

LOCATION HYDRAULIC REPORT ADDENDUM

Florida Department of Transportation

District One

SR 29

Limits of Project: from South of CR 846 to SR 29 Bypass Junction

Collier County, Florida

Financial Management Number: 417540-1

ETDM Number: 3752

Date: March 2024

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by the Florida Department of Transportation (FDOT) pursuant to 23 U.S.C. § 327 and a Memorandum of Understanding dated May 26, 2022 and executed by the Federal Highway Administration and FDOT.

Authorized Signature

Kenneth Yinger

Print/Type Name

Drainage Engineer

Title

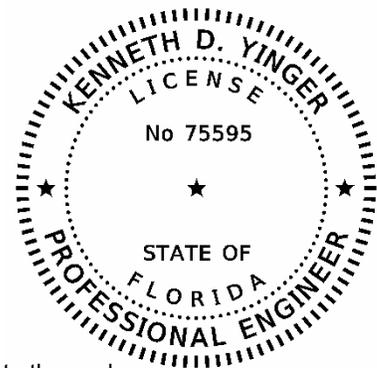
12570 Telecom Drive

Address

Temple Terrace, FL 33637

Address

This item has been digitally signed and sealed by:



On the date adjacent to the seal.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Patel, Greene & Associates, LLC
12570 Telecom Drive
Temple Terrace, FL 33637
Kenneth D. Yinger, P.E. No. 75595

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2. ALTERNATIVES AND TYPICALS	2
3. FLOODPLAIN AND FLOODWAYS	2
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ATTACHMENTS

- Attachment A - Typical Section Package
- Attachment B - FEMA Maps
- Attachment C – PD&E Concept Alignment

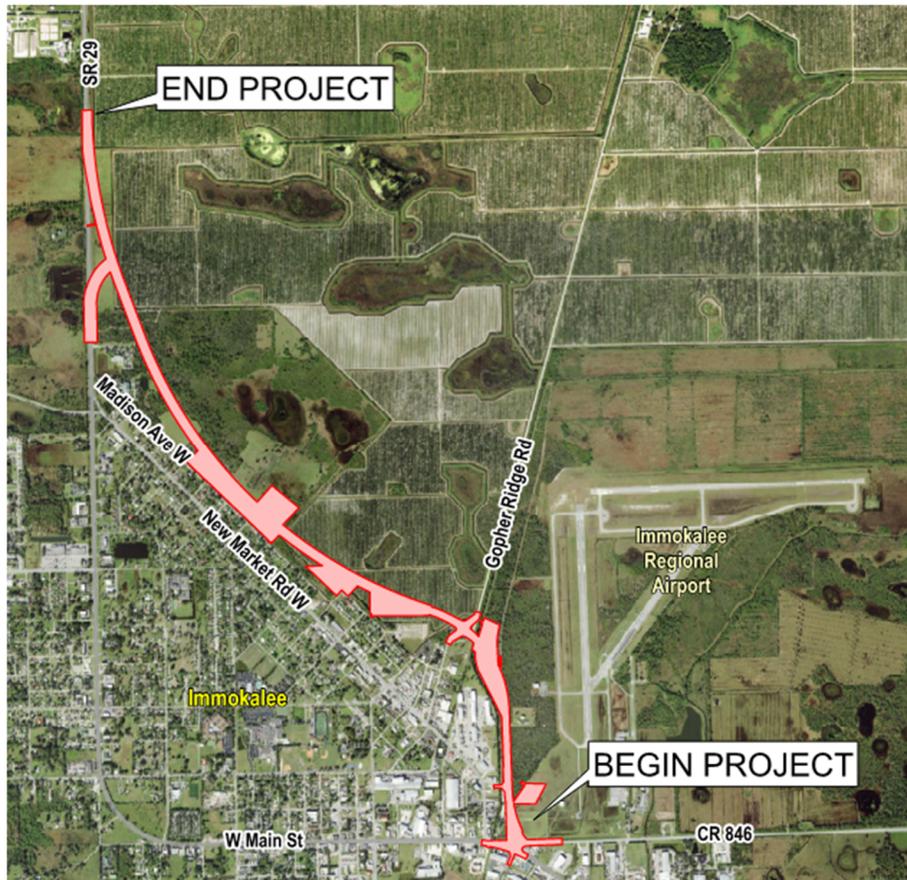
1. INTRODUCTION

A Project Development and Environment (PD&E) Public Hearing was held on November 15, 2018, to present the Preferred Alternative and provide the public with the opportunity to review project documents and provide comments. Refinements to the Preferred Alternative have been made to meet the FDOT Design Manual (FDM) requirements and include the identification of stormwater management facilities (SMF), necessary to accommodate stormwater runoff. This Location Hydraulics Report Addendum supplements the Preliminary Location Hydraulics Report dated August 2018 and specifically addresses the design refinements for the project.

Refer to **Attachment C** for updated PD&E concept alignment.

The proposed new signalized intersection at CR 846 and the proposed intersection at Gopher Ridge Road have been revised to roundabouts at these locations. The proposed right-of-way (ROW) requirement previously varied from 108 feet to 200 feet and has been increased to varying from 144 feet to 250 feet. The two 11-foot travel lanes in each direction have been increased to 12-foot travel lanes in each direction from CR 846 to Gopher Ridge Road. The 6-foot sidewalk and 7-foot buffered bicycle lanes in each direction have been replaced with 12-foot shared use paths from CR 846 to Gopher Ridge Road. Twelve-foot shared use paths have been added to both sides of the corridor from Gopher Ridge Road to the SR 29 Bypass Junction. As a result of criteria updates, the proposed design speeds, ranging from 45-50 miles per hour (mph), have been updated and range from 45-55 mph. Three SMFs have been identified. The three proposed SMFs will require approximately 22 acres of offsite right-of-way. Stormwater runoff will be conveyed to the proposed SMFs by an open drainage system within the existing mainline right-of-way.

