

LOCATION HYDRAULIC REPORT ADDENDUM

Florida Department of Transportation

District One

SR 29

Limits of Project: from North of New Market Road to SR 82

Collier County, Florida

Financial Management Number: 417540-6

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

Alan S. Eldridge

Print/Type Name

Stormwater Engineer

Title

1150 Assembly Drive, Suite 400

Address

Tampa, FL 33607

Address

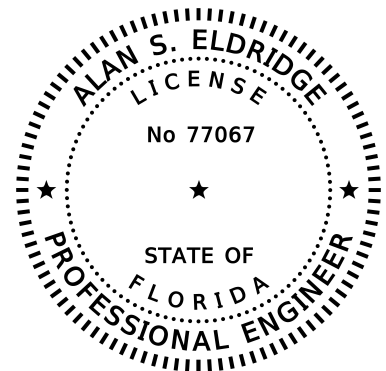


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1 INTRODUCTION

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 LHR Addendum supplements the LHR dated August 2018 and specifically addresses the design refinements for the project.

The currently existing signalized intersection at New Market Road West and SR 29 has been revised to a roundabout at this location. A 10-foot shared use path has been added on the east side of the roadway from north of New Market Road West to SR 82, thus providing a 10-foot shared use path on both sides of the corridor. The mainline roadway improvements required for the proposed project will not require any additional right-of-way. As a result of criteria updates, the proposed design speeds, ranging from 50-60 mph, have been unified at 55 mph. Six SMFs have been identified. The six proposed SMFs will require approximately 20.3 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.

See **Appendix 1.1** and **Figure 1** for the **Project Location Map**.

