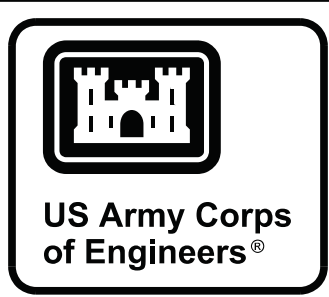


INDEX OF NAVIGATION AIDS			
NO.	DATE	STATE PLANE COORDINATES	GEOGRAPHIC POSITION
GC-11	05/06/16	N 3079270.43 E 848154.58	42°-41'-43.6"N 70°-47'-09.1"W
GC-1	05/06/16	N 3078618.22 E 848046.92	42°-41'-37.2"N 70°-47'-10.6"W
RN-2	05/06/16	N 3078774.27 E 847876.75	42°-41'-38.8"N 70°-47'-12.9"W
GC-5	05/06/16	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



DATE	DESCRIPTION

ISSUE DATE: JUNE 15, 2017	DRAWING CODE: IPS-45
CHK BY: MWM	APPROVED BY: [Signature]
SWK BY: [Signature]	For: Chief, Survey Section
REVISED BY: [Signature]	SCALE: 1" = 1'
DATE: 05/06/16	SHEET 1 OF 14

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

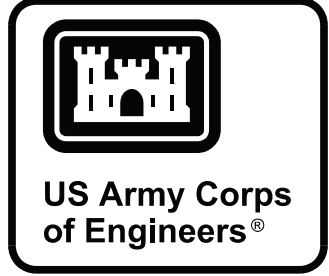
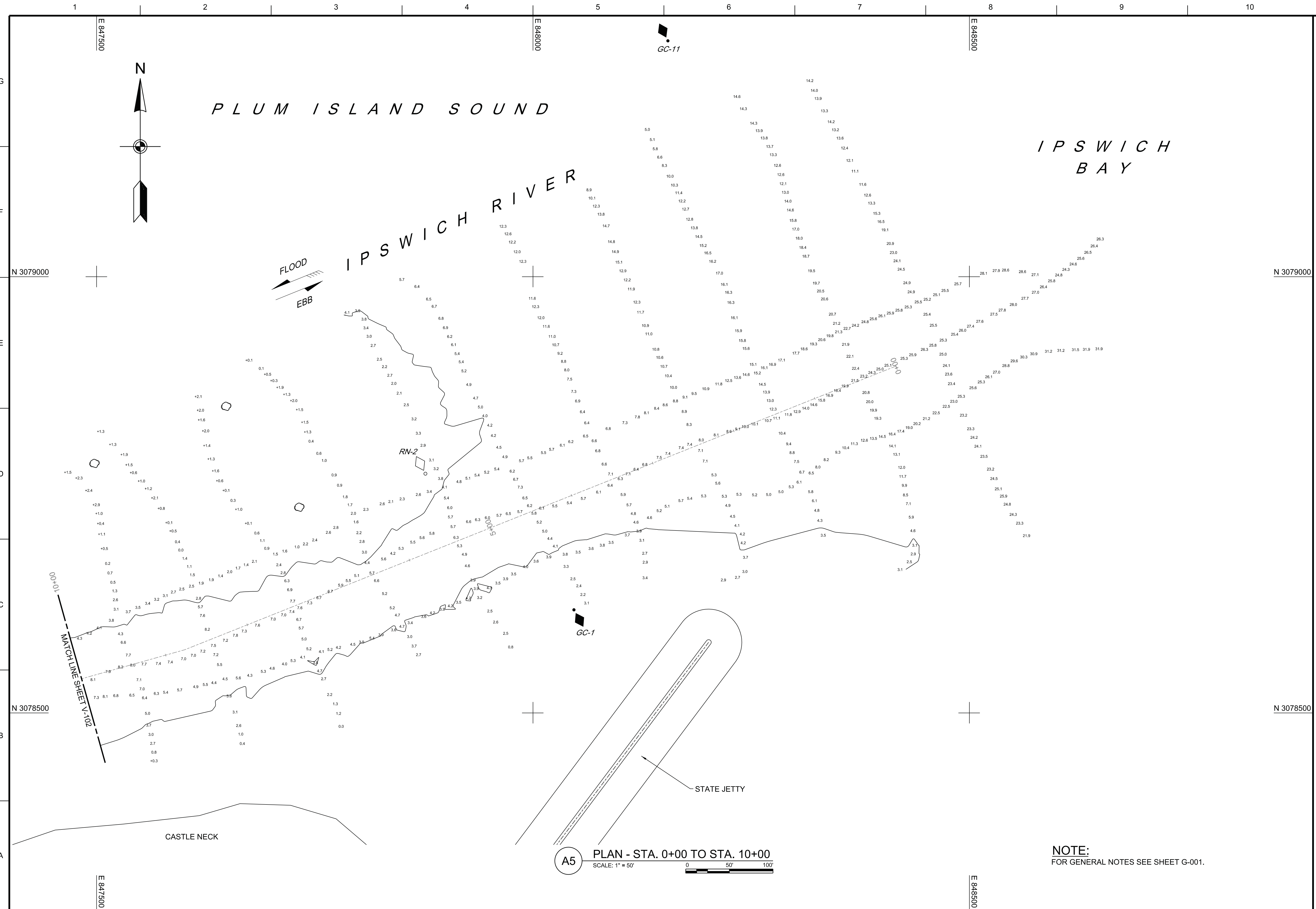
IPSWICH RIVER
IPSWICH, MASSACHUSETTS
CONDITION SURVEY

4-FOOT CHANNEL

SHEET ID
G-001

- GENERAL NOTES:**
- 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.
 - 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.
 - 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.
 - 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.
 - 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).
 - THE SOUNDING INFORMATION SHOWN ON THESE MAPS REPRESENTS THE SHOALEST SOUNDINGS OF THOSE OBTAINED FROM HYDROGRAPHIC SURVEYS CONDUCTED FROM DECEMBER 2015 THRU MAY 2016.
 - THE SOUNDING INFORMATION DEPICTED ON THESE MAPS SHOULD NOT BE USED TO DETERMINE VOLUMES. VOLUMES ARE DETERMINED FROM MORE SOUNDING INFORMATION THAN SHOWN.
 - 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.
 - 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'



DATE
MARK
DESCRIPTION

ISSUE DATE:	JUNE 15, 2017
DRAWING CODE:	IPS-45
FOR:	Chief, Survey Section
SIZE:	SCALE: 1:1
SHEET:	2 OF 14