Figure 1: Project Location Map



2. ALTERNATIVES AND TYPICALS

The original LHR considered a No Build Alternative as well as two Build Alternatives; identified as Central Alternative #1 Revised and Central Alternative #2. The Central Alternative #2 with minor optimizations was chosen as the preferred alternative and programmed for further analysis.

The typical sections in Figure 3-11 and Figure 3-12 in the original LHR for this project segment have been revised. Please see **Attachment A** for the revised typical sections. The suburban typical section is comprised of four 12-foot travel lanes with type F curb and gutter, 22-foot median with type E curb and gutter, and two 12 shared use paths. The typical section is based on a 45 MPH design speed.

3. FLOODPLAIN AND FLOODWAYS

As noted in the original LHR, the entire project study area was located within the Federal Emergency Management Agency (FEMA) floodplain Zone AH as identified in FIRM Panels 12021C0135 and 12021C0145H (Effective date of May 16, 2012). Please refer to **Attachment B** for the effective floodplain maps. It should be noted that the current FEMA maps are the same as reviewed during the original LHR report. The impacts to the floodplain within the project corridor are considered to be transverse encroachments. There are no floodway encroachments associated with the proposed corridor. The original LHR divided the corridor into three impact areas (F-1, F-2, and F-3) and estimated potential floodplain impacts within each. The impact area, F-2, associated with the alignment of the Central Alternative #2 was not identified within the FEMA FIRM Panel provided in Appendix C of the original report. Therefore, the Floodplain Impact Calculation located within Appendix E of the original report may not be an accurate estimate of the anticipated floodplain encroachment for this project.

Per the FEMA Flood Insurance Study (FIS 12021CV000B), with an effective date of May 16, 2012, a riverine analysis was conducted using two-dimensional hydrologic/hydrodynamic modeling to determine the floodplain elevations. The watershed was modeled using the S2DMM program, which is a two-dimensional, grid-based hydrologic/hydrodynamic model. The project corridor is located within the Ava Maria basin for the purposes of this analysis. The grid size of Ava Maria basin was 1000-ft x 1000-ft, with other basins in the study using grid sizes between 500-ft x 500-ft and 2640-ft x 2640-ft. The calibrated model simulated the 10-percent, 2-percent, 1-percent, and 0.2-percent-annual-chance floods. The starting conditions for each model were established by running the model for 14-days with the average daily rainfall for the months of August and September (wet season). The resulting water levels throughout the basins were used as the antecedent condition. Rainfall was distributed temporarily according to the SFWMD 3-day temporal distribution. It should be noted that the current effective FIS did not determine floodways due to the nature of flooding within Collier County (coastal flooding and ponding).

Given the scale of the study conducted to identify the floodplain limits shown within the FEMA FIRM Panels it is recommended to create a localized one-dimensional hydrologic and hydraulic model using Interconnected Channel and Pond Routing (ICPRv4) software to more accurately identify floodplain limits based on the SFWMD 100-yr/72-hr storm event. It is anticipated the ICPRv4 model will depict a more accurate floodplain footprint within the vicinity of the project corridor. The pre vs. post condition modeling may demonstrate a “de minimis” rise in the Base Flood Elevation (BFE) negating the need for dedicated floodplain compensation sites. As noted in the original PD&E recommendations, floodplain modeling should be explored during the design phase of the project.

The local FEMA coordinator was contacted during the original LHR to discuss the floodplain map. The initial correspondence, from January 2018, noted that new floodplain maps were currently in production. Currently new maps have not been published for Collier County and it does not appear new maps are in process for the project corridor. However, it should be noted that new flood maps are currently pending, with a date of 2/8/2024, for southwest portions of Collier County.

4. CONCLUSION

The original PD&E document classified the encroachments to the floodplain along the corridor as insignificant and were determined to have minimal encroachment. The modifications noted for this segment do not change the conclusion of the original LHR report as noted below.

Minimal Encroachment:

“The proposed drainage systems will perform hydraulically in a manner equal to or greater than the existing conveyance systems, and surface water elevations are not expected to increase upstream or downstream of the project limits. This project will have a minimal impact on the existing floodplains within and adjacent to this roadway improvement project. As a result, there will be no significant adverse impacts on natural and beneficial floodplain values. There will be no significant change in flood risk, and there will not be a significant change in the potential for interruption or termination of emergency service or emergency evacuation routes. Therefore, it has been determined that this encroachment is not significant.”

Attachment A

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTION PACKAGE

FINANCIAL PROJECT ID 417540-5-52-01
COLLIER COUNTY (03080)
STATE ROAD NO. 29
FROM CR 846 E TO N OF NEW MARKET ROAD N

APPROVED BY:

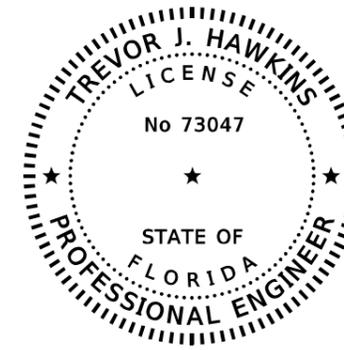
THIS ITEM HAS BEEN DIGITALLY
SIGNED AND SEALED BY

Trevor J Hawkins 2019.12.13
14:26:51 -05'00'

ON THE DATE ADJACENT TO THE SEAL

PRINTED COPIES OF THIS DOCUMENT ARE
NOT CONSIDERED SIGNED AND SEALED
AND THE SIGNATURE MUST BE VERIFIED
ON ANY ELECTRONIC COPIES.

