



District 5

SR 44

From US 441/SR 500 to SR 44/Orange Avenue
Financial Project ID No. 409870-1-52-01

Design Alternative Study for Multi-Use Path

BOYLE | AECOM

March 4, 2009

SR 44
from US 441 / SR 500 to SR 44 / Orange Ave.

Financial Project ID: 409870-1-52-01

LAKE COUNTY

DESIGN ALTERNATIVE STUDY
FOR MULTI-USE PATH

Prepared for:

FLORIDA DEPARTMENT OF TRANSPORTATION
District 5

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EXECUTIVE SUMMARY

Boyle Engineering currently serves as the engineering consultant to the Florida Department of Transportation (FDOT) District Five for the final design of SR 44 from US 441 / SR 500 to SR 44 / Orange Ave. in Lake County. The project traverses the City limits of Eustis and Mount Dora. The main purpose of the project is to reconstruct the existing 2-lane rural roadway as a 4-lane divided urban facility with curb and gutter, 4-ft wide bike lanes and sidewalks in each direction. Due to limited right-of-way and the desire to avoid right of way acquisition (other than for retention ponds), several elements of the design are less than the desired standards. These include 11-ft wide travel lanes (versus 12-ft desirable) and a 19.5-ft wide median (versus a desirable of 22-ft). The profile of the roadway will be raised and thus several sections of the roadway will require gravity / retaining walls. The reduced lane and median widths allow for the minimization of walls by providing additional width on the outside of the sidewalks to facilitate tying the new construction back to existing ground at the right-of-way line.

The Lake Sumter Metropolitan Planning Organization (MPO) requested that FDOT investigate the potential of adding a multi-use path to the project. This report documents the results of that analysis. A number of potential alternatives were evaluated to accommodate the path within the existing right-of-way. Also, one alternative was evaluated that would require additional right-of-way to add the path while accommodating desirable standards for all design elements.

The results of this study indicate the following:

- The path cannot be simply added within the existing right of way. Some modifications to the approved design will be required. Modifications that were considered in the various alternatives include:
 - Eliminating the 4-ft wide bike lanes.
 - Modifying the 4-ft wide bike lanes to 3-ft wide urban shoulders.
 - Eliminating the maintenance area behind any gravity / retaining walls.
 - Eliminating the raised median and instead using a two-way left-turn lane.
 - Building a 3-lane section.
- Consideration was given to both a “wall” solution and a solution with no more walls than currently planned for with the approved Typical Section. Basically, in order to avoid extensive increases in the amount of gravity / retaining wall required for the project, either the bike lanes or the median, or both will need to be eliminated.
- Under the “wall” solution gravity / retaining wall will need to be constructed along the majority of both sides of the roadway. This could be an issue with the property owners along the project as they will be faced with walls and hand rails along the frontage of their properties, as well as longer harmonizing easements at connection points.
- A sidewalk was maintained on the opposite side of the roadway from the trail. This is due to the nature of the area and the lack of safe crossing points.
- Safety, operations, maintainability, construction cost, design approval requirements, and other factors were impacted differently by the various alternatives. These impacts are identified in this report.

The remainder of this report documents the alternatives considered, the advantages and disadvantages of each, and supporting documentation

DESIGN ALTERNATIVE STUDY FOR MULTI-USE PATH

SR 44

Financial Project ID: 409870-1-32-01

Lake County

PROJECT DESCRIPTION

This project consists of milling and resurfacing the existing 4-lane segment from US441/SR500 (MP 0.000) to MP 0.237, and reconstructing the existing 2-lane segment to a 4-lane divided roadway from MP 0.237 to SR44/Orange Ave. (MP 2.110).

The currently approved Typical Section consists of a 4-lane divided urban section with 11-foot wide lanes, a 4-foot wide bicycle lane in each direction, a 19.5-foot wide raised grassed median, and a 5-foot wide sidewalk behind a 2-foot utility strip along each side of the roadway. The typical right-of-way width along this corridor is 100 feet.

PURPOSE FOR DESIGN STUDY

This study was performed to provide possible solutions to the resolution put forth by the MPO requesting for the following considerations:

- Redesign the corridor to include a multi-use path along the western side of the corridor for use by pedestrians and bicyclists.
- Design the multi-use path with widest dimension feasible within the constraints of the existing 100-ft right-of-way.
- Eliminate or reduce in width, as necessary, roadway/roadside elements including but not limited to bike lanes, median widths, lane widths, and sidewalks; in order to add multi-use path to Typical Section without right-of-way impacts.

LIMITS AND FUNCTIONALITY OF MULTI-USE PATH

It was assumed for the purpose of this study that the limits of the Multi-Use Path be the same as the limits of the project: from US 441 / SR 500 to SR 44 /Orange Ave.

As further defined in the literature attached in Appendix C, a multi-use path is not intended for motor vehicle use. This facility is intended to provide pedestrians, cyclists, joggers, and skaters a recreational and peaceful place away from motor vehicle traffic.

ALTERNATIVES STUDIED

All options were considered and investigated. As a result, excluding the currently approved Typical Section, the following 10 Alternative Typical Sections were developed for this study.

- 7 alternatives using a 4-lane divided section.
- 2 alternatives using a 5-lane undivided section.
- 1 alternative using a 3-lane undivided section.

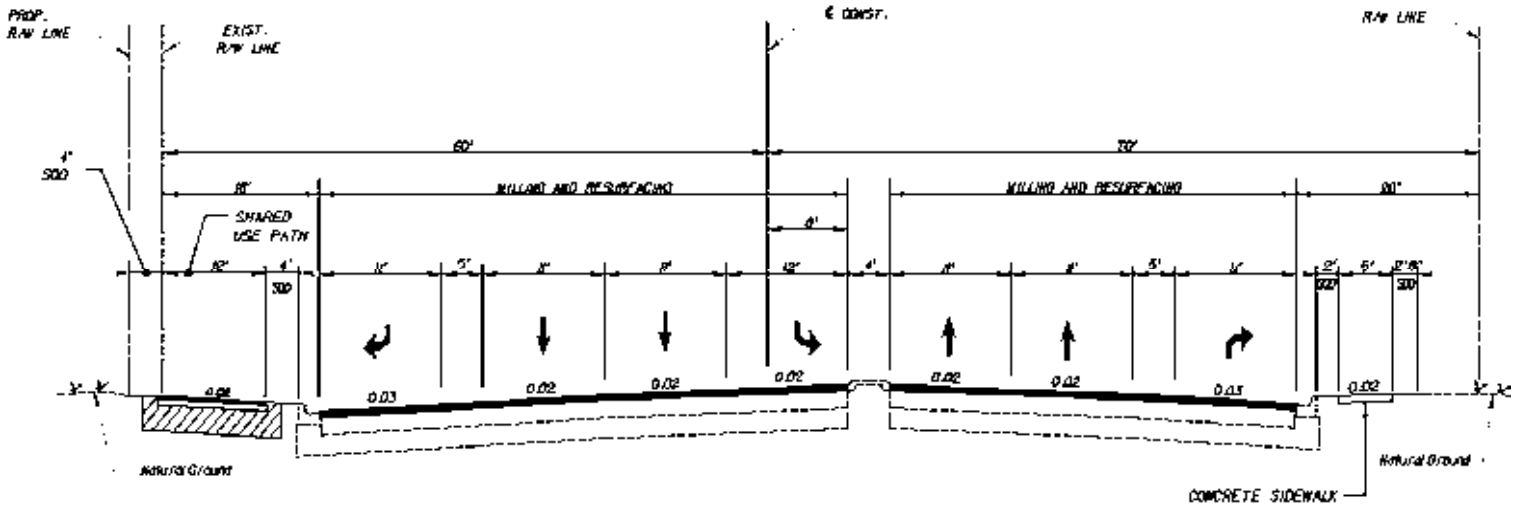
CONSIDERATIONS USED IN STUDY

Each of the alternatives presented a unique set of advantages and disadvantages. In developing these alternatives, the following criteria were considered:

- Can bicycle lanes be included?
- Can U-turns be negotiated with reduced roadway/median?
- How much additional retaining / gravity wall will be necessary as a result of adding multi-use path?
- How will the utilities (above- and under-ground) be impacted?
- How will gravity / retaining wall be constructed / maintained if right at R/W? Will a Construction / Maintenance Easement be required throughout the length of project?
- How will off-site drainage be accommodated?
- Can the multi-use path be constructed without additional R/W in the existing 4-lane segment?
- What are the Pros and Cons with each Typical?
- What is the cost associated with each alternative?
- How does each alternative rate in terms of safety / operation / maintenance / drainage / constructability / utility accommodation?

MULTI-USE PATH WITHIN EXISTING 4-LANE SEGMENT

The Multi-Use Path is shown added to the west side of the existing 4-Lane Typical Section:

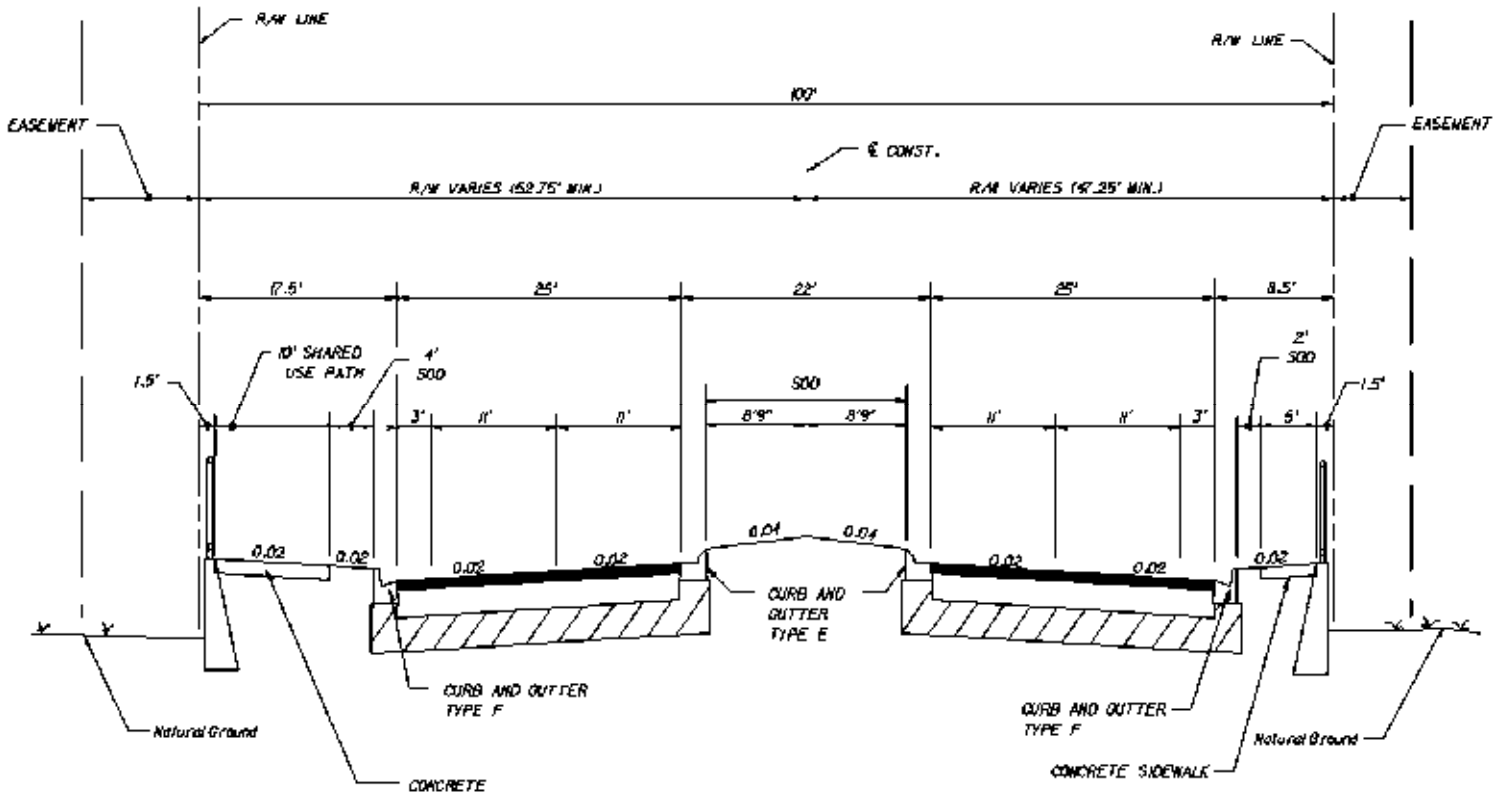


This existing 4-Lane segment is approximately the first 1/4 mile of the project. This segment is not planned for reconstruction, therefore only the existing sidewalk on the west side would be replaced with the 12-ft Multi-Use Path. To accommodate the construction of the Multi-Use Path a minor amount of additional right-of-way would be required, as indicated in the above diagram.

Alternative Typical Section # 1

4-Lane Divided / 3-ft Urban Shoulders / Standard Median / Min. Lanes /

Min. Multi-Use Path / Sidewalk with Utility Strip



- 11-ft Travel Lanes
- 3-ft Striped / Undesignated Bicycle Lanes
- 22-ft Median
- 10-ft Shared-Use Path
- 5-ft Sidewalk with 2-ft Utility Strip
- Gravity / Retaining Walls on both sides for majority of project length
- Const. / Maint. Easements on both sides for majority of project length

Alternative Typical Section # 1 Evaluation Table		
	Pros	Cons
Criteria	Standard Median Width and Standard Sidewalk with Utility Strip	Min. Lane Widths, Min. Urban Shoulders, Min. Multi-Use Path
Safety	Can make U-Turns with Passenger Vehicles.	Substandard Bicycle Lane width.
Operation	Level Of Service same as approved Typical and improved from existing 2-lane roadway.	
Construction		Cannot construct gravity / retaining walls from within existing R/W. Additional Driveway Connections.
Maintenance		Cannot maintain gravity / retaining walls from within existing R/W.
Drainage		No space to accommodate offsite drainage.
Utility Accommodation		No space for above-ground utilities. Above-ground utilities cannot be placed between multi-use path or sidewalk and curb and gutter.
Right-of-Way / Easements		This alternative will require either additional R/W or permanent easements along both sides of the roadway to accommodate construction, maintenance, and drainage.
Cost		<u>Construction</u> : \$3,314,221.57 (19.5%) cost increase compared to Approved Typical Section. <u>R/W or Easements</u> : Undetermined. <u>Utility Relocations</u> : Undetermined.
Other		Walls and picket style handrails are aesthetic concerns.

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FDOT Long Range Estimating System - Production**R4: Project Details Composite Report
By Component****Project:** 409870-1-52-XX**Letting Date:** 01/2099**Description:** SR 44 (CR 44B) FROM SR 500 US 441 TO SR 44**District:** 05 **County:** 11 LAKE**Project Manager:** DRZ-BOYLE**Version 5 Project Grand Total****\$20,279,002.85****Description:** Shared Use Path Typical Section Evaluation Alternative 1: 4-lane divided, 11-ft travel lanes, 22-ft raised median, 3-ft urban shoulders, 5-ft sidewalk with 2-ft utility strip, 10-ft shared use path, concrete.**EARTHWORK COMPONENT****Pay Items**

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
120-1	REGULAR EXCAVATION	26,160.18 CY	\$6.50	\$170,041.17
120-6	EMBANKMENT	12,620.50 CY	\$10.00	\$126,205.00
110-1-1	CLEARING & GRUBBING	22.63 AC	\$20,000.00	\$452,600.00
Earthwork Component Total				\$748,846.17

ROADWAY COMPONENT**Pay Items**

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
160-4	TYPE B STABILIZATION	81,701.42 SY	\$5.00	\$408,507.10
285-709	OPTIONAL BASE,BASE GROUP 09	67,723.34 SY	\$16.00	\$1,083,573.44
519-78	BOLLARDS	18.00 EA	\$456.71	\$8,220.78
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	855.00 EA	\$5.25	\$4,488.75
327-70-6	MILLING EXIST ASPH PAVT,1 1/2" AVG DEPTH	16,061.99 SY	\$3.00	\$48,185.97
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	11,174.35 TN	\$105.00	\$1,173,306.75
337-7-33	ASPH CONC FC,TRAFFIC C,FC- 12.5,RUBBER	6,912.27 TN	\$120.00	\$829,472.40
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	16.88 NM	\$1,135.49	\$19,167.07
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	8.44 GM	\$494.16	\$4,170.71
711-11-111	THERMOPLASTIC, STD, WHITE, SOLID, 6"	8.44 NM	\$3,572.91	\$30,155.36
711-11-131	THERMOPLASTIC, STD, WHITE, SKIP, 6"	4.22 GM	\$1,270.27	\$5,360.54
Roadway Component Total				\$3,614,608.87

SHOULDER COMPONENT**Pay Items**

Pay Item	Description	Total Unit	Weighted Avg.	Total
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		Quantity	Unit Price	Amount
104-15	SOIL TRACKING PREVENTION DEVICE	8.00 EA	\$3,462.50	\$27,700.00
104-16	ROCK BAG	1,780.00 EA	\$6.40	\$11,392.00
522-1	SIDEWALK CONC, 4" THICK	6,194.87 SY	\$45.00	\$278,769.15
522-2	SIDEWALK CONC, 6" THICK	14,124.00 SY	\$55.20	\$779,644.80
527-1	DETECTABLE WARNING ON WALK SURF, RETRO	6.00 EA	\$668.00	\$4,008.00
104-13-1	STAKED SILT FENCE, TYPE III	19,504.32 LF	\$1.15	\$22,429.97
400-1-11	CONC CLASS I, RETAINING WALLS	3,073.00 CY	\$700.00	\$2,151,100.00
515-1-2	PIPE HANDRAIL - GUIDERAIL, ALUMINUM	342.00 LF	\$47.08	\$16,101.36
515-2-202	PED/BICYCLE RAILING,STL,54"PICKET RAIL	18,304.00 LF	\$65.00	\$1,189,760.00
520-1-10	CONCRETE CURB & GUTTER, TYPE F	19,504.32 LF	\$20.00	\$390,086.40
570-1-2	PERFORMANCE TURF, SOD	7,330.44 SY	\$3.00	\$21,991.32
Shoulder Component Total				\$4,892,983.00

MEDIAN COMPONENT

Pay Items

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
520-70	CONCRETE TRAFFIC SEPARATOR, SP-VAR WIDT	837.00 SY	\$66.53	\$55,685.61
520-1-7	CONCRETE CURB & GUTTER, TYPE E	19,504.32 LF	\$20.00	\$390,086.40
520-5-41	TRAF SEP CONC-TYPE IV, 4' WIDE	4,798.00 LF	\$36.68	\$175,990.64
570-1-2	PERFORMANCE TURF, SOD	18,962.53 SY	\$3.00	\$56,887.59
Median Component Total				\$678,650.24

DRAINAGE COMPONENT

Pay Items

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
120-1	REGULAR EXCAVATION	26,785.00 CY	\$6.50	\$174,102.50
120-6	EMBANKMENT	753.00 CY	\$10.00	\$7,530.00
575-1	SODDING	7,271.00 SY	\$3.00	\$21,813.00
110-1-1	CLEARING & GRUBBING	6.00 AC	\$20,000.00	\$120,000.00
400-2-2	CONC CLASS II, ENDWALLS	48.00 CY	\$950.00	\$45,600.00
425-1-311	INLETS, CURB, TYPE P-1, <10'	2.00 EA	\$4,226.18	\$8,452.36
425-1-321	INLETS, CURB, TYPE P-2, <10'	1.00 EA	\$4,424.83	\$4,424.83
425-1-351	INLETS, CURB, TYPE P-5, <10'	42.00 EA	\$4,217.71	\$177,143.82
425-1-361	INLETS, CURB, TYPE P-6, <10'	14.00 EA	\$3,923.80	\$54,933.20
425-1-411	INLETS, CURB TYPE J-1, <10'	4.00 EA	\$4,629.10	\$18,516.40
425-1-421	INLETS, CURB, TYPE J-2, <10'	3.00 EA	\$5,256.46	\$15,769.38
425-1-461	INLETS, CURB, TYPE J-6, <10'	5.00 EA	\$6,087.47	\$30,437.35
425-1-471	INLETS, CURB, TYPE 7, <10'	7.00 EA	\$4,214.32	\$29,500.24
425-1-473	INLETS, CURB, TYPE 7, J BOT , <10'	1.00 EA	\$5,629.45	\$5,629.45
425-1-541	INLETS, DT BOT, TYPE D, <10'	2.00 EA	\$3,490.49	\$6,980.98
425-2-41	MANHOLES, P-7, <10'	35.00 EA	\$3,423.12	\$119,809.20
425-2-71	MANHOLES, J-7, <10'	13.00 EA	\$5,427.90	\$70,562.70
430-171-101	PIPE CULV OPT MATL, ROUND, 0-24", SS	56.00 LF	\$108.15	\$6,056.40
430-171-103	PIPE CULV OPT MATL, ROUND, 37-48", SS	208.00 LF	\$118.97	\$24,745.76
430-171-104	PIPE CULV OPT MATL, ROUND, 49-60",	664.00 LF	\$181.57	\$120,562.48

SS			
430-174-101	PIPE CULV, OPT MATL, ROUND,0-24"SD	5,848.00 LF	\$74.56 \$436,026.88
430-174-102	PIPE CULV, OPT MATL, ROUND,25-36"SD	4,176.00 LF	\$77.49 \$323,598.24
430-174-103	PIPE CULV, OPT MATL, ROUND,37-48"SD	2,016.00 LF	\$130.80 \$263,692.80
430-174-104	PIPE CULV, OPT MATL, ROUND,49-60"SD	632.00 LF	\$206.32 \$130,394.24
430-174-203	PIPE CULV, OPT MATL, OTHER, 37-48"SD	288.00 LF	\$158.36 \$45,607.68
430-610-125	U-ENDWALL,STD 261,1:4 SLP, 18"	19.00 EA	\$2,040.00 \$38,760.00
430-982-140	MITERED END SECT, OPTIONAL RD, 42" CD	1.00 EA	\$3,030.34 \$3,030.34
550-10-220	FENCING, TYPE B, 5.1-6.0, STANDARD	2,795.00 LF	\$11.67 \$32,617.65
550-60-234	FENCE GATE,TYP B,SLIDE/CANT,18.1-20'OPEN	2.00 EA	\$2,761.10 \$5,522.20
570-1-2	PERFORMANCE TURF, SOD	561.00 SY	\$3.00 \$1,683.00
Drainage Component Total			\$2,343,503.08

SIGNING COMPONENT

Pay Items				
Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
700-20-11	SINGLE POST SIGN, F&I, LESS THAN 12 SF	54.00 AS	\$279.28	\$15,081.12
700-20-12	SINGLE POST SIGN, F&I, 12-20 SF	18.00 AS	\$488.52	\$8,793.36
700-20-40	SINGLE POST SIGN, RELOCATE	1.00 AS	\$99.82	\$99.82
700-20-60	SINGLE POST SIGN, REMOVE	13.00 AS	\$29.45	\$382.85
705-11-1	DELINEATOR, FLEXIBLE TUBULAR	31.00 EA	\$74.76	\$2,317.56
Signing Component Total				\$26,674.71

SIGNALIZATIONS COMPONENT

Pay Items				
Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
653-191	PEDESTRIAN SIGNAL, F&I, LED-COUNT DWN, 1	2.00 AS	\$810.00	\$1,620.00
653-192	PEDESTRIAN SIGNAL, F&I, LED-COUNT DWN, 2	4.00 AS	\$1,250.60	\$5,002.40
653-400	PEDESTRIAN SIGNAL, RELOCATE	1.00 AS	\$257.98	\$257.98
659-101	SGNL HEAD AUXIL, F&I, BACK PLT 3 SECT	6.00 EA	\$100.75	\$604.50
659-109	SGNL HEAD AUXIL, F&I, CONC PED TYP II	6.00 EA	\$859.39	\$5,156.34
659-118	SGNL HEAD AUX,F&I, BACK PLT 5 SECT CLU	2.00 EA	\$180.93	\$361.86
665-11	PED DET, F&I, DET STA POLE OR CAB MTD	10.00 EA	\$197.74	\$1,977.40
690-10	SIGNAL HEAD TRAFFIC ASSEMBLY REMOVAL	8.00 EA	\$65.38	\$523.04
690-80	SPAN WIRE ASSEMBLY REMOVE	2.00 EA	\$377.06	\$754.12
690-90	CONDUIT & CABLING REMOVE	1.00 PI	\$365.78	\$365.78
690-100	SIGNAL EQUIPMENT MISCELLANOUS REMOVE	1.00 PI	\$663.40	\$663.40
630-1-12	CONDUIT-SIGNALS, F& I, UNDERGROUND	545.00 LF	\$7.00	\$3,815.00

630-1-14	CONDUIT-SIGNALS,F& I, UG JACKED	436.00 LF	\$19.83	\$8,645.88
632-7-1	CABLE, SIGNAL, FURNISH & INSTALL	2.00 PI	\$2,638.64	\$5,277.28
634-4-114	SPAN WIRE ASSEMBLY, F&I, 2 WIRE, OTHER	1.00 PI	\$2,802.35	\$2,802.35
635-1-11	PULL & JUNCTION BOXES, F&I, PULL BOX	13.00 EA	\$400.00	\$5,200.00
641-2-17	PREST CNC POLE,F&I,TYP P-VII	1.00 EA	\$8,320.63	\$8,320.63
650-51-311	TRAFFIC SIGNAL, F&I, 3 SECT, 1 WAY, STD	6.00 AS	\$991.68	\$5,950.08
650-51-511	TRAFFIC SIGNAL, F&I, 5 SECT, 1 WAY, STD	2.00 AS	\$1,612.65	\$3,225.30
660-2-106	LOOP ASSEMBLY, F&I, TYPE F	9.00 AS	\$1,023.38	\$9,210.42
663-74-11	VEH DETECTOR ASSEM, F&I, OPTICAL TYPE	1.00 EA	\$3,170.00	\$3,170.00
671-2-41	TRAFFIC CONTROLLER, MODIFY, NEMA	2.00 EA	\$923.30	\$1,846.60
678-1-104	CNTRL ACCESS, F&I, LOAD SWITCH	6.00 EA	\$83.00	\$498.00
690-33-1	POLE REMOVAL, DEEP DIRECT BURIAL	20.00 LF	\$120.85	\$2,417.00
699-1-21	INTERNAL ILLUM SIGN, INSTALL, ST NAME	2.00 EA	\$842.00	\$1,684.00
700-48-19	SIGN PANELS, F & I, 16 - 100	1.00 EA	\$1,389.16	\$1,389.16
Signalizations Component Total				\$80,738.52

RETAINING WALLS COMPONENT
Pay Items

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
400-2-11	CONC CLASS II, RETAINING WALLS	238.80 CY	\$1,432.18	\$342,004.58
415-1-3	REINF STEEL- RETAINING WALL	1,795.00 LB	\$1.00	\$1,795.00
Retaining Walls Component Total				\$343,799.58

