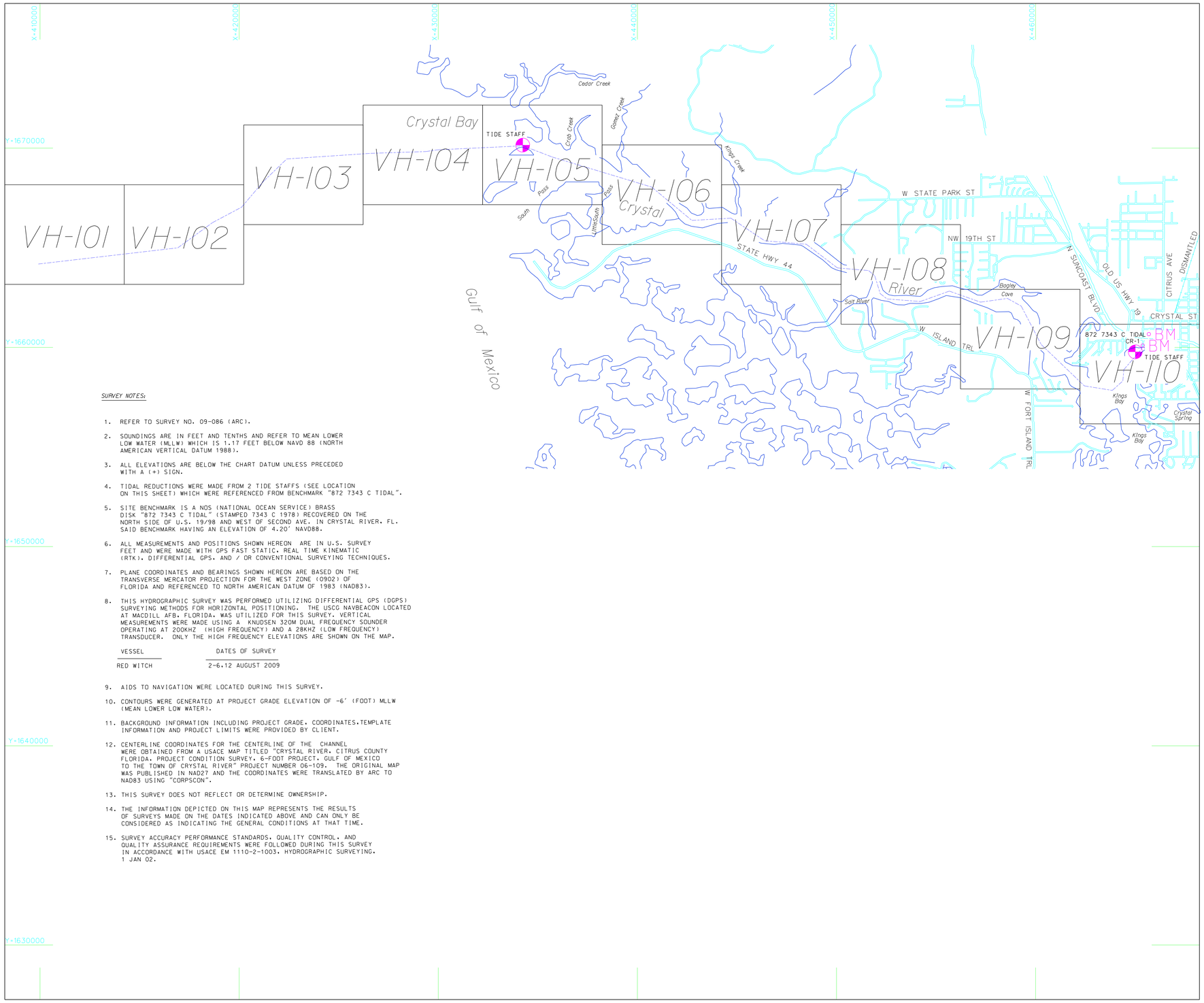
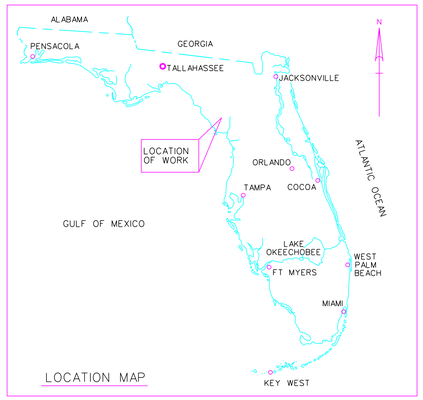
CRYSTAL RIVER - CITRUS COUNTY, FLORIDA
PROJECT CONDITION SURVEY
6-FOOT PROJECT





LOCATION MAP

N

SURVEY NOTES:

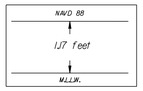
1. REFER TO SURVEY NO. 09-086 (ARC).
2. SOUNDINGS ARE IN FEET AND TENTHS AND REFER TO MEAN LOWER LOW WATER (MLLW) WHICH IS 1.17 FEET BELOW NAVD 88 (NORTH AMERICAN VERTICAL DATUM 1988).
3. ALL ELEVATIONS ARE BELOW THE CHART DATUM UNLESS PRECEDED WITH A (+) SIGN.
4. TIDAL REDUCTIONS WERE MADE FROM 2 TIDE STAFFS (SEE LOCATION ON THIS SHEET) WHICH WERE REFERENCED FROM BENCHMARK "872 7343 C TIDAL".
5. SITE BENCHMARK IS A NOS (NATIONAL OCEAN SERVICE) BRASS DISK "872 7343 C TIDAL" (STAMPED 7343 C 1978) RECOVERED ON THE NORTH SIDE OF U.S. 19/98 AND WEST OF SECOND AVE. IN CRYSTAL RIVER. FL. SAID BENCHMARK HAVING AN ELEVATION OF 4.20' NAVD88.
6. ALL MEASUREMENTS AND POSITIONS SHOWN HEREON ARE IN U.S. SURVEY FEET AND WERE MADE WITH GPS FAST STATIC. REAL TIME KINEMATIC (RTK). DIFFERENTIAL GPS. AND / OR CONVENTIONAL SURVEYING TECHNIQUES.
7. PLANE COORDINATES AND BEARINGS SHOWN HEREON ARE BASED ON THE TRANSVERSE MERCATOR PROJECTION FOR THE WEST ZONE (0902) OF FLORIDA AND REFERENCED TO NORTH AMERICAN DATUM OF 1983 (NAD83).
8. THIS HYDROGRAPHIC SURVEY WAS PERFORMED UTILIZING DIFFERENTIAL GPS (DGPS) SURVEYING METHODS FOR HORIZONTAL POSITIONING. THE USCG NAVBEACON LOCATED AT MACDILL AFB. FLORIDA. WAS UTILIZED FOR THIS SURVEY. VERTICAL MEASUREMENTS WERE MADE USING A KNUDSEN 320M DUAL FREQUENCY SOUNDER OPERATING AT 200KHZ (HIGH FREQUENCY) AND A 28KHZ (LOW FREQUENCY) TRANSDUCER. ONLY THE HIGH FREQUENCY ELEVATIONS ARE SHOWN ON THE MAP.

VESSEL	DATES OF SURVEY
RED WITCH	2-6.12 AUGUST 2009

9. AIDS TO NAVIGATION WERE LOCATED DURING THIS SURVEY.
10. CONTOURS WERE GENERATED AT PROJECT GRADE ELEVATION OF -6' (FOOT) MLLW (MEAN LOWER LOW WATER).
11. BACKGROUND INFORMATION INCLUDING PROJECT GRADE. COORDINATES.TEMPLATE INFORMATION AND PROJECT LIMITS WERE PROVIDED BY CLIENT.
12. CENTERLINE COORDINATES FOR THE CENTERLINE OF THE CHANNEL WERE OBTAINED FROM A USACE MAP TITLED "CRYSTAL RIVER. CITRUS COUNTY FLORIDA. PROJECT CONDITION SURVEY. 6-FOOT PROJECT. GULF OF MEXICO TO THE TOWN OF CRYSTAL RIVER" PROJECT NUMBER 06-109. THE ORIGINAL MAP WAS PUBLISHED IN NAD27 AND THE COORDINATES WERE TRANSLATED BY ARC TO NAD83 USING "CORPSCON".
13. THIS SURVEY DOES NOT REFLECT OR DETERMINE OWNERSHIP.
14. 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.
15. 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. 1 JAN 02.

BENCHMARK	NAVD 88 ELEV.(FT)
872 7343 C TIDAL	4.20
USACE CR-1 1999	2.41

LEGEND	
	CHANNEL CENTERLINE
5	CONTOUR W/ ANNOTATION
BM	BENCHMARK
	LIGHTED BEACON
	GREEN DAYBEACON
	RED DAYBEACON
	RED LIGHTED BUOY
	GREEN LIGHTED BUOY
	CAN BUOY
	NUN BUOY
	CAUTION MANATEE SIGN
	TIDE STAFF



Relationship between NAVD 88 and 1983-2001 NOAA Mean Lower Low Water Tidal Datum

GRAPHIC SCALE

2000' 0 2000' 4000'

SCALE: 1"=2000'-0"

US Army Corps of Engineers
Jacksonville District

SAFETY ON THIS JOB DEPENDS ON YOU

No.	Symbol	Zone	Description
N	△	A-N	ABCD

ARC SURVEYING & MAPPING, INC.
8320 SAN JUAN AVENUE,
JACKSONVILLE, FLORIDA 32210
(904) 381-1010
LICENSED BUSINESS NO. 6487

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

Designed by: XXX
Cad by: JFS
DWN by: DET
Inv. No. W912EP-05-D-0003
Dated: 17 JULY 2009
D.O.FILE NO.
Dated: AUGUST 2009

2009-086-V-HPBACKGROUND.DGN
2009-086-V-HPBAKNAME.DGN
2009-086-V-HPNAVAD.DGN
2009-086-V-HPPROJECT.DGN
2009-086-V-PROJECT.DGN
2009-086-V-SCELEV.DGN
2009-086-V-SCELEVDOR.DGN
FLORIDA_PLCC.DGN
2009-086-G-BS.DGN
Reference files:

