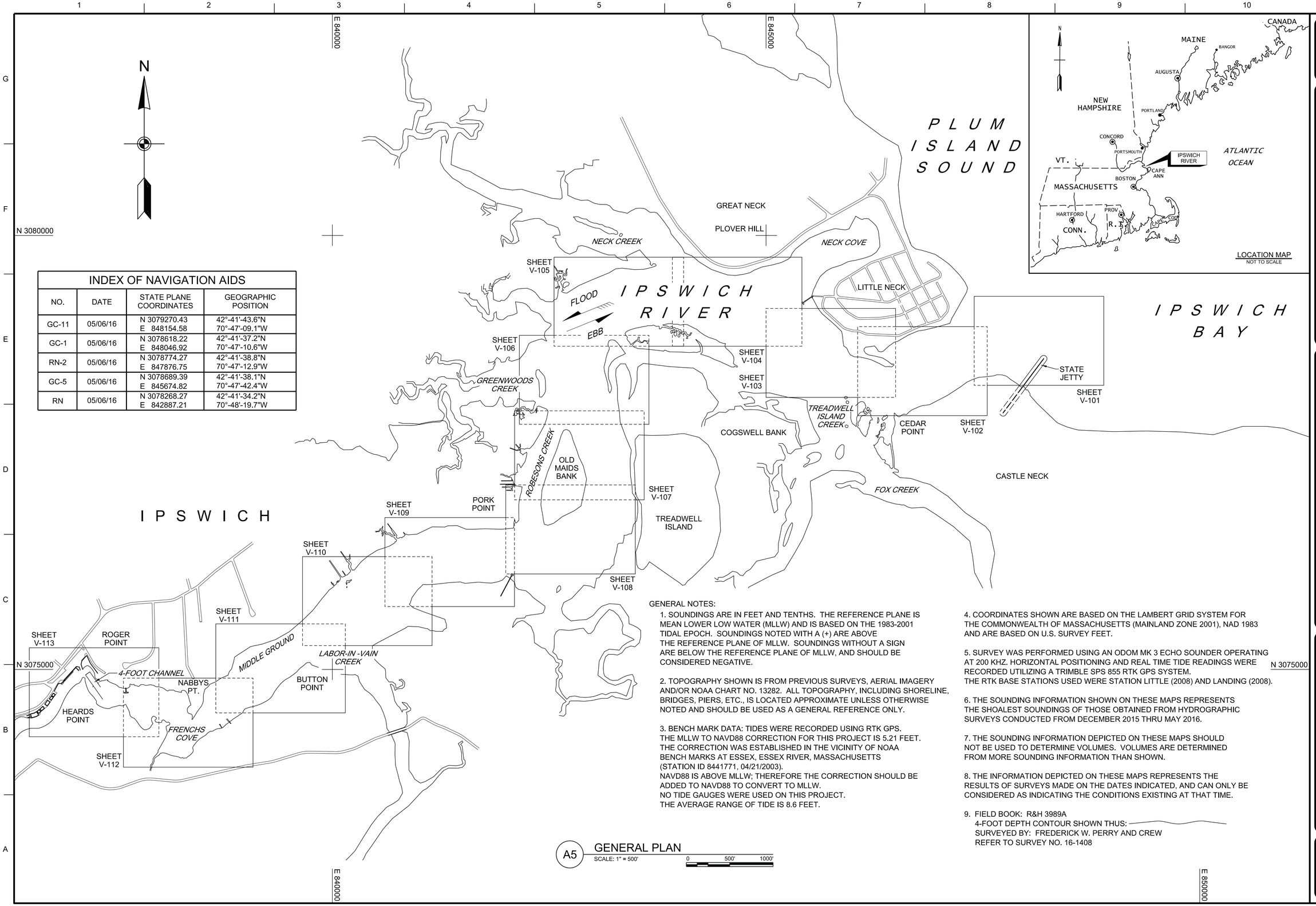


INDEX OF NAVIGATION AIDS

NO.	DATE	STATE PLANE COORDINATES	GEOGRAPHIC POSITION
GC-11	05/06/16	N 3079270.43 E 848154.58	42°-41'-43.6"N 70°-47'-09.1"W
GC-1	05/06/16	N 3078618.22 E 848046.92	42°-41'-37.2"N 70°-47'-10.6"W
RN-2	05/06/16	N 3078774.27 E 847876.75	42°-41'-38.8"N 70°-47'-12.9"W
GC-5	05/06/16	N 3078689.39 E 845674.82	42°-41'-38.1"N 70°-47'-42.4"W
RN	05/06/16	N 3078268.27 E 842887.21	42°-41'-34.2"N 70°-48'-19.7"W

GENERAL NOTES:

1. SOUNDINGS ARE IN FEET AND TENTHS. THE REFERENCE PLANE IS MEAN LOWER LOW WATER (MLLW) AND IS BASED ON THE 1983-2001 TIDAL EPOCH. SOUNDINGS NOTED WITH A (+) ARE ABOVE THE REFERENCE PLANE OF MLLW. SOUNDINGS WITHOUT A SIGN ARE BELOW THE REFERENCE PLANE OF MLLW, AND SHOULD BE CONSIDERED NEGATIVE.

2. TOPOGRAPHY SHOWN IS FROM PREVIOUS SURVEYS, AERIAL IMAGERY AND/OR NOAA CHART NO. 13282. ALL TOPOGRAPHY, INCLUDING SHORELINE, BRIDGES, PIERS, ETC., IS LOCATED APPROXIMATE UNLESS OTHERWISE NOTED AND SHOULD BE USED AS A GENERAL REFERENCE ONLY.

3. BENCH MARK DATA: TIDES WERE RECORDED USING RTK GPS. THE MLLW TO NAVD88 CORRECTION FOR THIS PROJECT IS 5.21 FEET. THE CORRECTION WAS ESTABLISHED IN THE VICINITY OF NOAA BENCH MARKS AT ESSEX, ESSEX RIVER, MASSACHUSETTS (STATION ID 8441771, 04/21/2003). NAVD88 IS ABOVE MLLW; THEREFORE THE CORRECTION SHOULD BE ADDED TO NAVD88 TO CONVERT TO MLLW. NO TIDE GAUGES WERE USED ON THIS PROJECT. THE AVERAGE RANGE OF TIDE IS 8.6 FEET.

4. COORDINATES SHOWN ARE BASED ON THE LAMBERT GRID SYSTEM FOR THE COMMONWEALTH OF MASSACHUSETTS (MAINLAND ZONE 2001), NAD 1983 AND ARE BASED ON U.S. SURVEY FEET.

5. SURVEY WAS PERFORMED USING AN ODOM MK 3 ECHO SOUNDER OPERATING AT 200 KHZ. HORIZONTAL POSITIONING AND REAL TIME TIDE READINGS WERE RECORDED UTILIZING A TRIMBLE SPS 855 RTK GPS SYSTEM. THE RTK BASE STATIONS USED WERE STATION LITTLE (2008) AND LANDING (2008).

6. THE SOUNDING INFORMATION SHOWN ON THESE MAPS REPRESENTS THE SHOALEST SOUNDINGS OF THOSE OBTAINED FROM HYDROGRAPHIC SURVEYS CONDUCTED FROM DECEMBER 2015 THRU MAY 2016.

7. THE SOUNDING INFORMATION DEPICTED ON THESE MAPS SHOULD NOT BE USED TO DETERMINE VOLUMES. VOLUMES ARE DETERMINED FROM MORE SOUNDING INFORMATION THAN SHOWN.

8. THE INFORMATION DEPICTED ON THESE MAPS REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATES INDICATED, AND CAN ONLY BE CONSIDERED AS INDICATING THE CONDITIONS EXISTING AT THAT TIME.

