APPENDIX B

Site Maps

Map B-1 Culebra Municipality and Investigation Sites

Map B-2 Cerro Balcon (OOU-3) Grid Layout, Explosives Magazine Location, and Quantity Distance Map

Map B-3 Culebrita (OOU-4) and Cayo Botella (OOU-5) Grid Layout and Quantity Distance Map

Map B-4 Cayo Lobo (OOU-5) Grid Layout and Quantity Distance Map

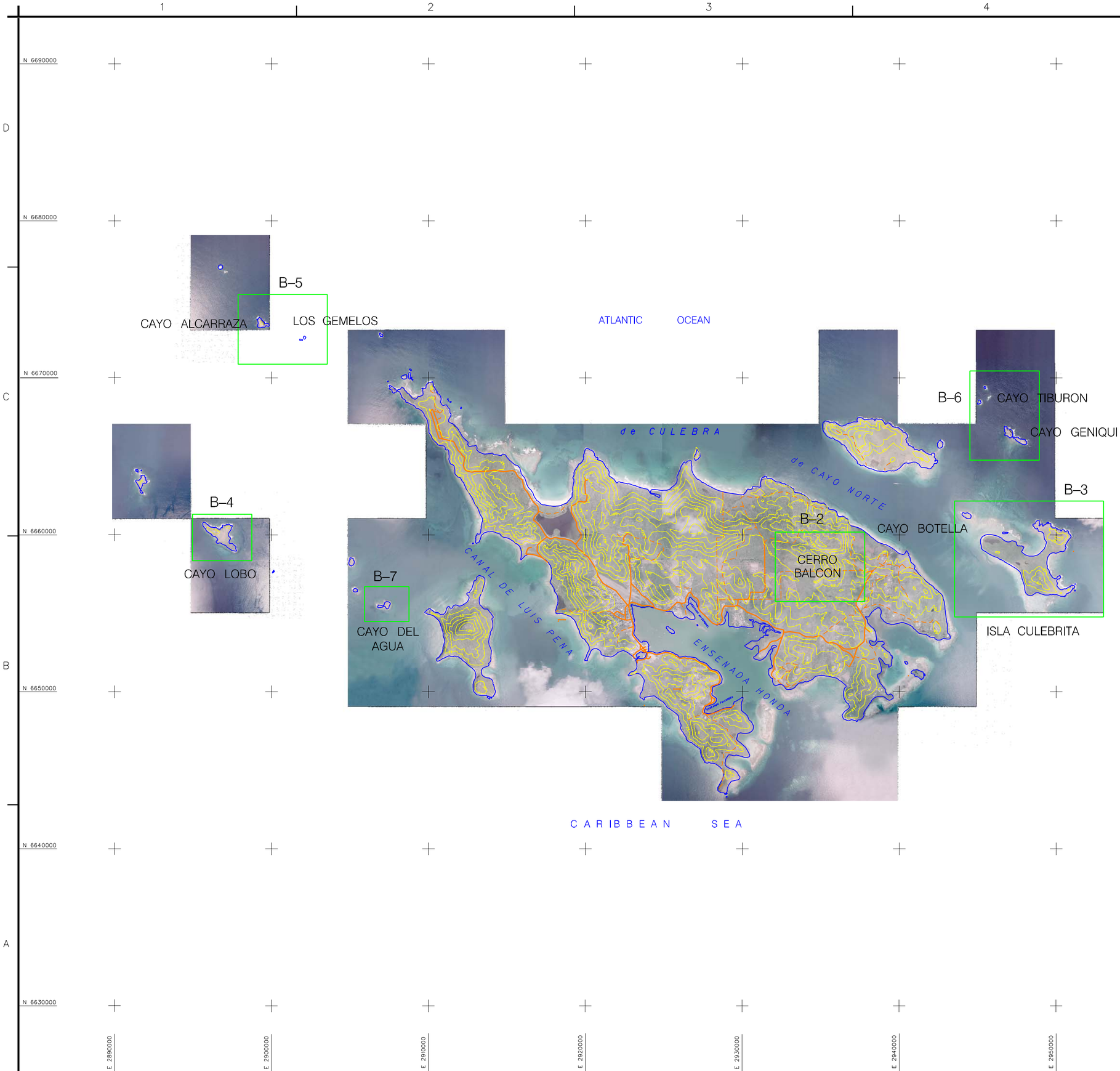
Map B-5 Cayo Alcarraza and Los Gemelos (OOU-5) Grid Layout and Quantity Distance Map

Map B-6 Cayo Tiburon and Cayos Geniqui (OOU-5) Grid Layout and Quantity Distance Map

Map B-7 Cayo del Aqua (OOU-5) Grid Layout and Quantity Distance Map

Map B-8 Geology Map

Map B-9 Environmental Sensitivity Index Map



MAG NORTH VAR 12° 00' W

N

GRID NORTH VAR 00° 00' W

3000' 1500' 0 3000'

SCALE: 1'' = 3000'-0"

LEGEND	
Symbol	Description
	MAP LOCATIONS
50	MAJOR CONTOUR CONTOUR INTERVAL 25 METERS

CONTOUR SOURCE: 6' x 11' 1948 USGS QUADRANGLE.
VERTICAL DATUM: LOCAL MEAN SEAL LEVEL.
AERIAL SOURCE: (300 INC.,2005)
MAP PROJECTION: UNIVERSAL TRASVERSE MERIATOR.
ZONE: 19
DATUM: NAD 1927 (PUERTO RICO).

US Army Corps of Engineers
District or Division

Mark	Description	Date	Appr.
1	Delete B-2 Area & Relabel Areas	01/06	

Mark	Description	Date	Appr.

Designed by: MGB
Dwn by: DSS
Ckd by:
Reviewed by:
Submitted by:
Chief, Arch. Branch

Date: 01/2006
Rev. 1
Design file no.
Drawing code:
File name: 10PR0506B2GEW
Plot date: 5/2005
Plot scale: 1"=3000'