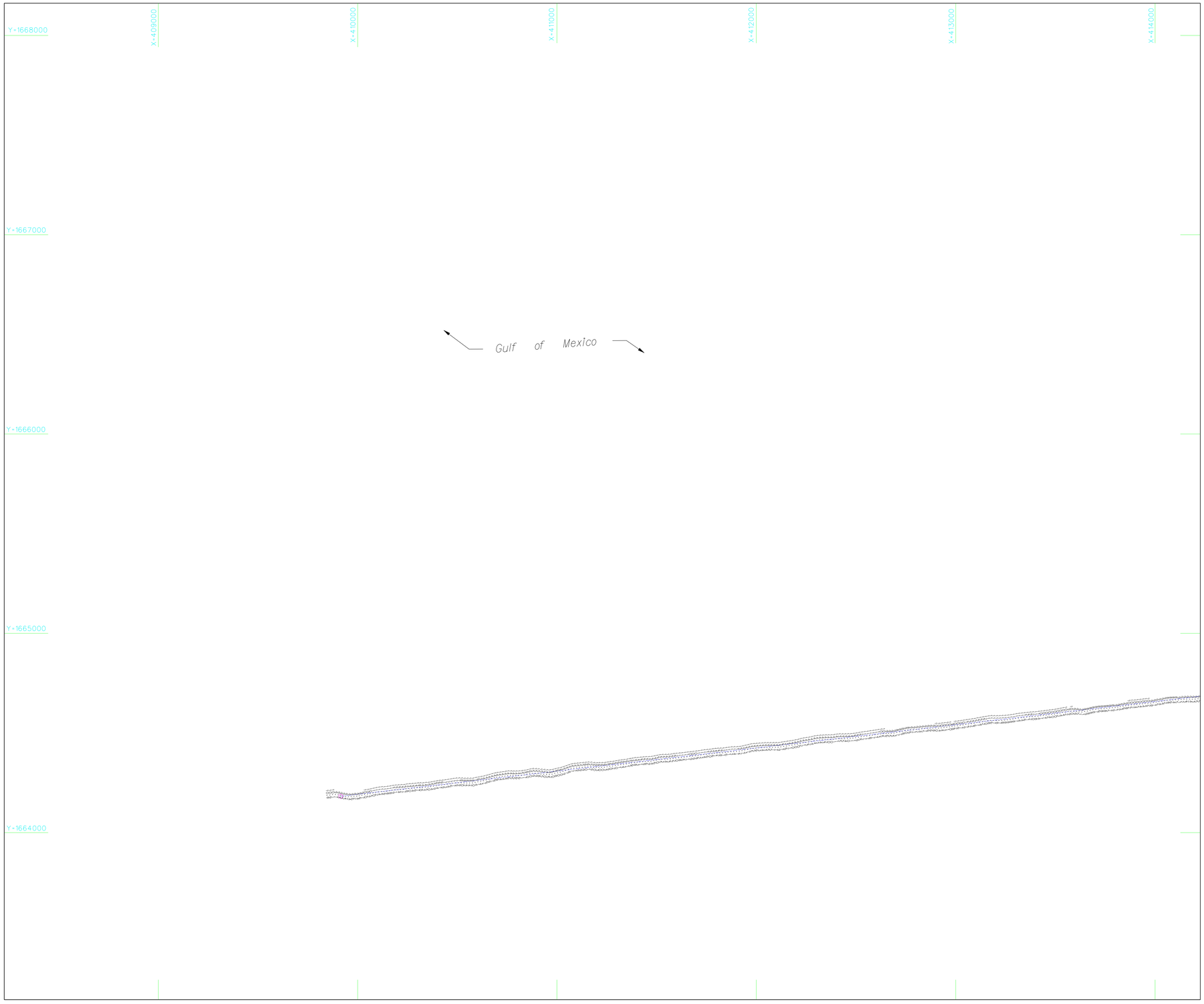
2009-086-GI001.DGN
File name:

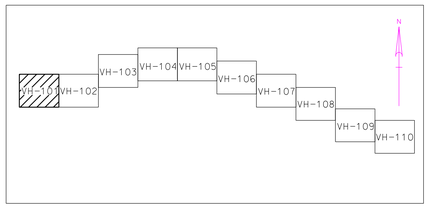
CRYSTAL RIVER
CITRUS COUNTY, FLORIDA
PROJECT CONDITION SURVEY
6-FOOT PROJECT
GULF OF MEXICO TO THE TOWN OF CRYSTAL RIVER
COVER

Scale: AS SHOWN

Drawing no.

GI-001





SHEET LAYOUT

N

LEGEND	
	CHANNEL CENTERLINE
5	CONTOUR W/ ANNOTATION
BM	BENCHMARK
	LIGHTED BEACON
	GREEN DAYBEACON
	RED DAYBEACON
	RED LIGHTED BUOY
	GREEN LIGHTED BUOY
C	CAN BUOY
N	NUN BUOY
CAUTION MANATEE SIGN	CAUTION MANATEE SIGN
	TIDE STAFF

NOTES:

1. REFER TO SURVEY 2009-086 (ARC)
2. SEE SHEET G1001 THIS SET FOR ALL NOTES.

GRAPHIC SCALE

200' 0 200' 400'

SCALE: 1"=200'-0"

US Army Corps of Engineers
Jacksonville District

SAFETY ON THIS JOB DEPENDS ON YOU

No.	Symbol	Zone	Description
N	A	A-N	ABCD

ARC SURVEYING & MAPPING, INC.
CERTIFICATE OF AUTHORIZATION
JACKSONVILLE, FLORIDA 32210
PHONE: 904/384-8377
LICENSED BUSINESS NO. 4987

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

Designed by: XXX
Cad by: JFS
DWN by: DET
Inv. No. W912EP-05-D-0003
Dated: 17 JULY 2009
D.O.FILE NO.
Dated: AUGUST 2009

Reference files:
2009-086-V-HPBACKGROUND.DGN
2009-086-V-HPCHANNEL.DGN
2009-086-V-HPMAIN.DGN
2009-086-V-HPGRIDTICK.DGN
2009-086-V-PRELEV.DGN
2009-086-V-SECT.DGN
2009-086-V-GPCONTOUR.DGN
2009-086-G-BS.DGN

File name: 2008-086-VH101.DGN

CRYSTAL RIVER
CITRUS COUNTY, FLORIDA
PROJECT CONDITION SURVEY
6-FOOT PROJECT
GULF OF MEXICO TO THE TOWN OF CRYSTAL RIVER
PLAN

Scale: AS SHOWN

Drawing no.
VH-101

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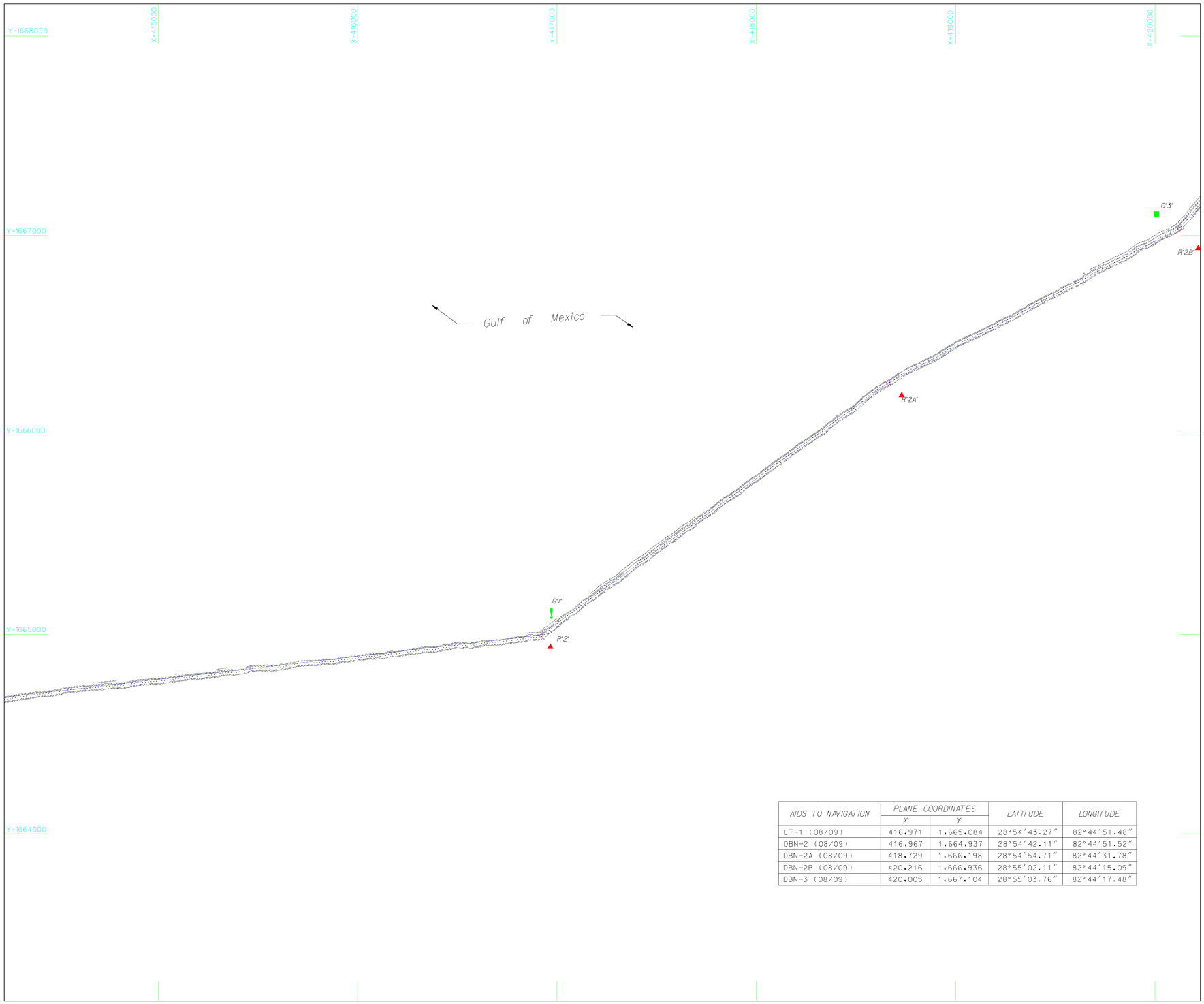

