

Project Design Variation Memorandum Form 122-B

To: Kevin S. Ingle, P.E.
 District or Turnpike Design Engineer

Date: 12-19-2023

Financial Project ID: 444612-1-52-01 New Const. RRR

Federal Aid Number: D121 031 B

Project Name: SR 45 (US41) from Edwards Dr. to Magellan Dr.

State Road Number: 45 Co./Sec./Sub. 13010000

Begin Project MP: 0.000 End Project MP: 2.095

Request for: Design Variation

	Design Element	MP: Beg-End	Existing	Proposed	Required	Attr. Crashes	Approved	Denied	Addl. Docum.
1.	MEDIAN WIDTH	0.000-2.000	0	12' (MIN.)	22'	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Justification: This design is converting a 14' dual left turn lane into a raised median throughout the corridor. In order to achieve the standard width of median, widening would have to be conducted throughout the corridor to gain the required space. Within the 5-year crash data in our analysis, 2 crashes were opposing sideswipes, 4 head-on collisions, 51 left entering angular collisions and 23 left leaving angular collisions. With one additional opposing traffic collision from a loss of control. The 12' median allows us to control the left turning movements throughout the corridor and decrease the conflicts and current crash pattern. This design also allows the existing lane widths and bike lanes to remain. See Typical Section in Appendix A.

2.	TRAFFIC SEPARATOR WIDTH	0.000-1.723	0	1.5' – 2'	4'	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Justification: This design is converting a 14' dual left turn lane into a raised median and traffic separators throughout the corridor. In order to provide the 4' traffic separator as standard, the lane widths would have to be reduced to sub-standard widths, or widening of the corridor would have to be performed. Within the 5-year crash data in our analysis, 2 crashes were opposing sideswipes, 4 head-on collisions, 51 left entering angular collisions and 23 left leaving angular collisions. With one additional opposing traffic collision from a loss of control. The 1.5'-2' Traffic Separator allows us to control the left turning movements throughout the corridor and decrease the conflicts and current crash pattern. This design also allows the existing lane widths and bike lanes to remain. See Typical Section in Appendix A.

3. MEDIAN SHOULDER 0.000-2.095 0 1' 10'

Justification: With the limitations of this corridor, widening and right of way would be required to achieve the standard median shoulder width of 10'. See Typical Section in Appendix A.

4. HARDENED CENTERLINE 0.000-2.095 0 0 2'

Justification: A variation is requested for the absence of hardened centerlines throughout this corridor. Extensive reconfiguration of intersection quadrants and crosswalks would be required to achieve the space needed, possibly introducing sight issues and making it more likely that a right turning vehicle will pull too far forward blocking the crosswalk for pedestrians. All ramps are being updated to meet ADA compliance, with updated pedestrian signals and cross walks. Signal timings will be adjusted to include appropriate pedestrian movements.

Appendices: Yes No

Recommended by:

Name: Joel Hobbs, P.E.
Responsible Professional Engineer or Landscape Architect (Landscape-Only Projects)

Date: _____

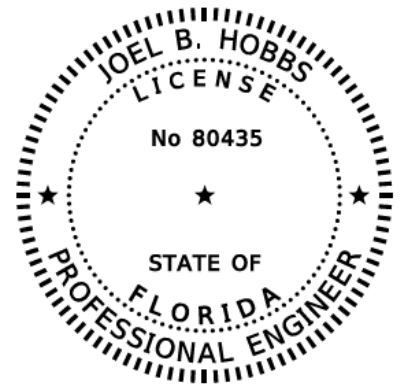
Approvals:

Name:
District or Turnpike Traffic Operations Engineer

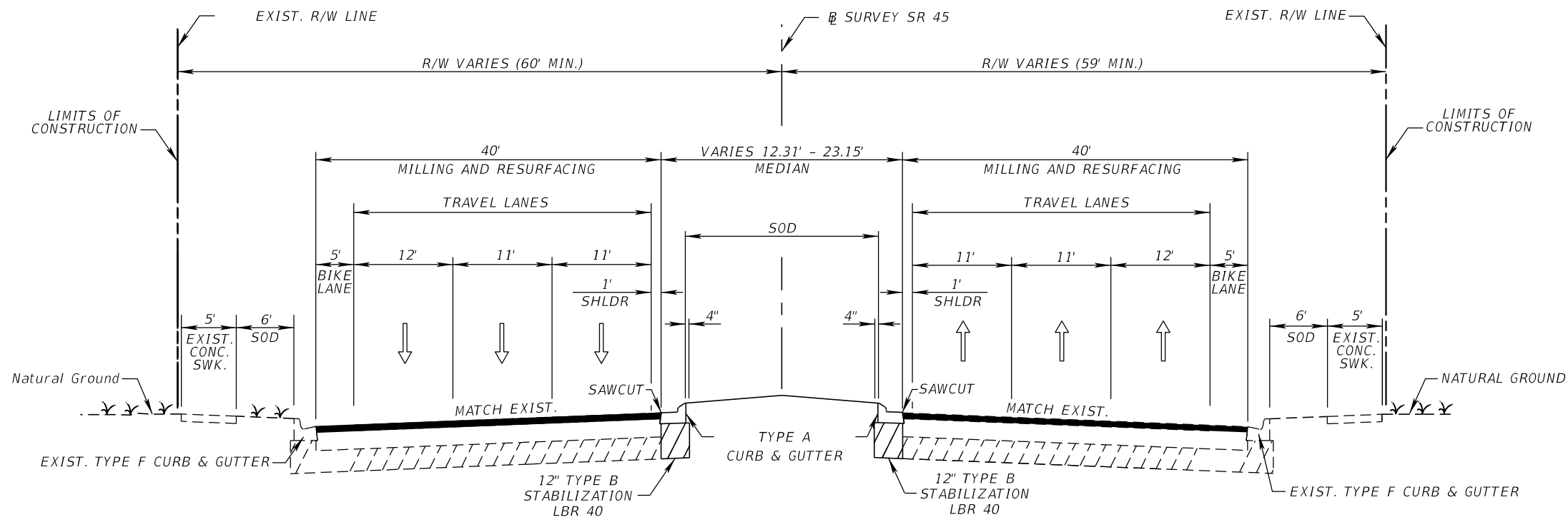
Date: _____

Name:
District or Turnpike Design Engineer

Date: _____



APPENDIX A:



TYPICAL SECTION

SR 45 (US 41)

STA. 1203+50.24 TO STA. 1314+13.72

**NORTHBOUND TRAVEL LANES,
BIKE LANE, INSIDE SHOULDER,
ALL TURN LANES, AND CROSSOVERS**

MILL EXISTING ASPHALT PAVEMENT FOR DEPTH (3.00")
TYPE SP STRUCTURAL COURSE (TRAFFIC C) (1.50"),
AND FRICTION COURSE FC-12.5 (TRAFFIC C) (1.50") (PG 76-22)

**SOUTHBOUND TRAVEL LANES,
AND INSIDE SHOULDER**

MILL EXISTING ASPHALT PAVEMENT FOR DEPTH (3.50")
TYPE SP STRUCTURAL COURSE (TRAFFIC C) (2.00"),
AND FRICTION COURSE FC-12.5 (TRAFFIC C) (1.50") (PG 76-22)

**SOUTHBOUND OUTSIDE TRAVEL LANE,
AND BIKE LANE**

MILL EXISTING ASPHALT PAVEMENT FOR DEPTH (4.50")
TYPE SP STRUCTURAL COURSE (TRAFFIC C) (3.00"),
AND FRICTION COURSE FC-12.5 (TRAFFIC C) (1.50") (PG 76-22)

SIDE STREETS

MILL EXISTING ASPHALT PAVEMENT FOR DEPTH (1.50")
FRICTION COURSE FC-12.5 (TRAFFIC C) (1.50") (PG 76-22)

TRAFFIC DATA

CURRENT YEAR = 2021 AADT = 47700
ESTIMATED OPENING YEAR = 2023 AADT = 49300
ESTIMATED DESIGN YEAR = 2043 AADT = 65600
K = 9.0% D = 54.5% T = 3.0% (24 HOUR)
DESIGN HOUR T = 1.5%
DESIGN SPEED = 45 MPH
CONTEXT CLASSIFICATION = C4