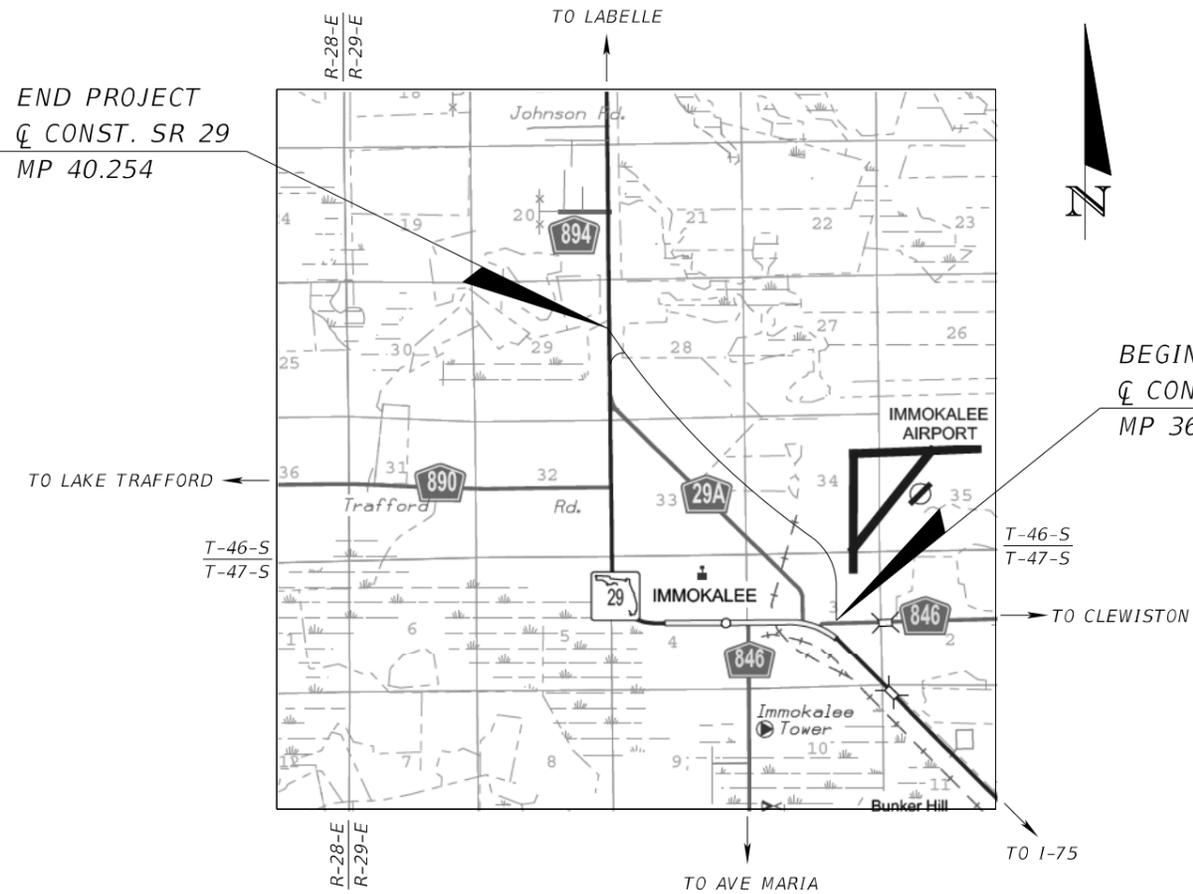
PATEL, GREENE AND ASSOCIATES, PLLC
12570 TELECOM DRIVE
TEMPLE TERRACE, FLORIDA 33637
TREVOR J. HAWKINS, P.E. NO. 73047



THE ABOVE NAMED PROFESSIONAL ENGINEER SHALL BE RESPONSIBLE FOR THE
FOLLOWING SHEETS IN ACCORDANCE WITH RULE 61G15-23.004, F.A.C.

TYPICAL SECTION PACKAGE

SHEET NO	SHEET DESCRIPTION
1	COVER SHEET
2	TYPICAL SECTION NO. 1
3	TYPICAL SECTION NO. 2



TYPICAL SECTION CONCURRENCE

SAM K JOSEPH
Digitally signed by SAM K JOSEPH
Date: 2020.01.08 08:16:21 -05'00'
FDOT DISTRICT DESIGN ENGINEER

FDOT DISTRICT STRUCTURES
DESIGN ENGINEER

FHWA TRANSPORTATION ENGINEER

DESIGN SPEED AND POSTED
SPEED CONCURRENCE:

Trisha Hartzell
Digitally signed by Trisha Hartzell
Date: 2019.12.23 08:22:41 -05'00'
FDOT DISTRICT TRAFFIC OPERATIONS
ENGINEER

SAM K JOSEPH
Digitally signed by SAM K JOSEPH
Date: 2020.01.08 08:16:42 -05'00'
FDOT DISTRICT DESIGN ENGINEER

CONTEXT CLASSIFICATION
CONCURRENCE:

Nicole E Mills
2019.12.20 14:09:21 -05'00'
FDOT DISTRICT INTERMODAL SYSTEMS
DEVELOPMENT MANAGER

SHEET
NO.