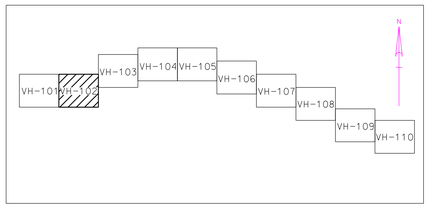

SHEET LAYOUT

AIDS TO NAVIGATION	PLANE COORDINATES		LATITUDE	LONGITUDE
	X	Y		
LT-1 (08/09)	416.971	1.665.084	28°54'43.27"	82°44'51.48"
DBN-2 (08/09)	416.967	1.664.937	28°54'42.11"	82°44'51.52"
DBN-2A (08/09)	418.729	1.666.198	28°54'54.71"	82°44'31.78"
DBN-2B (08/09)	420.216	1.666.936	28°55'02.11"	82°44'15.09"
DBN-3 (08/09)	420.005	1.667.104	28°55'03.76"	82°44'17.48"

LEGEND

	CHANNEL CENTERLINE
5	CONTOUR W/ ANNOTATION
BM	BENCHMARK
	LIGHTED BEACON
	GREEN DAYBEACON
	RED DAYBEACON
	RED LIGHTED BUOY
	GREEN LIGHTED BUOY
C	CAN BUOY
N	NUN BUOY
CAUTION	CAUTION MANATEE SIGN
	TIDE STAFF

NOTES:

1. REFER TO SURVEY 2009-086 (ARC)
2. SEE SHEET G1001 THIS SET FOR ALL NOTES.

GRAPHIC SCALE

200' 0 200' 400'

SCALE: 1"=200'-0"

US Army Corps of Engineers
Jacksonville District

SAFETY ON THIS JOB DEPENDS ON YOU

No.	Symbol	Zone	Description
N	A	A-N	ABCD

ARC SURVEYING & MAPPING, INC.
5202 SAN JUAN AVENUE,
JACKSONVILLE, FLORIDA 32210
PHONE: 904/384-8377
LICENSED BUSINESS NO. 6487

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

Designed by: XXX
Ckd by: JFS
DWN by: DET
Inv. No. W912EP-05-D-0003
Dated: 17 JULY 2009
D.O.FILE NO.
Dated: AUGUST 2009

2009-086-V-HPBACKGROUND.DGN
2009-086-V-HPCHANNEL.DGN
2009-086-V-HPNAVAID.DGN
2009-086-V-HPGRIDTICK.DGN
2009-086-V-PRELEV.DGN
2009-086-V-SCELEV.DGN
2009-086-V-GPCONTOUR.DGN
2009-086-G-BS.DGN
Reference files:
2009-086-VH102.DGN
File name:

CRYSTAL RIVER
CITRUS COUNTY, FLORIDA
PROJECT CONDITION SURVEY
6-FOOT PROJECT
GULF OF MEXICO TO THE TOWN OF CRYSTAL RIVER
PLAN

Scale: AS SHOWN

Drawing no.
VH-102

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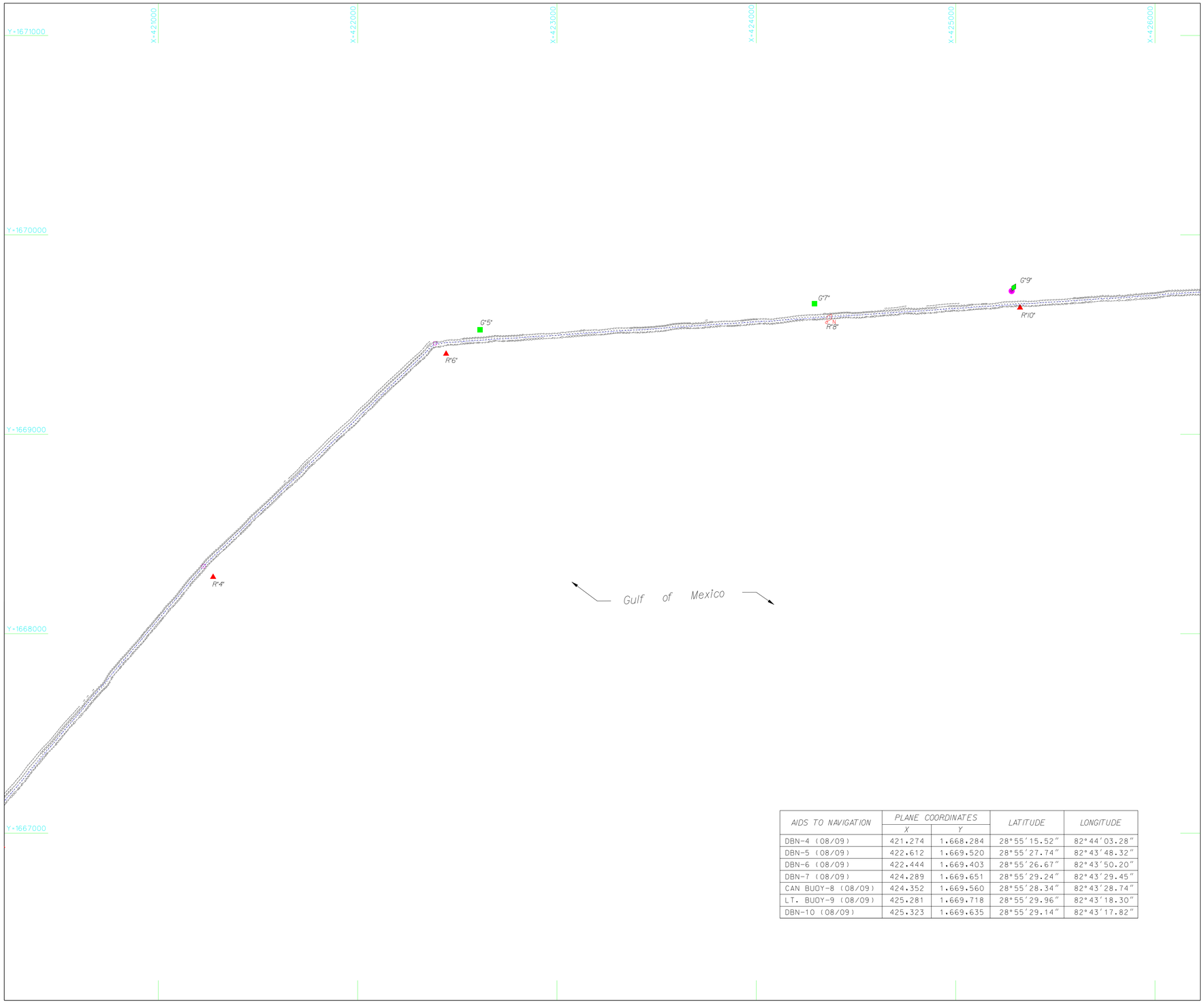
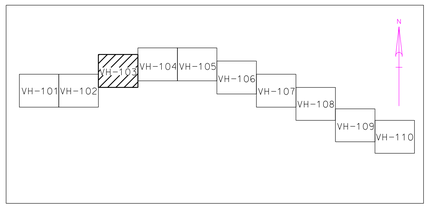


AIDS TO NAVIGATION	PLANE COORDINATES		LATITUDE	LONGITUDE
	X	Y		
DBN-4 (08/09)	421.274	1.668.284	28°55'15.52"	82°44'03.28"
DBN-5 (08/09)	422.612	1.669.520	28°55'27.74"	82°43'48.32"
DBN-6 (08/09)	422.444	1.669.403	28°55'26.67"	82°43'50.20"
DBN-7 (08/09)	424.289	1.669.651	28°55'29.24"	82°43'29.45"
CAN BUOY-8 (08/09)	424.352	1.669.560	28°55'28.34"	82°43'28.74"
LT. BUOY-9 (08/09)	425.281	1.669.718	28°55'29.96"	82°43'18.30"
DBN-10 (08/09)	425.323	1.669.635	28°55'29.14"	82°43'17.82"



SHEET LAYOUT

N

LEGEND	
	CHANNEL CENTERLINE
5	CONTOUR W/ ANNOTATION
RM	BENCHMARK
	LIGHTED BEACON
	GREEN DAYBEACON
	RED DAYBEACON
	RED LIGHTED BUOY
	GREEN LIGHTED BUOY
C	CAN BUOY
N	NUN BUOY
CAUTION MANATEE SIGN	CAUTION MANATEE SIGN
	TIDE STAFF

NOTES:

1. REFER TO SURVEY 2009-086 (ARC)
2. SEE SHEET G1001 THIS SET FOR ALL NOTES.

GRAPHIC SCALE

200' 0 200' 400'

SCALE: 1"=200'-0"

US Army Corps of Engineers
Jacksonville District

SAFETY ON THIS JOB DEPENDS ON YOU

No.	Symbol	Zone	Description
N	A	A-N	ABCD

ARC SURVEYING & MAPPING, INC.
CERTIFICATE OF AUTHORIZATION
JACKSONVILLE, FLORIDA 32210
PHONE: 904/384-8377
LICENSED BUSINESS NO. 4487

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

Designed by: XXX
Cvd by: JFS
DWN by: DET
Rev. No. W912EP-05-D-0003
Dated: 17 JULY 2009
D.O.FILE NO.
Dated: AUGUST 2009

Reference files:
2009-086-V-HPBACKGROUND.DGN
2009-086-V-HPCHANNEL.DGN
2009-086-V-HPMANUAL.DGN
2009-086-V-HPGRIDTICK.DGN
2009-086-V-PRELEV.DGN
2009-086-V-PCELEV.DGN
2009-086-V-GPCONTOUR.DGN
2009-086-G-BS.DGN

File name: 2009-086-VH103.DGN

GRYSTAL RIVER
CITRUS COUNTY, FLORIDA

PROJECT CONDITION SURVEY
6-FOOT PROJECT

GULF OF MEXICO TO THE TOWN OF CRYSTAL RIVER

PLAN

Scale: AS SHOWN

Drawing no.