NOT TO SCALE

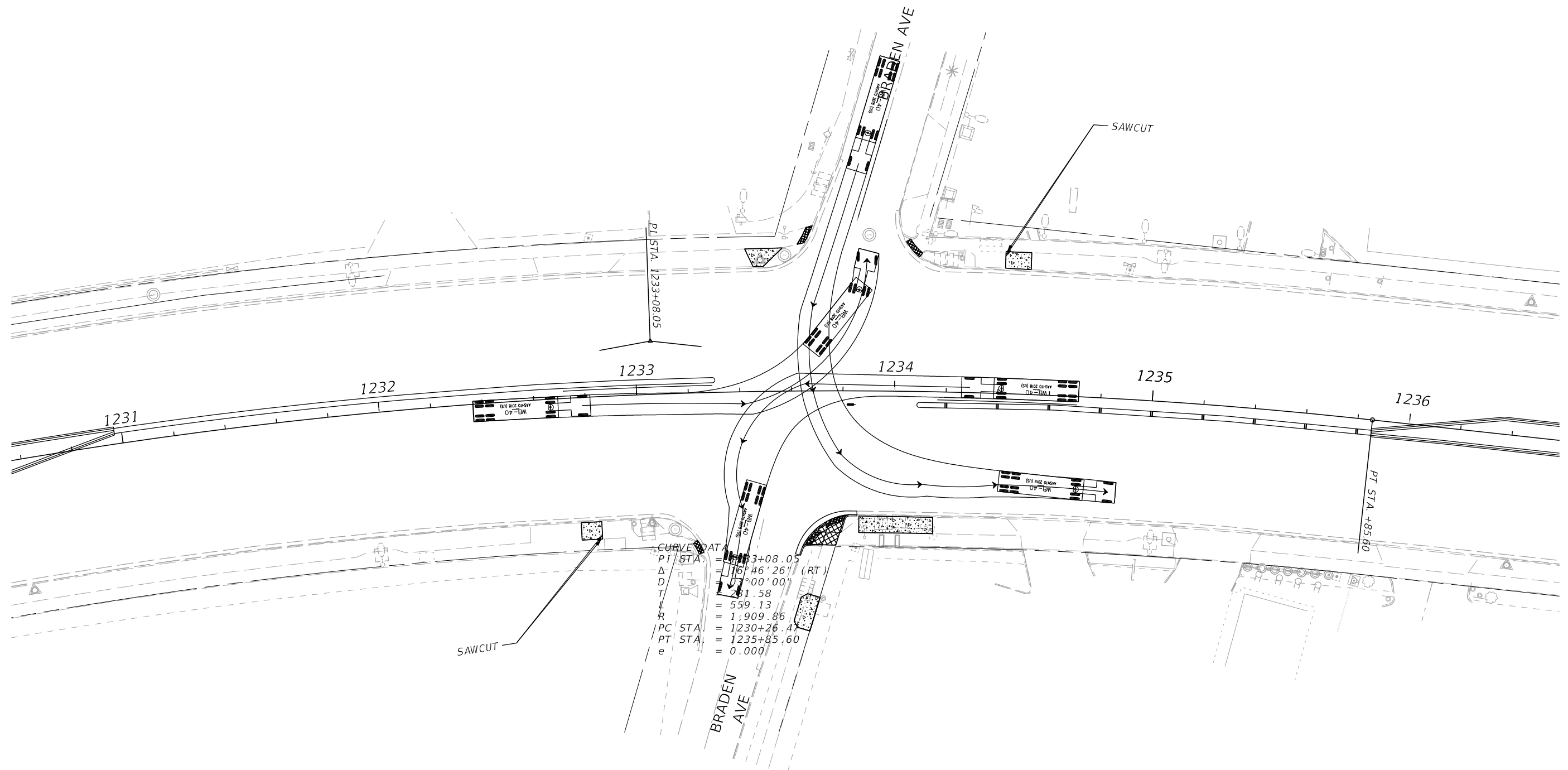
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THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

REVISIONS				ENGINEER OF RECORD		STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION	JOEL B. HOBBS, P.E. LICENSE NUMBER 80435 FLORIDA DEPARTMENT OF TRANSPORTATION 801 N. BROADWAY AVENUE BARTOW, FL 33830-3809		ROAD NO.	COUNTY	FINANCIAL PROJECT ID	
						SR 45	MANATEE	444612-1-52-01	3
TYPICAL SECTION									

APPENDIX B:

*AUTOTURN AT
INTERSECTIONS
WITHOUT HARDENED
CENTERLINES*



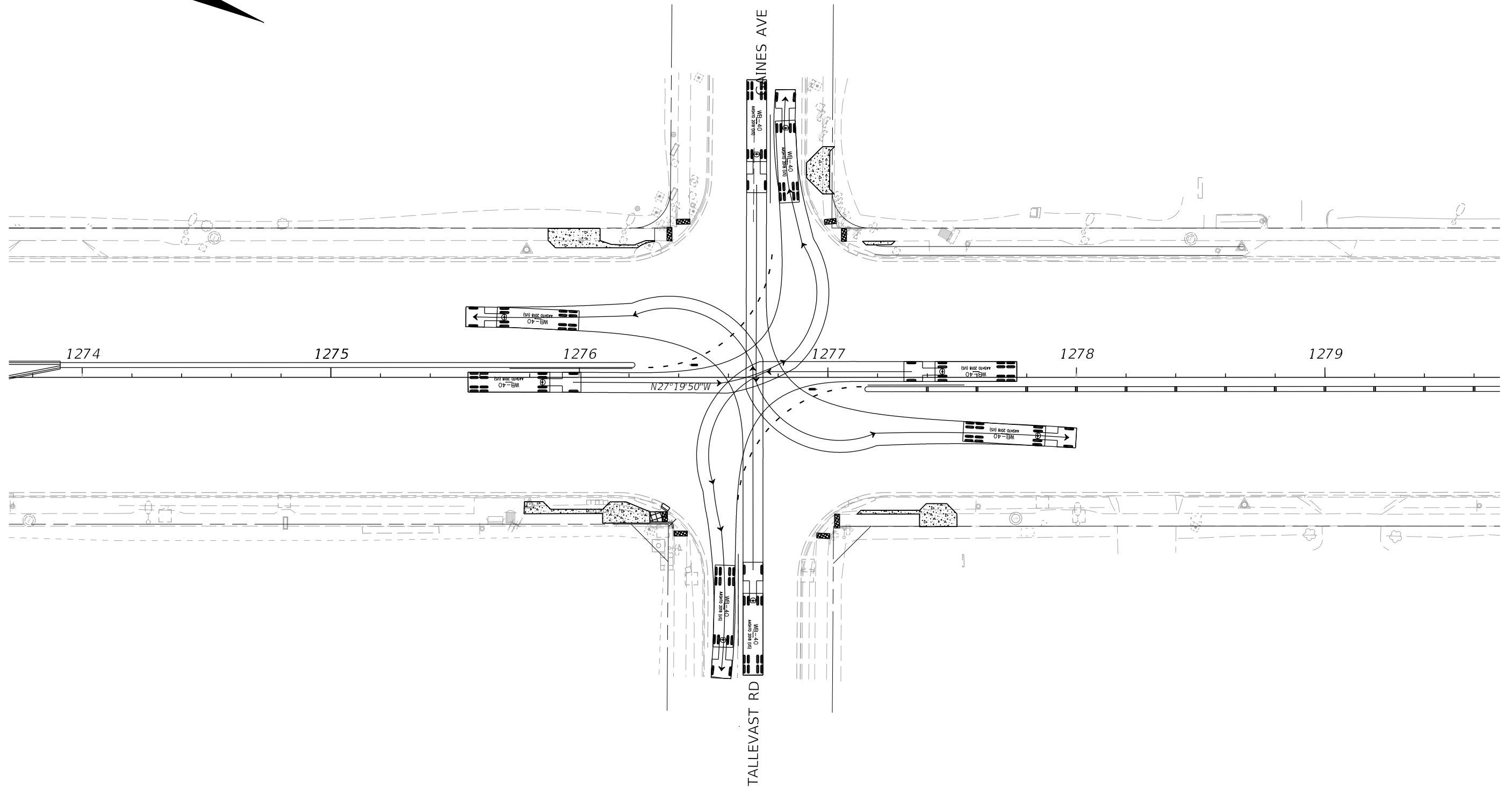
CURVE DATA

PI STA	= 1233+08.05
Δ	= 16°46'26" (RT)
D	= 100'00"
T	= 21.58
R	= 559.13
PC STA	= 1230+26.47
PT STA	= 1235+85.60
e	= 0.000

12/19/2023 9:35:31 AM KM3HEMC
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REVISIONS				PROFESSIONAL TYPE	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			AUTOTURN EXHIBIT	SHEET NO. 1
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
				PROFESSIONAL NAME LICENSE NUMBER: ##### COMPANY NAME STREET CITY, STATE ZIP CODE	SR 45	MANATEE	444612-1-52-01		