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FDOT Long Range Estimating System - Production**R4: Project Details Composite Report****By Component****Project:** 409870-1-52-XX**Letting Date:** 01/2099**Description:** SR 44 (CR 44B) FROM SR 500 US 441 TO SR 44**District:** 05 **County:** 11 LAKE**Project Manager:** DRZ-BOYLE**Version 5 Project Grand Total****\$20,279,002.85****Description:** Shared Use Path Typical Section Evaluation Alternative 1: 4-lane divided, 11-ft travel lanes, 22-ft raised median, 3-ft urban shoulders, 5-ft sidewalk with 2-ft utility strip, 10-ft shared use path, concrete.**Project Sequences Subtotal****\$12,729,804.17**

102-1	MAINTENANCE OF TRAFFIC	15.00		\$1,909,470.63
101-1	MOBILIZATION	10.00		\$1,463,927.48

Project Sequences Total**\$16,103,202.28****Project Unknowns**

25.00%

\$4,025,800.57

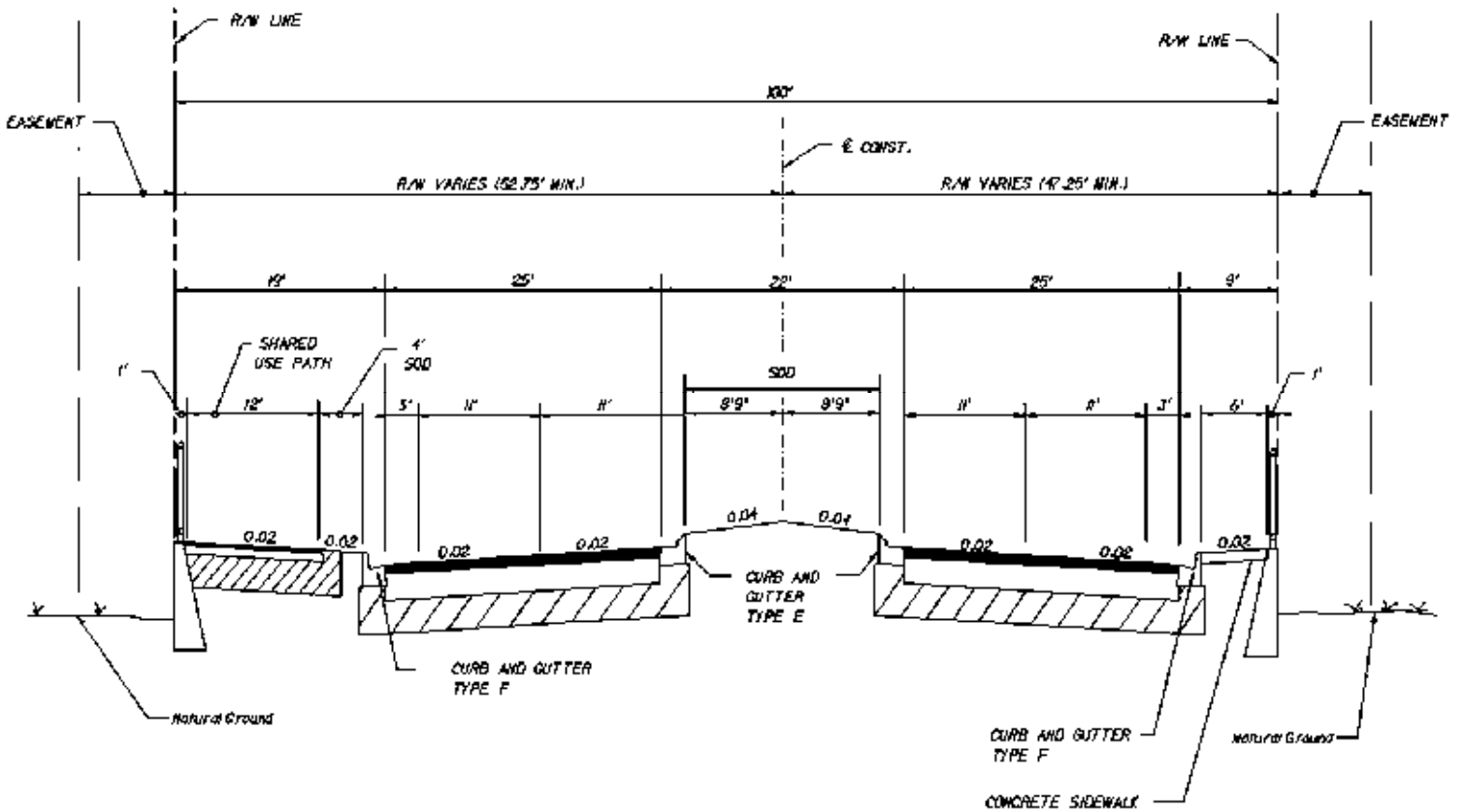
Non-Bid Components:

Pay item Description	Quantity	Unit	Unit Price	Extended Amount
999-25 INITIAL CONTINGENCY AMOUNT (DO NOT BID)	1.00	LS	\$150,000.00	\$150,000.00
Project Non-Bid Subtotal				\$150,000.00

Version 5 Project Grand Total**\$20,279,002.85**

Alternative Typical Section # 2

4-Lane Divided / 3-ft urban shoulders / Standard Median / Min. Lanes
Full Multi-Use Path / Sidewalk against Curb and Gutter



Elements:

- 11-ft Travel Lanes
- 3-ft Striped / Undesignated Bicycle Lanes
- 22-ft Median
- 12-ft Shared-Use Path
- 6-ft Sidewalk against Curb and Gutter
- Gravity / Retaining Walls on both sides for majority of project length
- Const. / Maint. Easements on both sides for majority of project length

Alternative Typical Section # 2 Evaluation Table		
	Pros	Cons
Criteria	Standard Median Width and Standard Multi-Use Path	Min. Lane Widths, Min. Urban Shoulders, Sidewalk against Curb and Gutter
Safety	Can make U-Turns with Passenger Vehicles.	Substandard Bicycle Lane width.
Operation	Level Of Service same as approved Typical and improved from existing 2-lane roadway.	
Construction		Cannot construct gravity / retaining walls from within existing R/W. Additional Driveway Connections.
Maintenance		Cannot maintain gravity / retaining walls from within existing R/W.
Drainage		No space to accommodate offsite drainage.
Utility Accommodation		No space for above-ground utilities. Above-ground utilities cannot be placed between multi-use path and curb and gutter.
Right-of-Way / Easements		This alternative will require either additional R/W or permanent easements along both sides of the roadway to accommodate construction, maintenance, and drainage.
Cost		<u>Construction</u> : \$2,986,378.76 (17.6%) cost increase compared to Approved Typical Section. <u>R/W or Easements</u> : Undetermined. <u>Utility Relocations</u> : Undetermined.
Other		Walls and picket style handrails are aesthetic concerns.

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FDOT Long Range Estimating System - Production**R4: Project Details Composite Report
By Component****Project:** 409870-1-52-XX**Letting Date:** 01/2099**Description:** SR 44 (CR 44B) FROM SR 500 US 441 TO SR 44**District:** 05 **County:** 11 LAKE**Project Manager:** DRZ-BOYLE**Version 7 Project Grand Total****\$19,951,160.04****Description:** Shared Use Path Typical Section Evaluation Alternative 2: 4-lane divided, 11-ft travel lanes, 22-ft raised median, 3-ft wide curb lanes, 6-ft sidewalk, 12-ft shared use path.**EARTHWORK COMPONENT****Pay Items**

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
120-1	REGULAR EXCAVATION	26,027.25 CY	\$6.50	\$169,177.13
120-6	EMBANKMENT	12,466.76 CY	\$10.00	\$124,667.60
110-1-1	CLEARING & GRUBBING	22.63 AC	\$20,000.00	\$452,600.00
Earthwork Component Total				\$746,444.72

ROADWAY COMPONENT**Pay Items**

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
160-4	TYPE B STABILIZATION	121,313.15 SY	\$5.00	\$606,565.75
285-701	OPTIONAL BASE,BASE GROUP 01	15,262.90 SY	\$8.48	\$129,429.39
285-709	OPTIONAL BASE,BASE GROUP 09	67,723.34 SY	\$16.00	\$1,083,573.44
519-78	BOLLARDS	18.00 EA	\$456.71	\$8,220.78
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	855.00 EA	\$5.25	\$4,488.75
327-70-6	MILLING EXIST ASPH PAVT,1 1/2" AVG DEPTH	16,061.99 SY	\$3.00	\$48,185.97
334-1-11	SUPERPAVE ASPHALTIC CONC, TRAFFIC A	816.99 TN	\$121.25	\$99,060.04
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	11,174.35 TN	\$105.00	\$1,173,306.75
337-7-33	ASPH CONC FC,TRAFFIC C,FC- 12.5,RUBBER	6,912.27 TN	\$120.00	\$829,472.40
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	25.32 NM	\$1,135.49	\$28,750.61
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	8.44 GM	\$494.16	\$4,170.71
711-11-111	THERMOPLASTIC, STD, WHITE, SOLID, 6"	8.44 NM	\$3,572.91	\$30,155.36
711-11-131	THERMOPLASTIC, STD, WHITE, SKIP, 6"	4.22 GM	\$1,270.27	\$5,360.54
Roadway Component Total				\$4,050,740.50

SHOULDER COMPONENT

Pay Items

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
104-15	SOIL TRACKING PREVENTION DEVICE	8.00 EA	\$3,462.50	\$27,700.00
104-16	ROCK BAG	1,780.00 EA	\$6.40	\$11,392.00
522-1	SIDEWALK CONC, 4" THICK	7,278.44 SY	\$45.00	\$327,529.80
522-2	SIDEWALK CONC, 6" THICK	1,745.00 SY	\$55.20	\$96,324.00
527-1	DETECTABLE WARNING ON WALK SURF, RETRO	6.00 EA	\$668.00	\$4,008.00
104-13-1	STAKED SILT FENCE, TYPE III	19,504.32 LF	\$1.15	\$22,429.97
400-1-11	CONC CLASS I, RETAINING WALLS	3,073.00 CY	\$700.00	\$2,151,100.00
515-1-2	PIPE HANDRAIL - GUIDERAIL, ALUMINUM	342.00 LF	\$47.08	\$16,101.36
515-2-202	PED/BICYCLE RAILING,STL,54"PICKET RAIL	18,304.00 LF	\$65.00	\$1,189,760.00
520-1-10	CONCRETE CURB & GUTTER, TYPE F	19,504.32 LF	\$20.00	\$390,086.40
570-1-2	PERFORMANCE TURF, SOD	5,163.29 SY	\$3.00	\$15,489.87
Shoulder Component Total				\$4,251,921.40

MEDIAN COMPONENT**Pay Items**

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
520-70	CONCRETE TRAFFIC SEPARATOR, SP-VAR WIDT	837.00 SY	\$66.53	\$55,685.61
520-1-7	CONCRETE CURB & GUTTER, TYPE E	19,504.32 LF	\$20.00	\$390,086.40
520-5-41	TRAF SEP CONC-TYPE IV, 4' WIDE	4,798.00 LF	\$36.68	\$175,990.64
570-1-2	PERFORMANCE TURF, SOD	18,962.53 SY	\$3.00	\$56,887.59
Median Component Total				\$678,650.24

DRAINAGE COMPONENT**Pay Items**

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
120-1	REGULAR EXCAVATION	26,785.00 CY	\$6.50	\$174,102.50
120-6	EMBANKMENT	753.00 CY	\$10.00	\$7,530.00
575-1	SODDING	7,271.00 SY	\$3.00	\$21,813.00
110-1-1	CLEARING & GRUBBING	6.00 AC	\$20,000.00	\$120,000.00
400-2-2	CONC CLASS II, ENDWALLS	48.00 CY	\$950.00	\$45,600.00
425-1-311	INLETS, CURB, TYPE P-1, <10'	2.00 EA	\$4,226.18	\$8,452.36
425-1-321	INLETS, CURB, TYPE P-2, <10'	1.00 EA	\$4,424.83	\$4,424.83
425-1-351	INLETS, CURB, TYPE P-5, <10'	42.00 EA	\$4,217.71	\$177,143.82
425-1-361	INLETS, CURB, TYPE P-6, <10'	14.00 EA	\$3,923.80	\$54,933.20
425-1-411	INLETS, CURB TYPE J-1, <10'	4.00 EA	\$4,629.10	\$18,516.40
425-1-421	INLETS, CURB, TYPE J-2, <10'	3.00 EA	\$5,256.46	\$15,769.38
425-1-461	INLETS, CURB, TYPE J-6, <10'	5.00 EA	\$6,087.47	\$30,437.35
425-1-471	INLETS, CURB, TYPE 7, <10'	7.00 EA	\$4,214.32	\$29,500.24
425-1-473	INLETS, CURB, TYPE 7, J BOT , <10'	1.00 EA	\$5,629.45	\$5,629.45
425-1-541	INLETS, DT BOT, TYPE D, <10'	2.00 EA	\$3,490.49	\$6,980.98
425-2-41	MANHOLES, P-7, <10'	35.00 EA	\$3,423.12	\$119,809.20
425-2-71	MANHOLES, J-7, <10'	13.00 EA	\$5,427.90	\$70,562.70
430-171-101	PIPE CULV OPT MATL, ROUND, 0-24", SS	56.00 LF	\$108.15	\$6,056.40
430-171-103	PIPE CULV OPT MATL, ROUND, 37-48",	208.00 LF	\$118.97	\$24,745.76

	SS			
430-171-104	PIPE CULV OPT MATL, ROUND, 49-60", SS	664.00 LF	\$181.57	\$120,562.48
430-174-101	PIPE CULV, OPT MATL, ROUND,0- 24"SD	5,848.00 LF	\$74.56	\$436,026.88
430-174-102	PIPE CULV, OPT MATL, ROUND,25- 36"SD	4,176.00 LF	\$77.49	\$323,598.24
430-174-103	PIPE CULV, OPT MATL, ROUND,37- 48"SD	2,016.00 LF	\$130.80	\$263,692.80
430-174-104	PIPE CULV, OPT MATL, ROUND,49- 60"SD	632.00 LF	\$206.32	\$130,394.24
430-174-203	PIPE CULV, OPT MATL, OTHER, 37- 48"SD	288.00 LF	\$158.36	\$45,607.68
430-610-125	U-ENDWALL,STD 261,1:4 SLP, 18"	19.00 EA	\$2,040.00	\$38,760.00
430-982-140	MITERED END SECT, OPTIONAL RD, 42" CD	1.00 EA	\$3,030.34	\$3,030.34
550-10-220	FENCING, TYPE B, 5.1-6.0, STANDARD	2,795.00 LF	\$11.67	\$32,617.65
550-60-234	FENCE GATE,TYP B,SLIDE/CANT,18.1- 20'OPEN	2.00 EA	\$2,761.10	\$5,522.20
570-1-2	PERFORMANCE TURF, SOD	561.00 SY	\$3.00	\$1,683.00
Drainage Component Total				\$2,343,503.08

SIGNING COMPONENT

Pay Items				
Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
700-20-11	SINGLE POST SIGN, F&I, LESS THAN 12 SF	54.00 AS	\$279.28	\$15,081.12
700-20-12	SINGLE POST SIGN, F&I, 12-20 SF	18.00 AS	\$488.52	\$8,793.36
700-20-40	SINGLE POST SIGN, RELOCATE	1.00 AS	\$99.82	\$99.82
700-20-60	SINGLE POST SIGN, REMOVE	13.00 AS	\$29.45	\$382.85
705-11-1	DELINEATOR, FLEXIBLE TUBULAR	31.00 EA	\$74.76	\$2,317.56
Signing Component Total				\$26,674.71

SIGNALIZATIONS COMPONENT

Pay Items				
Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
653-191	PEDESTRIAN SIGNAL, F&I, LED- COUNT DWN, 1	2.00 AS	\$810.00	\$1,620.00
653-192	PEDESTRIAN SIGNAL, F&I, LED- COUNT DWN, 2	4.00 AS	\$1,250.60	\$5,002.40
653-400	PEDESTRIAN SIGNAL, RELOCATE	1.00 AS	\$257.98	\$257.98
659-101	SGNL HEAD AUXIL, F&I, BACK PLT 3 SECT	6.00 EA	\$100.75	\$604.50
659-109	SGNL HEAD AUXIL, F&I, CONC PED TYP II	6.00 EA	\$859.39	\$5,156.34
659-118	SGNL HEAD AUX,F&I, BACK PLT 5 SECT CLU	2.00 EA	\$180.93	\$361.86
665-11	PED DET, F&I, DET STA POLE OR CAB MTD	10.00 EA	\$197.74	\$1,977.40
690-10	SIGNAL HEAD TRAFFIC ASSEMBLY REMOVAL	8.00 EA	\$65.38	\$523.04
690-80	SPAN WIRE ASSEMBLY REMOVE	2.00 EA	\$377.06	\$754.12
690-90	CONDUIT & CABLING REMOVE	1.00 PI	\$365.78	\$365.78
690-100	SIGNAL EQUIPMENT MISCELLANOUS REMOVE	1.00 PI	\$663.40	\$663.40

630-1-12	CONDUIT-SIGNALS, F& I, UNDERGROUND	545.00 LF	\$7.00	\$3,815.00
630-1-14	CONDUIT-SIGNALS,F& I, UG JACKED	436.00 LF	\$19.83	\$8,645.88
632-7-1	CABLE, SIGNAL, FURNISH & INSTALL	2.00 PI	\$2,638.64	\$5,277.28
634-4-114	SPAN WIRE ASSEMBLY, F&I, 2 WIRE, OTHER	1.00 PI	\$2,802.35	\$2,802.35
635-1-11	PULL & JUNCTION BOXES, F&I, PULL BOX	13.00 EA	\$400.00	\$5,200.00
641-2-17	PREST CNC POLE,F&I,TYP P-VII	1.00 EA	\$8,320.63	\$8,320.63
650-51-311	TRAFFIC SIGNAL, F&I, 3 SECT, 1 WAY, STD	6.00 AS	\$991.68	\$5,950.08
650-51-511	TRAFFIC SIGNAL, F&I, 5 SECT, 1 WAY, STD	2.00 AS	\$1,612.65	\$3,225.30
660-2-106	LOOP ASSEMBLY, F&I, TYPE F	9.00 AS	\$1,023.38	\$9,210.42
663-74-11	VEH DETECTOR ASSEM, F&I, OPTICAL TYPE	1.00 EA	\$3,170.00	\$3,170.00
671-2-41	TRAFFIC CONTROLLER, MODIFY, NEMA	2.00 EA	\$923.30	\$1,846.60
678-1-104	CNTRL ACCESS, F&I, LOAD SWITCH	6.00 EA	\$83.00	\$498.00
690-33-1	POLE REMOVAL, DEEP DIRECT BURIAL	20.00 LF	\$120.85	\$2,417.00
699-1-21	INTERNAL ILLUM SIGN, INSTALL, ST NAME	2.00 EA	\$842.00	\$1,684.00
700-48-19	SIGN PANELS, F & I, 16 - 100	1.00 EA	\$1,389.16	\$1,389.16
Signalizations Component Total				\$80,738.52

RETAINING WALLS COMPONENT
Pay Items

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
400-2-11	CONC CLASS II, RETAINING WALLS	238.80 CY	\$1,432.18	\$342,004.58
415-1-3	REINF STEEL- RETAINING WALL	1,795.00 LB	\$1.00	\$1,795.00
Retaining Walls Component Total				\$343,799.58

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FDOT Long Range Estimating System - Production**R4: Project Details Composite Report
By Component****Project:** 409870-1-52-XX**Letting Date:** 01/2099**Description:** SR 44 (CR 44B) FROM SR 500 US 441 TO SR 44**District:** 05 **County:** 11 LAKE**Project Manager:** DRZ-BOYLE**Version 7 Project Grand Total****\$19,951,160.04****Description:** Shared Use Path Typical Section Evaluation Alternative 2: 4-lane divided, 11-ft travel lanes, 22-ft raised median, 3-ft wide curb lanes, 6-ft sidewalk, 12-ft shared use path.**Project Sequences Subtotal****\$12,522,472.75**

102-1	MAINTENANCE OF TRAFFIC	15.00	\$1,878,370.91
101-1	MOBILIZATION	10.00	\$1,440,084.37

Project Sequences Total**\$15,840,928.03****Project Unknowns**

25.00%

\$3,960,232.01

Non-Bid Components:**Pay item Description****Quantity Unit Unit Price Extended Amount**

999-25 INITIAL CONTINGENCY AMOUNT (DO NOT BID) 1.00 LS \$150,000.00 \$150,000.00

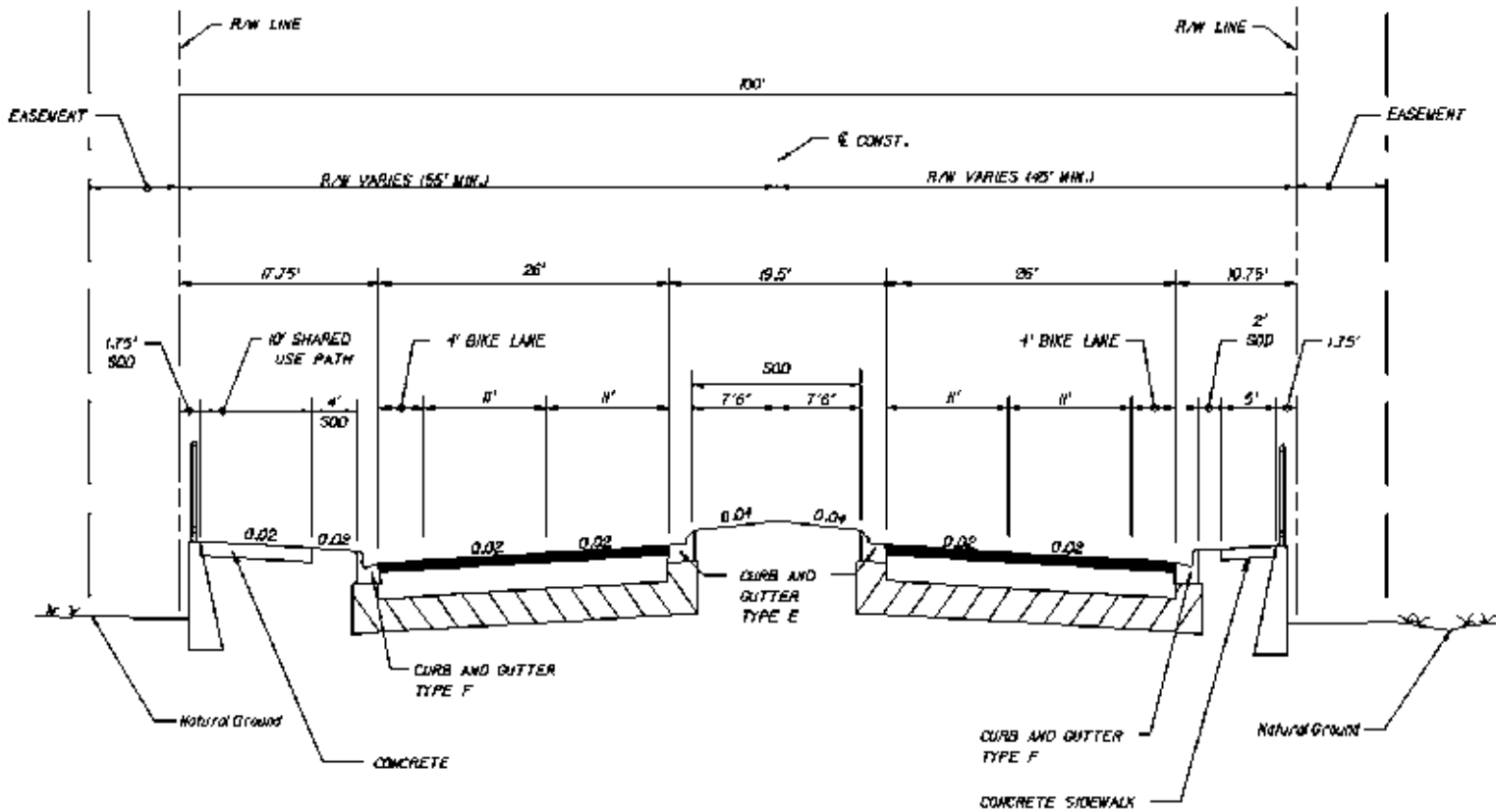
Project Non-Bid Subtotal

\$150,000.00

Version 7 Project Grand Total**\$19,951,160.04**

Alternative Typical Section # 3

4-Lane Divided / 4-ft Bicycle Lanes / Min. Median / Min. Lanes /
Min. Multi-Use Path / Sidewalk with Utility Strip



Elements:

- 11-ft Travel Lanes
- 4-ft Striped / Undesignated Bicycle Lanes
- 19.5-ft Median
- 10-ft Shared-Use Path
- 5-ft Sidewalk with 2-ft Utility Strip
- Gravity / Retaining Walls on both sides for majority of project length
- Const. / Maint. Easements on both sides for majority of project length

Alternative Typical Section # 3 Evaluation Table		
	Pros	Cons
Criteria	Standard Bicycle Lanes, Standard Sidewalk with Utility Strip.	Min. Median Width, Min. Lane Widths, Min. Multi-Use Path.
Safety	Can make U-Turns with Passenger Vehicles. Full Bicycle Lane width.	
Operation	Level Of Service same as approved Typical and improved from existing 2-lane roadway.	
Construction		Cannot construct gravity / retaining walls from within existing R/W. Additional Driveway Connections.
Maintenance		Cannot maintain gravity / retaining walls from within existing R/W.
Drainage		No space to accommodate offsite drainage.
Utility Accommodation		No space for above-ground utilities. Above-ground utilities cannot be placed between multi-use path or sidewalk and curb and gutter.
Right-of-Way / Easements		This alternative will require either additional R/W or permanent easements along both sides of the roadway to accommodate construction, maintenance, and drainage.
Cost		<u>Construction</u> : \$3,513,780.97 (20.7%) cost increase compared to Approved Typical Section. <u>R/W or Easements</u> : Undetermined. <u>Utility Relocations</u> : Undetermined.
Other		Walls and picket style handrails are aesthetic concerns.