VH-103

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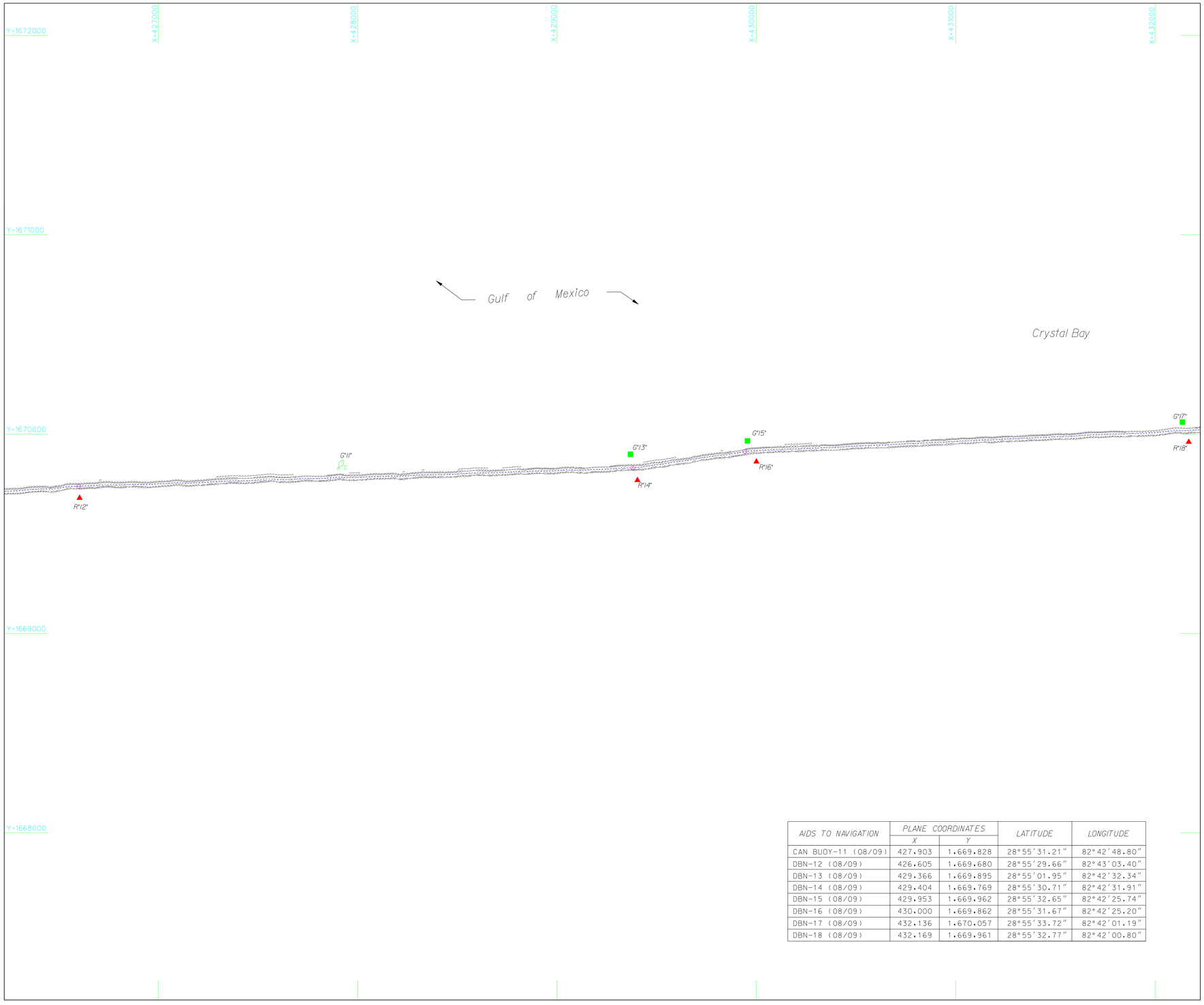

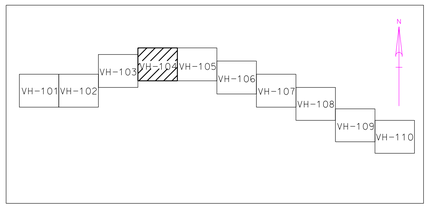

SHEET LAYOUT

N

AIDS TO NAVIGATION	PLANE COORDINATES		LATITUDE	LONGITUDE
	X	Y		
CAN BUOY-11 (08/09)	427,903	1,669,828	28°55'31.21"	82°42'48.80"
DBN-12 (08/09)	426,605	1,669,680	28°55'29.66"	82°43'03.40"
DBN-13 (08/09)	429,366	1,669,895	28°55'01.95"	82°42'32.34"
DBN-14 (08/09)	429,404	1,669,769	28°55'30.71"	82°42'31.91"
DBN-15 (08/09)	429,953	1,669,962	28°55'32.65"	82°42'25.74"
DBN-16 (08/09)	430,000	1,669,862	28°55'31.67"	82°42'25.20"
DBN-17 (08/09)	432,136	1,670,057	28°55'33.72"	82°42'01.19"
DBN-18 (08/09)	432,169	1,669,961	28°55'32.77"	82°42'00.80"

LEGEND	
	CHANNEL CENTERLINE
5	CONTOUR W/ ANNOTATION
BM	BENCHMARK
	LIGHTED BEACON
	GREEN DAYBEACON
	RED DAYBEACON
	RED LIGHTED BUOY
	GREEN LIGHTED BUOY
C	CAN BUOY
N	NUN BUOY
CAUTION MANATEE SIGN	CAUTION MANATEE SIGN
	TIDE STAFF

NOTES:

1. REFER TO SURVEY 2009-086 (ARC)
2. SEE SHEET G1001 THIS SET FOR ALL NOTES.

GRAPHIC SCALE

200' 0 200' 400'

SCALE: 1"=200'-0"

US Army Corps of Engineers
Jacksonville District

SAFETY ON THIS JOB DEPENDS ON YOU

No.	Symbol	Zone	Description
N	A	A-N	ABCD

ARC SURVEYING & MAPPING, INC.
CERTIFICATE OF AUTHORIZATION
JACKSONVILLE, FLORIDA 32210
PHONE: 904/384-8377
LICENSED BUSINESS NO. 4487

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

Designed by: XXX
Cad by: JFS
DWN by: DET
Inv. No. W912EP-05-D-0003
Dated: 17 JULY 2009
D.O.FILE NO.
Dated: AUGUST 2009

Reference files:
2009-086-V-HPBACKGROUND.DGN
2009-086-V-HPCHANNEL.DGN
2009-086-V-HPMAIN.DGN
2009-086-V-HPGRIDTICK.DGN
2009-086-V-PRELEV.DGN
2009-086-V-SCELEV.DGN
2009-086-V-GPCONTOUR.DGN
2009-086-G-BS.DGN

File name: 2009-086-VH104.DGN

CRYSTAL RIVER
CITRUS COUNTY, FLORIDA
PROJECT CONDITION SURVEY
6-FOOT PROJECT
GULF OF MEXICO TO THE TOWN OF CRYSTAL RIVER
PLAN

Scale: AS SHOWN

Drawing no.
VH-104

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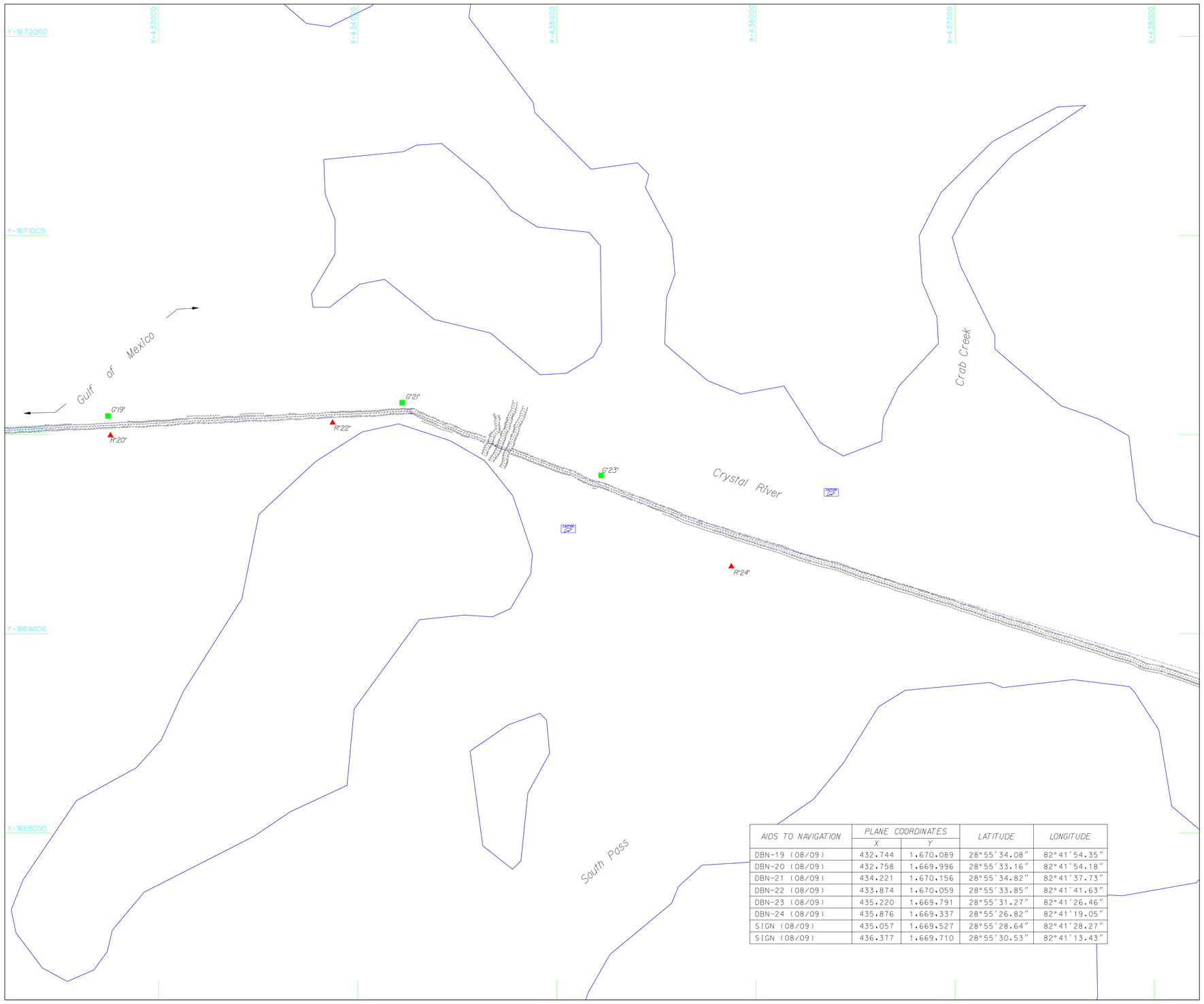
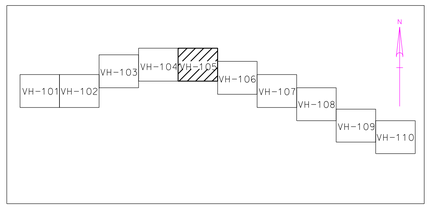


