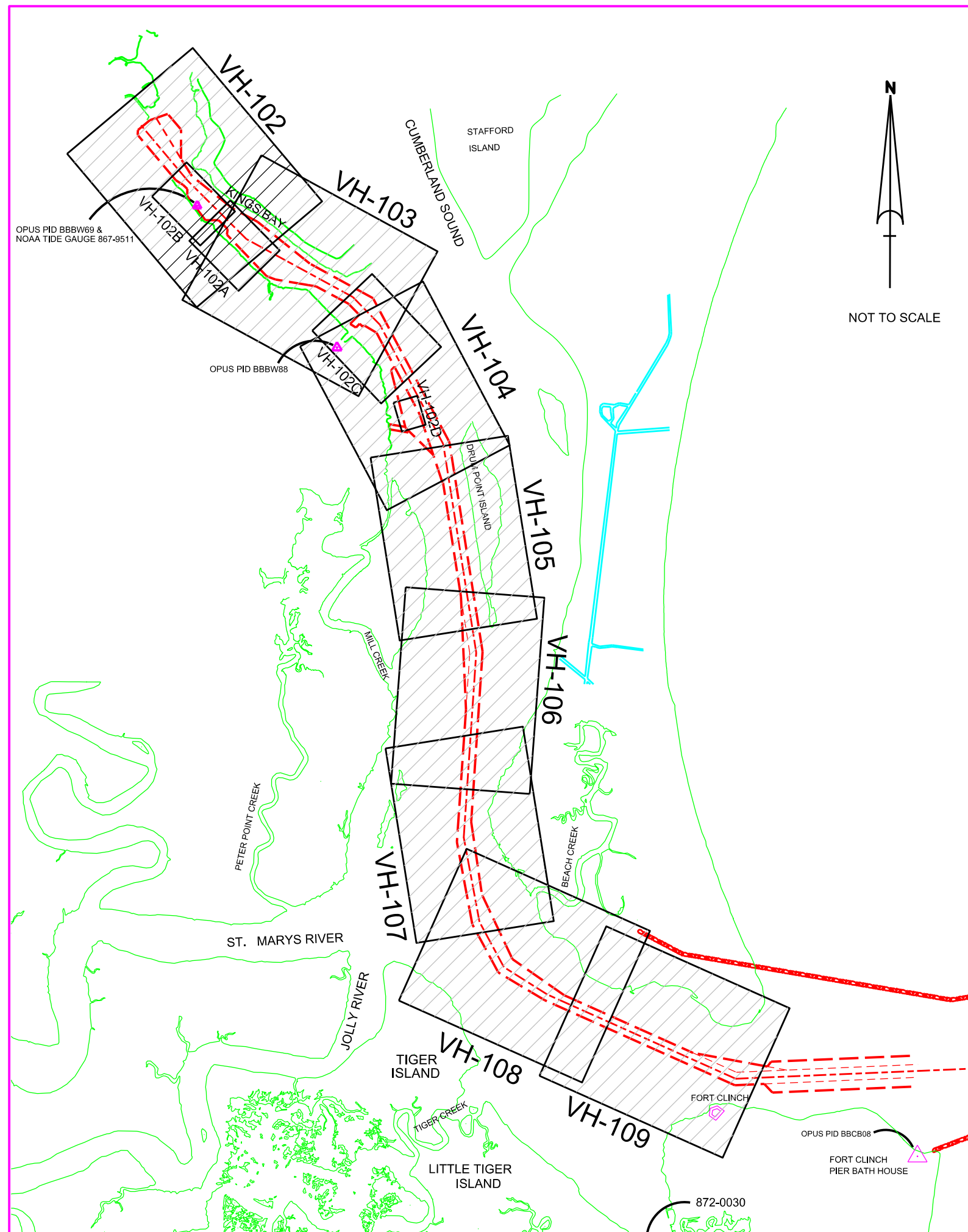


# U.S. NAVY SUBMARINE BASE KINGS BAY, GEORGIA KINGS BAY INNER CHANNEL HYDROGRAPHIC EXAMINATION SURVEY 2ND QUARTER FY14



LEGEND	
+BM	BENCHMARK
⬆	LIGHTED BEACON
⬆	GREEN DAYBEACON
▲	RED DAYBEACON
⬆	RED LIGHTED BUOY
⬆	GREEN LIGHTED BUOY
⬆	CAN BUOY
⬆	NUN BUOY
⬆	TIDE STAFF

DEPTH COLOR CODE	
≤39.9	Red
40.0-41.9	Orange
42.0-45.9	Yellow
46.0-48.9	Green
≥49.0	Blue



**SURVEY NOTES:**

- REFER TO SURVEY NO. 14-049.
  - SOUNDINGS ARE IN FEET AND TENTHS AND REFER TO MEAN LOWER LOW WATER (MLLW) TIDAL DATUM.
  - ALL ELEVATIONS ARE BELOW THE CHART DATUM UNLESS PRECEDED BY A (+) SIGN.
  - TIDAL REDUCTIONS WERE OBTAINED UTILIZING REAL-TIME KINEMATIC (RTK) GPS USING A HYPACK KINEMATIC TIDAL DATUM MODEL (KINGSBAY-2013 06 10.KTD).
  - PLANE COORDINATES ARE BASED ON THE TRANSVERSE MERCATOR PROJECTION FOR THE EAST ZONE OF GEORGIA AND REFERENCED TO NORTH AMERICAN DATUM OF 1983 (NAD83).
  - ALL AZIMUTHS ARE GRID; RECKONED CLOCKWISE FROM SOUTH.
  - ALL STATIONING REFERS TO THE CENTERLINE OF THE CHANNEL.
  - THIS SURVEY WAS PERFORMED USING REAL-TIME KINEMATIC (RTK) GPS POSITIONING WITH THE FOLLOWING REFERENCE BASE LOCATIONS:  
 REFERENCE BASE LOCATED AT "BATH HOUSE ARP" (OPUS PID # BBCB08), FOR RANGE-A THRU RANGE-C.  
 REFERENCE BASE LOCATED AT "SITE-6" (OPUS PID # BBBW88), FOR RANGE-D THRU RANGE-G (OUTSIDE WRA).  
 REFERENCE BASE LOCATED AT "9511-F" (OPUS PID # BBBW69), FOR RANGE-G THRU RANGE-I (INSIDE WRA).
  - DEPTHS DEPICTED BY THIS SURVEY ARE REFERENCED TO MLLW, AS REPORTED BY THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA). NOAA'S VDATUM MODEL WAS USED AND CALIBRATED TO THE PUBLISHED MLLW HEIGHTS OF THE BENCH MARKS ASSOCIATED WITH THE TIDE GAUGE SITES SPECIFIED BELOW:  
 NOAA TIDAL STATION 872-0030, FERNANDINA, FL, FOR RANGE-A THRU RANGE-G (OUTSIDE WRA)  
 NOAA TIDAL STATION 867-9511, KINGS BAY, GA, FOR RGE-G THRU RGE-I (INSIDE WRA)
  - VERTICAL MEASUREMENTS WERE MADE USING A RESON 7101 MULTIBEAM SYSTEM AND A ROSS MODEL 835 SMARTSOUNDER WITH A DUAL-FREQUENCY (28/200KHZ) TRANSDUCER. SOUNDINGS SHOWN ARE IN HIGH FREQUENCY FROM RANGE-A THRU RANGE-E, STA 33+100 AND LOW FREQUENCY FROM RANGE-E, STA 33+100 THRU RANGE-I.
- | VESSEL | DATE OF SURVEY | AREA SURVEYED                                      |
|--------|----------------|--|
| SB-36  | 25 JAN 2014    | RGE - E, RGE-F, RGE-G (OUTSIDE WRA) & SITE-6       |
| SB-36  | 26 JAN 2014    | RGE - G (INSIDE WRA), EHW-1, WARPING WHARF & RGE-I |
| SB-36  | 27 JAN 2014    | RGE - H, RGE - I & REFIT WHARF                     |
| SB-36  | 28 JAN 2014    | RGE - E & MSF                                      |
| SB-36  | 29 JAN 2014    | RGE - D, RGE - E & MSF                             |
| SB-36  | 30 JAN 2014    | RGE - D & RGE-E                                    |
| SB-36  | 31 JAN 2014    | RGE - F, SITE-6 & ARDM YOKE                        |
| SB-36  | 2 FEB 2014     | RGE - A & RGE - A-1                                |
| SB-36  | 3 FEB 2014     | RGE - A-2, RGE - B & RGE-C                         |
| SB-36  | 4 FEB 2014     | RGE - C & RGE - D                                  |
- AIDS TO NAVIGATION WERE LOCATED DURING THIS SURVEY.
  - THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATES INDICATED ABOVE AND CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS AT THAT TIME. THIS CHART IS SOLELY FOR THE DISTRIBUTION OF AVAILABLE DEPTHS AT THE TIME OF THE SURVEY AND IS NOT TO BE USED FOR NAVIGATION.
  - SURVEY ACCURACY PERFORMANCE STANDARDS, QUALITY CONTROL, AND QUALITY ASSURANCE REQUIREMENTS WERE FOLLOWED IN ACCORDANCE WITH USACE EM 1110-2-1003, HYDROGRAPHIC SURVEYING, 1 JAN 02 AND EM 1110-2-6056, STANDARDS AND PROCEDURES FOR REFERENCING PROJECT ELEVATION GRADES TO NATIONWIDE VERTICAL DATUMS, 31 DEC 10.

