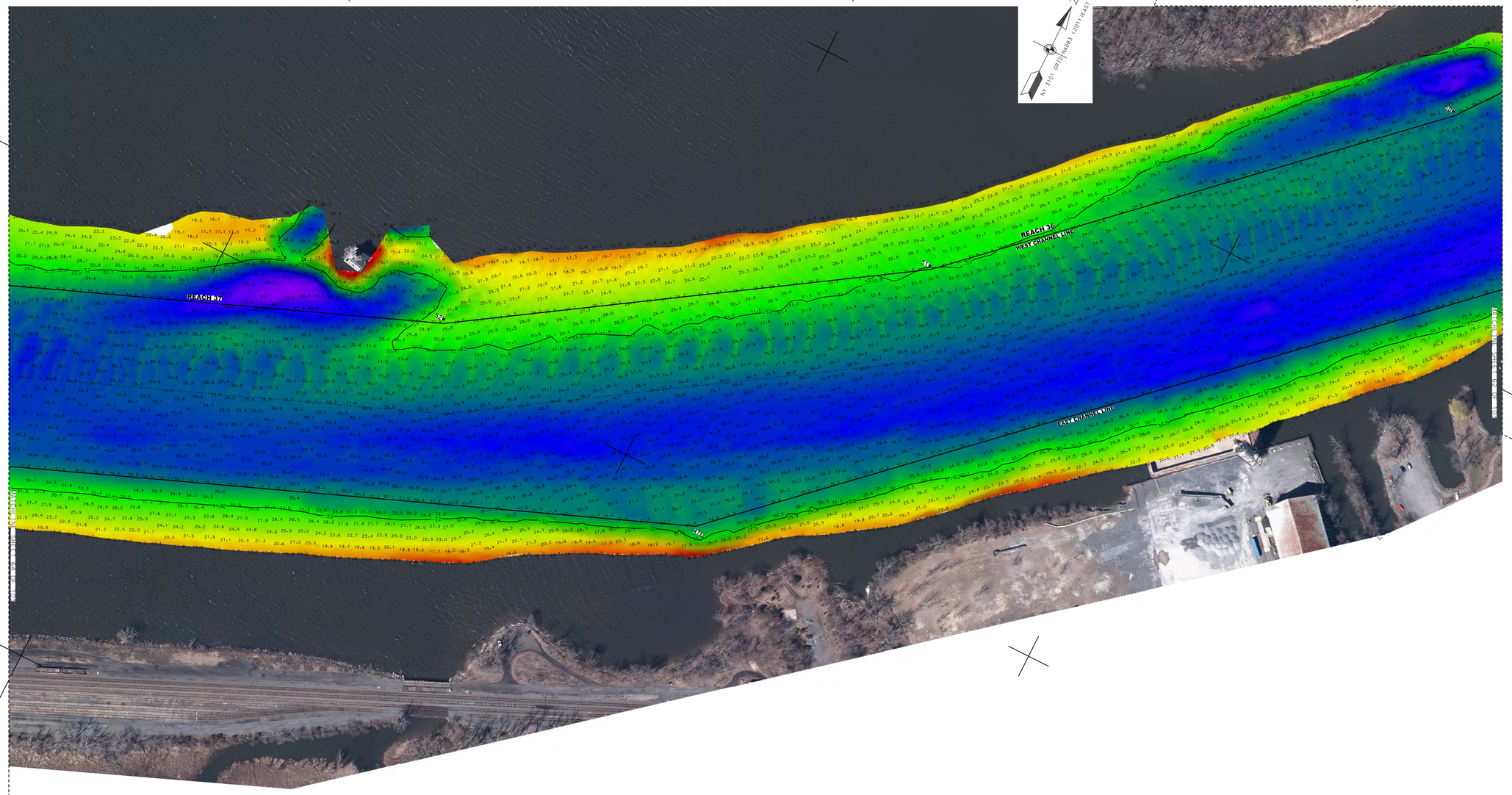
U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

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

DESIGNED BY: DSA	DATE: AUGUST-SEPTEMBER 2017
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: SEPTEMBER 2017
FILE NAME: VH101-056890043_HUDSON_MB.DGN	FILE NUMBER:

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 35

SHEET IDENTIFICATION
VH-162
SHEET 62 OF 162



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 2016A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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 AUGUST 24-SEPTEMBER 13, 2017 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. 49358
LICENSED LAND SURVEYOR

US Army Corps of Engineers
New York District

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

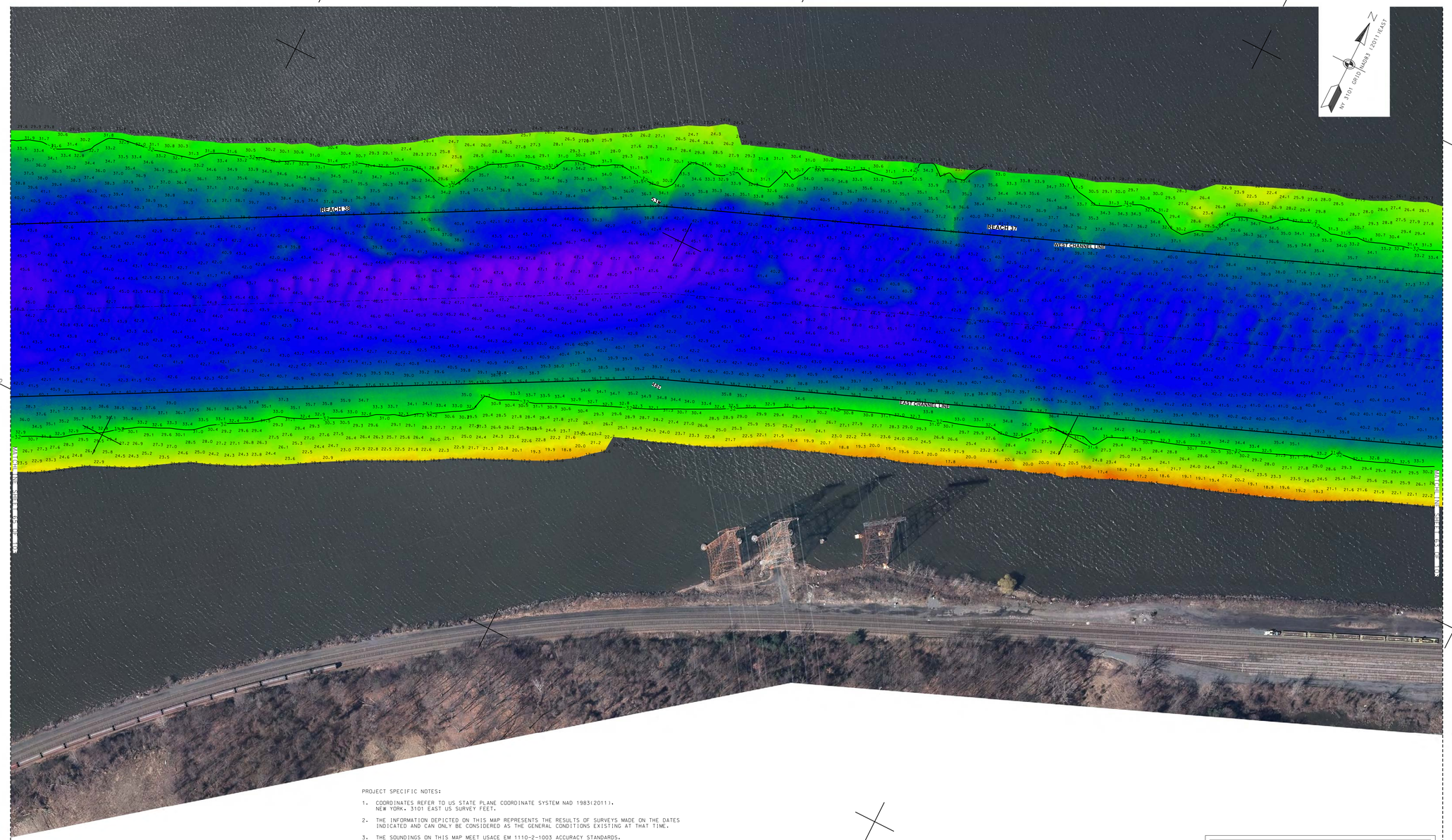
U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

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

DESIGNED BY: DGC	CKD BY: RBD	DATE: AUGUST-SEPTEMBER 2017	SOLICITATION NO.:
DWN BY: MBH	SUBMITTED BY: DLJ	CONTRACT NO.: W912DS-14-D-0004	
PLOT SCALE: 1:600	ISSUE DATE: DECEMBER 2017	FILE NUMBER:	
SIZE: ANSI F	FILE NAME: VH101-058890043_HUDSON_MBLOGN		

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 36-37

SHEET IDENTIFICATION
VH-163
SHEET 63 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 2016A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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 AUGUST 24-SEPTEMBER 13, 2017 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. 49350
LICENSED LAND SURVEYOR

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:			

SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers
New York District

MARK	DESCRIPTION	DATE	APPR.	MARK	DESCRIPTION	DATE	APPR.

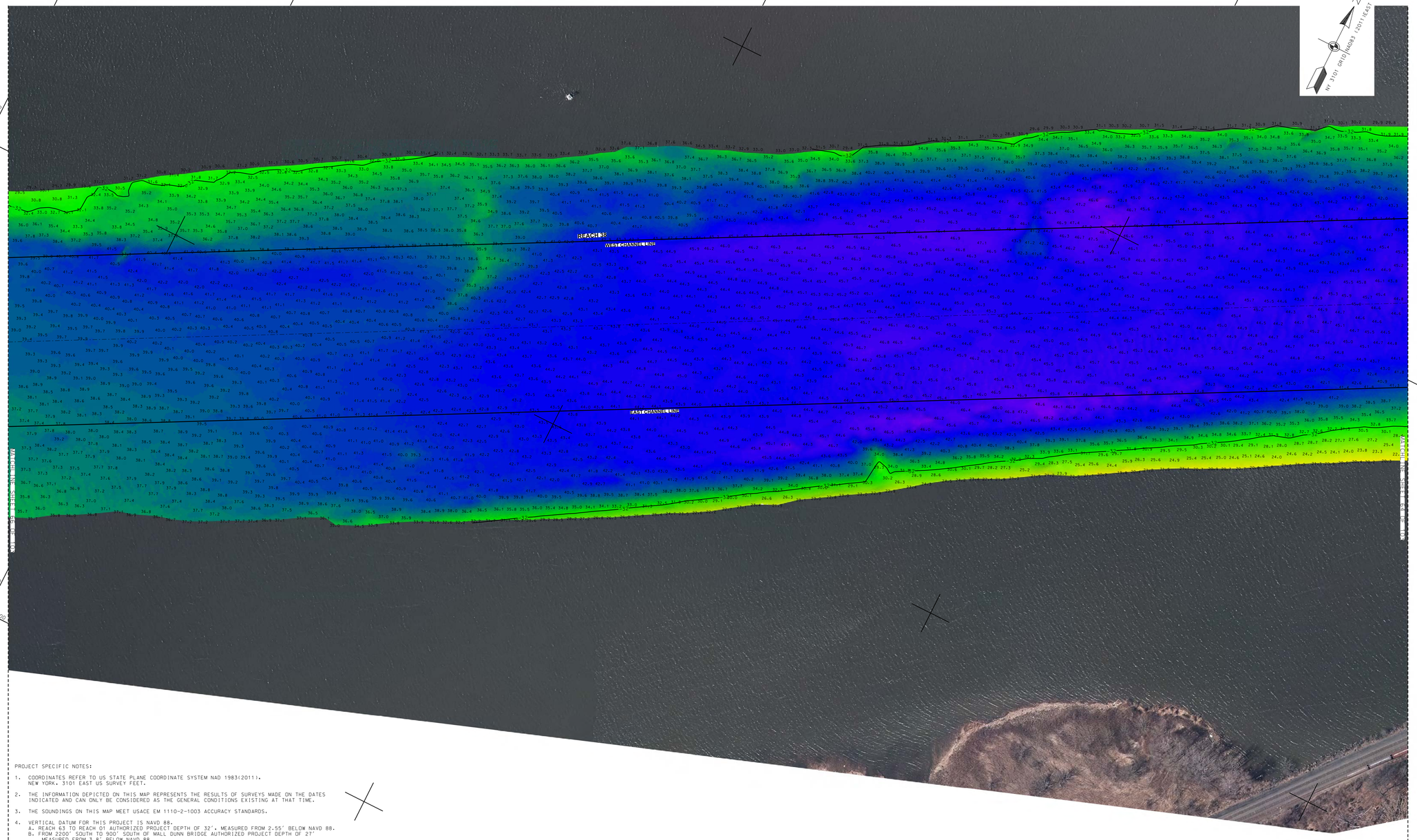
U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

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

DESIGNED BY: DWT
DRAWN BY: MBH
CHKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1:50'
SIZE: ANSI F
ISSUE DATE: 10/27/17
FILE NAME: VH101-058890043_HUDSON_MB.DGN
DATE: AUGUST-SEPTEMBER 2017
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 37-38

SHEET IDENTIFICATION
VH-164
SHEET 64 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 2016A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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 AUGUST 24-SEPTEMBER 13, 2017 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. O'BRIEN
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.

DATE: AUGUST - SEPTEMBER 2017
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
ISSUE DATE:
REPORT:
FILE NAME: VH101-0568980043_HUDSON_MB.DGN
PLOT SCALE: 1 = 100'
SIZE: ANSI F

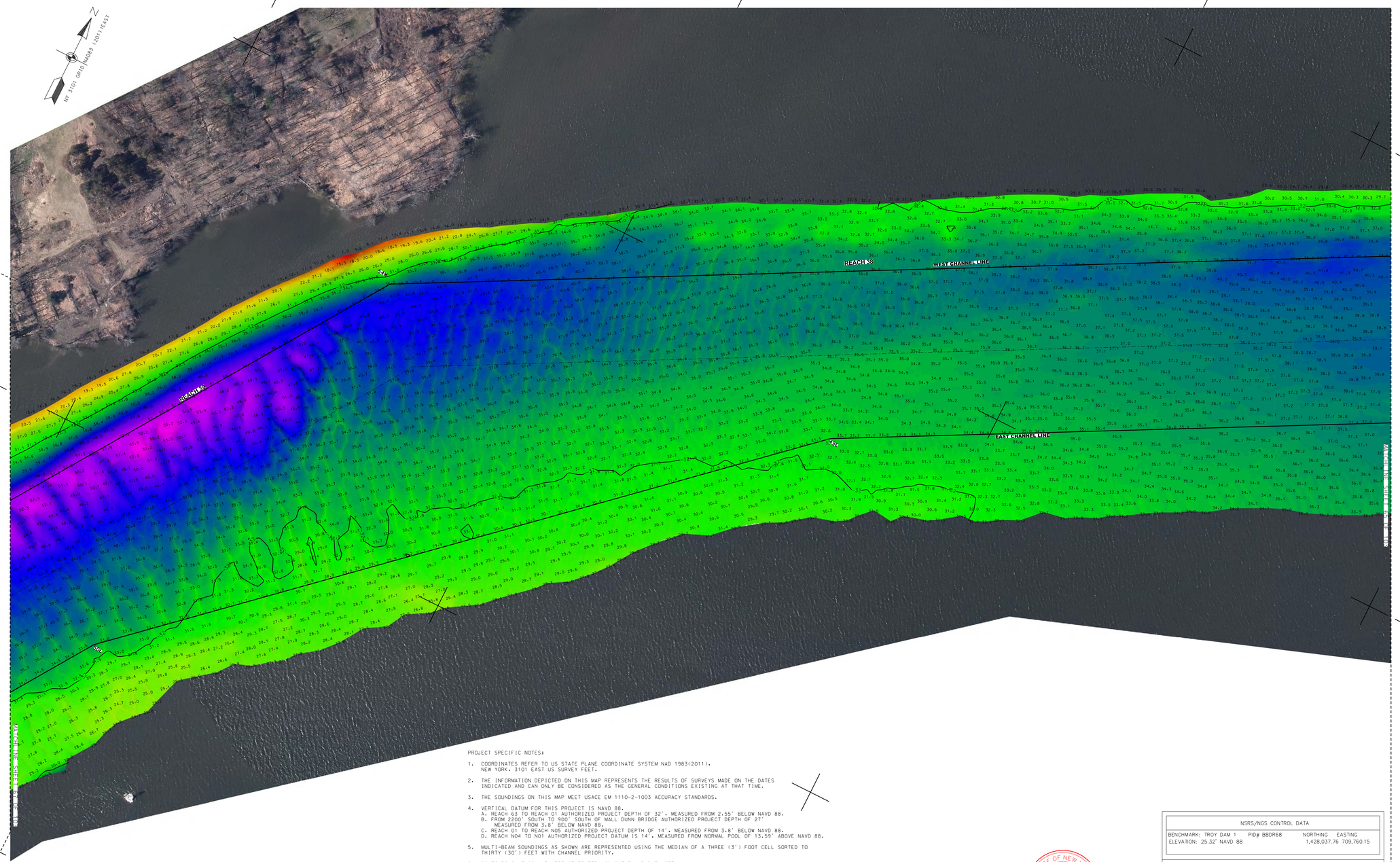
DESIGNED BY: DBA
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DEJ

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

MCKIM & CREED
241 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-8246
FAX: (910) 251-8282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 38

SHEET IDENTIFICATION
VH-165
SHEET 65 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 2016A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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 AUGUST 24-SEPTEMBER 13, 2017 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. BAKER
049350
LICENSED LAND SURVEYOR

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:			

SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.	MARK	DESCRIPTION	DATE	APPR.

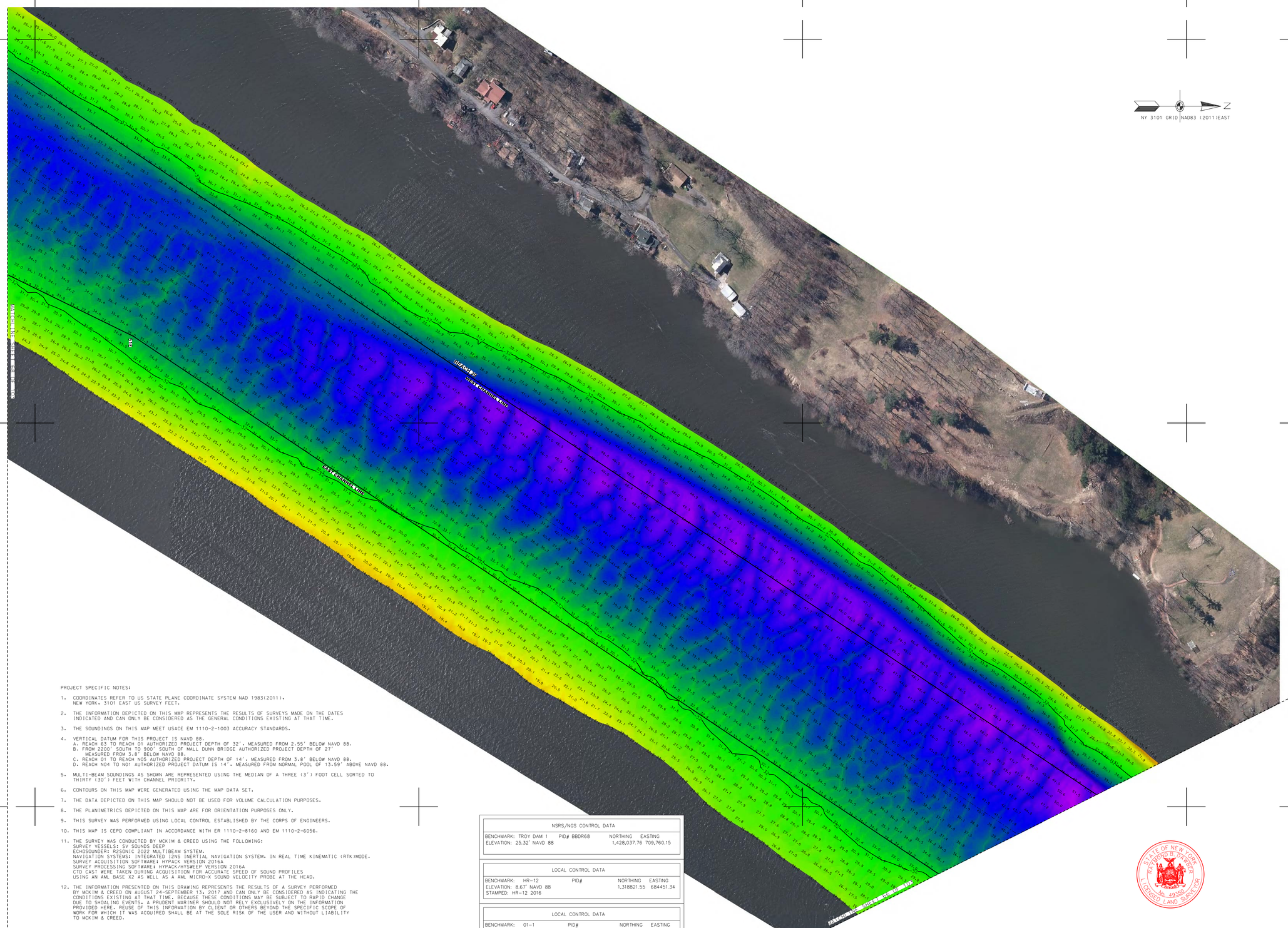
U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-8246
FAX: (910) 251-8282

DESIGNED BY: DBG
DWN BY: MBH
SUBMITTED BY: DLJ
PLOT SCALE: 1" = 100'
PLOT DATE: 10/27/2017
SIZE: ANSI F
DATE: AUGUST-SEPTEMBER 2017
SOLICITATION NO.:
CHKD BY: RBD
CONTRACT NO.: W912DS-14-D-0004
ISSUE DATE:
FILE NUMBER:
FILE NAME: VH101-056890043_HUDSON_MB.DGN

