Federal Emergency Management Agency

Washington, D.C. 20472

LETTER OF MAP REVISION DETERMINATION DOCUMENT

COMMUNITY AND REVISION INFORMATION		PROJECT DESCRIPTION	BASIS OF REQUEST
COMMUNITY	Lee County Florida (Unincorporated Areas)	NO PROJECT	FLOODWAY HYDRAULIC ANALYSIS HYDROLOGIC ANALYSIS UPDATED TOPOGRAPHIC DATA
	COMMUNITY NO.: 125124		
IDENTIFIER	2870 Joel Blvd. LOMR (Previously Case No. 18-04-5920P)	APPROXIMATE LATITUDE AND LONGITUDE: 26.707, -81.601 SOURCE: USGS QUADRANGLE DATUM: NAD 83	

ANNOTATED MAPPING ENCLOSURES	ANNOTATED STUDY ENCLOSURES
TYPE: FIRM* NO.: 12071C0328F DATE: August 28, 2008 TYPE: FIRM NO.: 12071C0329F DATE: August 28, 2008	DATE OF EFFECTIVE FLOOD INSURANCE STUDY: December 07, 2018 PROFILES: 03P and 04P FLOODWAY DATA TABLE: 11 SUMMARY OF DISCHARGES TABLE: 8

Enclosures reflect changes to flooding sources affected by this revision.
* FIRM - Flood Insurance Rate Map

FLOODING SOURCE AND REVISED REACH

Bedman Creek/Dog Canal - from the confluence with Caloosahatchee River to approximately 15,920 feet upstream of the confluence with Caloosahatchee River

SUMMARY OF REVISIONS

Flooding Source	Effective Flooding	Revised Flooding	Increases	Decreases
Bedman Creek/Dog Canal	Zone AE	Zone AE	YES	YES
	Zone X (shaded)	Zone X (shaded)	YES	YES
	BFEs*	BFEs	NONE	YES
	Floodway	Floodway	YES	YES

* BFEs - Base Flood Elevations

DETERMINATION

This document provides the determination from the Department of Homeland Security's Federal Emergency Management Agency (FEMA) regarding a request for a Letter of Map Revision (LOMR) for the area described above. Using the information submitted, we have determined that a revision to the flood hazards depicted in the Flood Insurance Study (FIS) report and National Flood Insurance Program (NFIP) map is warranted. This document revises the effective NFIP map, as indicated in the attached documentation. Please use the enclosed annotated map panels revised by this LOMR for floodplain management purposes and for all flood insurance policies and renewals in your community.

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Information eXchange toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMC Clearinghouse, 3601 Eisenhower Avenue, Suite 500, Alexandria, VA 22304-6426. Additional Information about the NFIP is available on our website at https://www.fema.gov/national-flood-insurance-program.

Patrick "Rick" F. Sacbibit, Chief
Engineering Services Branch
Federal Insurance and Mitigation Administration

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LETTER OF MAP REVISION
DETERMINATION DOCUMENT (CONTINUED)

COMMUNITY INFORMATION

APPLICABLE NFIP REGULATIONS/COMMUNITY OBLIGATION

We have made this determination pursuant to Section 206 of the Flood Disaster Protection Act of 1973 (P.L. 93-234) and in accordance with the National Flood Insurance Act of 1968, as amended (Title XIII of the Housing and Urban Development Act of 1968, P.L. 90-448), 42 U.S.C. 4001-4128, and 44 CFR Part 65. Pursuant to Section 1361 of the National Flood Insurance Act of 1968, as amended, communities participating in the NFIP are required to adopt and enforce floodplain management regulations that meet or exceed NFIP criteria. These criteria, including adoption of the FIS report and FIRM, and the modifications made by this LOMR, are the minimum requirements for continued NFIP participation and do not supersede more stringent State/Commonwealth or local requirements to which the regulations apply.

We provide the floodway designation to your community as a tool to regulate floodplain development. Therefore, the floodway revision we have described in this letter, while acceptable to us, must also be acceptable to your community and adopted by appropriate community action, as specified in Paragraph 60.3(d) of the NFIP regulations.