US Army Corps of Engineers  
Jacksonville District

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JACKSONVILLE DISTRICT, CORPS OF ENGINEERS  
JACKSONVILLE, FLORIDA

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14-AR-BC-ARBOR.DGN  
KINGSBAY-14-049.DGN  
INDEX.DGN

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U.S. NAVY SUBMARINE BASE  
KINGS BAY, GEORGIA

**2ND QUARTER FY14 EXAMINATION SURVEY  
44, 45 & 46 FOOT PROJECT  
INDEX AND LOCATION  
PLAN**

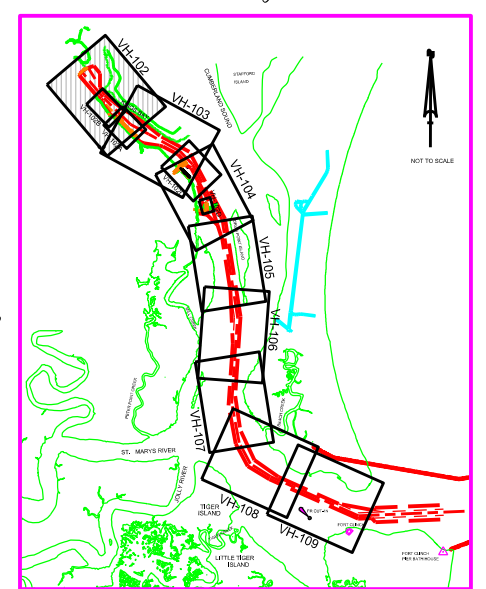
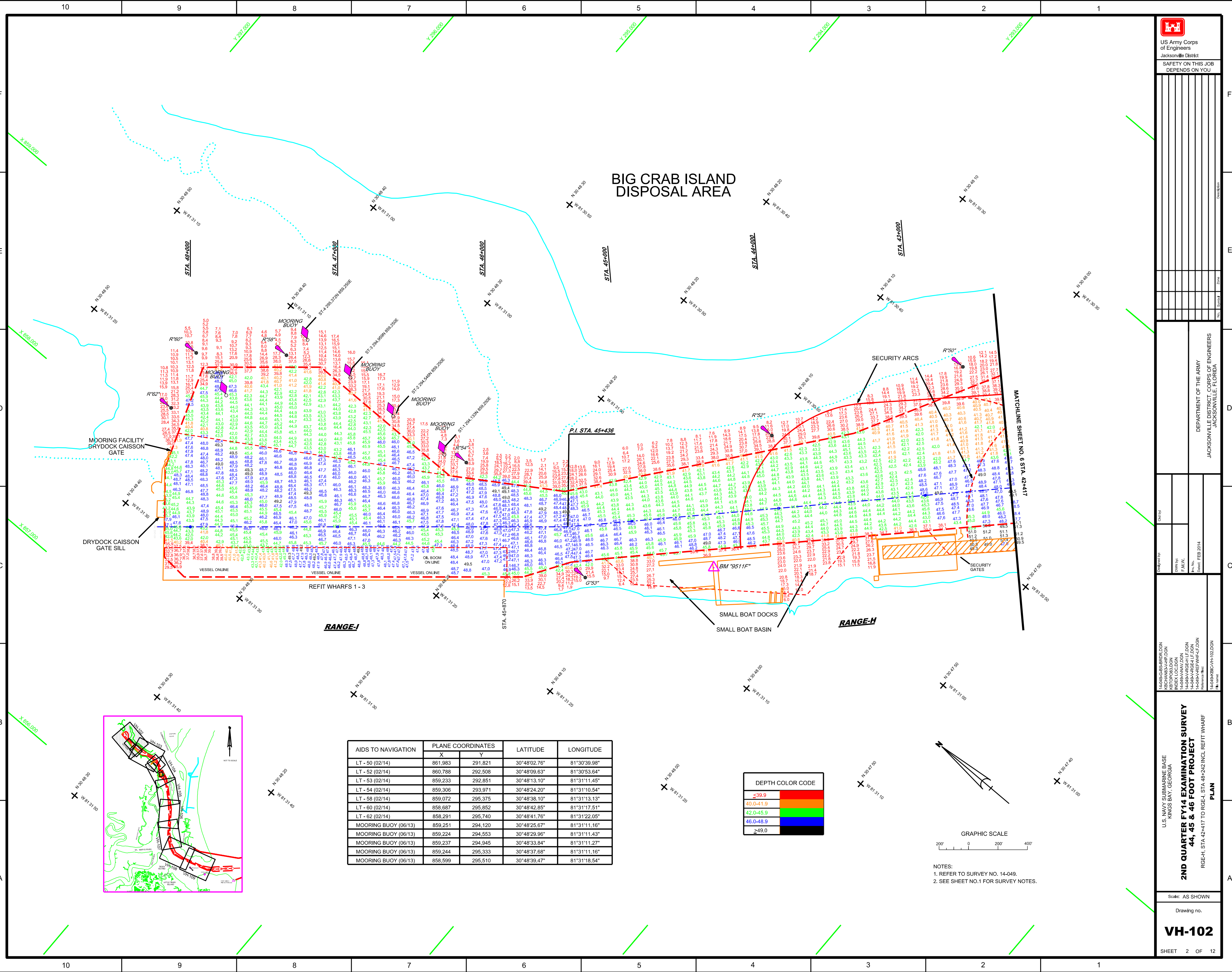
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Scale: AS SHOWN

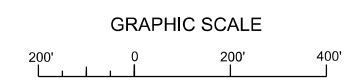
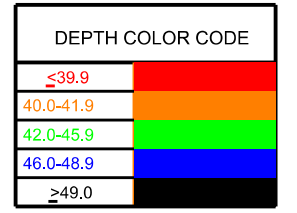
Drawing no.

**VH-101**

SHEET 1 OF 12

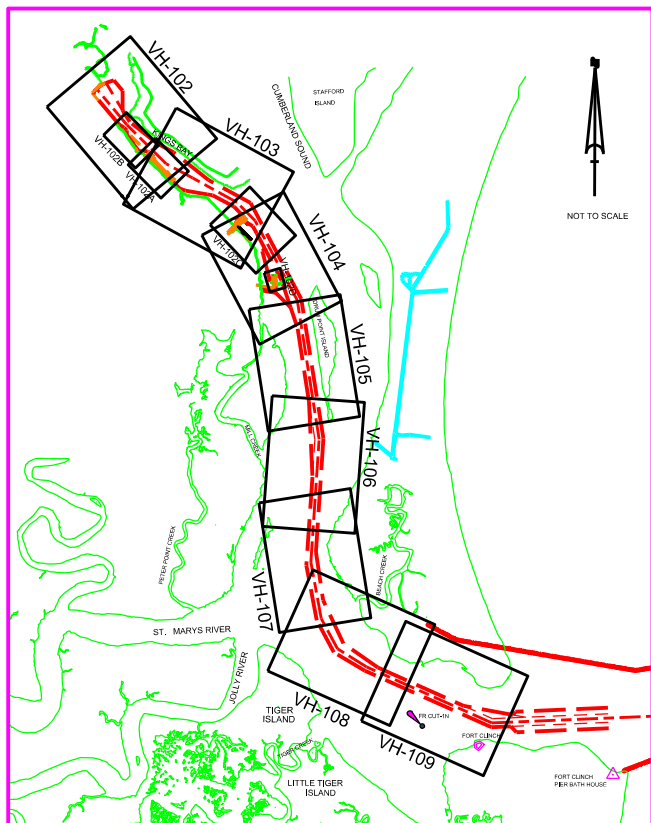
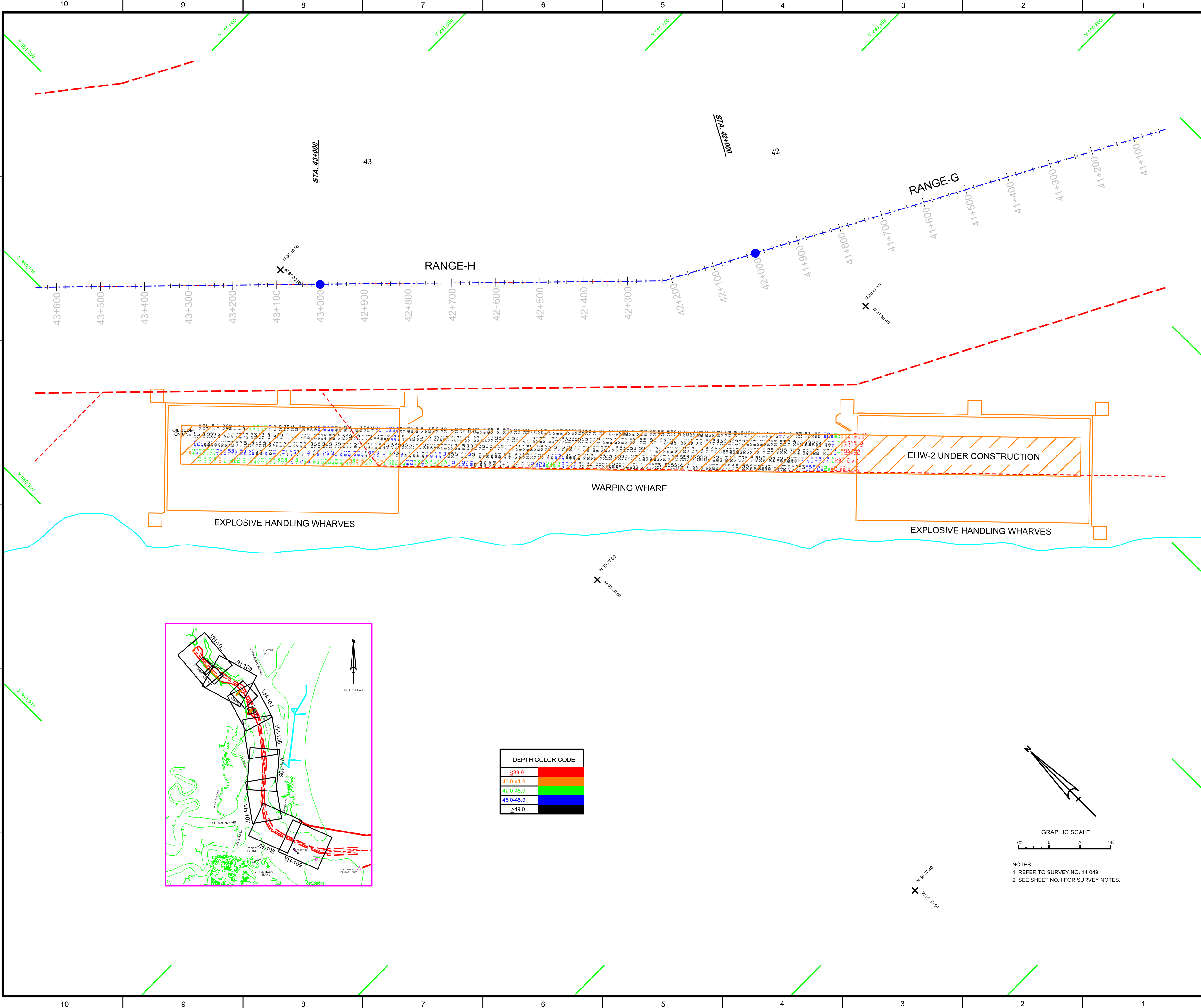