9. FIELD BOOK: R&H 3989A
4-FOOT DEPTH CONTOUR SHOWN THUS:
SURVEYED BY: FREDERICK W. PERRY AND CREW
REFER TO SURVEY NO. 16-1408

A5 GENERAL PLAN
SCALE: 1" = 500'
0 500' 1000'

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

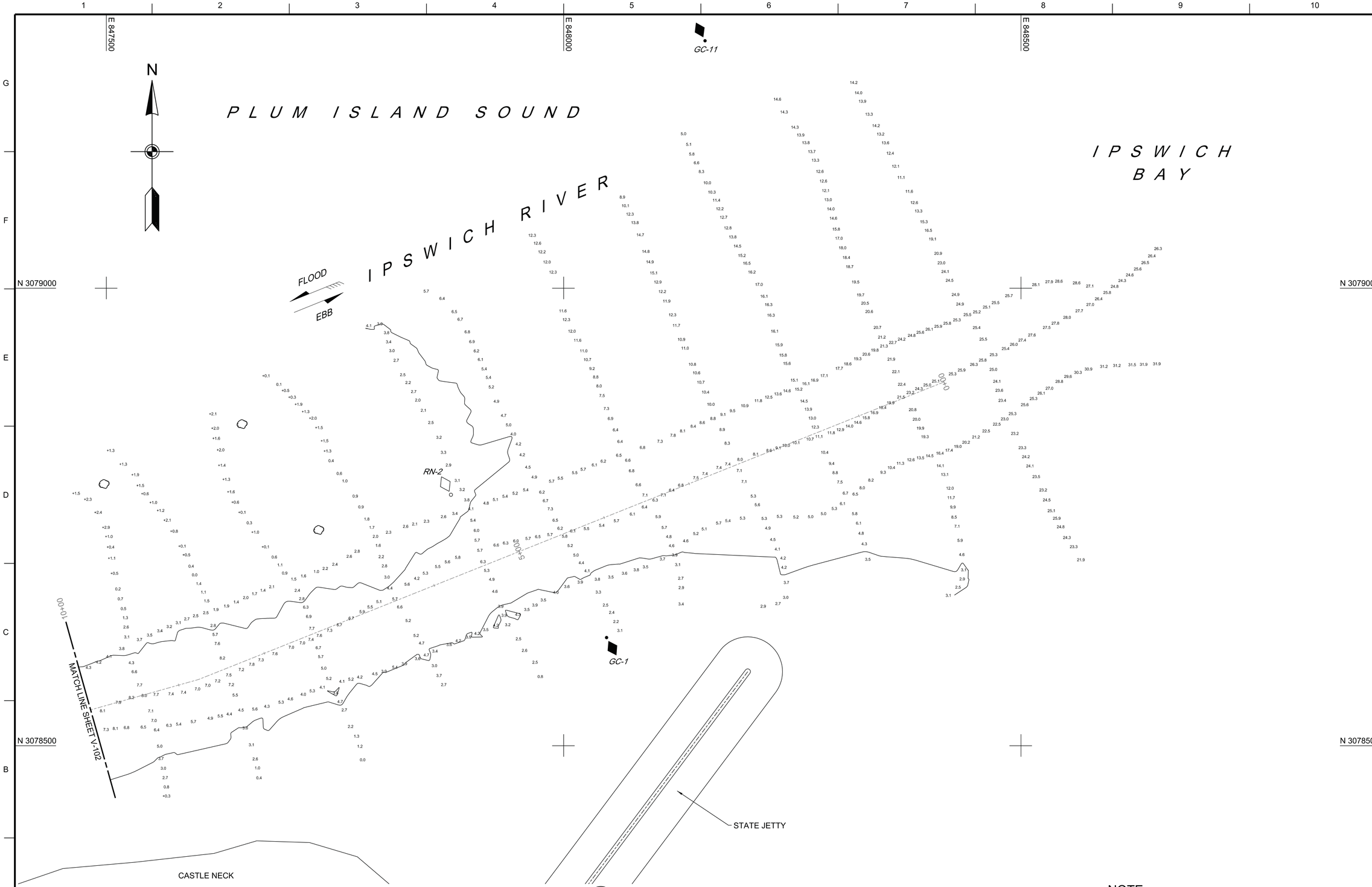
DWN BY: SWK
CHK BY: WHW
ISSUE DATE: JUNE 15, 2017
REVIEWED BY: WALKER, WILLIAM H. JR. GS-13
DRAWING CODE: DR3-4S
Asst. Chief, Survey Sec.
APPROVED BY: WALKER, WILLIAM H. JR. GS-13
For: Chief, Survey Section
SIZE: ANSI D
SCALE: 1:1
SHEET 1 OF 14

U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 VIRGINIA ROAD
CONCORD, MA 01742-2751

IPSWICH RIVER
IPSWICH, MASSACHUSETTS
CONDITION SURVEY

4-FOOT CHANNEL

SHEET ID
G-001



A5 PLAN - STA. 0+00 TO STA. 10+00

SCALE: 1" = 50'

0 50' 100'

NOTE:
FOR GENERAL NOTES SEE SHEET G-001.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DWN BY: SWK
CHK BY: WHW
REVIEWED BY: WALKER, WILLIAM H. CIVILIAN USACE NAE
Asst. Chief, Survey Sec.
APPROVED BY: WALKER, WILLIAM H. CIVILIAN USACE NAE
For: Chief, Survey Section
SIZE: ANSI D
SCALE: 1:1
ISSUE DATE: JUNE 15, 2017
DRAWING CODE: IPS-4S
SHEET 2 OF 14

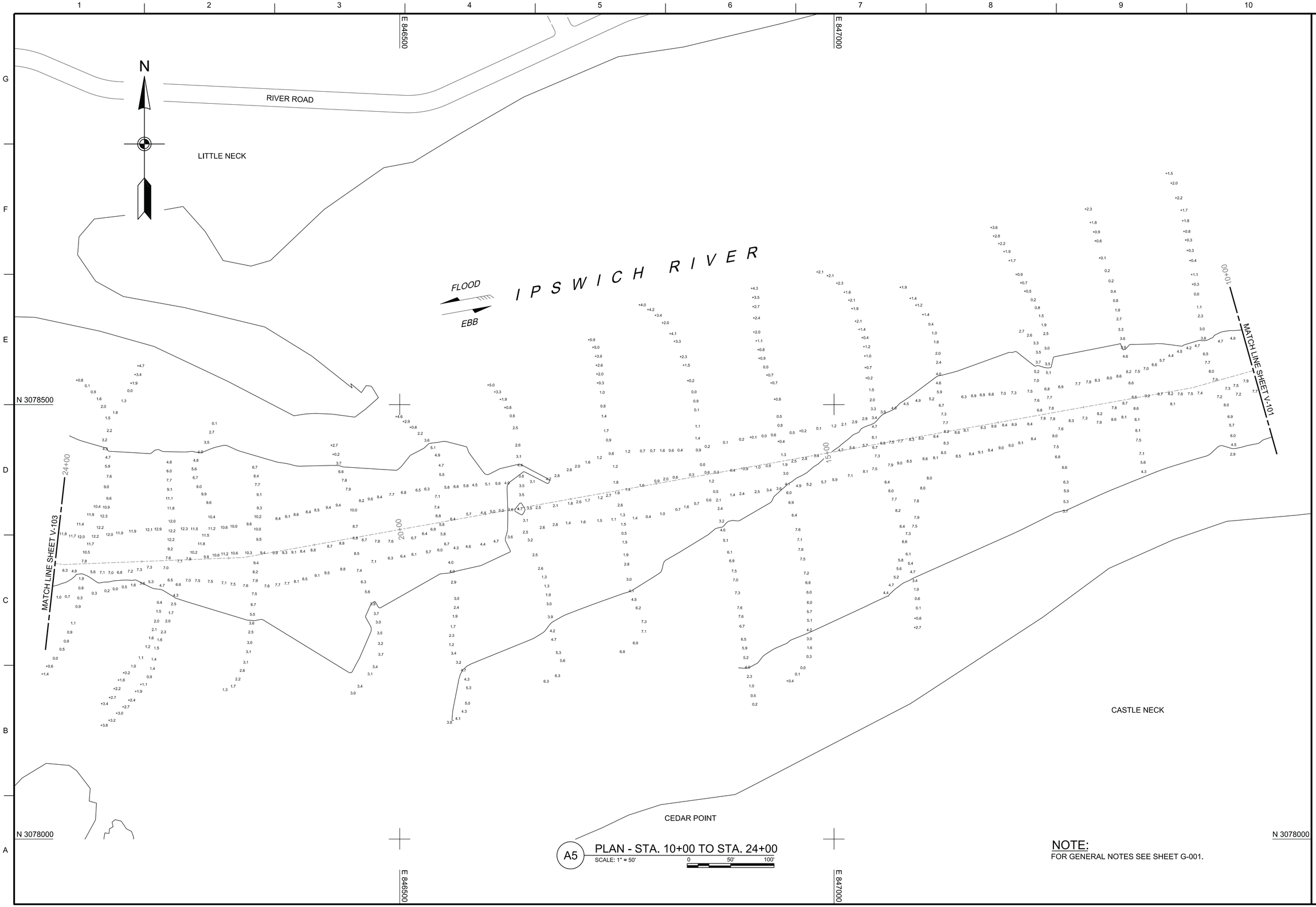
U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 VIRGINIA ROAD
CONCORD, MA 01742-2751