AIDS TO NAVIGATION	PLANE COORDINATES		LATITUDE	LONGITUDE
	X	Y		
DBN-19 (08/09)	432.744	1.670.089	28°55'34.08"	82°41'54.35"
DBN-20 (08/09)	432.758	1.669.996	28°55'33.16"	82°41'54.18"
DBN-21 (08/09)	434.221	1.670.156	28°55'34.82"	82°41'37.73"
DBN-22 (08/09)	433.874	1.670.059	28°55'33.85"	82°41'41.63"
DBN-23 (08/09)	435.220	1.669.791	28°55'31.27"	82°41'26.46"
DBN-24 (08/09)	435.876	1.669.337	28°55'26.82"	82°41'19.05"
SIGN (08/09)	435.057	1.669.527	28°55'28.64"	82°41'28.27"
SIGN (08/09)	436.377	1.669.710	28°55'30.53"	82°41'13.43"



SHEET LAYOUT

N

LEGEND	
	CHANNEL CENTERLINE
5	CONTOUR W/ ANNOTATION
BM	BENCHMARK
	LIGHTED BEACON
	GREEN DAYBEACON
	RED DAYBEACON
	RED LIGHTED BUOY
	GREEN LIGHTED BUOY
	CAN BUOY
	NUN BUOY
	CAUTION MANATEE SIGN
	TIDE STAFF

NOTES:

1. REFER TO SURVEY 2009-086 (ARC)
2. SEE SHEET G1001 THIS SET FOR ALL NOTES.

GRAPHIC SCALE

200' 0 200' 400'

SCALE: 1"=200'-0"

US Army Corps of Engineers
Jacksonville District

SAFETY ON THIS JOB DEPENDS ON YOU

No.	Symbol	Zone	Description
N		A-N	ABCD

ARC SURVEYING & MAPPING, INC.
5202 SAN JUAN AVENUE,
JACKSONVILLE, FLORIDA 32210
PHONE: (904) 387-8191
LICENSED BUSINESS NO. 6487

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

Designed by: XXX
Cad by: JFS
DWN by: DET
Inv. No. W912EP-05-D-0003
Dated: 17 JULY 2009
D.O.FILE NO.
Dated: AUGUST 2009

2009-086-V-HPBACKGROUND.DGN
2009-086-V-HPCHANNEL.DGN
2009-086-V-HPNAVAID.DGN
2009-086-V-HPREFDOC.DGN
2009-086-V-PREFIDX.DGN
2009-086-V-SCELEV.DGN
2009-086-V-GPCONTOUR.DGN
2009:086:G:BS.DGN
Reference files:
File name: 2009-086-VH105.DGN

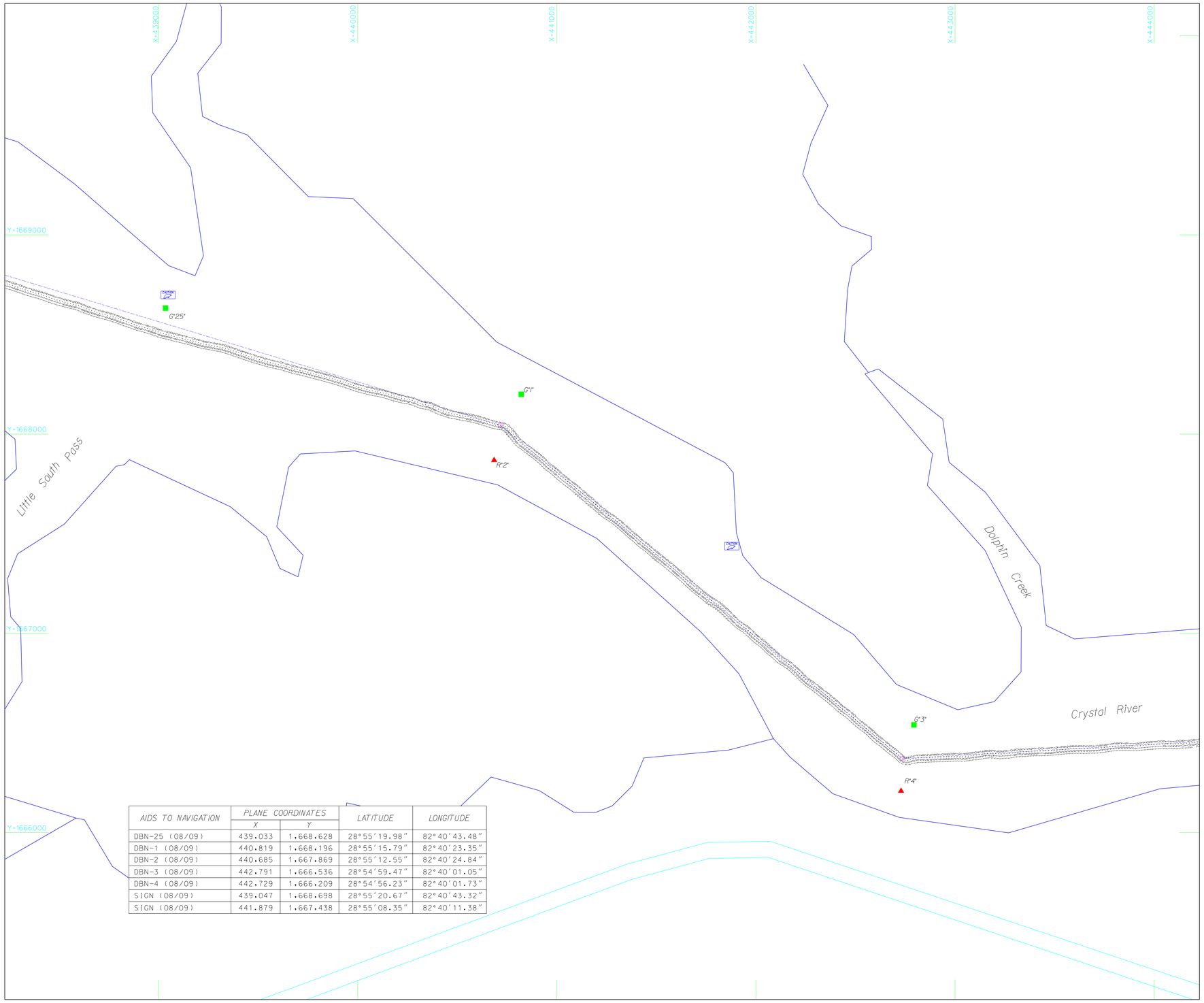
CRYSTAL RIVER
CITRUS COUNTY, FLORIDA
PROJECT CONDITION SURVEY
6-FOOT PROJECT
GULF OF MEXICO TO THE TOWN OF CRYSTAL RIVER
PLAN

Scale: AS SHOWN

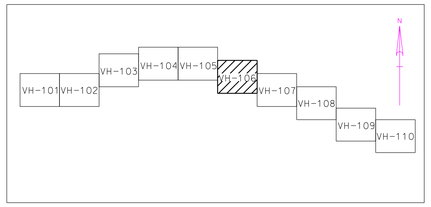
Drawing no.

VH-105

..\dgn\2009-086-VH105.dgn 8/26/2009 10:53:32 AM



AIDS TO NAVIGATION	PLANE COORDINATES		LATITUDE	LONGITUDE
	X	Y		
DBN-25 (08/09)	439.033	1.668.628	28°55'19.98"	82°40'43.48"
DBN-1 (08/09)	440.819	1.668.196	28°55'15.79"	82°40'23.35"
DBN-2 (08/09)	440.685	1.667.869	28°55'12.55"	82°40'24.84"
DBN-3 (08/09)	442.791	1.666.536	28°54'59.47"	82°40'01.05"
DBN-4 (08/09)	442.729	1.666.209	28°54'56.23"	82°40'01.73"
SIGN (08/09)	439.047	1.668.698	28°55'20.67"	82°40'43.32"
SIGN (08/09)	441.879	1.667.438	28°55'08.35"	82°40'11.38"



SHEET LAYOUT

N

LEGEND	
	CHANNEL CENTERLINE
5	CONTOUR W/ ANNOTATION
BM	BENCHMARK
	LIGHTED BEACON
	GREEN DAYBEACON
	RED DAYBEACON
	RED LIGHTED BUOY
	GREEN LIGHTED BUOY
	CAN BUOY
	NUN BUOY
	CAUTION MANATEE SIGN
	TIDE STAFF

NOTES:

1. REFER TO SURVEY 2009-086 (ARC)
2. SEE SHEET GI001 THIS SET FOR ALL NOTES.

GRAPHIC SCALE

200' 0 200' 400'

SCALE: 1"=200'-0"