COMMUNITY REMINDERS

We based this determination on the 1-percent-annual-chance discharges computed in the submitted hydrologic model. Future development of projects upstream could cause increased discharges, which could cause increased flood hazards. A comprehensive restudy of your community's flood hazards would consider the cumulative effects of development on discharges and could, therefore, indicate that greater flood hazards exist in this area.

Your community must regulate all proposed floodplain development and ensure that permits required by Federal and/or State/Commonwealth law have been obtained. State/Commonwealth or community officials, based on knowledge of local conditions and in the interest of safety, may set higher standards for construction or may limit development in floodplain areas. If your State/Commonwealth or community has adopted more restrictive or comprehensive floodplain management criteria, those criteria take precedence over the minimum NFIP requirements.

We will not print and distribute this LOMR to primary users, such as local insurance agents or mortgage lenders; instead, the community will serve as a repository for the new data. We encourage you to disseminate the information in this LOMR by preparing a news release for publication in your community's newspaper that describes the revision and explains how your community will provide the data and help interpret the NFIP maps. In that way, interested persons, such as property owners, insurance agents, and mortgage lenders, can benefit from the information.

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Information eXchange toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMC Clearinghouse, 3601 Eisenhower Avenue, Suite 500, Alexandria, VA 22304-6426. Additional Information about the NFIP is available on our website at https://www.fema.gov/national-flood-insurance-program.

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LETTER OF MAP REVISION
DETERMINATION DOCUMENT (CONTINUED)

We have designated a Consultation Coordination Officer (CCO) to assist your community. The CCO will be the primary liaison between your community and FEMA. For information regarding your CCO, please contact:

Mr. Jesse Munoz
Director, Mitigation Division
Federal Emergency Management Agency, Region IV
Koger Center - Rutgers Building, 3003 Chamblee Tucker Road
Atlanta, GA 30341
(770)-220-5406

STATUS OF THE COMMUNITY NFIP MAPS

We will not physically revise and republish the FIRM and FIS report for your community to reflect the modifications made by this LOMR at this time. When changes to the previously cited FIRM panels and FIS report warrant physical revision and republication in the future, we will incorporate the modifications made by this LOMR at that time.

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Information eXchange toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMC Clearinghouse, 3601 Eisenhower Avenue, Suite 500, Alexandria, VA 22304-6426. Additional Information about the NFIP is available on our website at https://www.fema.gov/national-flood-insurance-program.

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LETTER OF MAP REVISION
DETERMINATION DOCUMENT (CONTINUED)

PUBLIC NOTIFICATION OF REVISION

A notice of changes will be published in the *Federal Register*. This information also will be published in your local newspaper on or about the dates listed below, and through FEMA's Flood Hazard Mapping website at https://www.floodmaps.fema.gov/fhm/bfe_status/bfe_main.asp

LOCAL NEWSPAPER

Name: *The News-Press*

Dates: August 20, 2019 and August 27, 2019

Within 90 days of the second publication in the local newspaper, any interested party may request that we reconsider this determination. Any request for reconsideration must be based on scientific or technical data. Therefore, this letter will be effective only after the 90-day appeal period has elapsed and we have resolved any appeals that we receive during this appeal period. Until this LOMR is effective, the revised flood hazard determination presented in this LOMR may be changed.

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Information eXchange toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMC Clearinghouse, 3601 Eisenhower Avenue, Suite 500, Alexandria, VA 22304-6426. Additional Information about the NFIP is available on our website at https://www.fema.gov/national-flood-insurance-program.

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Federal Insurance and Mitigation Administration

below those in the effective FIS and rise significantly above, in some instances, those in the NRCS studies.