IPSWICH RIVER
IPSWICH, MASSACHUSETTS
CONDITION SURVEY

4-FOOT CHANNEL

SHEET ID

V-101



A5 PLAN - STA. 10+00 TO STA. 24+00

SCALE: 1" = 50'

0 50' 100'

NOTE:
FOR GENERAL NOTES SEE SHEET G-001.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: JUNE 15, 2017

DWN BY: SWK
CHK BY: WHW

REVIEWED BY: WALKER, WILLIAM H. 12/06/2016
Asst. Chief, Survey Sec.

APPROVED BY: MARCUS, MICHAEL A. 12/06/2016
For: Chief, Survey Section

DRAWING CODE: IPS-45

SIZE: ANSI D
SCALE: 1:1

SHEET 3 OF 14

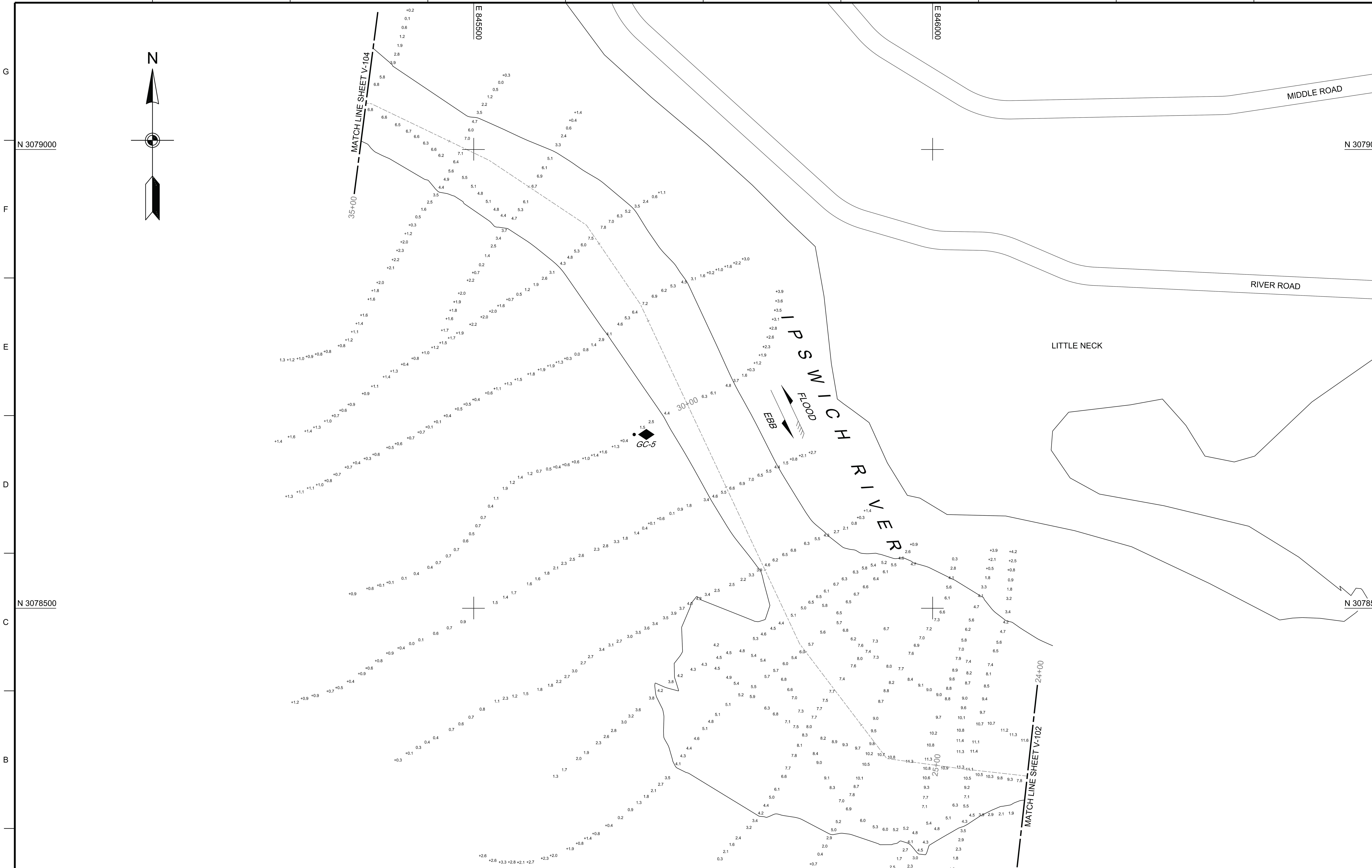
U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 VIRGINIA ROAD
CONCORD, MA 01742-2751

IPSWICH RIVER
IPSWICH, MASSACHUSETTS
CONDITION SURVEY

4-FOOT CHANNEL

SHEET ID

V-102



A5 PLAN - STA. 24+00 TO STA. 35+00
SCALE: 1" = 50'
0 50' 100'

NOTE:
FOR GENERAL NOTES SEE SHEET G-001.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: JUNE 15, 2017