AIDS TO NAVIGATION	PLANE COORDINATES		LATITUDE	LONGITUDE
	X	Y		
LT - 50 (02/14)	861,983	291,821	30°48'02.76"	81°30'39.98"
LT - 52 (02/14)	860,788	292,508	30°48'09.63"	81°30'53.64"
LT - 53 (02/14)	859,233	292,851	30°48'13.10"	81°31'11.45"
LT - 54 (02/14)	859,306	293,971	30°48'24.20"	81°31'10.54"
LT - 58 (02/14)	859,072	295,375	30°48'38.10"	81°31'12.13"
LT - 60 (02/14)	858,687	295,852	30°48'42.85"	81°31'17.51"
LT - 62 (02/14)	858,291	295,740	30°48'41.76"	81°31'22.05"
MOORING BUOY (06/13)	859,251	294,120	30°48'25.67"	81°31'11.16"
MOORING BUOY (06/13)	859,224	294,553	30°48'29.96"	81°31'11.43"
MOORING BUOY (06/13)	859,237	294,945	30°48'33.84"	81°31'11.27"
MOORING BUOY (06/13)	859,244	295,333	30°48'37.68"	81°31'11.16"
MOORING BUOY (06/13)	858,599	295,510	30°48'39.47"	81°31'18.54"

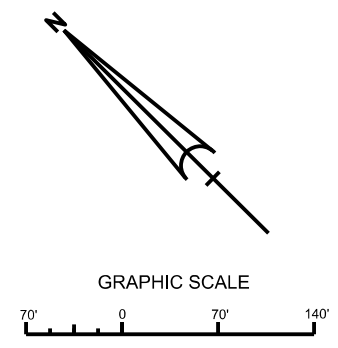


NOTES:  
1. REFER TO SURVEY NO. 14-049.  
2. SEE SHEET NO.1 FOR SURVEY NOTES.

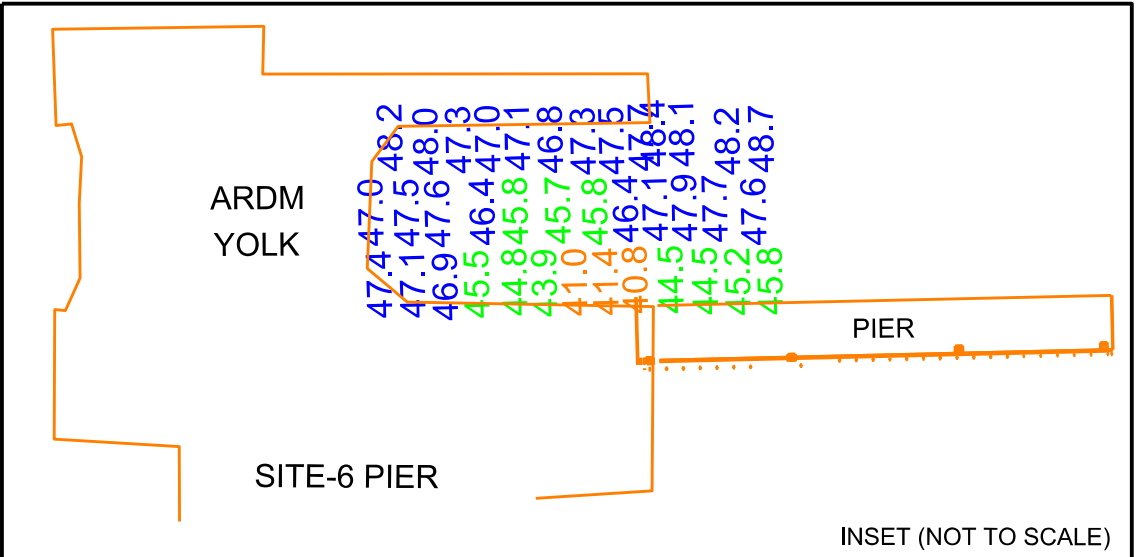
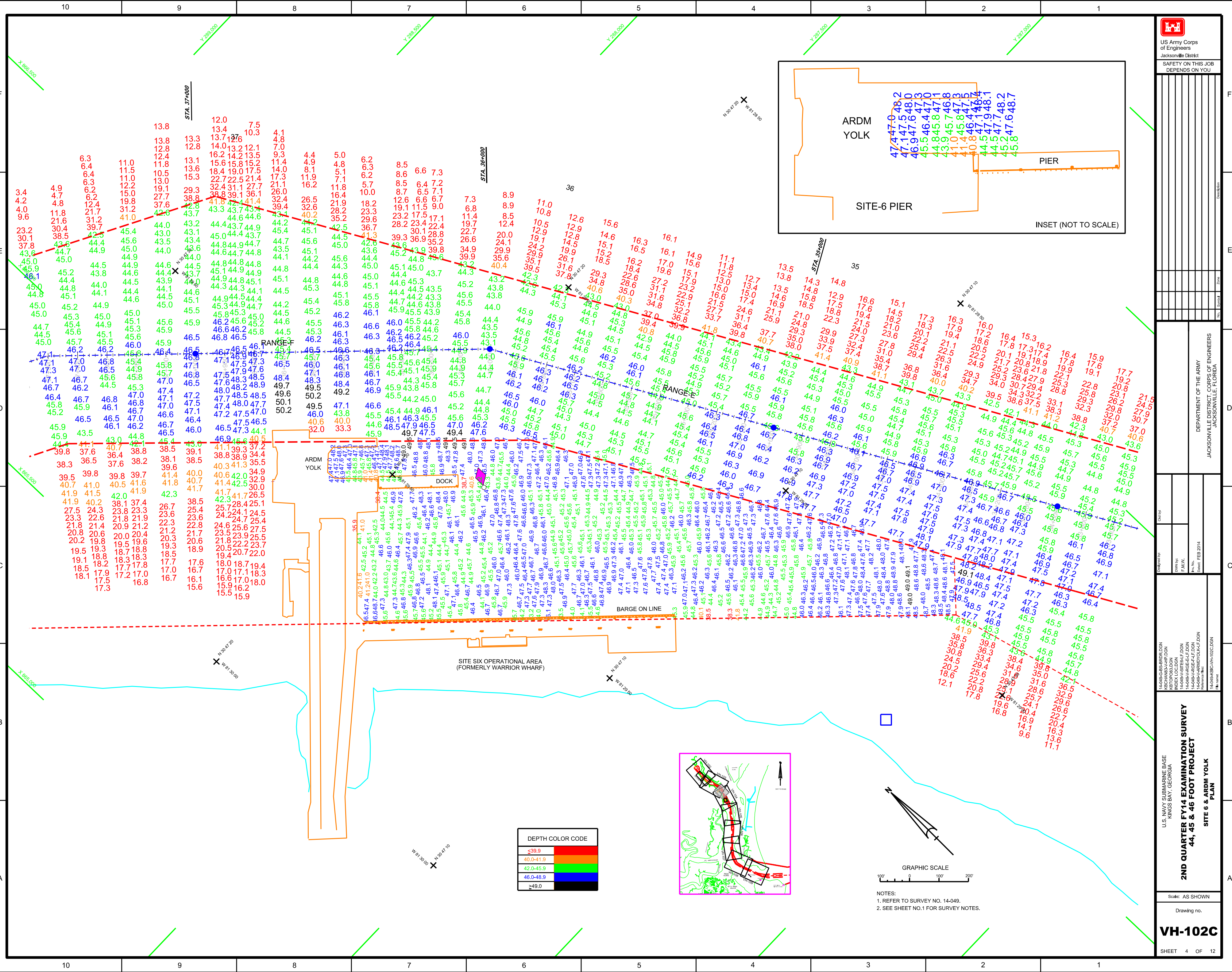




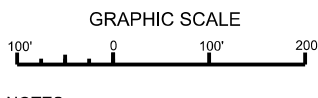
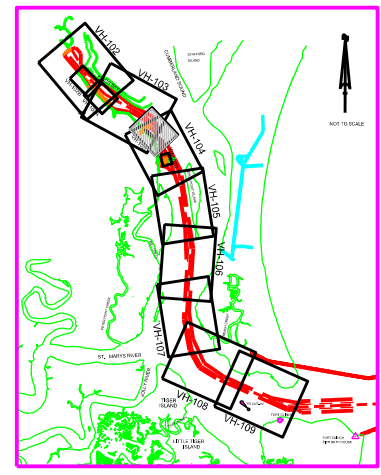
DEPTH COLOR CODE	
≤39.9	Red
40.0-41.9	Orange
42.0-45.9	Yellow
46.0-48.9	Green
≥49.0	Blue




NOTES:  
1. REFER TO SURVEY NO. 14-049.  
2. SEE SHEET NO.1 FOR SURVEY NOTES.



