

SAN JUAN HARBOR SAN JUAN, PUERTO RICO HYDROGRAPHIC EXAM SURVEY FY19 30 THRU 56-FOOT PROJECT

SURVEY NOTES

- REFER TO SURVEY NO. 19-146.
 - SOUNDINGS ARE IN FEET AND TENTHS AND REFER TO NOAA'S REPORTED MEAN LOWER LOW WATER (MLLW) TIDAL DATUM RELATIVE TO THE 1983-2001 TIDAL EPOCH.
 - TIDAL REDUCTIONS WERE OBTAINED UTILIZING A REAL-TIME KINEMATIC (RTK) GPS AND REFERENCED TO MLLW UTILIZING A HYPACK KINEMATIC TIDE DATUM (KTD) MODEL. KTD FILE NAME IS "SANJUAN-2011APRIL06.KTD".
 - ALL ELEVATIONS ARE BELOW THE CHART DATUM UNLESS PRECEDED BY A (+) SIGN.
 - PLANE COORDINATES ARE BASED ON THE LAMBERT CONFORMAL CONIC PROJECTION FOR PUERTO RICO & THE VIRGIN ISLANDS, ZONE 1, NORTH AMERICAN DATUM OF 1983 (NAD83).
 - 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 LOCATION:
REFERENCE BASE LOCATED AT "975 5371 A TIDAL" (PID: TV1513)
TIDE STAFF LOCATED FROM "975 5371 A TIDAL" (PID: TV1513)
MLLW ELEVATION: 5.15'
A MEASURE DOWN POINT WAS SET FROM SURVEY MONUMENT "975 5371 A TIDAL", LOCATED ON THE EDGE OF USCG BULKHEAD ADJACENT TO THE BASE STATION POINT.
 - DEPTHS DEPICTED BY THIS SURVEY ARE REFERENCED TO MLLW, TIDAL EPOCH 1983-2001 AS REPORTED BY THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA). SURVEY WAS CALIBRATED TO THE PUBLISHED MLLW HEIGHTS OF THE BENCHMARKS ASSOCIATED WITH THE TIDE GAUGE SITE SPECIFIED BELOW.
NOAA TIDAL STATION 975-5371 A TIDAL USED FOR ALL CUTS. (PID: TV1513)
VERTICAL MEASUREMENTS WERE MADE USING A ROSS 835 SMARTSOUNDER DUAL-FREQUENCY 28/200 KHZ SINGLE-BEAM TRANSDUCER. ALL SOUNDINGS SHOWN ARE IN HIGH FREQUENCY.
- | VESSEL | DATE OF SURVEY | CUT |
|--------|----------------|--|
| SB-34 | 01 MAY 2019 | PUERTO NUEVO CHANNEL, BULKHEADS |
| SB-34 | 02 MAY 2019 | ANEGADO CHANNEL |
| SB-34 | 03 MAY 2019 | ARMY TERMINAL CHANNEL, BULKHEADS |
| SB-34 | 04 MAY 2019 | SAN ANTONIO APPROACH CHANNEL, BERTHING AREAS |
| SB-34 | 05 MAY 2019 | BAR CUTS 1-6, WEST BAY |
| SB-34 | 06 MAY 2019 | SAN ANTONIO CHANNEL, PUERTO NUEVO CHANNEL, GRAVING DOCK CHANNEL, WEST BAY, BULKHEADS |
- 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.
 - SURVEY ACCURACY PERFORMANCE STANDARDS, QUALITY CONTROL AND QUALITY ASSURANCE REQUIREMENTS WERE FOLLOWED DURING THIS SURVEY IN ACCORDANCE WITH USACE EM 1110-2-1003, HYDROGRAPHIC SURVEYING, 30 NOV 2013.

LEGEND	
	MONUMENT
	LIGHTED BEACON
	GREEN DAYBEACON
	RED DAYBEACON
	RED LIGHTED BUOY
	GREEN LIGHTED BUOY
	CAN BUOY
	NUN BUOY
	TIDE STAFF
	PROJECT DEPTH

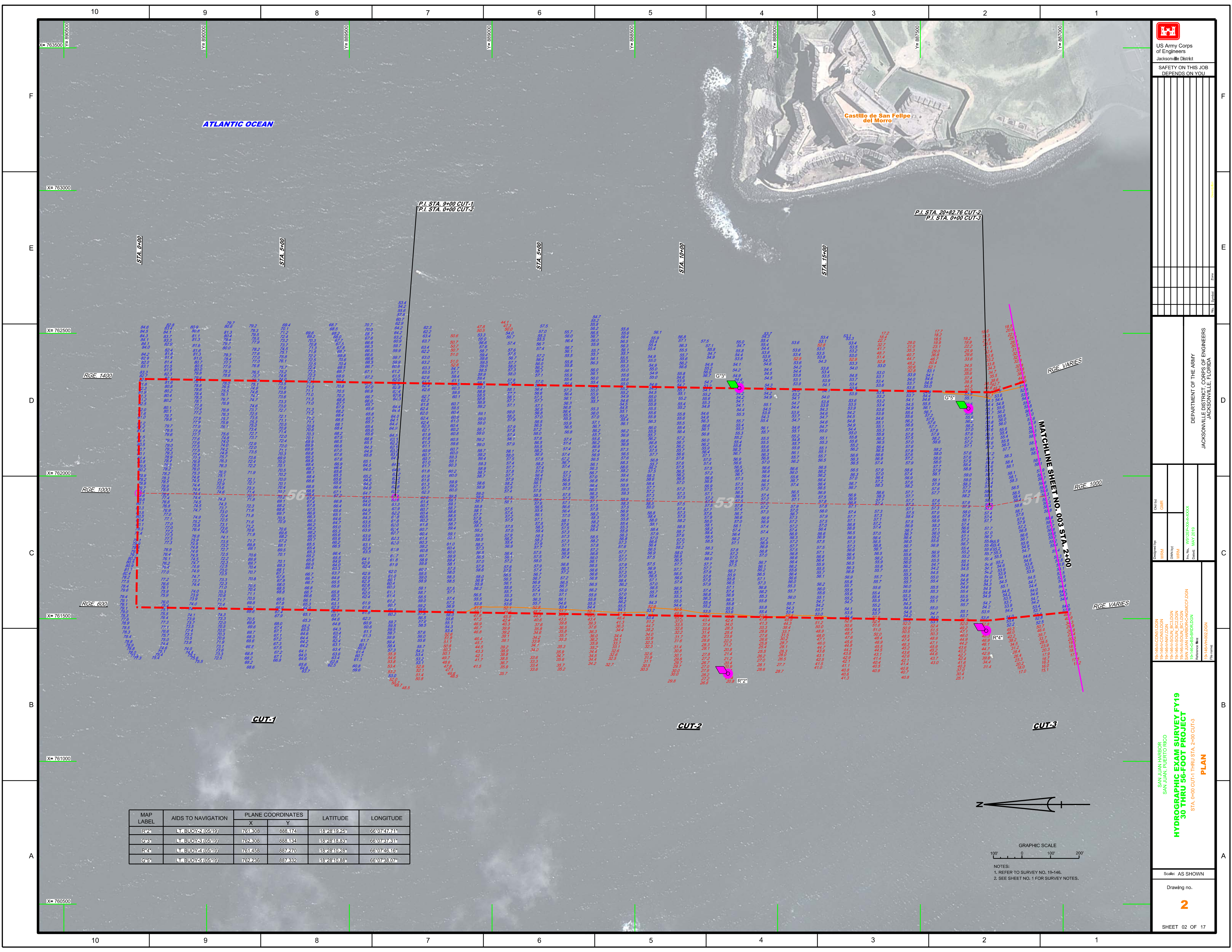
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Jacksonville District
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JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA