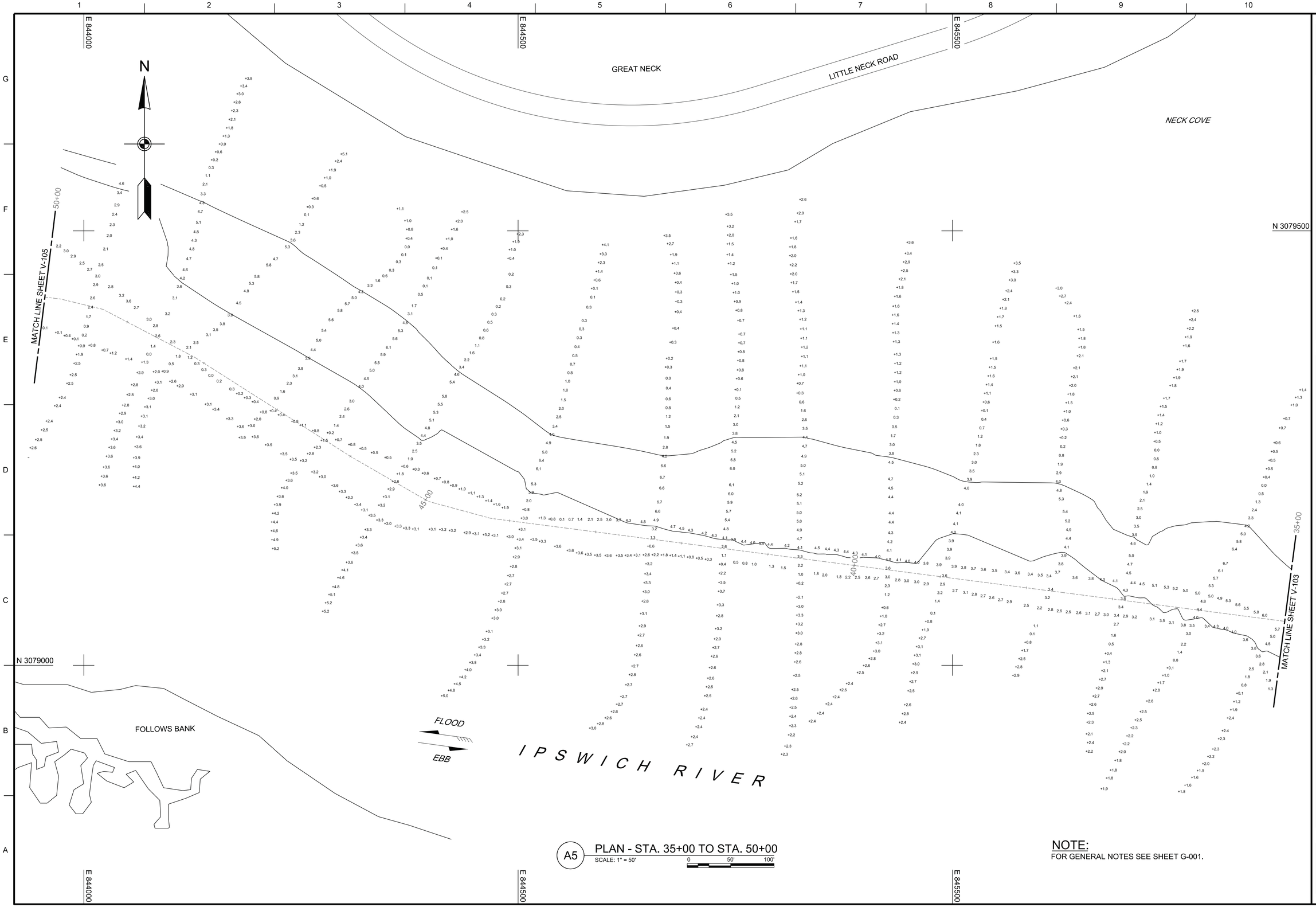
DWN BY: SWK
CHK BY: WHW
REVIEWED BY: WALKER.WILLIAM.H.1228577908 Asst. Chief, Survey Sec.
APPROVED BY: WALKER.WILLIAM.H.1228577908 For: Chief, Survey Section
DRAWING CODE: IPS-45
SHEET 4 OF 14
SIZE: ANSI D
SCALE: 1:1

U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 VIRGINIA ROAD
CONCORD, MA 01742-2751

IPSWICH RIVER
IPSWICH, MASSACHUSETTS
CONDITION SURVEY

4-FOOT CHANNEL

SHEET ID
V-103



A5 PLAN - STA. 35+00 TO STA. 50+00

SCALE: 1" = 50' 0 50' 100'

NOTE:
FOR GENERAL NOTES SEE SHEET G-001.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: JUNE 15, 2017

DWN BY: SWK | CHK BY: WHW

REVIEWED BY: WALKER, WILLIAM H. Digitally signed by WALKER.WILLIAM.H.1238567300 Date: 2017.06.15 08:42:40 -04'00' Asst. Chief, Survey Sec.

APPROVED BY: MAHAR, MICHAEL J. Digitally signed by MAHAR.MICHAEL.J.1238567300 Date: 2017.06.15 08:43:07 -04'00' For: Chief, Survey Section

DRAWING CODE: IPS-4-5

SHEET 5 OF 14

SIZE: ANSI D | SCALE: 1:1

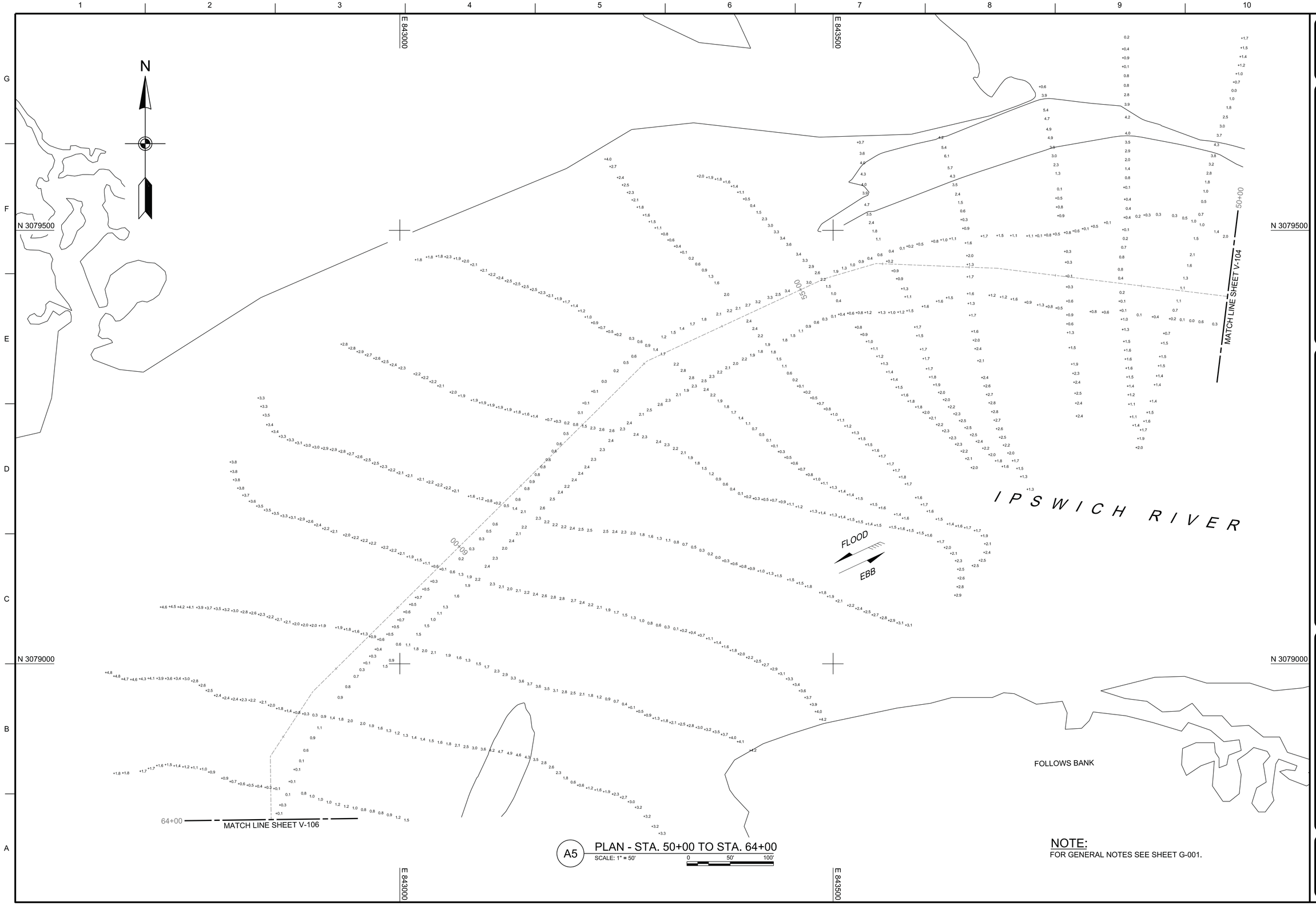
U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 VIRGINIA ROAD
CONCORD, MA 01742-2751

IPSWICH RIVER
IPSWICH, MASSACHUSETTS
CONDITION SURVEY

4-FOOT CHANNEL

SHEET ID

V-104



A5 PLAN - STA. 50+00 TO STA. 64+00

SCALE: 1" = 50'