DEPTH COLOR CODE	
<39.9	Red
40.0-41.9	Orange
42.0-45.9	Yellow
46.0-48.9	Green
>49.0	Blue



- NOTES:  
 1. REFER TO SURVEY NO. 14-049.  
 2. SEE SHEET NO.1 FOR SURVEY NOTES.



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JACKSONVILLE, FLORIDA

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U.S. NAVY SUBMARINE BASE  
KINGS BAY, GEORGIA

**2ND QUARTER FY14 EXAMINATION SURVEY  
44, 45 & 46 FOOT PROJECT**

**SITE 6 & ARDM YOLK  
PLAN**

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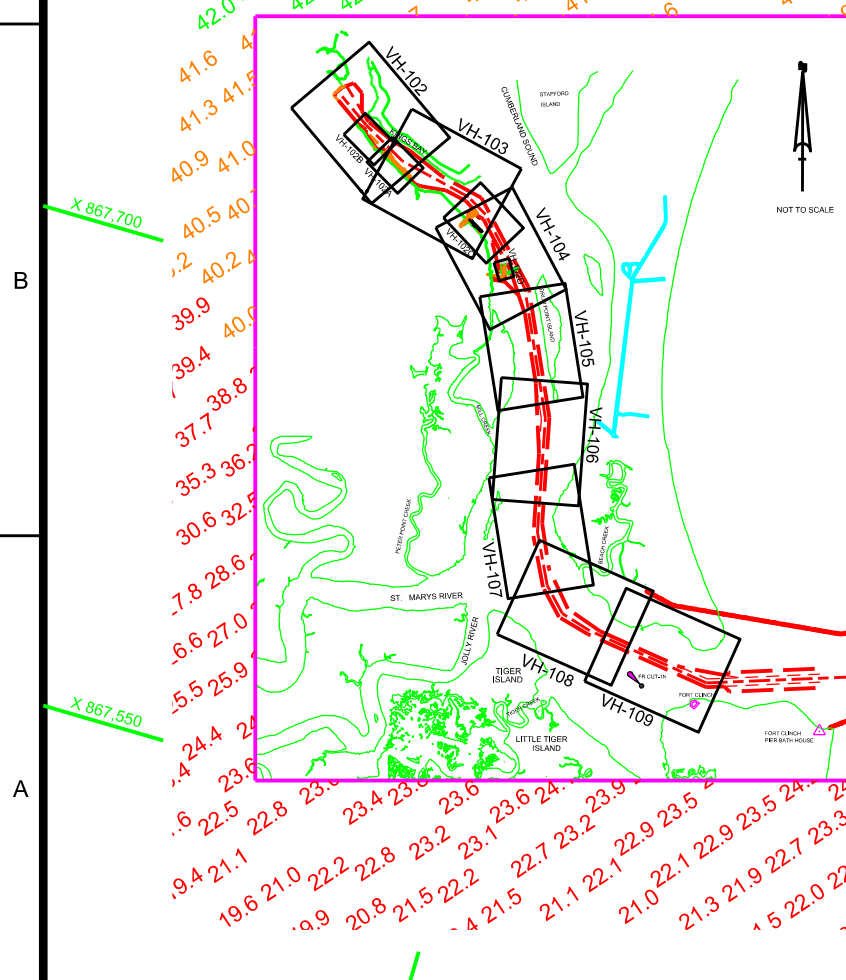
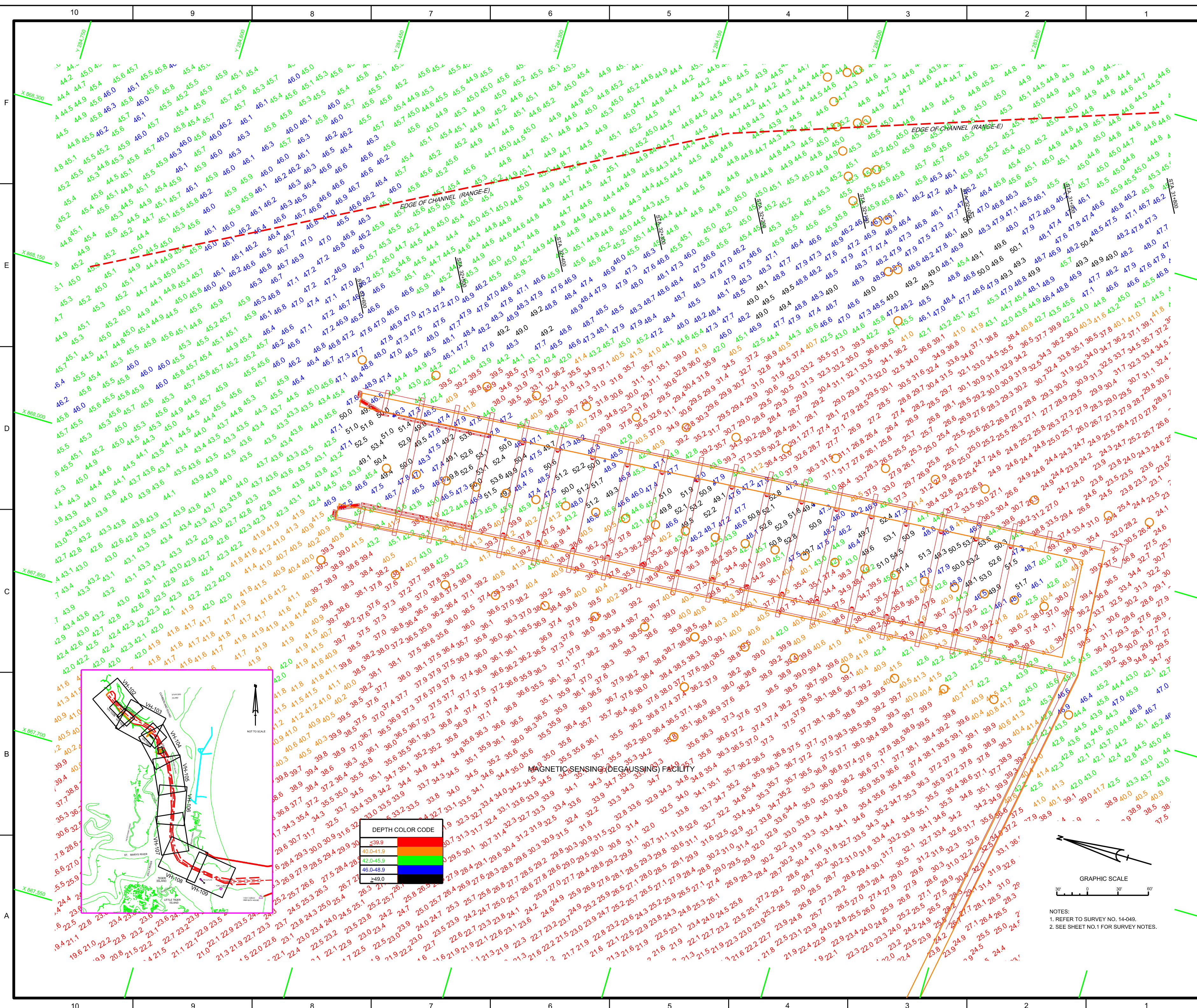
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Drawing no.

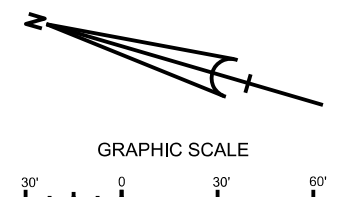
**VH-102C**

SHEET 4 OF 12





DEPTH COLOR CODE	
339-419	Light Blue
420-459	Yellow
460-489	Orange
>490	Red



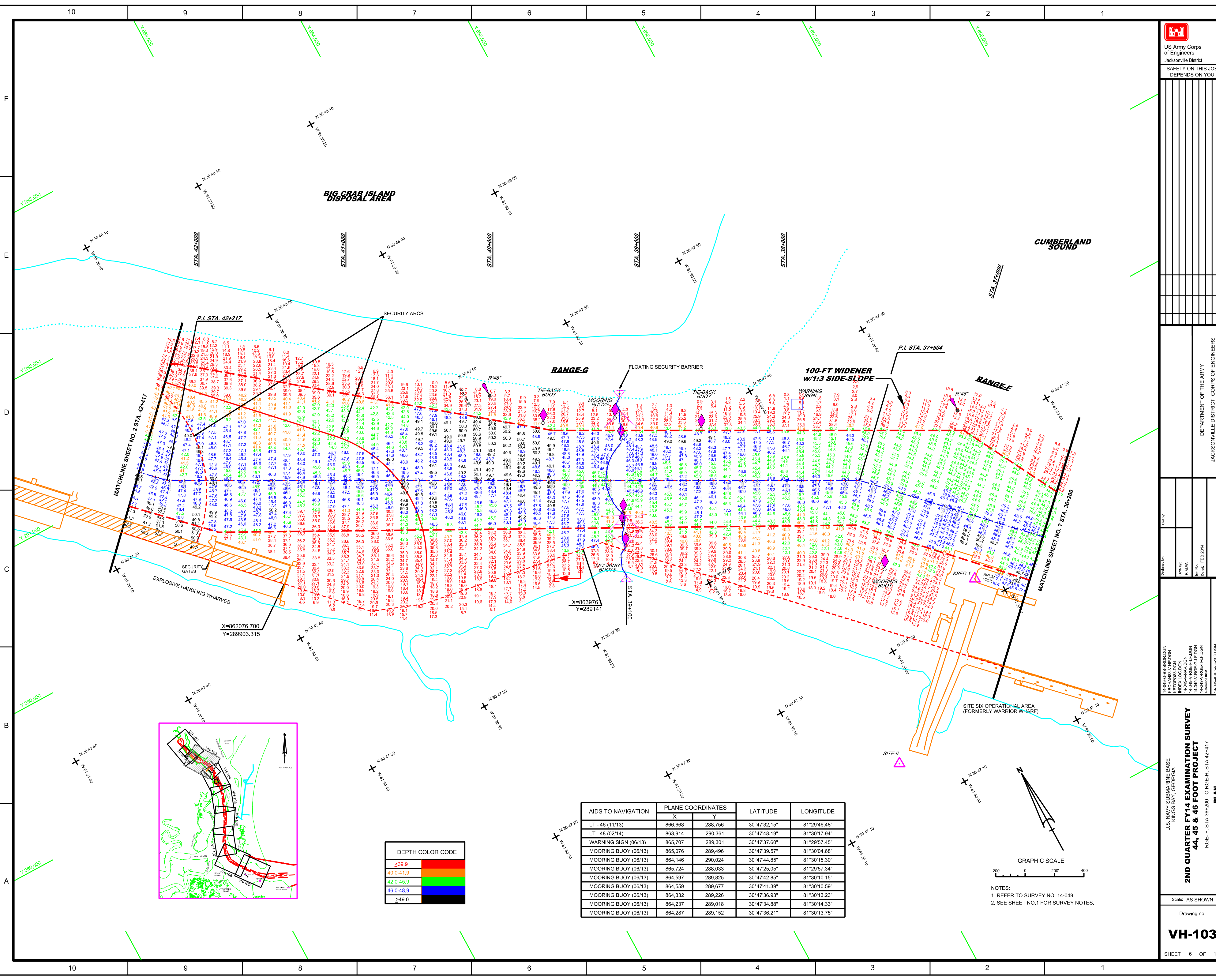
NOTES:  
1. REFER TO SURVEY NO. 14-049.  
2. SEE SHEET NO.1 FOR SURVEY NOTES.