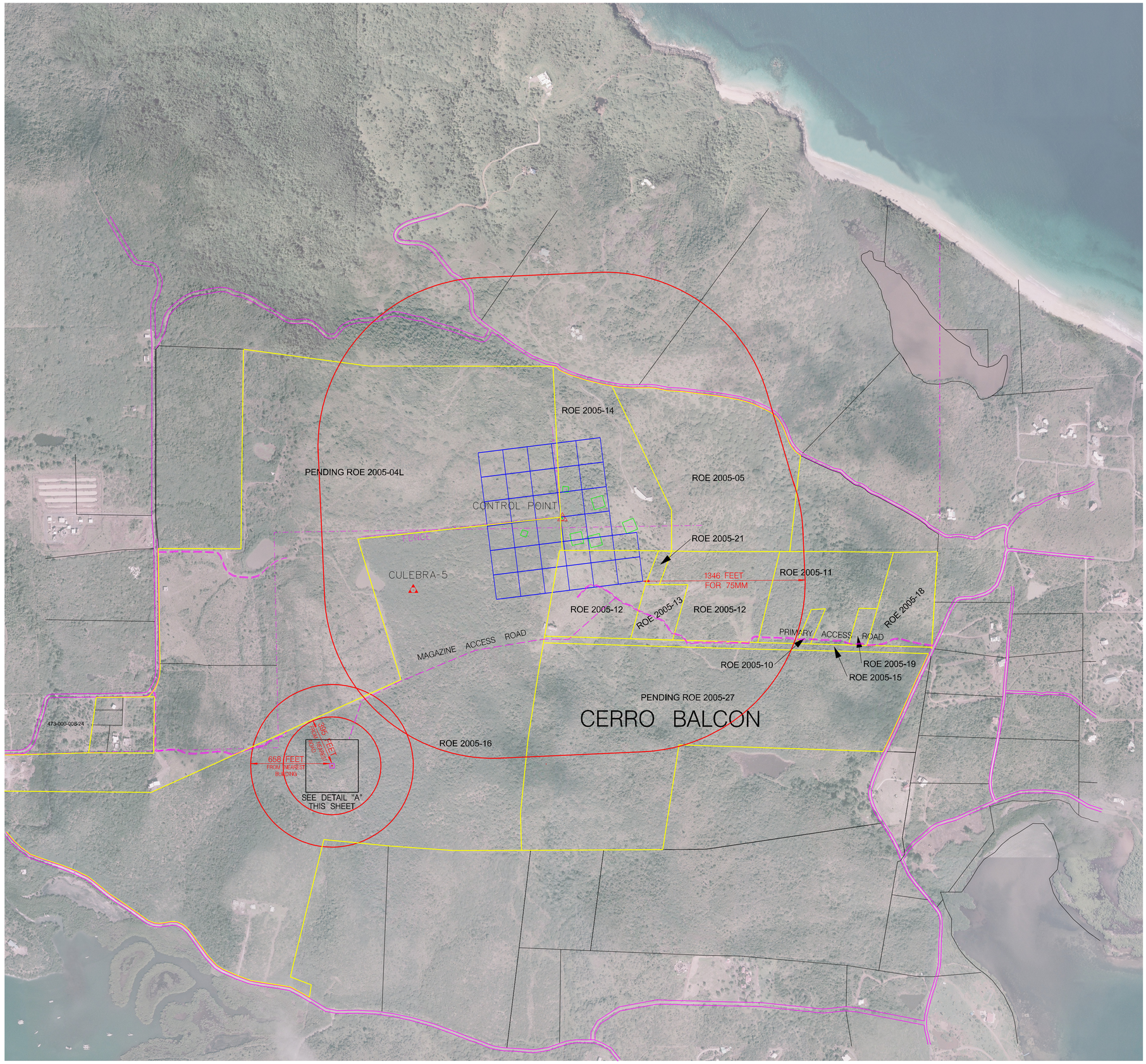
U.S. ARMY ENGINEERING AND SUPPORT CENTER
Huntsville, Alabama

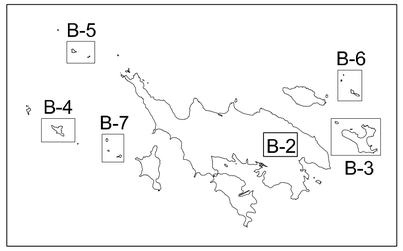
ELLIS ENVIRONMENTAL GROUP
Newberry, Florida

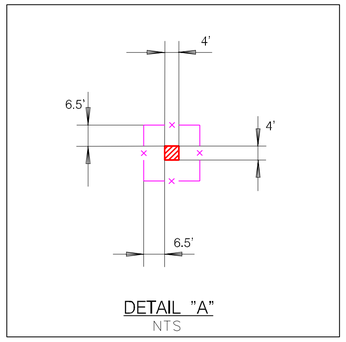
NON-TIME CRITICAL REMOVAL ACTION
Culebra, Puerto Rico
Project No. 102PR0506B2 Contract No. W912DY-05-D-0007

CULEBRA MUNICIPALITY
AND INVESTIGATION SITES

Sheet reference number:
B-1







MAG NORTH VAR 12° 00' W — N — GRID NORTH VAR 2° 00' W

400' 200' 0 400'

SCALE: 1'' = 400'-0"

LEGEND

Symbol	Description
	GPS CONTROL MONUMENT
	CONTROL POINT
	EE/CA SAMPLING GRID LOCATION
	MEC REMOVAL GRID AREAS
	MAXIMUM FRAGMENTATION DISTANCE (Q-D ARCS)
	MAGAZINE COMPLEX
—x—	FENCE LINE
	DIRT ROAD
	ROAD
	RIGHT OF ENTRY BOUNDARIES (ROE=RIGHT OF ENTRY)

CONTOUR SOURCE: 6' x 11' 1948 USGS QUADRANGLE.
VERTICAL DATUM: LOCAL MEAN SEAL LEVEL.
AERIAL SOURCE: (3001 INC.,2005)
MAP PROJECTION: UNIVERSAL TRASVERSE MERIATOR.
ZONE: 19
DATUM: NAD 1927 (PUERTO RICO).

US Army Corps of Engineers
District or Division

Mark	Description	Date	Appr.	Mark	Description	Date	Appr.
1	Access Roads & ROE Numbers	01/06					

Designed by: MGB
Dwn by: DSS
Ckd by:
Reviewed by:
Submitted by: Chief, Arch. Branch
Date: 01/2006
Rev: 1
Design file no.:
Drawing code:
File name: 10PR00807PRECAP
Plot date: 6/2005
Plot scale: 1"=400'