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 38-39

SHEET IDENTIFICATION
VH-166
SHEET 66 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 2016A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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 AUGUST 24-SEPTEMBER 13, 2017 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
RICHARD B. BAKER
049350
LICENSED LAND SURVEYOR

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

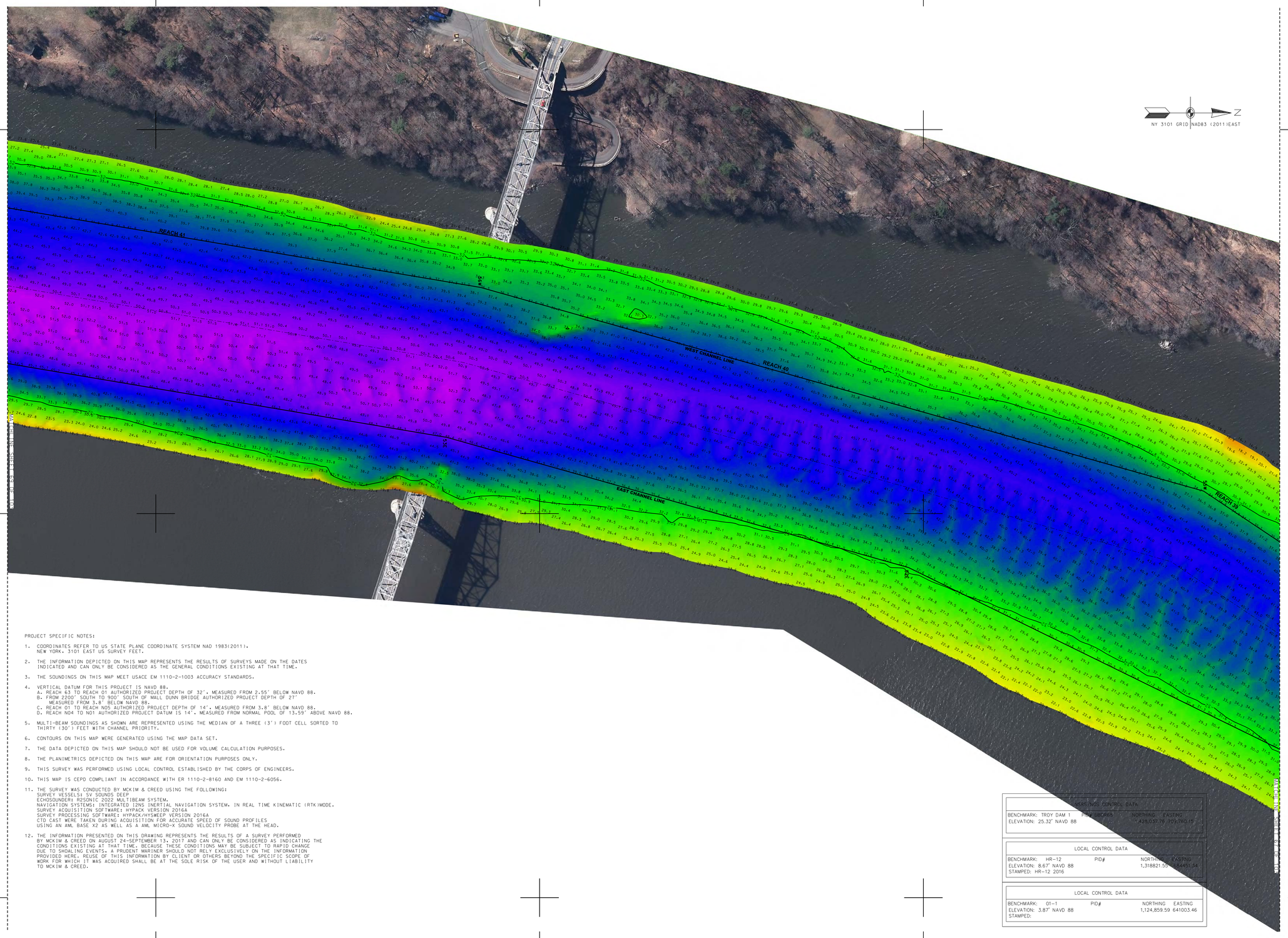
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DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1:100'
SIZE: ANSI F
DATE: AUGUST-SEPTEMBER 2017
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
ISSUE DATE: DECEMBER 2017
FILE NUMBER:
FILE NAME: VH101-058890043_HUDSON_MB.DGN

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

MCKIM&CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE (910) 341-7848
FAX: (910) 251-8262

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 39

SHEET IDENTIFICATION
VH-167
SHEET 67 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 2016A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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 AUGUST 24-SEPTEMBER 13, 2017 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.

HORIZONTAL CONTROL DATA			
BENCHMARK: TROY DAM 1	PID#: DP0883	NORTHING	EASTING
ELEVATION: 25.32' NAVD 88		1,426,037.76	703,763.15

LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	644651.34
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.

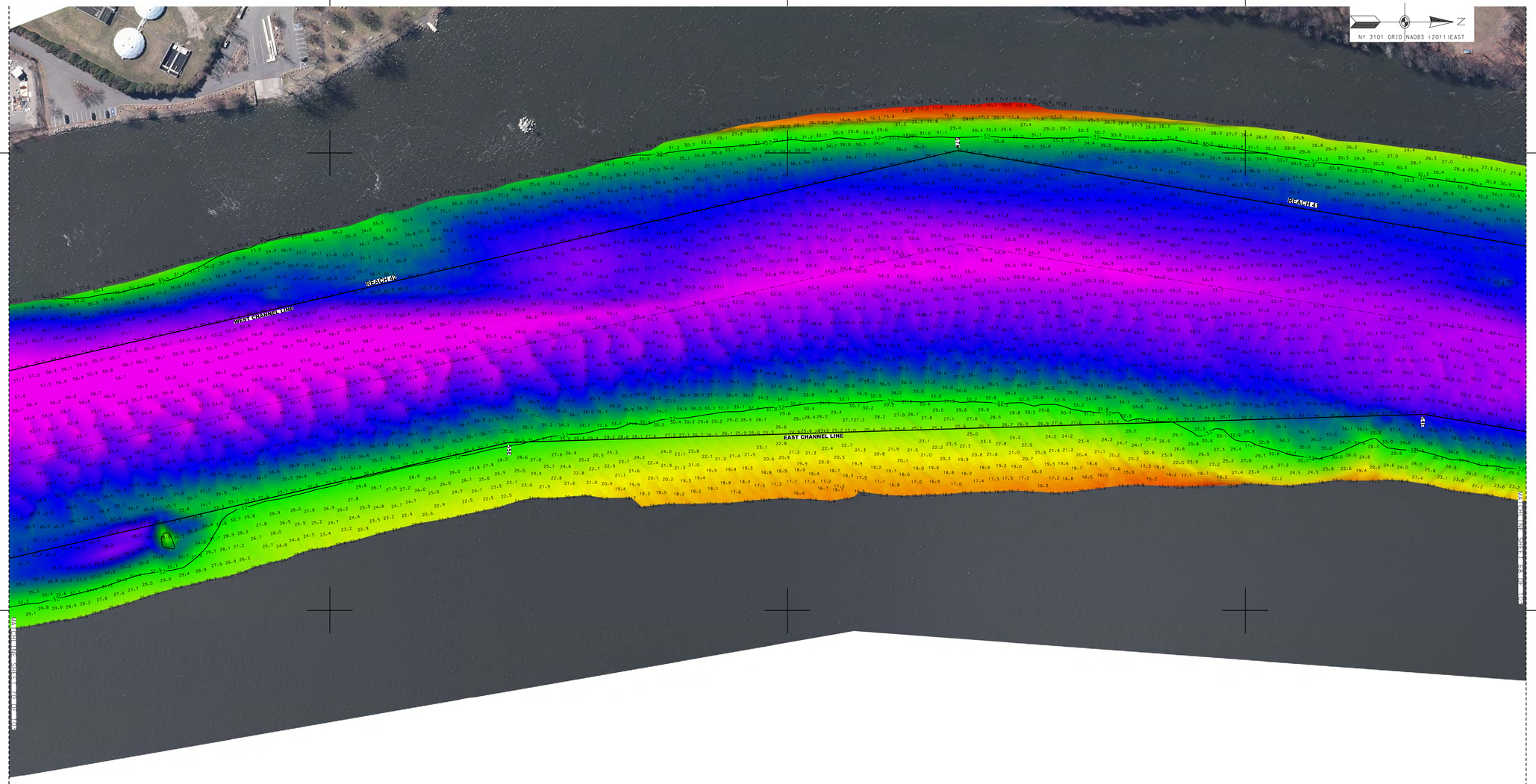
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DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1:100
PLOT DATE: 1:1
SIZE: ANSI F
DATE: AUGUST-SEPTEMBER 2017
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
ISSUE DATE:
FILE NAME: V:\101\-05889043_HUDSON_MB.DGN

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

MCKIM & CREED
245 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-0555
FAX: (910) 251-4282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 40-41

SHEET IDENTIFICATION
VH-168
SHEET 68 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 2016A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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 AUGUST 24-SEPTEMBER 13, 2017 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. TYRRELL
LICENSED LAND SURVEYOR
No. 49358

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.

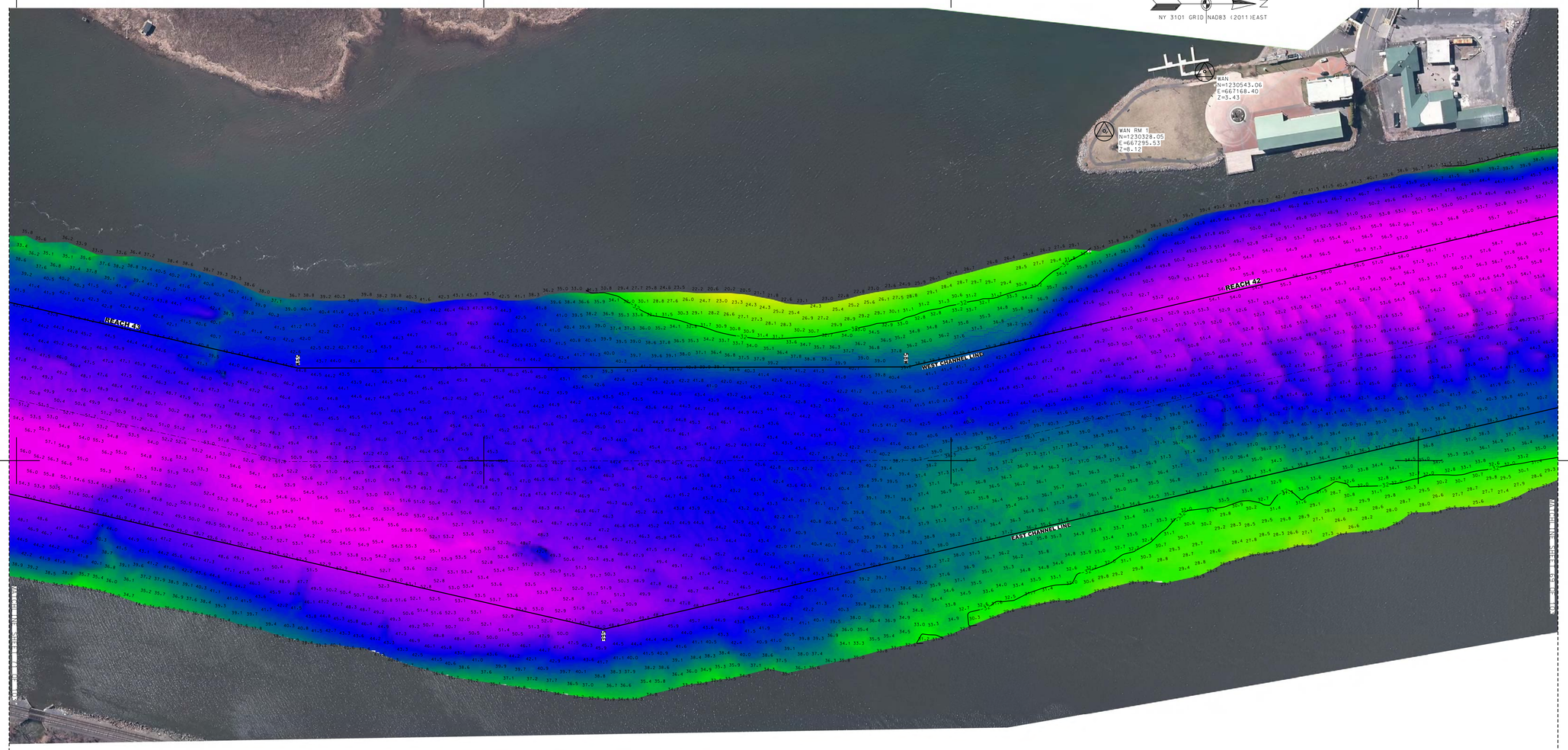
DESIGNED BY: DMB
DRAWN BY: MBH
SUBMITTED BY: DLJ
CHKD BY: RBD
ISSUE DATE: DEC 2017
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
PLOT SCALE: 1" = 100'
SIZE: ANSI F
FILE NAME: VH101-058890043_HUDSON_MB.DGN
DATE: AUGUST - SEPTEMBER 2017
SOLICITATION NO.:

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

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

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 41-42

SHEET IDENTIFICATION
VH-169
SHEET 69 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 2016A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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 AUGUST 24-SEPTEMBER 13, 2017 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.	MARK	DESCRIPTION	DATE	APPR.

DATE: AUGUST-SEPTEMBER 2017
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
ISSUE DATE: DEC 2017
FILE NAME: VH101-058890043_HUDSON_MB.DGN

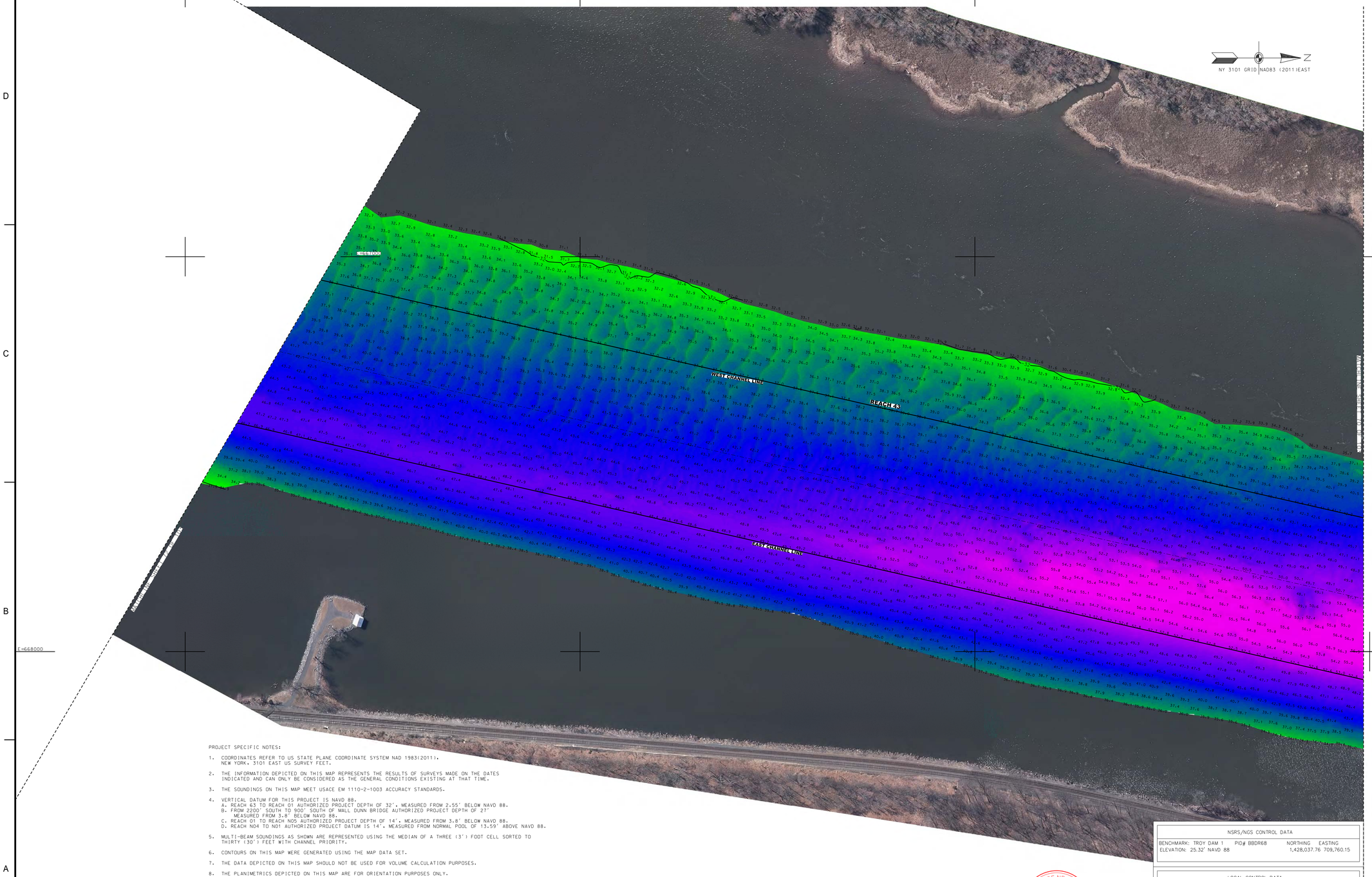
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DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1" = 100'
SIZE: ANSI F

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

MCKIM & CREED
243 NORTH FRONT STREET
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FAX: (910) 251-8282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 42-43

SHEET IDENTIFICATION
VH-170
SHEET 70 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 2016A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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.
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STATE OF NEW YORK
RAYMOND B. DAWES
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.

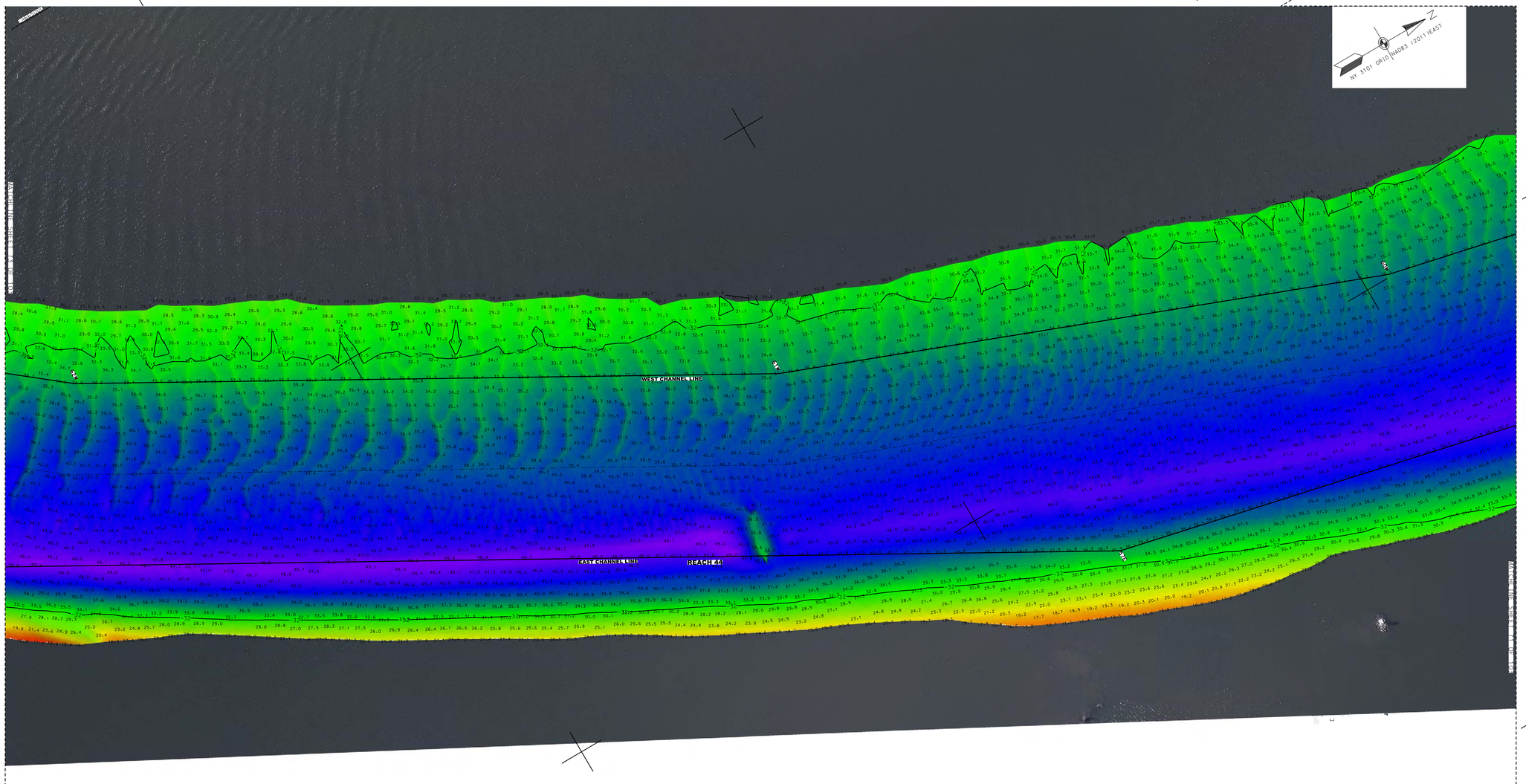
DESIGNED BY: MBH
DRAWN BY: MBH
CHKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1" = 100'
SIZE: ANSI F
DATE: AUGUST-SEPTEMBER 2017
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
ISSUE DATE: DEC 2017
FILE NAME: VH101-056890043_HUDSON_MB.DGN

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 43

SHEET IDENTIFICATION
VH-171
SHEET 71 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 2016A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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 AUGUST 24-SEPTEMBER 13, 2017 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. TAPPER
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.