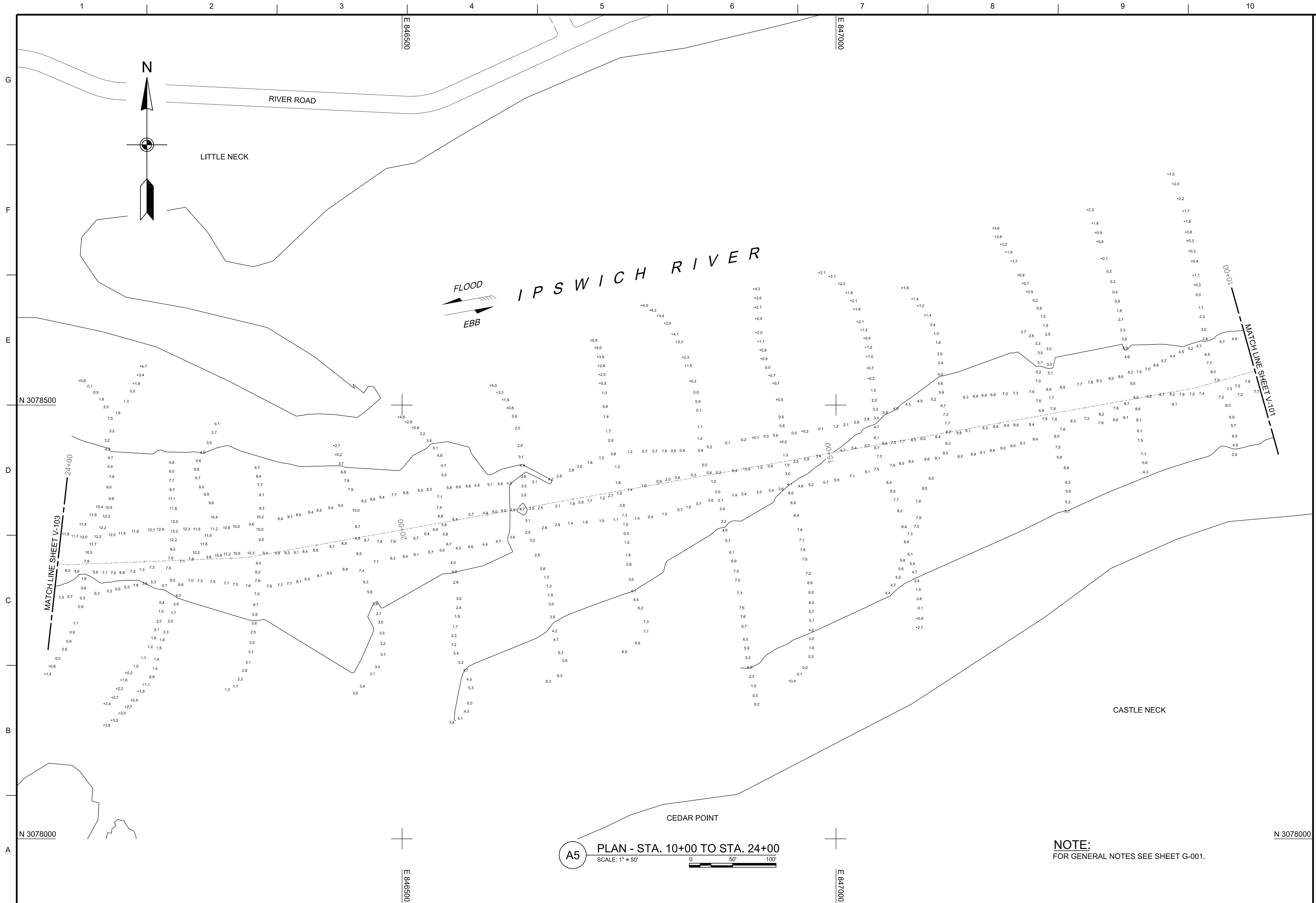
U.S. ARMY CORPS OF ENGINEERS
 NEW ENGLAND DISTRICT
 696 VIRGINIA ROAD
 CONCORD, MA 01742-2751

IPSWICH RIVER
 IPSWICH, MASSACHUSETTS
 CONDITION SURVEY

4-FOOT CHANNEL

SHEET ID
 V-101

NOTE:
 FOR GENERAL NOTES SEE SHEET G-001.

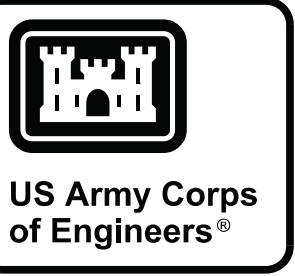


FLOOD
EBB

IPSWICH RIVER

A5 PLAN - STA. 10+00 TO STA. 24+00
SCALE: 1" = 50'

NOTE:
FOR GENERAL NOTES SEE SHEET G-001.



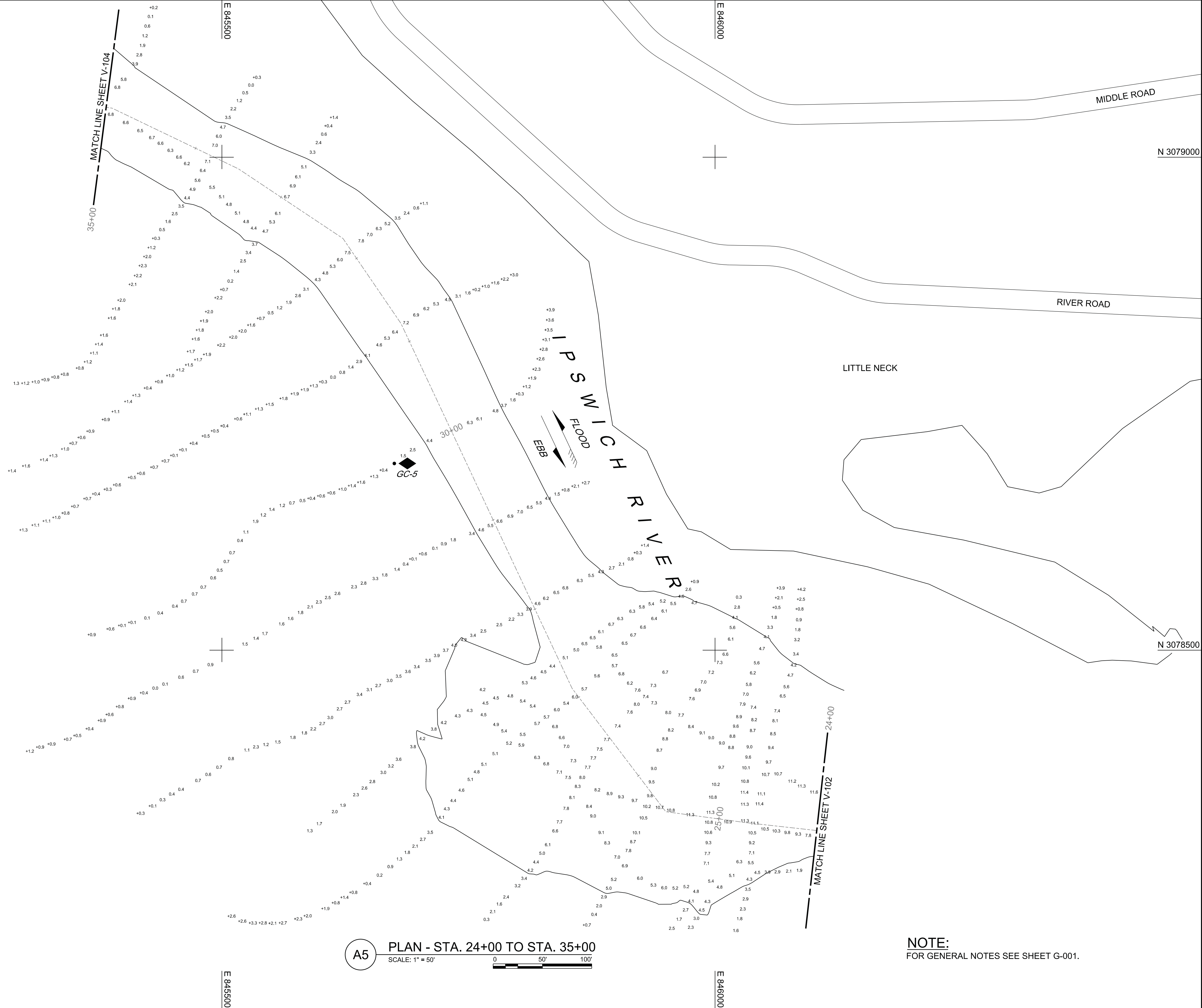
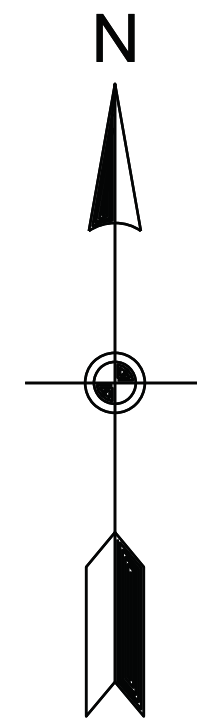
DATE	DESCRIPTION	MARK

DWG BY: <u>SWK</u> CHECK BY: <u>MRW</u>	ISSUE DATE: <u>JUNE 15, 2017</u>	DRAWING CODE: <u>IPS-45</u>
SWK REVIEWED BY: <u>WALTER W. MARSH, P.E.</u>	DATE: <u> </u>	SCALE: <u>1:1</u>
APPROVED BY: <u>Asst. Chief of Survey Sec.</u>	DATE: <u> </u>	SIZE: <u>AANSI D</u>
U.S. ARMY CORPS OF ENGINEERS NEW ENGLAND DISTRICT 696 VIRGINIA ROAD CONCORD, MA 01742-2751		
For Chief, Survey Section		
SHEET 3 OF 14		

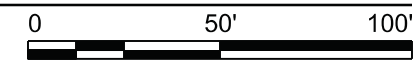
IPSWICH RIVER
IPSWICH, MASSACHUSETTS
CONDITION SURVEY

4-FOOT CHANNEL

1 2 3 4 5 6 7 8 9 10
G
F
E
D
C
B
A



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



NOTE:
FOR GENERAL NOTES SEE SHEET G-001.