San Juan Harbor
San Juan, Puerto Rico
Hydrographic Exam Survey FY19
30 Thru 56-Foot Project
Index, Location and Vicinity
MAP

Scale: AS SHOWN
Drawing no.
1

SHEET 01 OF 17

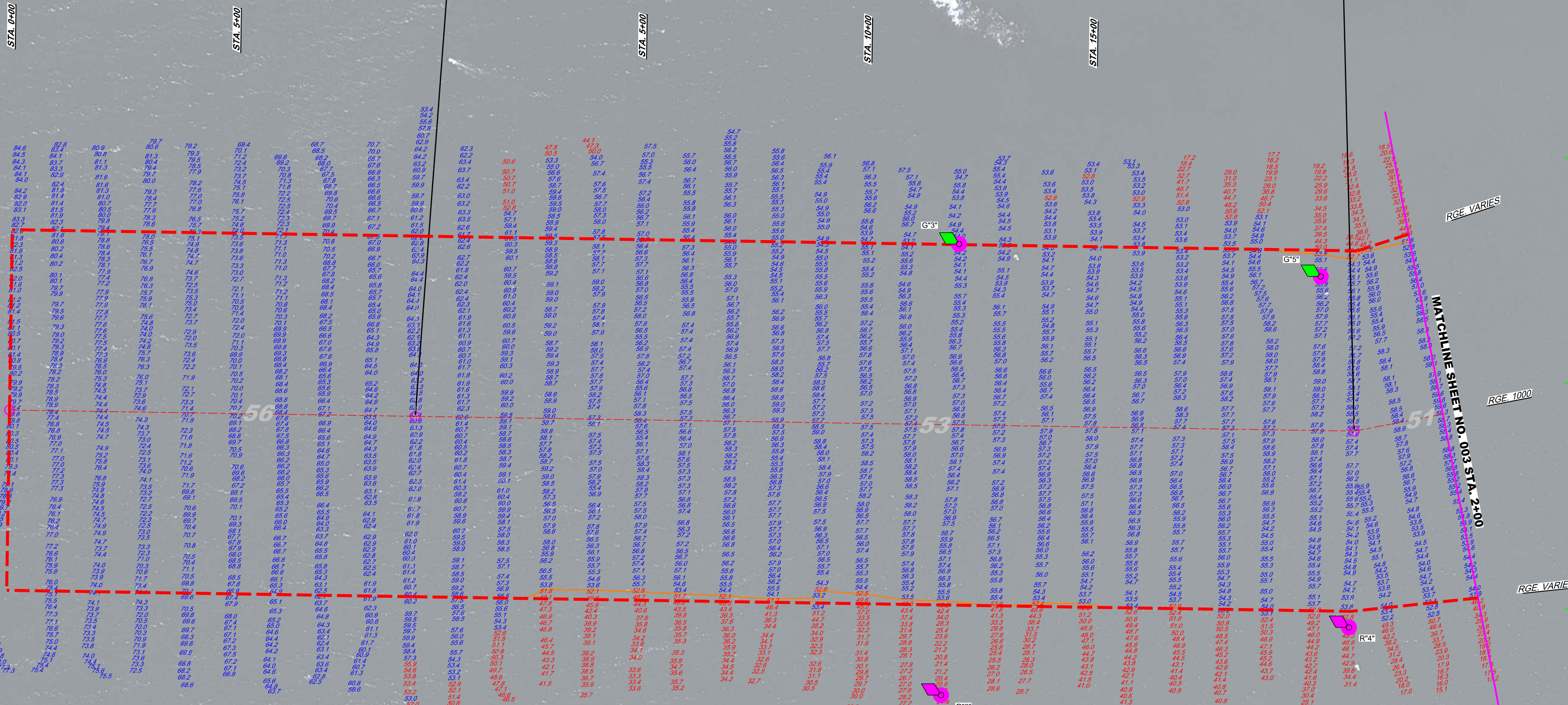


ATLANTIC OCEAN

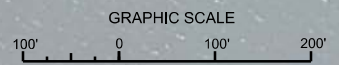
Castillo de San Felipe del Morro

P.I. STA. 9+00 CUT-1
P.I. STA. 0+00 CUT-2

P.I. STA. 20+82.76 CUT-2
P.I. STA. 0+00 CUT-3



MAP LABEL	AIDS TO NAVIGATION	PLANE COORDINATES		LATITUDE	LONGITUDE
		X	Y		
R2a	BUOY-2 (0519)	761.308	888.174	18°28'19.25"	66°07'47.71"
G3s	BUOY-3 (0519)	762.308	888.134	18°28'18.83"	66°07'37.31"
R4a	BUOY-4 (0519)	761.458	887.270	18°28'10.28"	66°07'46.16"
G5s	BUOY-5 (0519)	762.236	887.332	18°28'10.88"	66°07'38.07"



NOTES:
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2. SEE SHEET NO. 1 FOR SURVEY NOTES.