1

PROJECT CONTROLS

CONTEXT CLASSIFICATION

- () C1 : NATURAL (X) C3C : SUBURBAN COMM.
- () C2 : RURAL () C4 : URBAN GENERAL
- () C2T : RURAL TOWN () C5 : URBAN CENTER
- () C3R : SUBURBAN RES. () C6 : URBAN CORE
- () N/A : L.A. FACILITY

FUNCTIONAL CLASSIFICATION

- () INTERSTATE () MAJOR COLLECTOR
- () FREEWAY/EXPWY. () MINOR COLLECTOR
- (X) PRINCIPAL ARTERIAL () LOCAL
- () MINOR ARTERIAL

HIGHWAY SYSTEM

- () NATIONAL HIGHWAY SYSTEM
- (X) STRATEGIC INTERMODAL SYSTEM
- () STATE HIGHWAY SYSTEM
- () OFF-STATE HIGHWAY SYSTEM

ACCESS CLASSIFICATION

- () 1 - FREEWAY
- () 2 - RESTRICTIVE w/Service Roads
- (X) 3 - RESTRICTIVE w/660 ft. Connection Spacing
- () 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing
- () 5 - RESTRICTIVE w/440 ft. Connection Spacing
- () 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing
- () 7 - BOTH MEDIAN TYPES

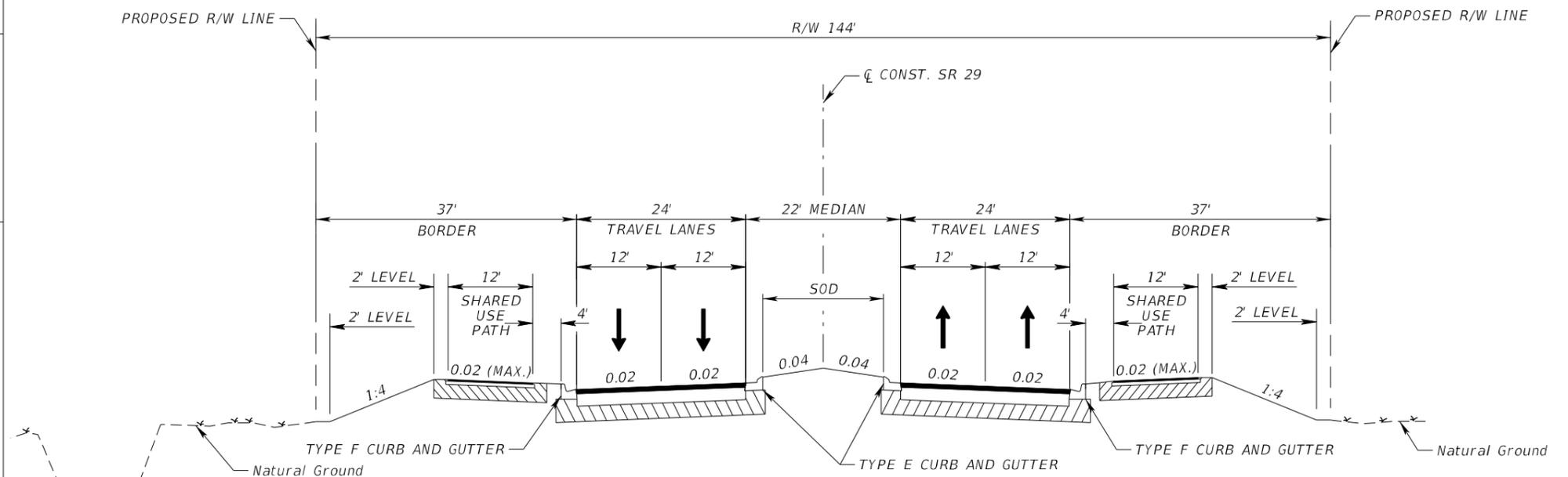
CRITERIA

- (X) NEW CONSTRUCTION / RECONSTRUCTION
- () RESURFACING (LA FACILITIES)
- () RRR (ARTERIALS & COLLECTORS)

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

BASE CLEARANCE VARIATION

TYPICAL SECTION No. 1



TYPICAL SECTION NO. 1
SR 29
MP 36.770 TO MP 37.684

TRAFFIC DATA

CURRENT YEAR= 2020 AADT = 21000
 ESTIMATED OPENING YEAR = 2025 AADT = 25000
 ESTIMATED DESIGN YEAR = 2045 AADT = 41000
 K = 9% D = 59% T = 16% (24 HOUR)
 DESIGN HOUR T = 8%
 DESIGN SPEED = 45 MPH
 POSTED SPEED = 45 MPH

NOT TO SCALE

FINANCIAL PROJECT ID	SHEET NO.
417540-5-52-01	2

PROJECT CONTROLS

CONTEXT CLASSIFICATION

- () C1 : NATURAL () C3C : SUBURBAN COMM.
- () C2 : RURAL () C4 : URBAN GENERAL
- () C2T : RURAL TOWN () C5 : URBAN CENTER
- (X) C3R : SUBURBAN RES. () C6 : URBAN CORE
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- () MINOR ARTERIAL