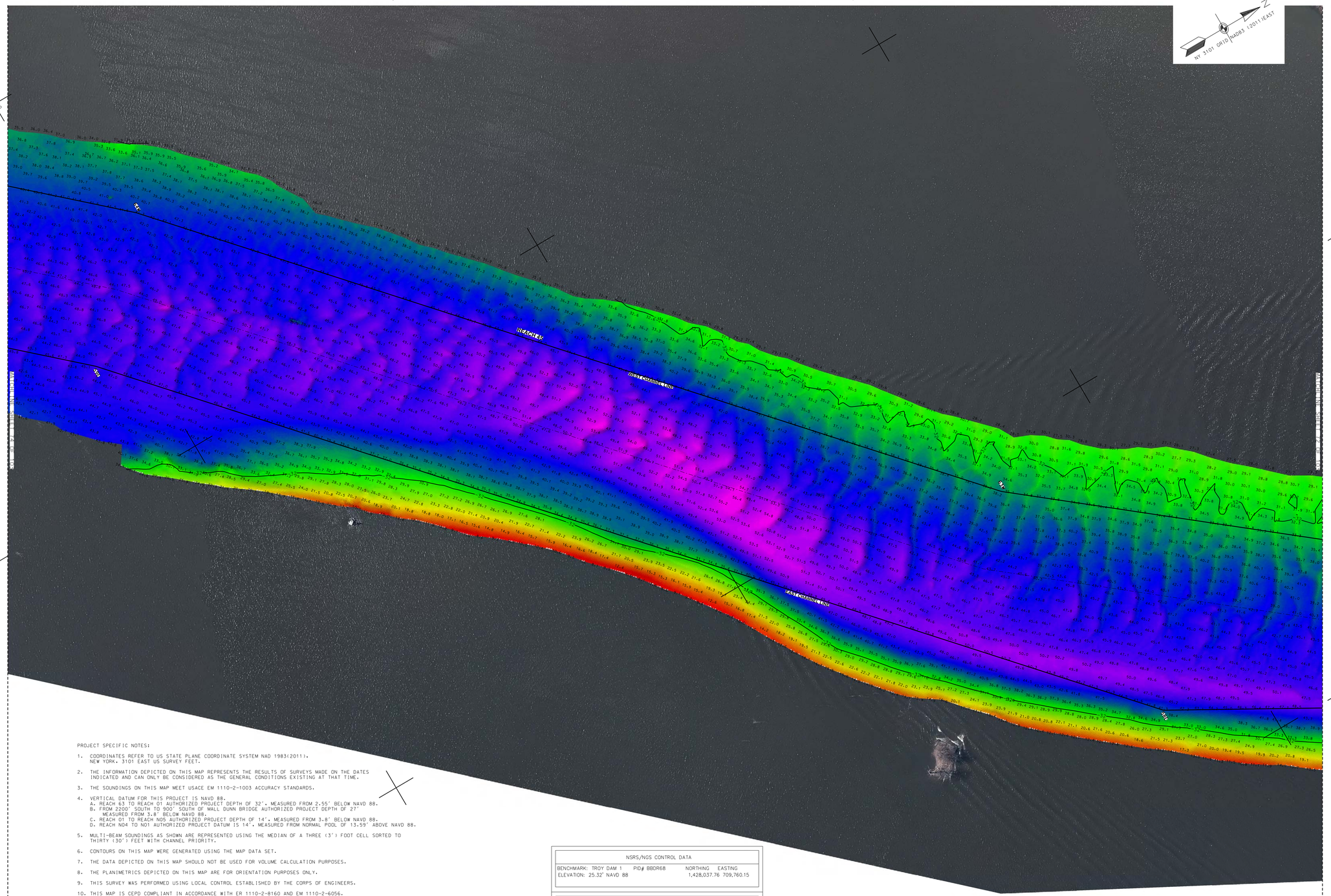
U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

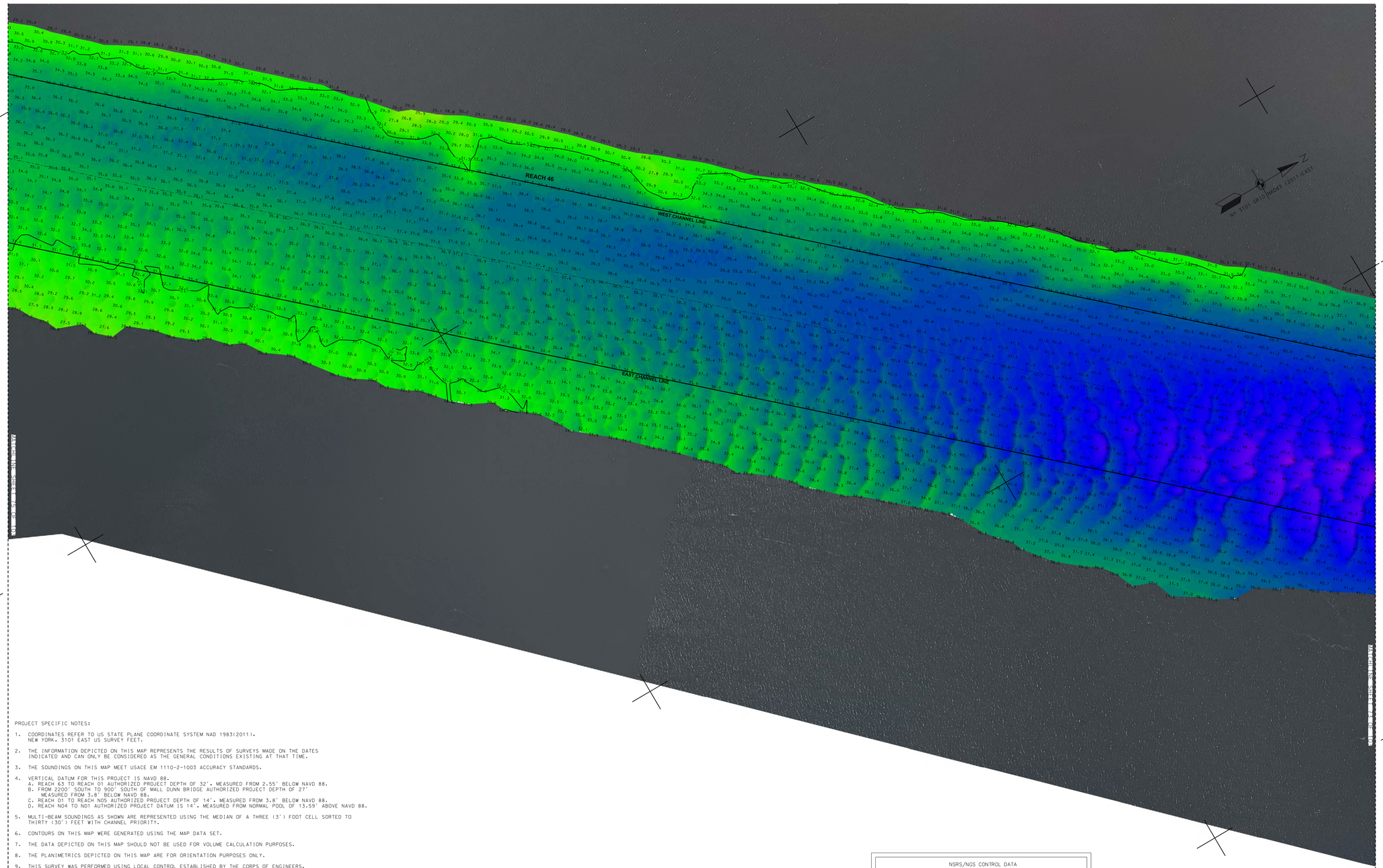
MCKIM&CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-1848
FAX: (910) 251-8282

DESIGNED BY: DLJ
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1" = 100'
SIZE: ANSI F
ISSUE DATE: SEPTEMBER 2017
FILE NAME: VH101-056890043_HUDSON_MB.DGN
DATE: AUGUST-SEPTEMBER 2017
SOLICITATION NO.:
CONTRACT NO.: W912QR-14-D-0004
FILE NUMBER:

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 44

SHEET IDENTIFICATION
VH-172
SHEET 72 OF 103


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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 2016A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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 AUGUST 24-SEPTEMBER 13, 2017 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

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

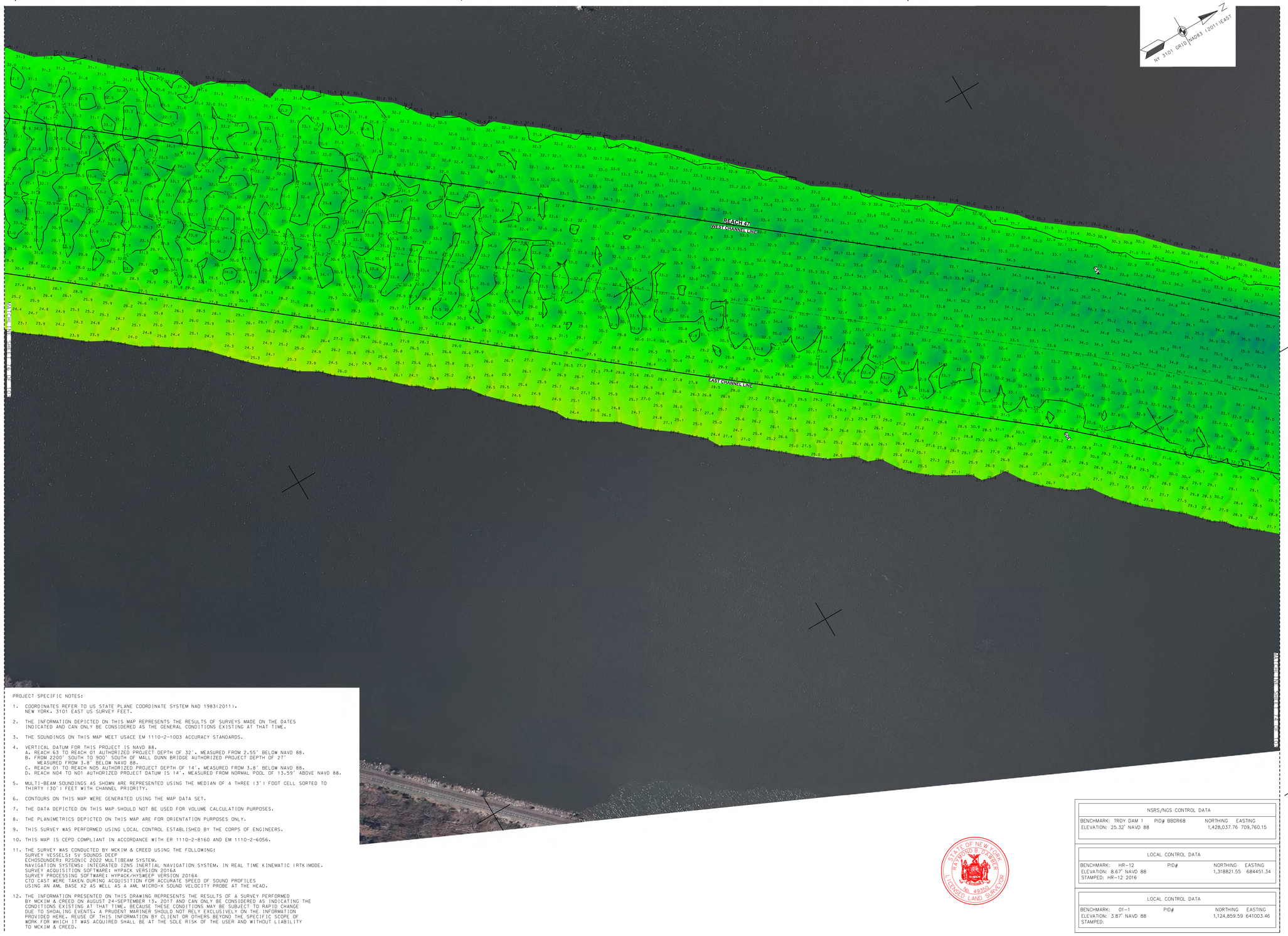
U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

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

DESIGNED BY: EDA
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1" = 100'
PLOT DATE: 12/6/2017
SIZE: ANSI F
DATE: AUGUST-SEPTEMBER 2017
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
FILE NAME: VH101-056890043_HUDSON_MB.DGN

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 46

SHEET IDENTIFICATION
VH-174
SHEET 74 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 N06 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 2016A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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 AUGUST 24-SEPTEMBER 13, 2017 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

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.	MARK	DESCRIPTION	DATE	APPR.

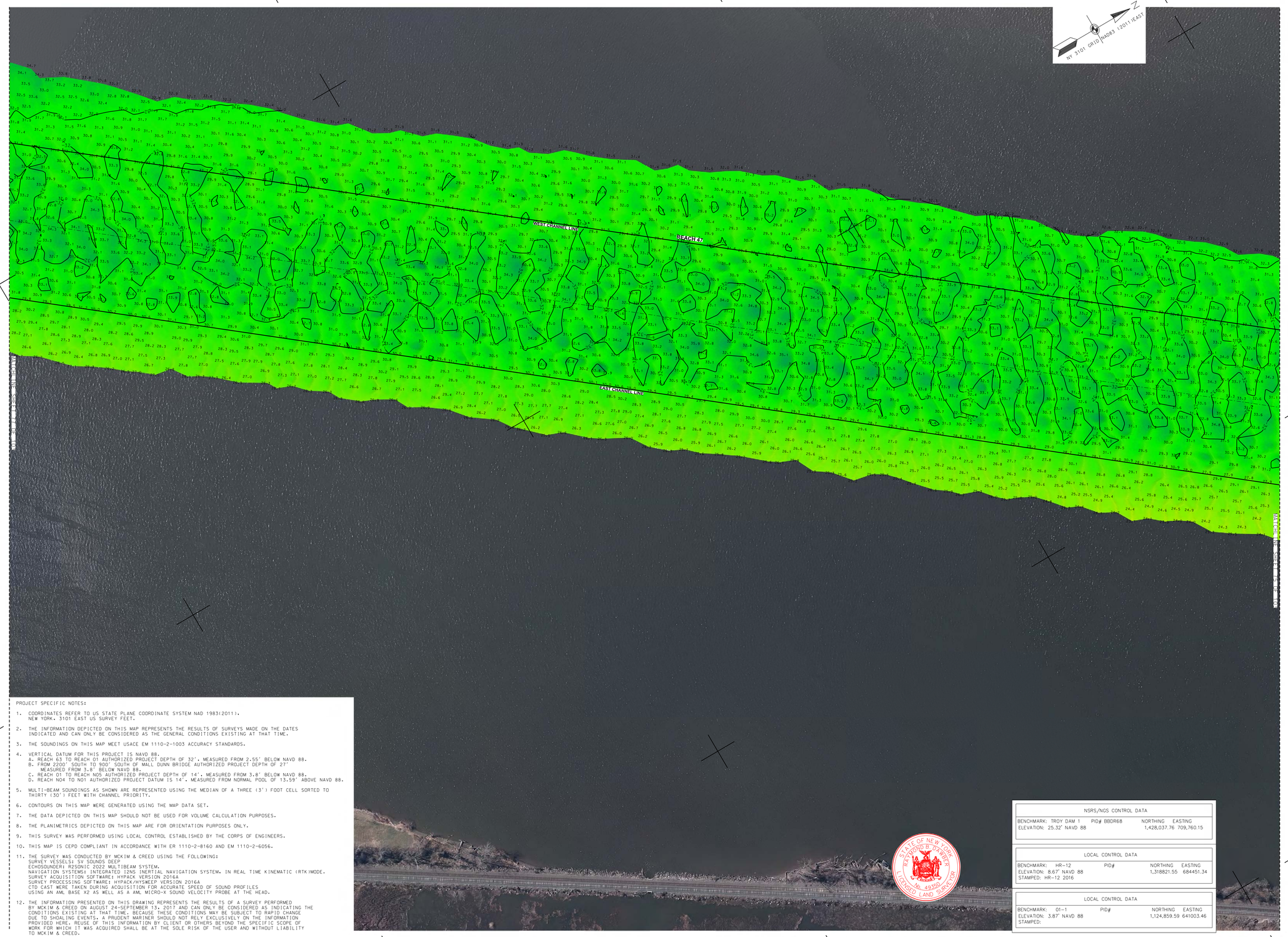
DATE: AUGUST - SEPTEMBER 2017
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
DESIGNED BY: DBG
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1" = 100'
ISSUE DATE:
RECEIPT:
SIZE: ANSI F
FILE NAME: VH101-005880043_HUDSON_MB.DGN

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 47

SHEET IDENTIFICATION
VH-175
SHEET 75 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 2016A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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 AUGUST 24-SEPTEMBER 13, 2017 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. 49359
LICENSED LAND SURVEYOR

US Army Corps of Engineers
New York District

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

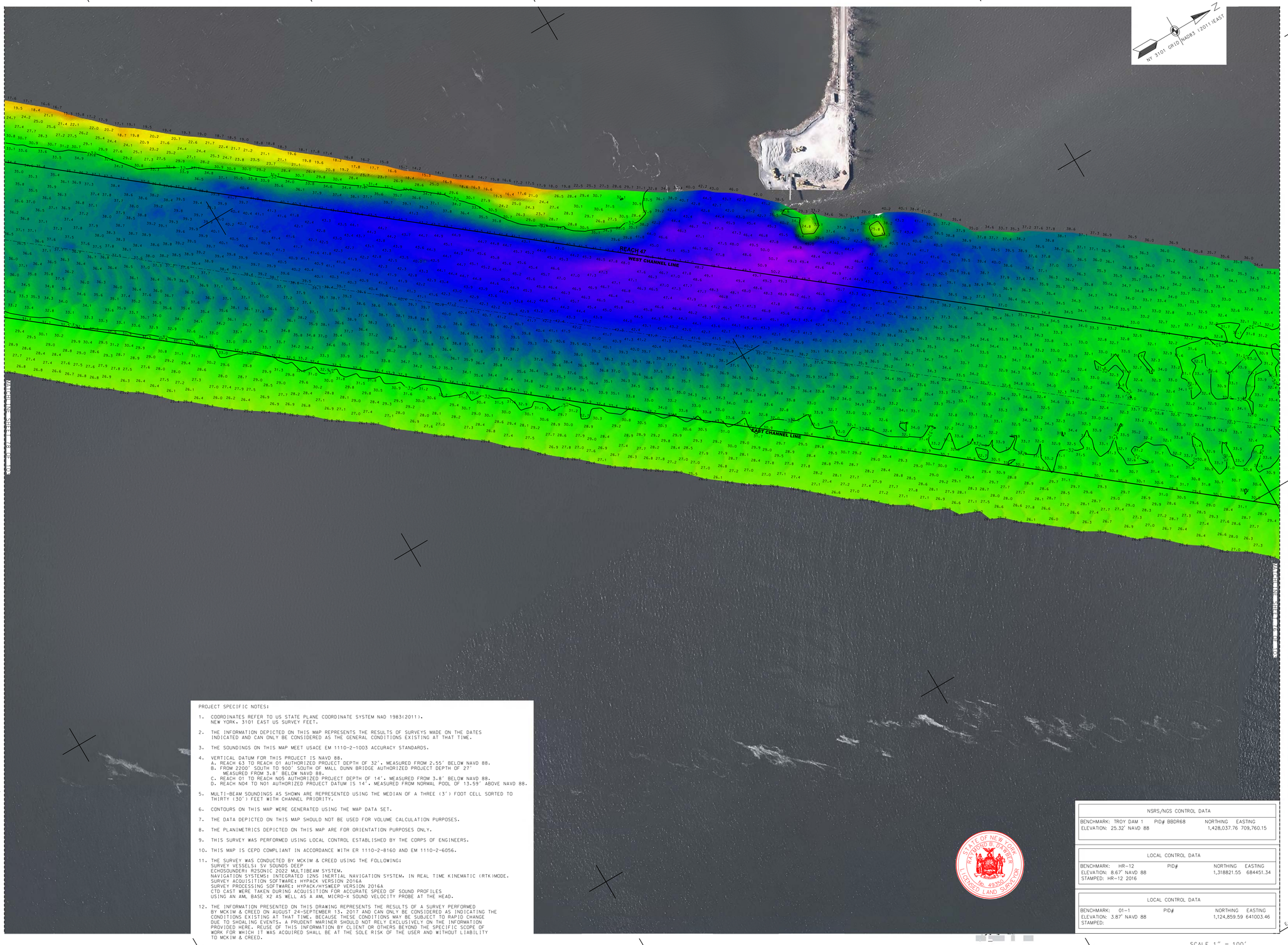
U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

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

DESIGNED BY: BRD
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1" = 100'
SIZE: ANSI F
ISSUE DATE: DECEMBER 2017
FILE NAME: VH101-C658900043_HUDSON_MB.DGN
DATE: AUGUST-SEPTEMBER 2017
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 47

SHEET IDENTIFICATION
VH-176
SHEET 76 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 12XN INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2016A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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 AUGUST 24-SEPTEMBER 13, 2017 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. O'BRIEN
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.