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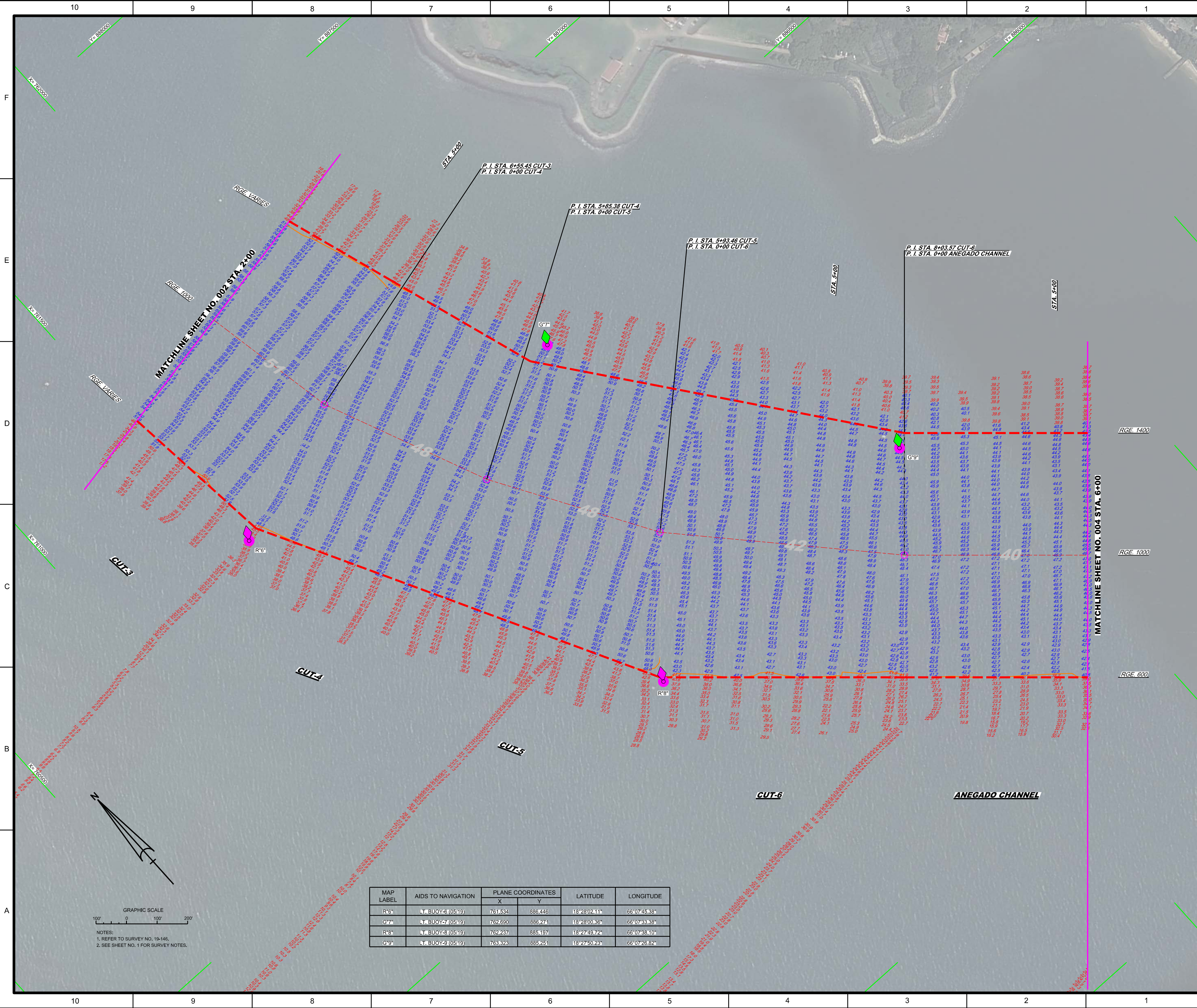
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JACKSONVILLE DISTRICT CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA

San Juan Harbor
San Juan, Puerto Rico
Hydrographic Exam Survey FY19
30 THRU 56-FOOT PROJECT
STA. 0+00 CUT-1 THRU STA. 2+00 CUT-3
PLAN

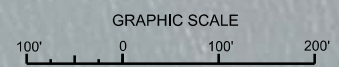
Scale: AS SHOWN

Drawing no. **2**

SHEET 02 OF 17



MAP LABEL	AIDS TO NAVIGATION	PLANE COORDINATES		LATITUDE	LONGITUDE
		X	Y		
R ⁶	LT BUOY 2 (0519)	761.534	886.446	18°28'02.11"	66°07'45.38"
G ⁷	LT BUOY 2 (0519)	762.690	886.274	18°28'00.36"	66°07'43.33"
R ⁶	LT BUOY 3 (0519)	762.237	885.197	18°27'49.72"	66°07'38.10"
G ⁹	LT BUOY 3 (0519)	763.323	885.251	18°27'50.23"	66°07'26.82"



NOTES:
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MAP LABEL	AIDS TO NAVIGATION	PLANE COORDINATES		LATITUDE	LONGITUDE
		X	Y		
R*10"	LT. BUOY-10 (05/19)	764.161	883.478	18°27'32.64"	66°07'18.15"
G*11"	LT. BUOY-11 (05/19)	765.715	883.254	18°27'30.39"	66°07'02.01"