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FDOT Long Range Estimating System - Production**R4: Project Details Composite Report
By Component****Project:** 409870-1-52-XX**Letting Date:** 01/2099**Description:** SR 44 (CR 44B) FROM SR 500 US 441 TO SR 44**District:** 05 **County:** 11 LAKE**Project Manager:** DRZ-BOYLE**Version 8 Project Grand Total****\$20,478,562.25****Description:** Shared Use Path Typical Section Evaluation Alternative 3: 4-lane divided, 11-ft travel lanes, 19.5-ft raised median, 4-ft bicycle lanes, 5-ft sidewalk with 2-ft utility strip, 10-ft shared use path, concrete.**EARTHWORK COMPONENT****Pay Items**

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
120-1	REGULAR EXCAVATION	27,049.84 CY	\$6.50	\$175,823.96
120-6	EMBANKMENT	12,411.57 CY	\$10.00	\$124,115.70
110-1-1	CLEARING & GRUBBING	22.63 AC	\$20,000.00	\$452,600.00
Earthwork Component Total				\$752,539.66

ROADWAY COMPONENT**Pay Items**

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
160-4	TYPE B STABILIZATION	84,410.36 SY	\$5.00	\$422,051.80
285-709	OPTIONAL BASE,BASE GROUP 09	70,432.26 SY	\$16.00	\$1,126,916.16
519-78	BOLLARDS	18.00 EA	\$456.71	\$8,220.78
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	855.00 EA	\$5.25	\$4,488.75
327-70-6	MILLING EXIST ASPH PAVT,1 1/2" AVG DEPTH	16,061.99 SY	\$3.00	\$48,185.97
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	11,621.32 TN	\$105.00	\$1,220,238.60
337-7-33	ASPH CONC FC,TRAFFIC C,FC- 12.5,RUBBER	7,135.75 TN	\$120.00	\$856,290.00
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	16.88 NM	\$1,135.49	\$19,167.07
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	8.44 GM	\$494.16	\$4,170.71
711-11-111	THERMOPLASTIC, STD, WHITE, SOLID, 6"	8.44 NM	\$3,572.91	\$30,155.36
711-11-131	THERMOPLASTIC, STD, WHITE, SKIP, 6"	4.22 GM	\$1,270.27	\$5,360.54
Roadway Component Total				\$3,745,245.75

SHOULDER COMPONENT**Pay Items**

Pay Item	Description	Total Unit	Weighted Avg.	Total
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		Quantity	Unit Price	Amount
104-15	SOIL TRACKING PREVENTION DEVICE	8.00 EA	\$3,462.50	\$27,700.00
104-16	ROCK BAG	1,780.00 EA	\$6.40	\$11,392.00
522-1	SIDEWALK CONC, 4" THICK	6,194.87 SY	\$45.00	\$278,769.15
522-2	SIDEWALK CONC, 6" THICK	14,124.00 SY	\$55.20	\$779,644.80
527-1	DETECTABLE WARNING ON WALK SURF, RETRO	6.00 EA	\$668.00	\$4,008.00
104-13-1	STAKED SILT FENCE, TYPE III	19,504.32 LF	\$1.15	\$22,429.97
400-1-11	CONC CLASS I, RETAINING WALLS	3,073.00 CY	\$700.00	\$2,151,100.00
515-1-2	PIPE HANDRAIL - GUIDERAIL, ALUMINUM	342.00 LF	\$47.08	\$16,101.36
515-2-202	PED/BICYCLE RAILING,STL,54"PICKET RAIL	18,304.00 LF	\$65.00	\$1,189,760.00
520-1-10	CONCRETE CURB & GUTTER, TYPE F	19,504.32 LF	\$20.00	\$390,086.40
570-1-2	PERFORMANCE TURF, SOD	7,330.44 SY	\$3.00	\$21,991.32
Shoulder Component Total				\$4,892,983.00

MEDIAN COMPONENT

Pay Items

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
520-70	CONCRETE TRAFFIC SEPARATOR, SP-VAR WIDT	837.00 SY	\$66.53	\$55,685.61
520-1-7	CONCRETE CURB & GUTTER, TYPE E	19,504.32 LF	\$20.00	\$390,086.40
520-5-41	TRAF SEP CONC-TYPE IV, 4' WIDE	4,798.00 LF	\$36.68	\$175,990.64
570-1-2	PERFORMANCE TURF, SOD	16,253.60 SY	\$3.00	\$48,760.80
Median Component Total				\$670,523.45

DRAINAGE COMPONENT

Pay Items

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
120-1	REGULAR EXCAVATION	26,785.00 CY	\$6.50	\$174,102.50
120-6	EMBANKMENT	753.00 CY	\$10.00	\$7,530.00
575-1	SODDING	7,271.00 SY	\$3.00	\$21,813.00
110-1-1	CLEARING & GRUBBING	6.00 AC	\$20,000.00	\$120,000.00
400-2-2	CONC CLASS II, ENDWALLS	48.00 CY	\$950.00	\$45,600.00
425-1-311	INLETS, CURB, TYPE P-1, <10'	2.00 EA	\$4,226.18	\$8,452.36
425-1-321	INLETS, CURB, TYPE P-2, <10'	1.00 EA	\$4,424.83	\$4,424.83
425-1-351	INLETS, CURB, TYPE P-5, <10'	42.00 EA	\$4,217.71	\$177,143.82
425-1-361	INLETS, CURB, TYPE P-6, <10'	14.00 EA	\$3,923.80	\$54,933.20
425-1-411	INLETS, CURB TYPE J-1, <10'	4.00 EA	\$4,629.10	\$18,516.40
425-1-421	INLETS, CURB, TYPE J-2, <10'	3.00 EA	\$5,256.46	\$15,769.38
425-1-461	INLETS, CURB, TYPE J-6, <10'	5.00 EA	\$6,087.47	\$30,437.35
425-1-471	INLETS, CURB, TYPE 7, <10'	7.00 EA	\$4,214.32	\$29,500.24
425-1-473	INLETS, CURB, TYPE 7, J BOT , <10'	1.00 EA	\$5,629.45	\$5,629.45
425-1-541	INLETS, DT BOT, TYPE D, <10'	2.00 EA	\$3,490.49	\$6,980.98
425-2-41	MANHOLES, P-7, <10'	35.00 EA	\$3,423.12	\$119,809.20
425-2-71	MANHOLES, J-7, <10'	13.00 EA	\$5,427.90	\$70,562.70
430-171-101	PIPE CULV OPT MATL, ROUND, 0-24", SS	56.00 LF	\$108.15	\$6,056.40
430-171-103	PIPE CULV OPT MATL, ROUND, 37-48", SS	208.00 LF	\$118.97	\$24,745.76
430-171-104	PIPE CULV OPT MATL, ROUND, 49-60",	664.00 LF	\$181.57	\$120,562.48

	SS			
430-174-101	PIPE CULV, OPT MATL, ROUND,0-24"SD	5,848.00 LF	\$74.56	\$436,026.88
430-174-102	PIPE CULV, OPT MATL, ROUND,25-36"SD	4,176.00 LF	\$77.49	\$323,598.24
430-174-103	PIPE CULV, OPT MATL, ROUND,37-48"SD	2,016.00 LF	\$130.80	\$263,692.80
430-174-104	PIPE CULV, OPT MATL, ROUND,49-60"SD	632.00 LF	\$206.32	\$130,394.24
430-174-203	PIPE CULV, OPT MATL, OTHER, 37-48"SD	288.00 LF	\$158.36	\$45,607.68
430-610-125	U-ENDWALL,STD 261,1:4 SLP, 18"	19.00 EA	\$2,040.00	\$38,760.00
430-982-140	MITERED END SECT, OPTIONAL RD, 42" CD	1.00 EA	\$3,030.34	\$3,030.34
550-10-220	FENCING, TYPE B, 5.1-6.0, STANDARD	2,795.00 LF	\$11.67	\$32,617.65
550-60-234	FENCE GATE,TYP B,SLIDE/CANT,18.1-20'OPEN	2.00 EA	\$2,761.10	\$5,522.20
570-1-2	PERFORMANCE TURF, SOD	561.00 SY	\$3.00	\$1,683.00
Drainage Component Total				\$2,343,503.08

SIGNING COMPONENT
Pay Items

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
700-20-11	SINGLE POST SIGN, F&I, LESS THAN 12 SF	54.00 AS	\$279.28	\$15,081.12
700-20-12	SINGLE POST SIGN, F&I, 12-20 SF	18.00 AS	\$488.52	\$8,793.36
700-20-40	SINGLE POST SIGN, RELOCATE	1.00 AS	\$99.82	\$99.82
700-20-60	SINGLE POST SIGN, REMOVE	13.00 AS	\$29.45	\$382.85
705-11-1	DELINEATOR, FLEXIBLE TUBULAR	31.00 EA	\$74.76	\$2,317.56
Signing Component Total				\$26,674.71

SIGNALIZATIONS COMPONENT
Pay Items

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
653-191	PEDESTRIAN SIGNAL, F&I, LED-COUNT DWN, 1	2.00 AS	\$810.00	\$1,620.00
653-192	PEDESTRIAN SIGNAL, F&I, LED-COUNT DWN, 2	4.00 AS	\$1,250.60	\$5,002.40
653-400	PEDESTRIAN SIGNAL, RELOCATE	1.00 AS	\$257.98	\$257.98
659-101	SGNL HEAD AUXIL, F&I, BACK PLT 3 SECT	6.00 EA	\$100.75	\$604.50
659-109	SGNL HEAD AUXIL, F&I, CONC PED TYP II	6.00 EA	\$859.39	\$5,156.34
659-118	SGNL HEAD AUX,F&I, BACK PLT 5 SECT CLU	2.00 EA	\$180.93	\$361.86
665-11	PED DET, F&I, DET STA POLE OR CAB MTD	10.00 EA	\$197.74	\$1,977.40
690-10	SIGNAL HEAD TRAFFIC ASSEMBLY REMOVAL	8.00 EA	\$65.38	\$523.04
690-80	SPAN WIRE ASSEMBLY REMOVE	2.00 EA	\$377.06	\$754.12
690-90	CONDUIT & CABLING REMOVE	1.00 PI	\$365.78	\$365.78
690-100	SIGNAL EQUIPMENT MISCELLANOUS REMOVE	1.00 PI	\$663.40	\$663.40
630-1-12	CONDUIT-SIGNALS, F& I, UNDERGROUND	545.00 LF	\$7.00	\$3,815.00

630-1-14	CONDUIT-SIGNALS,F& I, UG JACKED	436.00 LF	\$19.83	\$8,645.88
632-7-1	CABLE, SIGNAL, FURNISH & INSTALL	2.00 PI	\$2,638.64	\$5,277.28
634-4-114	SPAN WIRE ASSEMBLY, F&I, 2 WIRE, OTHER	1.00 PI	\$2,802.35	\$2,802.35
635-1-11	PULL & JUNCTION BOXES, F&I, PULL BOX	13.00 EA	\$400.00	\$5,200.00
641-2-17	PREST CNC POLE,F&I,TYP P-VII	1.00 EA	\$8,320.63	\$8,320.63
650-51-311	TRAFFIC SIGNAL, F&I, 3 SECT, 1 WAY, STD	6.00 AS	\$991.68	\$5,950.08
650-51-511	TRAFFIC SIGNAL, F&I, 5 SECT, 1 WAY, STD	2.00 AS	\$1,612.65	\$3,225.30
660-2-106	LOOP ASSEMBLY, F&I, TYPE F	9.00 AS	\$1,023.38	\$9,210.42
663-74-11	VEH DETECTOR ASSEM, F&I, OPTICAL TYPE	1.00 EA	\$3,170.00	\$3,170.00
671-2-41	TRAFFIC CONTROLLER, MODIFY, NEMA	2.00 EA	\$923.30	\$1,846.60
678-1-104	CNTRL ACCESS, F&I, LOAD SWITCH	6.00 EA	\$83.00	\$498.00
690-33-1	POLE REMOVAL, DEEP DIRECT BURIAL	20.00 LF	\$120.85	\$2,417.00
699-1-21	INTERNAL ILLUM SIGN, INSTALL, ST NAME	2.00 EA	\$842.00	\$1,684.00
700-48-19	SIGN PANELS, F & I, 16 - 100	1.00 EA	\$1,389.16	\$1,389.16
Signalizations Component Total				\$80,738.52

RETAINING WALLS COMPONENT
Pay Items

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
400-2-11	CONC CLASS II, RETAINING WALLS	238.80 CY	\$1,432.18	\$342,004.58
415-1-3	REINF STEEL- RETAINING WALL	1,795.00 LB	\$1.00	\$1,795.00
Retaining Walls Component Total				\$343,799.58

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FDOT Long Range Estimating System - Production**R4: Project Details Composite Report
By Component****Project:** 409870-1-52-XX**Letting Date:** 01/2099**Description:** SR 44 (CR 44B) FROM SR 500 US 441 TO SR 44**District:** 05 **County:** 11 LAKE**Project Manager:** DRZ-BOYLE**Version 8 Project Grand Total****\$20,478,562.25****Description:** Shared Use Path Typical Section Evaluation Alternative 3: 4-lane divided, 11-ft travel lanes, 19.5-ft raised median, 4-ft bicycle lanes, 5-ft sidewalk with 2-ft utility strip, 10-ft shared use path, concrete.

Project Sequences Subtotal**\$12,856,007.75**

102-1	MAINTENANCE OF TRAFFIC	15.00		\$1,928,401.16
101-1	MOBILIZATION	10.00		\$1,478,440.89

Project Sequences Total**\$16,262,849.80****Project Unknowns**

25.00%

\$4,065,712.45

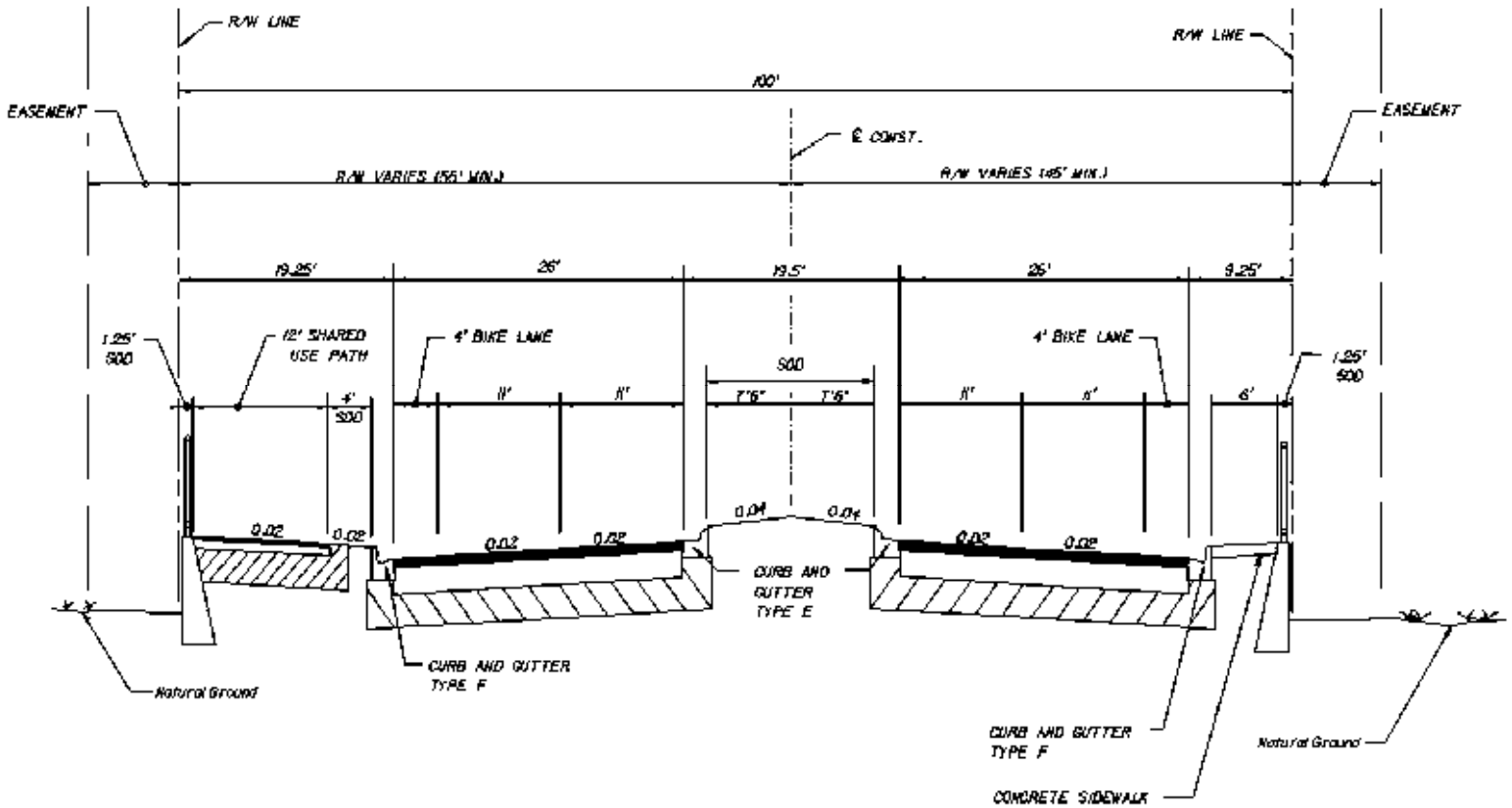
Non-Bid Components:

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
999-25	INITIAL CONTINGENCY AMOUNT (DO NOT BID)	1.00	LS	\$150,000.00	\$150,000.00
Project Non-Bid Subtotal					\$150,000.00

Version 8 Project Grand Total**\$20,478,562.25**

Alternative Typical Section # 4

4-Lane Divided / 4-ft Bicycle Lanes / Min. Median / Min. Lanes / Full Multi-Use Path / Sidewalk against Curb and Gutter



Elements:

- 11-ft Travel Lanes
- 4-ft Striped / Undesignated Bicycle Lanes
- 19.5-ft Median
- 12-ft Shared-Use Path
- 6-ft Sidewalk against Curb and Gutter
- Gravity / Retaining Walls on both sides for majority of project length
- Construction / Maintenance Easements on both sides for majority of project length

Alternative Typical Section # 4 Evaluation Table		
	Pros	Cons
Criteria	Standard Bicycle Lanes, Standard Multi-Use Path	Min. Median Width, Min. Lane Widths, Sidewalk against Curb and Gutter.
Safety	Can make U-Turns with Passenger Vehicles. Full Bicycle Lane width.	
Operation	Level Of Service same as approved Typical and improved from existing 2-lane roadway.	
Construction		Cannot construct gravity / retaining walls from within existing R/W. Additional Driveway Connections.
Maintenance		Cannot maintain gravity / retaining walls from within existing R/W.
Drainage		No space to accommodate offsite drainage.
Utility Accommodation		No space for above-ground utilities. Above-ground utilities cannot be placed between multi-use path and curb and gutter.
Right-of-Way / Easements		This alternative will require either additional R/W or permanent easements along both sides of the roadway to accommodate construction, maintenance, and drainage.
Cost		<u>Construction:</u> \$3,185,907.37 (18.8%) cost increase compared to Approved Typical Section. <u>R/W or Easements:</u> Undetermined. <u>Utility Relocations:</u> Undetermined.
Other		Walls and picket style handrails are aesthetic concerns.

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FDOT Long Range Estimating System - Production**R4: Project Details Composite Report
By Component****Project:** 409870-1-52-XX**Letting Date:** 01/2099**Description:** SR 44 (CR 44B) FROM SR 500 US 441 TO SR 44**District:** 05 **County:** 11 LAKE**Project Manager:** DRZ-BOYLE**Version 4 Project Grand Total****\$20,150,688.65****Description:** Shared Use Path Typical Section Evaluation Alternative 4: 4-lane divided, 11-ft travel lanes, 19.5-ft raised median, 4-ft bicycle lanes, 6-ft sidewalk, 12-ft shared use path.**EARTHWORK COMPONENT****Pay Items**

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
120-1	REGULAR EXCAVATION	26,913.33 CY	\$6.50	\$174,936.65
120-6	EMBANKMENT	12,258.21 CY	\$10.00	\$122,582.10
110-1-1	CLEARING & GRUBBING	22.63 AC	\$20,000.00	\$452,600.00
Earthwork Component Total				\$750,118.74

ROADWAY COMPONENT**Pay Items**

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
160-4	TYPE B STABILIZATION	124,022.09 SY	\$5.00	\$620,110.45
285-701	OPTIONAL BASE,BASE GROUP 01	15,262.90 SY	\$8.48	\$129,429.39
285-709	OPTIONAL BASE,BASE GROUP 09	70,432.26 SY	\$16.00	\$1,126,916.16
519-78	BOLLARDS	18.00 EA	\$456.71	\$8,220.78
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	855.00 EA	\$5.25	\$4,488.75
327-70-6	MILLING EXIST ASPH PAVT,1 1/2" AVG DEPTH	16,061.99 SY	\$3.00	\$48,185.97
334-1-11	SUPERPAVE ASPHALTIC CONC, TRAFFIC A	816.99 TN	\$121.25	\$99,060.04
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	11,621.32 TN	\$105.00	\$1,220,238.60
337-7-33	ASPH CONC FC,TRAFFIC C,FC- 12.5,RUBBER	7,135.75 TN	\$120.00	\$856,290.00
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	25.32 NM	\$1,135.49	\$28,750.61
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	8.44 GM	\$494.16	\$4,170.71
711-11-111	THERMOPLASTIC, STD, WHITE, SOLID, 6"	8.44 NM	\$3,572.91	\$30,155.36
711-11-131	THERMOPLASTIC, STD, WHITE, SKIP, 6"	4.22 GM	\$1,270.27	\$5,360.54
Roadway Component Total				\$4,181,377.37

SHOULDER COMPONENT

Pay Items

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
104-15	SOIL TRACKING PREVENTION DEVICE	8.00 EA	\$3,462.50	\$27,700.00
104-16	ROCK BAG	1,780.00 EA	\$6.40	\$11,392.00
522-1	SIDEWALK CONC, 4" THICK	7,278.44 SY	\$45.00	\$327,529.80
522-2	SIDEWALK CONC, 6" THICK	1,745.00 SY	\$55.20	\$96,324.00
527-1	DETECTABLE WARNING ON WALK SURF, RETRO	6.00 EA	\$668.00	\$4,008.00
104-13-1	STAKED SILT FENCE, TYPE III	19,504.32 LF	\$1.15	\$22,429.97
400-1-11	CONC CLASS I, RETAINING WALLS	3,073.00 CY	\$700.00	\$2,151,100.00
515-1-2	PIPE HANDRAIL - GUIDERAIL, ALUMINUM	342.00 LF	\$47.08	\$16,101.36
515-2-202	PED/BICYCLE RAILING,STL,54"PICKET RAIL	18,304.00 LF	\$65.00	\$1,189,760.00
520-1-10	CONCRETE CURB & GUTTER, TYPE F	19,504.32 LF	\$20.00	\$390,086.40
570-1-2	PERFORMANCE TURF, SOD	5,163.29 SY	\$3.00	\$15,489.87
Shoulder Component Total				\$4,251,921.40

MEDIAN COMPONENT**Pay Items**

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
520-70	CONCRETE TRAFFIC SEPARATOR, SP- VAR WIDT	837.00 SY	\$66.53	\$55,685.61
520-1-7	CONCRETE CURB & GUTTER, TYPE E	19,504.32 LF	\$20.00	\$390,086.40
520-5-41	TRAF SEP CONC-TYPE IV, 4' WIDE	4,798.00 LF	\$36.68	\$175,990.64
570-1-2	PERFORMANCE TURF, SOD	16,253.60 SY	\$3.00	\$48,760.80
Median Component Total				\$670,523.45

DRAINAGE COMPONENT**Pay Items**

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
120-1	REGULAR EXCAVATION	26,785.00 CY	\$6.50	\$174,102.50
120-6	EMBANKMENT	753.00 CY	\$10.00	\$7,530.00
575-1	SODDING	7,271.00 SY	\$3.00	\$21,813.00
110-1-1	CLEARING & GRUBBING	6.00 AC	\$20,000.00	\$120,000.00
400-2-2	CONC CLASS II, ENDWALLS	48.00 CY	\$950.00	\$45,600.00
425-1-311	INLETS, CURB, TYPE P-1, <10'	2.00 EA	\$4,226.18	\$8,452.36
425-1-321	INLETS, CURB, TYPE P-2, <10'	1.00 EA	\$4,424.83	\$4,424.83
425-1-351	INLETS, CURB, TYPE P-5, <10'	42.00 EA	\$4,217.71	\$177,143.82
425-1-361	INLETS, CURB, TYPE P-6, <10'	14.00 EA	\$3,923.80	\$54,933.20
425-1-411	INLETS, CURB TYPE J-1, <10'	4.00 EA	\$4,629.10	\$18,516.40
425-1-421	INLETS, CURB, TYPE J-2, <10'	3.00 EA	\$5,256.46	\$15,769.38
425-1-461	INLETS, CURB, TYPE J-6, <10'	5.00 EA	\$6,087.47	\$30,437.35
425-1-471	INLETS, CURB, TYPE 7, <10'	7.00 EA	\$4,214.32	\$29,500.24
425-1-473	INLETS, CURB, TYPE 7, J BOT , <10'	1.00 EA	\$5,629.45	\$5,629.45
425-1-541	INLETS, DT BOT, TYPE D, <10'	2.00 EA	\$3,490.49	\$6,980.98
425-2-41	MANHOLES, P-7, <10'	35.00 EA	\$3,423.12	\$119,809.20
425-2-71	MANHOLES, J-7, <10'	13.00 EA	\$5,427.90	\$70,562.70
430-171-101	PIPE CULV OPT MATL, ROUND, 0-24", SS	56.00 LF	\$108.15	\$6,056.40
430-171-103	PIPE CULV OPT MATL, ROUND, 37-48",	208.00 LF	\$118.97	\$24,745.76

	SS			
430-171-104	PIPE CULV OPT MATL, ROUND, 49-60", SS	664.00 LF	\$181.57	\$120,562.48
430-174-101	PIPE CULV, OPT MATL, ROUND,0- 24"SD	5,848.00 LF	\$74.56	\$436,026.88
430-174-102	PIPE CULV, OPT MATL, ROUND,25- 36"SD	4,176.00 LF	\$77.49	\$323,598.24
430-174-103	PIPE CULV, OPT MATL, ROUND,37- 48"SD	2,016.00 LF	\$130.80	\$263,692.80
430-174-104	PIPE CULV, OPT MATL, ROUND,49- 60"SD	632.00 LF	\$206.32	\$130,394.24
430-174-203	PIPE CULV, OPT MATL, OTHER, 37- 48"SD	288.00 LF	\$158.36	\$45,607.68
430-610-125	U-ENDWALL,STD 261,1:4 SLP, 18"	19.00 EA	\$2,040.00	\$38,760.00
430-982-140	MITERED END SECT, OPTIONAL RD, 42" CD	1.00 EA	\$3,030.34	\$3,030.34
550-10-220	FENCING, TYPE B, 5.1-6.0, STANDARD	2,795.00 LF	\$11.67	\$32,617.65
550-60-234	FENCE GATE,TYP B,SLIDE/CANT,18.1- 20'OPEN	2.00 EA	\$2,761.10	\$5,522.20
570-1-2	PERFORMANCE TURF, SOD	561.00 SY	\$3.00	\$1,683.00
Drainage Component Total				\$2,343,503.08

SIGNING COMPONENT

Pay Items				
Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
700-20-11	SINGLE POST SIGN, F&I, LESS THAN 12 SF	54.00 AS	\$279.28	\$15,081.12
700-20-12	SINGLE POST SIGN, F&I, 12-20 SF	18.00 AS	\$488.52	\$8,793.36
700-20-40	SINGLE POST SIGN, RELOCATE	1.00 AS	\$99.82	\$99.82
700-20-60	SINGLE POST SIGN, REMOVE	13.00 AS	\$29.45	\$382.85
705-11-1	DELINEATOR, FLEXIBLE TUBULAR	31.00 EA	\$74.76	\$2,317.56
Signing Component Total				\$26,674.71