DEPARTMENT OF THE ARMY  
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS  
JACKSONVILLE, FLORIDA

2ND QUARTER FY14 EXAMINATION SURVEY  
44, 45 & 46 FOOT PROJECT  
MSP OPERATION BASIN  
PLAN

Scale: AS SHOWN  
Drawing no.  
VH-102D  
SHEET 5 OF 12





AIDS TO NAVIGATION	PLANE COORDINATES		LATITUDE	LONGITUDE
	X	Y		
LT - 46 (11/13)	866,668	288,756	30°47'32.15"	81°29'46.48"
LT - 48 (02/14)	863,914	290,361	30°47'48.19"	81°30'17.94"
WARNING SIGN (06/13)	865,707	289,301	30°47'37.60"	81°29'57.45"
MOORING BUOY (06/13)	865,076	289,496	30°47'39.57"	81°30'04.68"
MOORING BUOY (06/13)	864,146	290,024	30°47'44.85"	81°30'15.30"
MOORING BUOY (06/13)	865,724	288,033	30°47'25.05"	81°29'57.34"
MOORING BUOY (06/13)	864,597	289,825	30°47'42.85"	81°30'10.15"
MOORING BUOY (06/13)	864,559	289,677	30°47'41.39"	81°30'10.59"
MOORING BUOY (06/13)	864,332	289,226	30°47'36.93"	81°30'13.23"
MOORING BUOY (06/13)	864,237	289,018	30°47'34.88"	81°30'14.33"
MOORING BUOY (06/13)	864,287	289,152	30°47'36.21"	81°30'13.75"

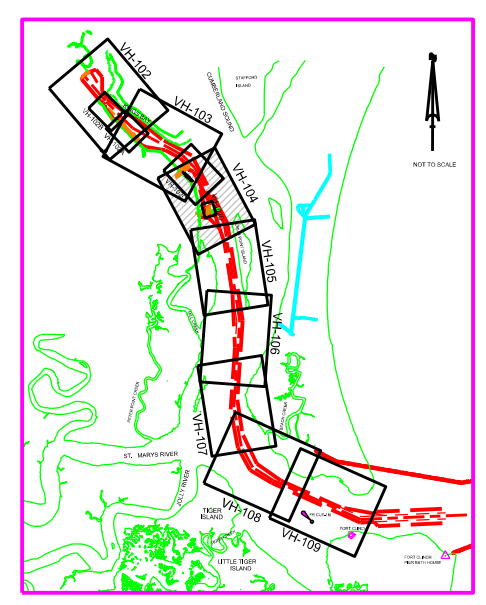
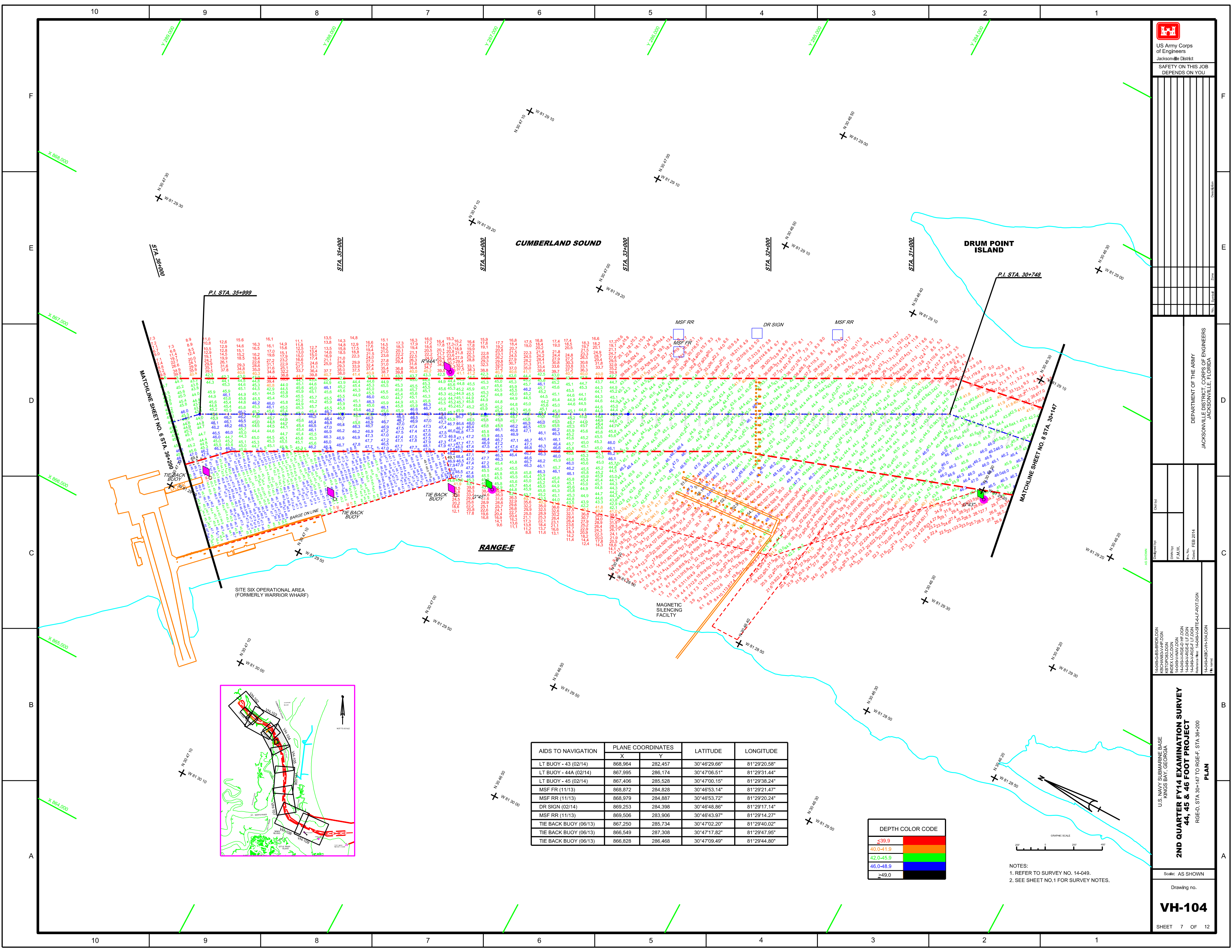
**DEPTH COLOR CODE**

≤39.9	Red
40.0-41.9	Orange
42.0-45.9	Yellow
46.0-48.9	Green
≥49.0	Blue

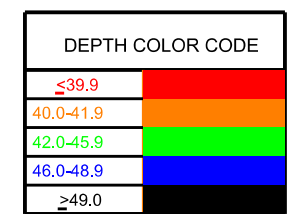


NOTES:  
1. REFER TO SURVEY NO. 14-049.  
2. SEE SHEET NO. 1 FOR SURVEY NOTES.