HIGHWAY SYSTEM

- () NATIONAL HIGHWAY SYSTEM
- (X) STRATEGIC INTERMODAL SYSTEM
- () STATE HIGHWAY SYSTEM
- () OFF-STATE HIGHWAY SYSTEM

ACCESS CLASSIFICATION

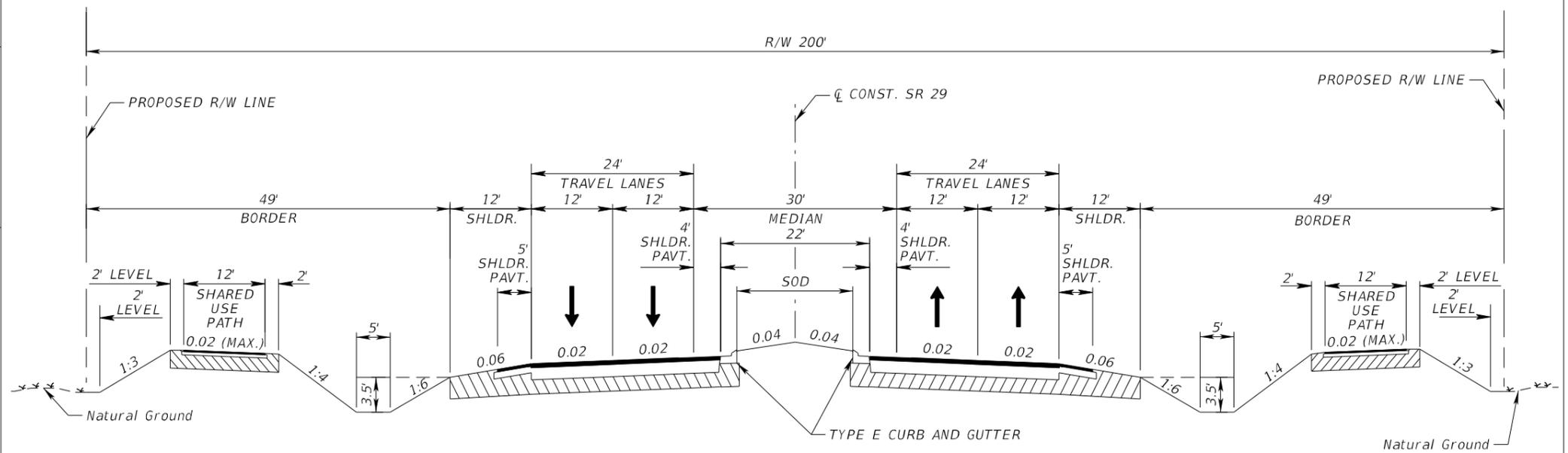
- () 1 - FREEWAY
- () 2 - RESTRICTIVE w/Service Roads
- (X) 3 - RESTRICTIVE w/660 ft. Connection Spacing
- () 4 - NON-RESTRICTIVE w/2640 ft. Signal Spacing
- () 5 - RESTRICTIVE w/440 ft. Connection Spacing
- () 6 - NON-RESTRICTIVE w/1320 ft. Signal Spacing
- () 7 - BOTH MEDIAN TYPES

CRITERIA

- (X) NEW CONSTRUCTION / RECONSTRUCTION
- () RESURFACING (LA FACILITIES)
- () RRR (ARTERIALS & COLLECTORS)

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

TYPICAL SECTION No. 2



TYPICAL SECTION NO. 2
SR 29
MP 37.684 TO MP 40.254

TRAFFIC DATA

CURRENT YEAR= 2020 AADT = 21000
 ESTIMATED OPENING YEAR = 2025 AADT = 25000
 ESTIMATED DESIGN YEAR = 2045 AADT = 41000
 K = 9% D = 59% T = 16% (24 HOUR)
 DESIGN HOUR T = 8%
 DESIGN SPEED = 50 MPH / 55 MPH
 POSTED SPEED = 50 MPH / 55 MPH

NOT TO SCALE

FINANCIAL PROJECT ID	SHEET NO.
417540-5-52-01	3

Attachment B

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations (BFEs)** and/or **floodways** have been determined, users are encouraged to consult the **Firm Profiles and Floodway Data and/or Summary of Stillwater Elevations** tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded half-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only to landward of 0.6 North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations have been determined, users are encouraged to consult the **Firm Profiles and Floodway Data and/or Summary of Stillwater Elevations** tables contained within the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than elevations shown on this FIRM.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The projection used in the preparation of this map was Florida State Plane east zone (FIPSZONE 0901). The horizontal datum was NAD 83, GRS1980 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1988 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov> or contact the National Geodetic Survey at the following address:

NGS Information Services
 NOAA/NMSS/12
 National Geodetic Survey
 5340-3 40202
 Silver Spring, MD 20910-1330

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-5242, or visit its website at <http://www.ngs.noaa.gov>.