US Army Corps
of Engineers®

DATE

DWN BY: SMW	CHK BY: MVM	ISSUE DATE: JUNE 15, 2017
DESIGNED BY: MVM	APPROVED BY: MVM	DRAWING CODE: IPS-45
DATE: JUN 15 2017	SCALE: 1:1	SHEET 4 OF 14

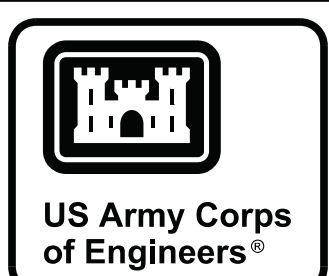
U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 VIRGINIA ROAD
CONCORD, MA 01742-2751

IPSWICH RIVER
IPSWICH, MASSACHUSETTS
CONDITION SURVEY

4-FOOT CHANNEL

SHEET ID
V-103

1 2 3 4 5 6 7 8 9 10



DATE	DESCRIPTION	MARK

DWN BY: CHK BY: SWK / MW	ISSUE DATE: JUNE 15, 2017
DESIGNED BY: WALTON WARD, INC.	DRAWING CODE: IPS-45
ASST. CHIEF SURVEY SEC. WALTER WARD, INC.	FOR: Chief, Survey Section
APPROVED BY: WALTER WARD, INC.	SCALE: 1:1
DATE:	SHEET: 5 OF 14

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

IPSWICH RIVER
IPSWICH, MASSACHUSETTS
CONDITION SURVEY

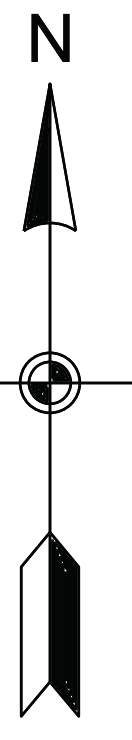
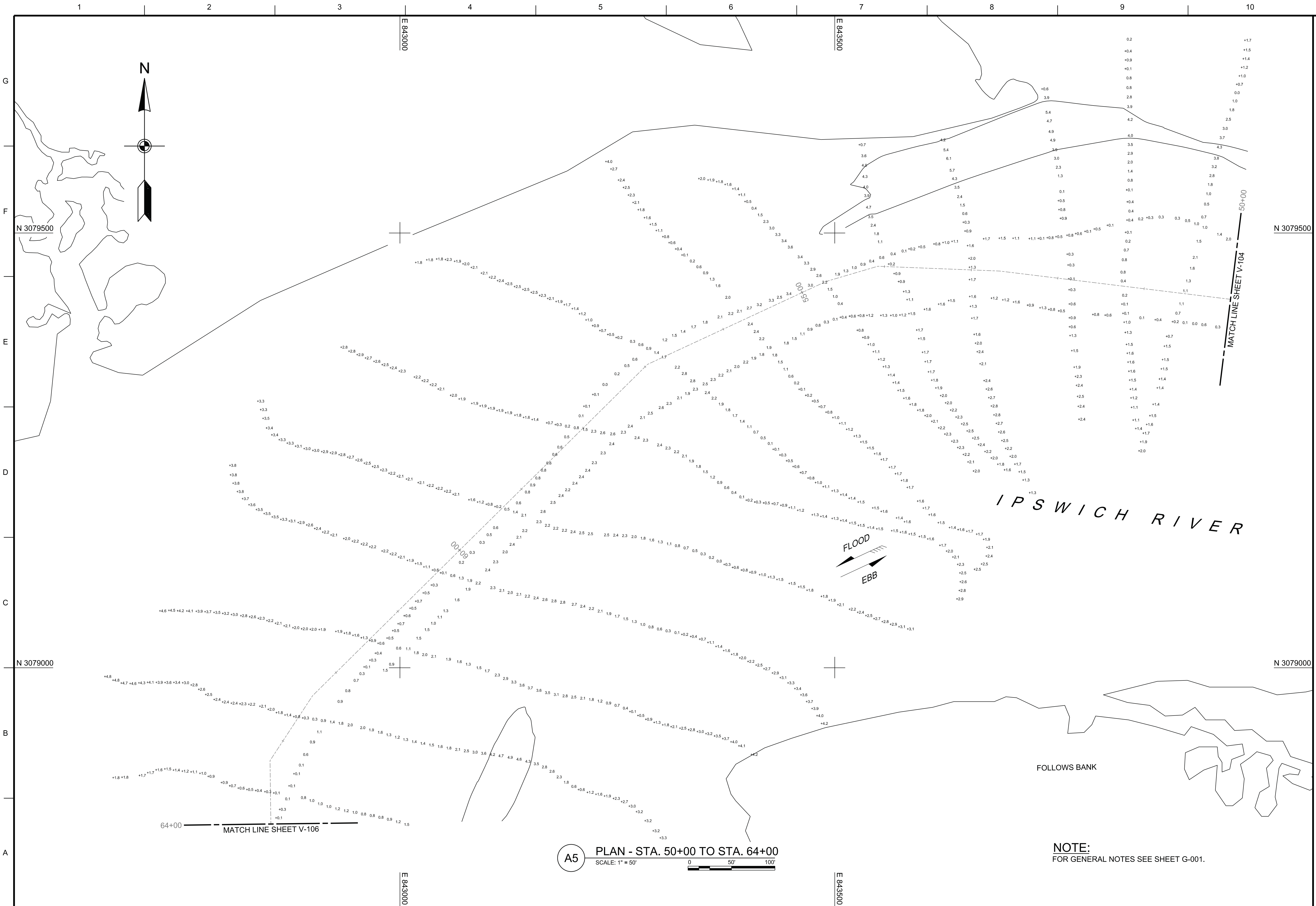
4-FOOT CHANNEL

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

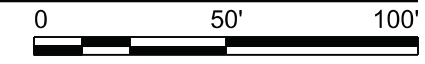


NOTE:
FOR GENERAL NOTES SEE SHEET G-001.

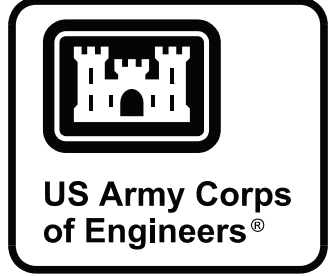
SHEET ID
V-104



A5 PLAN - STA. 50+00 TO STA. 64+00
SCALE: 1" = 50'



NOTE:
FOR GENERAL NOTES SEE SHEET G-001.