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Jacksonville District

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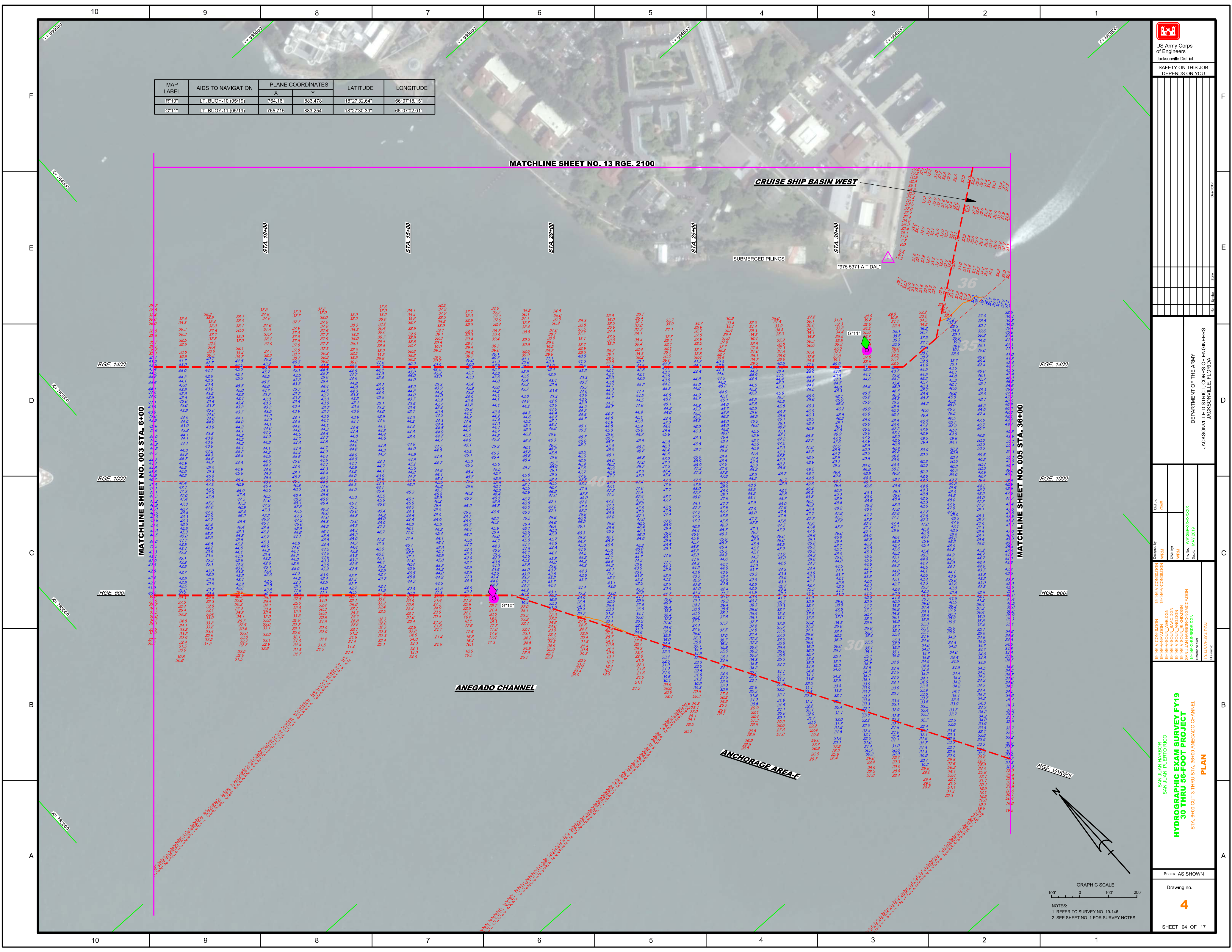
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JACKSONVILLE, FLORIDA

Project: HYDROGRAPHIC EXAM SURVEY FY19
30 THRU 56-FOOT PROJECT
STA. 6+00 OUT-3 THRU STA. 36+00 ANEGADO CHANNEL

Scale: AS SHOWN

Drawing no. **4**

SHEET 04 OF 17



MATCHLINE SHEET NO. 13 RGE. 2100

CRUISE SHIP BASIN WEST

SUBMERGED PILINGS

"975 5371 A TIDAL"