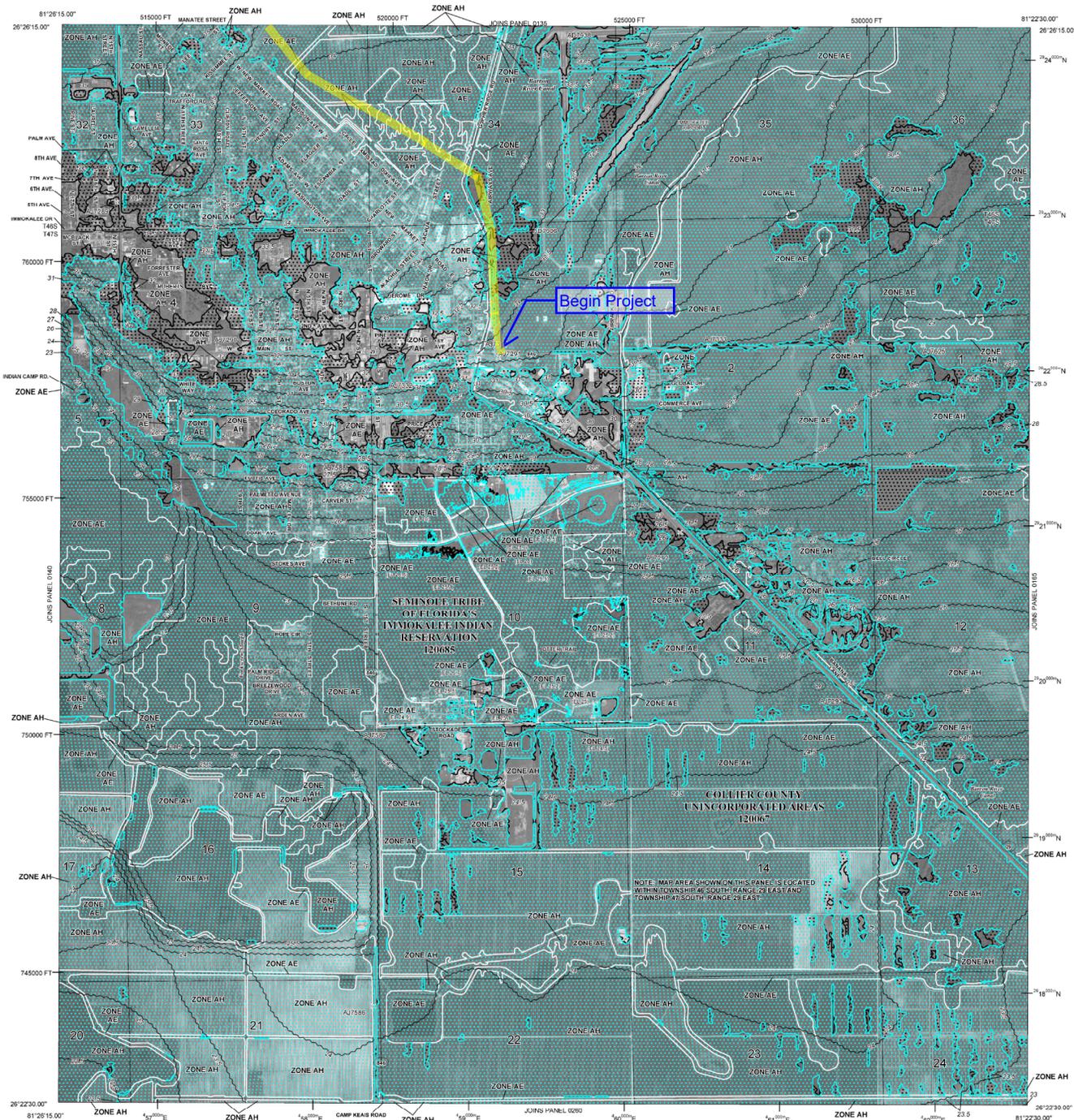
Base map information shown on this FIRM was derived from multiple sources. This information was compiled from Collier County Government (2003, 2008, 2009), U.S. Bureau of Land Management (2005), 3001, Inc. (2004), NOAA-National Geodetic Survey (2008), and U.S. Geological Survey (2009) at a scale of 1:24,000.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or deannexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels, community map repository addresses, and a listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Information exchange at 1-877-FEMA-MAP (1-877-336-2627)** for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Information exchange may also be reached by Fax at 1-800-368-9620 and its website at <http://www.nfip.fema.gov>.

If you have **questions about this map or questions concerning the National Flood Insurance Program** in general, please call **1-877-FEMA-MAP (1-877-336-2627)** or visit the FEMA website at <http://www.fema.gov>.



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A
 No Base Flood Elevations determined.

ZONE AE
 Base Flood Elevations determined.

ZONE AH
 Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

ZONE AD
 Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of shallow fan flooding, velocities are determined.

ZONE AV
 Special Flood Hazard Area formerly protected from the 1% annual chance flood by a levee system under construction; no Base Flood Elevations determined.

ZONE V
 Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE VE
 Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X
 Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with average wave less than 1 square foot; areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X
 Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D
 Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPA)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary
 0.2% annual chance floodplain boundary
 Floodway boundary
 Zone D boundary
 CBRS and OPA boundary

0.2-foot depth of Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities
 Base Flood Elevation line and value; elevation in feet
 Base Flood Elevation value; uniform within panel; elevation in feet

Reference to the North American Vertical Datum of 1988 (NAVD 88)

A - Cross section line
 B - Transsect line
 C - Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
 D - 1000-meter Universal Transverse Mercator grid value; zone 17
 E - 5000-foot grid value; Florida State Plane coordinate system, east zone (FIPSZONE 0901) Lambert Conformal Conic projection

DX6510 - North arrow (see explanation in back of insert section of this FIRM panel)

M.S. - River Mile

MAP REPOSITORY
 Refer to Map Repository list on Map Index

EFFECTIVE DATE OF COLLIER COUNTY FLOOD INSURANCE RATE MAP
 November 17, 2008

EFFECTIVE DATES OF REVISIONS TO THIS PANEL
 May 16, 2012 - to update coordinate lines, to change Base Flood Elevations, to add Special Flood Hazard Areas, to change Special Flood Hazard Areas, to change some designations, to update panel and sheet names, to update the effects of wave action, to reflect revised shorelines, to reflect updated topographic information, and to modify Coastal Barrier Resources Areas and Otherwise Protected Areas

For community map revision history prior to desktop mapping refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-9620.

MAP SCALE 1" = 1000'
 0 1000 2000
 FEET
 0 300 600
 METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0145H

FIRM FLOOD INSURANCE RATE MAP

COLLIER COUNTY, FLORIDA AND INCORPORATED AREAS

PANEL 145 OF 1225
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

COMMUNITY	NUMBER	PANEL	SUFFIX
COLLIER COUNTY	00967	0145	H
SEMINOLE TRIBE OF FLORIDA	10068	0145	H

NOTE TO USER: The Map Register shown below should be used when ordering this map. The Community Identifier is the number which identifies the map. Users should use an insurance application for the subject community.

MAP NUMBER 12021C0145H

MAP REVISED MAY 16, 2012

Federal Emergency Management Agency

NOTES TO USERS

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Coastal Base Flood Elevations shown on this map apply only inlandward of 0.0 North American Vertical Datum of 1988 (NAVD 88). Users of the FIRM should be aware that flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than elevations shown on the FIRM.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The projection used in the preparation of this map was Florida State Plane east zone (FIPSZONE 0501). The horizontal datum was NAD 83 (GRS1980) spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1988 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov> or contact the National Geodetic Survey at the following address:

NGS Information Services
 NOAA/NMFS/12
 National Geodetic Survey
 5360-3 80012
 1315 East-West Highway
 Silver Spring, MD 20910-3282

To obtain current elevation, description, and/or location information for bench marks shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit its website at <http://www.ngs.noaa.gov/>

Base map information shown on this FIRM was derived from multiple sources. This information was compiled from Collier County Government (2003, 2008, 2009), U.S. Bureau of Land Management (2000, 2001, 2004), NOAA/National Geodetic Survey (2005), and U.S. Geological Survey (2009) at a scale of 1:24,000.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed Map Index for an overview map of the county showing the layout of map panels, community map repository addresses, and a listing of Communities having participating flood insurance program dates for each community as well as a listing of the panels on which each community is located.