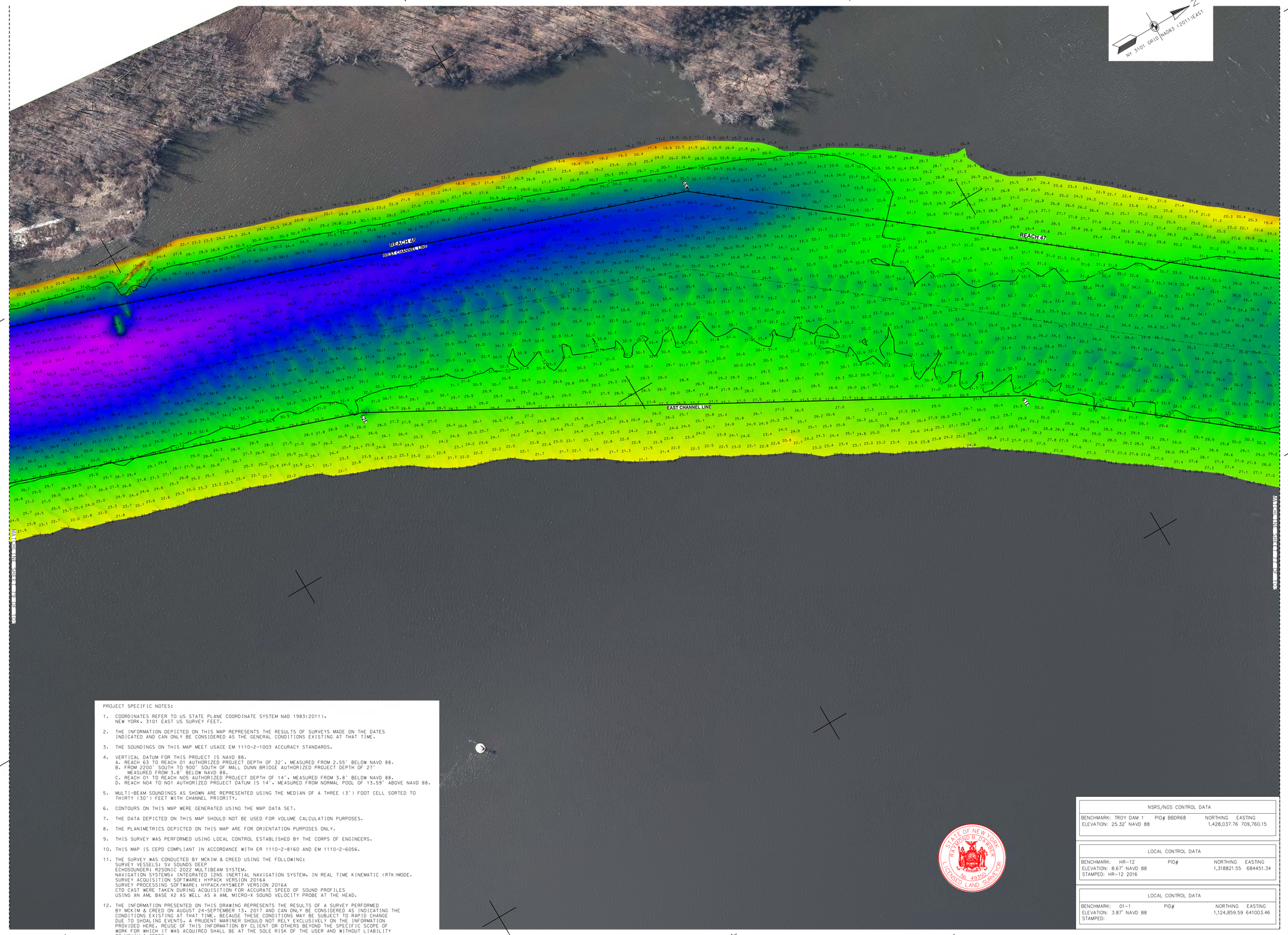
U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

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

DESIGNED BY:	
DWN BY: MBH	CKD BY: RBD
SUBMITTED BY: DLJ	
PLOT SCALE: 1" = 100'	ISSUE DATE: DECEMBER 2017
SIZE: ANSI F	FILE NAME: VH101-058900043_HUDSON_MB.DGN
DATE: AUGUST-SEPTEMBER 2017	
SOLICITATION NO.:	
CONTRACT NO.: W912DS-14-D-0004	
FILE NUMBER:	

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 47

SHEET IDENTIFICATION
VH-177
SHEET 77 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 2016A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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 AUGUST 24-SEPTEMBER 13, 2017 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. O'BRIEN
No. 49350
LICENSED LAND SURVEYOR

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.	MARK	DESCRIPTION	DATE	APPR.

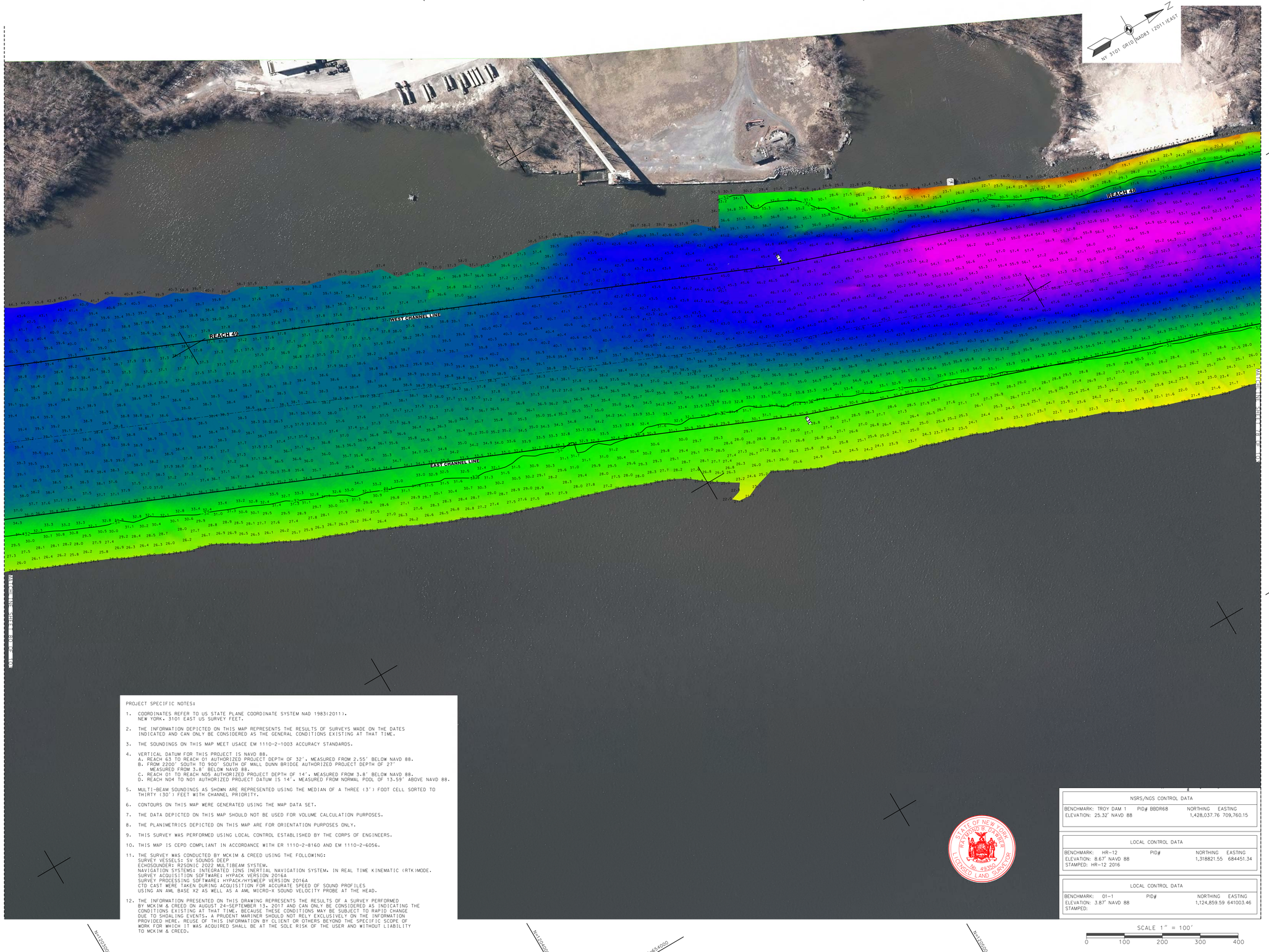
DATE: AUGUST-SEPTEMBER 2017
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
DESIGNED BY: DEJ
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DEJ
PLOT SCALE: 1" = 100'
ISSUE DATE: ISSUE PART
SIZE: ANSI F
FILE NAME: VH101-056890043_HUDSON_MB.DGN

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

MCKIM & CREED
243 NORTH FRONT STREET
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FAX: (910) 251-8282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 47-48

SHEET IDENTIFICATION
VH-178
SHEET 78 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 2016A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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 AUGUST 24-SEPTEMBER 13, 2017 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. DAMER
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.

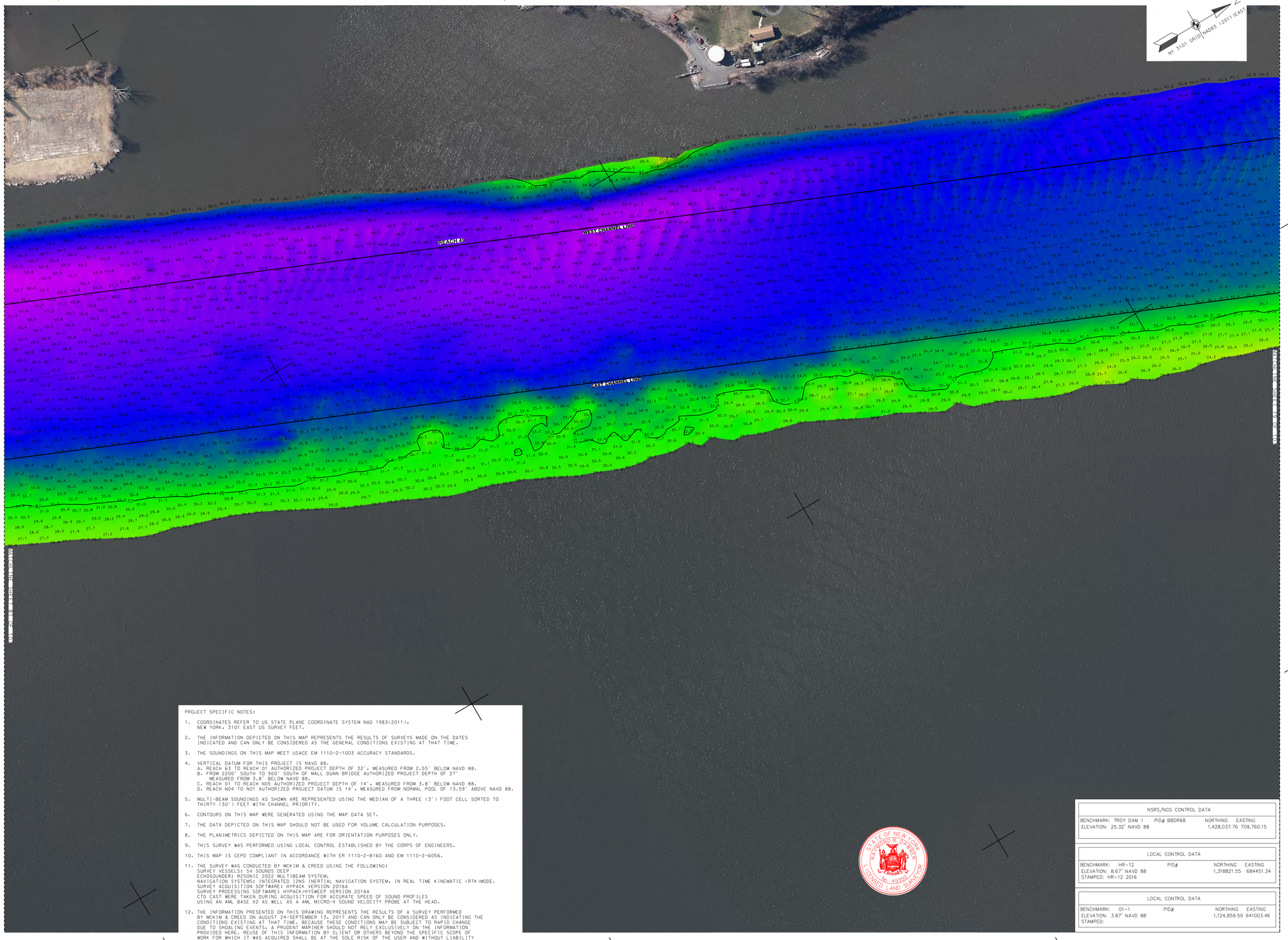
DESIGNED BY:
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1:100
PLOT DATE: 9/27/2017
SIZE: ANSI F
DATE: AUGUST-SEPTEMBER 2017
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
ISSUE DATE:
FILE NAME: VH101-058890043_HUDSON_MB.DGN

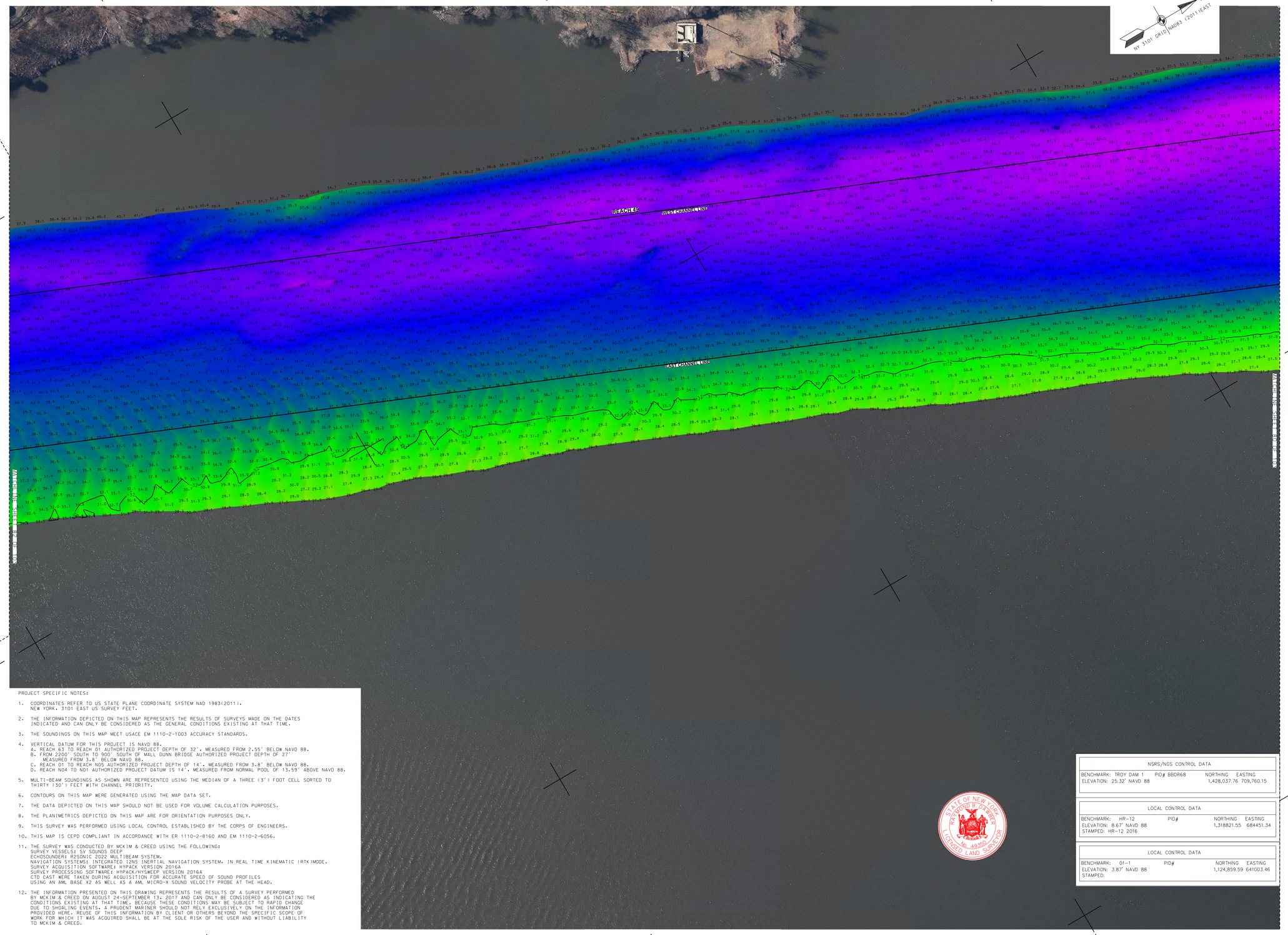
U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

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

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 48-49

SHEET IDENTIFICATION
VH-179
SHEET 79 OF 103


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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 220O' 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 2016A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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 AUGUST 24-SEPTEMBER 13, 2017 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
LICENSED LAND SURVEYOR
No. 49350

US Army Corps of Engineers
New York District

MARK	DESCRIPTION	DATE	APPR.	MARK	DESCRIPTION	DATE	APPR.

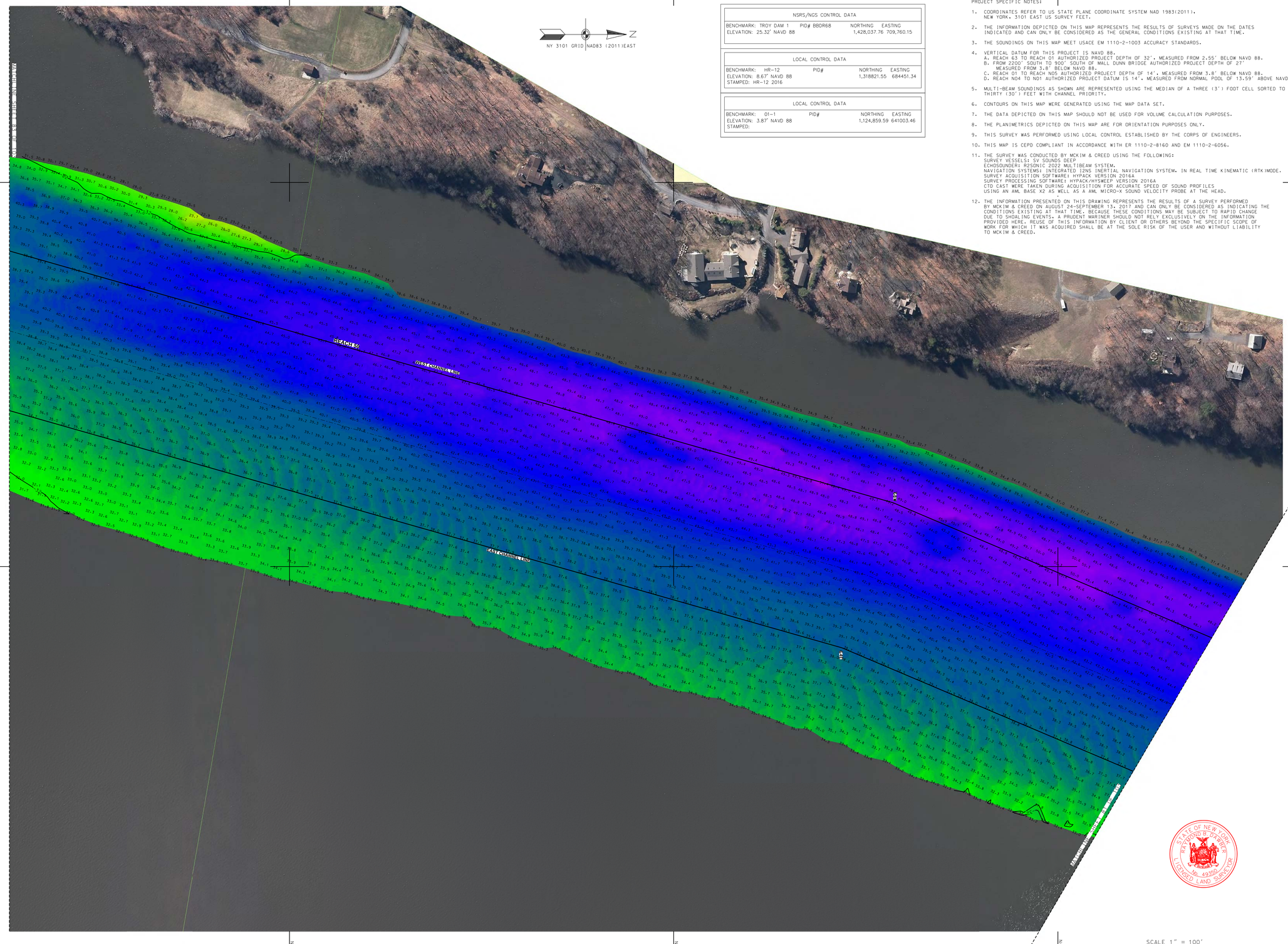
DESIGNED BY: DBJ
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1" = 100'
PLOT DATE:
DATE: AUGUST - SEPTEMBER 2017
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
ISSUE DATE:
RECEIPT
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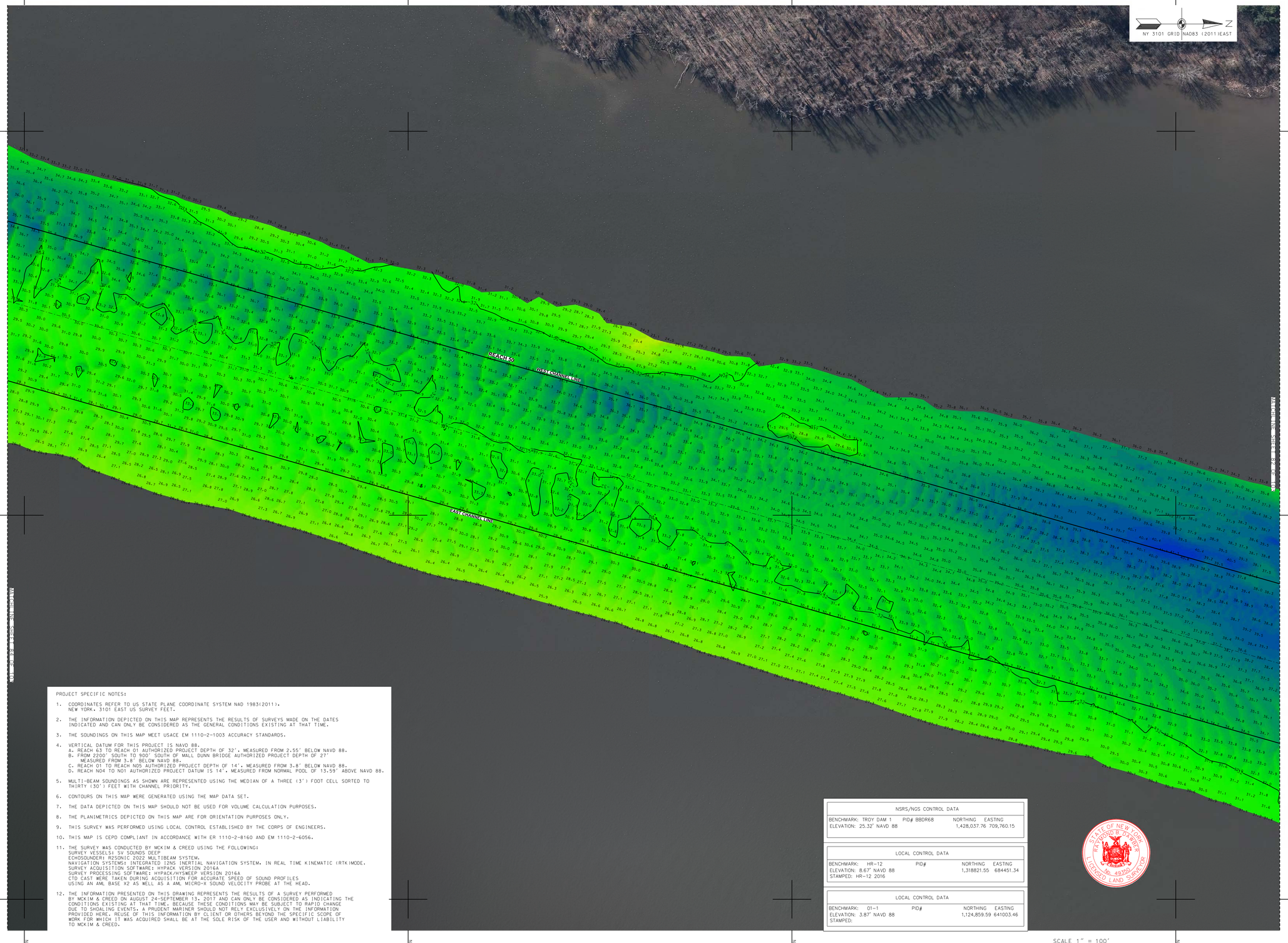
U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

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 49

SHEET IDENTIFICATION
VH-181
SHEET 81 OF 103


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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 NOT 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 2016A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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 AUGUST 24-SEPTEMBER 13, 2017 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 E. 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.