RGE. 1400

RGE. 1400

RGE. 1000

RGE. 1000

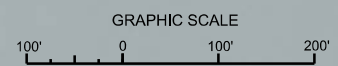
RGE. 600

RGE. 600

ANEGADO CHANNEL

ANCHORAGE AREA

RGE. VARIES



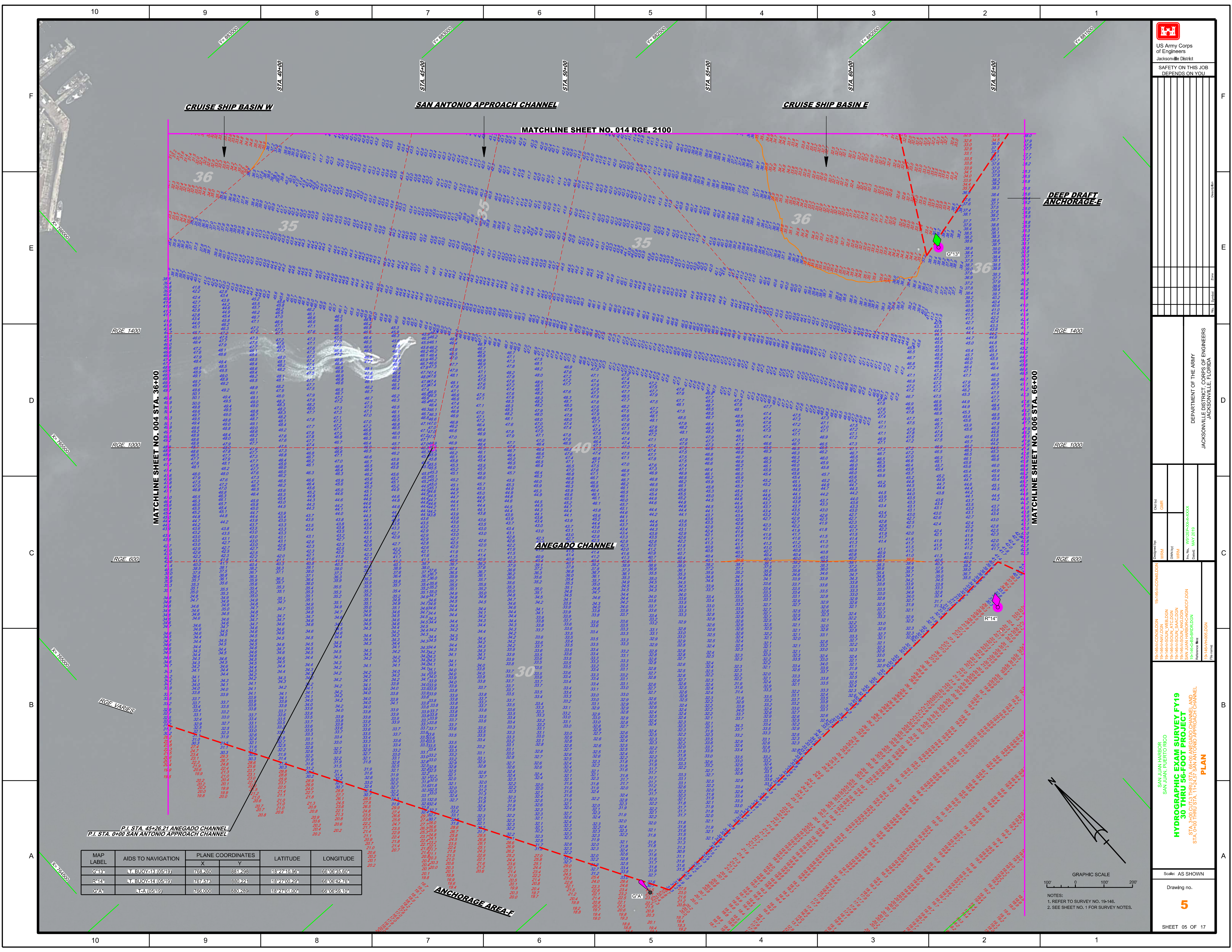
NOTES:
1. REFER TO SURVEY NO. 19-146.
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1	2	3	4	5	6	7	8	9	10
A	B	C	D	E	F				

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19-166A-CO-008.DGN	19-166A-CO-008.DGN	19-166A-CO-008.DGN	19-166A-CO-008.DGN	19-166A-CO-008.DGN	19-166A-CO-008.DGN	19-166A-CO-008.DGN	19-166A-CO-008.DGN	19-166A-CO-008.DGN	19-166A-CO-008.DGN
19-166A-CO-008.DGN	19-166A-CO-008.DGN	19-166A-CO-008.DGN	19-166A-CO-008.DGN	19-166A-CO-008.DGN	19-166A-CO-008.DGN	19-166A-CO-008.DGN	19-166A-CO-008.DGN	19-166A-CO-008.DGN	19-166A-CO-008.DGN

San Juan Harbor
San Juan, Puerto Rico
HYDROGRAPHIC EXAM SURVEY FY19
30 THRU 56-FOOT PROJECT
STA. 3+00 CUTS THRU STA. 65+00 ANEGADO CHANNEL AND
STA. 0+00 THRU STA. 17+50 SAN ANTONIO APPROACH CHANNEL
PLAN



CRUISE SHIP BASIN W

SAN ANTONIO APPROACH CHANNEL

CRUISE SHIP BASIN E

MATCHLINE SHEET NO. 014 RGE. 2100

DEEP DRAFT ANCHORAGE E

RGE. 1400

RGE. 1400

RGE. 1000

RGE. 1000

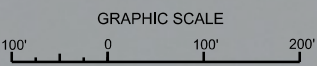
RGE. 600

RGE. 600

RGE. VARIES

P.I. STA. 45+26.21 ANEGADO CHANNEL
P.I. STA. 0+00 SAN ANTONIO APPROACH CHANNEL

MAP LABEL	AIDS TO NAVIGATION	PLANE COORDINATES		LATITUDE	LONGITUDE
		X	Y		
G13	LT BUOY 13 (0549)	768260	881288	18°27'10.96"	68°06'35.60"
R14	RT BUOY 14 (0549)	767576	880224	18°27'00.28"	68°06'24.76"
G14	LA (0549)	768500	880289	18°27'10.00"	68°06'59.10"



NOTES:
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Checked by: GHR
Designed by: WRW
Drawn by: WRW
Reviewed by: WRW
Project No.: 14-H4650-R002020
Date: MAY 2019