Contact the FEMA Map Information exchange at 1-877-FEMA-MAP (1-877-336-2627) for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and digital versions of this map. The FEMA Map Information exchange may also be reached by Fax at 1-800-358-9620 and its website at <http://www.fema.gov/>.

If you have questions about this map or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA website at <http://www.fema.gov/>.

For information on available products associated with this FIRM, visit the FEMA Map Information exchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA website at <http://www.fema.gov/>.

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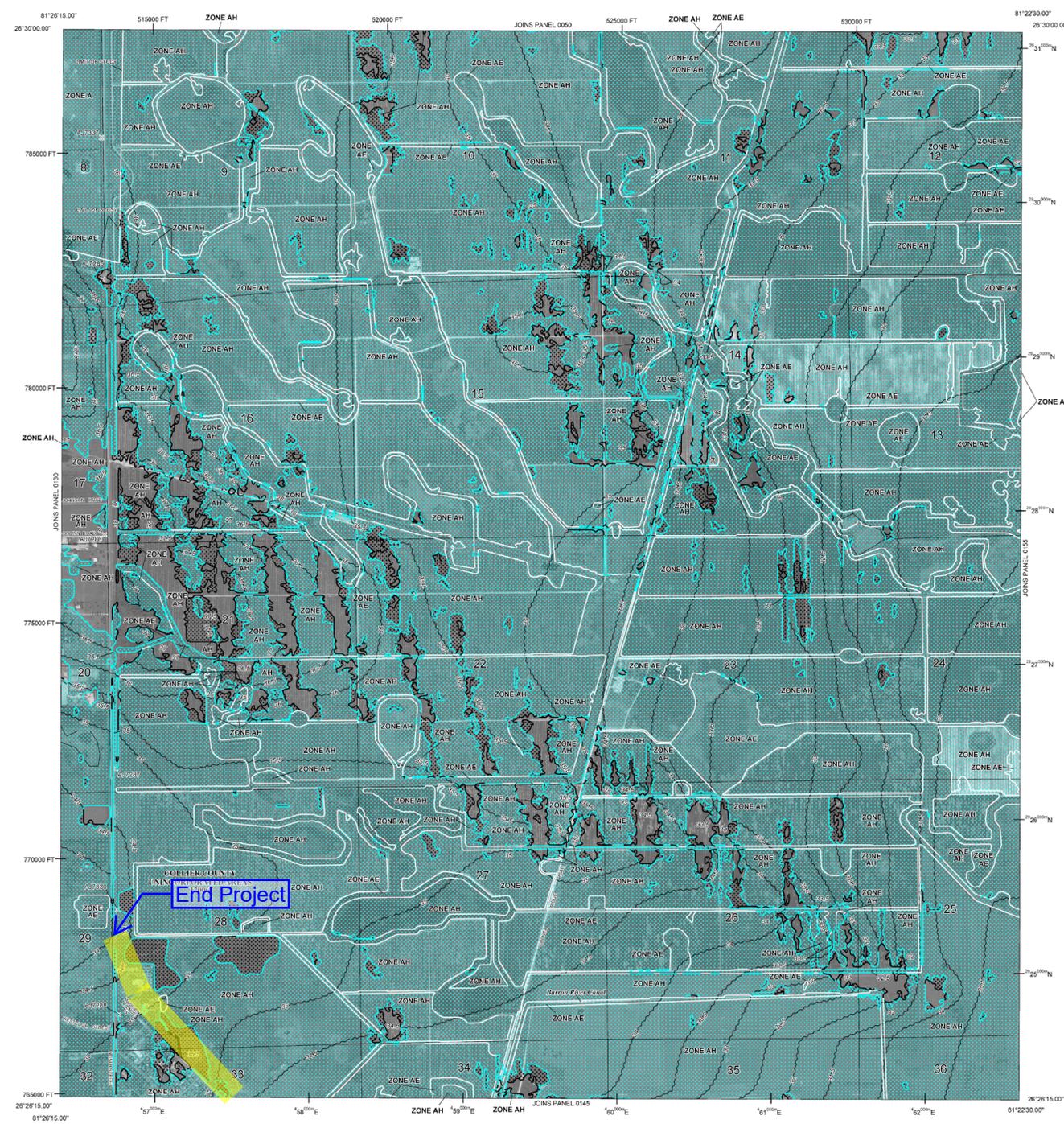
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LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The designated Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zone A, AE, AH, X, D, VE, and V. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A No Base Flood Elevations determined.
 Base Flood Elevation determined.

ZONE AE Base Flood Elevation determined.
 Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevation determined.

ZONE AH Flood depths of 1 to 3 feet (usually sheet flow on existing terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE X Special Flood Hazard Area formerly protected from the 1% annual chance flood by a levee system. The levee system was found to be inadequate to provide protection from the 1% annual chance or greater flood.