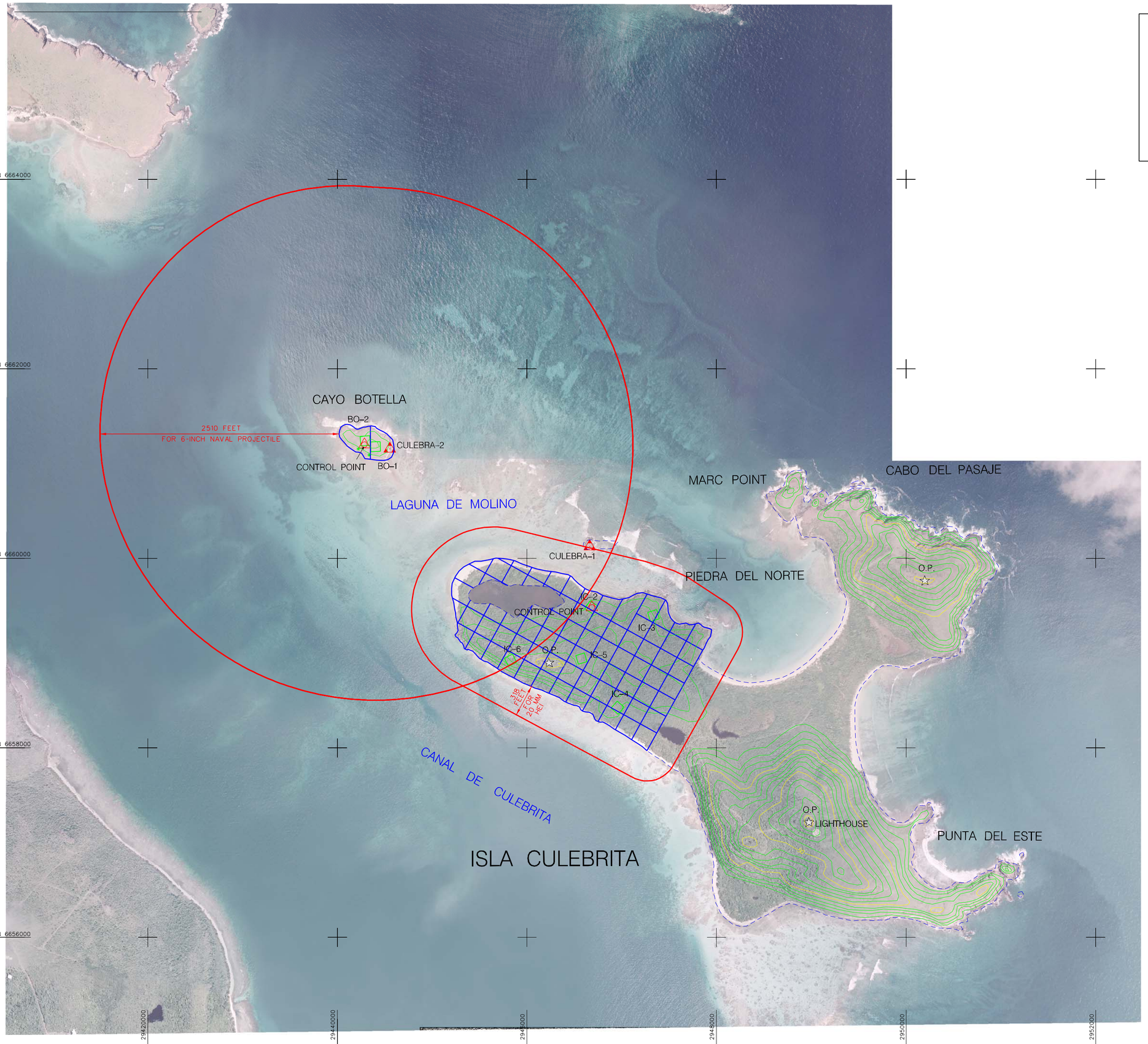
U.S. ARMY ENGINEERING AND SUPPORT CENTER
Huntsville, Alabama

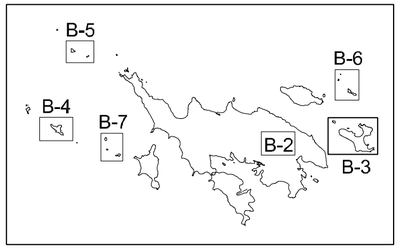
ELLIS ENVIRONMENTAL GROUP
Newberry, Florida

NON-TIME CRITICAL REMOVAL ACTION
Culebra, Puerto Rico
Project No. 10ZPR00802
Contract No. W912DY-05-D-0007

CERRO BALCON (OOU-3) GRID LAYOUT, EXPLOSIVES MAGAZINE LOCATION AND QUANTITY DISTANCE MAP

Sheet reference number:
B-2





MAG NORTH VAR 12° 00' W

N

GRID NORTH VAR 28° 97' 39"

500' 250' 0 500'

SCALE: 1'' = 500'-0"

LEGEND	
Symbol	Description
	GPS CONTROL MONUMENT
	CONTROL POINT
	OBSERVATION POINT
	EECA SAMPLING GRID LOCATION
	MEC REMOVAL GRID AREAS
	MAXIMUM FRAGMENTATION DISTANCE (Q-D ARCS)
	ISLAND DELINEATION
50	MAJOR CONTOUR
	MINOR CONTOUR CONTOUR INTERVAL 5 METERS

CONTOUR SOURCE: 6' x 11' 1948 USGS QUADRANGLE.
VERTICAL DATUM: LOCAL MEAN SEAL LEVEL.
AERIAL SOURCE: (300' INC. 2005)
MAP PROJECTION: UNIVERSAL TRASVERSE MERIATOR.
ZONE: 19
DATUM: NAD 1927 (PUERTO RICO).

US Army Corps of Engineers
District or Division

Mark	Description	Date	Appr.	Mark	Description	Date	Appr.
1	Remove Max Frag Line & Dimen	01/06					

Designed by: MGB
Dwn by: DSS
Ckd by:
Reviewed by:
Submitted by:
Chief, Arch. Branch
Date: 01/2006
Rev. 1
Design file no.
Drawing code:
File name: tomoaleza2pasa.dwg
Plot date: 6/2005
Plot scale: 1"=500'