US Army Corps of Engineers
Jacksonville District

SAFETY ON THIS JOB DEPENDS ON YOU

No.	Symbol	Zone	Description
N		A-N	ABCD

ARC SURVEYING & MAPPING, INC.
5920 SAN JUAN AVENUE,
JACKSONVILLE, FLORIDA 32210
(904) 387-8191 FAX 387-1701
LICENSED BUSINESS NO. 6487

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

Designed by: XXX
Cad by: JFS
DWN by: CET
Inv. No. W912EP-05-D-0003
Dated: 17 JULY 2009
D.O.FILE NO.
Dated: AUGUST 2009

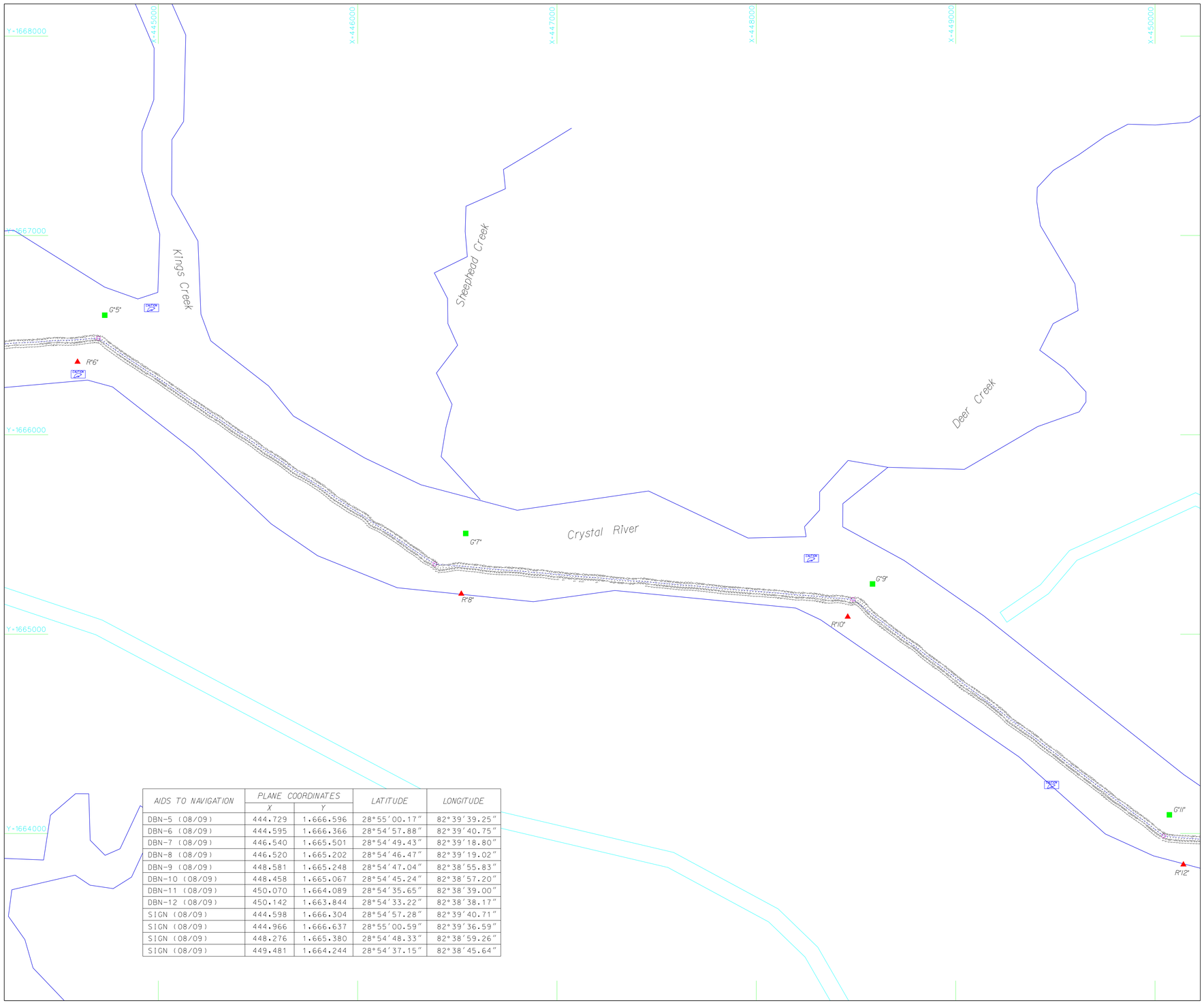
Reference files:
2009-086-V-HPDACSCEND.DGN
2009-086-V-HPCHANEL.DGN
2009-086-V-HPNAV40.DGN
2009-086-V-HPREFTCA.DGN
2009-086-V-HPREFTCB.DGN
2009-086-V-SCEELEV.DGN
2009-086-V-GPCONTOUR.DGN
2009-086-GBS.DGN
File name: 2009-086-VH106.DGN

CRYSTAL RIVER
CITRUS COUNTY, FLORIDA
PROJECT CONDITION SURVEY
6-FOOT PROJECT
GULF OF MEXICO TO THE TOWN OF CRYSTAL RIVER
PLAN

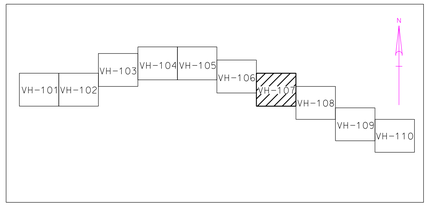
Scale: AS SHOWN

Drawing no.
VH-106

..\dgn\2009-086-VH106.dgn 8/26/2009 10:53:52 AM



AIDS TO NAVIGATION	PLANE COORDINATES		LATITUDE	LONGITUDE
	X	Y		
DBN-5 (08/09)	444.729	1.666.596	28°55'00.17"	82°39'39.25"
DBN-6 (08/09)	444.595	1.666.366	28°54'57.88"	82°39'40.75"
DBN-7 (08/09)	446.540	1.665.501	28°54'49.43"	82°39'18.80"
DBN-8 (08/09)	446.520	1.665.202	28°54'46.47"	82°39'19.02"
DBN-9 (08/09)	448.581	1.665.248	28°54'47.04"	82°38'55.83"
DBN-10 (08/09)	448.458	1.665.067	28°54'45.24"	82°38'57.20"
DBN-11 (08/09)	450.070	1.664.089	28°54'35.65"	82°38'39.00"
DBN-12 (08/09)	450.142	1.663.844	28°54'33.22"	82°38'38.17"
SIGN (08/09)	444.598	1.666.304	28°54'57.28"	82°39'40.71"
SIGN (08/09)	444.966	1.666.637	28°55'00.59"	82°39'36.59"
SIGN (08/09)	448.276	1.665.380	28°54'48.33"	82°38'59.26"
SIGN (08/09)	449.481	1.664.244	28°54'37.15"	82°38'45.64"



SHEET LAYOUT

N

LEGEND	
	CHANNEL CENTERLINE
5	CONTOUR W/ ANNOTATION
BM	BENCHMARK
	LIGHTED BEACON
	GREEN DAYBEACON
	RED DAYBEACON
	RED LIGHTED BUOY
	GREEN LIGHTED BUOY
C	CAN BUOY
N	NUN BUOY
	CAUTION MANATEE SIGN
	TIDE STAFF

NOTES:

1. REFER TO SURVEY 2009-086 (ARC)
2. SEE SHEET G1001 THIS SET FOR ALL NOTES.

GRAPHIC SCALE

200' 0 200' 400'

SCALE: 1"=200'-0"

US Army Corps of Engineers
Jacksonville District

SAFETY ON THIS JOB DEPENDS ON YOU

No.	Symbol	Zone	Description
N	A	A-N	ABCD

ARC SURVEYING & MAPPING, INC.
CERTIFICATE OF AUTHORIZATION
JACKSONVILLE, FLORIDA 32210
PHONE: 904/384-8377
LICENSED BUSINESS NO. 4987

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

Designed by: XXX
Cad by: JFS
DWN by: DET
Inv. No. W912EP-05-D-0003
Dated: 17 JULY 2009
D.O.FILE NO.
Dated: AUGUST 2009

Reference files:
2009-086-V-HPBACKGROUND.DGN
2009-086-V-HPCHANNEL.DGN
2009-086-V-HPHANDLINE.DGN
2009-086-V-HPGRIDTICK.DGN
2009-086-V-PRELEV.DGN
2009-086-V-SECT.DGN
2009-086-V-GPCONTOUR.DGN
2009-086-G-BS.DGN