MARK	DESCRIPTION	DATE	APPR.

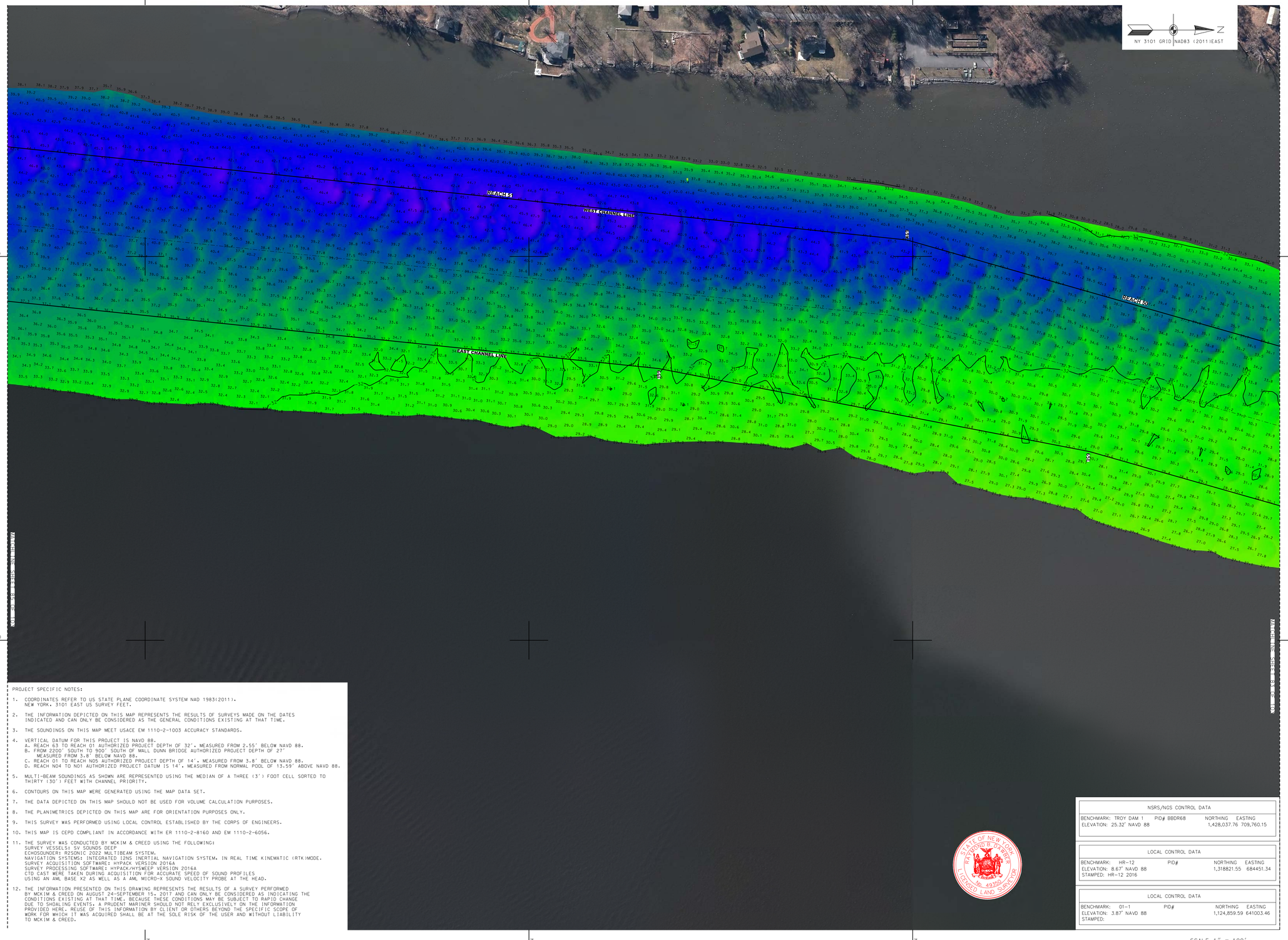
U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

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: AUGUST-SEPTEMBER 2017	SOLICITATION NO.:
DWN BY: MBH	SUBMITTED BY: DLJ	CONTRACT NO.: W912DS-14-D-0004	
PLOT SCALE: 1:100	ISSUE DATE: DEC 2017	FILE NUMBER:	
SIZE: ANSI F	FILE NAME: VH101-036890043_HUDSON_MB.DGN		

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 50

SHEET IDENTIFICATION
VH-183
SHEET 83 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 VESSEL(S): 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 2016A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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 AUGUST 24-SEPTEMBER 15, 2017 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. DAYER
049950
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.

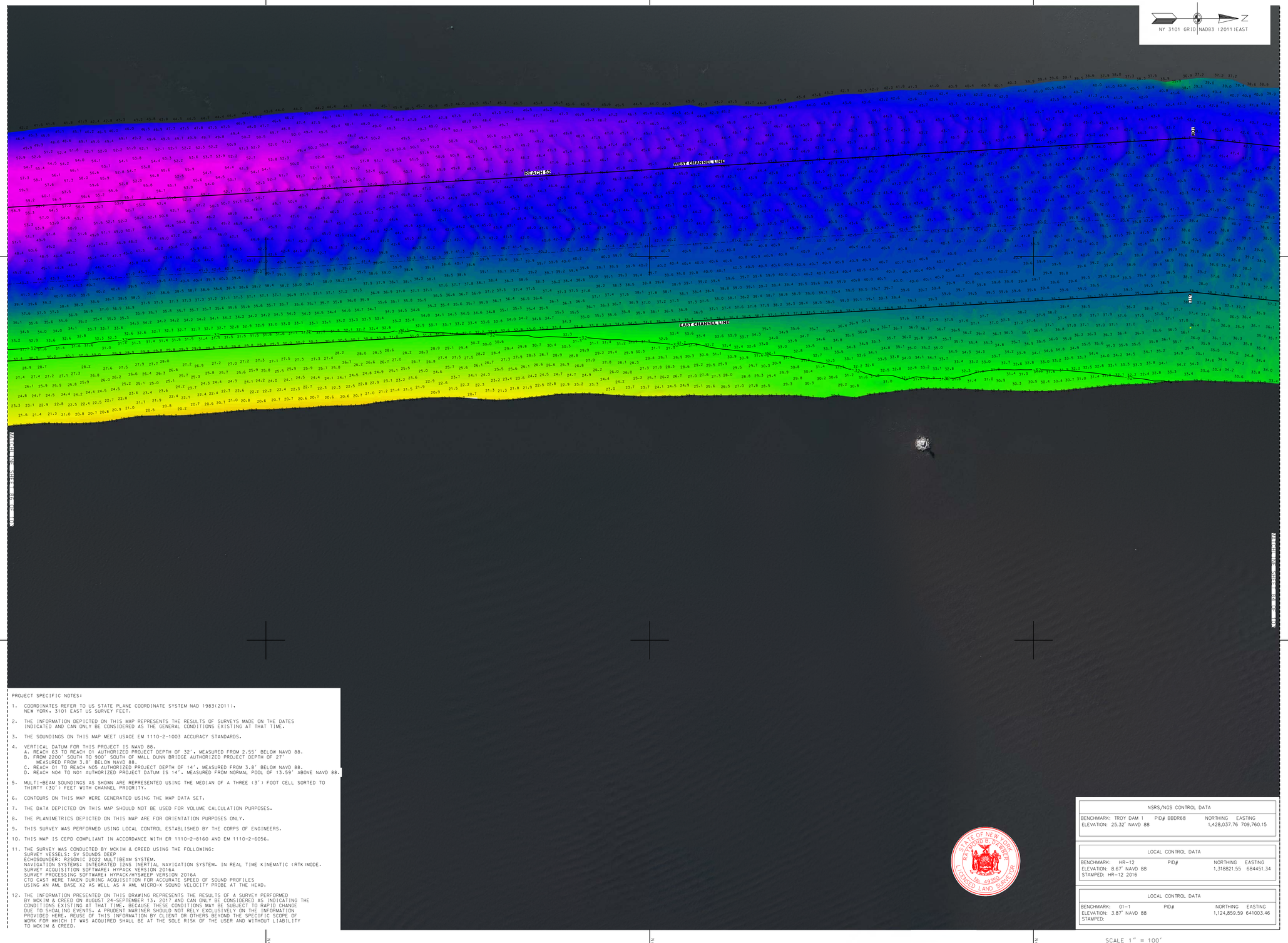
DESIGNED BY: DGS
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
ISSUE DATE: DEC 2017
PLOT SCALE: 1:50'
SIZE: ANSI F
DATE: AUGUST - SEPTEMBER 2017
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
FILE NAME: VH101-058890043_HUDSON_MB.DGN

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 50-51

SHEET IDENTIFICATION
VH-184
SHEET 84 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 2016A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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 AUGUST 24-SEPTEMBER 13, 2017 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 F. WARNER · 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.

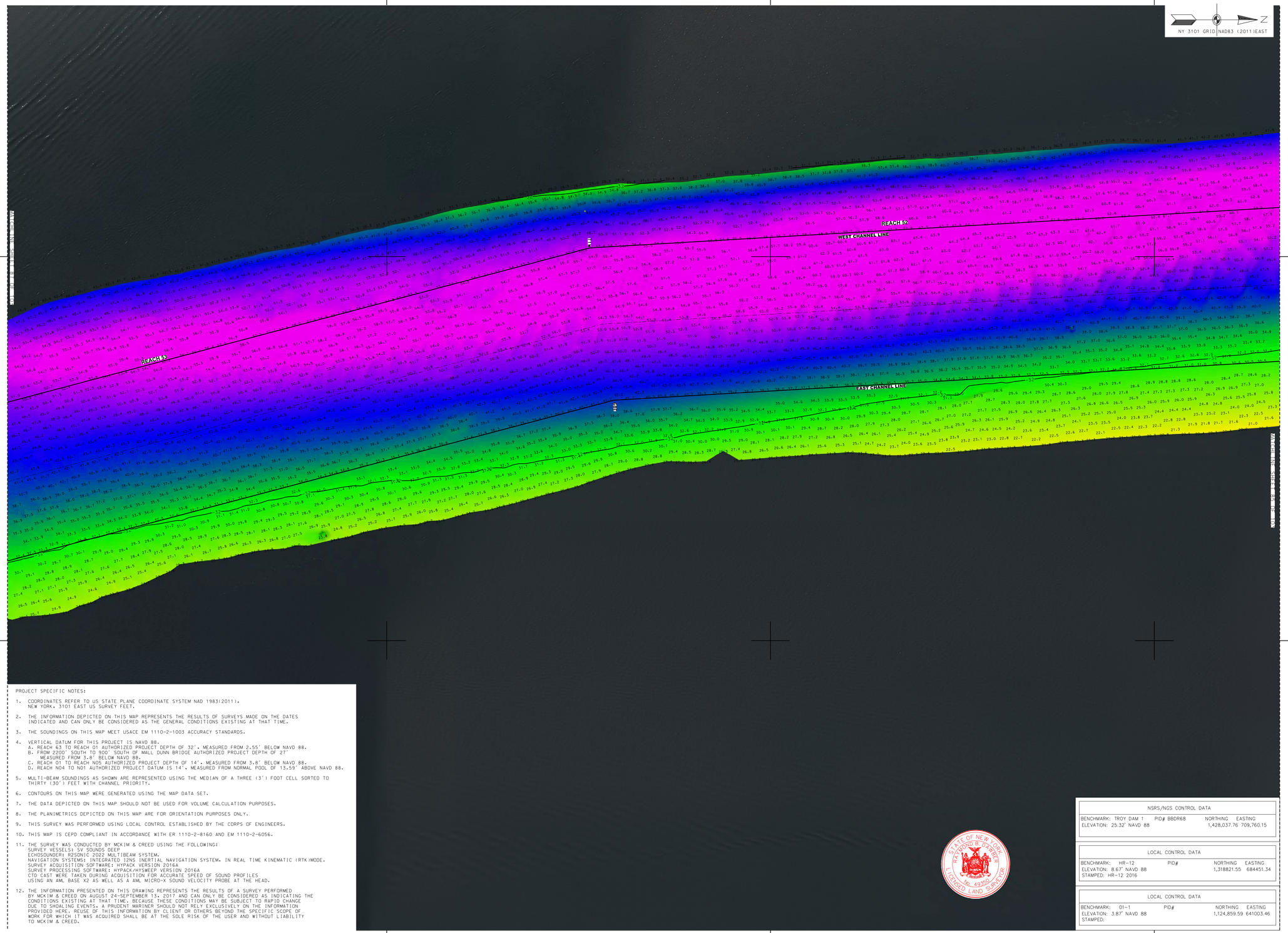
DESIGNED BY: DLJ
DRAWN BY: MBH
SUBMITTED BY: DLJ
PLOT SCALE: 1" = 100'
SIZE: ANSI F
DATE: AUGUST-SEPETMBER 2017
CHKD BY: RBD
ISSUE DATE: DEC 2017
FILE NAME: VH101-056890043_HUDSON_MB.DGN
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:

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

McKIM & CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE (910) 251-8348
FAX: (910) 251-8282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 52

SHEET IDENTIFICATION
VH-185
SHEET 85 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.
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   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 2016A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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 AUGUST 24-SEPTEMBER 13, 2017 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

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

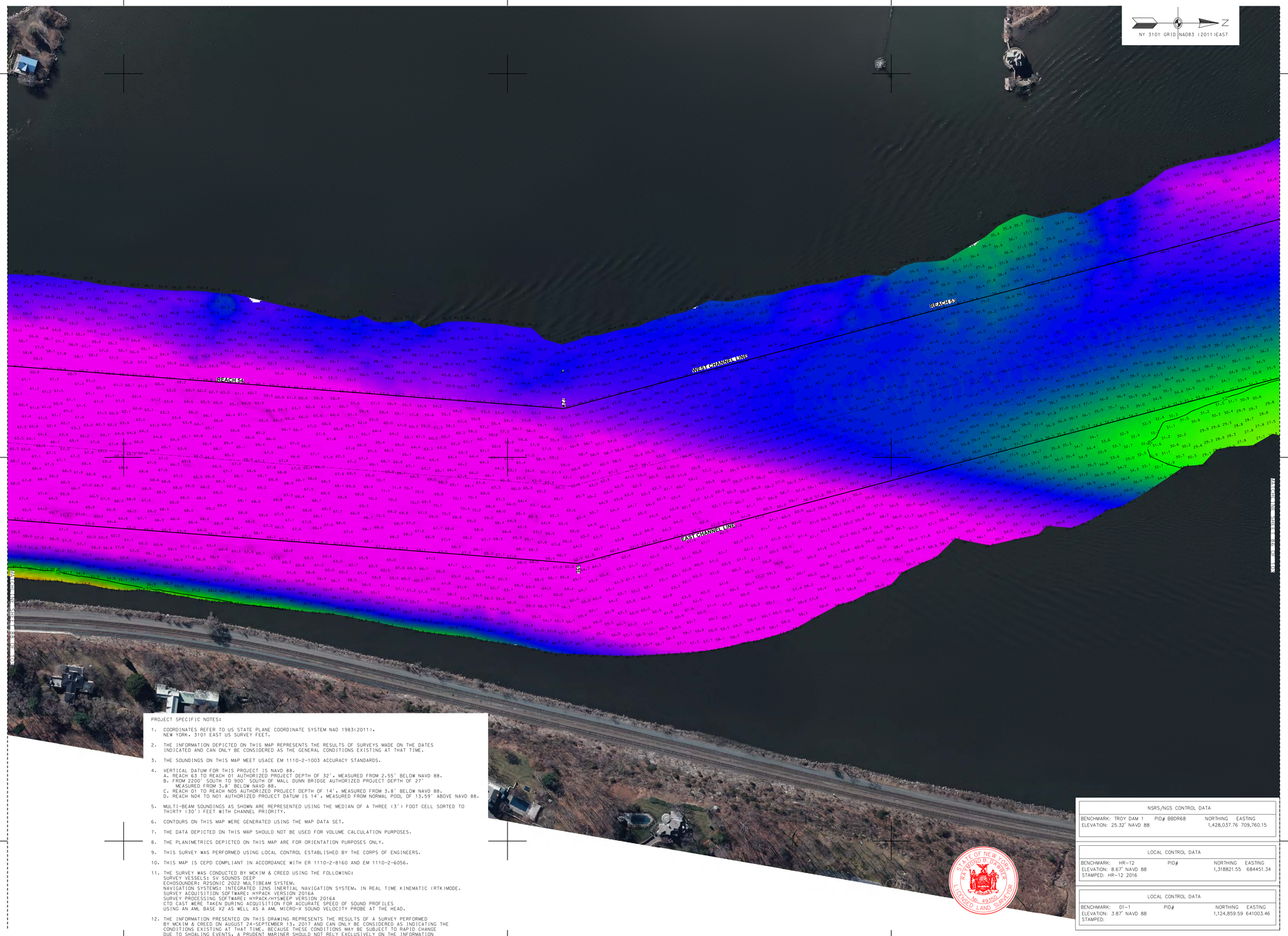
DESIGNED BY: DBJ
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1" = 100'
ISSUE DATE: ISSUE DATE
FILE NAME: VH101-056890043_HUDSON_MB.DGN
SIZE: ANSI F
DATE: DATE: SEPTEMBER 2017
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:

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 52-53

SHEET IDENTIFICATION
VH-186
SHEET 86 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 2016A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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 AUGUST 24-SEPTEMBER 13, 2017 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. TANNER
049302
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: DEC 2017
FILE NAME: VH101-058890043_HUDSON_MB.DGN