For this revision, a revised hydrologic analysis within the Ten Mile Canal Basin was completed by Tomasello Consulting Engineers, Inc (TCE). This model was submitted and approved by FEMA under LOMR Case Number 12-04-7499P. Flood discharges were computed using a S2DMM model (Tomasello, 2008). The design rainfall amounts for the basin applied as SFWMD Modified Type II, 3-day distributions are included in Table 7, "Design Storm Rainfall Amounts – Ten Mile Canal Basin". The antecedent condition for the application of the design rainfall was a continuous application of the average rainfall for the months of August and September (10.05 in/mo = 0.33 inches/day). All structure gates within the basin were assumed closed and then opened on the end of the 2nd day of the 3-day event. Based on a 2012 Report titled "Hydrologic/Hydrodynamic Riverine Study of the Ten Mile Canal Basin", prepared by TCE, rainfall runoff parameters were calibrated to observed data during heavy rains in July 2005 and validated to an event in September 2000.

Table 7 – Design Storm Rainfall Amounts – Ten Mile Canal Basin

Design Frequency	24-Hour Rainfall Amount (inches)	3-Day Rainfall Amount (inches)
10%	6.5	8.8
4%	8.0	10.9
1%	10.0	13.6
0.2%	13.0	17.7

In addition, a revised hydrologic analysis within the Estero Basin was completed by TCE, utilizing the S2DMM model with rainfall and antecedent condition assumptions similar to those utilized in the Ten Mile Canal Basin. Based on a June 2017 Report titled "Hydrologic/Hydrodynamic Flood Study for Estero River South Branch", prepared by TCE, rainfall runoff parameters were calibrated to observed data during heavy rains in August 1995 and validated to an event in October 1995.

A summary of the drainage area-peak discharge relationships for all the streams studied by detailed methods is shown in Table 8, "Summary of Discharges".

Table 8 – Summary of Discharges

Flooding Source and Location	Drainage Area (Square Miles)	PEAK DISCHARGES (cfs) 10-Percent-Annual-Chance	4-Percent-Annual-Chance	1-Percent-Annual-Chance	0.2-Percent-Annual-Chance
BAYSHORE CREEK					
At mouth	3.0	622	840	1,171	1,542
At Bayshore Road	2.58	551	734	1,020	1,332
BEDMAN CREEK/ DOG CANAL					
At mouth	14.0	414	979	2,186	3,716

REVISED DATA

REVISED TO
REFLECT LOMR
EFFECTIVE: December 26, 2019

REVISED DATA

Table 8 – Summary of Discharges (continued)

Flooding Source and Location	Drainage Area (Square Miles)	PEAK DISCHARGES (cfs) 10-Percent-Annual-Chance	4-Percent-Annual-Chance	1-Percent-Annual-Chance	0.2-Percent-Annual-Chance
BEDMAN CREEK / DOG CANAL - continued					
Just upstream of published cross-section K	12.1	355	843	1,878	3,193
Just downstream of 16th Terrace	8.05	346	842	1,622	2,549
Just downstream of Weir S-D-2	6.12	346	596	1,214 783	1,909
Just downstream of 10th Place	3.97	161	383		1,230

DATA REVISED BY LOMR EFFECTIVE NOVEMBER 22, 2019

REVISED TO REFLECT LOMR EFFECTIVE: December 26, 2019

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
BAYSHORE CREEK (Continued)								
O	23,967	34	142	2.2	22.2	22.2	23.1	0.9
P	24,798	469	581	0.5	23.5	23.5	23.6	0.1
BEDMAN CREEK / DOG CANAL								
A	1,828	451	1,278	1.7	7.0	6.1[2]	6.9	0.8
B	2,775	134	745	2.9	7.0	6.8[2]	7.4	0.6
C	4,138	215	768	2.9	8.3	8.3	8.8	0.5
D	5,349	196	936	2.3	9.5	9.5	9.7	0.2
E	6,571	176	843	2.6	10.1	10.1	10.4	0.3
F	7,778	178	830	2.6	10.7	10.7	11.1	0.4
G	8,711	213	768	2.8	11.3	11.3	11.7	0.4
H	9,753	221	994	2.1	12.1	12.1	12.4	0.3
I	10,643	179	1,214	1.8	12.9	12.9	13.1	0.2
J	11,673	289	1,341	1.6	13.1	13.1	13.4	0.3

[1] Feet above mouth.