**HYDROGRAPHIC EXAM SURVEY FY19
30 THRU 56-FOOT PROJECT**

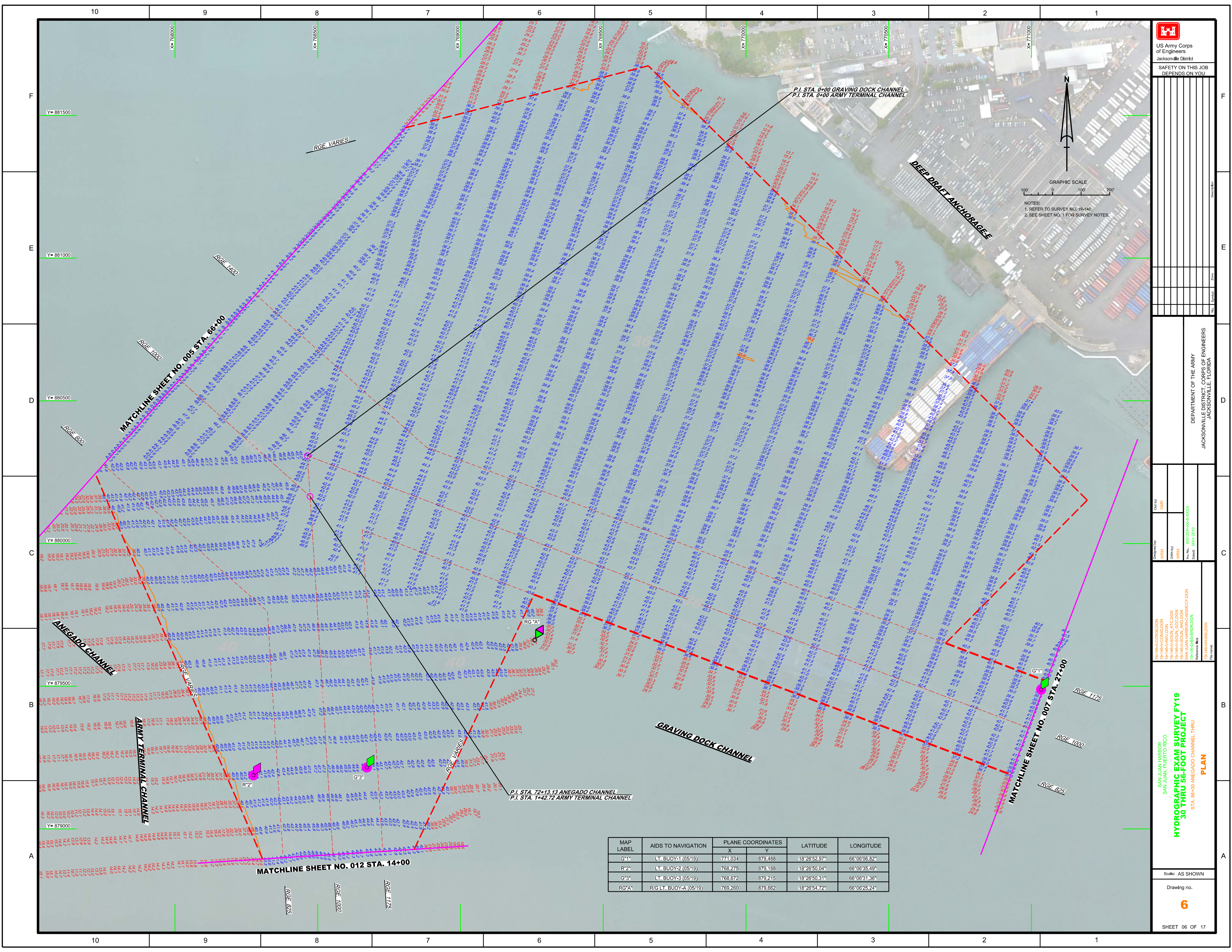
PLAN

STA. 66+00 ANEGADO CHANNEL THRU
STA. 1442.72 ARMY TERMINAL CHANNEL

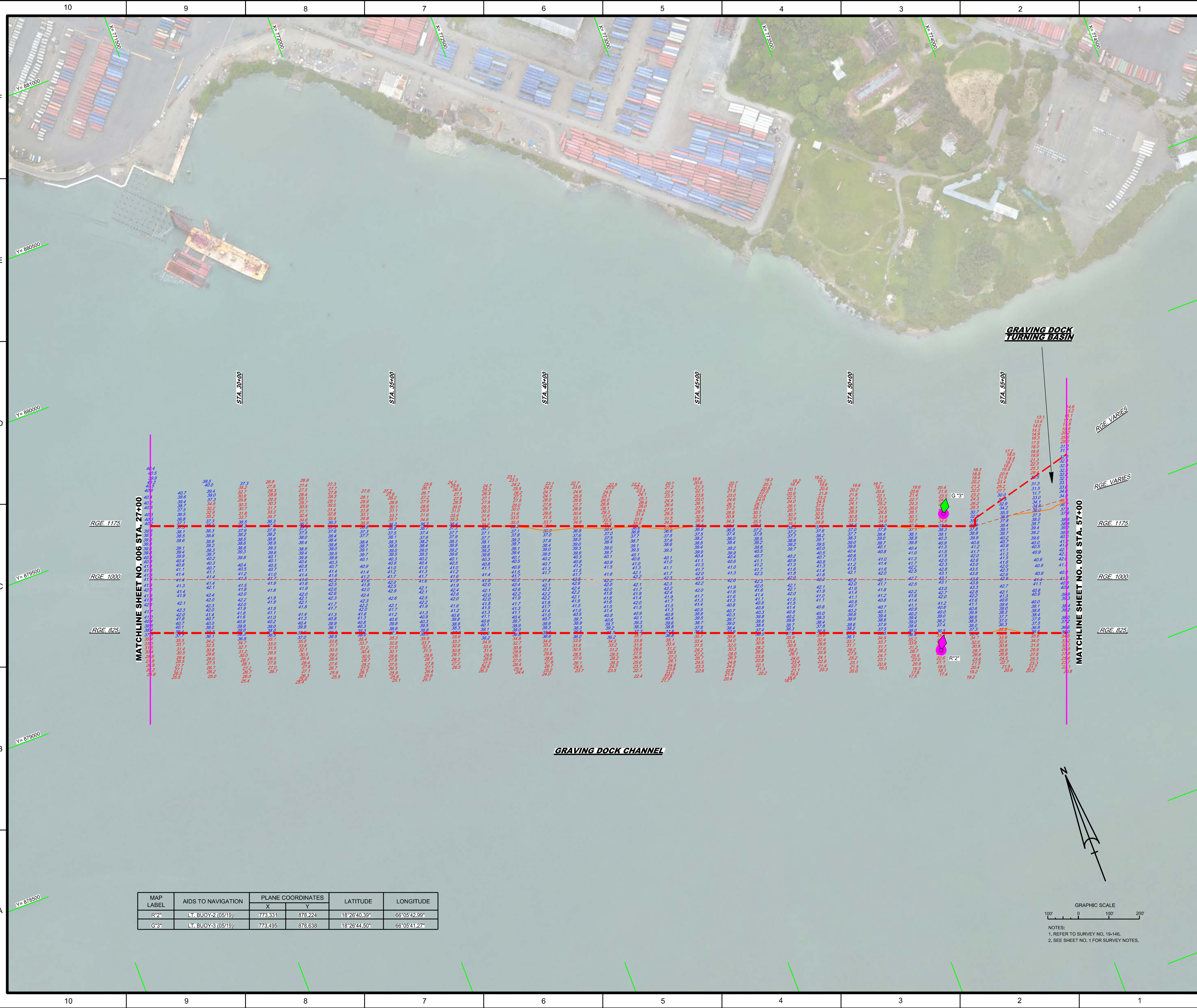
Scale: AS SHOWN

Drawing No. **6**

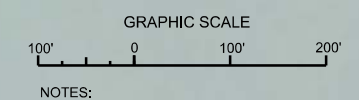
SHEET 06 OF 17



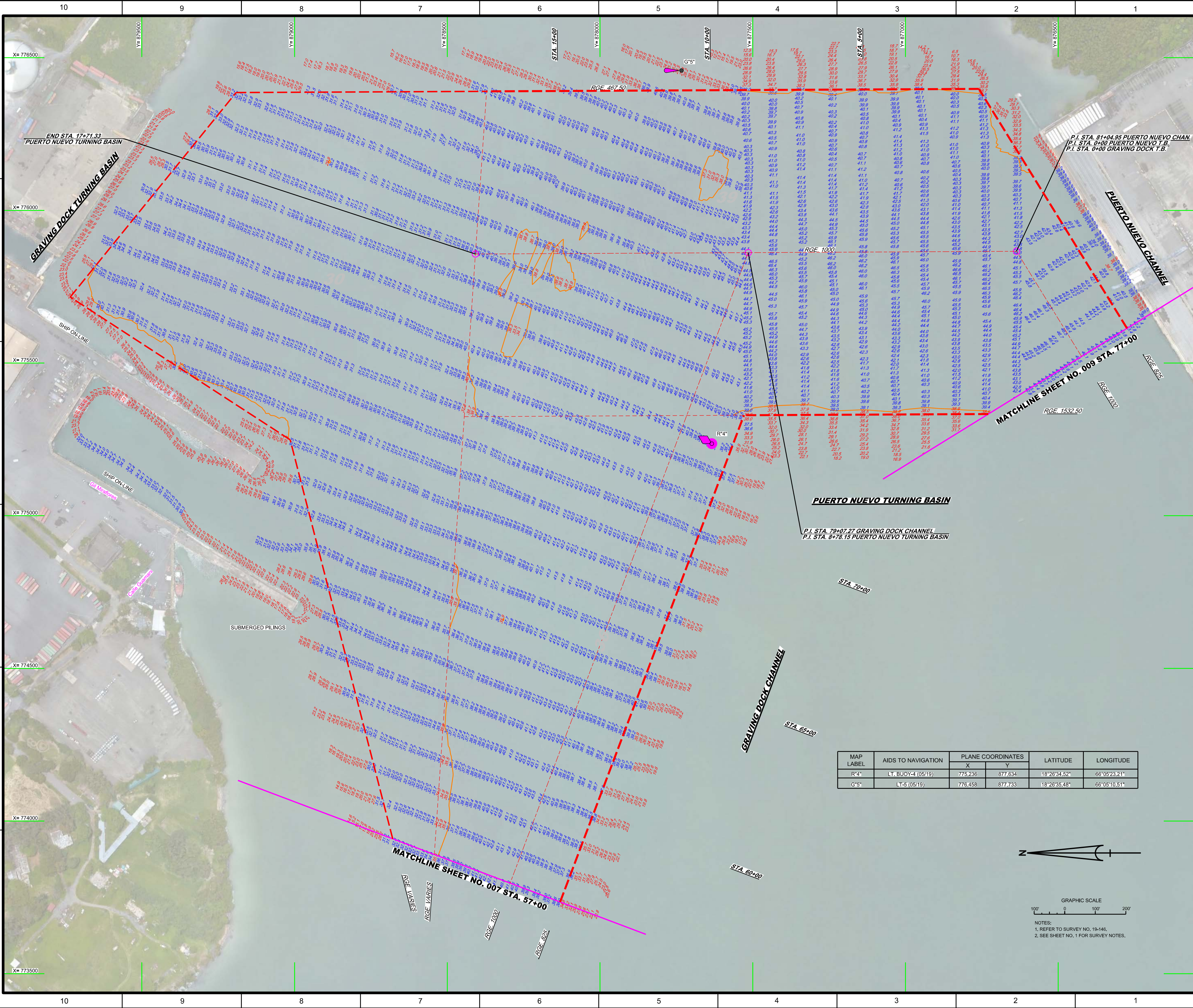
MAP LABEL	AIDS TO NAVIGATION	PLANE COORDINATES		LATITUDE	LONGITUDE
		X	Y		
G*1*	LT. BUOY-1 (05/19)	771.034	879.488	18°26'52.97"	66°06'06.82"
R*2*	LT. BUOY-2 (05/19)	768.275	879.188	18°26'50.04"	66°06'35.49"
G*3*	LT. BUOY-3 (05/19)	768.672	879.215	18°26'50.31"	66°06'31.36"
RG*A*	R/G LT. BUOY-A (05/19)	769.260	879.662	18°26'54.72"	66°06'25.24"



MAP LABEL	AIDS TO NAVIGATION	PLANE COORDINATES		LATITUDE	LONGITUDE
		X	Y		
R'2"	LT. BUOY-2 (0519)	773,331	878,224	18°26'40.39"	66°05'42.99"
G'3"	LT. BUOY-3 (0519)	773,495	878,638	18°26'44.50"	66°05'41.27"



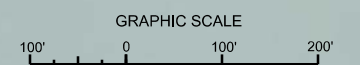
NOTES:
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PUERTO NUEVO TURNING BASIN
 P.I. STA. 79+07.27 GRAVING DOCK CHANNEL
 P.I. STA. 8+78.15 PUERTO NUEVO TURNING BASIN

P.I. STA. 81+04.95 PUERTO NUEVO CHAN.
 P.I. STA. 0+00 PUERTO NUEVO T.B.
 P.I. STA. 0+00 GRAVING DOCK T.B.