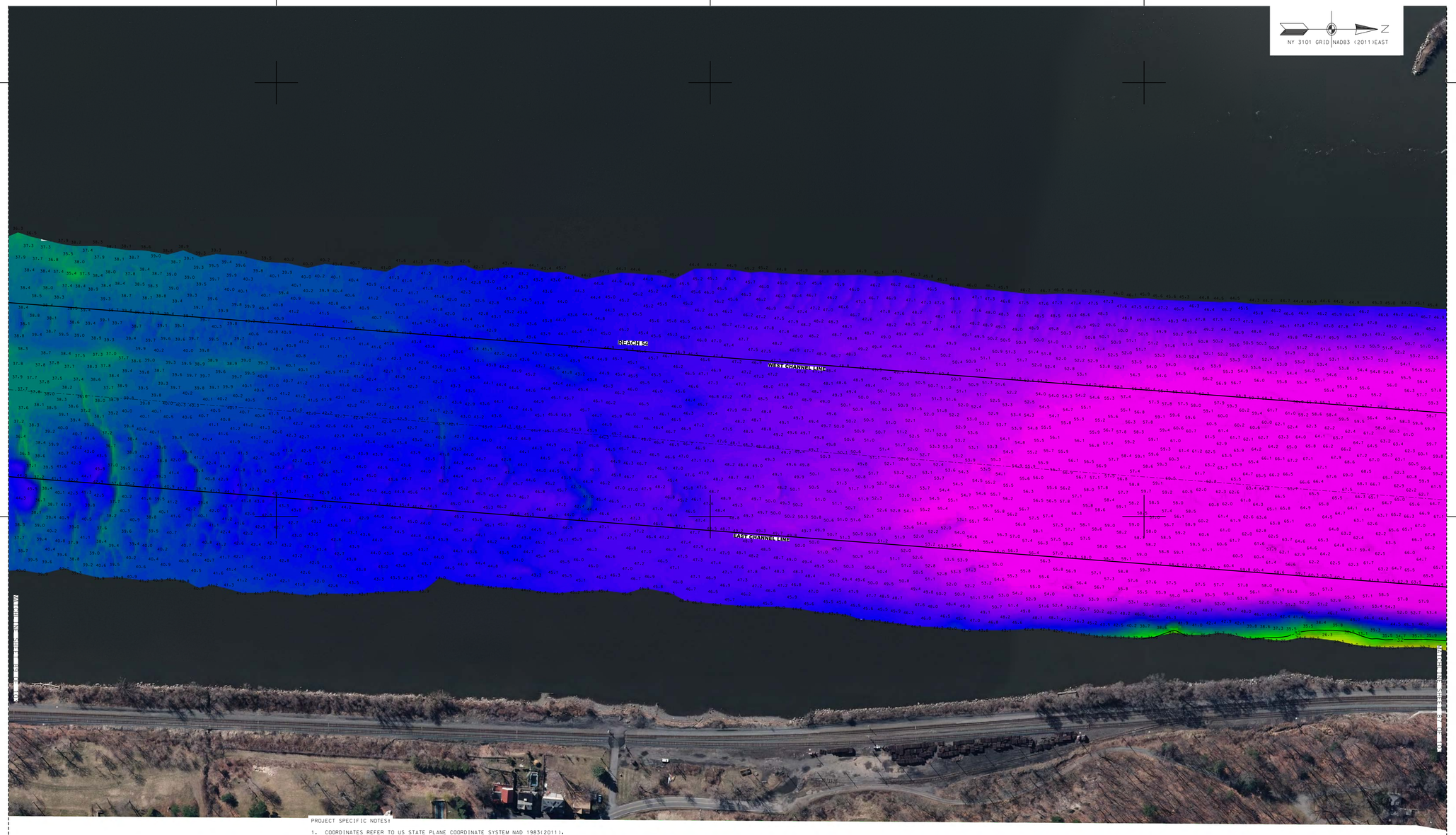
DATE: AUGUST-SEPTEMBER 2017
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:

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

MCKIM & CREED
245 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 343-1648
FAX: (910) 251-8282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 53-54

SHEET IDENTIFICATION
VH-187
SHEET 87 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.
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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.
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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 2016A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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.
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STATE OF NEW YORK
RAYMOND B. OSTBER
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

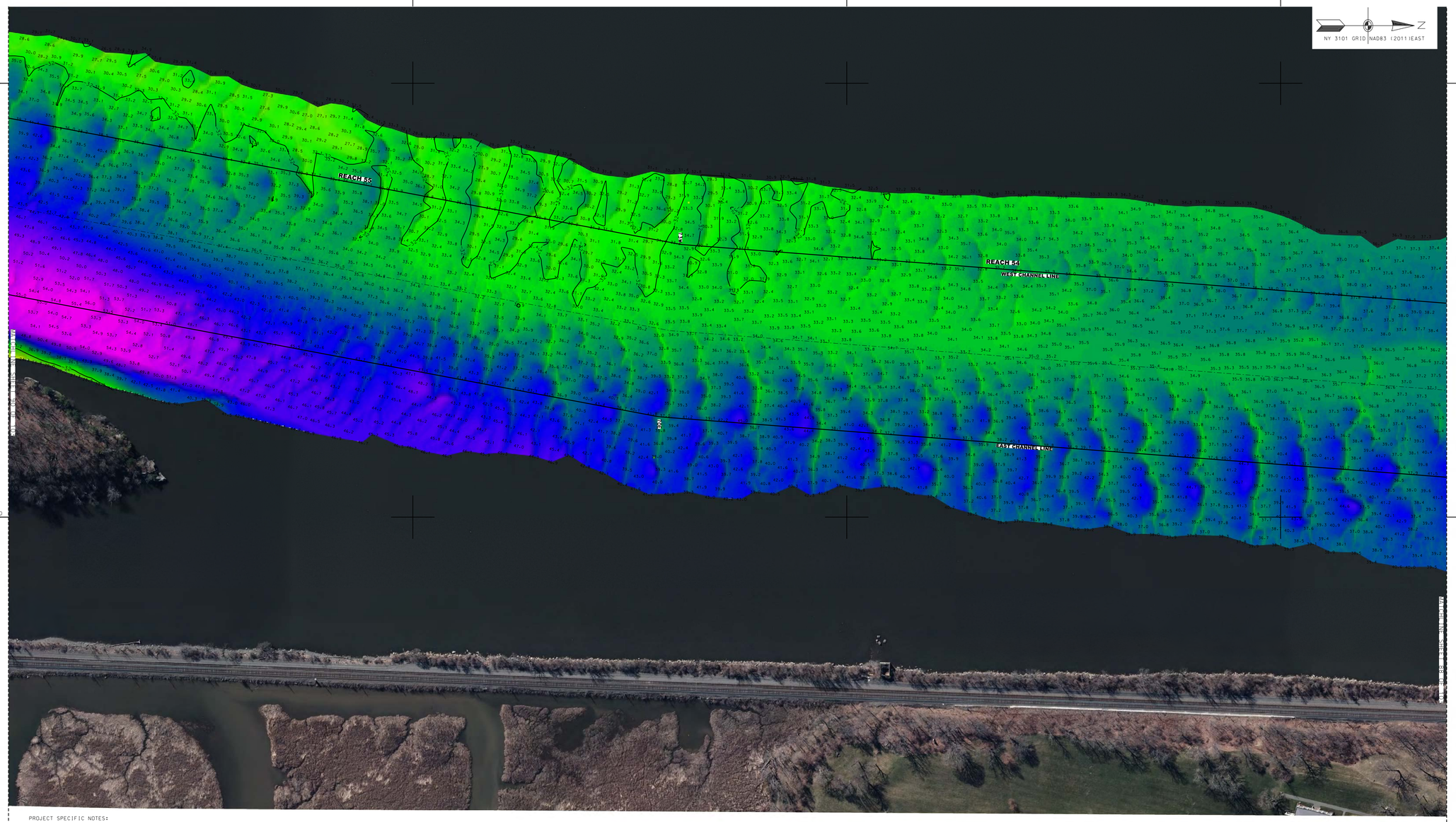
LOCAL CONTROL DATA			
BENCHMARK: HR-12	PID#	NORTHING	EASTING
ELEVATION: 8.67' NAVD 88		1,318821.55	684451.34
STAMPED: HR-12 2016			

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

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.
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   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 12NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2016A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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 AUGUST 24-SEPTEMBER 13, 2017 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. DAVIS JR. 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.

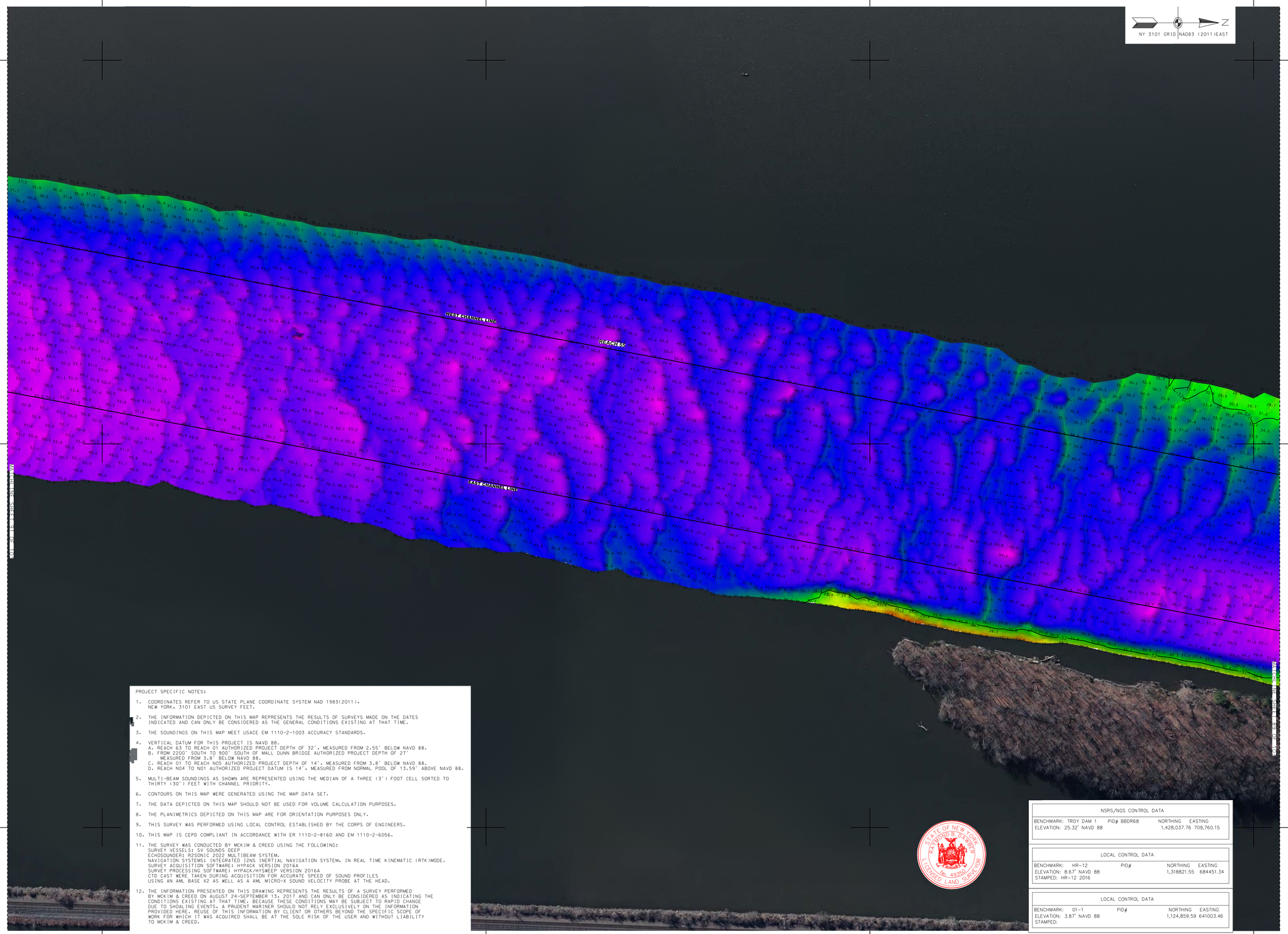
U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

MCKIM&CREED
245 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-0348
FAX: (910) 251-4362

DESIGNED BY: DGM
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1" = 100'
PLOT DATE: ANSI F
DATE: AUGUST-SEPTEMBER 2017
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
ISSUE DATE:
FILE NUMBER:
FILE NAME: V:\101-058890\043_HUDSON_MB.DGN

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 54-55

SHEET IDENTIFICATION
VH-189
SHEET 89 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 2016A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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 AUGUST 24-SEPTEMBER 13, 2017 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. 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.

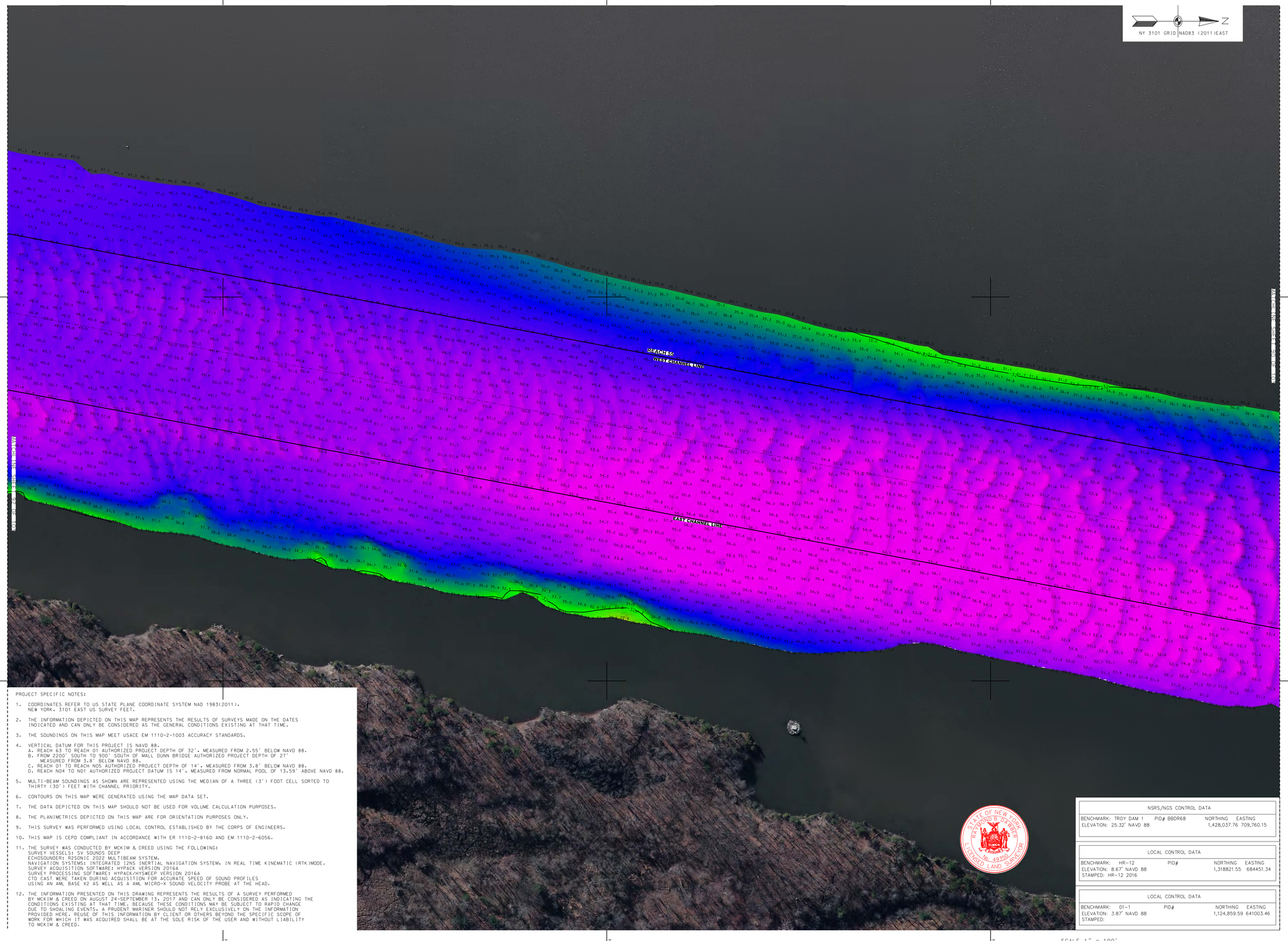
U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

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

DESIGNED BY: DBA	CKD BY: RBD	DATE: AUGUST-SEPTEMBER 2017	SOLICITATION NO.:
DWN BY: MBH			
SUBMITTED BY: DLJ			CONTRACT NO.: W912DS-14-D-0004
PLOT SCALE: 1" = 100'	ISSUE DATE: DEC 2017		FILE NUMBER:
SIZE: ANSI F	FILE NAME: VH101-0268900043_HUDSON_MB.DGN		

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 55

SHEET IDENTIFICATION
VH-190
SHEET 90 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 2016A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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 AUGUST 24-SEPTEMBER 13, 2017 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. 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:			

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

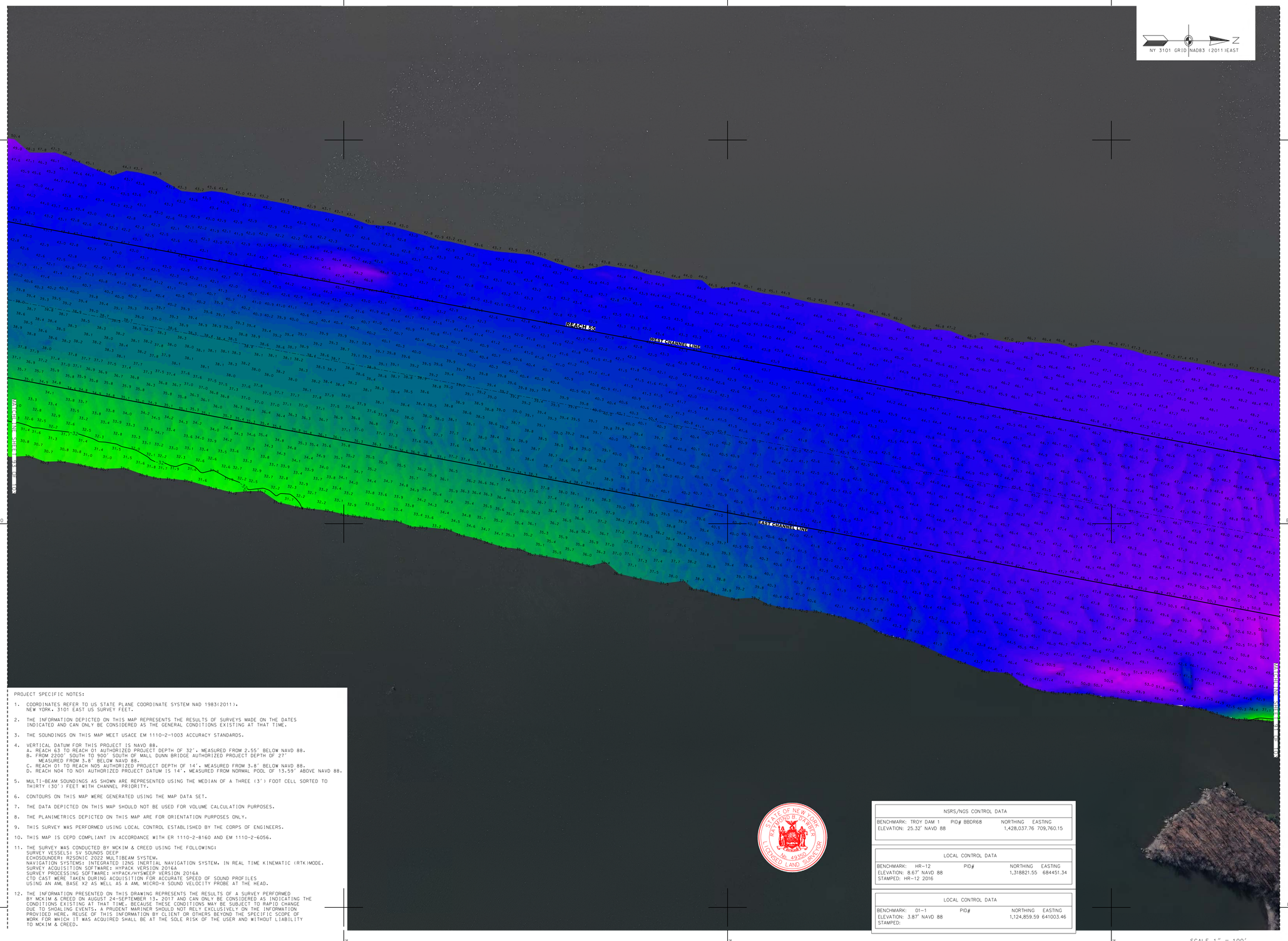
DESIGNED BY: DB
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1" = 100'
SIZE: ANSI F
DATE: AUGUST-SEPTEMBER 2017
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
ISSUE DATE: DEC 2017
FILE NAME: VH101-056890043_HUDSON_MB.DGN

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 55

SHEET IDENTIFICATION
VH-191
SHEET 91 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 2016A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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 AUGUST 24-SEPTEMBER 13, 2017 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 P. PARKER
049360
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.

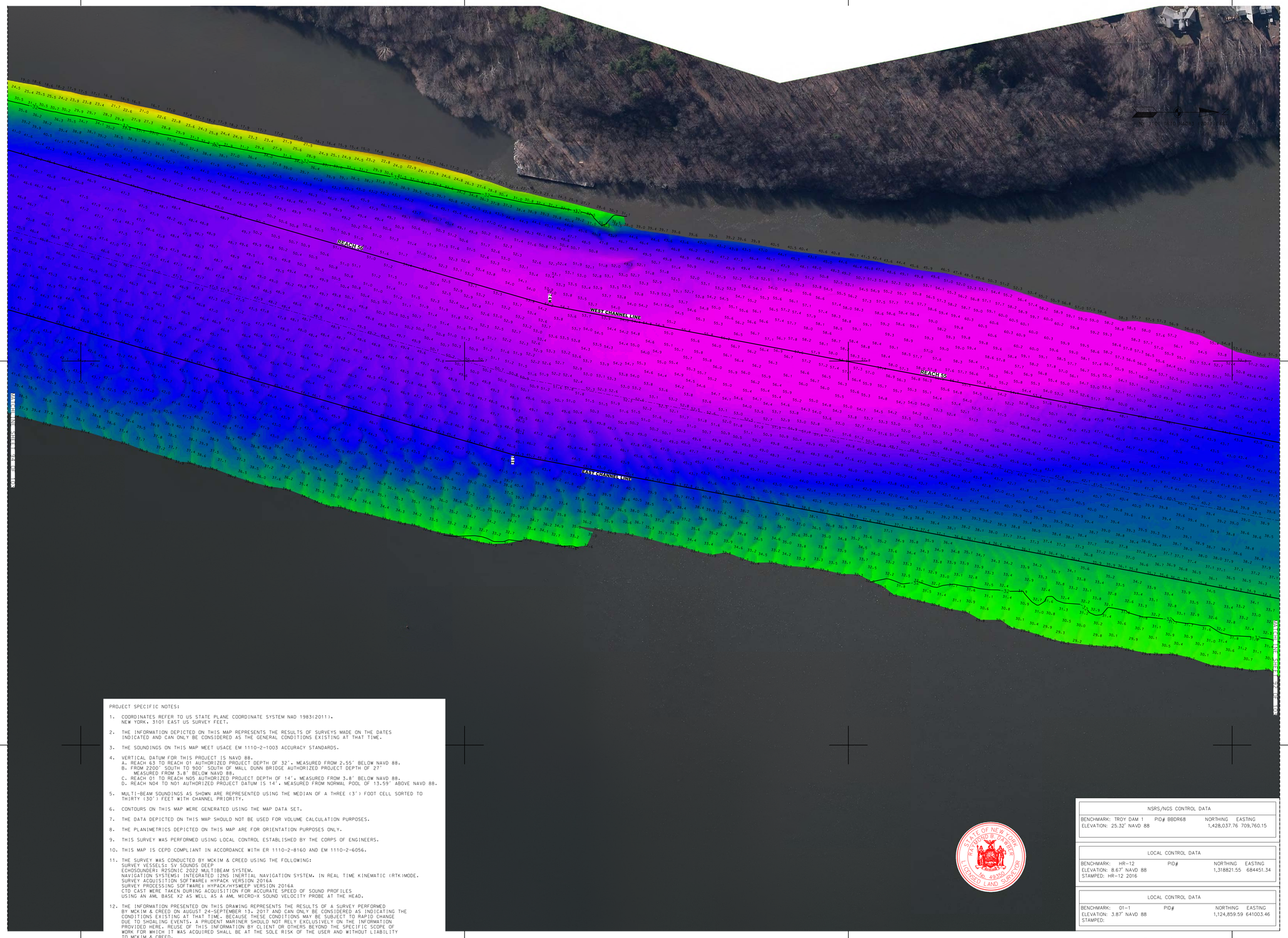
DESIGNED BY: EDA
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1" = 100'
SIZE: ANSI F
DATE: AUGUST-SEPTEMBER 2017
ISSUE DATE: NOV 2017
FILE NAME: VH101-056890043_HUDSON_MB.DGN
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:

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

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

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 55

SHEET IDENTIFICATION
VH-192
SHEET 92 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 2016A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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 AUGUST 24-SEPTEMBER 13, 2017 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
LICENSED LAND SURVEYOR
No. 49326

US Army Corps of Engineers
New York District

MARK	DESCRIPTION	DATE	APPR.
MARK	DESCRIPTION	DATE	APPR.