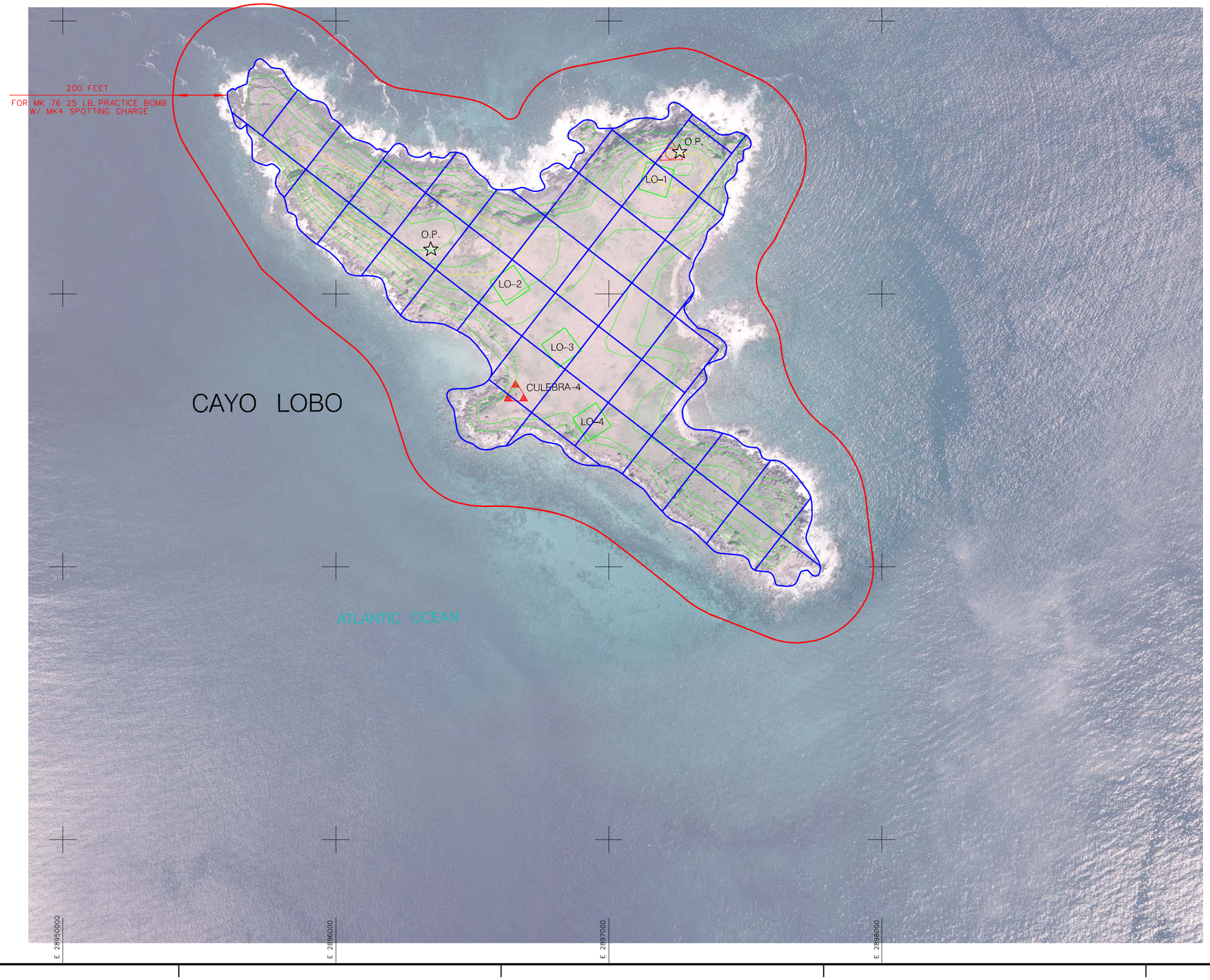
U.S. ARMY ENGINEERING AND SUPPORT CENTER
Huntsville, Alabama

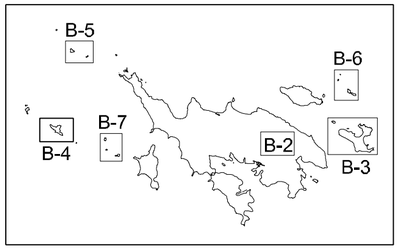
ELLIS ENVIRONMENTAL GROUP
Newberry, Florida

NON-TIME CRITICAL REMOVAL ACTION
Culebra, Puerto Rico
Project No. 102PR006802 Contract No. W912DY-05-D-0007

CULEBRITA (OOU-4) AND
CAYO BOTELLA (OOU-5)
GRID LAYOUT AND
QUANTITY DISTANCE MAP

Sheet reference number:
B-3





MAG. NORTH VAR 12° 00' W

N

GRID NORTH VAR 37° 43' 32" W

200' 100' 0 200'

SCALE: 1'' = 200'-0"

LEGEND

Symbol	Description
	GPS CONTROL MONUMENT
	CONTROL POINT
	OBSERVATION POINT
	EE/CA SAMPLING GRID LOCATION
	MEC REMOVAL GRID AREAS
	MAXIMUM FRAGMENTATION DISTANCE (Q-D ARC)
50	MAJOR CONTOUR
	MINOR CONTOUR CONTOUR INTERVAL 5 METERS

CONTOUR SOURCE: 6' x 11' 1948 USGS QUADRANGLE.
VERTICAL DATUM: LOCAL MEAN SEAL LEVEL.
AERIAL SOURCE: (3001 INC.,2005)
MAP PROJECTION: UNIVERSAL TRASVERSE MERIATOR.
ZONE: 19
DATUM: NAD 1927 (PUERTO RICO).

US Army Corps of Engineers
District or Division

Mark	Description	Date	Appr.
1	Revise Text Label	01/06	
0			

Mark	Description	Date	Appr.

Designed by: MGB
Dwn by: DSS
Ckd by:
Reviewed by:
Submitted by:
Chief, Arch. Branch
Date: 01/2006
Rev. 0
Design file no.
Drawing code:
File name: 10PR06B6229P184.dwg
Plot date: 6/2005
Plot scale: 1"=200'

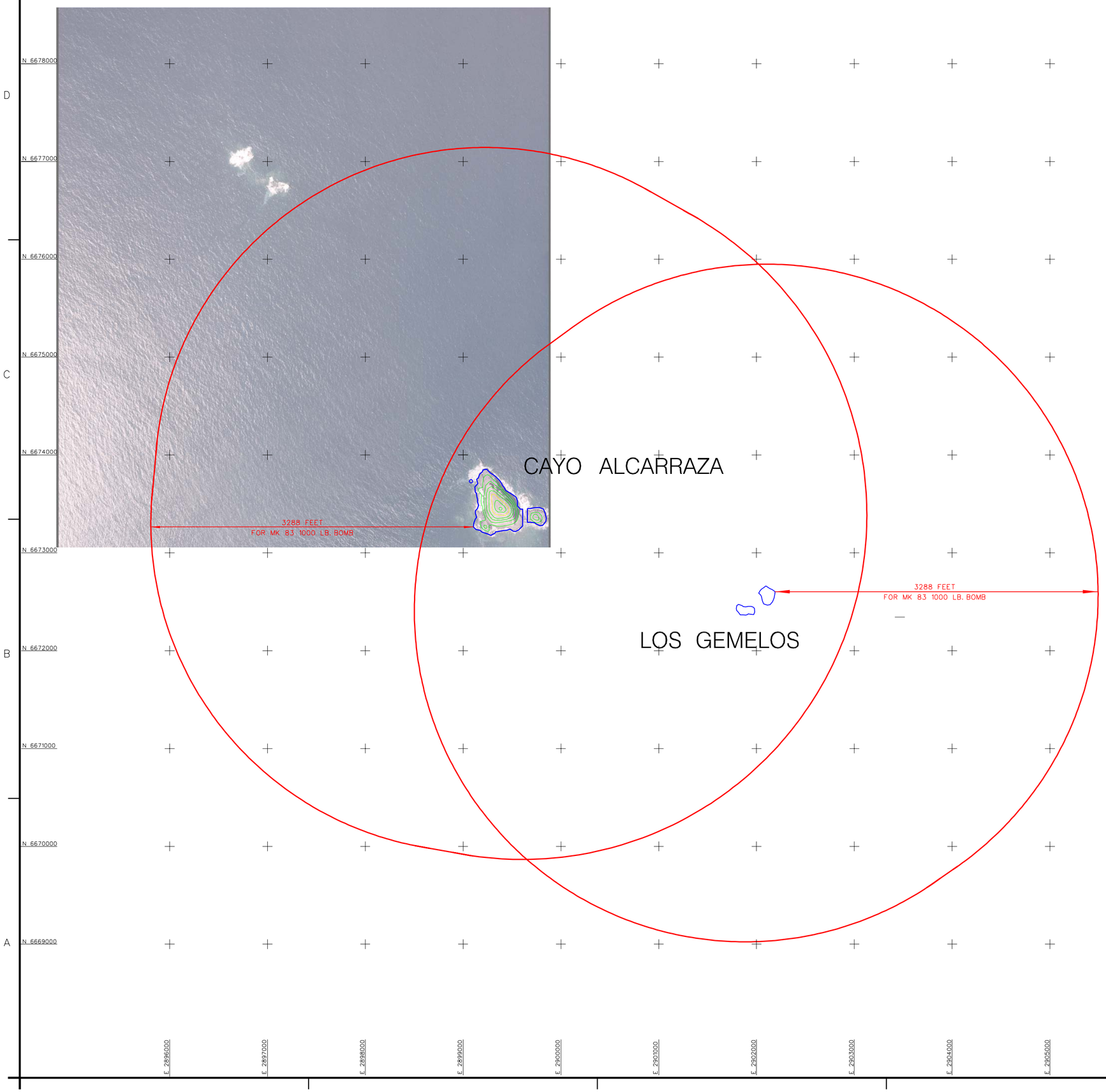
U.S. ARMY ENGINEERING AND SUPPORT CENTER
Huntsville, Alabama