ZONE XE Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevation determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no Base Flood Elevation determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevation determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with average wave less than 1 square foot; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE D Areas determined to be outside the 0.2% annual chance floodplain.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPA)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary
 0.2% annual chance floodplain boundary
 Floodway boundary
 Zone D boundary
 CBRS and OPA boundary

Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities

Base Flood Elevation line and value; elevation in feet (ELEV)

Base Flood Elevation value; uniform within zone; elevation in feet

Reference to the North American Vertical Datum of 1988 (NAVD 88)

Cross section line

Transect line

Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)

1000-meter Universal Transverse Mercator grid value; zone 17

5000-foot grid value; Florida State Plane coordinate system, east zone (FIPSZONE 0501) Lambert Conformal Conic projection

Marsh area (see explanation in notes to users section of this FIRM report)

River Mile

MAP REPOSITORY
 Refer to Map Repository list on Map Index

EFFECTIVE DATE OF COLLECTIVE FLOOD INSURANCE RATE MAP
 November 17, 2008

EFFECTIVE DATES OF REVISIONS TO THIS PANEL
 May 16, 2013 - to update corporate limits, to change Base Flood Elevations, to add Base Flood Elevations, to add Special Flood Hazard Areas, to change Special Flood Hazard Areas, to change zone designations, to update river and road names, to update the effects of wave action, to reflect revised storming, to reflect updated topographic information, and to modify Coastal Barrier Resources Areas and Otherwise Protected Areas

For community map history refer to community mapping refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-9620.

MAP SCALE 1" = 1000'
 0 1000 2000
 0 300 600
 FEET
 METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0135H

FIRM FLOOD INSURANCE RATE MAP

COLLIER COUNTY, FLORIDA AND INCORPORATED AREAS

PANEL 135 OF 1225
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:
 COMMUNITY NUMBER PANEL RATES
 COLLIER COUNTY 00967 0098 14

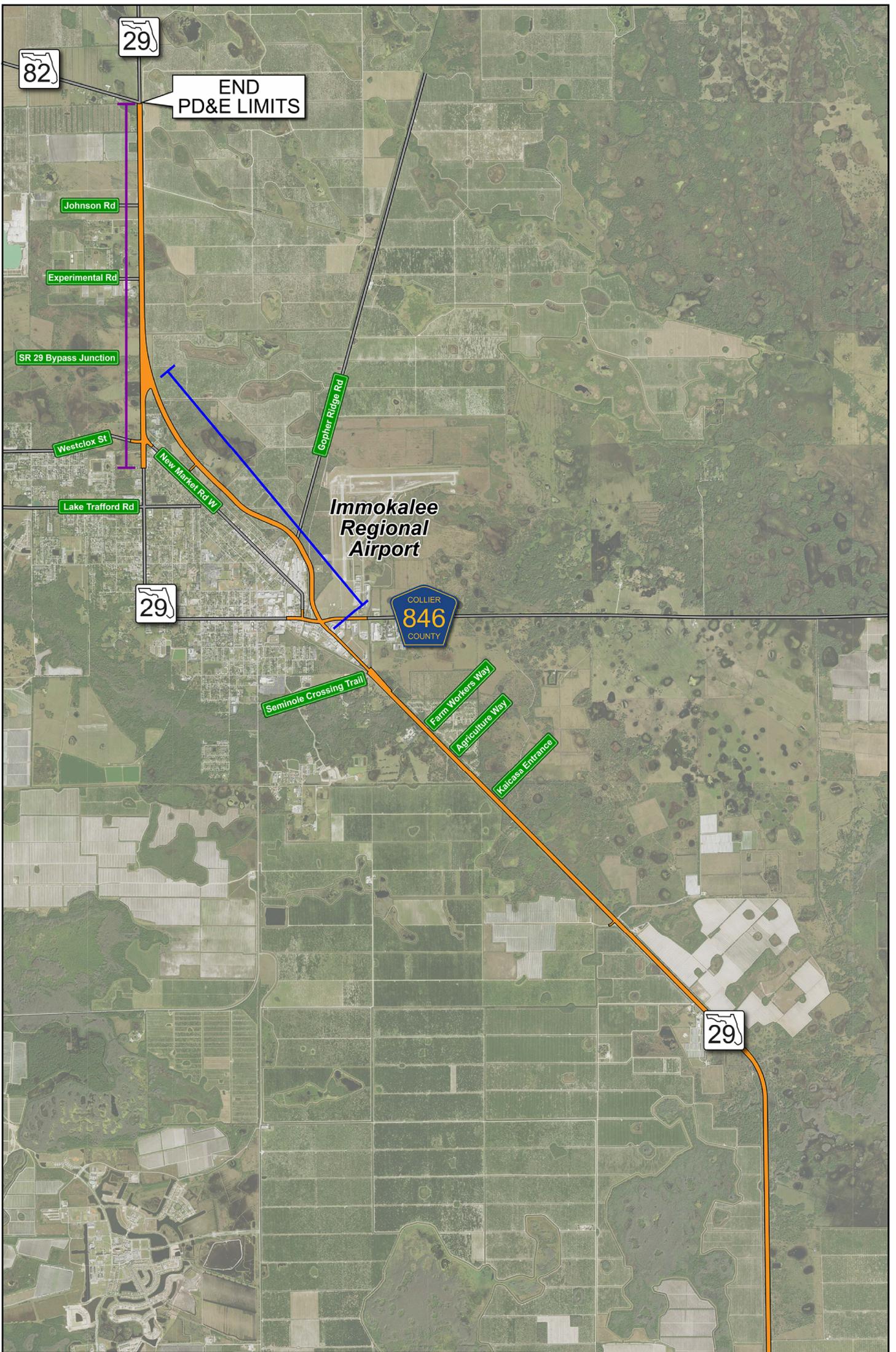
Notice to User: The Map Number shown herein should be used when ordering maps under the Community Reinsurance Support Community. To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-9620.

MAP NUMBER 120210135H

MAP REVISED MAY 16, 2012

Federal Emergency Management Agency

Attachment C



Legend

 PD&E Preferred Alternative

Concurrent Design Sections

 South of CR 846 to SR 29 Bypass Junction

 South of New Market Road West to SR 82



BEGIN
PD&E LIMITS

Oil Well Rd