SIGNALIZATIONS COMPONENT

Pay Items				
Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
653-191	PEDESTRIAN SIGNAL, F&I, LED- COUNT DWN, 1	2.00 AS	\$810.00	\$1,620.00
653-192	PEDESTRIAN SIGNAL, F&I, LED- COUNT DWN, 2	4.00 AS	\$1,250.60	\$5,002.40
653-400	PEDESTRIAN SIGNAL, RELOCATE	1.00 AS	\$257.98	\$257.98
659-101	SGNL HEAD AUXIL, F&I, BACK PLT 3 SECT	6.00 EA	\$100.75	\$604.50
659-109	SGNL HEAD AUXIL, F&I, CONC PED TYP II	6.00 EA	\$859.39	\$5,156.34
659-118	SGNL HEAD AUX,F&I, BACK PLT 5 SECT CLU	2.00 EA	\$180.93	\$361.86
665-11	PED DET, F&I, DET STA POLE OR CAB MTD	10.00 EA	\$197.74	\$1,977.40
690-10	SIGNAL HEAD TRAFFIC ASSEMBLY REMOVAL	8.00 EA	\$65.38	\$523.04
690-80	SPAN WIRE ASSEMBLY REMOVE	2.00 EA	\$377.06	\$754.12
690-90	CONDUIT & CABLING REMOVE	1.00 PI	\$365.78	\$365.78
690-100	SIGNAL EQUIPMENT MISCELLANOUS REMOVE	1.00 PI	\$663.40	\$663.40

630-1-12	CONDUIT-SIGNALS, F& I, UNDERGROUND	545.00 LF	\$7.00	\$3,815.00
630-1-14	CONDUIT-SIGNALS,F& I, UG JACKED	436.00 LF	\$19.83	\$8,645.88
632-7-1	CABLE, SIGNAL, FURNISH & INSTALL	2.00 PI	\$2,638.64	\$5,277.28
634-4-114	SPAN WIRE ASSEMBLY, F&I, 2 WIRE, OTHER	1.00 PI	\$2,802.35	\$2,802.35
635-1-11	PULL & JUNCTION BOXES, F&I, PULL BOX	13.00 EA	\$400.00	\$5,200.00
641-2-17	PREST CNC POLE,F&I,TYP P-VII	1.00 EA	\$8,320.63	\$8,320.63
650-51-311	TRAFFIC SIGNAL, F&I, 3 SECT, 1 WAY, STD	6.00 AS	\$991.68	\$5,950.08
650-51-511	TRAFFIC SIGNAL, F&I, 5 SECT, 1 WAY, STD	2.00 AS	\$1,612.65	\$3,225.30
660-2-106	LOOP ASSEMBLY, F&I, TYPE F	9.00 AS	\$1,023.38	\$9,210.42
663-74-11	VEH DETECTOR ASSEM, F&I, OPTICAL TYPE	1.00 EA	\$3,170.00	\$3,170.00
671-2-41	TRAFFIC CONTROLLER, MODIFY, NEMA	2.00 EA	\$923.30	\$1,846.60
678-1-104	CNTRL ACCESS, F&I, LOAD SWITCH	6.00 EA	\$83.00	\$498.00
690-33-1	POLE REMOVAL, DEEP DIRECT BURIAL	20.00 LF	\$120.85	\$2,417.00
699-1-21	INTERNAL ILLUM SIGN, INSTALL, ST NAME	2.00 EA	\$842.00	\$1,684.00
700-48-19	SIGN PANELS, F & I, 16 - 100	1.00 EA	\$1,389.16	\$1,389.16
Signalizations Component Total				\$80,738.52

RETAINING WALLS COMPONENT
Pay Items

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
400-2-11	CONC CLASS II, RETAINING WALLS	238.80 CY	\$1,432.18	\$342,004.58
415-1-3	REINF STEEL- RETAINING WALL	1,795.00 LB	\$1.00	\$1,795.00
Retaining Walls Component Total				\$343,799.58

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FDOT Long Range Estimating System - Production**R4: Project Details Composite Report
By Component****Project:** 409870-1-52-XX**Letting Date:** 01/2099**Description:** SR 44 (CR 44B) FROM SR 500 US 441 TO SR 44**District:** 05 **County:** 11 LAKE**Project Manager:** DRZ-BOYLE**Version 4 Project Grand Total****\$20,150,688.65****Description:** Shared Use Path Typical Section Evaluation Alternative 4: 4-lane divided, 11-ft travel lanes, 19.5-ft raised median, 4-ft bicycle lanes, 6-ft sidewalk, 12-ft shared use path.

Project Sequences Subtotal**\$12,648,656.85**

102-1 MAINTENANCE OF TRAFFIC

15.00

\$1,897,298.53

101-1 MOBILIZATION

10.00

\$1,454,595.54

Project Sequences Total**\$16,000,550.92****Project Unknowns**

25.00%

\$4,000,137.73

Non-Bid Components:**Pay item Description****Quantity Unit****Unit Price****Extended Amount**

999-25 INITIAL CONTINGENCY AMOUNT (DO NOT BID)

1.00 LS

\$150,000.00

\$150,000.00

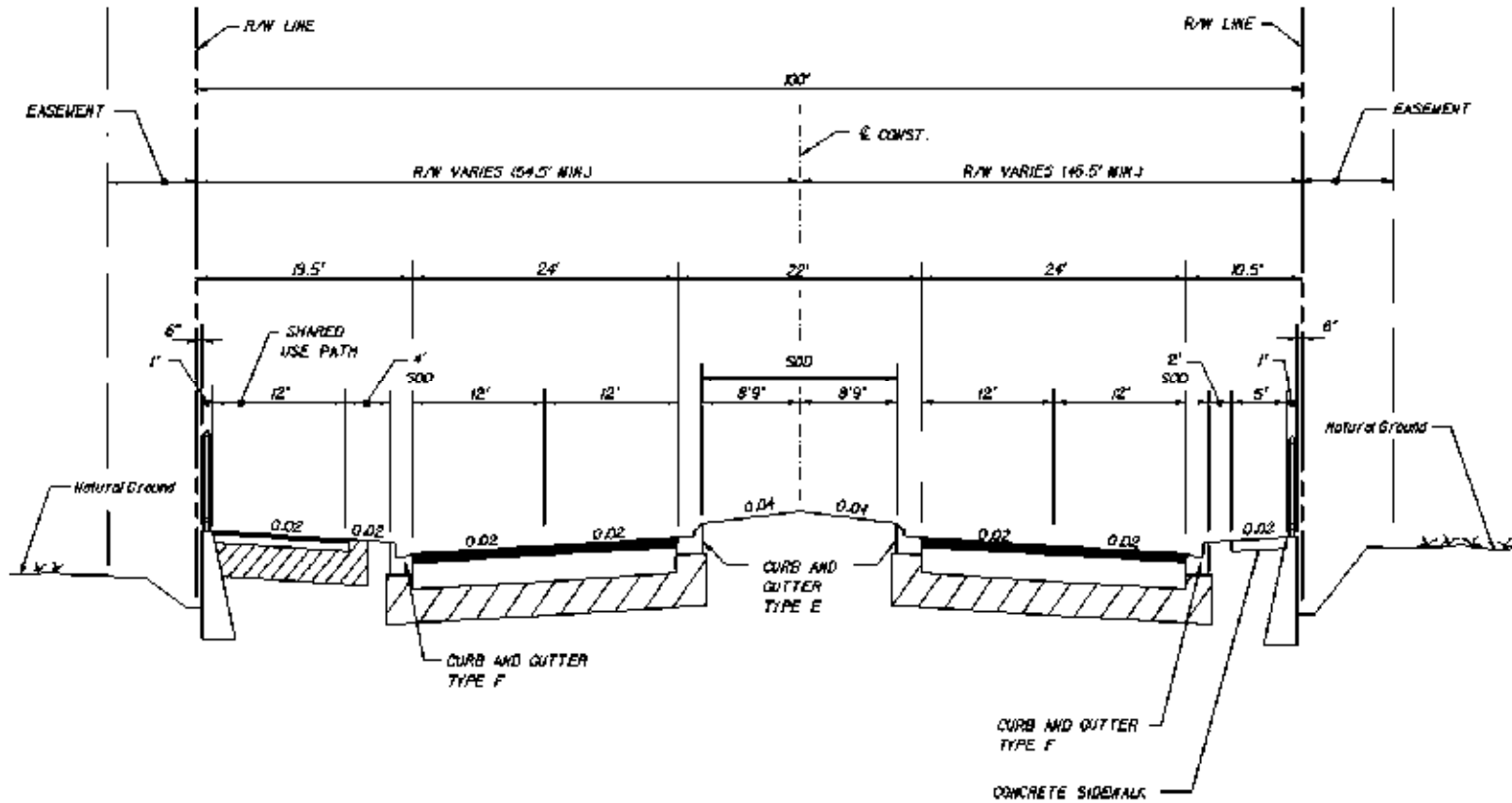
Project Non-Bid Subtotal

\$150,000.00

Version 4 Project Grand Total**\$20,150,688.65**

Alternative Typical Section # 5

4-Lane Divided / No Roadway Bicycle Lanes / Standard Median /
Standard Lanes / Full Multi-Use Path / Sidewalk with Utility Strip



- 12-ft Travel Lanes
- 22-ft Median
- 12-ft Shared-Use Path
- 5-ft Sidewalk with 2-ft Utility Strip
- Gravity / Retaining Walls on both sides for majority of project length
- Construction / Maintenance Easements on both sides for majority of project length

Alternative Typical Section # 5 Evaluation Table		
	Pros	Cons
Criteria	Standard Multi-Use Path, Standard Median Width, Standard Lane Widths, Sidewalk with Utility Strip	No Bicycle Lanes. Design Variation required for lack of Bicycle Lanes.
Safety	Can make U-Turns with Passenger Vehicles.	No Bicycle Lanes.
Operation	Level Of Service same as approved Typical and improved from existing 2-lane roadway.	
Construction		Cannot construct gravity / retaining walls from within existing R/W. Additional Driveway Connections.
Maintenance		Cannot maintain gravity / retaining walls from within existing R/W.
Drainage		No space to accommodate offsite drainage.
Utility Accommodation		No space for above-ground utilities. Above-ground utilities cannot be placed between multi-use path or sidewalk and curb and gutter.
Right-of-Way / Easements		This alternative will require either additional R/W or permanent easements along both sides of the roadway to accommodate construction, maintenance, and drainage.
Cost		<u>Construction</u> : \$2,704,051.27 (15.9%) cost increase compared to Approved Typical Section. <u>R/W or Easements</u> : Undetermined. <u>Utility Relocations</u> : Undetermined.
Other		Walls and picket style handrails are aesthetic concerns.

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FDOT Long Range Estimating System - Production**R4: Project Details Composite Report
By Component****Project:** 409870-1-52-XX**Letting Date:** 01/2099**Description:** SR 44 (CR 44B) FROM SR 500 US 441 TO SR 44**District:** 05 **County:** 11 LAKE**Project Manager:** DRZ-BOYLE**Version 3 Project Grand Total****\$19,668,832.55****Description:** Shared Use Path Typical Section Evaluation Alternative 5: 4-lane divided, 12-ft travel lanes, 22-ft raised median, no bicycle lanes, 5-ft sidewalk with 2-ft utility strip, 12-ft shared use path.**EARTHWORK COMPONENT****Pay Items**

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
120-1	REGULAR EXCAVATION	25,207.29 CY	\$6.50	\$163,847.39
120-6	EMBANKMENT	12,434.78 CY	\$10.00	\$124,347.80
110-1-1	CLEARING & GRUBBING	22.63 AC	\$20,000.00	\$452,600.00
Earthwork Component Total				\$740,795.19

ROADWAY COMPONENT**Pay Items**

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
160-4	TYPE B STABILIZATION	118,604.23 SY	\$5.00	\$593,021.15
285-701	OPTIONAL BASE,BASE GROUP 01	15,262.90 SY	\$8.48	\$129,429.39
285-709	OPTIONAL BASE,BASE GROUP 09	65,014.40 SY	\$16.00	\$1,040,230.40
519-78	BOLLARDS	18.00 EA	\$456.71	\$8,220.78
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	855.00 EA	\$5.25	\$4,488.75
327-70-6	MILLING EXIST ASPH PAVT,1 1/2" AVG DEPTH	16,061.99 SY	\$3.00	\$48,185.97
334-1-11	SUPERPAVE ASPHALTIC CONC, TRAFFIC A	816.99 TN	\$121.25	\$99,060.04
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	10,727.38 TN	\$105.00	\$1,126,374.90
337-7-33	ASPH CONC FC,TRAFFIC C,FC- 12.5,RUBBER	6,688.78 TN	\$120.00	\$802,653.60
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	25.32 NM	\$1,135.49	\$28,750.61
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	8.44 GM	\$494.16	\$4,170.71
711-11-111	THERMOPLASTIC, STD, WHITE, SOLID, 6"	8.44 NM	\$3,572.91	\$30,155.36
711-11-131	THERMOPLASTIC, STD, WHITE, SKIP, 6"	4.22 GM	\$1,270.27	\$5,360.54
Roadway Component Total				\$3,920,102.20

SHOULDER COMPONENT

Pay Items				
Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
104-15	SOIL TRACKING PREVENTION DEVICE	8.00 EA	\$3,462.50	\$27,700.00
104-16	ROCK BAG	1,780.00 EA	\$6.40	\$11,392.00
522-1	SIDEWALK CONC, 4" THICK	6,194.87 SY	\$45.00	\$278,769.15
522-2	SIDEWALK CONC, 6" THICK	1,745.00 SY	\$55.20	\$96,324.00
527-1	DETECTABLE WARNING ON WALK SURF, RETRO	6.00 EA	\$668.00	\$4,008.00
104-13-1	STAKED SILT FENCE, TYPE III	19,504.32 LF	\$1.15	\$22,429.97
400-1-11	CONC CLASS I, RETAINING WALLS	3,073.00 CY	\$700.00	\$2,151,100.00
515-1-2	PIPE HANDRAIL - GUIDERAIL, ALUMINUM	342.00 LF	\$47.08	\$16,101.36
515-2-202	PED/BICYCLE RAILING,STL,54"PICKET RAIL	18,304.00 LF	\$65.00	\$1,189,760.00
520-1-10	CONCRETE CURB & GUTTER, TYPE F	19,504.32 LF	\$20.00	\$390,086.40
570-1-2	PERFORMANCE TURF, SOD	7,330.44 SY	\$3.00	\$21,991.32
Shoulder Component Total				\$4,209,662.20

MEDIAN COMPONENT

Pay Items				
Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
520-70	CONCRETE TRAFFIC SEPARATOR, SP-VAR WIDT	837.00 SY	\$66.53	\$55,685.61
520-1-7	CONCRETE CURB & GUTTER, TYPE E	19,504.32 LF	\$20.00	\$390,086.40
520-5-41	TRAF SEP CONC-TYPE IV, 4' WIDE	4,798.00 LF	\$36.68	\$175,990.64
570-1-2	PERFORMANCE TURF, SOD	18,962.53 SY	\$3.00	\$56,887.59
Median Component Total				\$678,650.24

DRAINAGE COMPONENT

Pay Items				
Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
120-1	REGULAR EXCAVATION	26,785.00 CY	\$6.50	\$174,102.50
120-6	EMBANKMENT	753.00 CY	\$10.00	\$7,530.00
575-1	SODDING	7,271.00 SY	\$3.00	\$21,813.00
110-1-1	CLEARING & GRUBBING	6.00 AC	\$20,000.00	\$120,000.00
400-2-2	CONC CLASS II, ENDWALLS	48.00 CY	\$950.00	\$45,600.00
425-1-311	INLETS, CURB, TYPE P-1, <10'	2.00 EA	\$4,226.18	\$8,452.36
425-1-321	INLETS, CURB, TYPE P-2, <10'	1.00 EA	\$4,424.83	\$4,424.83
425-1-351	INLETS, CURB, TYPE P-5, <10'	42.00 EA	\$4,217.71	\$177,143.82
425-1-361	INLETS, CURB, TYPE P-6, <10'	14.00 EA	\$3,923.80	\$54,933.20
425-1-411	INLETS, CURB TYPE J-1, <10'	4.00 EA	\$4,629.10	\$18,516.40
425-1-421	INLETS, CURB, TYPE J-2, <10'	3.00 EA	\$5,256.46	\$15,769.38
425-1-461	INLETS, CURB, TYPE J-6, <10'	5.00 EA	\$6,087.47	\$30,437.35
425-1-471	INLETS, CURB, TYPE 7, <10'	7.00 EA	\$4,214.32	\$29,500.24
425-1-473	INLETS, CURB, TYPE 7, J BOT , <10'	1.00 EA	\$5,629.45	\$5,629.45
425-1-541	INLETS, DT BOT, TYPE D, <10'	2.00 EA	\$3,490.49	\$6,980.98
425-2-41	MANHOLES, P-7, <10'	35.00 EA	\$3,423.12	\$119,809.20
425-2-71	MANHOLES, J-7, <10'	13.00 EA	\$5,427.90	\$70,562.70
430-171-101	PIPE CULV OPT MATL, ROUND, 0-24", SS	56.00 LF	\$108.15	\$6,056.40

430-171-103	PIPE CULV OPT MATL, ROUND, 37-48", SS	208.00 LF	\$118.97	\$24,745.76
430-171-104	PIPE CULV OPT MATL, ROUND, 49-60", SS	664.00 LF	\$181.57	\$120,562.48
430-174-101	PIPE CULV, OPT MATL, ROUND,0-24"SD	5,848.00 LF	\$74.56	\$436,026.88
430-174-102	PIPE CULV, OPT MATL, ROUND,25-36"SD	4,176.00 LF	\$77.49	\$323,598.24
430-174-103	PIPE CULV, OPT MATL, ROUND,37-48"SD	2,016.00 LF	\$130.80	\$263,692.80
430-174-104	PIPE CULV, OPT MATL, ROUND,49-60"SD	632.00 LF	\$206.32	\$130,394.24
430-174-203	PIPE CULV, OPT MATL, OTHER, 37-48"SD	288.00 LF	\$158.36	\$45,607.68
430-610-125	U-ENDWALL,STD 261,1:4 SLP, 18"	19.00 EA	\$2,040.00	\$38,760.00
430-982-140	MITERED END SECT, OPTIONAL RD, 42" CD	1.00 EA	\$3,030.34	\$3,030.34
550-10-220	FENCING, TYPE B, 5.1-6.0, STANDARD	2,795.00 LF	\$11.67	\$32,617.65
550-60-234	FENCE GATE,TYP B,SLIDE/CANT,18.1-20'OPEN	2.00 EA	\$2,761.10	\$5,522.20
570-1-2	PERFORMANCE TURF, SOD	561.00 SY	\$3.00	\$1,683.00
Drainage Component Total				\$2,343,503.08

SIGNING COMPONENT

Pay Items				
Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
700-20-11	SINGLE POST SIGN, F&I, LESS THAN 12 SF	54.00 AS	\$279.28	\$15,081.12
700-20-12	SINGLE POST SIGN, F&I, 12-20 SF	18.00 AS	\$488.52	\$8,793.36
700-20-40	SINGLE POST SIGN, RELOCATE	1.00 AS	\$99.82	\$99.82
700-20-60	SINGLE POST SIGN, REMOVE	13.00 AS	\$29.45	\$382.85
705-11-1	DELINEATOR, FLEXIBLE TUBULAR	31.00 EA	\$74.76	\$2,317.56
Signing Component Total				\$26,674.71

SIGNALIZATIONS COMPONENT

Pay Items				
Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
653-191	PEDESTRIAN SIGNAL, F&I, LED-COUNT DWN, 1	2.00 AS	\$810.00	\$1,620.00
653-192	PEDESTRIAN SIGNAL, F&I, LED-COUNT DWN, 2	4.00 AS	\$1,250.60	\$5,002.40
653-400	PEDESTRIAN SIGNAL, RELOCATE	1.00 AS	\$257.98	\$257.98
659-101	SGNL HEAD AUXIL, F&I, BACK PLT 3 SECT	6.00 EA	\$100.75	\$604.50
659-109	SGNL HEAD AUXIL, F&I, CONC PED TYP II	6.00 EA	\$859.39	\$5,156.34
659-118	SGNL HEAD AUX,F&I, BACK PLT 5 SECT CLU	2.00 EA	\$180.93	\$361.86
665-11	PED DET, F&I, DET STA POLE OR CAB MTD	10.00 EA	\$197.74	\$1,977.40
690-10	SIGNAL HEAD TRAFFIC ASSEMBLY REMOVAL	8.00 EA	\$65.38	\$523.04
690-80	SPAN WIRE ASSEMBLY REMOVE	2.00 EA	\$377.06	\$754.12
690-90	CONDUIT & CABLING REMOVE	1.00 PI	\$365.78	\$365.78
690-100	SIGNAL EQUIPMENT MISCELLANOUS	1.00 PI	\$663.40	\$663.40

	REMOVE			
630-1-12	CONDUIT-SIGNALS, F& I, UNDERGROUND	545.00 LF	\$7.00	\$3,815.00
630-1-14	CONDUIT-SIGNALS,F& I, UG JACKED	436.00 LF	\$19.83	\$8,645.88
632-7-1	CABLE, SIGNAL, FURNISH & INSTALL	2.00 PI	\$2,638.64	\$5,277.28
634-4-114	SPAN WIRE ASSEMBLY, F&I, 2 WIRE, OTHER	1.00 PI	\$2,802.35	\$2,802.35
635-1-11	PULL & JUNCTION BOXES, F&I, PULL BOX	13.00 EA	\$400.00	\$5,200.00
641-2-17	PREST CNC POLE,F&I,TYP P-VII	1.00 EA	\$8,320.63	\$8,320.63
650-51-311	TRAFFIC SIGNAL, F&I, 3 SECT, 1 WAY, STD	6.00 AS	\$991.68	\$5,950.08
650-51-511	TRAFFIC SIGNAL, F&I, 5 SECT, 1 WAY, STD	2.00 AS	\$1,612.65	\$3,225.30
660-2-106	LOOP ASSEMBLY, F&I, TYPE F	9.00 AS	\$1,023.38	\$9,210.42
663-74-11	VEH DETECTOR ASSEM, F&I, OPTICAL TYPE	1.00 EA	\$3,170.00	\$3,170.00
671-2-41	TRAFFIC CONTROLLER, MODIFY, NEMA	2.00 EA	\$923.30	\$1,846.60
678-1-104	CNTRL ACCESS, F&I, LOAD SWITCH	6.00 EA	\$83.00	\$498.00
690-33-1	POLE REMOVAL, DEEP DIRECT BURIAL	20.00 LF	\$120.85	\$2,417.00
699-1-21	INTERNAL ILLUM SIGN, INSTALL, ST NAME	2.00 EA	\$842.00	\$1,684.00
700-48-19	SIGN PANELS, F & I, 16 - 100	1.00 EA	\$1,389.16	\$1,389.16
	Signalizations Component Total			\$80,738.52

RETAINING WALLS COMPONENT
Pay Items

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
400-2-11	CONC CLASS II, RETAINING WALLS	238.80 CY	\$1,432.18	\$342,004.58
415-1-3	REINF STEEL- RETAINING WALL	1,795.00 LB	\$1.00	\$1,795.00
	Retaining Walls Component Total			\$343,799.58

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FDOT Long Range Estimating System - Production

R4: Project Details Composite Report By Component

Project: 409870-1-52-XX**Letting Date:** 01/2099**Description:** SR 44 (CR 44B) FROM SR 500 US 441 TO SR 44**District:** 05 **County:** 11 LAKE**Project Manager:** DRZ-BOYLE**Version 3 Project Grand Total****\$19,668,832.55**

Description: Shared Use Path Typical Section Evaluation Alternative 5: 4-lane divided, 12-ft travel lanes, 22-ft raised median, no bicycle lanes, 5-ft sidewalk with 2-ft utility strip, 12-ft shared use path.