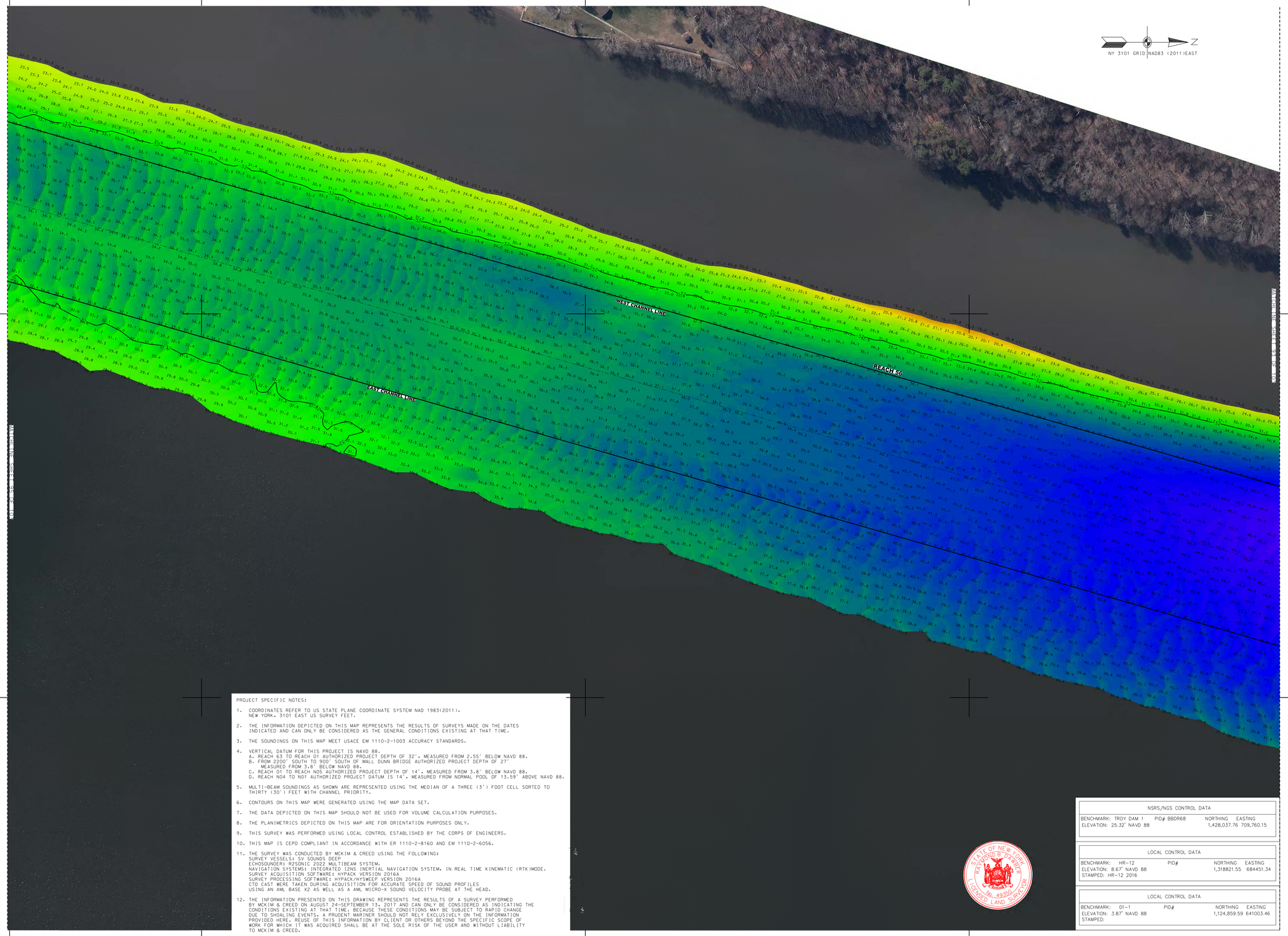
U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

MCKIM&CREED
343 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 251-0348
FAX: (910) 251-8282

DESIGNED BY: DLJ
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1:100
PLOT DATE: AS SHOWN
SIZE: ANSI F
DATE: AUGUST-SEPTEMBER 2017
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
ISSUE DATE:
FILE NUMBER:
FILE NAME: VH101-058890043_HUDSON_MB.DGN

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 55-56

SHEET IDENTIFICATION
VH-193
SHEET 93 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 2016A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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 AUGUST 24-SEPTEMBER 13, 2017 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. DARBY
No. 49350
LICENSED LAND SURVEYOR

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.	MARK	DESCRIPTION	DATE	APPR.

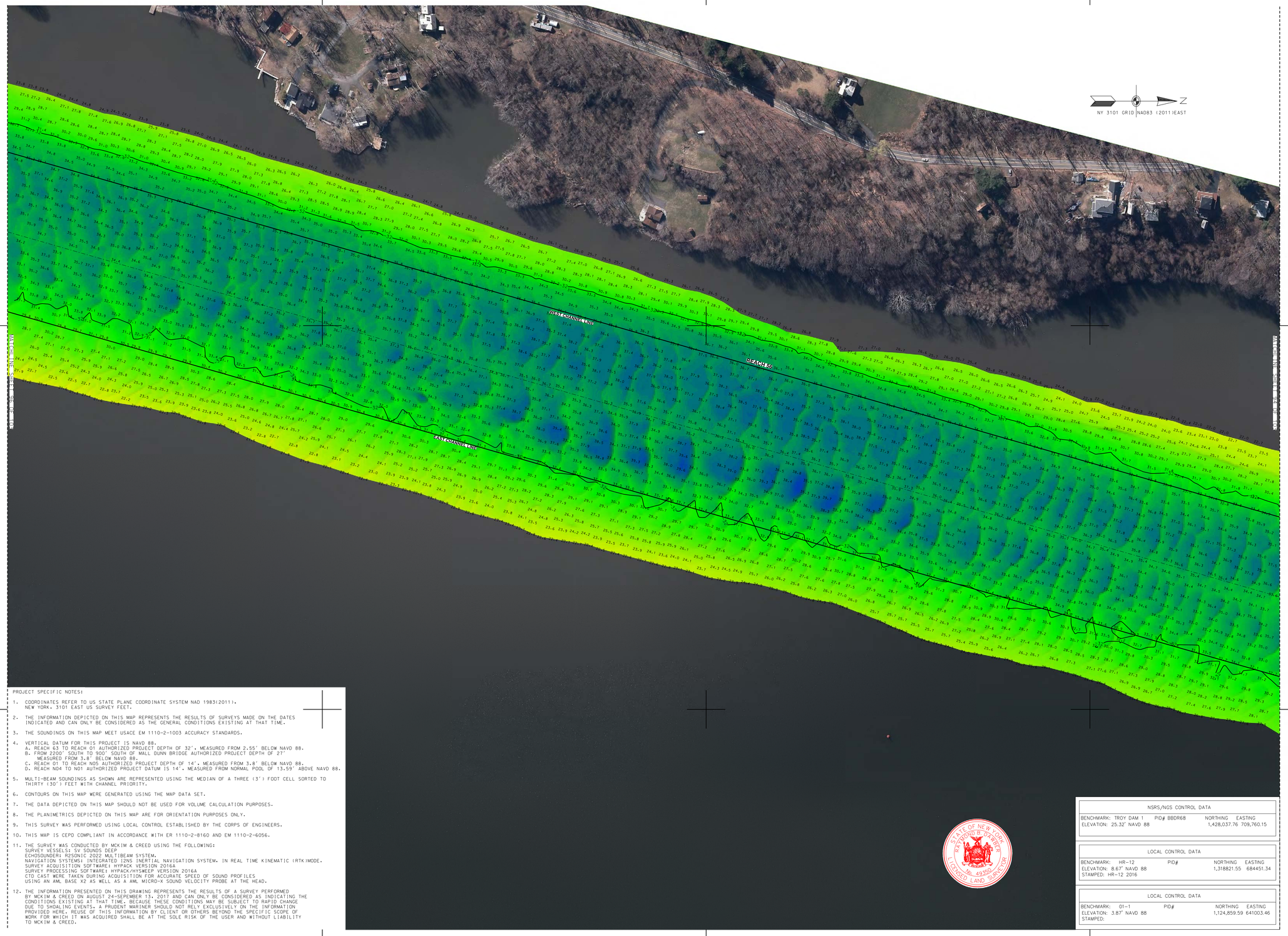
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DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DBJ
PLOT SCALE: 1" = 100'
ISSUE DATE: SEPT 2017
SIZE: ANSI F
DATE: AUGUST - SEPTEMBER 2017
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
FILE NAME: V:\410-\056890043_HUDSON_MB\DGN\

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) 251-0282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 56

SHEET IDENTIFICATION
VH-194
SHEET 94 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 2016A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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 AUGUST 24-SEPEMBER 13, 2017 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. BAKER
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.	MARK	DESCRIPTION	DATE	APPR.

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

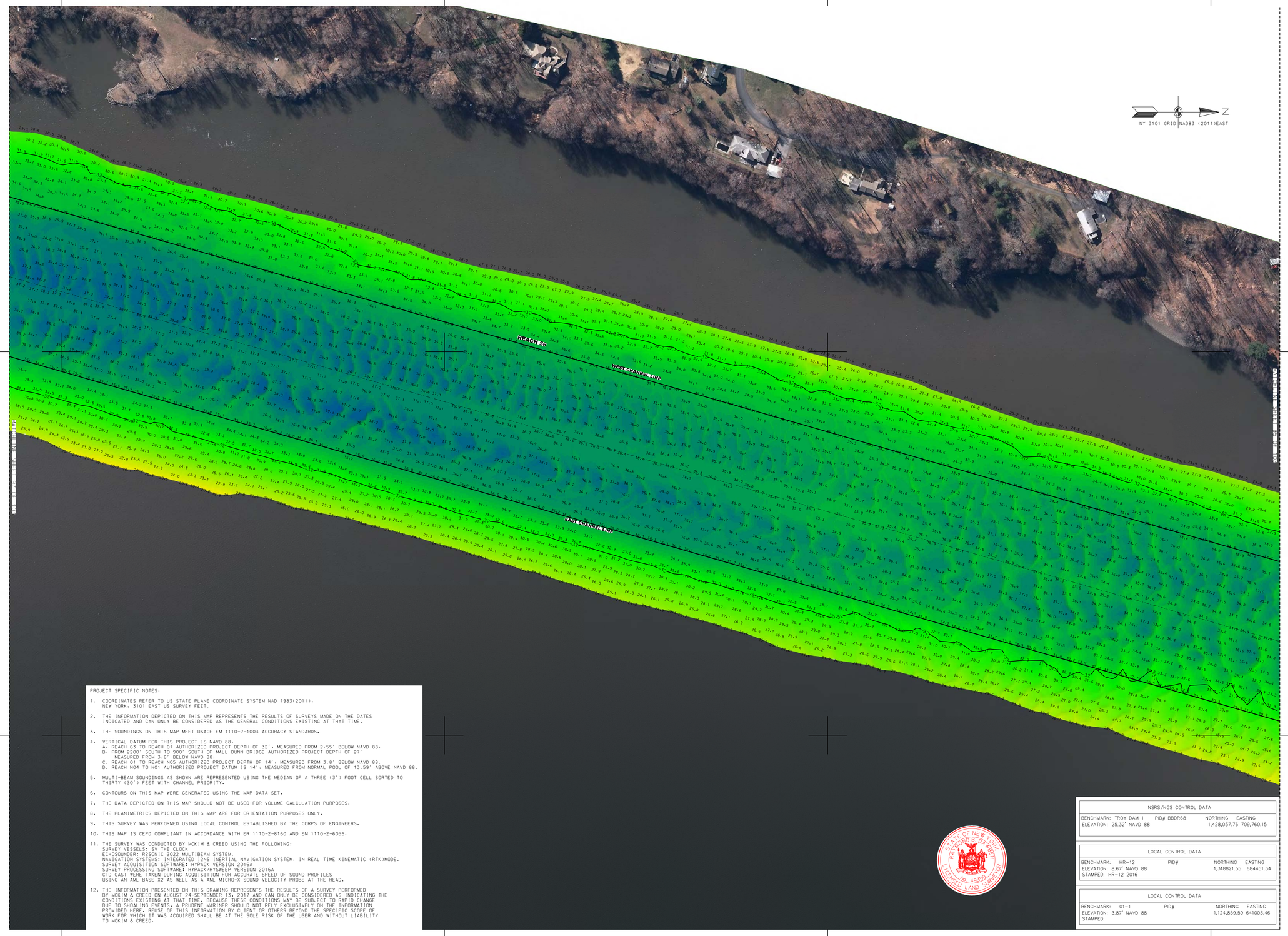
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DWN BY: MBH
SUBMITTED BY: DLJ
PLOT SCALE: 1:100
SIZE: ANSI F

DATE: AUGUST-SEPTEMBER 2017
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
ISSUE DATE:
CKD BY: RBD
FILE NAME: VH101-058890043_HUDSON_MB.DGN

MCKIM&CREED
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
TELEPHONE: (910) 341-0646
FAX: (910) 251-0320

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 56

SHEET IDENTIFICATION
VH-195
SHEET 95 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 THE CLOCK
    ECHOSOUNDER: R2SONIC 2022 MULTIBEAM SYSTEM.
    NAVIGATION SYSTEMS: INTEGRATED I2NS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK)MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2016A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    CTD CAST WERE TAKEN DURING ACQUISITION FOR ACCURATE SPEED OF SOUND PROFILES USING AN AML BASE X2 AS WELL AS A AML MICRO-V SOUND VELOCITY PROBE AT THE HEAD.
12. THE INFORMATION PRESENTED ON THIS DRAWING REPRESENTS THE RESULTS OF A SURVEY PERFORMED BY MCKIM & CREED ON AUGUST 24-SEPTEMBER 13, 2017 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. DARBY
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.

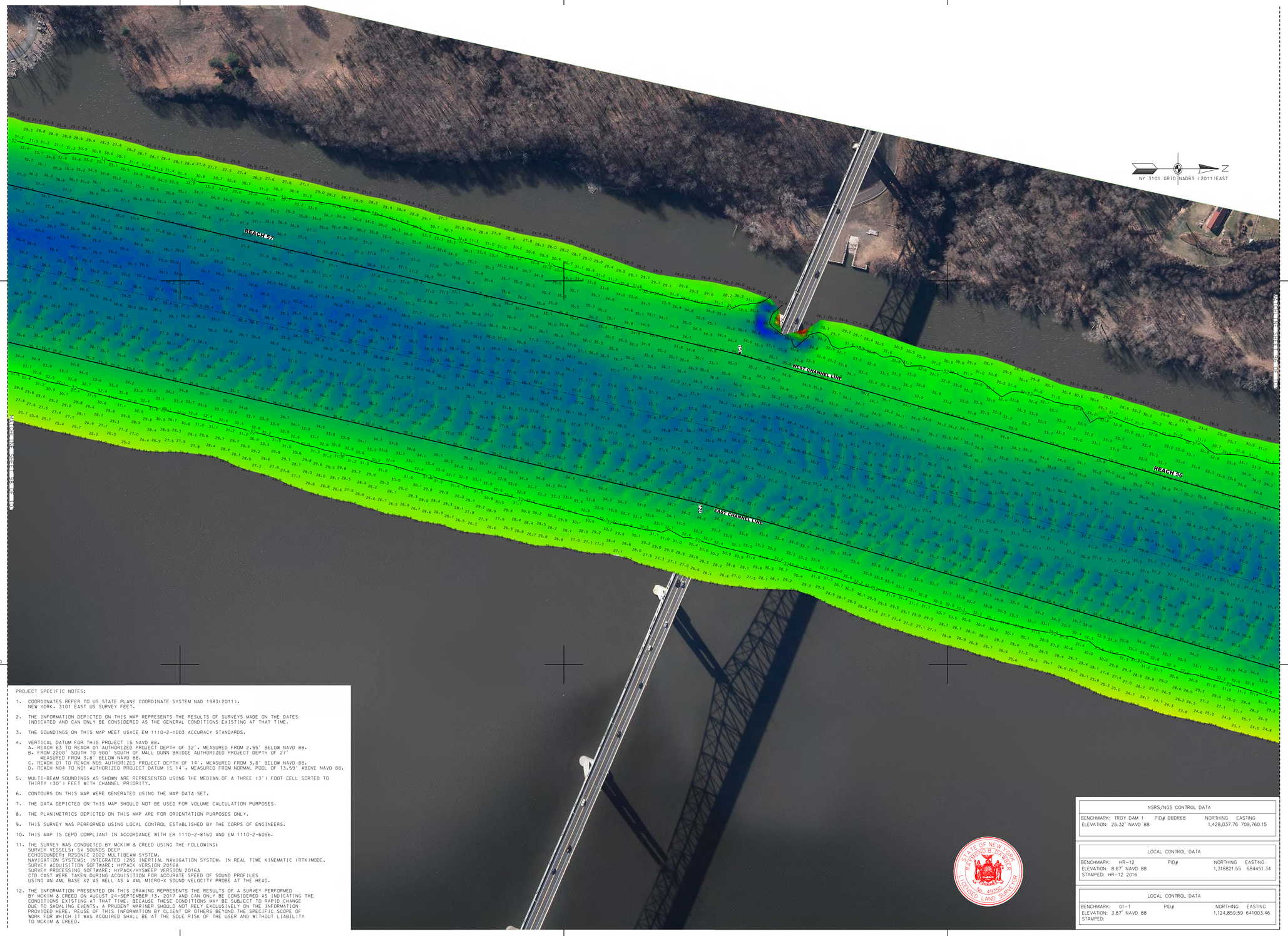
U.S. ARMY CORPS OF ENGINEERS
NEW YORK DISTRICT
NEW YORK, NY

DESIGNED BY:
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
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PLOT DATE: SIZE: ANSI F
ISSUE DATE: DECEMBER 2017
FILE NAME: VH101-058890043_HUDSON_MB.DGN
DATE: AUGUST-SEPTEMBER 2017
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:

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 56

SHEET IDENTIFICATION
VH-196
SHEET 96 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 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 2016A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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 AUGUST 24-SEPTEMBER 13, 2017 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. DAWES · 049504 · 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.