0 50' 100'

NOTE:
FOR GENERAL NOTES SEE SHEET G-001.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DWN BY: SWK | CHK BY: WHW
REVIEWED BY:
Asst. Chief, Survey Sec.
APPROVED BY:
Fcr Chief, Survey Section
SIZE: ANSI D | SCALE: 1:1
ISSUE DATE: JUNE 15, 2017
DRAWING CODE: DR-45
SHEET 6 OF 14

U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 VIRGINIA ROAD
CONCORD, MA 01742-2751

IPSWICH RIVER
IPSWICH, MASSACHUSETTS
CONDITION SURVEY

4-FOOT CHANNEL

SHEET ID

V-105

A5 PLAN - STA. 64+00 TO STA. 73+00

SCALE: 1" = 50'

0 50' 100'

NOTE:

FOR GENERAL NOTES SEE SHEET G-001.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DWN BY: SWK | CHK BY: WHW | ISSUE DATE: JUNE 15, 2017

REVIEWED BY: WALKER, WILLIAM H. Digitally signed by WALKER, WILLIAM H. DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USA, cn=WALKER, WILLIAM H. 1230577903 Date: 2017.06.15 08:37:00 -04'00' Asst. Chief, Survey Sec.

APPROVED BY: WALKER, WILLIAM H. Digitally signed by WALKER, WILLIAM H. DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USA, cn=WALKER, WILLIAM H. 1230577903 Date: 2017.06.15 08:37:00 -04'00' For: Chief, Survey Section

DRAWING CODE: DS-45

SIZE: ANSI D | SCALE: 1:1 | SHEET 7 OF 14

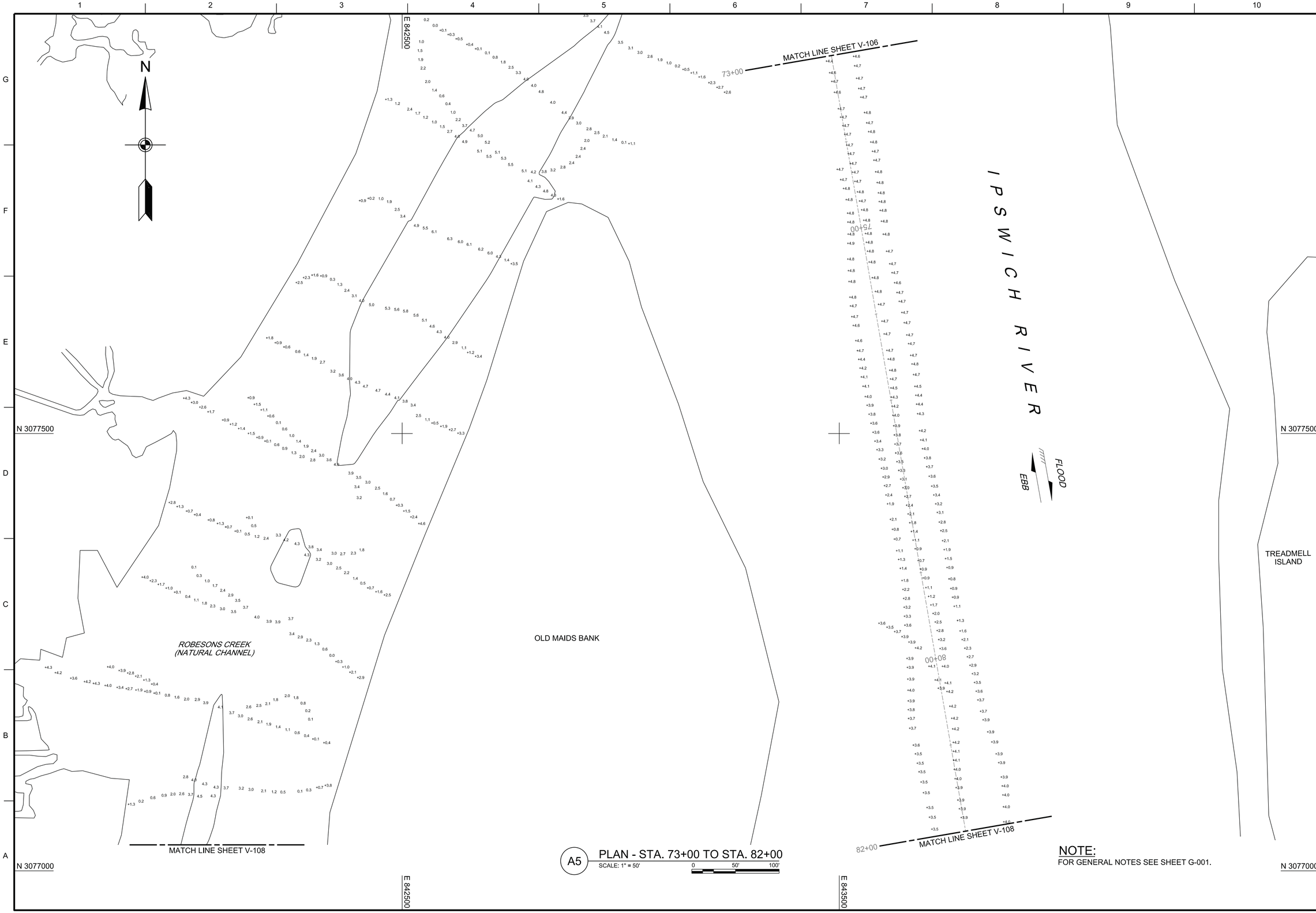
U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 VIRGINIA ROAD
CONCORD, MA 01742-2751

IPSWICH RIVER
IPSWICH, MASSACHUSETTS
CONDITION SURVEY

4-FOOT CHANNEL

SHEET ID

V-106



A5 PLAN - STA. 73+00 TO STA. 82+00

SCALE: 1" = 50'

0 50' 100'

NOTE:

FOR GENERAL NOTES SEE SHEET G-001.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: JUNE 15, 2017

DWN BY: SWK | CHK BY: WHW

REVIEWED BY: WALKER, WILLIAM H. JR. CIV

Asst. Chief, Survey Sec.

APPROVED BY:

DRAWING CODE: IPS-45

SHEET 8 OF 14

Eng. Chief, Survey Section

SIZE: ANSI D | SCALE: 1:1

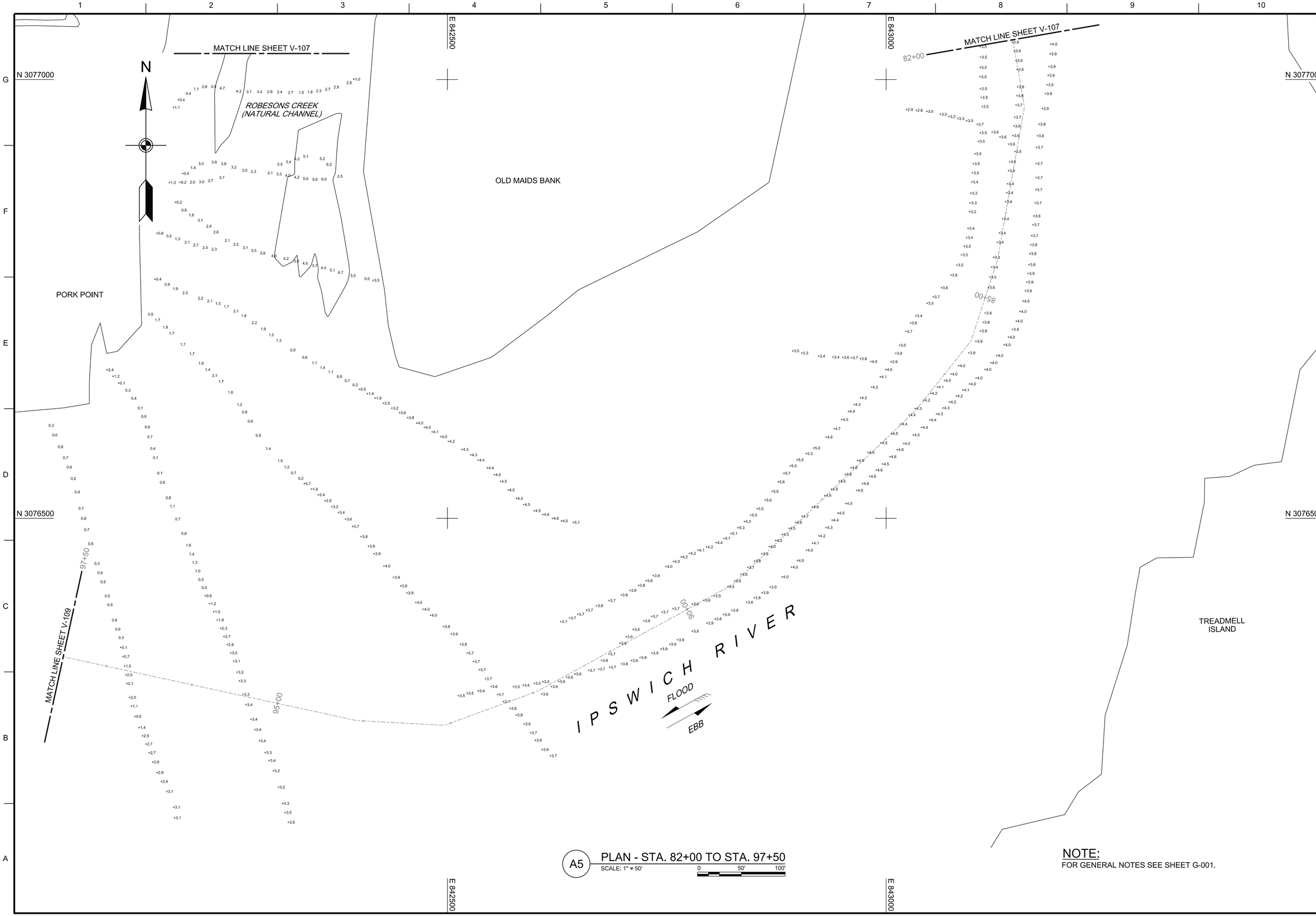
U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 VIRGINIA ROAD
CONCORD, MA 01742-2751

IPSWICH RIVER
IPSWICH, MASSACHUSETTS
CONDITION SURVEY

4-FOOT CHANNEL

SHEET ID

V-107



A5 PLAN - STA. 82+00 TO STA. 97+50

SCALE: 1" = 50'

0 50' 100'

NOTE:

FOR GENERAL NOTES SEE SHEET G-001.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DWN BY: SWK
CHK BY: WHW
REVIEWED BY: WALKER, WILLIAM H. (WILLIAM.H.WALKER@USACE.ARMY.MIL)
Asst. Chief, Survey Sec.
APPROVED BY: WALKER, WILLIAM H. (WILLIAM.H.WALKER@USACE.ARMY.MIL)
For Chief, Survey Section
SIZE: ANSI D
ISSUE DATE: JUNE 15, 2017
DRAWING CODE: IPS-45
SHEET 9 OF 14
SCALE: 1:1

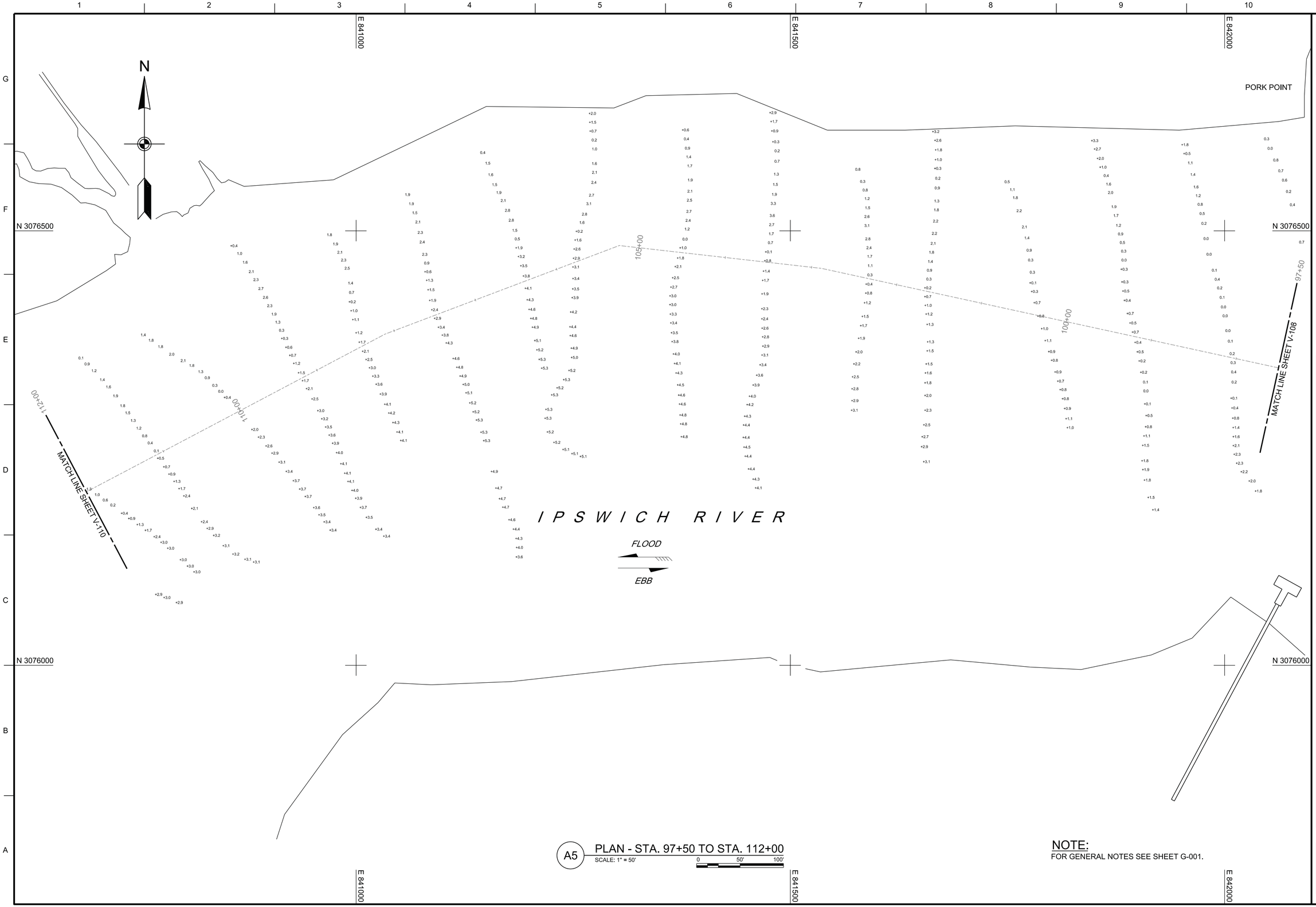
U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 VIRGINIA ROAD
CONCORD, MA 01742-2751

IPSWICH RIVER
IPSWICH, MASSACHUSETTS
CONDITION SURVEY

4-FOOT CHANNEL

SHEET ID

V-108



A5 PLAN - STA. 97+50 TO STA. 112+00

SCALE: 1" = 50'

0 50' 100'

NOTE:
FOR GENERAL NOTES SEE SHEET G-001.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 VIRGINIA ROAD
CONCORD, MA 01742-2751

DWN BY: SWK
CHK BY: WHW
REVIEWED BY: WALKER, WILLIAM H. LOPEZ, ROBERT J. Digitally signed by WALKER.WILLIAM.H.1229577960 Date: 2017.06.15 08:27:37 -04'00' Asst. Chief, Survey Sec.
APPROVED BY: WALKER, WILLIAM H. JR.1229577960 Digitally signed by WALKER.WILLIAM.H.JR.1229577960 Date: 2017.06.15 08:27:52 -04'00' For: Chief, Survey Section
SIZE: ANSI D
ISSUE DATE: JUNE 15, 2017
DRAWING CODE: IPS-45
SCALE: 1:1
SHEET 10 OF 14

IPSWICH RIVER
IPSWICH, MASSACHUSETTS
CONDITION SURVEY

4-FOOT CHANNEL

SHEET ID

V-109

A5 PLAN - STA. 112+00 TO STA. 122+50

SCALE: 1" = 50'

0 50' 100'

NOTE:
FOR GENERAL NOTES SEE SHEET G-001.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DWN BY: SWK | CHK BY: WHW | ISSUE DATE: JUNE 15, 2017

REVIEWED BY: VIRALKER.WILLIAM.H.1230917060 | DRAWING CODE: DR3-45

Asst. Chief, Survey Sec.