Project Sequences Subtotal**\$12,343,925.72**

102-1	MAINTENANCE OF TRAFFIC	15.00	\$1,851,588.86
101-1	MOBILIZATION	10.00	\$1,419,551.46

Project Sequences Total**\$15,615,066.04****Project Unknowns**

25.00%

\$3,903,766.51

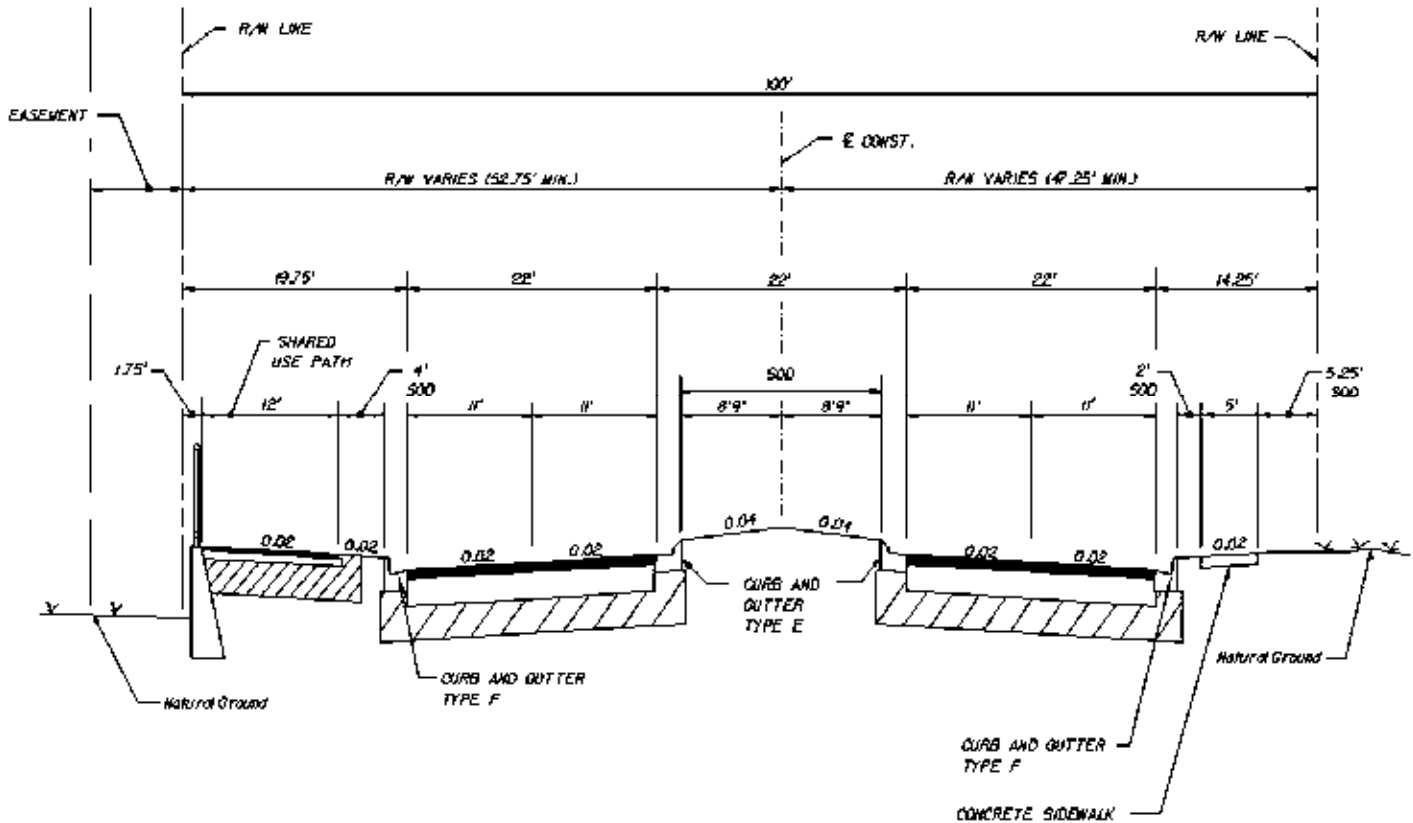
Non-Bid Components:

Pay item Description	Quantity	Unit	Unit Price	Extended Amount
999-25 INITIAL CONTINGENCY AMOUNT (DO NOT BID)	1.00	LS	\$150,000.00	\$150,000.00
Project Non-Bid Subtotal				\$150,000.00

Version 3 Project Grand Total**\$19,668,832.55**

Alternative Typical Section # 6

4-Lane Divided / No Roadway Bicycle Lanes / Standard Median /
Min. Lanes / Full Multi-Use Path / Sidewalk with Utility Strip



Elements:

- 11-ft Travel Lanes
- 22-ft Median
- 12-ft Shared-Use Path
- 5-ft Sidewalk with 2-ft Utility Strip
- Gravity / Retaining Walls on west side for majority of project length
- Construction / Maintenance Easements on west side only
- Gravity / Retaining Walls on east side only in locations currently required with approved Typical

Alternative Typical Section # 6 Evaluation Table		
	Pros	Cons
Criteria	Standard Multi-Use Path, Standard Median Width, Sidewalk with Utility Strip	Min. Lane Widths, No Bicycle Lanes. Design Variation required for lack of Bicycle Lanes.
Safety		No Bicycle Lanes. Not all vehicles will be able to make U-turns.
Operation	Level Of Service same as approved Typical and improved from existing 2-lane roadway.	
Construction		Cannot construct gravity / retaining walls from within existing R/W on west side.
Maintenance		Cannot maintain gravity / retaining walls from within existing R/W on west side.
Drainage		No space to accommodate offsite drainage on the west side.
Utility Accommodation		No space for above-ground Utilities on west side. Above-ground utilities cannot be placed between multi-use path and curb and gutter.
Right-of-Way / Easements		This alternative will require either additional R/W or permanent easements along the west side of the roadway to accommodate construction, maintenance, and drainage.
Cost		<u>Construction</u> : \$646,253.83 (3.8%) cost increase compared to Approved Typical Section. <u>R/W or Easements</u> : Undetermined. <u>Utility Relocations</u> : Undetermined.
Other		Walls and picket style handrails on west side are aesthetic concerns.

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FDOT Long Range Estimating System - Production**R4: Project Details Composite Report
By Component****Project:** 409870-1-52-XX**Letting Date:** 01/2099**Description:** SR 44 (CR 44B) FROM SR 500 US 441 TO SR 44**District:** 05 **County:** 11 LAKE**Project Manager:** DRZ-BOYLE**Version 6 Project Grand Total****\$17,611,035.11****Description:** Shared Use Path Typical Section Evaluation Alternative 6: 4-lane divided, 11-ft travel lanes, 22-ft raised median, no bicycle lanes, 5-ft sidewalk with 2-ft utility strip, 12-ft shared use path.**EARTHWORK COMPONENT****Pay Items**

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
120-1	REGULAR EXCAVATION	23,922.86 CY	\$6.50	\$155,498.59
120-6	EMBANKMENT	12,939.50 CY	\$10.00	\$129,395.00
110-1-1	CLEARING & GRUBBING	22.63 AC	\$20,000.00	\$452,600.00
Earthwork Component Total				\$737,493.59

ROADWAY COMPONENT**Pay Items**

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
160-4	TYPE B STABILIZATION	113,186.35 SY	\$5.00	\$565,931.75
285-701	OPTIONAL BASE,BASE GROUP 01	15,262.90 SY	\$8.48	\$129,429.39
285-709	OPTIONAL BASE,BASE GROUP 09	59,596.54 SY	\$16.00	\$953,544.64
519-78	BOLLARDS	18.00 EA	\$456.71	\$8,220.78
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	855.00 EA	\$5.25	\$4,488.75
327-70-6	MILLING EXIST ASPH PAVT,1 1/2" AVG DEPTH	16,061.99 SY	\$3.00	\$48,185.97
334-1-11	SUPERPAVE ASPHALTIC CONC, TRAFFIC A	816.99 TN	\$121.25	\$99,060.04
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	9,833.42 TN	\$105.00	\$1,032,509.10
337-7-33	ASPH CONC FC,TRAFFIC C,FC-12.5,RUBBER	6,241.80 TN	\$120.00	\$749,016.00
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	25.32 NM	\$1,135.49	\$28,750.61
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	8.44 GM	\$494.16	\$4,170.71
711-11-111	THERMOPLASTIC, STD, WHITE, SOLID, 6"	8.44 NM	\$3,572.91	\$30,155.36
711-11-131	THERMOPLASTIC, STD, WHITE, SKIP, 6"	4.22 GM	\$1,270.27	\$5,360.54
Roadway Component Total				\$3,658,823.65

SHOULDER COMPONENT

Pay Items				
Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
104-15	SOIL TRACKING PREVENTION DEVICE	8.00 EA	\$3,462.50	\$27,700.00
104-16	ROCK BAG	1,780.00 EA	\$6.40	\$11,392.00
522-1	SIDEWALK CONC, 4" THICK	6,194.87 SY	\$45.00	\$278,769.15
522-2	SIDEWALK CONC, 6" THICK	1,745.00 SY	\$55.20	\$96,324.00
527-1	DETECTABLE WARNING ON WALK SURF, RETRO	6.00 EA	\$668.00	\$4,008.00
104-13-1	STAKED SILT FENCE, TYPE III	19,504.32 LF	\$1.15	\$22,429.97
400-1-11	CONC CLASS I, RETAINING WALLS	2,450.00 CY	\$700.00	\$1,715,000.00
515-1-2	PIPE HANDRAIL - GUIDERAIL, ALUMINUM	342.00 LF	\$47.08	\$16,101.36
515-2-202	PED/BICYCLE RAILING,STL,54"PICKET RAIL	8,800.00 LF	\$65.00	\$572,000.00
520-1-10	CONCRETE CURB & GUTTER, TYPE F	19,504.32 LF	\$20.00	\$390,086.40
570-1-2	PERFORMANCE TURF, SOD	13,019.20 SY	\$3.00	\$39,057.60
Shoulder Component Total				\$3,172,868.48

MEDIAN COMPONENT

Pay Items				
Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
520-70	CONCRETE TRAFFIC SEPARATOR, SP-VAR WIDT	837.00 SY	\$66.53	\$55,685.61
520-1-7	CONCRETE CURB & GUTTER, TYPE E	19,504.32 LF	\$20.00	\$390,086.40
520-5-41	TRAF SEP CONC-TYPE IV, 4' WIDE	4,798.00 LF	\$36.68	\$175,990.64
570-1-2	PERFORMANCE TURF, SOD	18,962.53 SY	\$3.00	\$56,887.59
Median Component Total				\$678,650.24

DRAINAGE COMPONENT

Pay Items				
Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
120-1	REGULAR EXCAVATION	26,785.00 CY	\$6.50	\$174,102.50
120-6	EMBANKMENT	753.00 CY	\$10.00	\$7,530.00
575-1	SODDING	7,271.00 SY	\$3.00	\$21,813.00
110-1-1	CLEARING & GRUBBING	6.00 AC	\$20,000.00	\$120,000.00
400-2-2	CONC CLASS II, ENDWALLS	48.00 CY	\$950.00	\$45,600.00
425-1-311	INLETS, CURB, TYPE P-1, <10'	2.00 EA	\$4,226.18	\$8,452.36
425-1-321	INLETS, CURB, TYPE P-2, <10'	1.00 EA	\$4,424.83	\$4,424.83
425-1-351	INLETS, CURB, TYPE P-5, <10'	42.00 EA	\$4,217.71	\$177,143.82
425-1-361	INLETS, CURB, TYPE P-6, <10'	14.00 EA	\$3,923.80	\$54,933.20
425-1-411	INLETS, CURB TYPE J-1, <10'	4.00 EA	\$4,629.10	\$18,516.40
425-1-421	INLETS, CURB, TYPE J-2, <10'	3.00 EA	\$5,256.46	\$15,769.38
425-1-461	INLETS, CURB, TYPE J-6, <10'	5.00 EA	\$6,087.47	\$30,437.35
425-1-471	INLETS, CURB, TYPE 7, <10'	7.00 EA	\$4,214.32	\$29,500.24
425-1-473	INLETS, CURB, TYPE 7, J BOT , <10'	1.00 EA	\$5,629.45	\$5,629.45
425-1-541	INLETS, DT BOT, TYPE D, <10'	2.00 EA	\$3,490.49	\$6,980.98
425-2-41	MANHOLES, P-7, <10'	35.00 EA	\$3,423.12	\$119,809.20
425-2-71	MANHOLES, J-7, <10'	13.00 EA	\$5,427.90	\$70,562.70
430-171-101	PIPE CULV OPT MATL, ROUND, 0-24", SS	56.00 LF	\$108.15	\$6,056.40

430-171-103	PIPE CULV OPT MATL, ROUND, 37-48", SS	208.00 LF	\$118.97	\$24,745.76
430-171-104	PIPE CULV OPT MATL, ROUND, 49-60", SS	664.00 LF	\$181.57	\$120,562.48
430-174-101	PIPE CULV, OPT MATL, ROUND,0-24"SD	5,848.00 LF	\$74.56	\$436,026.88
430-174-102	PIPE CULV, OPT MATL, ROUND,25-36"SD	4,176.00 LF	\$77.49	\$323,598.24
430-174-103	PIPE CULV, OPT MATL, ROUND,37-48"SD	2,016.00 LF	\$130.80	\$263,692.80
430-174-104	PIPE CULV, OPT MATL, ROUND,49-60"SD	632.00 LF	\$206.32	\$130,394.24
430-174-203	PIPE CULV, OPT MATL, OTHER, 37-48"SD	288.00 LF	\$158.36	\$45,607.68
430-610-125	U-ENDWALL,STD 261,1:4 SLP, 18"	19.00 EA	\$2,040.00	\$38,760.00
430-982-140	MITERED END SECT, OPTIONAL RD, 42" CD	1.00 EA	\$3,030.34	\$3,030.34
550-10-220	FENCING, TYPE B, 5.1-6.0, STANDARD	2,795.00 LF	\$11.67	\$32,617.65
550-60-234	FENCE GATE,TYP B,SLIDE/CANT,18.1-20'OPEN	2.00 EA	\$2,761.10	\$5,522.20
570-1-2	PERFORMANCE TURF, SOD	561.00 SY	\$3.00	\$1,683.00
Drainage Component Total				\$2,343,503.08

SIGNING COMPONENT

Pay Items				
Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
700-20-11	SINGLE POST SIGN, F&I, LESS THAN 12 SF	54.00 AS	\$279.28	\$15,081.12
700-20-12	SINGLE POST SIGN, F&I, 12-20 SF	18.00 AS	\$488.52	\$8,793.36
700-20-40	SINGLE POST SIGN, RELOCATE	1.00 AS	\$99.82	\$99.82
700-20-60	SINGLE POST SIGN, REMOVE	13.00 AS	\$29.45	\$382.85
705-11-1	DELINEATOR, FLEXIBLE TUBULAR	31.00 EA	\$74.76	\$2,317.56
Signing Component Total				\$26,674.71

SIGNALIZATIONS COMPONENT

Pay Items				
Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
653-191	PEDESTRIAN SIGNAL, F&I, LED-COUNT DWN, 1	2.00 AS	\$810.00	\$1,620.00
653-192	PEDESTRIAN SIGNAL, F&I, LED-COUNT DWN, 2	4.00 AS	\$1,250.60	\$5,002.40
653-400	PEDESTRIAN SIGNAL, RELOCATE	1.00 AS	\$257.98	\$257.98
659-101	SGNL HEAD AUXIL, F&I, BACK PLT 3 SECT	6.00 EA	\$100.75	\$604.50
659-109	SGNL HEAD AUXIL, F&I, CONC PED TYP II	6.00 EA	\$859.39	\$5,156.34
659-118	SGNL HEAD AUX,F&I, BACK PLT 5 SECT CLU	2.00 EA	\$180.93	\$361.86
665-11	PED DET, F&I, DET STA POLE OR CAB MTD	10.00 EA	\$197.74	\$1,977.40
690-10	SIGNAL HEAD TRAFFIC ASSEMBLY REMOVAL	8.00 EA	\$65.38	\$523.04
690-80	SPAN WIRE ASSEMBLY REMOVE	2.00 EA	\$377.06	\$754.12
690-90	CONDUIT & CABLING REMOVE	1.00 PI	\$365.78	\$365.78
690-100	SIGNAL EQUIPMENT MISCELLANOUS	1.00 PI	\$663.40	\$663.40

	REMOVE			
630-1-12	CONDUIT-SIGNALS, F& I, UNDERGROUND	545.00 LF	\$7.00	\$3,815.00
630-1-14	CONDUIT-SIGNALS,F& I, UG JACKED	436.00 LF	\$19.83	\$8,645.88
632-7-1	CABLE, SIGNAL, FURNISH & INSTALL	2.00 PI	\$2,638.64	\$5,277.28
634-4-114	SPAN WIRE ASSEMBLY, F&I, 2 WIRE, OTHER	1.00 PI	\$2,802.35	\$2,802.35
635-1-11	PULL & JUNCTION BOXES, F&I, PULL BOX	13.00 EA	\$400.00	\$5,200.00
641-2-17	PREST CNC POLE,F&I,TYP P-VII	1.00 EA	\$8,320.63	\$8,320.63
650-51-311	TRAFFIC SIGNAL, F&I, 3 SECT, 1 WAY, STD	6.00 AS	\$991.68	\$5,950.08
650-51-511	TRAFFIC SIGNAL, F&I, 5 SECT, 1 WAY, STD	2.00 AS	\$1,612.65	\$3,225.30
660-2-106	LOOP ASSEMBLY, F&I, TYPE F	9.00 AS	\$1,023.38	\$9,210.42
663-74-11	VEH DETECTOR ASSEM, F&I, OPTICAL TYPE	1.00 EA	\$3,170.00	\$3,170.00
671-2-41	TRAFFIC CONTROLLER, MODIFY, NEMA	2.00 EA	\$923.30	\$1,846.60
678-1-104	CNTRL ACCESS, F&I, LOAD SWITCH	6.00 EA	\$83.00	\$498.00
690-33-1	POLE REMOVAL, DEEP DIRECT BURIAL	20.00 LF	\$120.85	\$2,417.00
699-1-21	INTERNAL ILLUM SIGN, INSTALL, ST NAME	2.00 EA	\$842.00	\$1,684.00
700-48-19	SIGN PANELS, F & I, 16 - 100	1.00 EA	\$1,389.16	\$1,389.16
	Signalizations Component Total			\$80,738.52

RETAINING WALLS COMPONENT
Pay Items

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
400-2-11	CONC CLASS II, RETAINING WALLS	238.80 CY	\$1,432.18	\$342,004.58
415-1-3	REINF STEEL- RETAINING WALL	1,795.00 LB	\$1.00	\$1,795.00
	Retaining Walls Component Total			\$343,799.58

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FDOT Long Range Estimating System - Production**R4: Project Details Composite Report
By Component****Project:** 409870-1-52-XX**Letting Date:** 01/2099**Description:** SR 44 (CR 44B) FROM SR 500 US 441 TO SR 44**District:** 05 **County:** 11 LAKE**Project Manager:** DRZ-BOYLE**Version 6 Project Grand Total****\$17,611,035.11****Description:** Shared Use Path Typical Section Evaluation Alternative 6: 4-lane divided, 11-ft travel lanes, 22-ft raised median, no bicycle lanes, 5-ft sidewalk with 2-ft utility strip, 12-ft shared use path.

Project Sequences Subtotal**\$11,042,551.85**

102-1	MAINTENANCE OF TRAFFIC	15.00	\$1,656,382.78
101-1	MOBILIZATION	10.00	\$1,269,893.46

Project Sequences Total**\$13,968,828.09****Project Unknowns**

25.00%

\$3,492,207.02

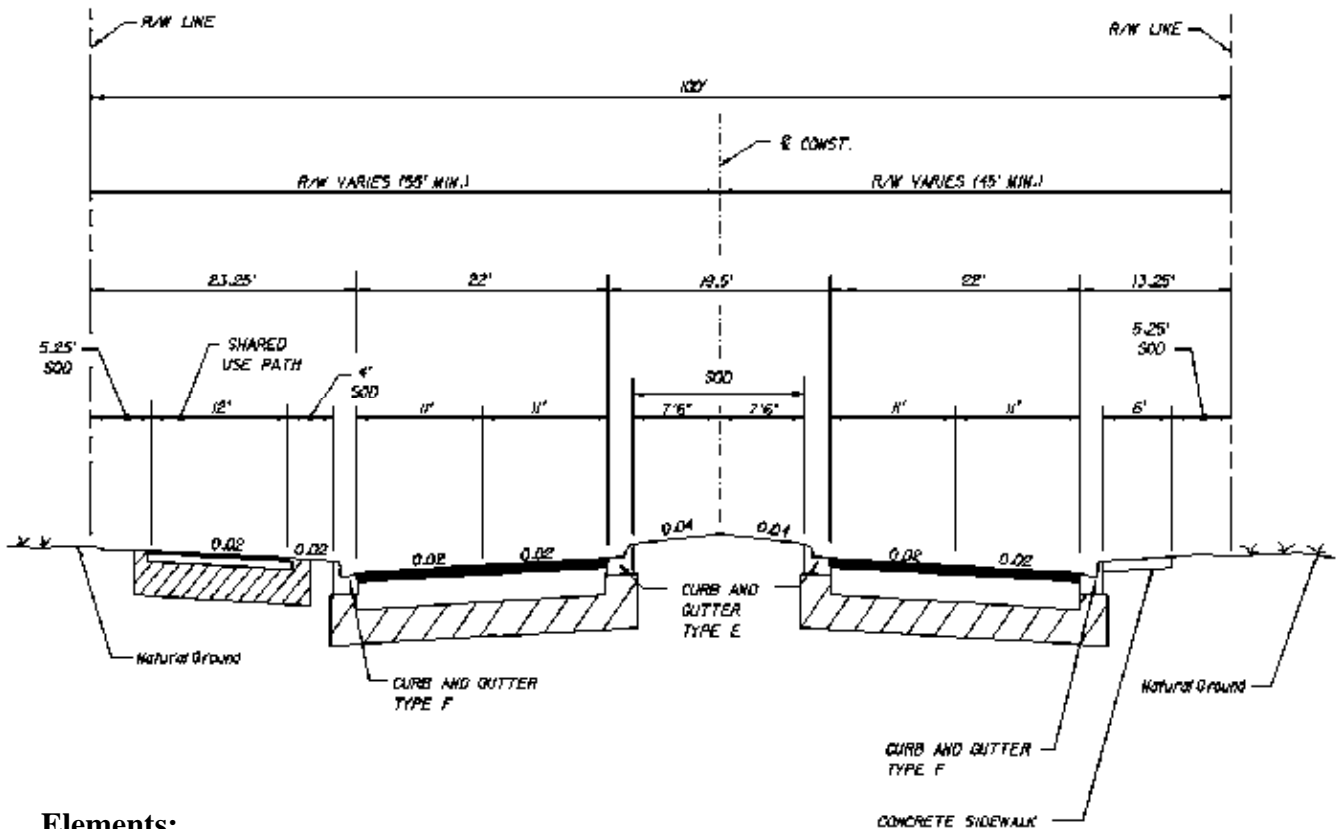
Non-Bid Components:

Pay item Description	Quantity	Unit	Unit Price	Extended Amount
999-25 INITIAL CONTINGENCY AMOUNT (DO NOT BID)	1.00	LS	\$150,000.00	\$150,000.00
Project Non-Bid Subtotal				\$150,000.00

Version 6 Project Grand Total**\$17,611,035.11**

Alternative Typical Section # 7

4-Lane Divided / No Roadway Bicycle Lanes / Min. Median /
Min. Lanes / Full Multi-Use Path / Sidewalk against Curb and Gutter



Elements:

- 11-ft Travel Lanes
- 19.5-ft Median
- 12-ft Shared-Use Path
- 6-ft Sidewalk against Curb and Gutter
- Gravity / Retaining Walls only in locations currently required with approved Typical

Alternative Typical Section # 7 Evaluation Table		
	Pros	Cons
Criteria	Standard Multi-Use Path.	Min. Median Width, Min. Lane Widths, No Bicycle Lanes, Sidewalk against Curb and Gutter. Design Variation required for lack of Bicycle Lanes.
Safety		No Bicycle Lanes. U-turning movement is not possible without special treatment.
Operation	Level Of Service same as approved Typical and improved from existing 2-lane roadway.	Inability to make U-Turns.
Construction		Will require additional pavement and gravity / retaining walls to accommodate U-Turning movement. Cannot construct gravity / retaining walls from within existing R/W.
Maintenance		Cannot maintain gravity / retaining walls from within existing R/W.
Utility Accommodation	Utilities accommodated.	
Right-of-Way / Easements		This alternative will require either additional R/W or permanent easements at select locations of the roadway to accommodate construction, maintenance, and drainage for the U-turning movements.
Cost	<u>Construction:</u> \$498,207.28 (2.9%) decrease in cost as compared to Approved Typical Section.	<u>Construction:</u> \$??? (???) to accommodate U-turning movement at all openings by introducing additional pavement and retaining walls at all median openings. <u>R/W or Easements:</u> Undetermined. <u>Utility Relocations:</u> Undetermined.
Other		

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FDOT Long Range Estimating System - Production**R4: Project Details Composite Report
By Component****Project:** 409870-1-52-XX**Letting Date:** 01/2099**Description:** SR 44 (CR 44B) FROM SR 500 US 441 TO SR 44**District:** 05 **County:** 11 LAKE**Project Manager:** DRZ-BOYLE**Version 9 Project Grand Total****\$16,466,574.00****Description:** Shared Use Path Typical Section Evaluation Alternative 7: 4-lane divided, 11-ft travel lanes, 19.5-ft raised median, no bicycle lanes, 6-ft sidewalk at back of curb, 12-ft shared use path.**EARTHWORK COMPONENT****Pay Items**

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
120-1	REGULAR EXCAVATION	24,393.31 CY	\$6.50	\$158,556.52
120-6	EMBANKMENT	13,198.35 CY	\$10.00	\$131,983.50
110-1-1	CLEARING & GRUBBING	22.63 AC	\$20,000.00	\$452,600.00
Earthwork Component Total				\$743,140.02

ROADWAY COMPONENT**Pay Items**

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
160-4	TYPE B STABILIZATION	113,186.35 SY	\$5.00	\$565,931.75
285-701	OPTIONAL BASE,BASE GROUP 01	15,262.90 SY	\$8.48	\$129,429.39
285-709	OPTIONAL BASE,BASE GROUP 09	59,596.54 SY	\$16.00	\$953,544.64
519-78	BOLLARDS	18.00 EA	\$456.71	\$8,220.78
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	855.00 EA	\$5.25	\$4,488.75
327-70-6	MILLING EXIST ASPH PAVT,1 1/2" AVG DEPTH	16,061.99 SY	\$3.00	\$48,185.97
334-1-11	SUPERPAVE ASPHALTIC CONC, TRAFFIC A	816.99 TN	\$121.25	\$99,060.04
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	9,833.42 TN	\$105.00	\$1,032,509.10
337-7-33	ASPH CONC FC,TRAFFIC C,FC- 12.5,RUBBER	6,241.80 TN	\$120.00	\$749,016.00
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	25.32 NM	\$1,135.49	\$28,750.61
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	8.44 GM	\$494.16	\$4,170.71
711-11-111	THERMOPLASTIC, STD, WHITE, SOLID, 6"	8.44 NM	\$3,572.91	\$30,155.36
711-11-131	THERMOPLASTIC, STD, WHITE, SKIP, 6"	4.22 GM	\$1,270.27	\$5,360.54
Roadway Component Total				\$3,658,823.65

SHOULDER COMPONENT

Pay Items				
Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
104-15	SOIL TRACKING PREVENTION DEVICE	8.00 EA	\$3,462.50	\$27,700.00
104-16	ROCK BAG	1,780.00 EA	\$6.40	\$11,392.00
522-1	SIDEWALK CONC, 4" THICK	7,278.44 SY	\$45.00	\$327,529.80
522-2	SIDEWALK CONC, 6" THICK	1,745.00 SY	\$55.20	\$96,324.00
527-1	DETECTABLE WARNING ON WALK SURF, RETRO	6.00 EA	\$668.00	\$4,008.00
104-13-1	STAKED SILT FENCE, TYPE III	19,504.32 LF	\$1.15	\$22,429.97
400-1-11	CONC CLASS I, RETAINING WALLS	1,828.00 CY	\$700.00	\$1,279,600.00
515-1-2	PIPE HANDRAIL - GUIDERAIL, ALUMINUM	342.00 LF	\$47.08	\$16,101.36
515-2-202	PED/BICYCLE RAILING,STL,54"PICKET RAIL	3,489.00 LF	\$65.00	\$226,785.00
520-1-10	CONCRETE CURB & GUTTER, TYPE F	19,504.32 LF	\$20.00	\$390,086.40
570-1-2	PERFORMANCE TURF, SOD	16,540.81 SY	\$3.00	\$49,622.43
Shoulder Component Total				\$2,451,578.96

MEDIAN COMPONENT

Pay Items				
Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
520-70	CONCRETE TRAFFIC SEPARATOR, SP-VAR WIDT	837.00 SY	\$66.53	\$55,685.61
520-1-7	CONCRETE CURB & GUTTER, TYPE E	19,504.32 LF	\$20.00	\$390,086.40
520-5-41	TRAF SEP CONC-TYPE IV, 4' WIDE	4,798.00 LF	\$36.68	\$175,990.64
570-1-2	PERFORMANCE TURF, SOD	16,253.60 SY	\$3.00	\$48,760.80
Median Component Total				\$670,523.45