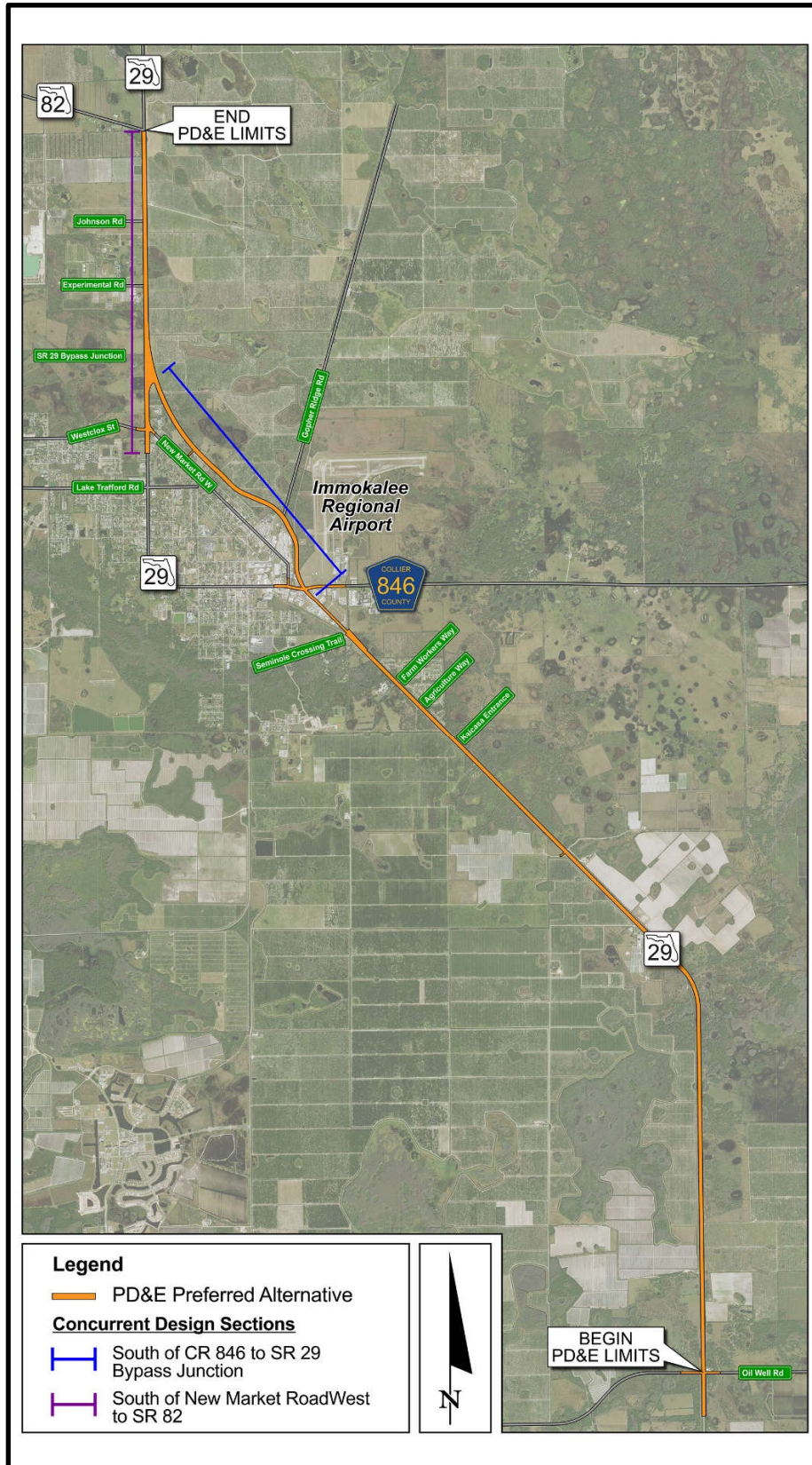


Figure 1 Project Location Map

2 TYPICAL SECTION

The typical section has been revised for the proposed project limits (Figure 1-2) and now includes a 10-foot shared use path on both sides of SR 29 along the entire length of the project corridor. The remaining elements of the typical section remain the same as previously proposed and are comprised of four 12-foot travel lanes with five foot outside paved shoulders and a 30-foot median with Type E curb and gutter. The approved typical section fits within the existing 200-foot right-of-way width and no new mainline right of way will be acquired for the project. The typical section is based on a 55 MPH design speed and utilizes a 30-foot clear zone. Refer to **Appendix 1.2** for the **Revised Typical Section**.

3 INTERSECTIONS

3.1 Westclox Street/New Market Road

The intersection at Westclox Street/New Market Road has been approved as a multilane roundabout with 17-foot outside lanes, 15-foot inside lanes, and a 10-foot truck apron. Pedestrian crossings are provided on each leg of the roundabout to provide connectivity for the two 10-foot shared use paths. The center of the inscribed circle of the roundabout has been shifted slightly east of the center of the existing signalized intersection to fit all the improvements within the existing right of way. The design speed of the roundabout is 45 MPH.

3.2 SR 29 Bypass

The intersection at the SR 29 bypass has been revised to a modified Median U-turn (MUT) and is provided as part of FPID: 417540-5-1-52. The intersection type requires the removal of a section of the existing SR 29 pavement to create the new roadway configuration. The new intersection is not signalized and vehicles traveling northbound on SR 29 from Westclox Road/New Market Road will be required to make a U-turn on the SR 29 bypass to continue north to SR 82. The design speed of the SR 29 bypass through the intersection with existing SR 29 varies from 50 MPH to 55 MPH.

4 FLOODPLAINS AND FLOODWAYS

The project is located within floodplain impact area F-3 and the floodplain impact calculations have been revised to reflect 2018 USGS/NRCS LiDAR data for Southwest Florida. The F-3 floodplain encroachment impact is now estimated at 27.84 acre-feet and compensation is required. See **Appendix 2.1** and **Table 1** for the **Estimated Floodplain Impacts**.

Floodplain Impact	Encroachment (ac-ft)	Excavation (ac-ft)	Comment
F-3	27.84	-	Compensation required. The LHR dated August 2018 analysis did not assume any encroachment within this impact area.

Table 1 – Estimated Floodplain Impacts

In the design phase pond siting report two floodplain compensation (FPC) sites were investigated to provide compensating storage volume to offset floodplain impacts from the project improvements. However, neither of the FPC alternative sites analyzed were recommended for floodplain compensation due to site specific geotechnical borings providing unfavorable seasonal high ground water table (SHGWT) elevations conducive to floodplain compensation. For floodplain impact area F-3, equivalent compensation volume will be provided with a combination of cup for cup compensation within the SR 29 mainline right of way and Interconnected Pond and Channel Routing (ICPR) modeling. Minimization and/or avoidance measures will be considered during the design phase of the project to reduce impacts to the 100-year floodplain. Compensation for floodplain impacts may include equivalent compensation and/or hydraulic modeling to demonstrate no impact to the 100-year floodplain.