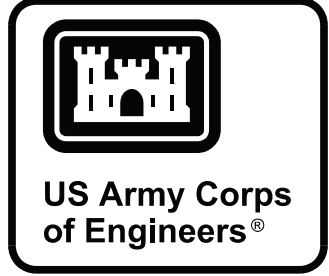
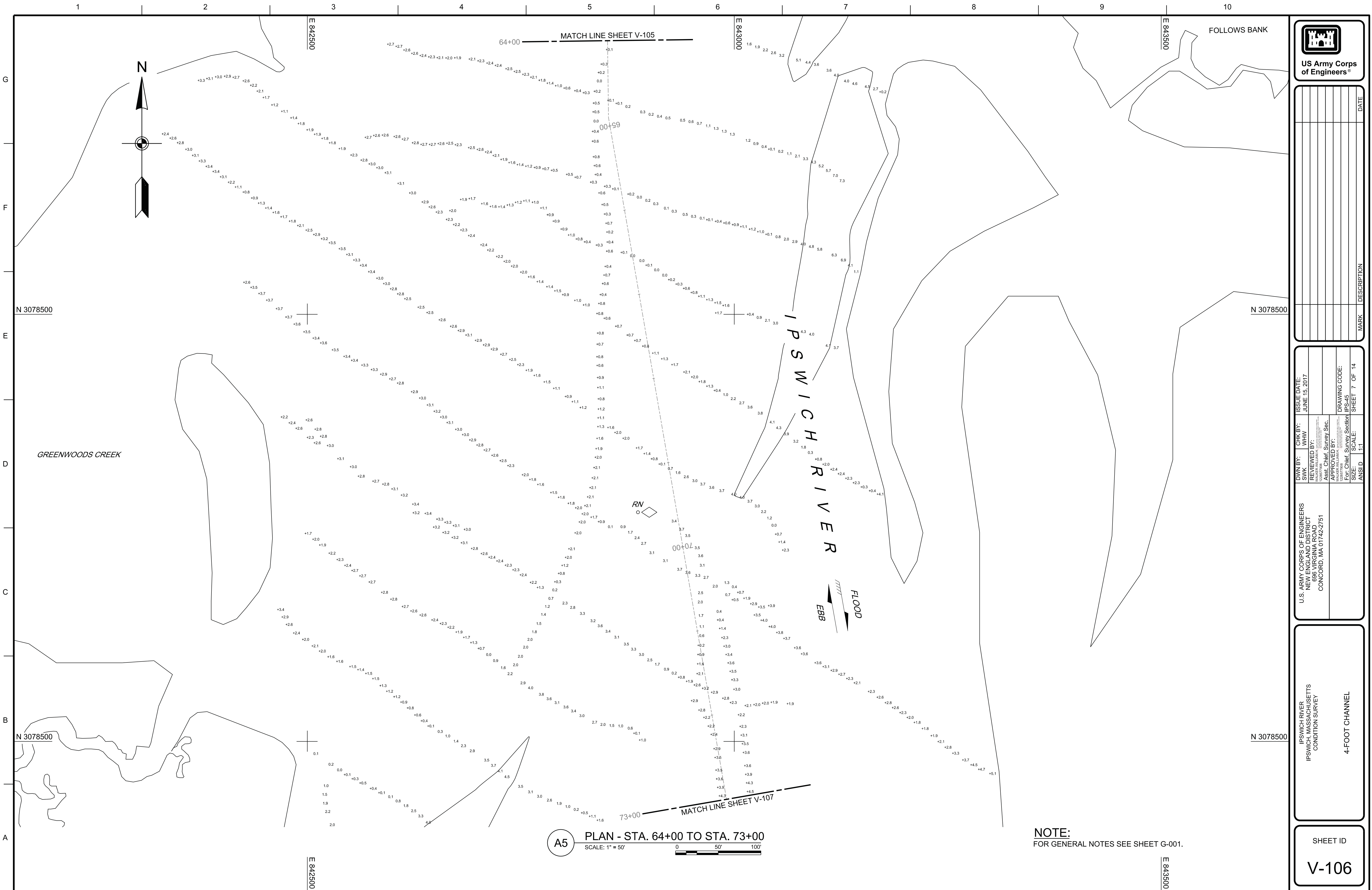
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DWN BY: SWK	CHK BY: MRW	ISSUE DATE: JUNE 15, 2017
ASST. CHIEF SURVEY SEC. APPROVED BY:	FOR CHIEF SURVEY SECTION IPS-45	DRAWING CODE: SHEET 6 OF 14
U.S. ARMY CORPS OF ENGINEERS NEW ENGLAND DISTRICT 696 VIRGINIA ROAD CONCORD, MA 01742-2751		SIZE: SCALE: ANSI:

IPSWICH RIVER
IPSWICH, MASSACHUSETTS
CONDITION SURVEY

4-FOOT CHANNEL

SHEET ID
V-105



DATE	DESCRIPTION	MARK

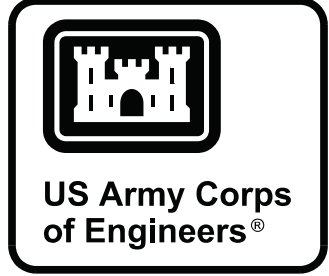
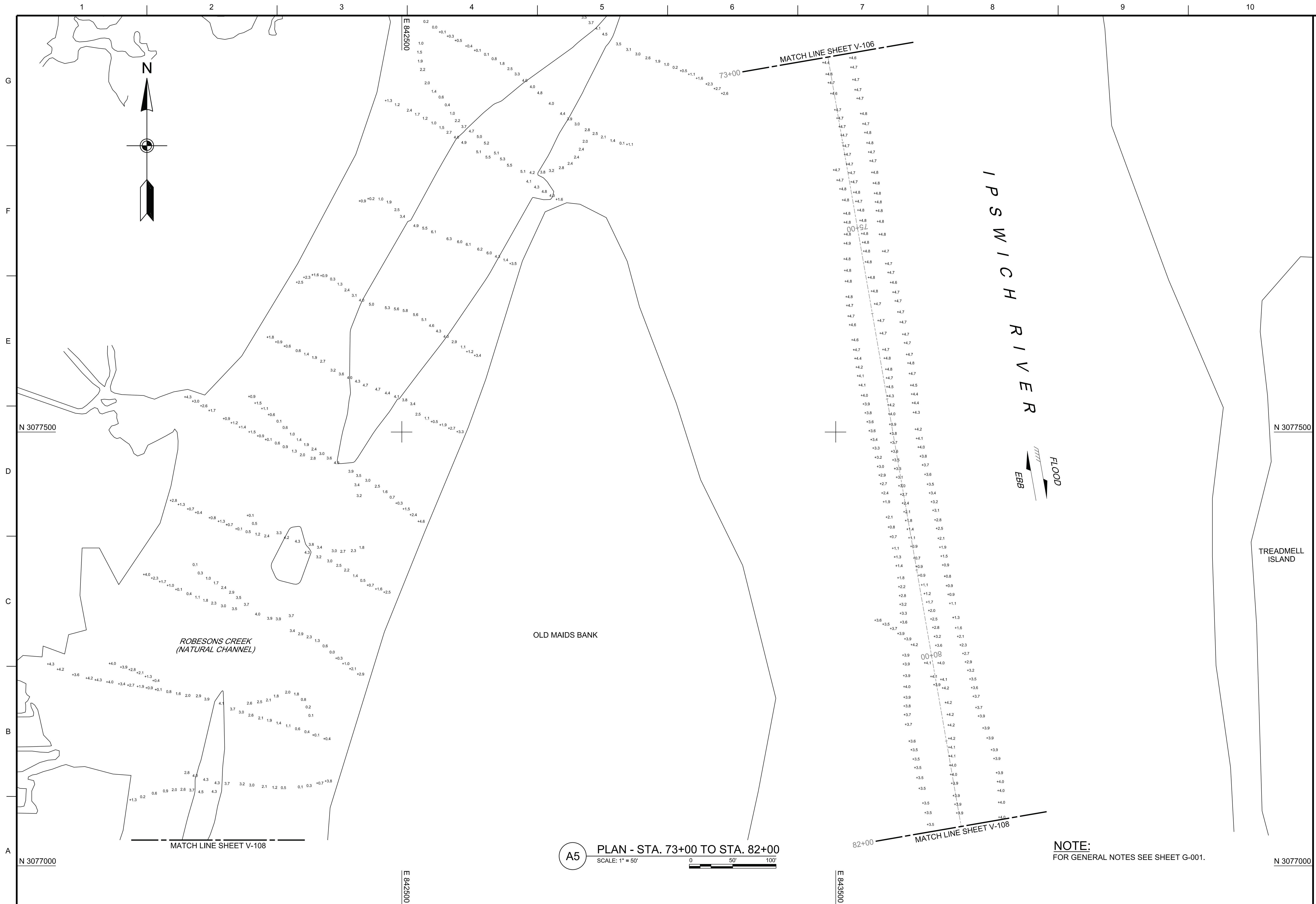
U.S. ARMY CORPS OF ENGINEERS NEW ENGLAND DISTRICT 696 VIRGINIA ROAD CONCORD, MA 01742-2751	DWN BY: MRM SWR REVIEWED BY: MRM DATE: JUNE 15, 2017	ISSUE DATE: JUNE 15, 2017
	ASST. CHIEF SURVEY SEC. APPROVED BY: For: Chief, Survey Section	DRAWING CODE: IPS-45 SHEET 7 OF 14
SCALE: 1" = 50' ANS/I: 1:1		SIZE: 11" x 17"