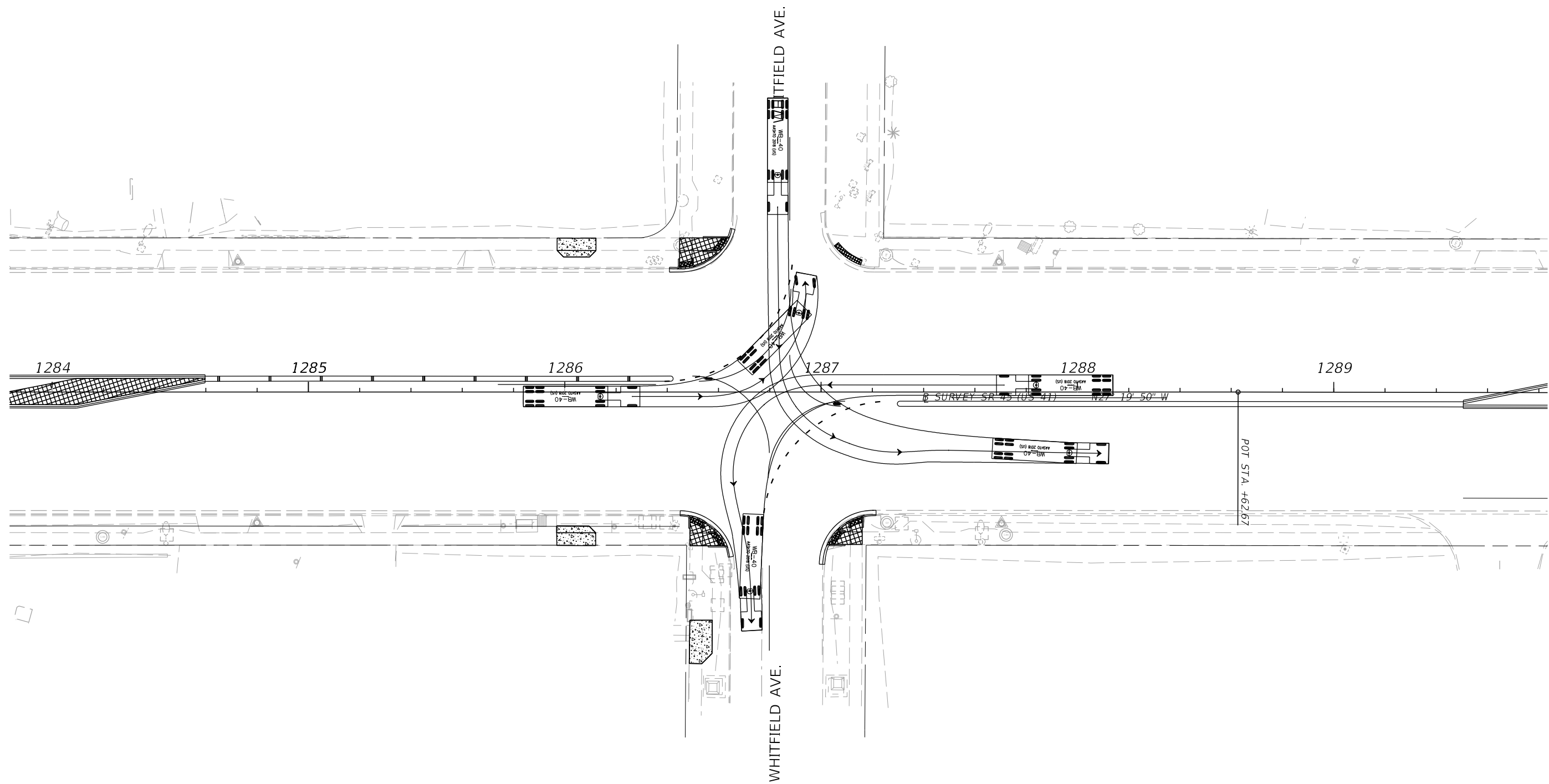
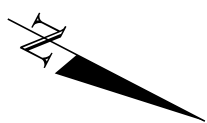
FAC NOTE



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DATE	DESCRIPTION	DATE	DESCRIPTION			ROAD NO.	COUNTY	FINANCIAL PROJECT ID	
				PROFESSIONAL NAME LICENSE NUMBER: ##### COMPANY NAME STREET CITY, STATE ZIP CODE		SR 45	MANATEE	444612-1-52-01	