APPROVED BY: WALKER.WILLIAM.H.1230917060 | SHEET 11 OF 14

For Chief, Survey Section

SIZE: ANSI D | SCALE: 1:1

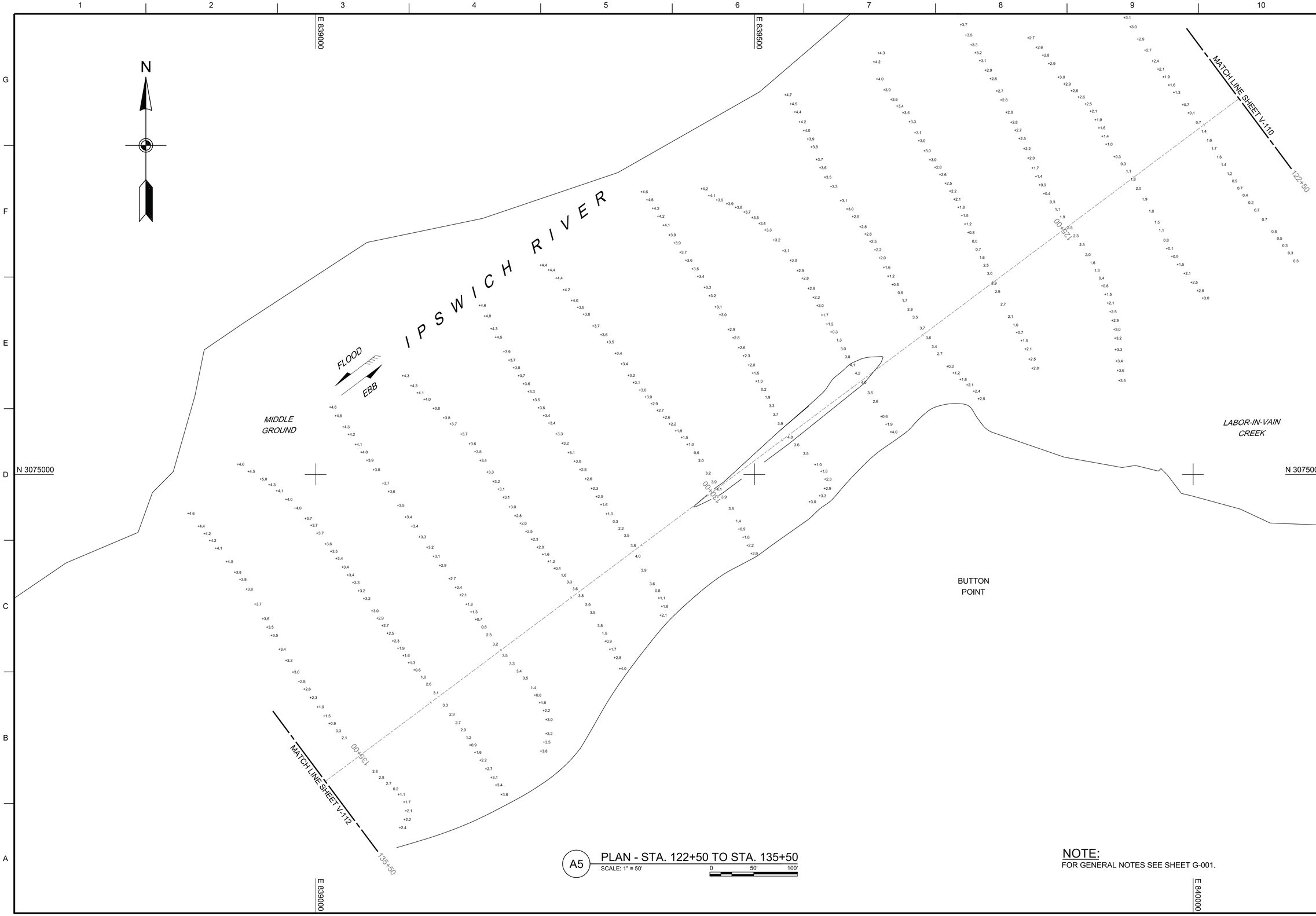
U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 VIRGINIA ROAD
CONCORD, MA 01742-2751

IPSWICH RIVER
IPSWICH, MASSACHUSETTS
CONDITION SURVEY

4-FOOT CHANNEL

SHEET ID

V-110



A5 PLAN - STA. 122+50 TO STA. 135+50

SCALE: 1" = 50'

0 50' 100'

NOTE:

FOR GENERAL NOTES SEE SHEET G-001.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: JUNE 15, 2017

DWN BY: SWK | CHK BY: WHW

REVIEWED BY: WALKER, WILLIAM H. LOCKE, DAVID W. Asst. Chief, Survey Sec.