IPSWICH RIVER IPSWICH, MASSACHUSETTS CONDITION SURVEY	4-FOOT CHANNEL
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A5 PLAN - STA. 64+00 TO STA. 73+00
 SCALE: 1" = 50'



NOTE:
 FOR GENERAL NOTES SEE SHEET G-001.

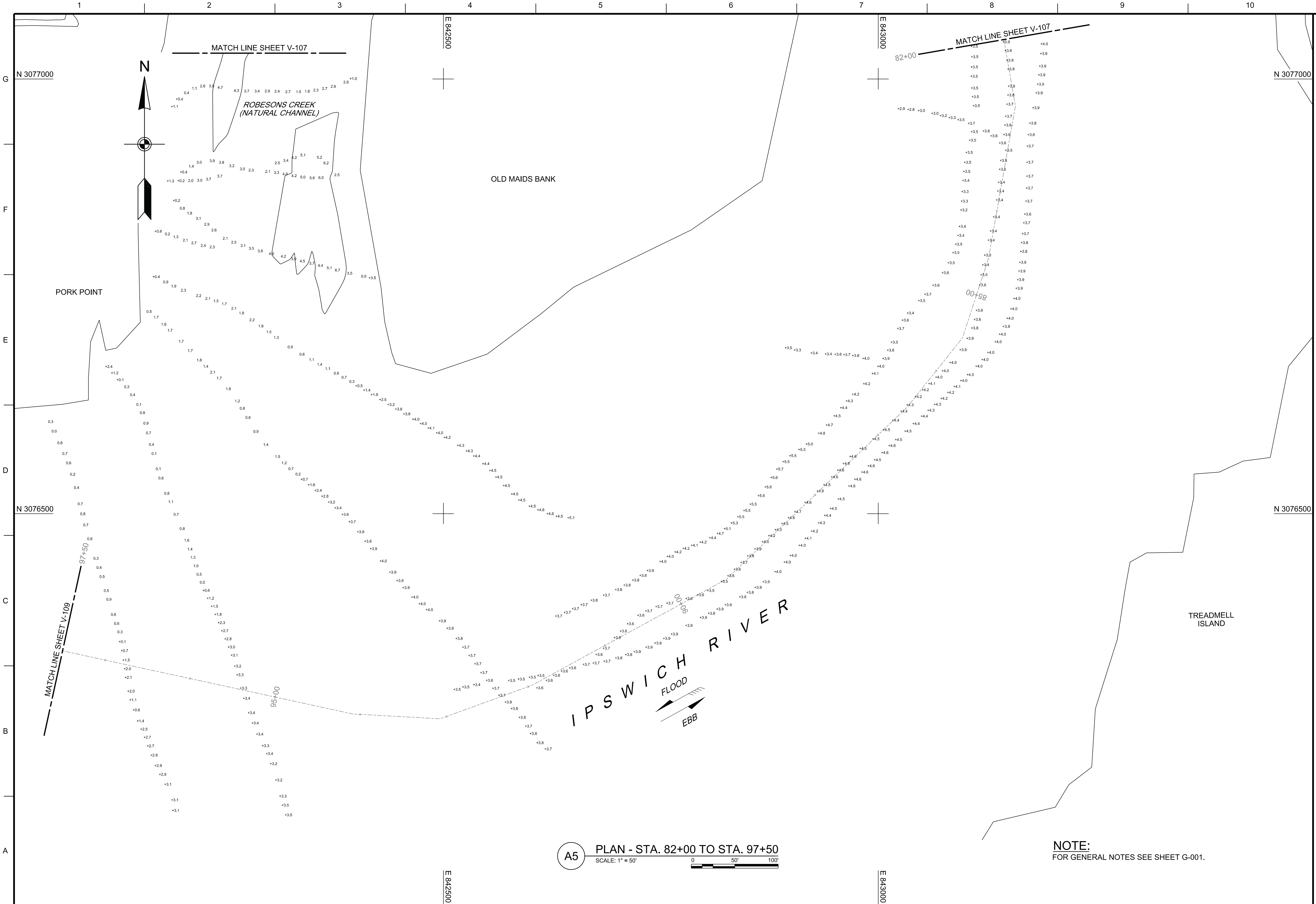


MARK	DESCRIPTION	DATE

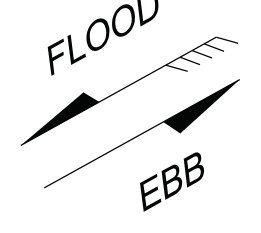
DWN BY: SWM/REVIEW BY: WATERWAY MARKED BY: ASST. CHIEF SURVEY SEC. APPROVED BY:	CHK BY: MWM	ISSUE DATE: JUNE 15, 2017	DRAWING CODE: IPS-45 SHEET 8 OF 14
U.S. ARMY CORPS OF ENGINEERS NEW ENGLAND DISTRICT 696 VIRGINIA ROAD CONCORD, MA 01742-2751		For Chief, Survey Section	SCALE: ANSI/D 1:1

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'



NOTE:
FOR GENERAL NOTES SEE SHEET G-001.