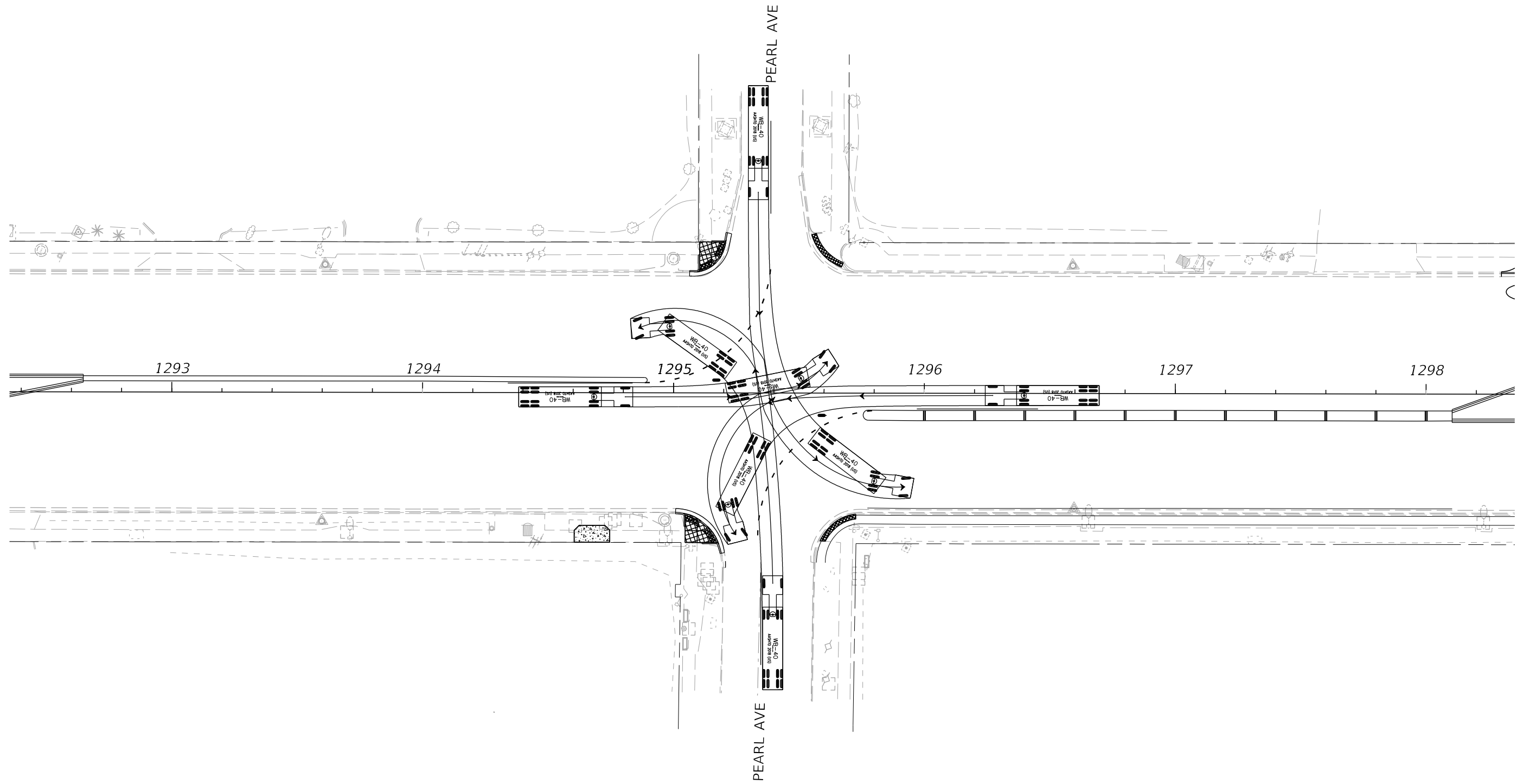
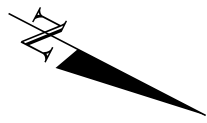
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FAC NOTE



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REVISIONS				PROFESSIONAL TYPE	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			<i>AUTOTURN EXHIBIT</i>	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		4
				PROFESSIONAL NAME LICENSE NUMBER: ##### COMPANY NAME STREET CITY, STATE ZIP CODE	SR 45	MANATEE	444612-1-52-01		

FAC NOTE