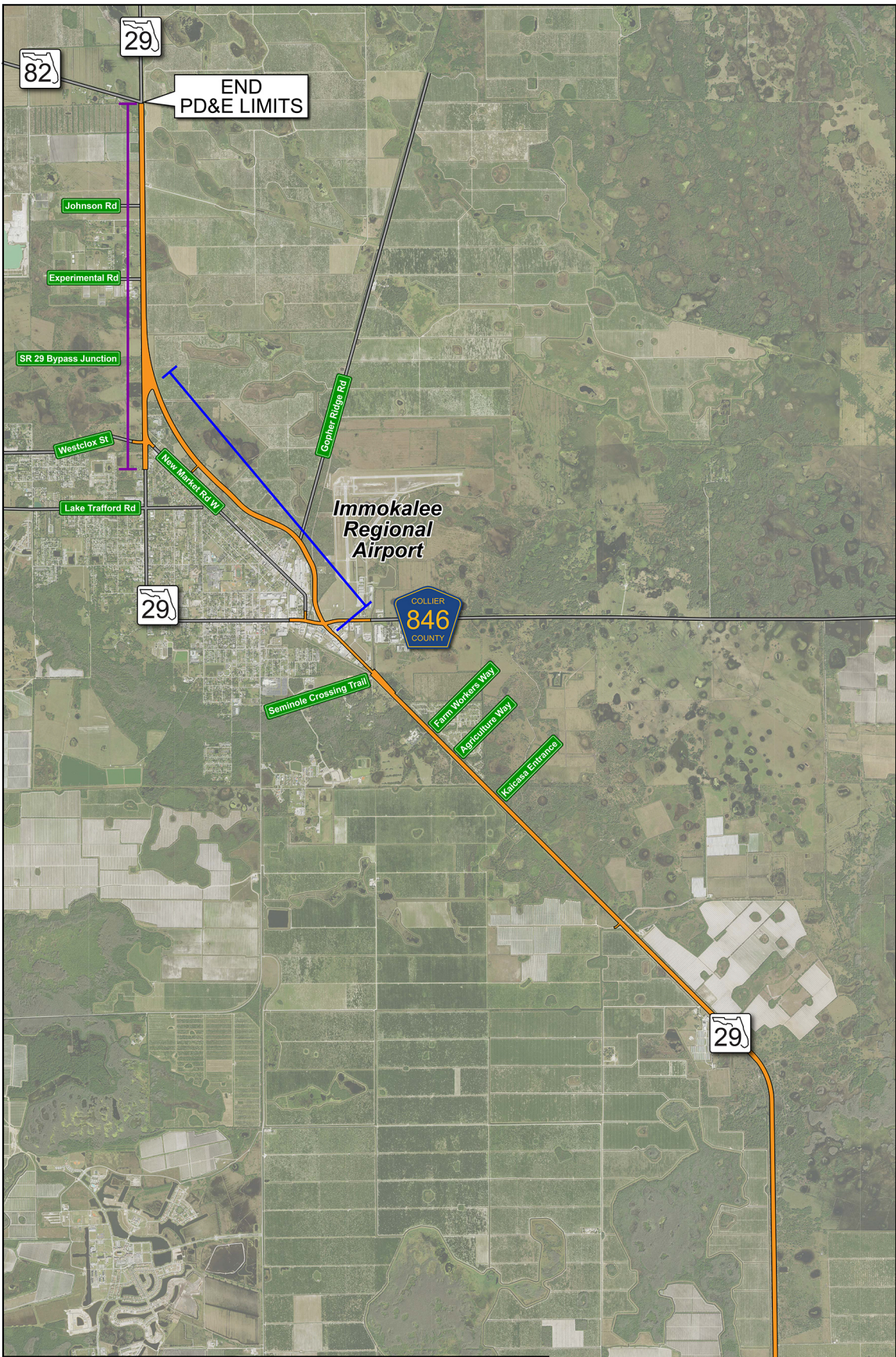
The LHR dated August 2018 and this LHR addendum document utilize the same effective floodplain maps (May 16, 2012) for the floodplain analysis.

5 CONCLUSION

The previous conclusion in the LHR dated August 2018 is still valid. The encroachments to the floodplains along the project corridor are considered insignificant and detailed modeling will demonstrate minimal encroachment.

Appendix 1.0
Miscellaneous Maps and Data


1.1 Project Location Map



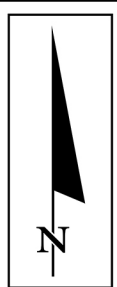
Legend

 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

1.2 Revised Typical Section

PROJECT CONTROLS

CONTEXT CLASSIFICATION

- () C1 : NATURAL (X) C3C : SUBURBAN COMM.
- (X) 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
- (X) 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

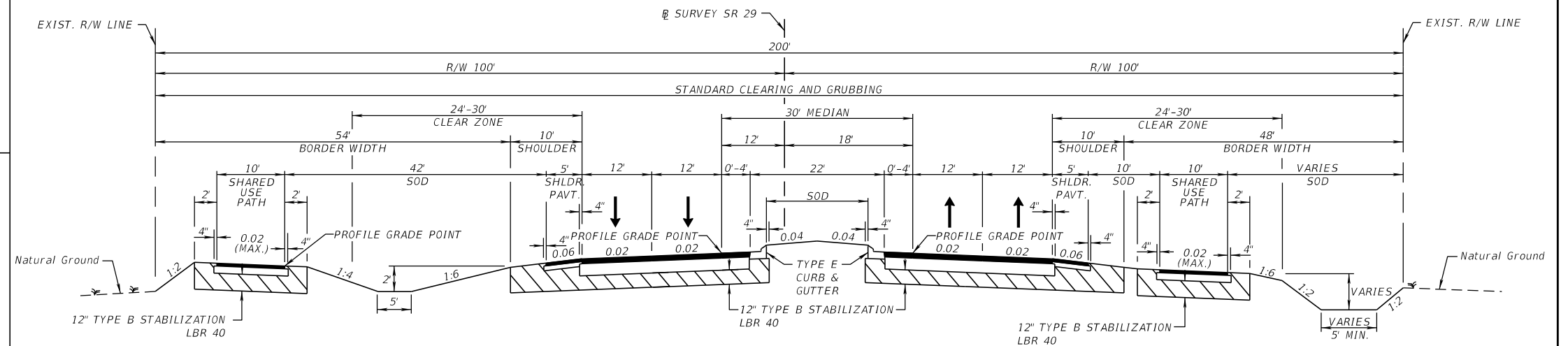
CRITERIA

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

POTENTIAL EXCEPTIONS AND VARIATIONS RELATED TO TYPICAL SECTION:

NONE

TYPICAL SECTION No. 1



TYPICAL SECTION

SR 29

MP 39.522 TO MP 40.131 (CONNECT TO FPID 417540-5)
(STA. 2088+40.00 TO STA. 2120+34.87)

MP 40.867 (CONNECT TO FPID 417540-5) TO MP 42.727
(STA. 2159+02.71 TO STA. 2256+80.00)

TRAFFIC DATA

CURRENT YEAR = 2024 AADT = 20400
 ESTIMATED OPENING YEAR = 2028 AADT = 22000
 ESTIMATED DESIGN YEAR = 2048 AADT = 30300
 K = 9.5% D = 58.5% T = 11.9% (24 HOUR)
 DESIGN HOUR T = 5.95%
 DESIGN/TARGET/POSTED SPEED = 45 MPH MP 39.522 TO MP 40.131
 (STA. 2088+40.00 TO STA. 2120+34.87)
 CONTEXT CLASSIFICATION = C3C
 DESIGN/TARGET/POSTED SPEED = 55 MPH MP 40.867 TO MP 42.386
 (STA. 2159+02.71 TO STA. 2230+12.00)
 45 MPH MP 42.386 TO MP 42.727
 (STA. 2230+12.00 TO STA. 2256+80.00)
 CONTEXT CLASSIFICATION = C2

FINANCIAL PROJECT ID

SHEET NO.

417540-6-52-01

2

Appendix 2.0
Calculations

2.1 Estimated Floodplain Impacts

FLOODPLAIN ENCROACHMENT CALCULATION

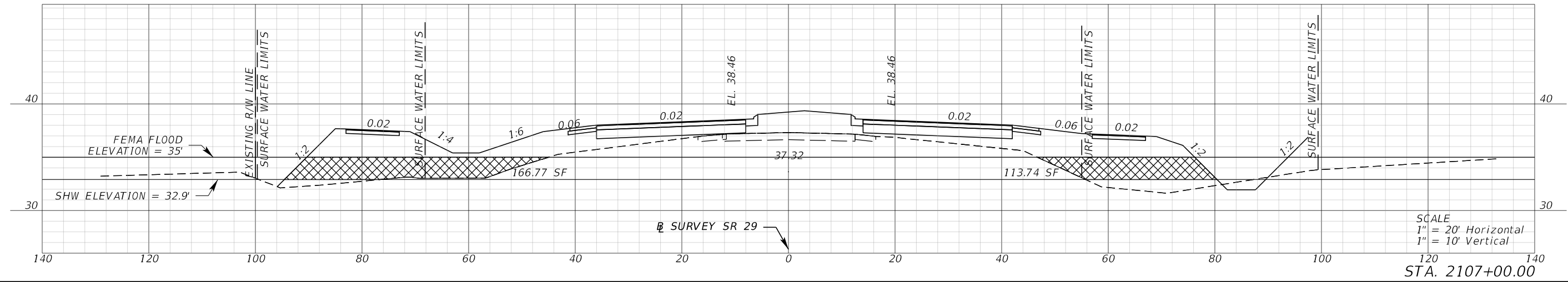
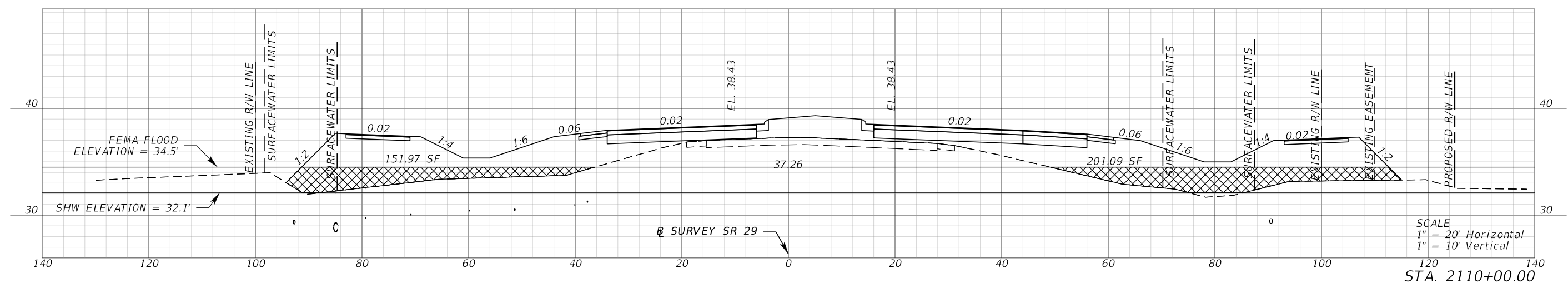
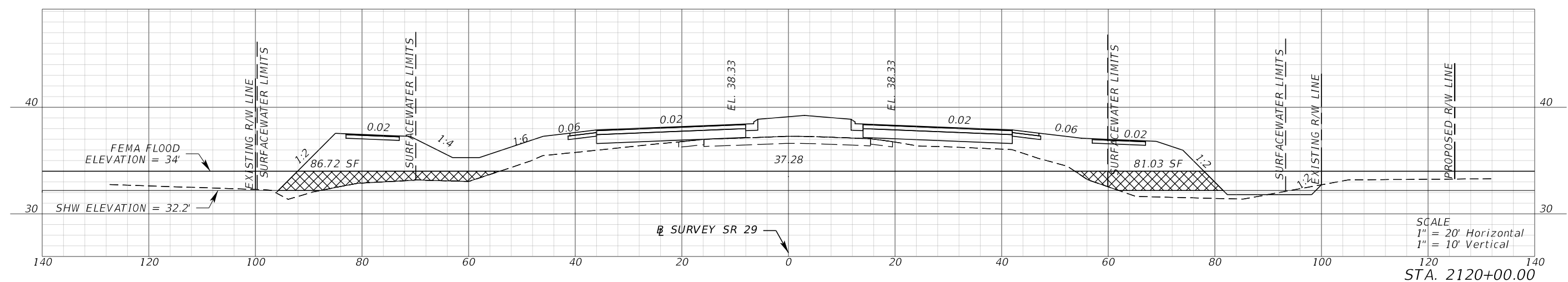
Project: SR 29 New Market Rd
Project #: 574.00
FPID: 417540-6-52-01
Subject: Floodplain Encroachment
 Floodplain Limits from Station 2107+00 to 2243+62.50