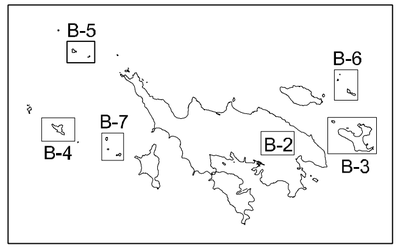
ELLIS ENVIRONMENTAL GROUP
Newberry, Florida

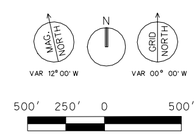
NON-TIME CRITICAL REMOVAL ACTION
Culebra, Puerto Rico
Project No. 102PR006802
Contract No. W912DY-05-D-0007

CAYO LOBO (OOU-5)
GRID LAYOUT AND
QUANTITY DISTANCE MAP

Sheet reference number:
B-4







SCALE: 1'' = 500'-0"

LEGEND

Symbol	Description
	MEC REMOVAL GRID AREAS
	MAXIMUM FRAGMENTATION DISTANCE
50	MAJOR CONTOUR
	MINOR CONTOUR CONTOUR INTERVAL 5 METERS

CONTOUR SOURCE: 6' x 11' 1948 USGS QUADRANGLE.
VERTICAL DATUM: LOCAL MEAN SEAL LEVEL.
AERIAL SOURCE: (3001 INC. 2005)
MAP PROJECTION: UNIVERSAL TRASVERSE MERIATOR.
ZONE: 19
DATUM: NAD 1927 (PUERTO RICO).

US Army Corps of Engineers
District or Division

Mark	Description	Date	Appr.
1	Revised Legend	01/06	

Designed by: MGB
Dwn by: DSS
Ckd by:
Reviewed by:
Submitted by: Chief, Arch. Branch
Date: 01/2006
Rev. 1
Design file no.
Drawing code:
File name: 102PR0068025PB5CWP
Plot date: 6/2005
Plot scale: 1"=400'

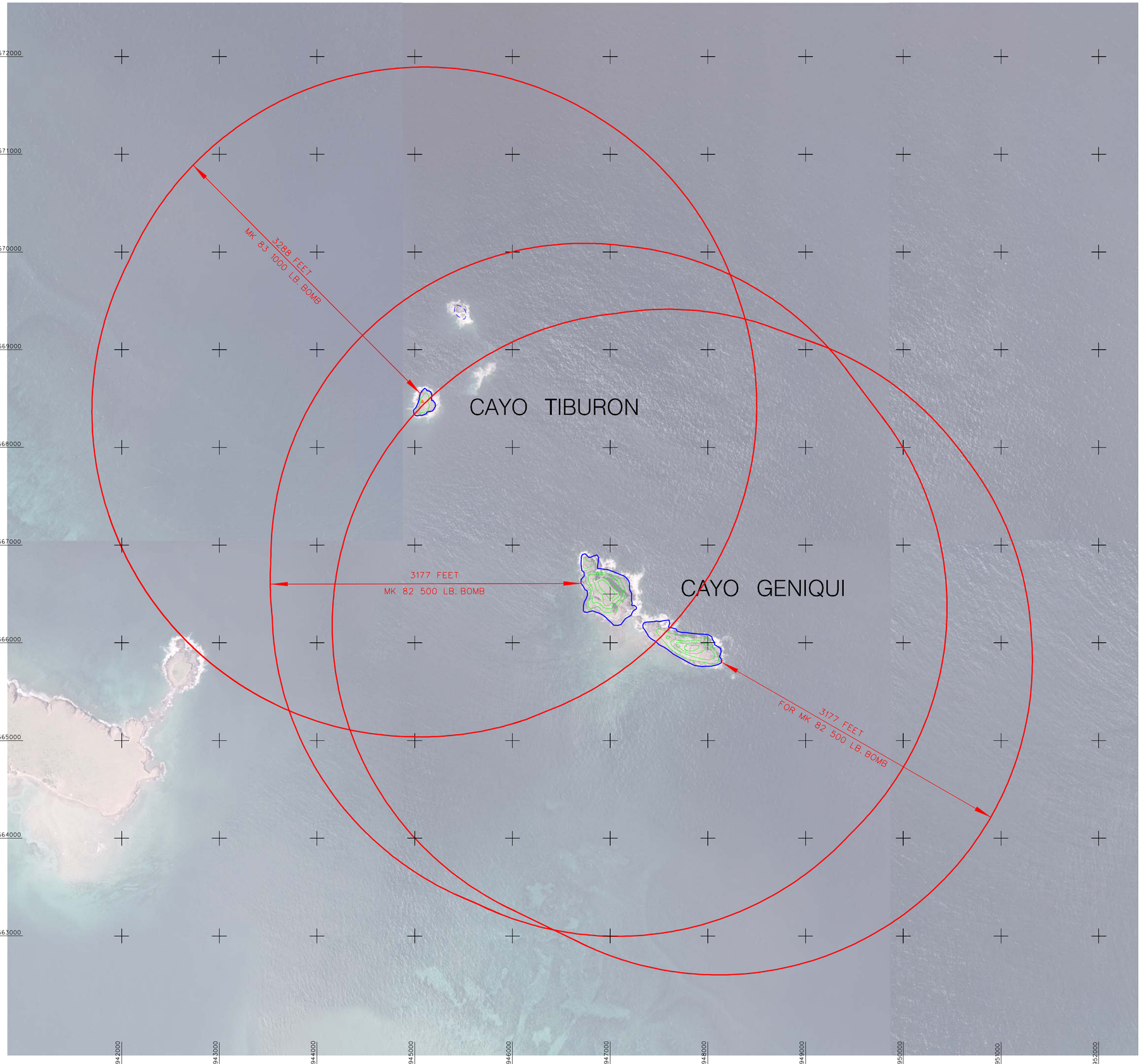
U.S. ARMY ENGINEERING AND SUPPORT CENTER
Huntsville, Alabama