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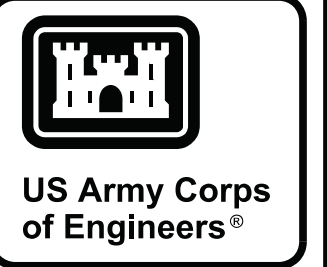
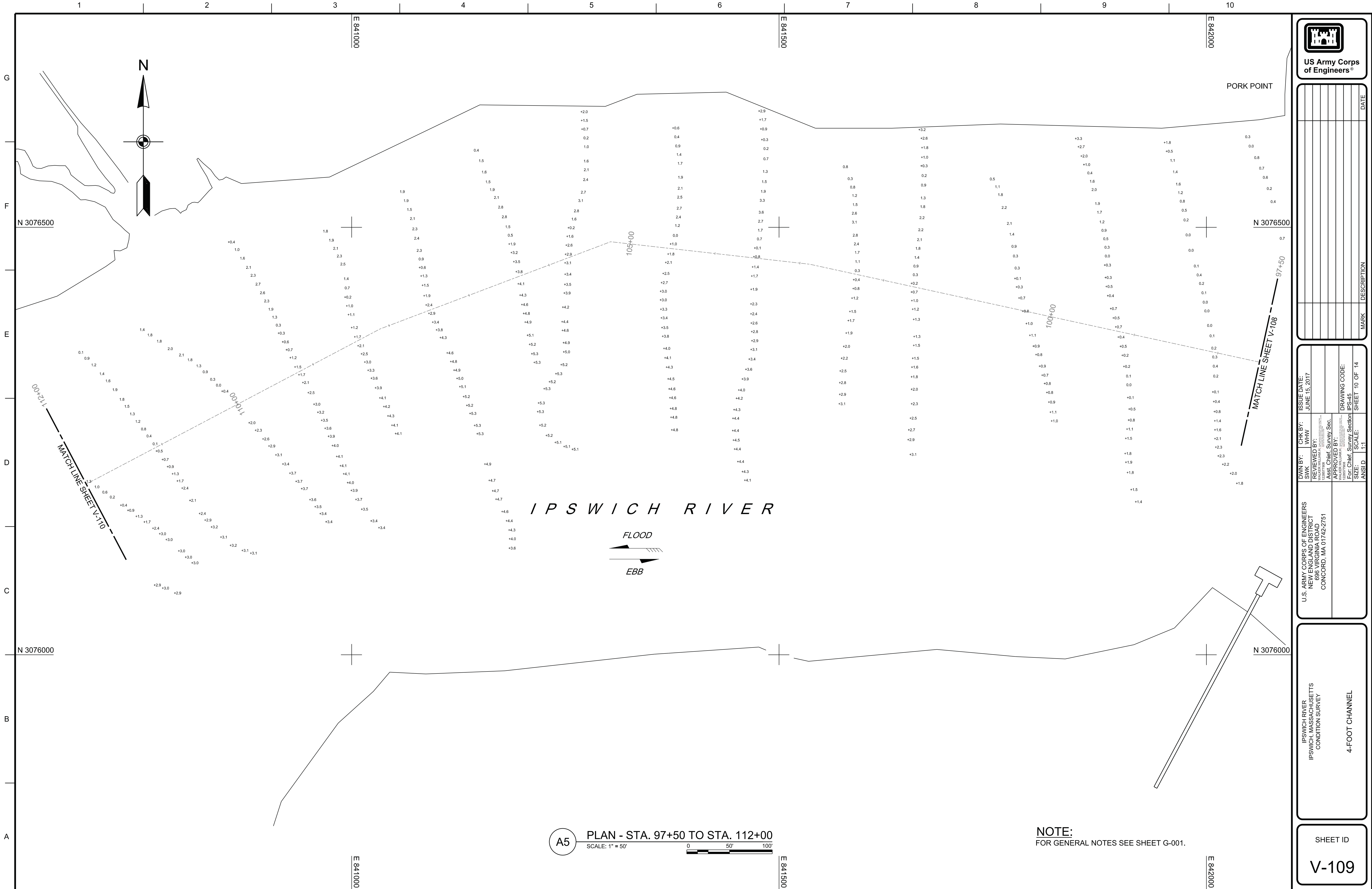
DATE	DESCRIPTION	MARK

DWN BY:	CHK BY:	ISSUE DATE:
SWK	MW	JUNE 15, 2017
REVIEWED BY:	APPROVED BY:	DRAWING CODE:
MARSHALL	WALSH	IPS-45
Asst. Chief Survey Sec.	For Chief Survey Section	SHEET 9 OF 14
SIZE:	SCALE:	
AANSI	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



MARK	DESCRIPTION	DATE

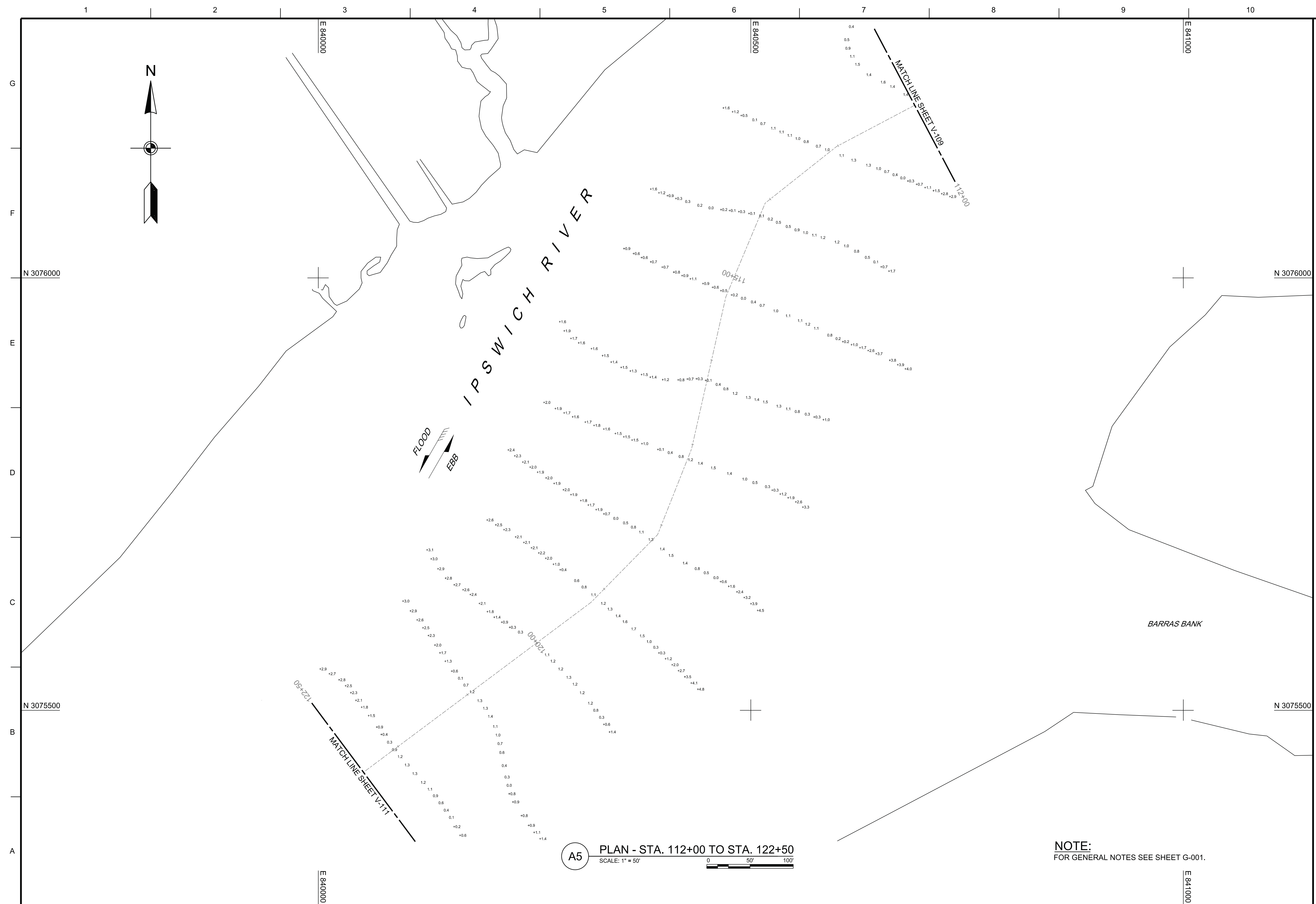
U.S. ARMY CORPS OF ENGINEERS
 NEW ENGLAND DISTRICT
 696 VIRGINIA ROAD
 CONCORD, MA 01742-2751

DWN BY: MKW
 SWM REVIEWED BY: MKW
 ASSIST. CHIEF SURVEY SEC.: MKW
 APPROVED BY: MKW
 FOR: Chief, Survey Section

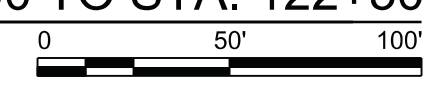
ISSUE DATE: JUNE 15, 2017
 DRAWING CODE: IPS-45
 SHEET 10 OF 14
 SCALE: 1:1

IPSWICH RIVER
 IPSWICH, MASSACHUSETTS
 CONDITION SURVEY
 4-FOOT CHANNEL

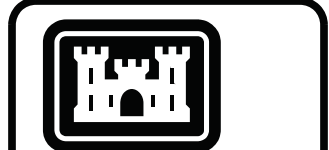
SHEET ID
V-109



A5 PLAN - STA. 112+00 TO STA. 122+50
SCALE: 1" = 50'



NOTE:
FOR GENERAL NOTES SEE SHEET G-001.