Station	Approx. FP Elevation	Encroachment (SY)	Total Encroachment (CY)
2107+00	35	15.58	
			1759.92
2110+00	34.5	19.61	
			4822.31
2120+00	34	9.32	
			6098.15
2145+00	34.5	5.32	
			7477.41
2165+00	35	17.12	
			2939.72
2170+00	35.5	18.16	
			3113.70
2175+00	36	19.20	
			3049.77
2180+00	36.5	17.39	
			2898.89
2190+00	0	0.00	
			7480.19
2210+00	39	22.44	
			1974.54
2215+00	36.5	1.25	
			104.49
2220+00	0	0.00	
			458.19
2225+00	36.5	5.50	
			2738.22
2243+63	36.5	3.32	

Incremental Total of Floodplain Encroachment Volume (acre-ft) 27.84

Notes: Geotech SHW elevations are utilized


LEGEND
ENCROACHMENT 

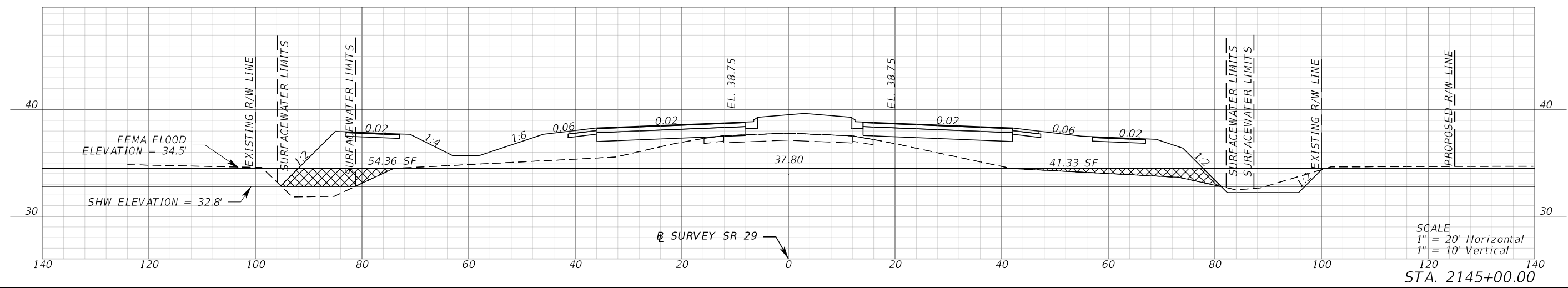
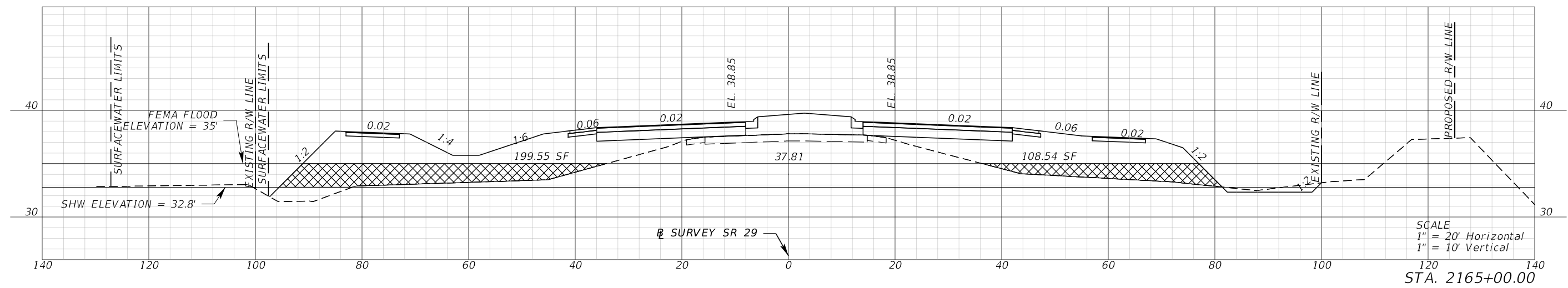
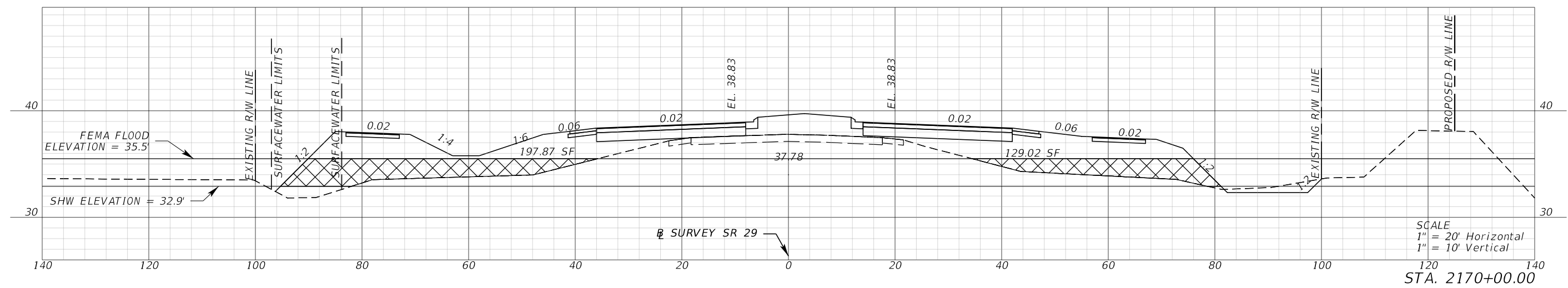