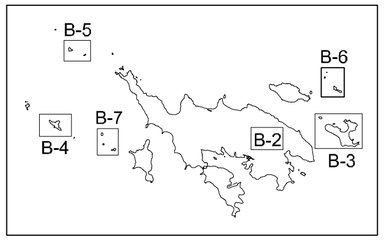
ELLIS ENVIRONMENTAL GROUP
Newberry, Florida

NON-TIME CRITICAL REMOVAL ACTION
Culebra, Puerto Rico
Project No. 102PR006802 Contract No. W912DY-05-D-0007

CAYO ALCARRAZA
AND LOS GEMELOS(OOU-5)
GRID LAYOUT AND
QUANTITY DISTANCE MAP

Sheet reference number:
B-5





US Army Corps of Engineers
District or Division

Mark	Description	Date	Appr.	Mark	Description	Date	Appr.

Designed by: MGB
Dwn by: DSS
Ckd by:
Reviewed by:
Submitted by:
Chief, Arch. Branch
Date: 01/2006
Rev. 0
Design file no.
Drawing code:
File name: 102PR006B06.dwg
Plot date: 6/2006
Plot scale: 1"=500'

U.S. ARMY ENGINEERING AND SUPPORT CENTER
Huntsville, Alabama

ELLIS ENVIRONMENTAL GROUP
Newberry, Florida

VAR (MAGNETIC NORTH) VAR 12° 00' W
N
GRID (NORTH) VAR 00° 00' W

500' 250' 0 500'

SCALE: 1'' = 500'-0"

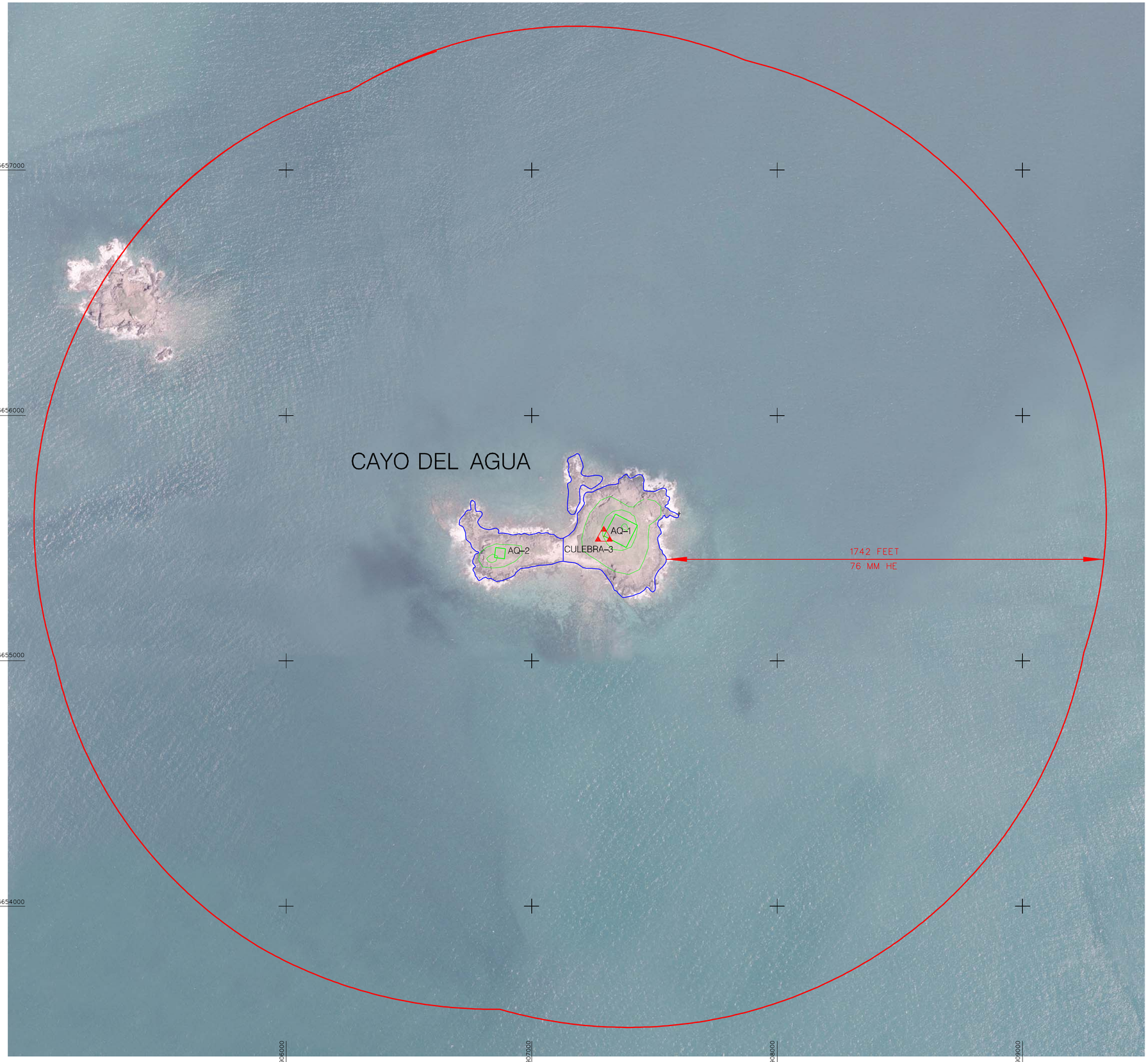
Symbol	LEGEND Description
	MEC REMOVAL GRID AREAS
	MAXIMUM FRAGMENTATION DISTANCE (Q-D ARCS)
50	MAJOR CONTOUR
	MINOR CONTOUR CONTOUR INTERVAL 5 METERS

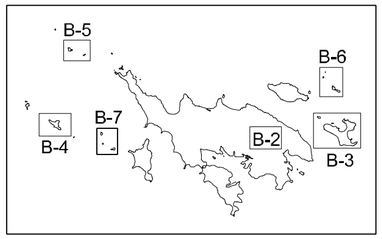
CONTOUR SOURCE: 6' x 11' 1948 USGS QUADRANGLE.
VERTICAL DATUM: LOCAL MEAN SEAL LEVEL.
AERIAL SOURCE: (3001 INC.,2005)
MAP PROJECTION: UNIVERSAL TRASVERSE MERIATOR.
ZONE: 19
DATUM: NAD 1927 (PUERTO RICO).