File name: 2009-086-VH107.DGN

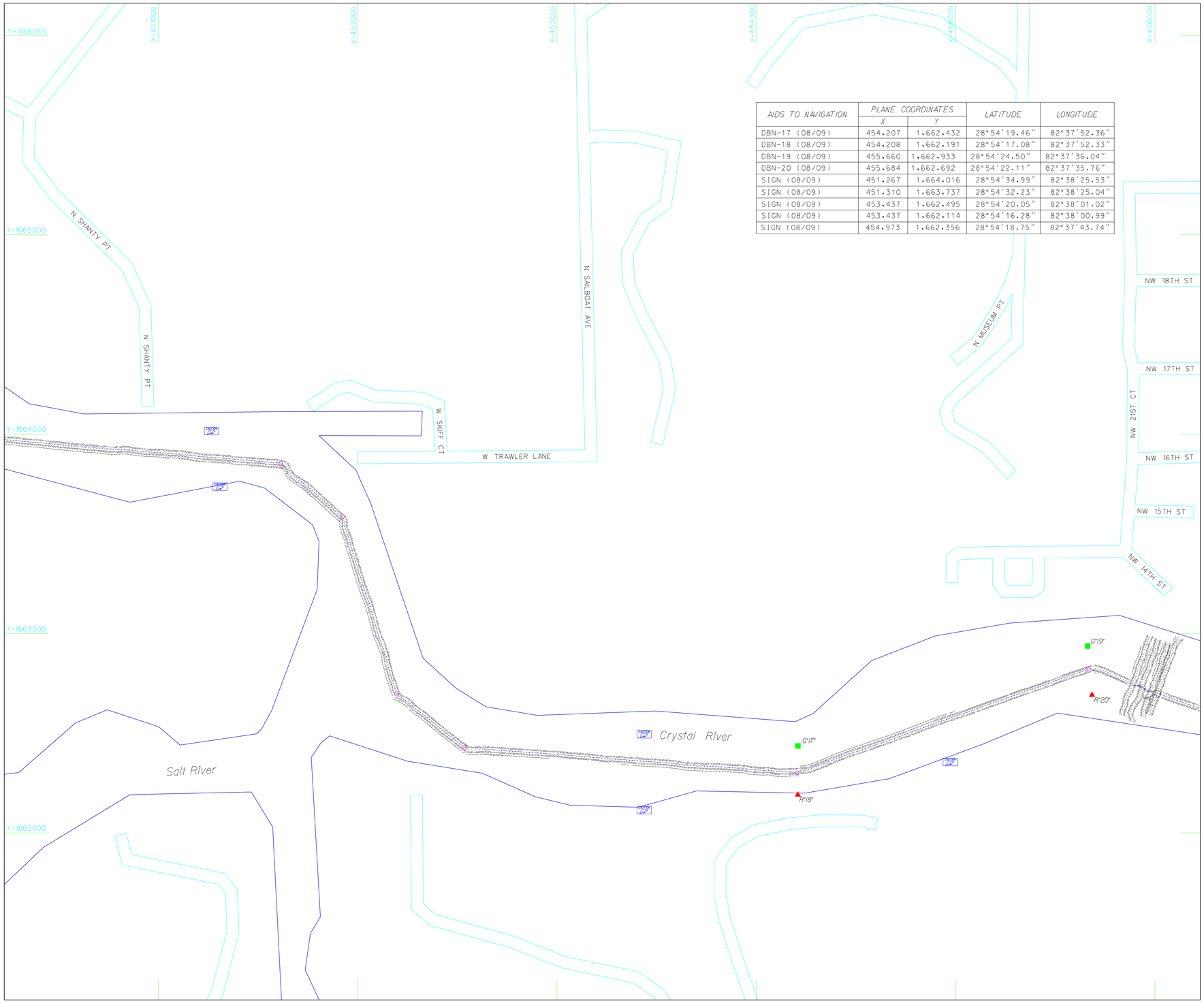
CRYSTAL RIVER
CITRUS COUNTY, FLORIDA
PROJECT CONDITION SURVEY
6-FOOT PROJECT
GULF OF MEXICO TO THE TOWN OF CRYSTAL RIVER
PLAN

Scale: AS SHOWN

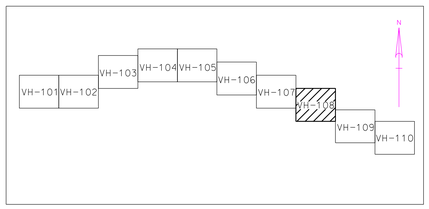
Drawing no.

VH-107

..\dgn\2009-086-VH107.dgn 8/23/2009 10:15:07 PM



AIDS TO NAVIGATION	PLANE COORDINATES		LATITUDE	LONGITUDE
	X	Y		
DBN-17 (08/09)	454.207	1.662.432	28°54'19.46"	82°37'52.36"
DBN-18 (08/09)	454.208	1.662.191	28°54'17.08"	82°37'52.33"
DBN-19 (08/09)	455.660	1.662.933	28°54'24.50"	82°37'36.04"
DBN-20 (08/09)	455.684	1.662.692	28°54'22.11"	82°37'35.76"
SIGN (08/09)	451.267	1.664.016	28°54'34.99"	82°38'25.53"
SIGN (08/09)	451.310	1.663.737	28°54'32.23"	82°38'25.04"
SIGN (08/09)	453.437	1.662.495	28°54'20.05"	82°38'01.02"
SIGN (08/09)	453.437	1.662.114	28°54'16.28"	82°38'00.99"
SIGN (08/09)	454.973	1.662.356	28°54'18.75"	82°37'43.74"



SHEET LAYOUT

N

LEGEND
CHANNEL CENTERLINE
5 CONTOUR W/ ANNOTATION
BM BENCHMARK
LIGHTED BEACON
GREEN DAYBEACON
RED DAYBEACON
RED LIGHTED BUOY
GREEN LIGHTED BUOY
CAN BUOY
NUN BUOY
CAUTION MANATEE SIGN
TIDE STAFF

NOTES:

1. REFER TO SURVEY 2009-086 (ARC)
2. SEE SHEET G1001 THIS SET FOR ALL NOTES.

GRAPHIC SCALE

200' 0 200' 400'

SCALE: 1"=200'-0"

US Army Corps of Engineers
Jacksonville District

SAFETY ON THIS JOB DEPENDS ON YOU

No.	Symbol	Zone	Description
N	A	A-N	ABCD

ARC SURVEYING & MAPPING, INC.
CERTIFICATE OF AUTHORIZATION
JACKSONVILLE, FLORIDA 32210
PHONE: 904/384-8377
LICENSED BUSINESS NO. 4987

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

Designed by: XXX
Cxd by: JFS
DWN by: DET
Inv. No. W912EP-05-D-0003
Dated: 17 JULY 2009
D.O.FILE NO.
Dated: AUGUST 2009

Reference files:
2009-086-V-HPBACKGROUND.DGN
2009-086-V-HPCHANNEL.DGN
2009-086-V-HPGRAND.DGN
2009-086-V-HPGRIDTICK.DGN
2009-086-V-PRELEV.DGN
2009-086-V-SELECTION.DGN
2009-086-V-SPCONTOUR.DGN
2009-086-C-BS.DGN

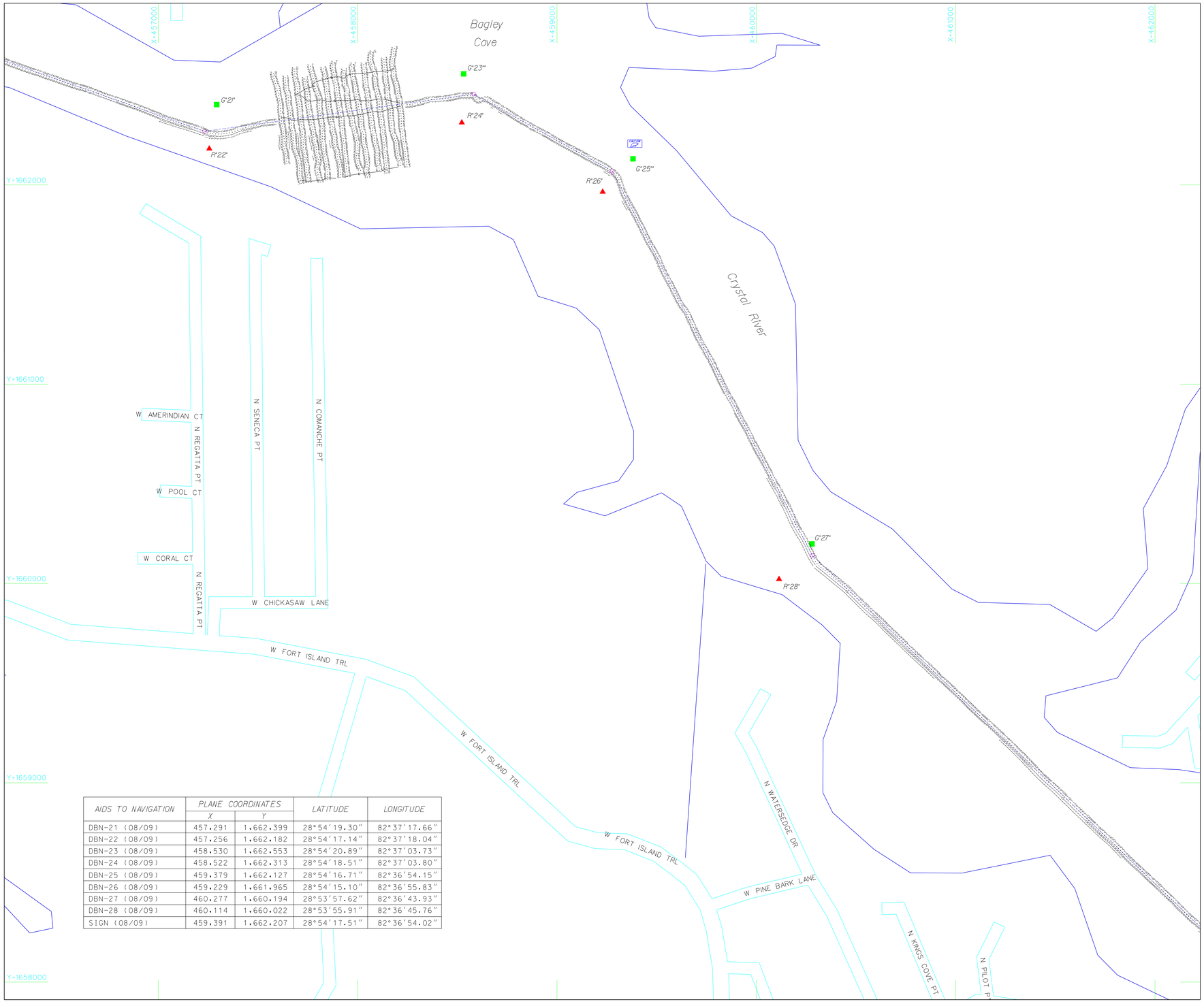
File name: 2009-086-VH108.DGN

CRYSTAL RIVER
CITRUS COUNTY, FLORIDA
PROJECT CONDITION SURVEY
6-FOOT PROJECT
GULF OF MEXICO TO THE TOWN OF CRYSTAL RIVER
PLAN