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DATE	DESCRIPTION	DATE	DESCRIPTION	ALAN S. ELDRIDGE, P.E. LICENSE NUMBER: 77067 FALLER, DAVIS & ASSOCIATES, INC 4200 W. CYPRESS ST., SUITE 500 TAMPA, FL 33607		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
						SR 29	COLLIER	417541-6-52-01		

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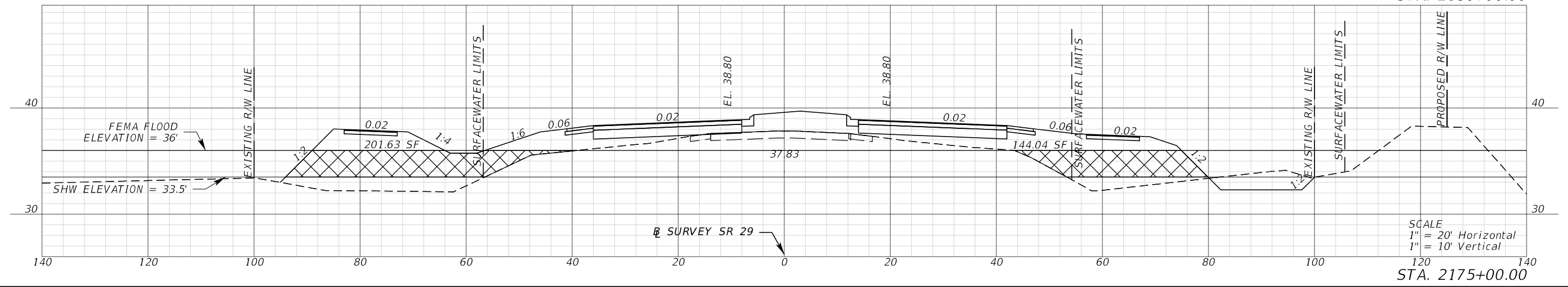
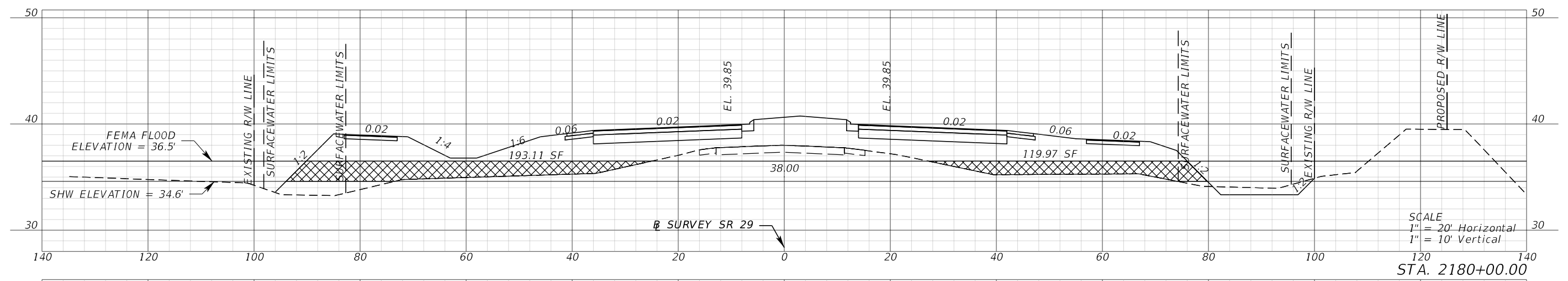
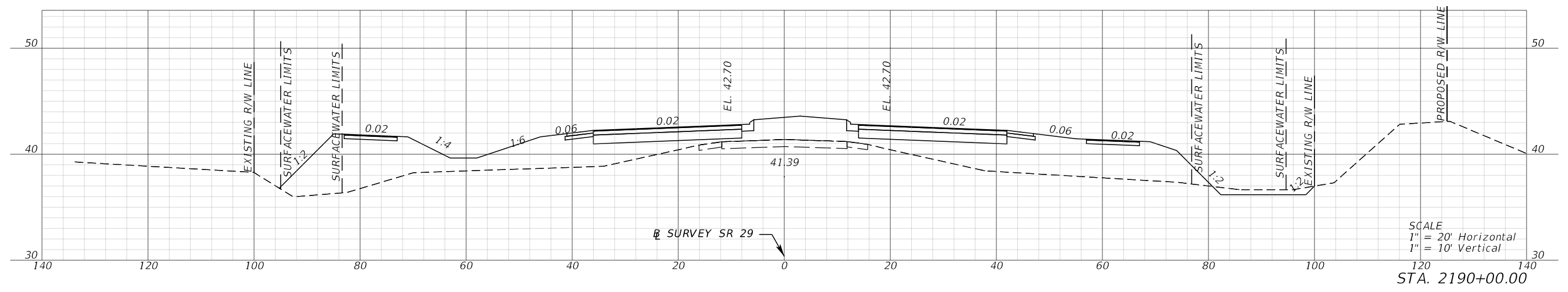