NON-TIME CRITICAL REMOVAL ACTION
Culebra, Puerto Rico
Project No. 102PR006B02 Contract No. W912DY-05-D-0007

CAYO TIBURON
AND CAYOS GENIQUI (OOU-5)
GRID LAYOUT AND
QUANTITY DISTANCE MAP

Sheet reference number:
B-6





MAG NORTH VAR 12° 00' W

N

GRID NORTH VAR 00° 00' W

200' 100' 0 200'

SCALE: 1'' = 200'-0"

LEGEND	
Symbol	Description
	CONTROL POINT
	EE/CA SAMPLING GRID LOCATION
	MEC REMOVAL GRID AREAS
	MAXIMUM FRAGMENTATION DISTANCE (Q-D ARCS)
50	MAJOR CONTOUR
	MINOR CONTOUR CONTOUR INTERVAL 5 METERS

CONTOUR SOURCE: 6' x 11' 1948 USGS QUADRANGLE.
VERTICAL DATUM: LOCAL MEAN SEAL LEVEL.
AERIAL SOURCE: (3001 INC, 2005)
MAP PROJECTION: UNIVERSAL TRASVERSE MERIATOR.
ZONE: 19
DATUM: NAD 1927 (PUERTO RICO).

US Army Corps of Engineers
District or Division

1	Revised Text Label	01/06			
	Mark	Description	Date	Appr.	Mark	Description	Date	Appr.

Designed by: MGB
Dwn by: DSS
Ckd by:
Reviewed by:
Submitted by:
Chief, Arch. Branch
Date: 01/2006
Rev. 1
Design file no.
Drawing code:
File name: 10PR0006CAYE.dwg
Plot date: 1/6/2006
Plot scale: 1"=200'

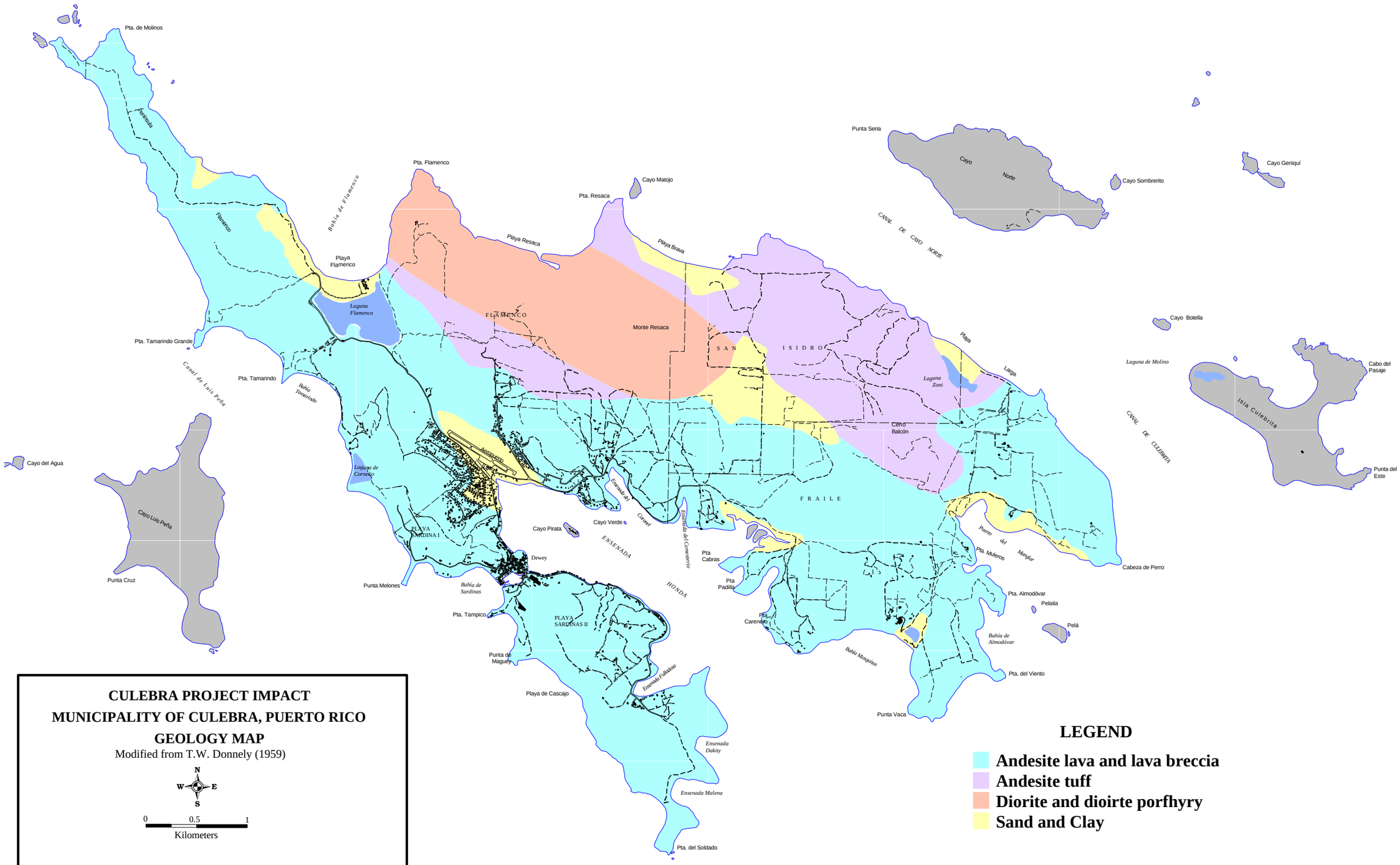
U.S. ARMY ENGINEERING AND SUPPORT CENTER
Huntsville, Alabama

ELLIS ENVIRONMENTAL GROUP
Newberry, Florida

NON-TIME CRITICAL REMOVAL ACTION
Culebra, Puerto Rico
Project No. 102PR0006802
Contract No. W912DY-05-D-0007

CAYO DEL AGUA (OOU-5)
GRID LAYOUT AND
QUANTITY DISTANCE MAP

Sheet reference number:
B-7



CULEBRA PROJECT IMPACT

MUNICIPALITY OF CULEBRA, PUERTO RICO

GEOLOGY MAP

Modified from T.W. Donnely (1959)