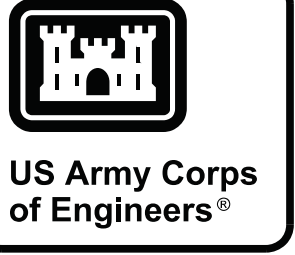
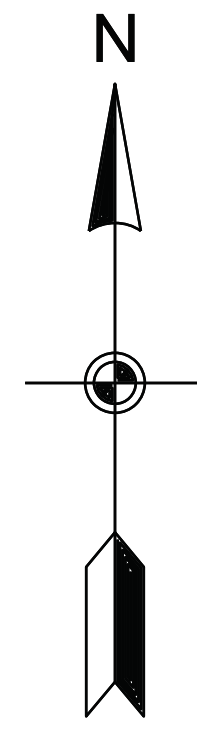
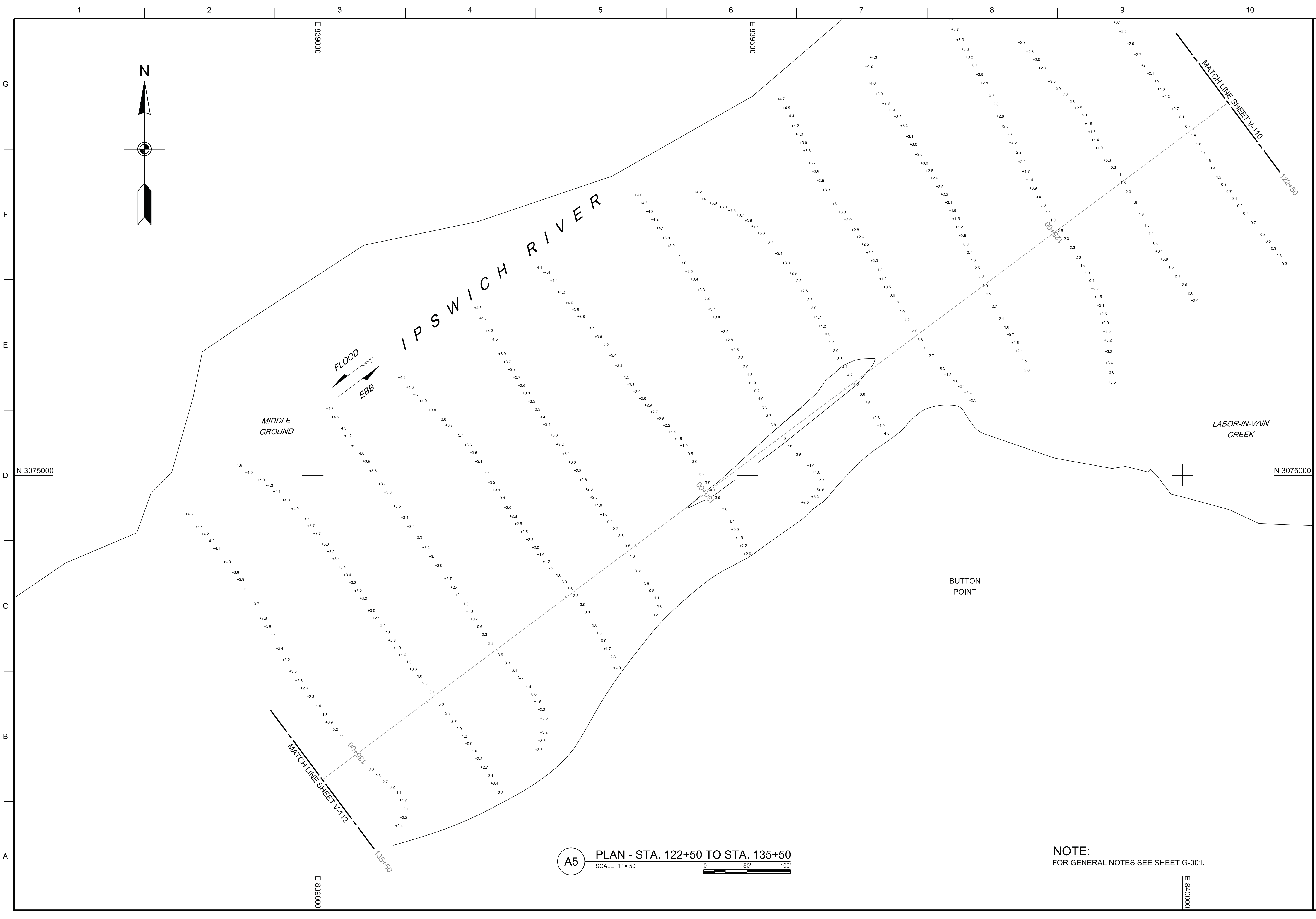
US Army Corps
of Engineers®

DATE	DESCRIPTION	MARK

DWN BY: SKM	CHK BY: MRW	ISSUE DATE: JUNE 15, 2017
APPROVED BY: WALTER W. JARH	APPROVED BY: WALTER W. JARH	DRAWING CODE: IPS-45
U.S. ARMY CORPS OF ENGINEERS NEW ENGLAND DISTRICT 696 VIRGINIA ROAD CONCORD, MA 01742-2751		SHEET 11 OF 14
IPSWICH RIVER IPSWICH, MASSACHUSETTS CONDITION SURVEY		SCALE: ANSI/D 1:1

4-FOOT CHANNEL

SHEET ID
V-110



MARK	DESCRIPTION

ISSUE DATE: JUNE 15, 2017	DRAWING CODE: IPS-45
CHK BY: MRW	APPROVED BY: [Signature]
SWR BY: [Signature]	FOR CHIEF, SURVEY SECTION: [Signature]
SCALE: 1:1	SHEET 12 OF 14
U.S. ARMY CORPS OF ENGINEERS NEW ENGLAND DISTRICT 686 VIRGINIA ROAD CONCORD, MA 01742-2751	

IPSWICH RIVER
IPSWICH, MASSACHUSETTS
CONDITION SURVEY

4-FOOT CHANNEL

SHEET ID
V-111

NOTE:
FOR GENERAL NOTES SEE SHEET G-001.