[2] Elevation computed without consideration of backwater effects of Caloosahatchee River.

REVISED DATA

TABLE 11

FEDERAL EMERGENCY MANAGEMENT AGENCY

LEE COUNTY, FL
AND INCORPORATED AREAS

FLOODWAY DATA

REVISED TO REFLECT LOMR
EFFECTIVE: December 26, 2019

BAYSHORE CREEK - BEDMAN CREEK / DOG CANAL

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
BEDMAN CREEK / DOG CANAL (Continued)								
K	12,798	257	1,256	1.7	13.5	13.5	13.8	0.3
L	14,060	324	1,714	1.1	13.8	13.8	14.3	0.5
M	15,006	308	1,060	1.8	14.1	14.1	14.5	0.4
N	15,931	179	414	4.5	14.8	14.8	15.3	0.5
O	21,474	86	723	4.2	19.9	19.9	20.3	0.4
P	29,922	215 / 160[4]	943	2.1	23.6	23.6	24.6	1.0
Q	32,949	128	1,056	1.3	23.9	23.9	24.8	0.9
R	39,208	151	794	1.2	24.5	24.5	25.3	0.8
S	43,011	125	678	1.3	24.7	24.7	25.5	0.8
T	46,732	96	510	0.7	24.8	24.8	25.6	0.8
BILLY CREEK								
A	505	107	772	5.6	6.8[2]	1.3[3]	1.8	0.5
B	3,482	115	787	5.5	6.8[2]	4.8[3]	5.2	0.4
C	5,126	178	1,244	3.4	6.8[2]	6.1[3]	6.6	0.5

REVISED DATA

DATA REVISED BY LOMR EFFECTIVE NOVEMBER 22, 2019

[1] Feet above mouth.

[2] Elevation computed without consideration of wave effects.

[3] Elevation computed without consideration of backwater effects from Caloosahatchee River.