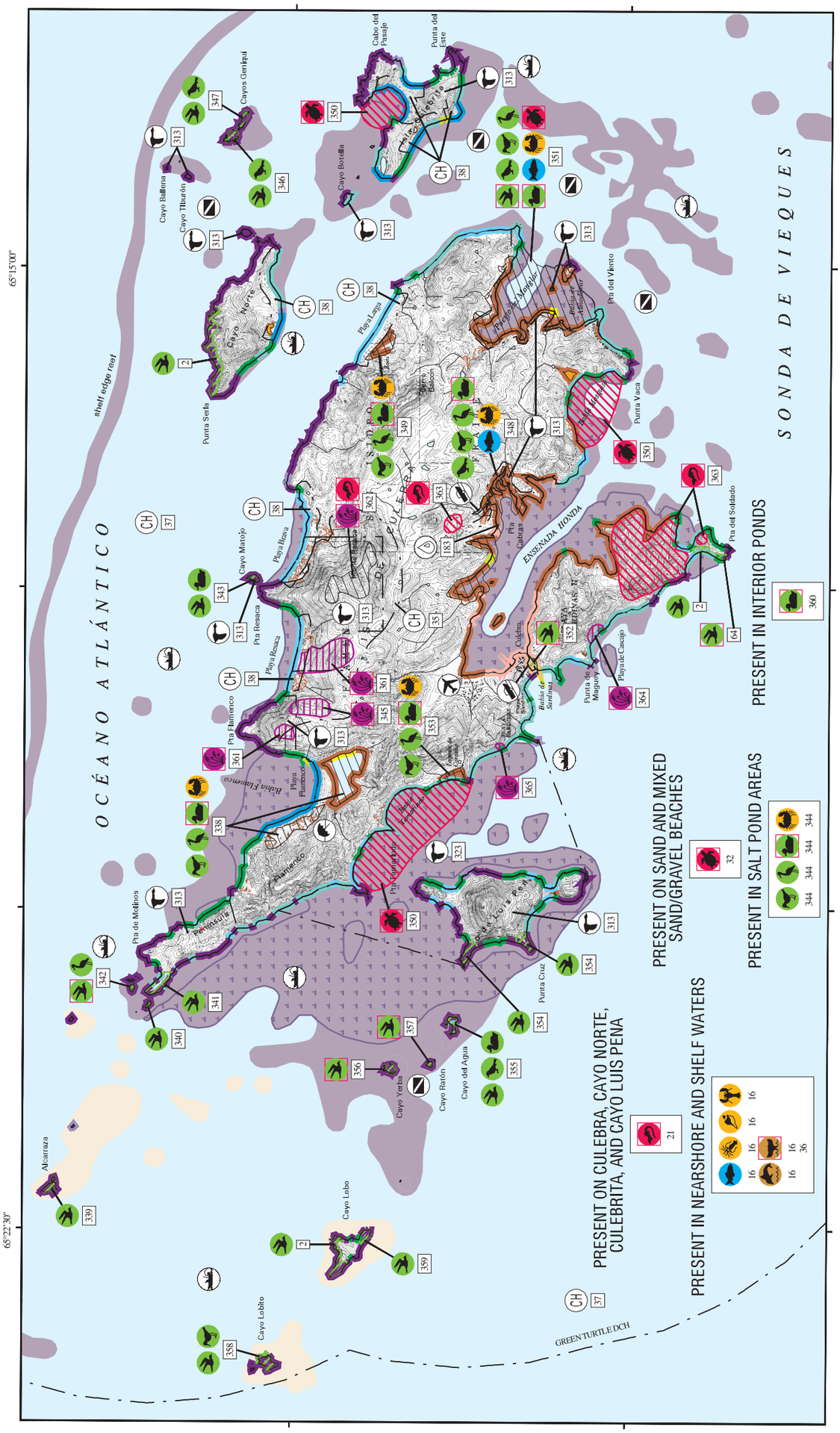
Structures, Paved Roads and Unpaved Roads delineated from 1999 aerial photography.

LEGEND

- **Andesite lava and lava breccia**
- **Andesite tuff**
- **Diorite and dioirte porfhyry**
- **Sand and Clay**

B-8. Geology Map

B-9. Environmental Sensitivity Index Map



SHORELINE HABITATS (ESI)

- 1A EXPOSED ROCKY CLIFFS
- 1B EXPOSED, SOLID MAN–MADE STRUCTURES
- 2A EXPOSED WAVE–CUT PLATFORMS IN BEDROCK
- 2B SCARPS AND STEEP SLOPES IN MUDDY SEDIMENTS
- 3A FINE– TO MEDIUM–GRAINED SAND BEACHES
- 4 COARSE–GRAINED SAND BEACHES
- 5 MIXED SAND AND GRAVEL BEACHES
- 6A GRAVEL BEACHES
- 6B RIPRAP
- 7 EXPOSED TIDAL FLATS
- 8A SHELTERED ROCKY SHORES
- 8B SHELTERED, SOLID MAN–MADE STRUCTURES
- 9A SHELTERED TIDAL FLATS
- 9B SHELTERED VEGETATED LOW BANKS
- 10D MANGROVES
- SALT– AND BRACKISH–WATER MARSHES
- FRESHWATER MARSHES
- FRESHWATER SWAMPS
- FRESHWATER SCRUB/SHRUB

STREAM REACHES (RSI)

- 1 QUIET POOL; LOW–SENSITIVE BANKS
- 2 STRAIGHT CHANNEL WITH CURRENTS; LOW–SENSITIVE BANKS (MUD DOMINANT)
- 3 MEANDERING CHANNEL; SAND POINT BARS
- 4 MEANDERING CHANNEL; VEGETATED POINT BARS
- 5 RAPIDS OVER BEDROCK
- 6 MEANDERING CHANNEL; SAND AND GRAVEL POINT BARS
- 7 SPLIT CHANNEL WITH COARSE GRAVEL; SOME RAPIDS
- 8 SMALL FALLS; BOULDERS IN CHANNEL
- 9 LARGE FALLS; BOULDERS IN CHANNEL
- 10 CHANNELS WITH ASSOCIATED VULNERABLE WETLANDS

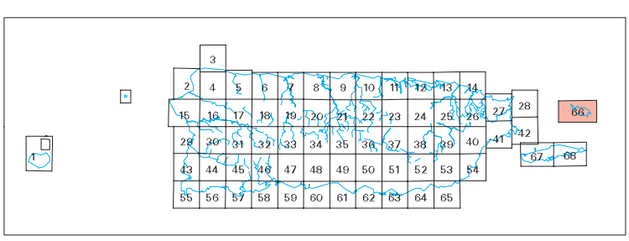
KARST

N W E S

SCALE 1:65000

1 .5 0 1 KILOMETER

1 .5 0 1 MILE



Not For Navigation
Published: May 2000

Published at Seattle, Washington
National Oceanic and Atmospheric Administration
National Ocean Service
Office of Response and Restoration
Hazardous Materials Response Division

CULEBRA AND ADJACENT ISLANDS, P.R. (1948)

PR-66