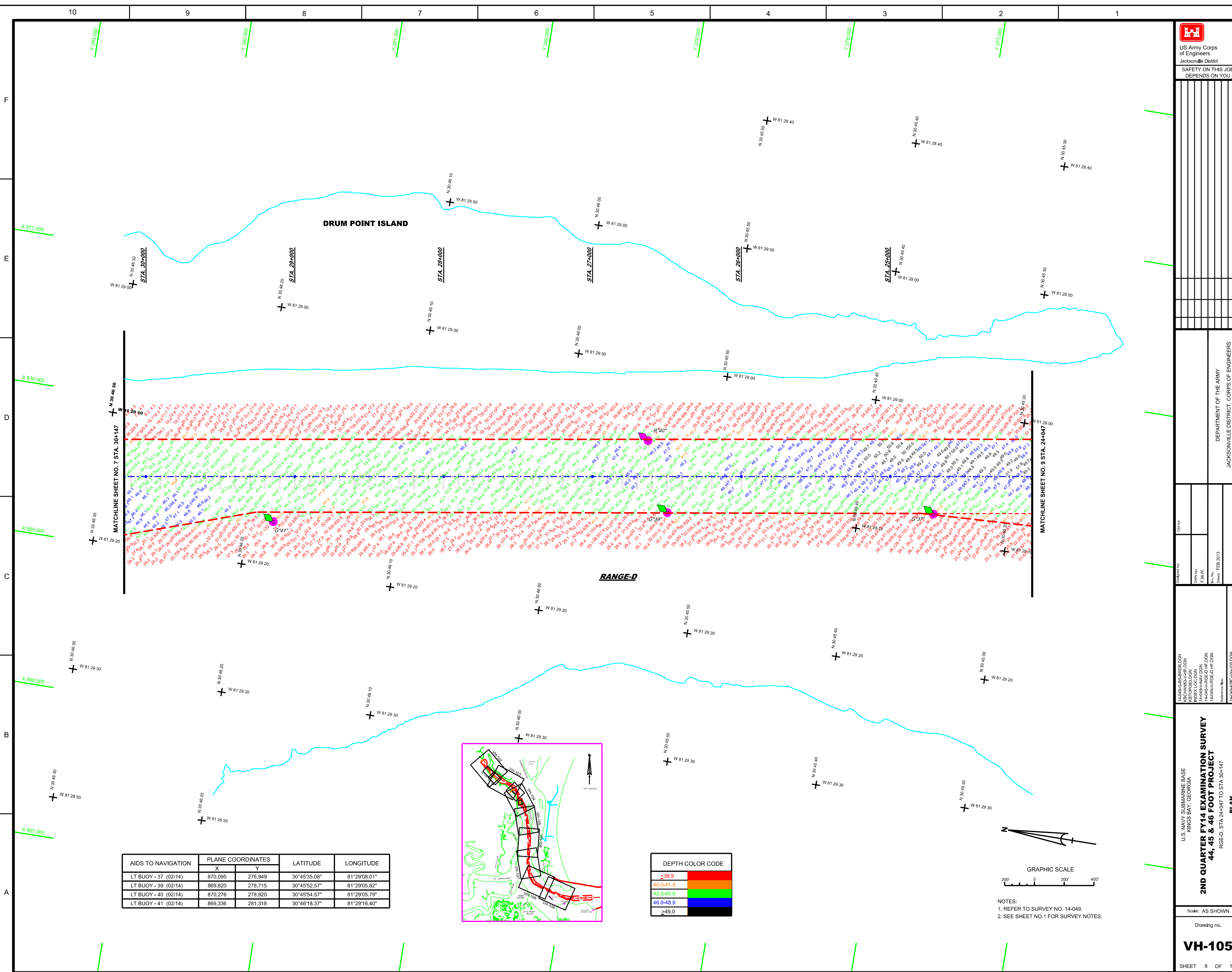
AIDS TO NAVIGATION	PLANE COORDINATES		LATITUDE	LONGITUDE
	X	Y		
LT BUOY - 43 (02/14)	868,964	282,457	30°46'29.66"	81°29'20.58"
LT BUOY - 44A (02/14)	867,995	286,174	30°47'06.51"	81°29'31.44"
LT BUOY - 45 (02/14)	867,406	285,528	30°47'00.15"	81°29'38.24"
MSF RR (11/13)	868,872	284,828	30°46'53.14"	81°29'21.47"
MSF RR (11/13)	868,979	284,887	30°46'53.72"	81°29'20.24"
DR SIGN (02/14)	869,253	284,398	30°46'48.86"	81°29'17.14"
MSF RR (11/13)	869,506	283,906	30°46'43.97"	81°29'14.27"
TIE BACK BUOY (06/13)	867,250	285,734	30°47'02.20"	81°29'40.02"
TIE BACK BUOY (06/13)	866,549	287,308	30°47'17.82"	81°29'47.95"
TIE BACK BUOY (06/13)	866,828	286,468	30°47'09.49"	81°29'44.80"



NOTES:  
1. REFER TO SURVEY NO. 14-049.  
2. SEE SHEET NO.1 FOR SURVEY NOTES.

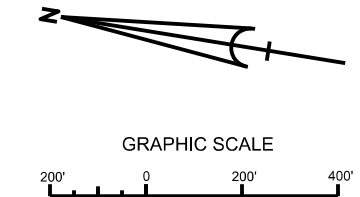


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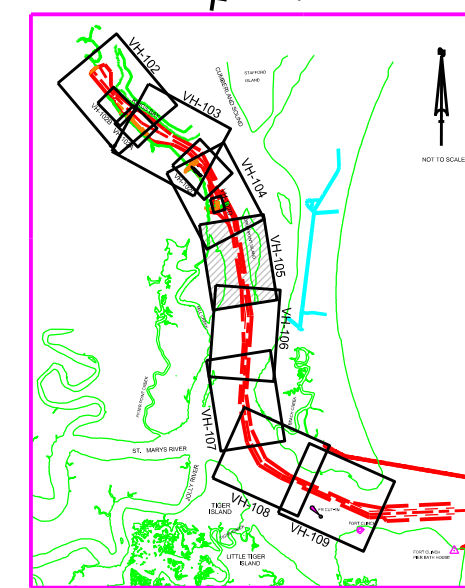


AIDS TO NAVIGATION	PLANE COORDINATES		LATITUDE	LONGITUDE
	X	Y		
LT BUOY - 37 (02/14)	870,095	276,949	30°45'35.08"	81°29'08.01"
LT BUOY - 39 (02/14)	869,820	278,715	30°45'52.57"	81°29'05.82"
LT BUOY - 40 (02/14)	870,276	278,920	30°45'54.57"	81°29'05.79"
LT BUOY - 41 (02/14)	869,336	281,318	30°46'18.37"	81°29'16.40"

DEPTH COLOR CODE	
≤39.9	Red
40.0-41.9	Orange
42.0-45.9	Yellow
46.0-48.9	Green
≥49.0	Blue



NOTES:  
1. REFER TO SURVEY NO. 14-049.  
2. SEE SHEET NO.1 FOR SURVEY NOTES.



No.	Symbol	Zone

DEPARTMENT OF THE ARMY  
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS  
JACKSONVILLE, FLORIDA

Checked by:	
Designed by:	
DRAWN BY:	F.A.W.
PLANNED BY:	
Scale:	AS SHOWN
Date:	FEB 2013

14-ARR-CBS-BRD/DR/DON  
14-ARR-H-VH-105/DON  
14-ARR-H-VH-105/JDN  
14-ARR-H-VH-105/JDN  
14-ARR-H-VH-105/JDN  
14-ARR-H-VH-105/JDN

U.S. NAVY'S SUBMARINE BASE  
KINGS BAY, GEORGIA  
**2ND QUARTER FY14 EXAMINATION SURVEY**  
**44, 45 & 46 FOOT PROJECT**  
RGE-D, STA. 24-047 TO STA. 30+147  
**PLAN**

Scale: AS SHOWN  
Drawing no.  
**VH-105**  
SHEET 8 OF 12




DEPARTMENT OF THE ARMY  
 JACKSONVILLE DISTRICT CORPS OF ENGINEERS  
 JACKSONVILLE, FLORIDA

Checked by:	
Designed by:	
Drawn by:	
F.A.M.W.	
Scale:	1:5000
Date:	FEB 2014

**2ND QUARTER FY14 EXAMINATION SURVEY  
 44, 45 & 46 FOOT PROJECT  
 PLAN**

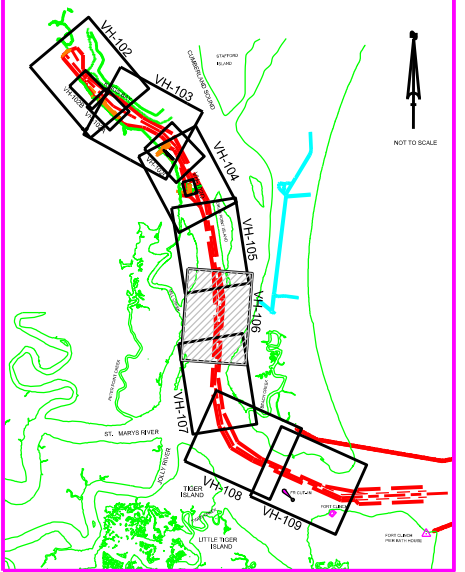
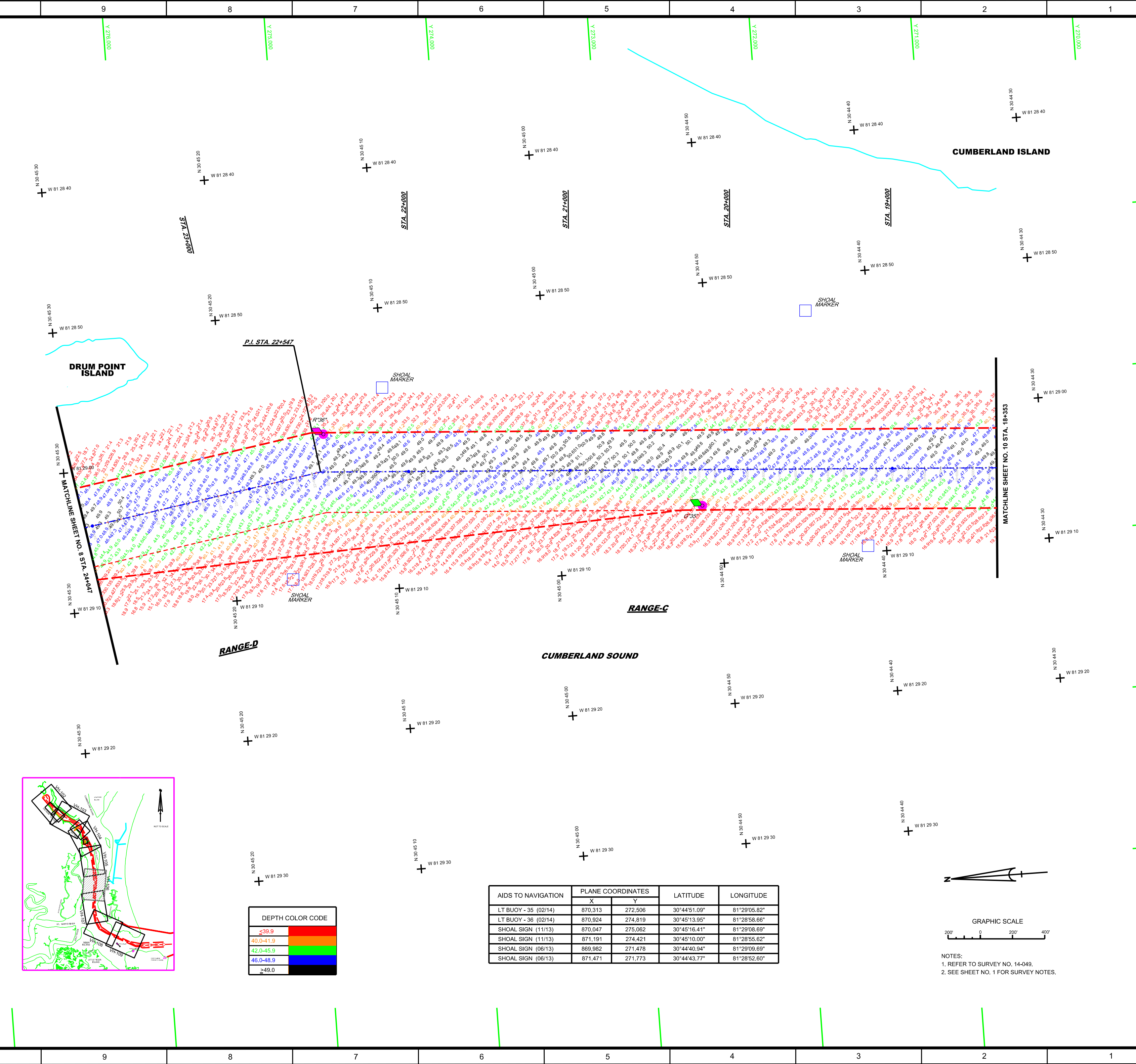
RANGE-C, STA. 18+353 TO RANGE-D, STA. 24+047