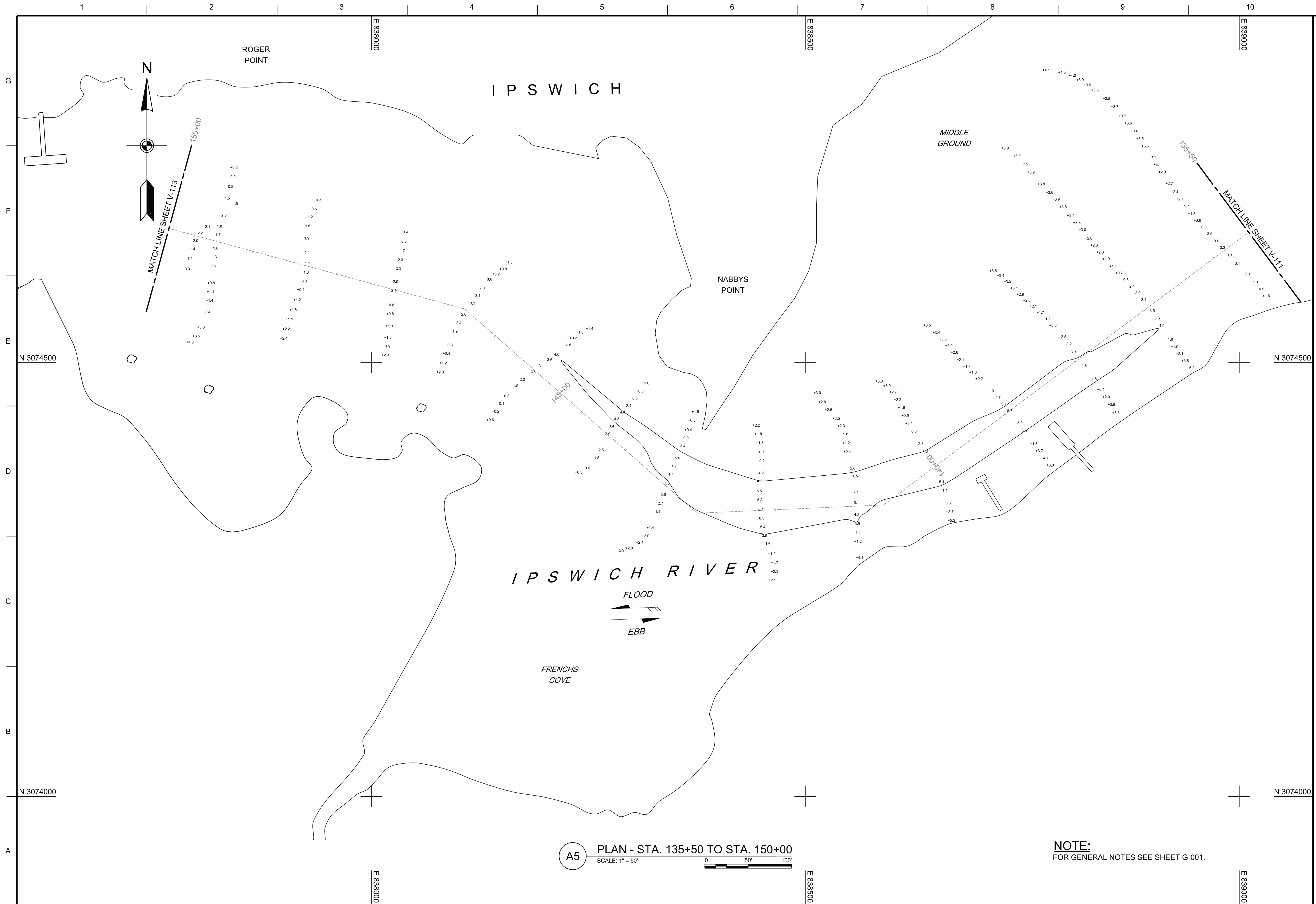
A5 PLAN - STA. 122+50 TO STA. 135+50
SCALE: 1" = 50'

E 840000

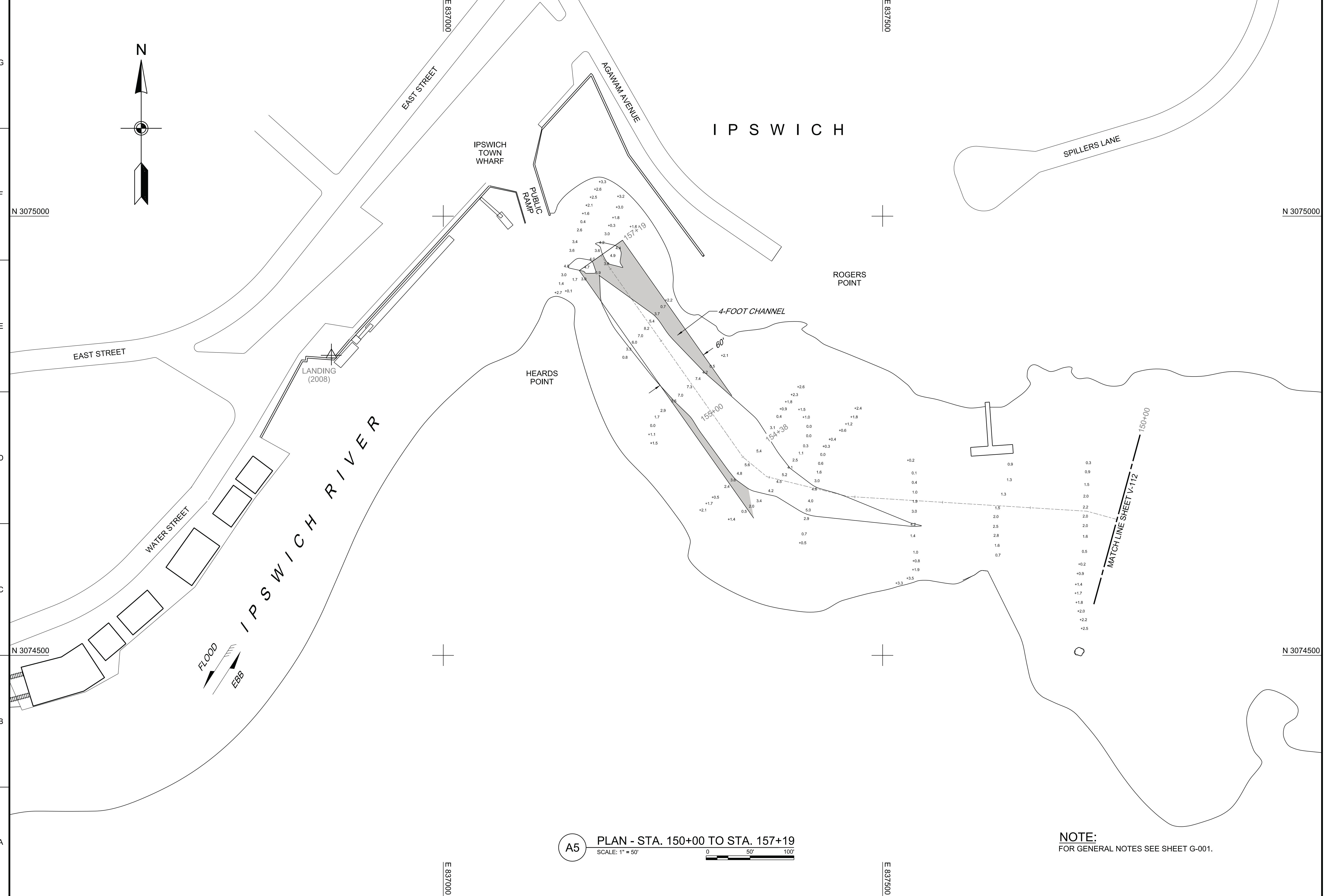
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N 3075000



US Army Corps of Engineers®	
ISSUE DATE: JUNE 15, 2017	DATE
DWN BY: CHK BY: SWR REVIEWED BY: WATERWAY MARKING UNIT	DESCRIPTION
APPROVED BY: WATERWAY MARKING UNIT For Chief, Survey Section	MARK
DRAWING CODE: IPS-45	DATE
SIZE: ANSI D	DESCRIPTION
SCALE: 1:1	DATE
SHEET 13 OF 14	DESCRIPTION
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-112	



US Army Corps of Engineers

MARK	DESCRIPTION	DATE

DWN BY: SWM	CHK BY: MWM	ISSUE DATE: JUNE 15, 2017
DESIGNED BY: MWM	APPROVED BY: WALTER W. LAMB, Asst. Chief Survey Sec.	DRAWING CODE: IPS-45
FOR: Chief, Survey Section		SHEET 14 OF 14
SIZE: ANSI D	SCALE: 1:1	

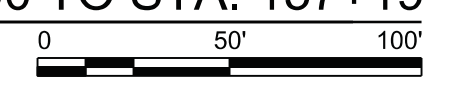
U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 VIRGINIA ROAD
CONCORD, MA 01742-2751

IPSWICH RIVER
IPSWICH, MASSACHUSETTS
CONDITION SURVEY

4-FOOT CHANNEL

SHEET ID
V-113

A5 PLAN - STA. 150+00 TO STA. 157+19
SCALE: 1" = 50'



NOTE:
FOR GENERAL NOTES SEE SHEET G-001.