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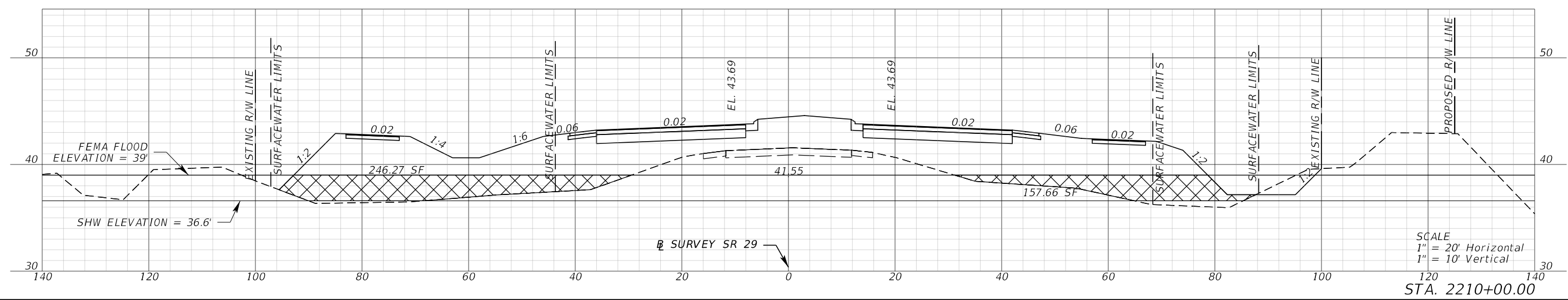
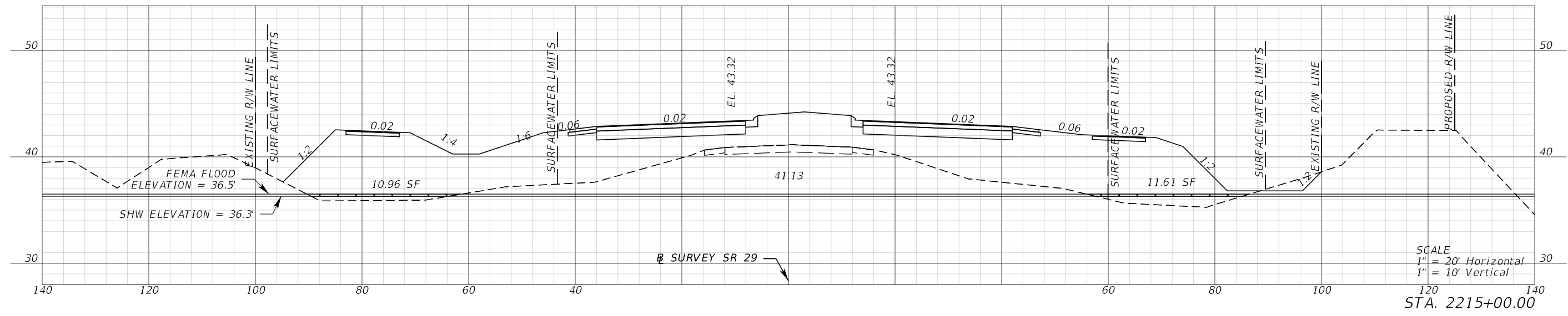
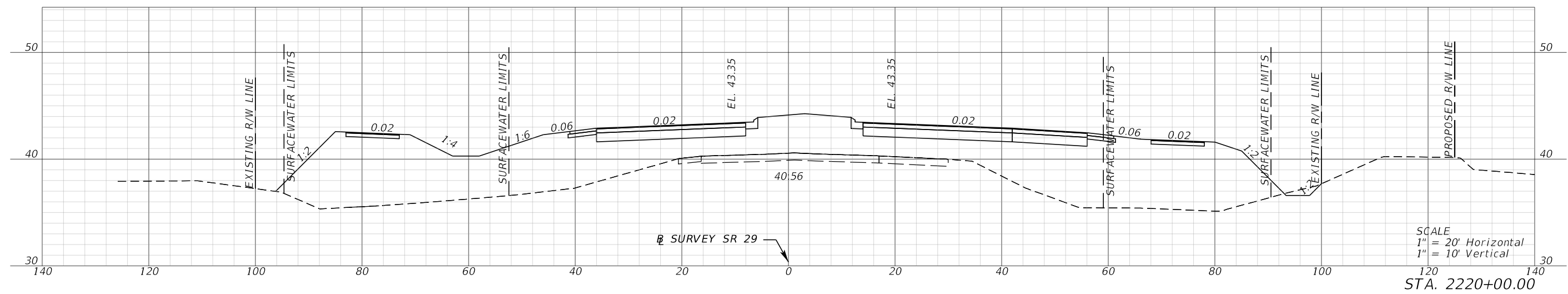