U.S. NAVY'S SURMARINE BASE  
 KINGS BAY, GEORGIA

Scale: AS SHOWN

Drawing no.  
**VH-106**

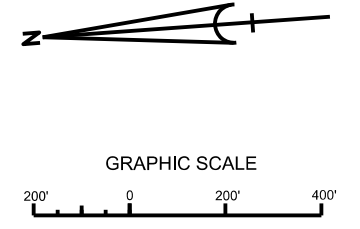
SHEET 9 OF 12



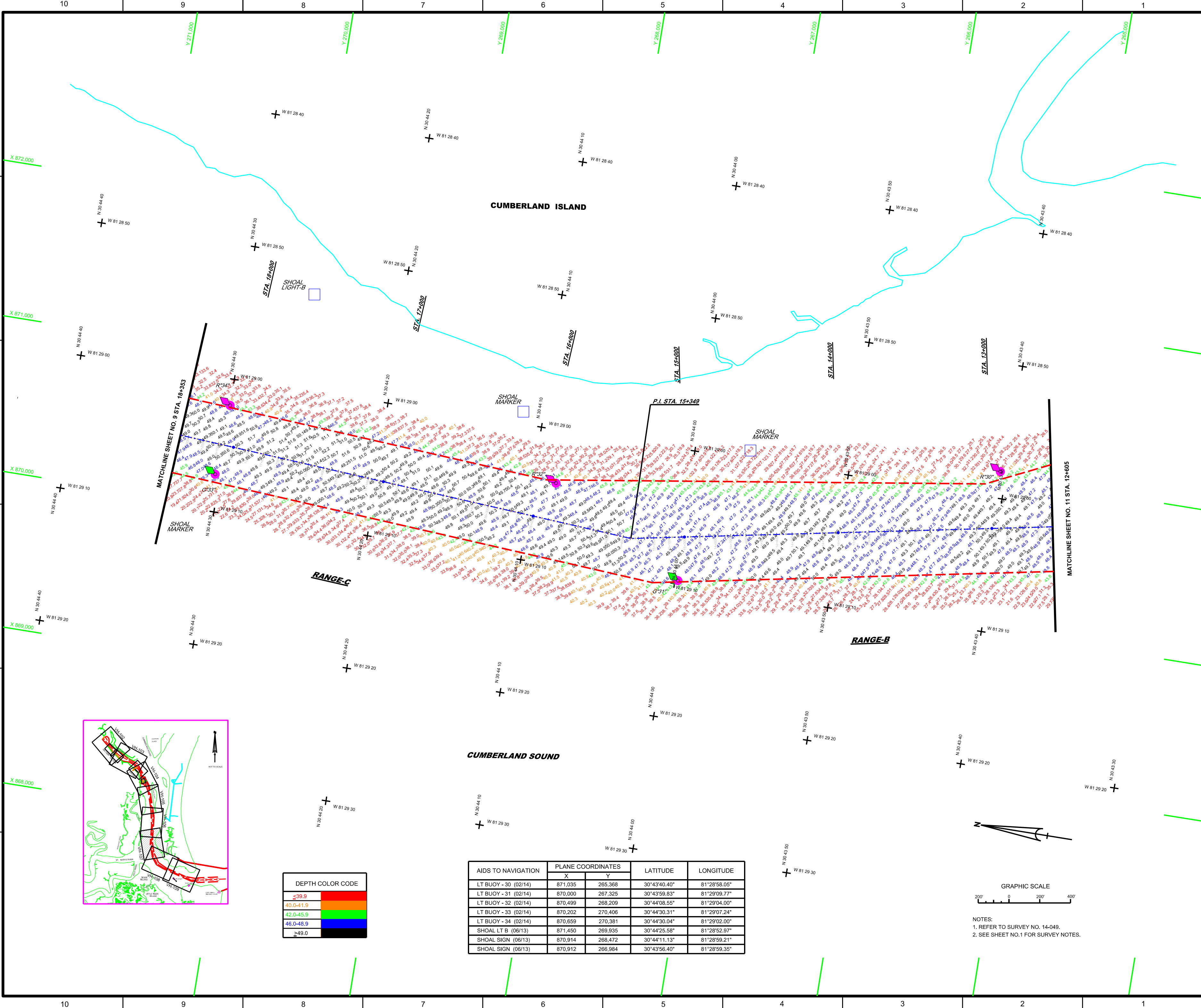
**DEPTH COLOR CODE**

≤ 39.9	Red
40.0-41.9	Orange
42.0-45.9	Yellow
46.0-48.9	Blue
≥ 49.0	White

AIDS TO NAVIGATION	PLANE COORDINATES		LATITUDE	LONGITUDE
	X	Y		
LT BUOY - 35 (02/14)	870,313	272,506	30°44'51.09"	81°29'05.82"
LT BUOY - 36 (02/14)	870,924	274,819	30°45'13.95"	81°28'58.66"
SHOAL SIGN (11/13)	870,047	275,062	30°45'16.41"	81°29'08.69"
SHOAL SIGN (11/13)	871,191	274,421	30°45'10.00"	81°28'55.62"
SHOAL SIGN (06/13)	869,982	271,478	30°44'40.94"	81°29'09.69"
SHOAL SIGN (06/13)	871,471	271,773	30°44'43.77"	81°28'52.60"



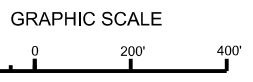
NOTES:  
 1. REFER TO SURVEY NO. 14-049.  
 2. SEE SHEET NO. 1 FOR SURVEY NOTES.



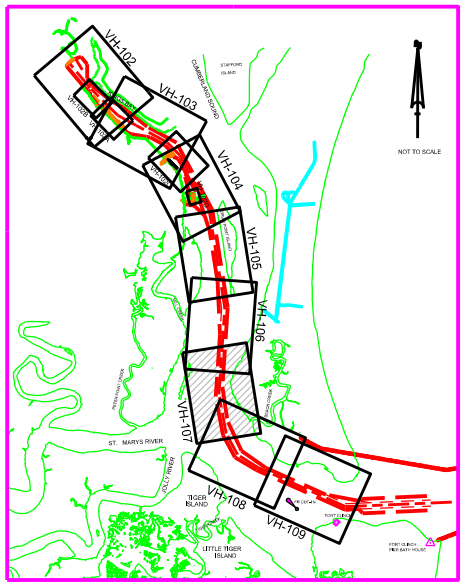
**DEPTH COLOR CODE**

≤39.9	
40.0-41.9	
42.0-45.9	
46.0-48.9	
≥49.0	

AIDS TO NAVIGATION	PLANE COORDINATES		LATITUDE	LONGITUDE
	X	Y		
LT BUOY - 30 (02/14)	871,035	265,368	30°43'40.40"	81°28'58.05"
LT BUOY - 31 (02/14)	870,000	267,325	30°43'59.83"	81°29'09.77"
LT BUOY - 32 (02/14)	870,499	268,209	30°44'08.55"	81°29'04.00"
LT BUOY - 33 (02/14)	870,202	270,406	30°44'30.31"	81°29'07.24"
LT BUOY - 34 (02/14)	870,659	270,381	30°44'30.04"	81°29'02.00"
SHOAL LT B (06/13)	871,450	269,935	30°44'25.58"	81°28'52.97"
SHOAL SIGN (06/13)	870,914	268,472	30°44'11.13"	81°28'59.21"
SHOAL SIGN (06/13)	870,912	266,984	30°43'56.40"	81°28'59.35"



NOTES:  
1. REFER TO SURVEY NO. 14-049.  
2. SEE SHEET NO. 1 FOR SURVEY NOTES.