DRAINAGE COMPONENT

Pay Items				
Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
120-1	REGULAR EXCAVATION	26,785.00 CY	\$6.50	\$174,102.50
120-6	EMBANKMENT	753.00 CY	\$10.00	\$7,530.00
575-1	SODDING	7,271.00 SY	\$3.00	\$21,813.00
110-1-1	CLEARING & GRUBBING	6.00 AC	\$20,000.00	\$120,000.00
400-2-2	CONC CLASS II, ENDWALLS	48.00 CY	\$950.00	\$45,600.00
425-1-311	INLETS, CURB, TYPE P-1, <10'	2.00 EA	\$4,226.18	\$8,452.36
425-1-321	INLETS, CURB, TYPE P-2, <10'	1.00 EA	\$4,424.83	\$4,424.83
425-1-351	INLETS, CURB, TYPE P-5, <10'	42.00 EA	\$4,217.71	\$177,143.82
425-1-361	INLETS, CURB, TYPE P-6, <10'	14.00 EA	\$3,923.80	\$54,933.20
425-1-411	INLETS, CURB TYPE J-1, <10'	4.00 EA	\$4,629.10	\$18,516.40
425-1-421	INLETS, CURB, TYPE J-2, <10'	3.00 EA	\$5,256.46	\$15,769.38
425-1-461	INLETS, CURB, TYPE J-6, <10'	5.00 EA	\$6,087.47	\$30,437.35
425-1-471	INLETS, CURB, TYPE 7, <10'	7.00 EA	\$4,214.32	\$29,500.24
425-1-473	INLETS, CURB, TYPE 7, J BOT , <10'	1.00 EA	\$5,629.45	\$5,629.45
425-1-541	INLETS, DT BOT, TYPE D, <10'	2.00 EA	\$3,490.49	\$6,980.98
425-2-41	MANHOLES, P-7, <10'	35.00 EA	\$3,423.12	\$119,809.20
425-2-71	MANHOLES, J-7, <10'	13.00 EA	\$5,427.90	\$70,562.70
430-171-101	PIPE CULV OPT MATL, ROUND, 0-24", SS	56.00 LF	\$108.15	\$6,056.40

430-171-103	PIPE CULV OPT MATL, ROUND, 37-48", SS	208.00 LF	\$118.97	\$24,745.76
430-171-104	PIPE CULV OPT MATL, ROUND, 49-60", SS	664.00 LF	\$181.57	\$120,562.48
430-174-101	PIPE CULV, OPT MATL, ROUND,0-24"SD	5,848.00 LF	\$74.56	\$436,026.88
430-174-102	PIPE CULV, OPT MATL, ROUND,25-36"SD	4,176.00 LF	\$77.49	\$323,598.24
430-174-103	PIPE CULV, OPT MATL, ROUND,37-48"SD	2,016.00 LF	\$130.80	\$263,692.80
430-174-104	PIPE CULV, OPT MATL, ROUND,49-60"SD	632.00 LF	\$206.32	\$130,394.24
430-174-203	PIPE CULV, OPT MATL, OTHER, 37-48"SD	288.00 LF	\$158.36	\$45,607.68
430-610-125	U-ENDWALL,STD 261,1:4 SLP, 18"	19.00 EA	\$2,040.00	\$38,760.00
430-982-140	MITERED END SECT, OPTIONAL RD, 42" CD	1.00 EA	\$3,030.34	\$3,030.34
550-10-220	FENCING, TYPE B, 5.1-6.0, STANDARD	2,795.00 LF	\$11.67	\$32,617.65
550-60-234	FENCE GATE,TYP B,SLIDE/CANT,18.1-20'OPEN	2.00 EA	\$2,761.10	\$5,522.20
570-1-2	PERFORMANCE TURF, SOD	561.00 SY	\$3.00	\$1,683.00
Drainage Component Total				\$2,343,503.08

SIGNING COMPONENT

Pay Items				
Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
700-20-11	SINGLE POST SIGN, F&I, LESS THAN 12 SF	54.00 AS	\$279.28	\$15,081.12
700-20-12	SINGLE POST SIGN, F&I, 12-20 SF	18.00 AS	\$488.52	\$8,793.36
700-20-40	SINGLE POST SIGN, RELOCATE	1.00 AS	\$99.82	\$99.82
700-20-60	SINGLE POST SIGN, REMOVE	13.00 AS	\$29.45	\$382.85
705-11-1	DELINEATOR, FLEXIBLE TUBULAR	31.00 EA	\$74.76	\$2,317.56
Signing Component Total				\$26,674.71

SIGNALIZATIONS COMPONENT

Pay Items				
Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
653-191	PEDESTRIAN SIGNAL, F&I, LED-COUNT DWN, 1	2.00 AS	\$810.00	\$1,620.00
653-192	PEDESTRIAN SIGNAL, F&I, LED-COUNT DWN, 2	4.00 AS	\$1,250.60	\$5,002.40
653-400	PEDESTRIAN SIGNAL, RELOCATE	1.00 AS	\$257.98	\$257.98
659-101	SGNL HEAD AUXIL, F&I, BACK PLT 3 SECT	6.00 EA	\$100.75	\$604.50
659-109	SGNL HEAD AUXIL, F&I, CONC PED TYP II	6.00 EA	\$859.39	\$5,156.34
659-118	SGNL HEAD AUX,F&I, BACK PLT 5 SECT CLU	2.00 EA	\$180.93	\$361.86
665-11	PED DET, F&I, DET STA POLE OR CAB MTD	10.00 EA	\$197.74	\$1,977.40
690-10	SIGNAL HEAD TRAFFIC ASSEMBLY REMOVAL	8.00 EA	\$65.38	\$523.04
690-80	SPAN WIRE ASSEMBLY REMOVE	2.00 EA	\$377.06	\$754.12
690-90	CONDUIT & CABLING REMOVE	1.00 PI	\$365.78	\$365.78
690-100	SIGNAL EQUIPMENT MISCELLANOUS	1.00 PI	\$663.40	\$663.40

	REMOVE			
630-1-12	CONDUIT-SIGNALS, F& I, UNDERGROUND	545.00 LF	\$7.00	\$3,815.00
630-1-14	CONDUIT-SIGNALS,F& I, UG JACKED	436.00 LF	\$19.83	\$8,645.88
632-7-1	CABLE, SIGNAL, FURNISH & INSTALL	2.00 PI	\$2,638.64	\$5,277.28
634-4-114	SPAN WIRE ASSEMBLY, F&I, 2 WIRE, OTHER	1.00 PI	\$2,802.35	\$2,802.35
635-1-11	PULL & JUNCTION BOXES, F&I, PULL BOX	13.00 EA	\$400.00	\$5,200.00
641-2-17	PREST CNC POLE,F&I,TYP P-VII	1.00 EA	\$8,320.63	\$8,320.63
650-51-311	TRAFFIC SIGNAL, F&I, 3 SECT, 1 WAY, STD	6.00 AS	\$991.68	\$5,950.08
650-51-511	TRAFFIC SIGNAL, F&I, 5 SECT, 1 WAY, STD	2.00 AS	\$1,612.65	\$3,225.30
660-2-106	LOOP ASSEMBLY, F&I, TYPE F	9.00 AS	\$1,023.38	\$9,210.42
663-74-11	VEH DETECTOR ASSEM, F&I, OPTICAL TYPE	1.00 EA	\$3,170.00	\$3,170.00
671-2-41	TRAFFIC CONTROLLER, MODIFY, NEMA	2.00 EA	\$923.30	\$1,846.60
678-1-104	CNTRL ACCESS, F&I, LOAD SWITCH	6.00 EA	\$83.00	\$498.00
690-33-1	POLE REMOVAL, DEEP DIRECT BURIAL	20.00 LF	\$120.85	\$2,417.00
699-1-21	INTERNAL ILLUM SIGN, INSTALL, ST NAME	2.00 EA	\$842.00	\$1,684.00
700-48-19	SIGN PANELS, F & I, 16 - 100	1.00 EA	\$1,389.16	\$1,389.16
	Signalizations Component Total			\$80,738.52

RETAINING WALLS COMPONENT
Pay Items

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
400-2-11	CONC CLASS II, RETAINING WALLS	238.80 CY	\$1,432.18	\$342,004.58
415-1-3	REINF STEEL- RETAINING WALL	1,795.00 LB	\$1.00	\$1,795.00
	Retaining Walls Component Total			\$343,799.58

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FDOT Long Range Estimating System - Production

R4: Project Details Composite Report By Component

Project: 409870-1-52-XX

Letting Date: 01/2099

Description: SR 44 (CR 44B) FROM SR 500 US 441 TO SR 44

District: 05 **County:** 11 LAKE

Project Manager: DRZ-BOYLE

Version 9 Project Grand Total **\$16,466,574.00**

Description: Shared Use Path Typical Section Evaluation Alternative 7: 4-lane divided, 11-ft travel lanes, 19.5-ft raised median, no bicycle lanes, 6-ft sidewalk at back of curb, 12-ft shared use path.

Project Sequences Subtotal **\$10,318,781.97**

102-1	MAINTENANCE OF TRAFFIC	15.00	\$1,547,817.30
101-1	MOBILIZATION	10.00	\$1,186,659.93

Project Sequences Total **\$13,053,259.20**

Project Unknowns 25.00% **\$3,263,314.80**

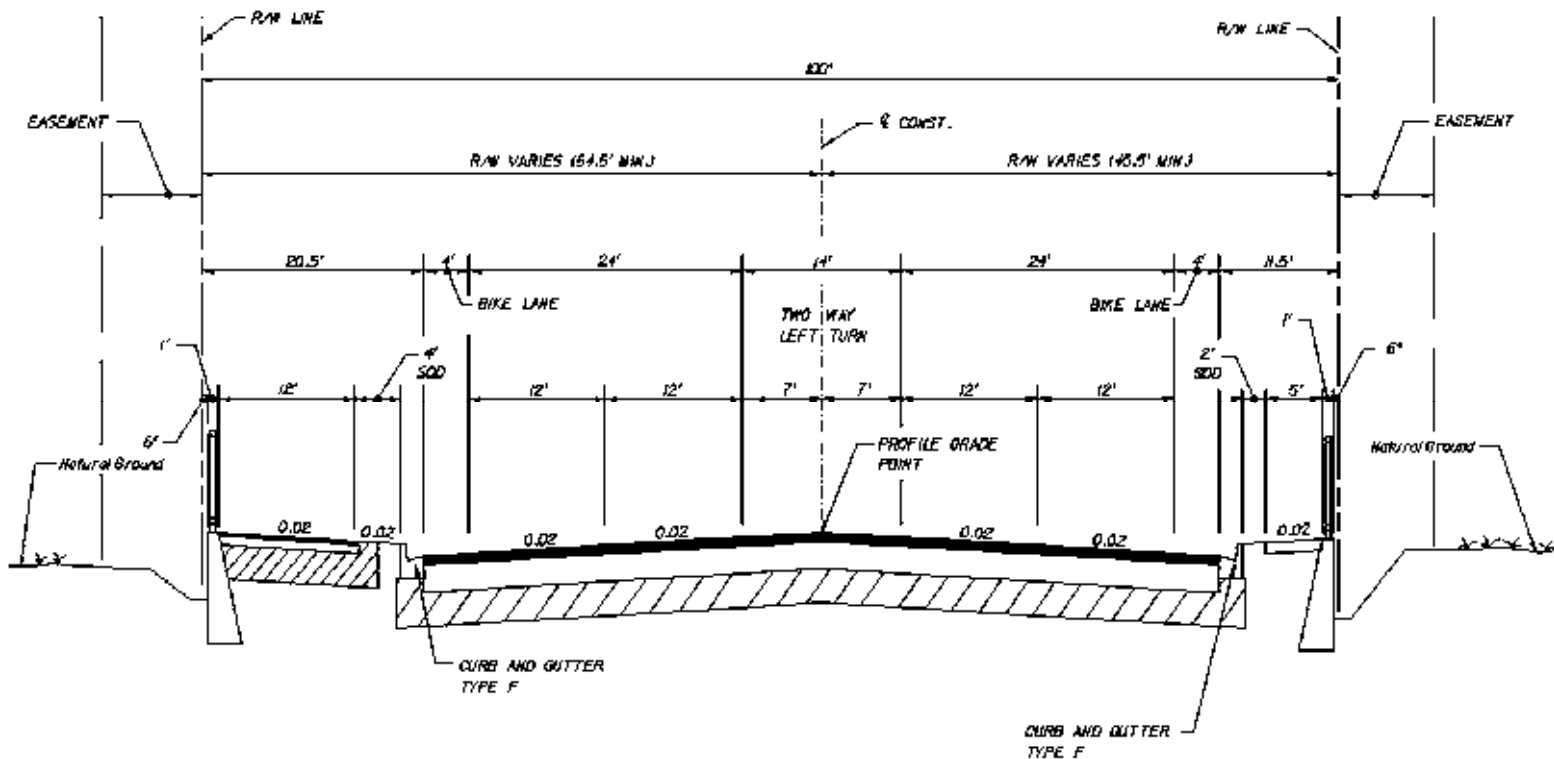
Non-Bid Components:

Pay item Description	Quantity	Unit	Unit Price	Extended Amount
999-25 INITIAL CONTINGENCY AMOUNT (DO NOT BID)	1.00	LS	\$150,000.00	\$150,000.00
Project Non-Bid Subtotal				\$150,000.00

Version 9 Project Grand Total **\$16,466,574.00**

Alternative Typical Section # 8

5-Lane Undivided / 4-ft Bicycle Lanes / 14-ft Two-Way Left-Turn Lane / Standard Lanes / Full Multi-Use Path / Sidewalk with Utility Strip



- 12-ft Travel Lanes
- 14-ft Two-Way Left-Turn Lane
- 12-ft Shared-Use Path
- 5-ft Sidewalk with 2-ft Utility Strip
- Gravity / Retaining Walls on both sides for majority of project length
- Construction / Maintenance Easements on both sides for majority of project length

Sub-Alternative 8.1: Reduce Travel Lanes to 11-ft, Two-Way Left Turn to 12-ft, and replace sidewalk with 6-ft against curb to reduce length of Gravity / Retaining Walls.

Alternative Typical Section # 8 Evaluation Table		
	Pros	Cons
Criteria	Standard Lane Widths, Standard Two-Way Left-Turn Lane, Standard Bicycle Lanes, Standard Multi-Use Path, Sidewalk with Utility Strip.	
Safety	Full Bicycle Lane width.	Access Management not met.
Operation	Level Of Service same as approved Typical and improved from existing 2-lane roadway.	Lack of Access Control.
Construction		Cannot construct gravity / retaining walls from within existing R/W. Additional Driveway Connections.
Maintenance		Cannot maintain gravity / retaining walls from within existing R/W.
Drainage		No space to accommodate offsite drainage.
Utility Accommodation		No space for above-ground utilities. Above-ground utilities cannot be placed between multi-use path or sidewalk and curb and gutter.
Right-of-Way / Easements		This alternative will require either additional R/W or permanent easements along both sides of the roadway to accommodate construction, maintenance, and drainage.
Cost		<u>Construction:</u> \$3,204,561.24 (18.9%) cost increase compared to Approved Typical Section. <u>R/W or Easements:</u> Undetermined. <u>Utility Relocations:</u> Undetermined.
Other		Walls and picket style handrails are aesthetic concerns.

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FDOT Long Range Estimating System - Production**R4: Project Details Composite Report
By Component****Project:** 409870-1-52-XX**Letting Date:** 01/2099**Description:** SR 44 (CR 44B) FROM SR 500 US 441 TO SR 44**District:** 05 **County:** 11 LAKE**Project Manager:** DRZ-BOYLE**Version 10 Project Grand Total****\$20,169,342.52****Description:** Shared Use Path Typical Section Evaluation Alternative 8: 5-lane undivided, 12-ft travel lanes, 14-ft two-way left-turn center lane, 4-ft bicycle lanes, 5-ft sidewalk with 2-ft utility strip, 12-ft shared use path.**EARTHWORK COMPONENT****Pay Items**

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
120-1	REGULAR EXCAVATION	33,604.01 CY	\$6.50	\$218,426.07
120-6	EMBANKMENT	12,035.88 CY	\$10.00	\$120,358.80
110-1-1	CLEARING & GRUBBING	22.63 AC	\$20,000.00	\$452,600.00
Earthwork Component Total				\$791,384.87

ROADWAY COMPONENT**Pay Items**

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
160-4	TYPE B STABILIZATION	108,511.98 SY	\$5.00	\$542,559.90
285-701	OPTIONAL BASE,BASE GROUP 01	15,262.90 SY	\$8.48	\$129,429.39
285-709	OPTIONAL BASE,BASE GROUP 09	87,227.65 SY	\$16.00	\$1,395,642.40
519-78	BOLLARDS	18.00 EA	\$456.71	\$8,220.78
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	1,603.00 EA	\$5.25	\$8,415.75
327-70-6	MILLING EXIST ASPH PAVT,1 1/2" AVG DEPTH	16,061.99 SY	\$3.00	\$48,185.97
334-1-11	SUPERPAVE ASPHALTIC CONC, TRAFFIC A	816.99 TN	\$121.25	\$99,060.04
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	14,392.56 TN	\$105.00	\$1,511,218.80
337-7-33	ASPH CONC FC,TRAFFIC C,FC-12.5,RUBBER	8,521.38 TN	\$120.00	\$1,022,565.60
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	13.71 NM	\$1,135.49	\$15,567.57
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	15.83 GM	\$494.16	\$7,822.55
711-11-111	THERMOPLASTIC, STD, WHITE, SOLID, 6"	4.74 NM	\$3,572.91	\$16,935.60
711-11-131	THERMOPLASTIC, STD, WHITE, SKIP, 6"	7.92 GM	\$1,270.27	\$10,060.54
Roadway Component Total				\$4,815,684.89

SHOULDER COMPONENT

Pay Items				
Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
104-15	SOIL TRACKING PREVENTION DEVICE	8.00 EA	\$3,462.50	\$27,700.00
104-16	ROCK BAG	1,780.00 EA	\$6.40	\$11,392.00
522-1	SIDEWALK CONC, 4" THICK	6,194.87 SY	\$45.00	\$278,769.15
522-2	SIDEWALK CONC, 6" THICK	1,745.00 SY	\$55.20	\$96,324.00
527-1	DETECTABLE WARNING ON WALK SURF, RETRO	6.00 EA	\$668.00	\$4,008.00
104-13-1	STAKED SILT FENCE, TYPE III	19,504.32 LF	\$1.15	\$22,429.97
400-1-11	CONC CLASS I, RETAINING WALLS	3,073.00 CY	\$700.00	\$2,151,100.00
515-1-2	PIPE HANDRAIL - GUIDERAIL, ALUMINUM	342.00 LF	\$47.08	\$16,101.36
515-2-202	PED/BICYCLE RAILING,STL,54"PICKET RAIL	18,304.00 LF	\$65.00	\$1,189,760.00
520-1-10	CONCRETE CURB & GUTTER, TYPE F	19,504.32 LF	\$20.00	\$390,086.40
570-1-1	PERFORMANCE TURF	6,501.44 SY	\$2.20	\$14,303.17
570-1-2	PERFORMANCE TURF, SOD	829.00 SY	\$3.00	\$2,487.00
Shoulder Component Total				\$4,204,461.05

DRAINAGE COMPONENT

Pay Items				
Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
120-1	REGULAR EXCAVATION	26,785.00 CY	\$6.50	\$174,102.50
120-6	EMBANKMENT	753.00 CY	\$10.00	\$7,530.00
110-1-1	CLEARING & GRUBBING	6.00 AC	\$20,000.00	\$120,000.00
400-2-2	CONC CLASS II, ENDWALLS	48.00 CY	\$950.00	\$45,600.00
425-1-311	INLETS, CURB, TYPE P-1, <10'	2.00 EA	\$4,226.18	\$8,452.36
425-1-321	INLETS, CURB, TYPE P-2, <10'	1.00 EA	\$4,424.83	\$4,424.83
425-1-351	INLETS, CURB, TYPE P-5, <10'	42.00 EA	\$4,217.71	\$177,143.82
425-1-361	INLETS, CURB, TYPE P-6, <10'	14.00 EA	\$3,923.80	\$54,933.20
425-1-411	INLETS, CURB TYPE J-1, <10'	4.00 EA	\$4,629.10	\$18,516.40
425-1-421	INLETS, CURB, TYPE J-2, <10'	3.00 EA	\$5,256.46	\$15,769.38
425-1-461	INLETS, CURB, TYPE J-6, <10'	5.00 EA	\$6,087.47	\$30,437.35
425-1-471	INLETS, CURB, TYPE 7, <10'	7.00 EA	\$4,214.32	\$29,500.24
425-1-473	INLETS, CURB, TYPE 7, J BOT , <10'	1.00 EA	\$5,629.45	\$5,629.45
425-1-541	INLETS, DT BOT, TYPE D, <10'	2.00 EA	\$3,490.49	\$6,980.98
425-2-41	MANHOLES, P-7, <10'	35.00 EA	\$3,423.12	\$119,809.20
425-2-71	MANHOLES, J-7, <10'	13.00 EA	\$5,427.90	\$70,562.70
430-171-101	PIPE CULV OPT MATL, ROUND, 0-24", SS	56.00 LF	\$108.15	\$6,056.40
430-171-103	PIPE CULV OPT MATL, ROUND, 37-48", SS	208.00 LF	\$118.97	\$24,745.76
430-171-104	PIPE CULV OPT MATL, ROUND, 49-60", SS	864.00 LF	\$181.57	\$156,876.48
430-174-101	PIPE CULV, OPT MATL, ROUND,0-24"SD	5,848.00 LF	\$74.56	\$436,026.88
430-174-102	PIPE CULV, OPT MATL, ROUND,25-36"SD	4,176.00 LF	\$77.49	\$323,598.24
430-174-103	PIPE CULV, OPT MATL, ROUND,37-48"SD	2,016.00 LF	\$130.80	\$263,692.80
430-174-104	PIPE CULV, OPT MATL, ROUND,49-60"SD	632.00 LF	\$206.32	\$130,394.24
430-174-203	PIPE CULV, OPT MATL, OTHER, 37-48"SD	288.00 LF	\$158.36	\$45,607.68
430-610-125	U-ENDWALL,STD 261,1:4 SLP, 18"	19.00 EA	\$2,040.00	\$38,760.00

430-982-140	MITERED END SECT, OPTIONAL RD, 42" CD	1.00 EA	\$3,030.34	\$3,030.34
550-10-220	FENCING, TYPE B, 5.1-6.0, STANDARD	2,795.00 LF	\$11.67	\$32,617.65
550-60-234	FENCE GATE, TYP B, SLIDE/CANT, 18.1- 20' OPEN	2.00 EA	\$2,761.10	\$5,522.20
570-1-1	PERFORMANCE TURF	1,290.00 SY	\$2.20	\$2,838.00
570-1-2	PERFORMANCE TURF, SOD	6,542.00 SY	\$3.00	\$19,626.00

Drainage Component Total

\$2,378,785.08

SIGNING COMPONENT**Pay Items**

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
700-20-11	SINGLE POST SIGN, F&I, LESS THAN 12 SF	54.00 AS	\$279.28	\$15,081.12
700-20-12	SINGLE POST SIGN, F&I, 12-20 SF	18.00 AS	\$488.52	\$8,793.36
700-20-40	SINGLE POST SIGN, RELOCATE	1.00 AS	\$99.82	\$99.82
700-20-60	SINGLE POST SIGN, REMOVE	13.00 AS	\$29.45	\$382.85
705-11-1	DELINEATOR, FLEXIBLE TUBULAR	31.00 EA	\$74.76	\$2,317.56

Signing Component Total

\$26,674.71

SIGNALIZATIONS COMPONENT**Pay Items**

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
653-191	PEDESTRIAN SIGNAL, F&I, LED- COUNT DWN, 1	2.00 AS	\$810.00	\$1,620.00
653-192	PEDESTRIAN SIGNAL, F&I, LED- COUNT DWN, 2	4.00 AS	\$1,250.60	\$5,002.40
653-400	PEDESTRIAN SIGNAL, RELOCATE	1.00 AS	\$257.98	\$257.98
659-101	SGNL HEAD AUXIL, F&I, BACK PLT 3 SECT	6.00 EA	\$100.75	\$604.50
659-109	SGNL HEAD AUXIL, F&I, CONC PED TYP II	6.00 EA	\$859.39	\$5,156.34
659-118	SGNL HEAD AUX, F&I, BACK PLT 5 SECT CLU	2.00 EA	\$180.93	\$361.86
665-11	PED DET, F&I, DET STA POLE OR CAB MTD	10.00 EA	\$197.74	\$1,977.40
690-10	SIGNAL HEAD TRAFFIC ASSEMBLY REMOVAL	8.00 EA	\$65.38	\$523.04
690-80	SPAN WIRE ASSEMBLY REMOVE	2.00 EA	\$377.06	\$754.12
690-90	CONDUIT & CABLING REMOVE	1.00 PI	\$365.78	\$365.78
690-100	SIGNAL EQUIPMENT MISCELLANEOUS REMOVE	1.00 PI	\$663.40	\$663.40
630-1-12	CONDUIT-SIGNALS, F& I, UNDERGROUND	545.00 LF	\$7.00	\$3,815.00
630-1-14	CONDUIT-SIGNALS, F& I, UG JACKED	436.00 LF	\$19.83	\$8,645.88
632-7-1	CABLE, SIGNAL, FURNISH & INSTALL	2.00 PI	\$2,638.64	\$5,277.28
634-4-114	SPAN WIRE ASSEMBLY, F&I, 2 WIRE, OTHER	1.00 PI	\$2,802.35	\$2,802.35
635-1-11	PULL & JUNCTION BOXES, F&I, PULL BOX	13.00 EA	\$400.00	\$5,200.00
641-2-17	PREST CNC POLE, F&I, TYP P-VII	1.00 EA	\$8,320.63	\$8,320.63
650-51-311	TRAFFIC SIGNAL, F&I, 3 SECT, 1 WAY, STD	6.00 AS	\$991.68	\$5,950.08
650-51-511	TRAFFIC SIGNAL, F&I, 5 SECT, 1 WAY, STD	2.00 AS	\$1,612.65	\$3,225.30

660-2-106	LOOP ASSEMBLY, F&I, TYPE F	9.00 AS	\$1,023.38	\$9,210.42
663-74-11	VEH DETECTOR ASSEM, F&I, OPTICAL TYPE	1.00 EA	\$3,170.00	\$3,170.00
670-5-111	TRAF CNTL ASSEM, F&I, NEMA, 1 PREEMPT	1.00 AS	\$18,925.07	\$18,925.07
671-2-41	TRAFFIC CONTROLLER, MODIFY, NEMA	2.00 EA	\$923.30	\$1,846.60
678-1-104	CNTRL ACCESS, F&I, LOAD SWITCH	6.00 EA	\$83.00	\$498.00
690-33-1	POLE REMOVAL, DEEP DIRECT BURIAL	20.00 LF	\$120.85	\$2,417.00
699-1-21	INTERNAL ILLUM SIGN, INSTALL, ST NAME	2.00 EA	\$842.00	\$1,684.00
700-48-19	SIGN PANELS, F & I, 16 - 100	1.00 EA	\$1,389.16	\$1,389.16
Signalizations Component Total				\$99,663.59