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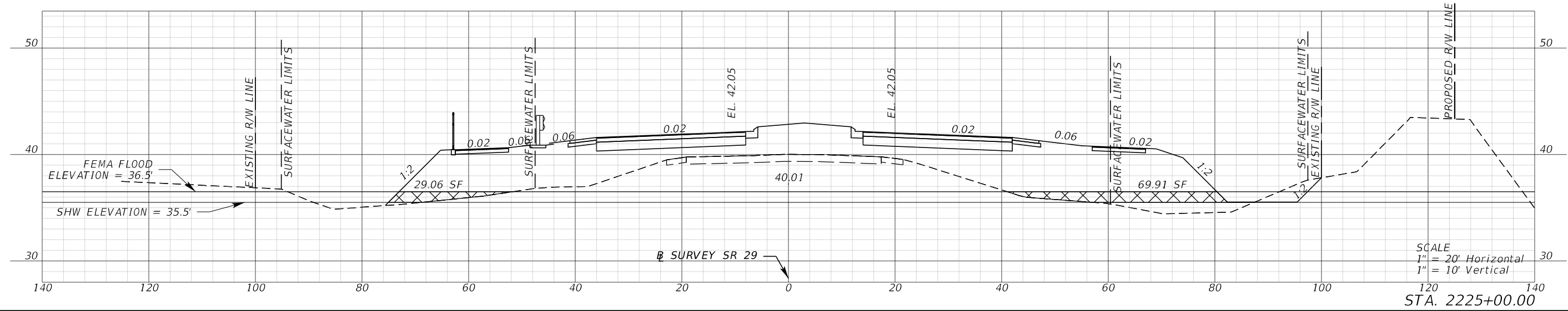
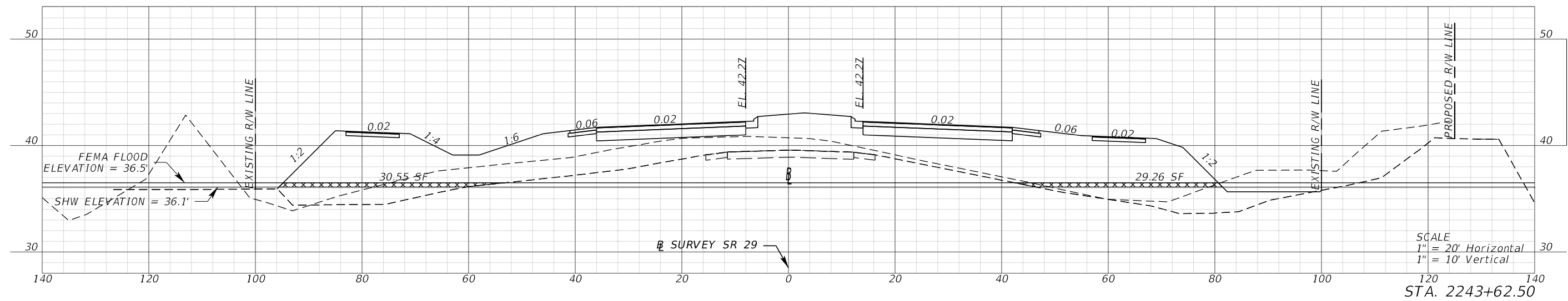
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