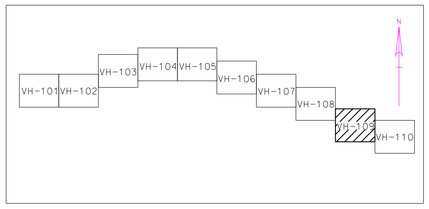
Scale: AS SHOWN

Drawing no.
VH-108

...\dgn\2009-086-VH108.dgn 8/23/2009 10:15:31 PM



AIDS TO NAVIGATION	PLANE COORDINATES		LATITUDE	LONGITUDE
	X	Y		
DBN-21 (08/09)	457.291	1.662.399	28°54'19.30"	82°37'17.66"
DBN-22 (08/09)	457.256	1.662.182	28°54'17.14"	82°37'18.04"
DBN-23 (08/09)	458.530	1.662.553	28°54'20.89"	82°37'03.73"
DBN-24 (08/09)	458.522	1.662.313	28°54'18.51"	82°37'03.80"
DBN-25 (08/09)	459.379	1.662.127	28°54'16.71"	82°36'54.15"
DBN-26 (08/09)	459.229	1.661.965	28°54'15.10"	82°36'55.83"
DBN-27 (08/09)	460.277	1.660.194	28°53'57.62"	82°36'43.93"
DBN-28 (08/09)	460.114	1.660.022	28°53'55.91"	82°36'45.76"
SIGN (08/09)	459.391	1.662.207	28°54'17.51"	82°36'54.02"



SHEET LAYOUT

N

LEGEND
CHANNEL CENTERLINE
CONTOUR W/ ANNOTATION
BENCHMARK
LIGHTED BEACON
GREEN DAYBEACON
RED DAYBEACON
RED LIGHTED BUOY
GREEN LIGHTED BUOY
CAN BUOY
NUN BUOY
CAUTION MANATEE SIGN
TIDE STAFF

NOTES:

1. REFER TO SURVEY 2009-086 (ARC)
2. SEE SHEET G1001 THIS SET FOR ALL NOTES.

GRAPHIC SCALE

200' 0 200' 400'

SCALE: 1"=200'-0"

US Army Corps of Engineers
Jacksonville District

SAFETY ON THIS JOB DEPENDS ON YOU

No.	Symbol	Zone	Description
N	A	A-N	ABCD

ARC SURVEYING & MAPPING, INC.
CERTIFICATE OF AUTHORIZATION
JACKSONVILLE, FLORIDA 32210
PHONE: 904/384-8377
LICENSED BUSINESS NO. 4487

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

Cad by: JFS

Designed by: XXX

DWN by: DET

Inv. No. W912EP-05-D-0003

Dated: 17 JULY 2009

D.O.FILE NO.

Dated: AUGUST 2009

2009-086-V-HPBACKGROUND.DGN
2009-086-V-HPCHANNEL.DGN
2009-086-V-HPMANATEE.DGN
2009-086-V-HPGRIDTICK.DGN
2009-086-V-PRELEV.DGN
2009-086-V-SCELEV.DGN
2009-086-V-GPCONTOUR.DGN

Reference files:

2009-086-G-BS.DGN

File name: 2009-086-VH109.DGN

CRYSTAL RIVER
CITRUS COUNTY, FLORIDA

PROJECT CONDITION SURVEY
6-FOOT PROJECT

GULF OF MEXICO TO THE TOWN OF CRYSTAL RIVER

PLAN

Scale: AS SHOWN

Drawing no.

VH-109

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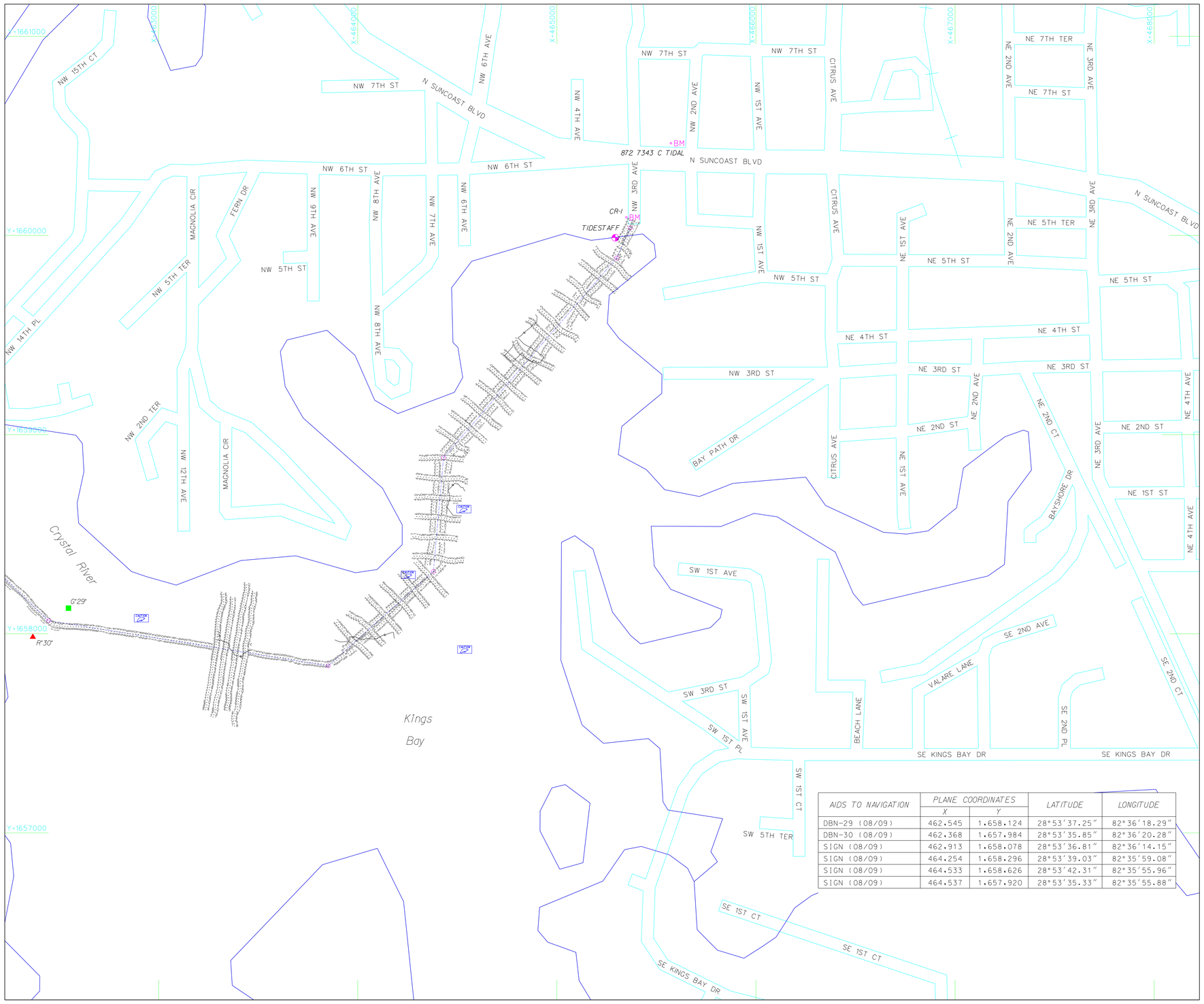

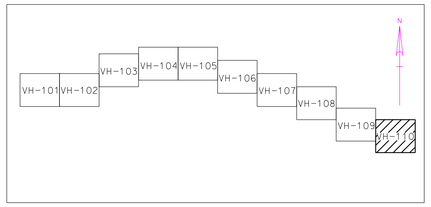

SHEET LAYOUT

AIDS TO NAVIGATION	PLANE COORDINATES		LATITUDE	LONGITUDE
	X	Y		
DBN-29 (08/09)	462.545	1.658.124	28°53'37.25"	82°36'18.29"
DBN-30 (08/09)	462.368	1.657.984	28°53'35.85"	82°36'20.28"
SIGN (08/09)	462.913	1.658.078	28°53'36.81"	82°36'14.15"
SIGN (08/09)	464.254	1.658.296	28°53'39.03"	82°35'59.08"
SIGN (08/09)	464.533	1.658.626	28°53'42.31"	82°35'55.96"
SIGN (08/09)	464.537	1.657.920	28°53'35.33"	82°35'55.88"

BENCHMARK	NAVD 88 ELEV. (FT)
872 7343 C TIDAL	4.20
USACE CR-1 1999	2.41

LEGEND	
	CHANNEL CENTERLINE
5	CONTOUR W/ ANNOTATION
BM	BENCHMARK
	LIGHTED BEACON
	GREEN DAYBEACON
	RED DAYBEACON
	RED LIGHTED BUOY
	GREEN LIGHTED BUOY
	CAN BUOY
	NUN BUOY
	CAUTION MANATEE SIGN
	TIDE STAFF

NOTES:

1. REFER TO SURVEY 2009-086 (ARC)
2. SEE SHEET GI001 THIS SET FOR ALL NOTES.

GRAPHIC SCALE

200' 0 200' 400'

SCALE: 1"=200'-0"

US Army Corps of Engineers
Jacksonville District

SAFETY ON THIS JOB DEPENDS ON YOU

No.	Symbol	Zone	Description
N		A-N	ABCD

ARC SURVEYING & MAPPING, INC.
5202 SAN JUAN AVENUE,
JACKSONVILLE, FLORIDA 32210
PHONE: 904/384-8377
LICENSED BUSINESS NO. 6487

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

Designed by: XXX
Ckd by: JFS
DWN by: DET
Inv. No. W912EP-05-D-0003
Dated: 17 JULY 2009
D.O.FILE NO.
Dated: AUGUST 2009

2009-086-V-HPBACKGROUND.DGN
2009-086-V-HPCHANNEL.DGN
2009-086-V-HPNAVAD.DGN
2009-086-V-HPGRDTICK.DGN
2009-086-V-PRELEV.DGN
2009-086-V-SCELEV.DGN
2009-086-V-GPCONTOUR.DGN
2009-086-G-BS.DGN
Reference files:
2009-086-VH110.DGN
File name:

CRYSTAL RIVER
CITRUS COUNTY, FLORIDA
PROJECT CONDITION SURVEY
6-FOOT PROJECT
GULF OF MEXICO TO THE TOWN OF CRYSTAL RIVER
PLAN

Scale: AS SHOWN

Drawing no.

VH-110