APPROVED BY: MULHEARN, PAUL E. 12/08/17 09:00 For: Chief, Survey Section

DRAWING CODE: DR-45

SIZE: ANSI D | SCALE: 1:1

SHEET 12 OF 14

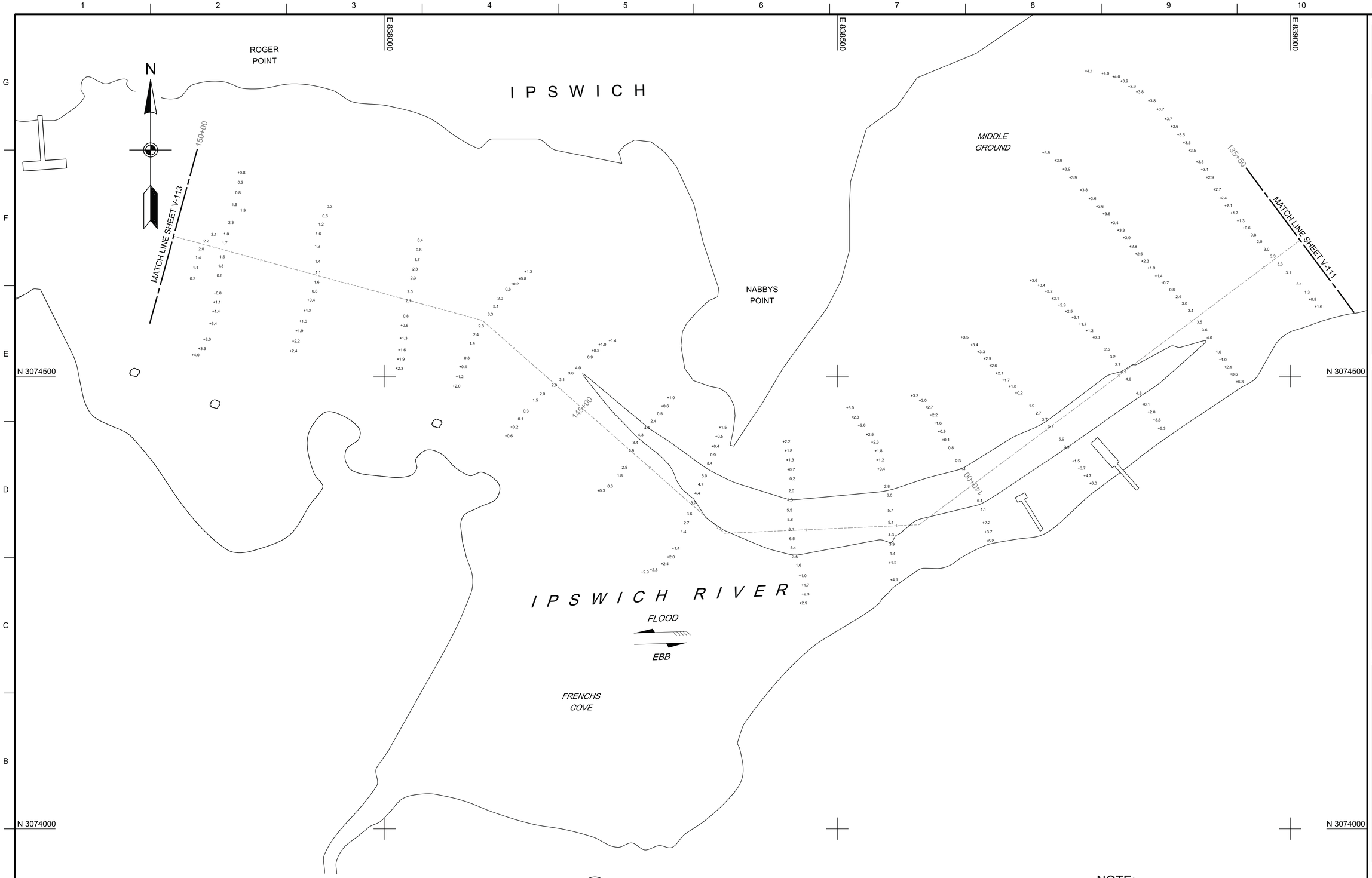
U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 VIRGINIA ROAD
CONCORD, MA 01742-2751

IPSWICH RIVER
IPSWICH, MASSACHUSETTS
CONDITION SURVEY

4-FOOT CHANNEL

SHEET ID

V-111



A5 PLAN - STA. 135+50 TO STA. 150+00

SCALE: 1" = 50'

0 50' 100'

NOTE:
FOR GENERAL NOTES SEE SHEET G-001.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 VIRGINIA ROAD
CONCORD, MA 01742-2751

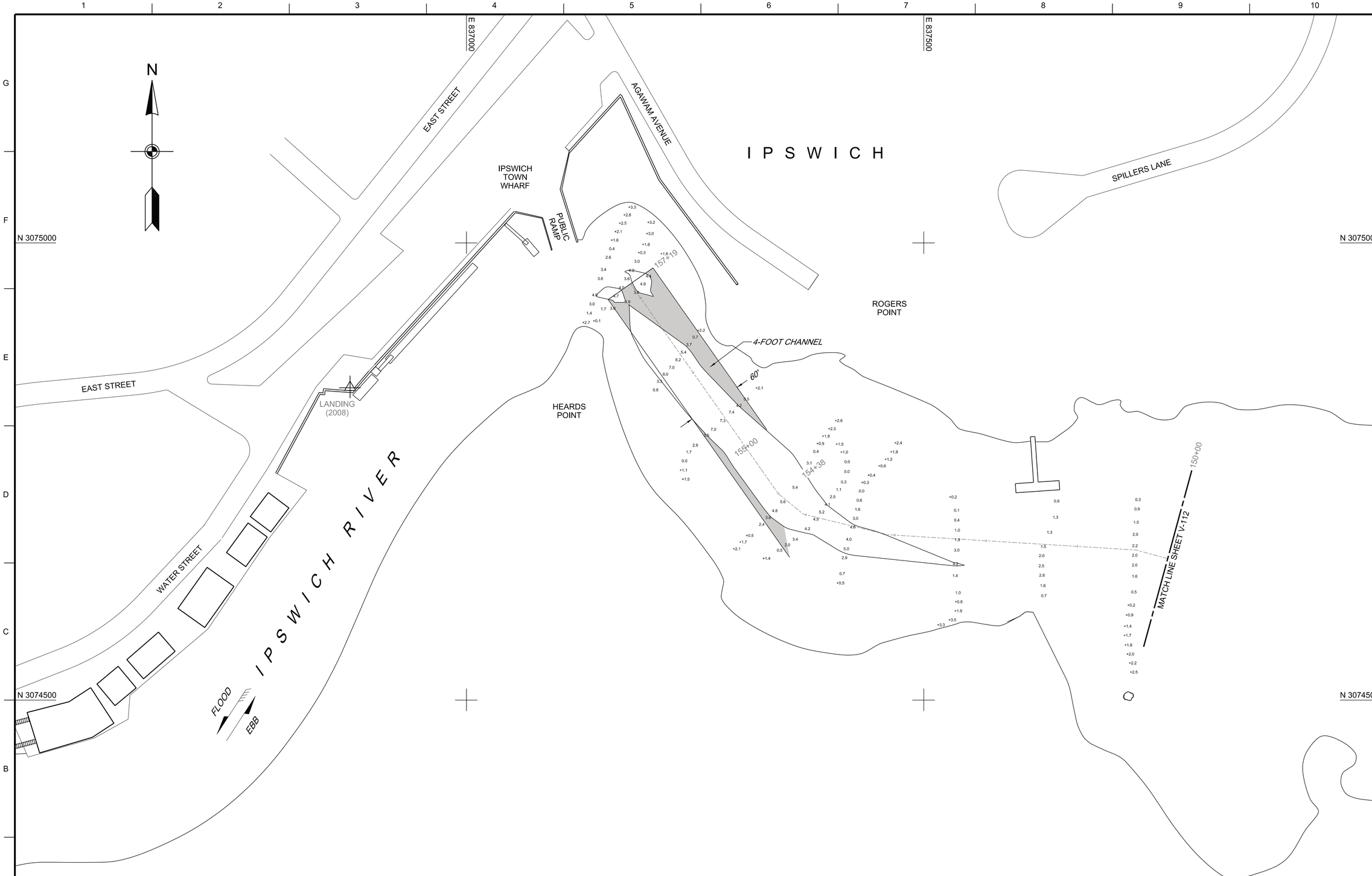
DWN BY: SWK
CHK BY: WHW
ISSUE DATE: JUNE 15, 2017
REVIEWED BY: WALKER, WILLIAM H. CIV (CENAE)
Asst. Chief, Survey Sec.
APPROVED BY: WALKER, WILLIAM H. CIV (CENAE)
For: Chief, Survey Section
DRAWING CODE: DS-45
SHEET 13 OF 14
SIZE: ANSI D
SCALE: 1:1

IPSWICH RIVER
IPSWICH, MASSACHUSETTS
CONDITION SURVEY

4-FOOT CHANNEL

SHEET ID

V-112



A5 PLAN - STA. 150+00 TO STA. 157+19

SCALE: 1" = 50'

0 50' 100'

NOTE:
FOR GENERAL NOTES SEE SHEET G-001.

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

ISSUE DATE: JUNE 15, 2017

DRAWING CODE: DS-45

SHEET 14 OF 14

DWN BY: SWK | CHK BY: WHW

REVIEWED BY: WALDEN, WILLIAM H. CONTRACTING OFFICER REPRESENTATIVE

Asst. Chief, Survey Sec.

APPROVED BY: WALDEN, WILLIAM H. COL, EN CONTRACTING OFFICER REPRESENTATIVE

For: Chief, Survey Section

SCALE: 1:1

SIZE: ANSI D

U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 VIRGINIA ROAD
CONCORD, MA 01742-2751

IPSWICH RIVER
IPSWICH, MASSACHUSETTS
CONDITION SURVEY

4-FOOT CHANNEL

SHEET ID

V-113