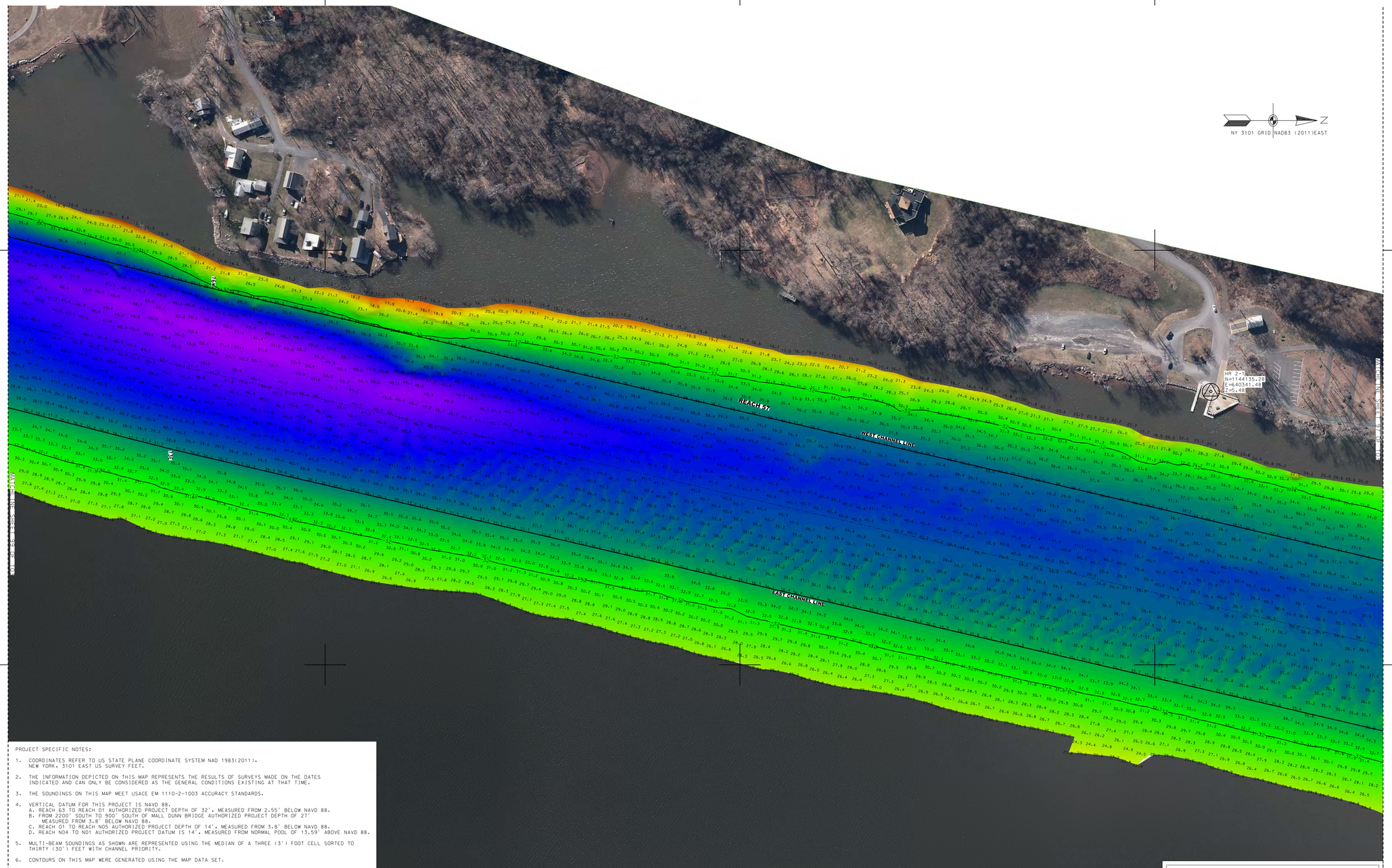
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CKD BY: RBD
SUBMITTED BY: DLJ
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PLOT DATE: 1/8/2018
SIZE: ANSI F
DATE: AUGUST-SEPTEMBER 2017
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
ISSUE DATE:
FILE NUMBER:
FILE NAME: V:\110\-058890043_HUDSON_MB.DGN

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 56-57

SHEET IDENTIFICATION
VH-197
SHEET 97 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 2016A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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 AUGUST 24-SEPTEMBER 13, 2017 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. 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.

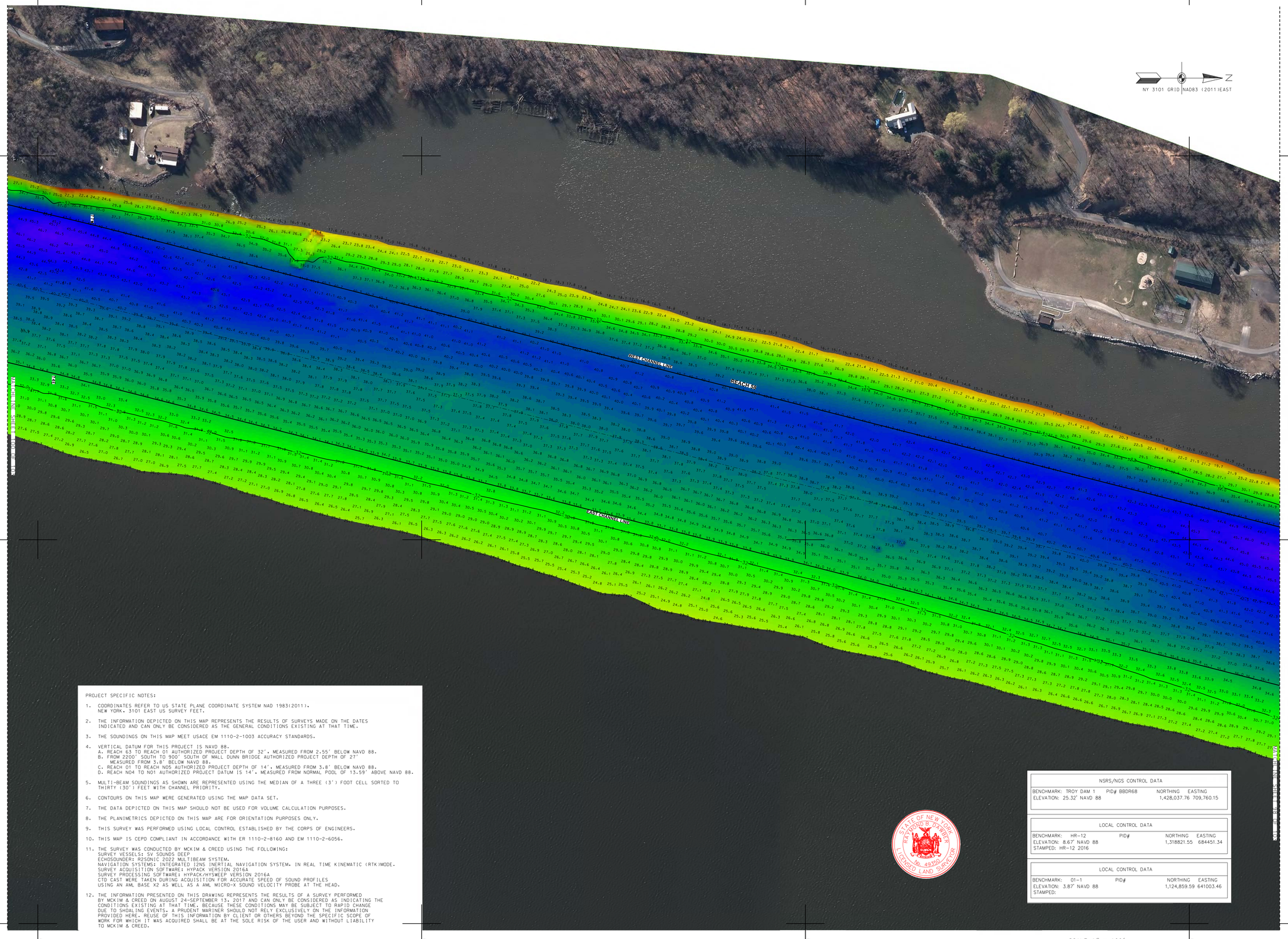
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CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1:100
SIZE: ANSI F
DATE: AUGUST-SEPTEMBER 2017
SOLICITATION NO.:
CONTRACT NO.: W912203-14-D-0004
FILE NUMBER:
ISSUE DATE: DECEMBER 2017
FILE NAME: VH101-0268890043_HUDSON_MB.DGN

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

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

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 57

SHEET IDENTIFICATION
VH-198
SHEET 98 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 IXNS INERTIAL NAVIGATION SYSTEM. IN REAL TIME KINEMATIC (RTK) MODE.
    SURVEY ACQUISITION SOFTWARE: HYPACK VERSION 2016A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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 AUGUST 24-SEPTEMBER 13, 2017 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
ANTHONY E. DAHER
LICENSED LAND SURVEYOR
No. 49350

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.

DESIGNED BY: DLJ
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1:100'
SIZE: ANSI F
DATE: AUGUST-SEPTEMBER 2017
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
ISSUE DATE: DECEMBER 2017
FILE NUMBER:
FILE NAME: VH101-058890043_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) 251-8282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 58

SHEET IDENTIFICATION
VH-199
SHEET 99 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:			

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 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 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 2016
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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 AUGUST 24-SEPTEMBER 13, 2017 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. PAWEP
090 49350
LICENSED LAND SURVEYOR

WEST CHANNEL LINE
REACH 59
EAST CHANNEL LINE
MATCHLINE SHEET 99 OF 103

SCALE 1" = 100'
0 100 200 300 400

US Army Corps of Engineers ®
New York District

MARK	DESCRIPTION	DATE	APPR.	MARK	DESCRIPTION	DATE	APPR.

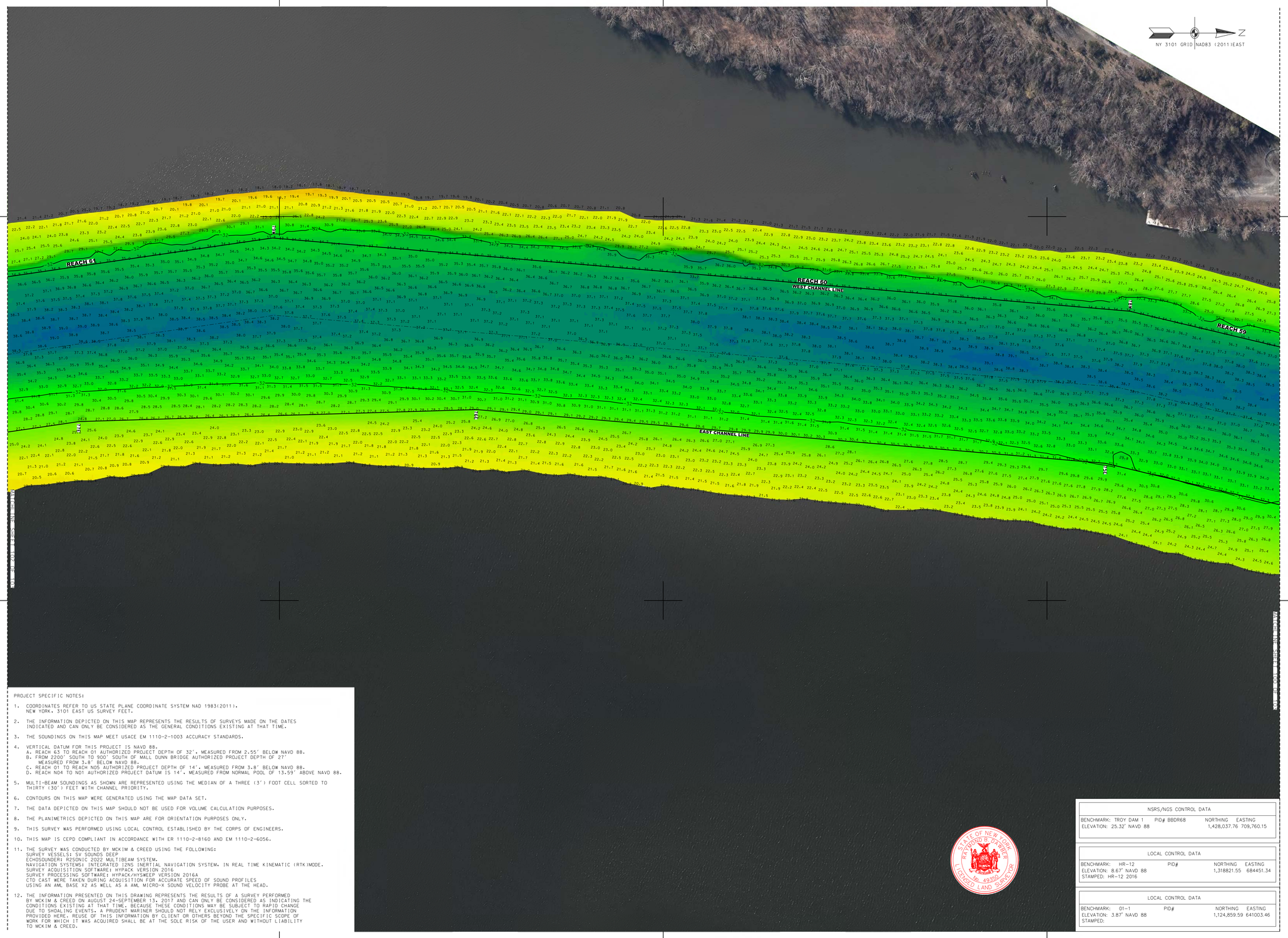
DESIGNED BY:
DRAWN BY: MBH
SUBMITTED BY: DLJ
PLOT SCALE: 1" = 100'
SIZE: ANSI F
DATE: AUGUST-SEPTEMBER 2017
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
FILE NUMBER:
FILE NAME: VH101-056890043_HUDSON_MB.DGN

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) 251-8282

HYDROGRAPHIC CONDITIONS SURVEY
HUDSON RIVER FEDERAL NAVIGATION CHANNEL
REACH 59

SHEET IDENTIFICATION
VH-200
SHEET 100 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 2016
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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 AUGUST 24-SEPTEMBER 13, 2017 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. PARKER
No. 49150
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.

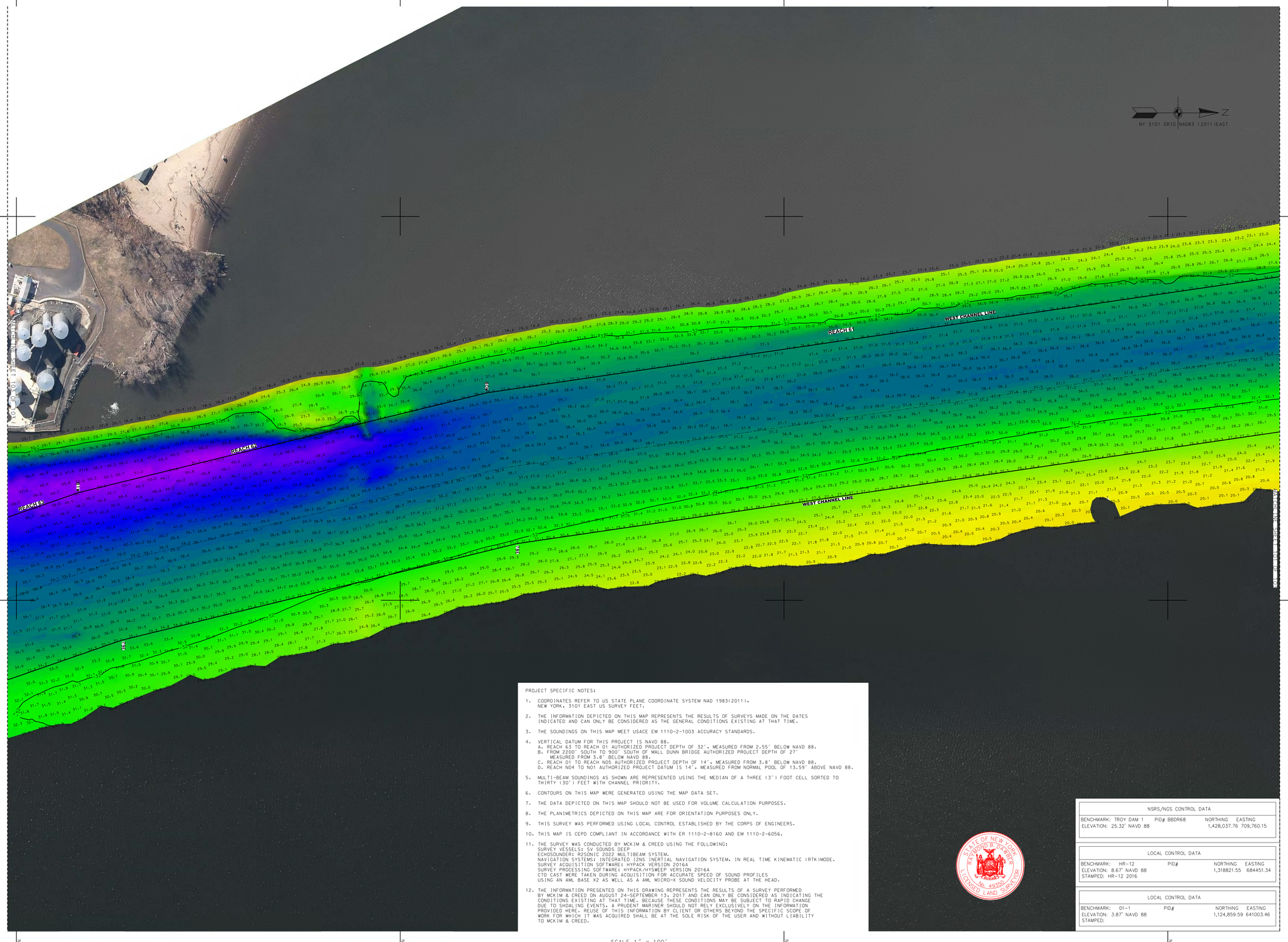
DESIGNED BY: DLJ
DRAWN BY: MBH
CKD BY: REID
SUBMITTED BY: DLJ
PLOT SCALE: 1:100
PLOT DATE: 1:1
SIZE: ANSI F
DATE: AUGUST-SEPTEMBER 2017
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
ISSUE DATE: DECEMBER 2017
FILE NUMBER:
FILE NAME: VH101-058890043_HUDSON_MB.DGN

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 59-61

SHEET IDENTIFICATION
VH-201
SHEET 101 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 2016A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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 AUGUST 24-SEPTEMBER 13, 2017 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
LICENSED LAND SURVEYOR
No. 49326

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

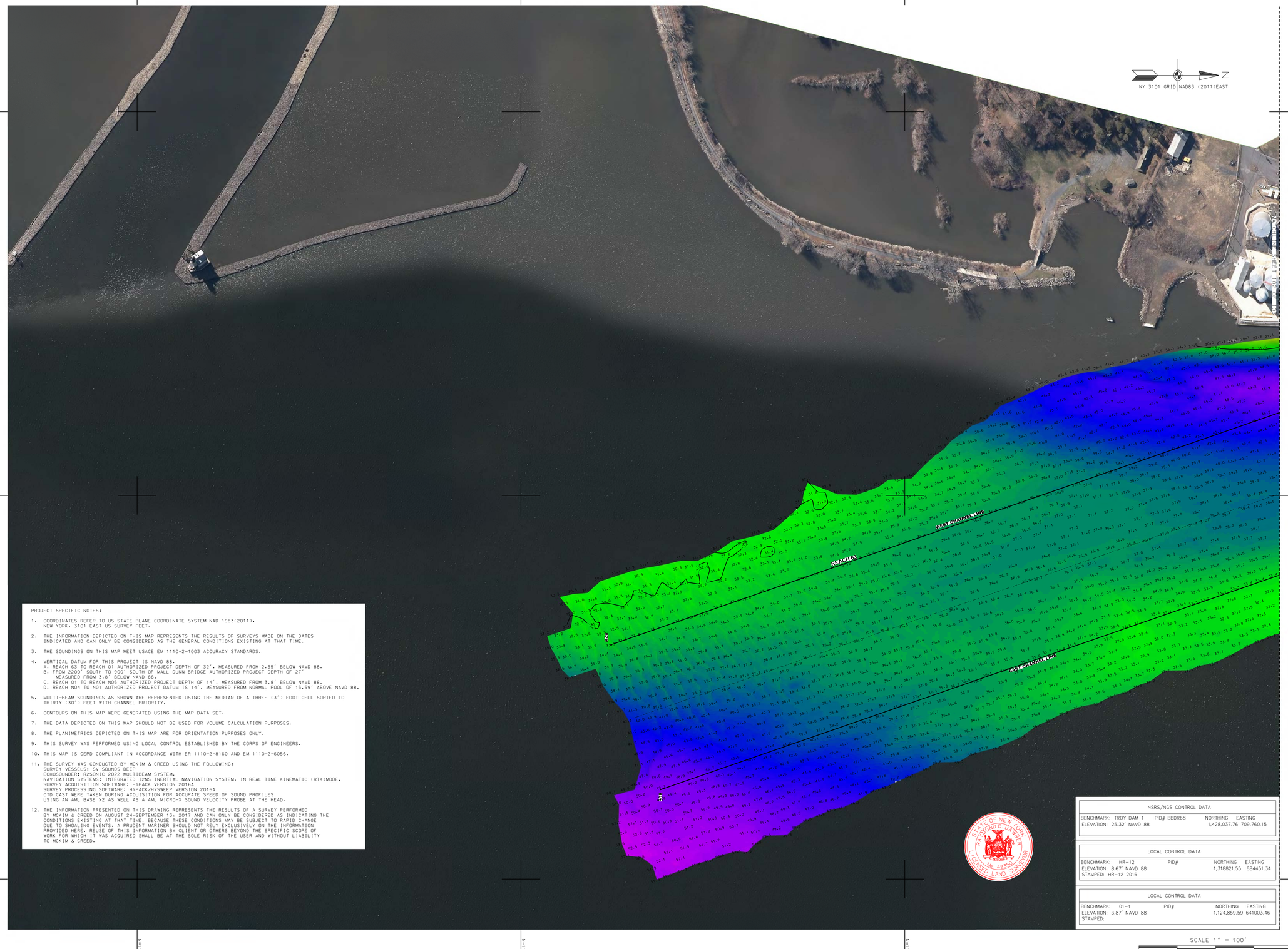
DESIGNED BY: MBH
DWN BY: MBH
CKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1:600
PLOT DATE: SIZE: ANSI F

DATE: AUGUST-SEPTEMBER 2017
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
ISSUE DATE:
FILE NUMBER:
FILE NAME: VH101-058890043_HUDSON_MLOGN

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 61-62

SHEET IDENTIFICATION
VH-202
SHEET 102 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 2016A
    SURVEY PROCESSING SOFTWARE: HYPACK/HYSWEEP VERSION 2016A
    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 AUGUST 24-SEPTEMBER 13, 2017 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. O'BRIEN
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.

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

DESIGNED BY: DLJ
DWN BY: MBH
CHKD BY: RBD
SUBMITTED BY: DLJ
PLOT SCALE: 1"=100'
SIZE: ANSI F
DATE: AUGUST-SEPTEMBER 2017
SOLICITATION NO.:
CONTRACT NO.: W912DS-14-D-0004
ISSUE DATE: DEC 2018
FILE NUMBER:
FILE NAME: VH101-056890043_HUDSON_MB.DGN

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 63

SHEET IDENTIFICATION
VH-203
SHEET 103 OF 103