MAP LABEL	AIDS TO NAVIGATION	PLANE COORDINATES		LATITUDE	LONGITUDE
		X	Y		
R*4	LT. BUOY-4 (05/19)	775.236	877.634	18°26'34.52"	66°05'23.21"
G*5	LT-5 (05/19)	776.458	877.733	18°26'35.48"	66°05'10.51"



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**HYDROGRAPHIC EXAM SURVEY FY19
30 THRU 56-FOOT PROJECT**

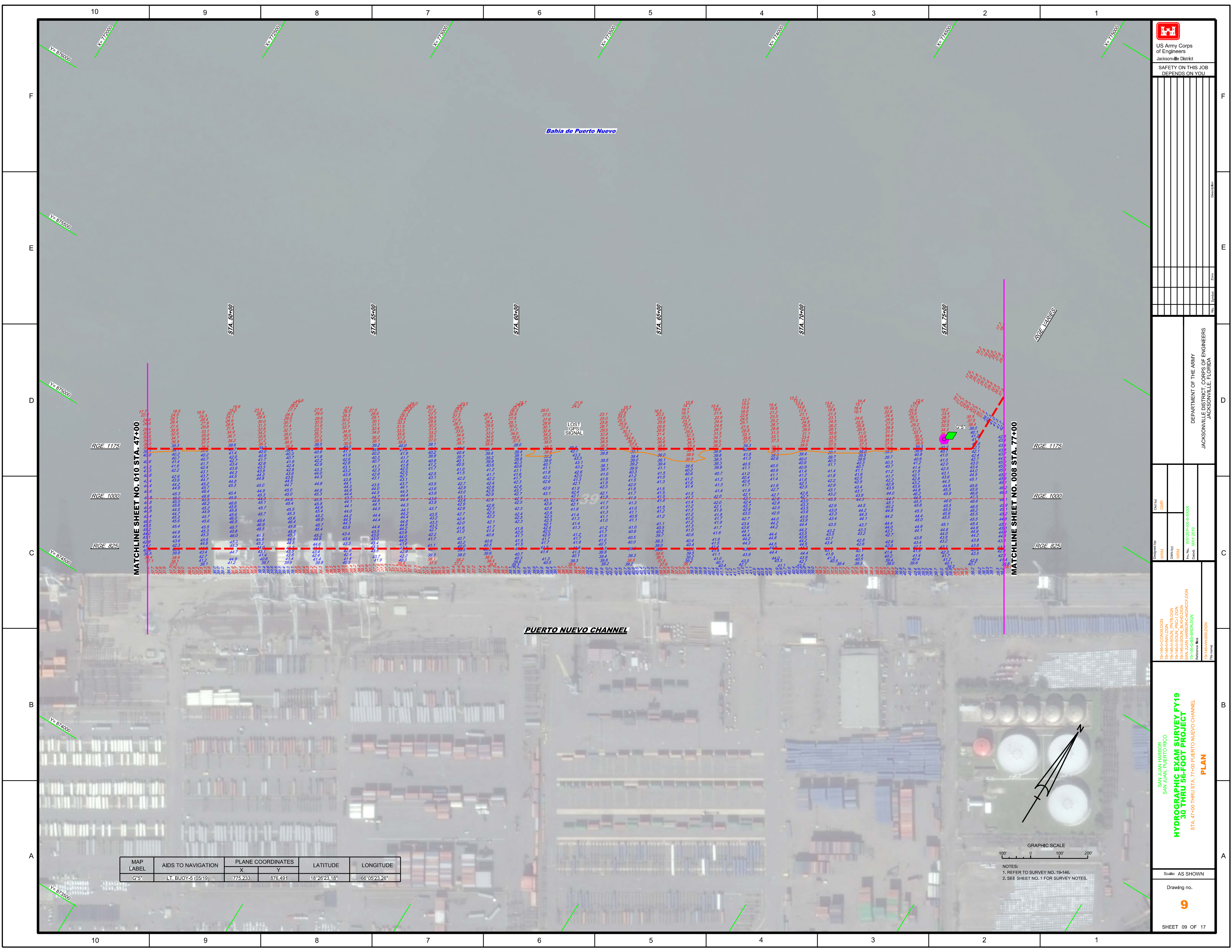
STA. 87+00 THRU STA. 79+07.27 GRAVING DOCK CHANNEL; STA. 0+00 THRU STA. 17+71.33 PUERTO NUEVO TURNING BASIN; STA. 0+00 THRU STA. 81+04.95 PUERTO NUEVO CHANNEL

PLAN

Scale: AS SHOWN

Drawing no.
8

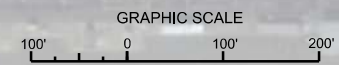
SHEET 08 OF 17




Bahia de Puerto Nuevo

PUERTO NUEVO CHANNEL

MAP LABEL	AIDS TO NAVIGATION	PLANE COORDINATES		LATITUDE	LONGITUDE
		X	Y		
G*5	LT. BUOY-5 (05/19)	775.233	876.491	18°26'23.18"	66°05'23.26"



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San Juan Harbor
 San Juan, Puerto Rico

**HYDROGRAPHIC EXAM SURVEY FY19
 30 THRU 56-FOOT PROJECT**

STA. 47+00 THRU STA. 77+00 PUERTO NUEVO CHANNEL

PLAN

Scale: AS SHOWN

Drawing no.
9

SHEET 09 OF 17