RETAINING WALLS COMPONENT
Pay Items

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
400-2-11	CONC CLASS II, RETAINING WALLS	238.80 CY	\$1,432.18	\$342,004.58
415-1-3	REINF STEEL- RETAINING WALL	1,795.00 LB	\$1.00	\$1,795.00
Retaining Walls Component Total				\$343,799.58

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FDOT Long Range Estimating System - Production**R4: Project Details Composite Report****By Component****Project:** 409870-1-52-XX**Letting Date:** 01/2099**Description:** SR 44 (CR 44B) FROM SR 500 US 441 TO SR 44**District:** 05 **County:** 11 LAKE**Project Manager:** DRZ-BOYLE**Version 10 Project Grand Total****\$20,169,342.52****Description:** Shared Use Path Typical Section Evaluation Alternative 8: 5-lane undivided, 12-ft travel lanes, 14-ft two-way left-turn center lane, 4-ft bicycle lanes, 5-ft sidewalk with 2-ft utility strip, 12-ft shared use path.**Project Sequences Subtotal****\$12,660,453.77**

102-1	MAINTENANCE OF TRAFFIC	15.00		\$1,899,068.07
101-1	MOBILIZATION	10.00		\$1,455,952.18

Project Sequences Total**\$16,015,474.02****Project Unknowns**

25.00%

\$4,003,868.50

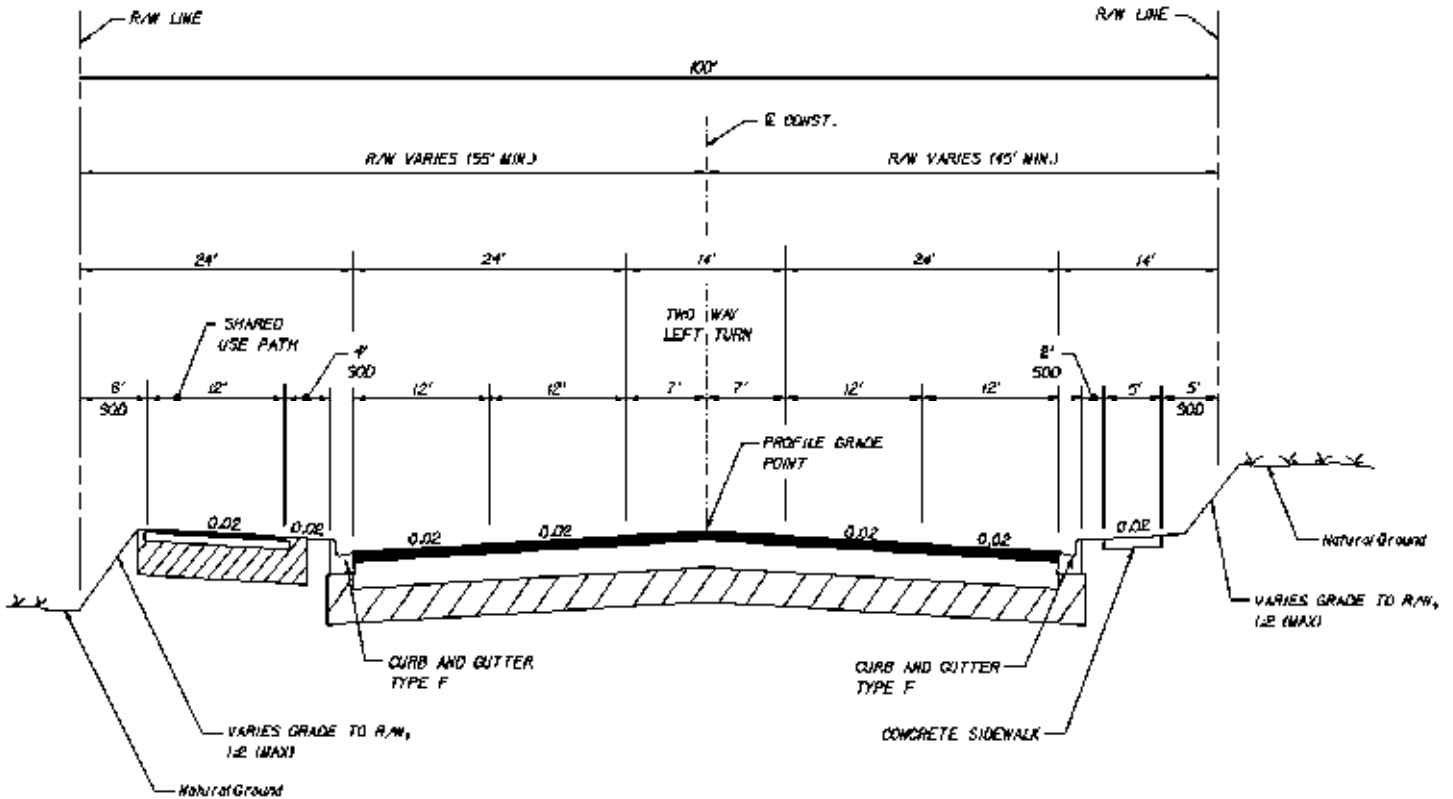
Non-Bid Components:

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
999-25	INITIAL CONTINGENCY AMOUNT (DO NOT BID)	1.00	LS	\$150,000.00	\$150,000.00
Project Non-Bid Subtotal					\$150,000.00

Version 10 Project Grand Total**\$20,169,342.52**

Alternative Typical Section # 9

5-Lane Undivided / No Rdwy Bike Lanes / 14-ft Two-Way Left-Turn Lane
Standard Lanes / Full Multi-Use Path / Sidewalk with Utility Strip



Elements:

- 12-ft Travel Lanes
- 14-ft Two-Way Left-Turn Lane
- 12-ft Shared-Use Path
- 5-ft Sidewalk with 2-ft Utility Strip
- Gravity / Retaining Walls only in locations currently required with approved Typical

Sub-Alternative 9.1: Reduce Travel Lanes to 11-ft, Two-Way Left Turn to 12-ft, and introduce 3-ft urban shoulders on both sides.

Alternative Typical Section # 9 Evaluation Table		
	Pros	Cons
Criteria	Standard Lane Widths, Standard Two-Way Left-Turn Lane, Standard Multi-Use Path, Sidewalk with Utility Strip.	No Bicycle Lanes. Design Variation required for lack of Bicycle Lanes.
Safety		No Bicycle Lanes. Access Management not met.
Operation	Level Of Service same as approved Typical and improved from existing 2-lane roadway.	Lack of Access Control.
Construction		
Maintenance		
Utility Accommodation	Utilities accommodated.	
Right-of-Way / Easements		
Cost	<u>Construction</u> : \$433,574.96 (2.6%) decrease in cost as compared to Approved Typical Section. <u>R/W or Easements</u> : None anticipated. <u>Utility Relocations</u> : None anticipated.	
Other		

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FDOT Long Range Estimating System - Production**R4: Project Details Composite Report
By Component****Project:** 409870-1-52-XX**Letting Date:** 01/2099**Description:** SR 44 (CR 44B) FROM SR 500 US 441 TO SR 44**District:** 05 **County:** 11 LAKE**Project Manager:** DRZ-BOYLE**Version 11 Project Grand Total****\$16,531,206.32****Description:** Shared Use Path Typical Section Evaluation Alternative 9: 5-lane undivided, 12-ft travel lanes, 14-ft two-way left-turn center lane, no bicycle lanes, 5-ft sidewalk with 2-ft utility strip, 12-ft shared use path.**EARTHWORK COMPONENT****Pay Items**

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
120-1	REGULAR EXCAVATION	31,198.67 CY	\$6.50	\$202,791.36
120-6	EMBANKMENT	12,419.78 CY	\$10.00	\$124,197.80
110-1-1	CLEARING & GRUBBING	22.63 AC	\$20,000.00	\$452,600.00
Earthwork Component Total				\$779,589.16

ROADWAY COMPONENT**Pay Items**

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
160-4	TYPE B STABILIZATION	98,543.11 SY	\$5.00	\$492,715.55
285-701	OPTIONAL BASE,BASE GROUP 01	15,262.90 SY	\$8.48	\$129,429.39
285-709	OPTIONAL BASE,BASE GROUP 09	77,258.78 SY	\$16.00	\$1,236,140.48
519-78	BOLLARDS	18.00 EA	\$456.71	\$8,220.78
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	1,603.00 EA	\$5.25	\$8,415.75
327-70-6	MILLING EXIST ASPH PAVT,1 1/2" AVG DEPTH	16,061.99 SY	\$3.00	\$48,185.97
334-1-11	SUPERPAVE ASPHALTIC CONC, TRAFFIC A	816.99 TN	\$121.25	\$99,060.04
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	12,747.70 TN	\$105.00	\$1,338,508.50
337-7-33	ASPH CONC FC,TRAFFIC C,FC- 12.5,RUBBER	7,698.94 TN	\$120.00	\$923,872.80
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	13.71 NM	\$1,135.49	\$15,567.57
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	15.83 GM	\$494.16	\$7,822.55
711-11-111	THERMOPLASTIC, STD, WHITE, SOLID, 6"	4.74 NM	\$3,572.91	\$16,935.60
711-11-131	THERMOPLASTIC, STD, WHITE, SKIP, 6"	7.92 GM	\$1,270.27	\$10,060.54
Roadway Component Total				\$4,334,935.52

SHOULDER COMPONENT

Pay Items				
Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
104-15	SOIL TRACKING PREVENTION DEVICE	8.00 EA	\$3,462.50	\$27,700.00
104-16	ROCK BAG	1,780.00 EA	\$6.40	\$11,392.00
522-1	SIDEWALK CONC, 4" THICK	6,194.87 SY	\$45.00	\$278,769.15
522-2	SIDEWALK CONC, 6" THICK	1,745.00 SY	\$55.20	\$96,324.00
527-1	DETECTABLE WARNING ON WALK SURF, RETRO	6.00 EA	\$668.00	\$4,008.00
104-13-1	STAKED SILT FENCE, TYPE III	19,504.32 LF	\$1.15	\$22,429.97
400-1-11	CONC CLASS I, RETAINING WALLS	1,828.00 CY	\$700.00	\$1,279,600.00
515-1-2	PIPE HANDRAIL - GUIDERAIL, ALUMINUM	342.00 LF	\$47.08	\$16,101.36
515-2-202	PED/BICYCLE RAILING,STL,54"PICKET RAIL	3,489.00 LF	\$65.00	\$226,785.00
520-1-10	CONCRETE CURB & GUTTER, TYPE F	19,504.32 LF	\$20.00	\$390,086.40
570-1-1	PERFORMANCE TURF	18,420.75 SY	\$2.20	\$40,525.65
570-1-2	PERFORMANCE TURF, SOD	829.00 SY	\$3.00	\$2,487.00
Shoulder Component Total				\$2,396,208.53

DRAINAGE COMPONENT

Pay Items				
Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
120-1	REGULAR EXCAVATION	26,785.00 CY	\$6.50	\$174,102.50
120-6	EMBANKMENT	753.00 CY	\$10.00	\$7,530.00
110-1-1	CLEARING & GRUBBING	6.00 AC	\$20,000.00	\$120,000.00
400-2-2	CONC CLASS II, ENDWALLS	48.00 CY	\$950.00	\$45,600.00
425-1-311	INLETS, CURB, TYPE P-1, <10'	2.00 EA	\$4,226.18	\$8,452.36
425-1-321	INLETS, CURB, TYPE P-2, <10'	1.00 EA	\$4,424.83	\$4,424.83
425-1-351	INLETS, CURB, TYPE P-5, <10'	42.00 EA	\$4,217.71	\$177,143.82
425-1-361	INLETS, CURB, TYPE P-6, <10'	14.00 EA	\$3,923.80	\$54,933.20
425-1-411	INLETS, CURB TYPE J-1, <10'	4.00 EA	\$4,629.10	\$18,516.40
425-1-421	INLETS, CURB, TYPE J-2, <10'	3.00 EA	\$5,256.46	\$15,769.38
425-1-461	INLETS, CURB, TYPE J-6, <10'	5.00 EA	\$6,087.47	\$30,437.35
425-1-471	INLETS, CURB, TYPE 7, <10'	7.00 EA	\$4,214.32	\$29,500.24
425-1-473	INLETS, CURB, TYPE 7, J BOT , <10'	1.00 EA	\$5,629.45	\$5,629.45
425-1-541	INLETS, DT BOT, TYPE D, <10'	2.00 EA	\$3,490.49	\$6,980.98
425-2-41	MANHOLES, P-7, <10'	35.00 EA	\$3,423.12	\$119,809.20
425-2-71	MANHOLES, J-7, <10'	13.00 EA	\$5,427.90	\$70,562.70
430-171-101	PIPE CULV OPT MATL, ROUND, 0-24", SS	56.00 LF	\$108.15	\$6,056.40
430-171-103	PIPE CULV OPT MATL, ROUND, 37-48", SS	208.00 LF	\$118.97	\$24,745.76
430-171-104	PIPE CULV OPT MATL, ROUND, 49-60", SS	864.00 LF	\$181.57	\$156,876.48
430-174-101	PIPE CULV, OPT MATL, ROUND,0-24"SD	5,848.00 LF	\$74.56	\$436,026.88
430-174-102	PIPE CULV, OPT MATL, ROUND,25-36"SD	4,176.00 LF	\$77.49	\$323,598.24
430-174-103	PIPE CULV, OPT MATL, ROUND,37-48"SD	2,016.00 LF	\$130.80	\$263,692.80
430-174-104	PIPE CULV, OPT MATL, ROUND,49-60"SD	632.00 LF	\$206.32	\$130,394.24
430-174-203	PIPE CULV, OPT MATL, OTHER, 37-48"SD	288.00 LF	\$158.36	\$45,607.68
430-610-125	U-ENDWALL,STD 261,1:4 SLP, 18"	19.00 EA	\$2,040.00	\$38,760.00

430-982-140	MITERED END SECT, OPTIONAL RD, 42" CD	1.00 EA	\$3,030.34	\$3,030.34
550-10-220	FENCING, TYPE B, 5.1-6.0, STANDARD	2,795.00 LF	\$11.67	\$32,617.65
550-60-234	FENCE GATE, TYP B, SLIDE/CANT, 18.1- 20' OPEN	2.00 EA	\$2,761.10	\$5,522.20
570-1-1	PERFORMANCE TURF	1,290.00 SY	\$2.20	\$2,838.00
570-1-2	PERFORMANCE TURF, SOD	6,542.00 SY	\$3.00	\$19,626.00
Drainage Component Total				\$2,378,785.08

SIGNING COMPONENT

Pay Items				
Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
700-20-11	SINGLE POST SIGN, F&I, LESS THAN 12 SF	54.00 AS	\$279.28	\$15,081.12
700-20-12	SINGLE POST SIGN, F&I, 12-20 SF	18.00 AS	\$488.52	\$8,793.36
700-20-40	SINGLE POST SIGN, RELOCATE	1.00 AS	\$99.82	\$99.82
700-20-60	SINGLE POST SIGN, REMOVE	13.00 AS	\$29.45	\$382.85
705-11-1	DELINEATOR, FLEXIBLE TUBULAR	31.00 EA	\$74.76	\$2,317.56
Signing Component Total				\$26,674.71

SIGNALIZATIONS COMPONENT

Pay Items				
Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
653-191	PEDESTRIAN SIGNAL, F&I, LED-COUNT DWN, 1	2.00 AS	\$810.00	\$1,620.00
653-192	PEDESTRIAN SIGNAL, F&I, LED-COUNT DWN, 2	4.00 AS	\$1,250.60	\$5,002.40
653-400	PEDESTRIAN SIGNAL, RELOCATE	1.00 AS	\$257.98	\$257.98
659-101	SGNL HEAD AUXIL, F&I, BACK PLT 3 SECT	6.00 EA	\$100.75	\$604.50
659-109	SGNL HEAD AUXIL, F&I, CONC PED TYP II	6.00 EA	\$859.39	\$5,156.34
659-118	SGNL HEAD AUX, F&I, BACK PLT 5 SECT CLU	2.00 EA	\$180.93	\$361.86
665-11	PED DET, F&I, DET STA POLE OR CAB MTD	10.00 EA	\$197.74	\$1,977.40
690-10	SIGNAL HEAD TRAFFIC ASSEMBLY REMOVAL	8.00 EA	\$65.38	\$523.04
690-80	SPAN WIRE ASSEMBLY REMOVE	2.00 EA	\$377.06	\$754.12
690-90	CONDUIT & CABLING REMOVE	1.00 PI	\$365.78	\$365.78
690-100	SIGNAL EQUIPMENT MISCELLANEOUS REMOVE	1.00 PI	\$663.40	\$663.40
630-1-12	CONDUIT-SIGNALS, F& I, UNDERGROUND	545.00 LF	\$7.00	\$3,815.00
630-1-14	CONDUIT-SIGNALS, F& I, UG JACKED	436.00 LF	\$19.83	\$8,645.88
632-7-1	CABLE, SIGNAL, FURNISH & INSTALL	2.00 PI	\$2,638.64	\$5,277.28
634-4-114	SPAN WIRE ASSEMBLY, F&I, 2 WIRE, OTHER	1.00 PI	\$2,802.35	\$2,802.35
635-1-11	PULL & JUNCTION BOXES, F&I, PULL BOX	13.00 EA	\$400.00	\$5,200.00
641-2-17	PREST CNC POLE, F&I, TYP P-VII	1.00 EA	\$8,320.63	\$8,320.63
650-51-311	TRAFFIC SIGNAL, F&I, 3 SECT, 1 WAY, STD	6.00 AS	\$991.68	\$5,950.08
650-51-511	TRAFFIC SIGNAL, F&I, 5 SECT, 1 WAY, STD	2.00 AS	\$1,612.65	\$3,225.30

660-2-106	LOOP ASSEMBLY, F&I, TYPE F	9.00 AS	\$1,023.38	\$9,210.42
663-74-11	VEH DETECTOR ASSEM, F&I, OPTICAL TYPE	1.00 EA	\$3,170.00	\$3,170.00
670-5-111	TRAF CNTL ASSEM, F&I, NEMA, 1 PREEMPT	1.00 AS	\$18,925.07	\$18,925.07
671-2-41	TRAFFIC CONTROLLER, MODIFY, NEMA	2.00 EA	\$923.30	\$1,846.60
678-1-104	CNTRL ACCESS, F&I, LOAD SWITCH	6.00 EA	\$83.00	\$498.00
690-33-1	POLE REMOVAL, DEEP DIRECT BURIAL	20.00 LF	\$120.85	\$2,417.00
699-1-21	INTERNAL ILLUM SIGN, INSTALL, ST NAME	2.00 EA	\$842.00	\$1,684.00
700-48-19	SIGN PANELS, F & I, 16 - 100	1.00 EA	\$1,389.16	\$1,389.16
Signalizations Component Total				\$99,663.59

RETAINING WALLS COMPONENT
Pay Items

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
400-2-11	CONC CLASS II, RETAINING WALLS	238.80 CY	\$1,432.18	\$342,004.58
415-1-3	REINF STEEL- RETAINING WALL	1,795.00 LB	\$1.00	\$1,795.00
Retaining Walls Component Total				\$343,799.58

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FDOT Long Range Estimating System - Production

R4: Project Details Composite Report By Component

Project: 409870-1-52-XX**Letting Date:** 01/2099**Description:** SR 44 (CR 44B) FROM SR 500 US 441 TO SR 44**District:** 05 **County:** 11 LAKE**Project Manager:** DRZ-BOYLE**Version 11 Project Grand Total****\$16,531,206.32**

Description: Shared Use Path Typical Section Evaluation Alternative 9: 5-lane undivided, 12-ft travel lanes, 14-ft two-way left-turn center lane, no bicycle lanes, 5-ft sidewalk with 2-ft utility strip, 12-ft shared use path.

Project Sequences Subtotal**\$10,359,656.17**

102-1	MAINTENANCE OF TRAFFIC	15.00	\$1,553,948.43
101-1	MOBILIZATION	10.00	\$1,191,360.46

Project Sequences Total**\$13,104,965.06****Project Unknowns**

25.00%

\$3,276,241.26

Non-Bid Components:

Pay item Description	Quantity	Unit	Unit Price	Extended Amount
999-25 INITIAL CONTINGENCY AMOUNT (DO NOT BID)	1.00	LS	\$150,000.00	\$150,000.00
Project Non-Bid Subtotal				\$150,000.00

Version 11 Project Grand Total**\$16,531,206.32**

Alternative Typical Section # 10 Evaluation Table		
	Pros	Cons
Criteria	Standard Lane Widths, Standard Two-Way Left-Turn Lane, Standard Bicycle Lanes, Standard Multi-Use Path, Sidewalk with Utility Strip.	
Safety	Full Bicycle Lane width.	Access Management not met.
Operation		Lack of Access Control. Level Of Service is reduced.
Construction		
Maintenance		
Utility Accommodation	Utilities accommodated.	
Right-of-Way / Easements		
Cost	<u>Construction</u> : \$2,770,238.53 (16.3%) decrease in cost as compared to Approved Typical Section. <u>R/W or Easements</u> : None anticipated. <u>Utility Relocations</u> : None anticipated.	
Other		Does not meet Concurrency for this Project; which is required for development.

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FDOT Long Range Estimating System - Production**R4: Project Details Composite Report
By Component****Project:** 409870-1-52-XX**Letting Date:** 01/2099**Description:** SR 44 (CR 44B) FROM SR 500 US 441 TO SR 44**District:** 05 **County:** 11 LAKE**Project Manager:** DRZ-BOYLE**Version 12 Project Grand Total****\$14,194,542.75****Description:** Shared Use Path Typical Section Evaluation Alternative 10: 3-lane undivided, 12-ft travel lanes, 14-ft two-way left-turn center lane, 4-ft bicycle lanes, 5-ft sidewalk with 2-ft utility strip, 12-ft shared use path.**EARTHWORK COMPONENT****Pay Items**

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
120-1	REGULAR EXCAVATION	20,994.14 CY	\$6.50	\$136,461.91
120-6	EMBANKMENT	12,908.81 CY	\$10.00	\$129,088.10
110-1-1	CLEARING & GRUBBING	22.63 AC	\$20,000.00	\$452,600.00
Earthwork Component Total				\$718,150.01

ROADWAY COMPONENT**Pay Items**

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
160-4	TYPE B STABILIZATION	68,636.48 SY	\$5.00	\$343,182.40
285-701	OPTIONAL BASE,BASE GROUP 01	15,262.90 SY	\$8.48	\$129,429.39
285-709	OPTIONAL BASE,BASE GROUP 09	47,352.16 SY	\$16.00	\$757,634.56
519-78	BOLLARDS	18.00 EA	\$456.71	\$8,220.78
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	1,104.00 EA	\$5.25	\$5,796.00
327-70-6	MILLING EXIST ASPH PAVT,1 1/2" AVG DEPTH	16,061.99 SY	\$3.00	\$48,185.97
334-1-11	SUPERPAVE ASPHALTIC CONC, TRAFFIC A	816.99 TN	\$121.25	\$99,060.04
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	7,813.10 TN	\$105.00	\$820,375.50
337-7-33	ASPH CONC FC,TRAFFIC C,FC-12.5,RUBBER	5,231.64 TN	\$120.00	\$627,796.80
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	13.71 NM	\$1,135.49	\$15,567.57
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	8.44 GM	\$494.16	\$4,170.71
711-11-111	THERMOPLASTIC, STD, WHITE, SOLID, 6"	4.74 NM	\$3,572.91	\$16,935.60
711-11-131	THERMOPLASTIC, STD, WHITE, SKIP, 6"	4.22 GM	\$1,270.27	\$5,360.54
Roadway Component Total				\$2,881,715.86

SHOULDER COMPONENT

Pay Items				
Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
104-15	SOIL TRACKING PREVENTION DEVICE	8.00 EA	\$3,462.50	\$27,700.00
104-16	ROCK BAG	1,780.00 EA	\$6.40	\$11,392.00
522-1	SIDEWALK CONC, 4" THICK	6,194.87 SY	\$45.00	\$278,769.15
522-2	SIDEWALK CONC, 6" THICK	1,745.00 SY	\$55.20	\$96,324.00
527-1	DETECTABLE WARNING ON WALK SURF, RETRO	6.00 EA	\$668.00	\$4,008.00
104-13-1	STAKED SILT FENCE, TYPE III	19,504.32 LF	\$1.15	\$22,429.97
400-1-11	CONC CLASS I, RETAINING WALLS	1,828.00 CY	\$700.00	\$1,279,600.00
515-1-2	PIPE HANDRAIL - GUIDERAIL, ALUMINUM	342.00 LF	\$47.08	\$16,101.36
515-2-202	PED/BICYCLE RAILING,STL,54"PICKET RAIL	3,489.00 LF	\$65.00	\$226,785.00
520-1-10	CONCRETE CURB & GUTTER, TYPE F	19,504.32 LF	\$20.00	\$390,086.40
570-1-1	PERFORMANCE TURF	37,925.07 SY	\$2.20	\$83,435.15
570-1-2	PERFORMANCE TURF, SOD	829.00 SY	\$3.00	\$2,487.00
Shoulder Component Total				\$2,439,118.03

DRAINAGE COMPONENT

Pay Items				
Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
120-1	REGULAR EXCAVATION	26,785.00 CY	\$6.50	\$174,102.50
120-6	EMBANKMENT	753.00 CY	\$10.00	\$7,530.00
110-1-1	CLEARING & GRUBBING	6.00 AC	\$20,000.00	\$120,000.00
400-2-2	CONC CLASS II, ENDWALLS	48.00 CY	\$950.00	\$45,600.00
425-1-311	INLETS, CURB, TYPE P-1, <10'	2.00 EA	\$4,226.18	\$8,452.36
425-1-321	INLETS, CURB, TYPE P-2, <10'	1.00 EA	\$4,424.83	\$4,424.83
425-1-351	INLETS, CURB, TYPE P-5, <10'	42.00 EA	\$4,217.71	\$177,143.82
425-1-361	INLETS, CURB, TYPE P-6, <10'	14.00 EA	\$3,923.80	\$54,933.20
425-1-411	INLETS, CURB TYPE J-1, <10'	4.00 EA	\$4,629.10	\$18,516.40
425-1-421	INLETS, CURB, TYPE J-2, <10'	3.00 EA	\$5,256.46	\$15,769.38
425-1-461	INLETS, CURB, TYPE J-6, <10'	5.00 EA	\$6,087.47	\$30,437.35
425-1-471	INLETS, CURB, TYPE 7, <10'	7.00 EA	\$4,214.32	\$29,500.24
425-1-473	INLETS, CURB, TYPE 7, J BOT , <10'	1.00 EA	\$5,629.45	\$5,629.45
425-1-541	INLETS, DT BOT, TYPE D, <10'	2.00 EA	\$3,490.49	\$6,980.98
425-2-41	MANHOLES, P-7, <10'	35.00 EA	\$3,423.12	\$119,809.20
425-2-71	MANHOLES, J-7, <10'	13.00 EA	\$5,427.90	\$70,562.70
430-171-101	PIPE CULV OPT MATL, ROUND, 0-24", SS	56.00 LF	\$108.15	\$6,056.40
430-171-103	PIPE CULV OPT MATL, ROUND, 37-48", SS	208.00 LF	\$118.97	\$24,745.76
430-171-104	PIPE CULV OPT MATL, ROUND, 49-60", SS	864.00 LF	\$181.57	\$156,876.48
430-174-101	PIPE CULV, OPT MATL, ROUND,0-24"SD	5,848.00 LF	\$74.56	\$436,026.88
430-174-102	PIPE CULV, OPT MATL, ROUND,25-36"SD	4,176.00 LF	\$77.49	\$323,598.24
430-174-103	PIPE CULV, OPT MATL, ROUND,37-48"SD	2,016.00 LF	\$130.80	\$263,692.80
430-174-104	PIPE CULV, OPT MATL, ROUND,49-60"SD	632.00 LF	\$206.32	\$130,394.24
430-174-203	PIPE CULV, OPT MATL, OTHER, 37-48"SD	288.00 LF	\$158.36	\$45,607.68
430-610-125	U-ENDWALL,STD 261,1:4 SLP, 18"	19.00 EA	\$2,040.00	\$38,760.00