[4] Total width / width within county boundary

TABLE 11

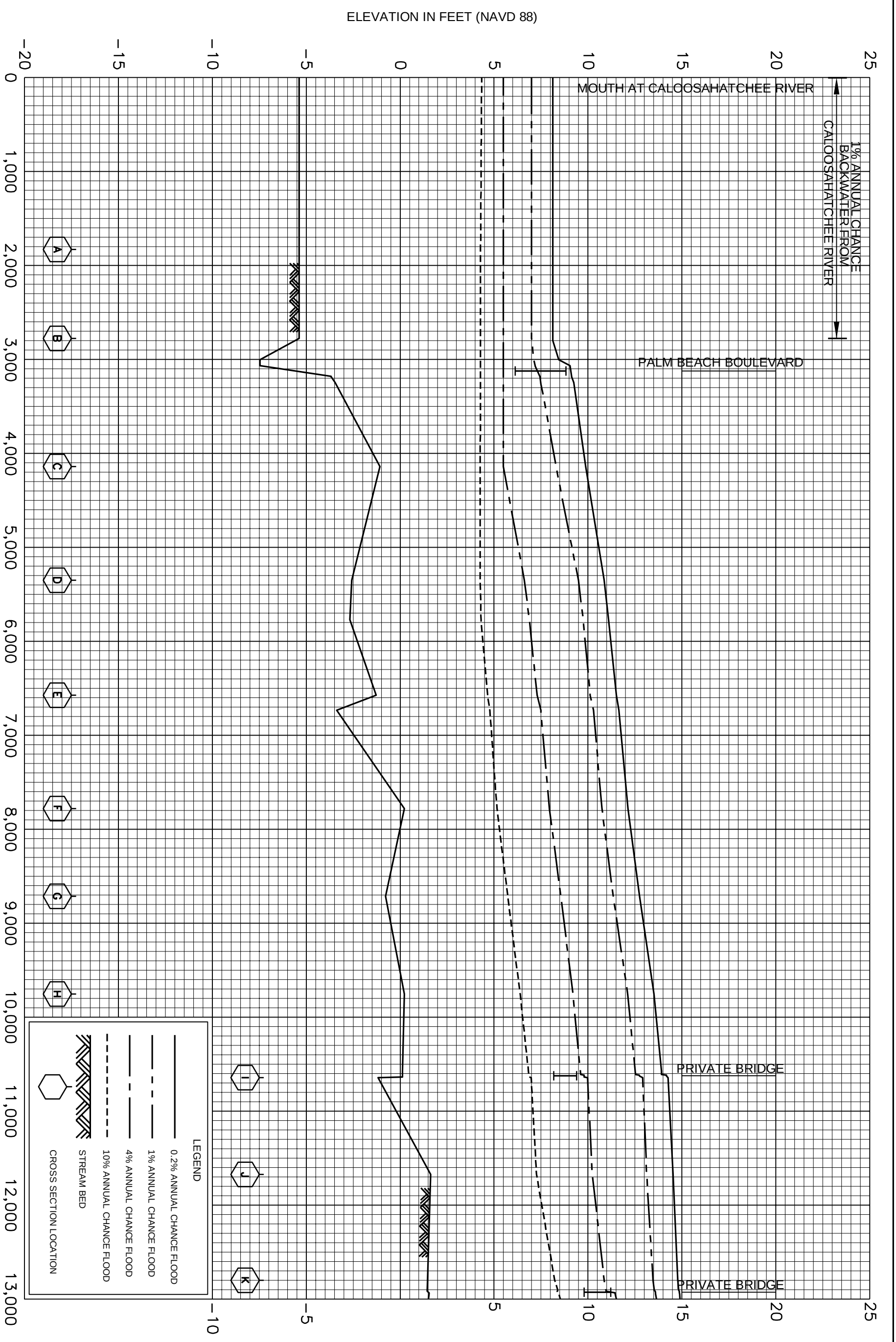
FEDERAL EMERGENCY MANAGEMENT AGENCY

LEE COUNTY, FL
AND INCORPORATED AREAS

FLOODWAY DATA

REVISED TO REFLECT LOMR EFFECTIVE: December 26, 2019

BEDMAN CREEK / DOG CANAL - BILLY CREEK



03P

FEDERAL EMERGENCY MANAGEMENT AGENCY

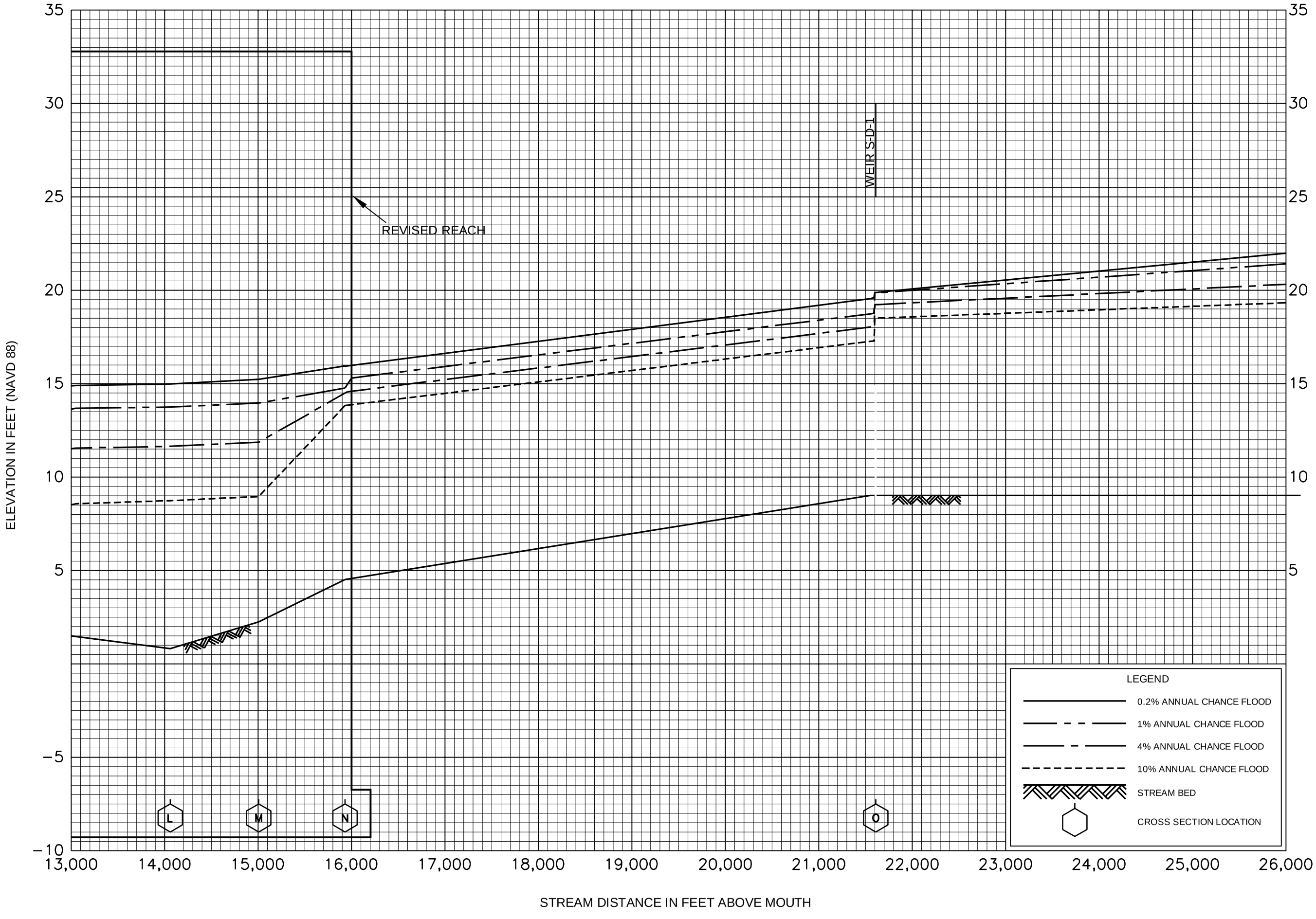
LEE COUNTY

AND INCORPORATED AREAS

FLOOD PROFILES

REVISED TO REFLECT LOMR EFFECTIVE: December 26, 2019

BEDMAN CREEK / DOG CANAL



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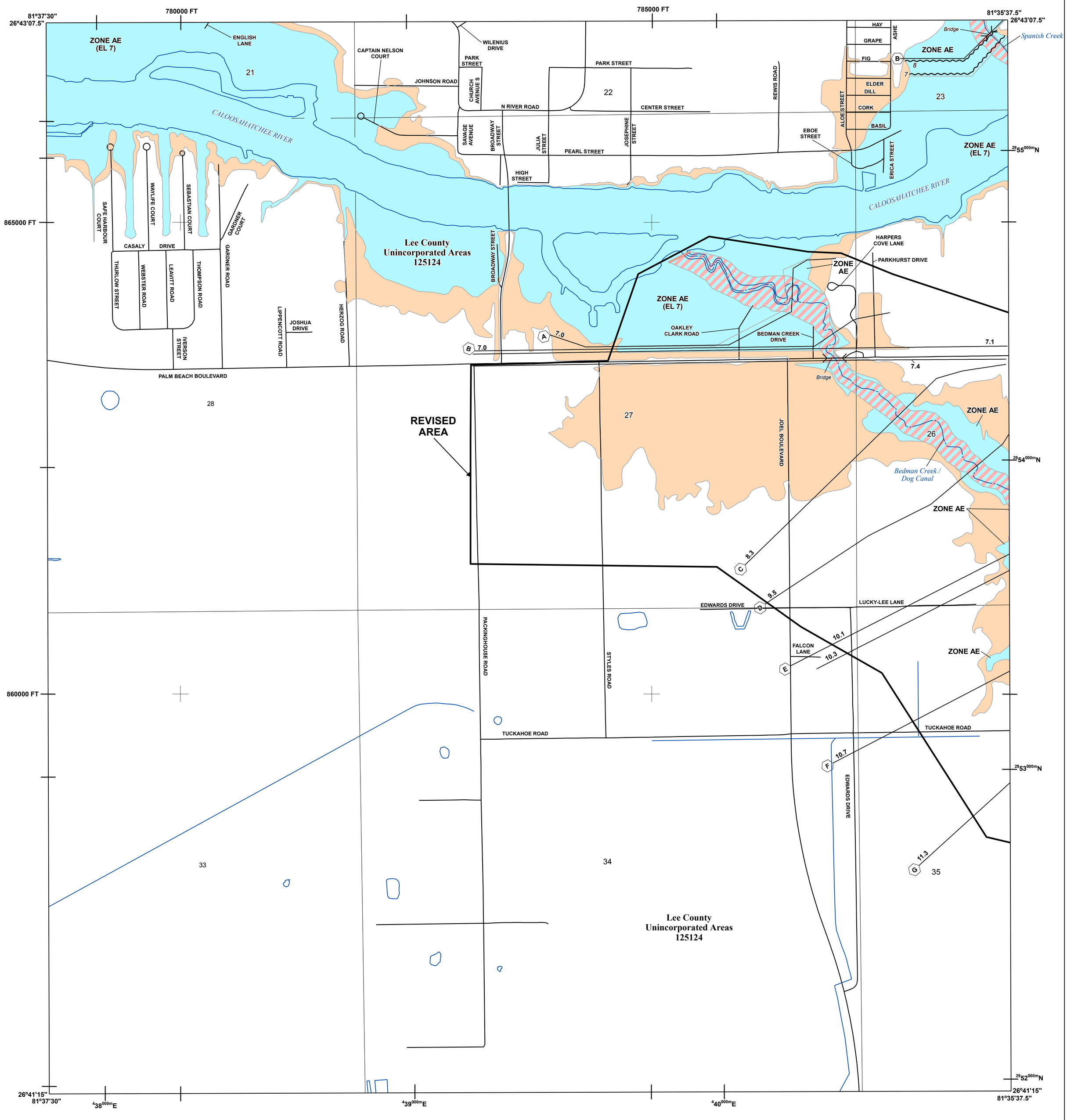
FLOOD PROFILES

BEDMAN CREEK / DOG CANAL

FEDERAL EMERGENCY MANAGEMENT AGENCY

LEE COUNTY, FL
AND INCORPORATED AREAS

04P



FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR ZONE DESCRIPTIONS AND INDEX MAP

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT HTTP://MSC.FEMA.GOV

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A,V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes. *Zone X*

OTHER AREAS
- NO SCREEN — Areas Determined to be Outside the 0.2% Annual Chance Floodplain *Zone X*
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- E 18.2 / 17.5 — Cross Sections with 1% Annual Chance Water Surface Elevation (BFE)
- 8 — Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 513 — Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

NOTES TO USERS

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For community and countywide map dates refer to the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in the community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Base map information shown on this FIRM was provided in digital format by the Lee County GIS Department. The Road centerline information was constructed based on orthophotography produced at a scale of 1"=100' from aerial imagery flown in 1998 and updated using orthophotography dated 2002 and 2005. The surface water features were also constucted based on orthophotography produced at a scale of 1"=100' from aerial imagery flown in 1998.

SCALE

N

Map Projection:
StatePlane Florida West FIPS 0902 Feet; North American Datum 1983; Western Hemisphere; Vertical Datum: NAVD 88

1 inch = 500 feet 1:6,000

0 500 1,000 2,000 feet

0 150 300 600 meters

PANEL LOCATOR

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP

LEE COUNTY, FLORIDA
and Incorporated Areas
PANEL 328 OF 685

FEMA

Panel Contains:

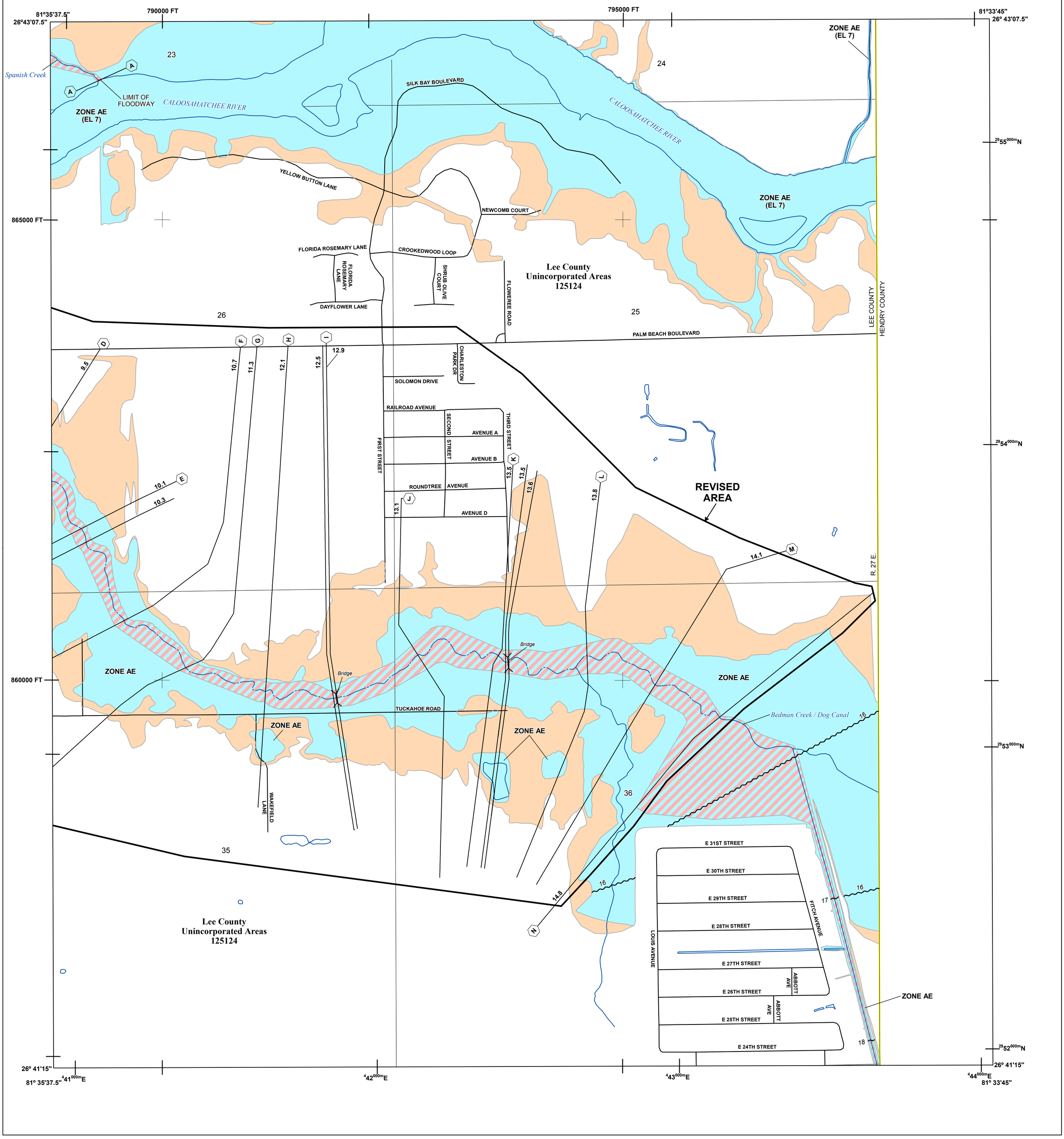
COMMUNITY	NUMBER	PANEL	SUFFIX
LEE COUNTY	125124	0328	F

REVISED TO REFLECT LOMR EFFECTIVE: December 26, 2019

VERSION NUMBER
2.1.3.0

MAP NUMBER
12071C0328F

EFFECTIVE DATE
AUGUST 28, 2008



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PANEL 329 OF 685

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MAP NUMBER
12071C0329F

MAP REVISED
AUGUST 28, 2008