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JACKSONVILLE, FLORIDA

Checked By: \_\_\_\_\_  
Designed By: \_\_\_\_\_  
Drawn By: \_\_\_\_\_  
Field Notes: \_\_\_\_\_  
Date: FEB 2014

14-AR-CBS-BRD-DGN  
KSHANIKSHP-DGN  
INDEX-LOC-DGN  
14-AR-VAN-DGN  
14-AR-VARGE-A-HF-DGN  
14-AR-VARGE-A-HF-DGN  
14-AR-VARGE-B-HF-DGN  
14-AR-VARGE-C-HF-DGN  
14-AR-VARGE-D-HF-DGN  
14-AR-VARGE-E-HF-DGN  
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14-AR-VARGE-HF-DGN

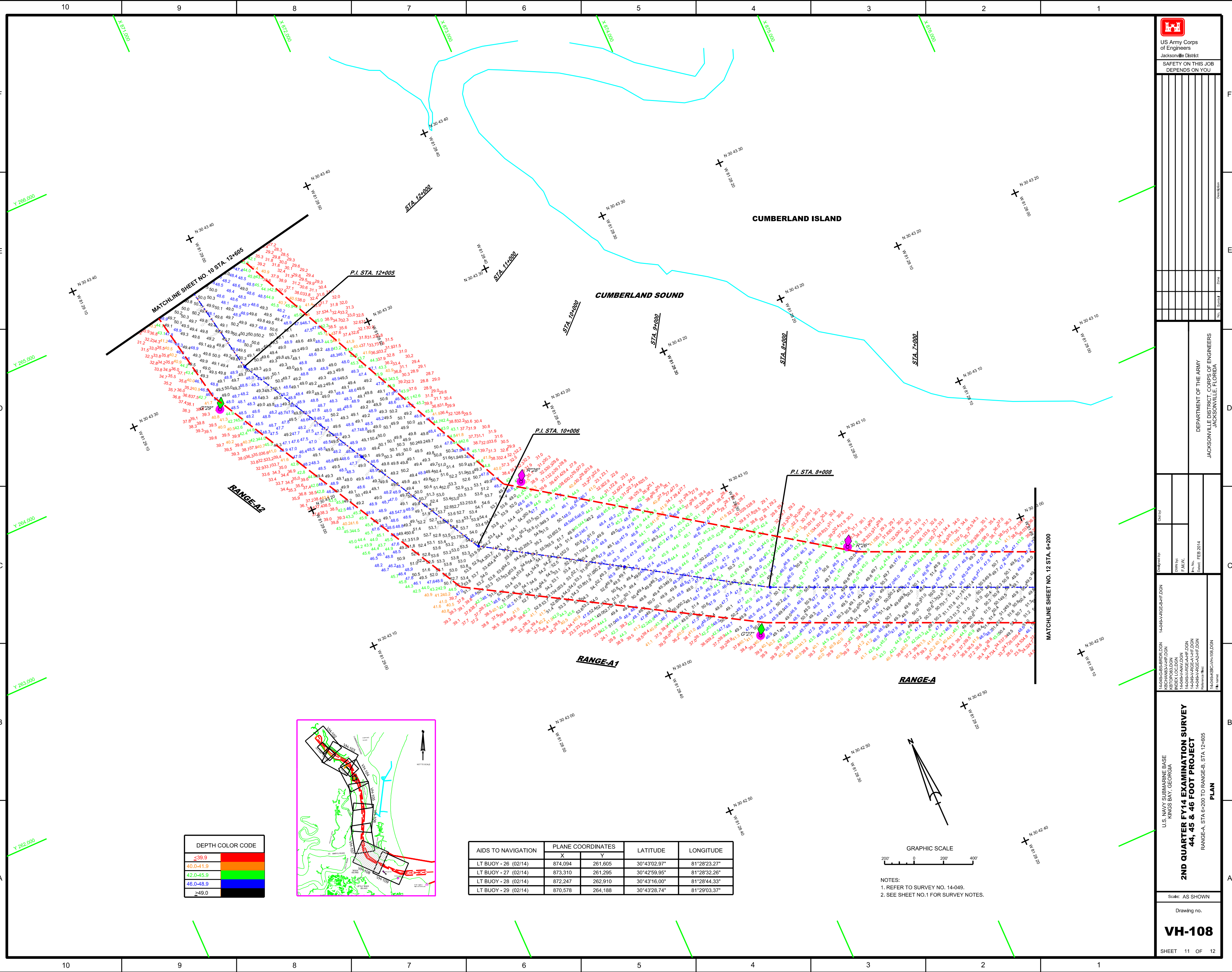
U.S. NAVY SUBMARINE BASE  
KINGS BAY, GEORGIA  
**2ND QUARTER FY14 EXAMINATION SURVEY  
44, 45 & 46 FOOT PROJECT  
PLAN**  
RANGE-A, STA 6+200 TO RANGE-B, STA 12+605

Scale: AS SHOWN

Drawing no.

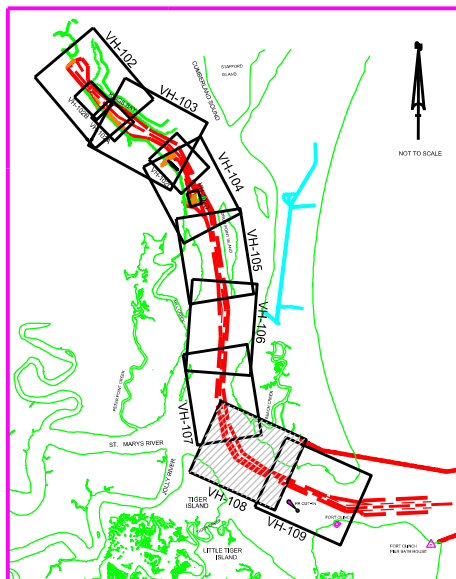
**VH-108**

SHEET 11 OF 12

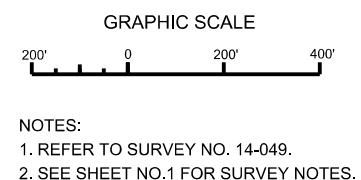


DEPTH COLOR CODE

≤39.9	Red
40.0-41.9	Orange
42.0-45.9	Yellow
46.0-48.9	Green
≥49.0	Blue



AIDS TO NAVIGATION	PLANE COORDINATES		LATITUDE	LONGITUDE
	X	Y		
LT BUOY - 26 (02/14)	874,094	261,605	30°43'02.97"	81°28'23.27"
LT BUOY - 27 (02/14)	873,310	261,295	30°42'59.95"	81°28'32.26"
LT BUOY - 28 (02/14)	872,247	262,910	30°43'16.00"	81°28'44.33"
LT BUOY - 29 (02/14)	870,578	264,188	30°43'28.74"	81°29'03.37"





US Army Corps of Engineers  
Jacksonville District  
SAFETY ON THIS JOB  
DEPENDS ON YOU

DEPARTMENT OF THE ARMY  
JACKSONVILLE DISTRICT CORPS OF ENGINEERS  
JACKSONVILLE, FLORIDA

Checked by: \_\_\_\_\_  
Designed by: \_\_\_\_\_  
Drawn by: F.A.W.  
Plot. No.: \_\_\_\_\_  
Date: FEB 2014

14-HRB-CBS-BRORDJDN  
14-HRB-NAVJ-HPJDDJDN  
14-HRB-NAVJ-LDNDJDN  
14-HRB-NAVJ-CRHPJDDJDN

U.S. NAVY SUBMARINE BASE  
KINGS BAY, GEORGIA  
2ND QUARTER FY14 EXAMINATION SURVEY  
44, 45 & 46 FOOT PROJECT  
RANGE-A, STA 0+00 TO STA 6+200  
PLAN

Scale: AS SHOWN

Drawing no.

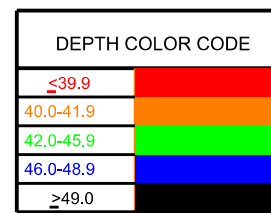
**VH-109**

SHEET 12 OF 12

**CUMBERLAND ISLAND**

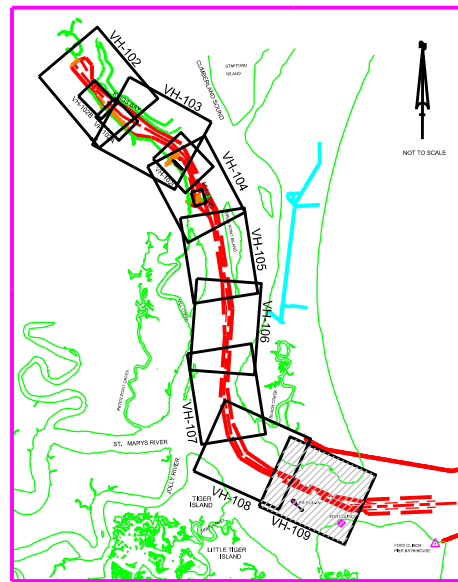
**RANGE-A**

**FT. CLINCH**



- NOTES:  
1. REFER TO SURVEY NO. 14-049.  
2. SEE SHEET NO.1 FOR SURVEY NOTES.

ADS TO NAVIGATION	PLANE COORDINATES	LATITUDE	LONGITUDE	
TY BODY 43 28144	272171	292317	07-4241.207	81-7726.507
TY BODY 43 28144	272165	292348	07-4231.707	81-7726.107
TY BODY 43 28144	272161	292345	07-4231.707	81-7726.107
TY BODY 43 28144	272161	292345	07-4231.707	81-7726.107



MATCHLINE SHEET NO. 11 STA. 6+200