430-982-140	MITERED END SECT, OPTIONAL RD, 42" CD	1.00 EA	\$3,030.34	\$3,030.34
550-10-220	FENCING, TYPE B, 5.1-6.0, STANDARD	2,795.00 LF	\$11.67	\$32,617.65
550-60-234	FENCE GATE, TYP B, SLIDE/CANT, 18.1- 20' OPEN	2.00 EA	\$2,761.10	\$5,522.20
570-1-1	PERFORMANCE TURF	1,290.00 SY	\$2.20	\$2,838.00
570-1-2	PERFORMANCE TURF, SOD	6,542.00 SY	\$3.00	\$19,626.00

Drainage Component Total

\$2,378,785.08

SIGNING COMPONENT**Pay Items**

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
700-20-11	SINGLE POST SIGN, F&I, LESS THAN 12 SF	54.00 AS	\$279.28	\$15,081.12
700-20-12	SINGLE POST SIGN, F&I, 12-20 SF	18.00 AS	\$488.52	\$8,793.36
700-20-40	SINGLE POST SIGN, RELOCATE	1.00 AS	\$99.82	\$99.82
700-20-60	SINGLE POST SIGN, REMOVE	13.00 AS	\$29.45	\$382.85
705-11-1	DELINEATOR, FLEXIBLE TUBULAR	31.00 EA	\$74.76	\$2,317.56

Signing Component Total

\$26,674.71

SIGNALIZATIONS COMPONENT**Pay Items**

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
653-191	PEDESTRIAN SIGNAL, F&I, LED-COUNT DWN, 1	2.00 AS	\$810.00	\$1,620.00
653-192	PEDESTRIAN SIGNAL, F&I, LED-COUNT DWN, 2	4.00 AS	\$1,250.60	\$5,002.40
653-400	PEDESTRIAN SIGNAL, RELOCATE	1.00 AS	\$257.98	\$257.98
659-101	SGNL HEAD AUXIL, F&I, BACK PLT 3 SECT	6.00 EA	\$100.75	\$604.50
659-109	SGNL HEAD AUXIL, F&I, CONC PED TYP II	6.00 EA	\$859.39	\$5,156.34
659-118	SGNL HEAD AUX, F&I, BACK PLT 5 SECT CLU	2.00 EA	\$180.93	\$361.86
665-11	PED DET, F&I, DET STA POLE OR CAB MTD	10.00 EA	\$197.74	\$1,977.40
690-10	SIGNAL HEAD TRAFFIC ASSEMBLY REMOVAL	8.00 EA	\$65.38	\$523.04
690-80	SPAN WIRE ASSEMBLY REMOVE	2.00 EA	\$377.06	\$754.12
690-90	CONDUIT & CABLING REMOVE	1.00 PI	\$365.78	\$365.78
690-100	SIGNAL EQUIPMENT MISCELLANEOUS REMOVE	1.00 PI	\$663.40	\$663.40
630-1-12	CONDUIT-SIGNALS, F& I, UNDERGROUND	545.00 LF	\$7.00	\$3,815.00
630-1-14	CONDUIT-SIGNALS, F& I, UG JACKED	436.00 LF	\$19.83	\$8,645.88
632-7-1	CABLE, SIGNAL, FURNISH & INSTALL	2.00 PI	\$2,638.64	\$5,277.28
634-4-114	SPAN WIRE ASSEMBLY, F&I, 2 WIRE, OTHER	1.00 PI	\$2,802.35	\$2,802.35
635-1-11	PULL & JUNCTION BOXES, F&I, PULL BOX	13.00 EA	\$400.00	\$5,200.00
641-2-17	PREST CNC POLE, F&I, TYP P-VII	1.00 EA	\$8,320.63	\$8,320.63
650-51-311	TRAFFIC SIGNAL, F&I, 3 SECT, 1 WAY, STD	6.00 AS	\$991.68	\$5,950.08
650-51-511	TRAFFIC SIGNAL, F&I, 5 SECT, 1 WAY, STD	2.00 AS	\$1,612.65	\$3,225.30

660-2-106	LOOP ASSEMBLY, F&I, TYPE F	9.00 AS	\$1,023.38	\$9,210.42
663-74-11	VEH DETECTOR ASSEM, F&I, OPTICAL TYPE	1.00 EA	\$3,170.00	\$3,170.00
670-5-111	TRAF CNTL ASSEM, F&I, NEMA, 1 PREEMPT	1.00 AS	\$18,925.07	\$18,925.07
671-2-41	TRAFFIC CONTROLLER, MODIFY, NEMA	2.00 EA	\$923.30	\$1,846.60
678-1-104	CNTRL ACCESS, F&I, LOAD SWITCH	6.00 EA	\$83.00	\$498.00
690-33-1	POLE REMOVAL, DEEP DIRECT BURIAL	20.00 LF	\$120.85	\$2,417.00
699-1-21	INTERNAL ILLUM SIGN, INSTALL, ST NAME	2.00 EA	\$842.00	\$1,684.00
700-48-19	SIGN PANELS, F & I, 16 - 100	1.00 EA	\$1,389.16	\$1,389.16
Signalizations Component Total				\$99,663.59

RETAINING WALLS COMPONENT
Pay Items

Pay Item	Description	Total Unit Quantity	Weighted Avg. Unit Price	Total Amount
400-2-11	CONC CLASS II, RETAINING WALLS	238.80 CY	\$1,432.18	\$342,004.58
415-1-3	REINF STEEL- RETAINING WALL	1,795.00 LB	\$1.00	\$1,795.00
Retaining Walls Component Total				\$343,799.58

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FDOT Long Range Estimating System - Production**R4: Project Details Composite Report
By Component****Project:** 409870-1-52-XX**Letting Date:** 01/2099**Description:** SR 44 (CR 44B) FROM SR 500 US 441 TO SR 44**District:** 05 **County:** 11 LAKE**Project Manager:** DRZ-BOYLE**Version 12 Project Grand Total****\$14,194,542.75****Description:** Shared Use Path Typical Section Evaluation Alternative 10: 3-lane undivided, 12-ft travel lanes, 14-ft two-way left-turn center lane, 4-ft bicycle lanes, 5-ft sidewalk with 2-ft utility strip, 12-ft shared use path.

Project Sequences Subtotal**\$8,887,906.86**

102-1	MAINTENANCE OF TRAFFIC	15.00		\$1,333,186.03
101-1	MOBILIZATION	10.00		\$1,022,109.29

Project Sequences Total**\$11,243,202.18****Project Unknowns**

25.00%

\$2,810,800.54

Non-Bid Components:

Pay item Description	Quantity	Unit	Unit Price	Extended Amount
999-25 INITIAL CONTINGENCY AMOUNT (DO NOT BID)	1.00	LS	\$140,540.03	\$140,540.03
Project Non-Bid Subtotal				\$140,540.03

Version 12 Project Grand Total**\$14,194,542.75**

AECOM
10210 Highland Manor Drive
Suite 350
Tampa, FL 33610

Dennisse Zornan
Project Manager
FDOT District 5
719 S. Woodland Blvd.
Deland, FL 32720

January 12, 2009

Project: SR 44
FP ID: 409870-1-52-01
Subject: Multi-Use Path

Dennisse,

Per request, we have investigated the impacts of adding a multi-use path to the SR 44 project. It was agreed upon that the multi-use path would be based on the following:

- The multi-use path will be located on one side of the roadway only.
- The side chosen for the multi-use path will not have a sidewalk. The sidewalk will remain on the opposite side of the multi-use path.
- The roadway bike lanes will remain with the addition of the multi-use path, as each facility serves a different purpose.

The first step we took was to determine the most logical side on which to place the multi-use path. Chapter 8.6 of 2009 PPM Volume I notes that multi-use paths should have "minimal cross flow of motor vehicles". The side with the least number of driveways is the right (East) side. We used this side for our investigation.

The criteria used for multi-use path design are as follows:

- 4-ft separation from back of curb to inside edge of multi-use path (Chapter 8.6.10 of 2009 PPM Volume I)
- 12-ft multi-use path (Chapter 8.6.2 of 2009 PPM Volume I)
- 2-ft graded area with 1:6 slope adjacent to path (Chapter 8.6.5 of 2009 PPM Volume I)

The cross sections were analyzed, and a template with the above-mentioned multi-use path design was placed at various locations along the project alignment that would represent areas of differing Right-of-way needs. Per our review, we found 8 areas that cause a jog in the R/W ranging from the minimum need of 25-ft to the maximum need of 45-ft. The new limits of construction from the cross sections were then translated onto the plan views.

The areas listed as needing more than 25-ft of right-of-way are areas of high fill that also require off-site ditches. These areas could be reduced to requiring only about 15-ft if retaining walls are introduced. However, it should be noted that although there will be a right-of-way cost savings, there will be additional costs for the retaining walls, barrier walls, and handrails.

The plan views that we have provided can be forwarded to the Right-of-Way Department for cost estimating purposes.

Please let me know if there is anything else we could assist with.

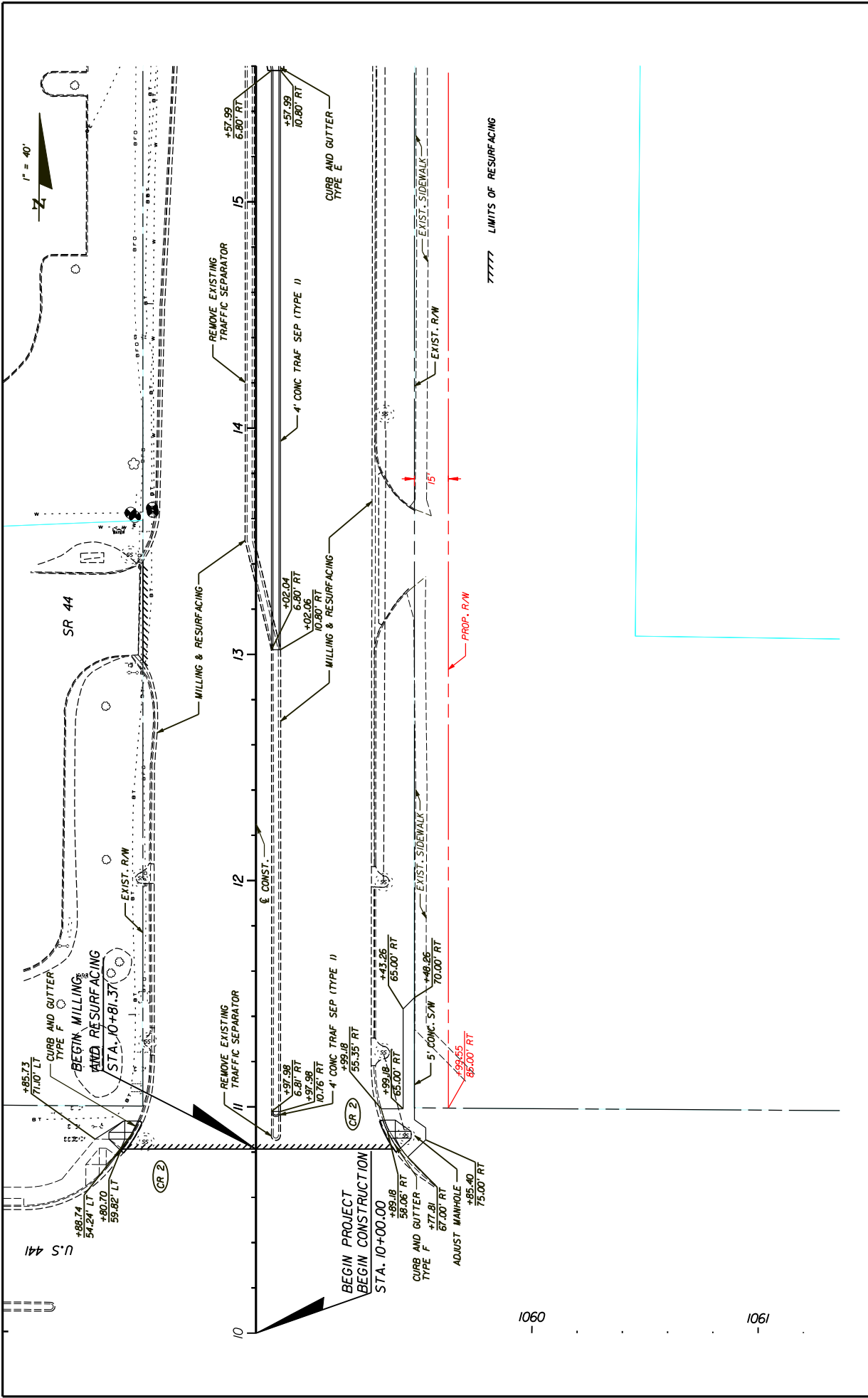
Thank you.

Boyle | AECOM

A handwritten signature in blue ink, appearing to read 'Bruno Fiori'.

Bruno Fiori, PE
Principal Engineer

Attachments: Plan Views showing required additional Right-of-way required.
8 Cross Sections representative of the 8 different R/W areas.



REVISIONS		NOTES	
DATE	DESCRIPTION	DATE	DESCRIPTION

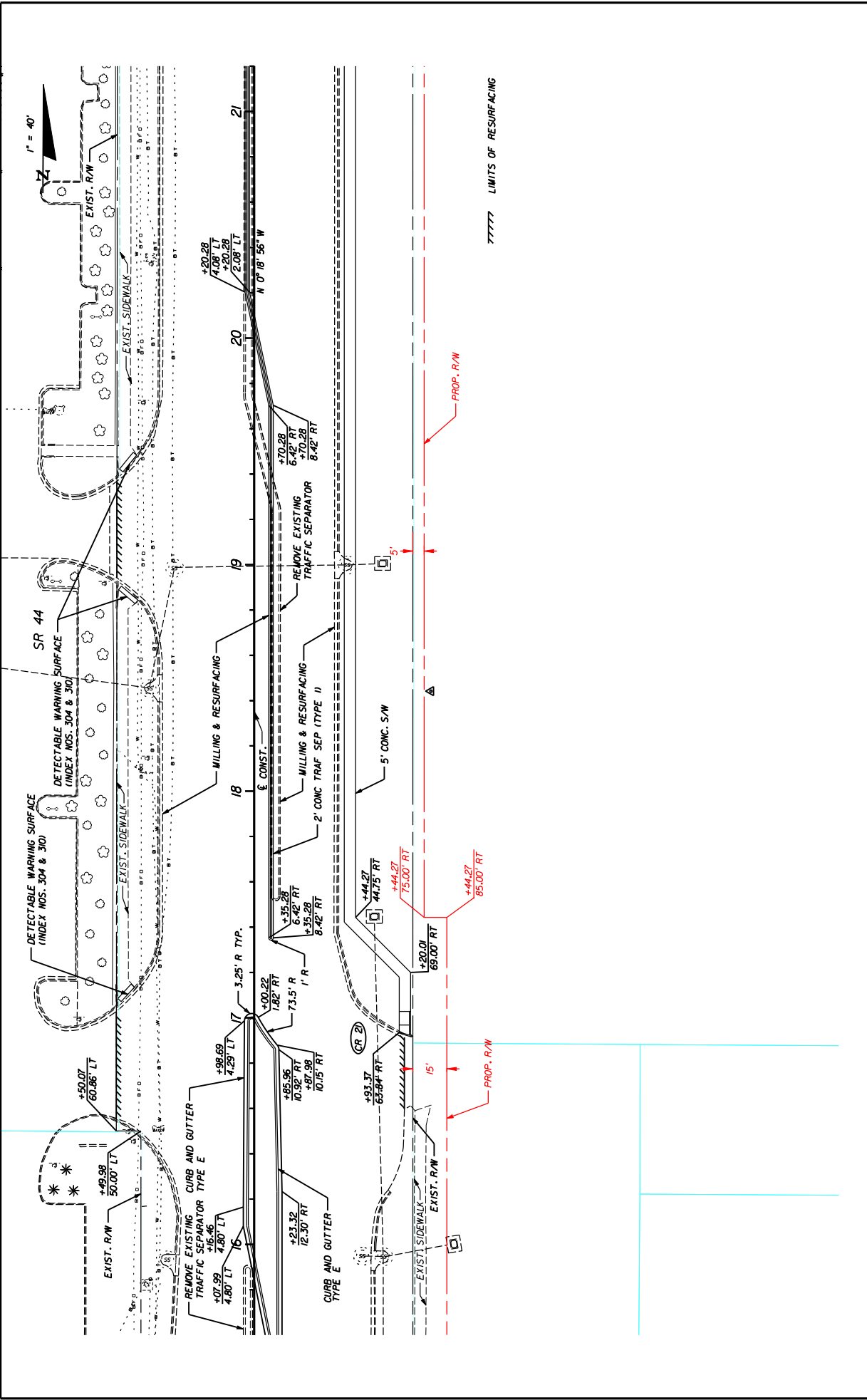
BRUNO J. BOYLE, P.E., FL LICENSE NO. 49150		STATE OF FLORIDA	
102 N. HIGHLAND AVE., SUITE 250, TAMPA, FL 33610 TEL: 813/280-2500, FAX: 813/281-2300 CERTIFICATE OF AUTHORIZATION NO. 2005		DEPARTMENT OF TRANSPORTATION	
BOYLE ENGINEERING CORPORATION		ROAD NO.	FINANCIAL PROJECT ID
		44	409870-1-52-01
		COUNTY	LAKE

PROPOSED RIGHT OF WAY		SHEET NO.	1
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77777 LIMITS OF RESURFACING



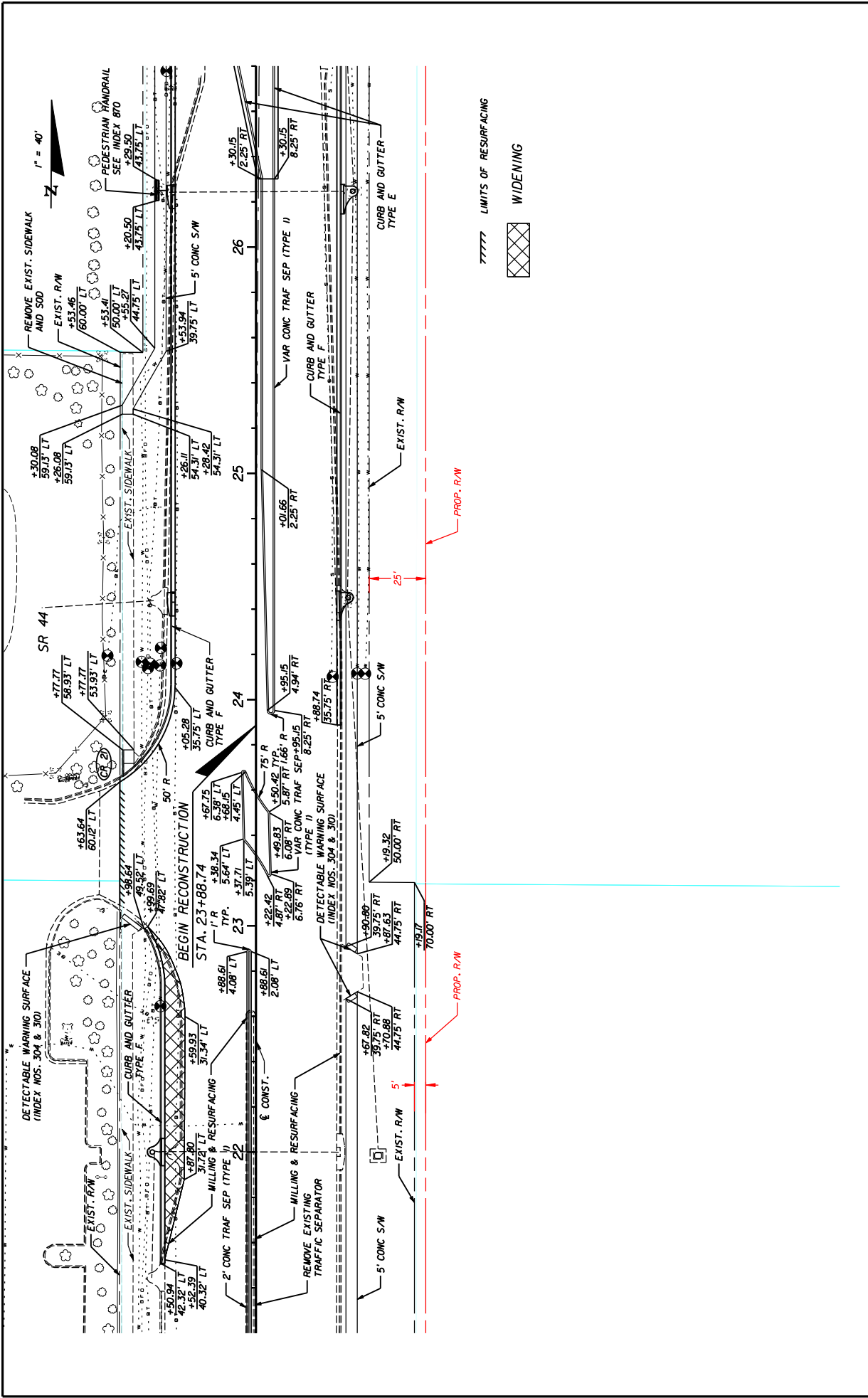
77777 LIMITS OF RESURFACING

REVISIONS		NOTES	
DATE	DESCRIPTION	DATE	DESCRIPTION

BRUNO J. BOYLE, P.E., * FL LICENSE NO. 49150		STATE OF FLORIDA	
ENGINEERING CORPORATION		DEPARTMENT OF TRANSPORTATION	
102 S. HIGHLAND AVE., SUITE 250 TALLAHASSEE, FL 32310 TEL: (904) 530-2500, FAX: (904) 421-2300 CERTIFICATE OF AUTHORIZATION NO. 2005		ROAD NO. 44	FINANCIAL PROJECT ID 409870-1-52-01
		COUNTY LAKE	

SHEET NO. 2

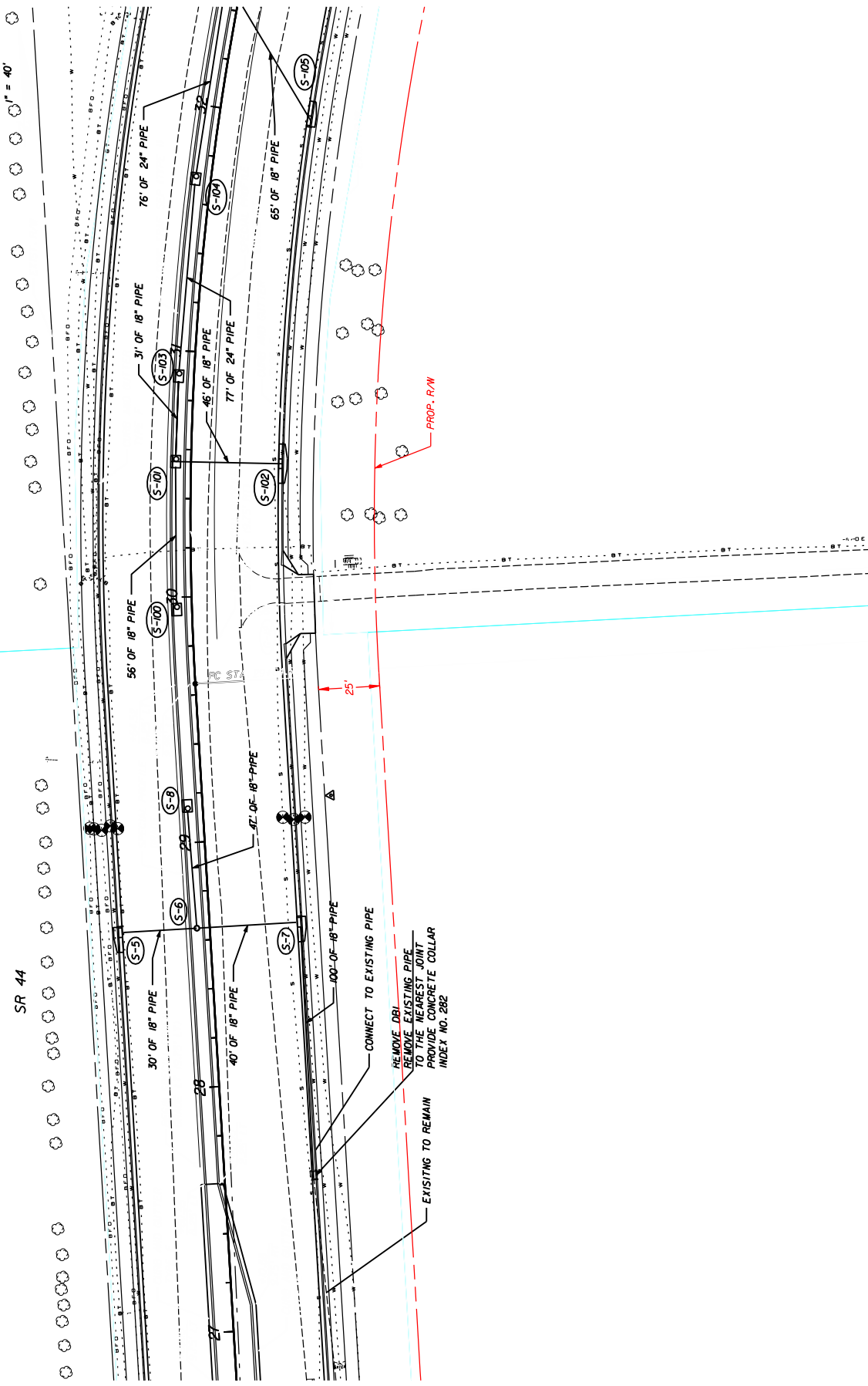
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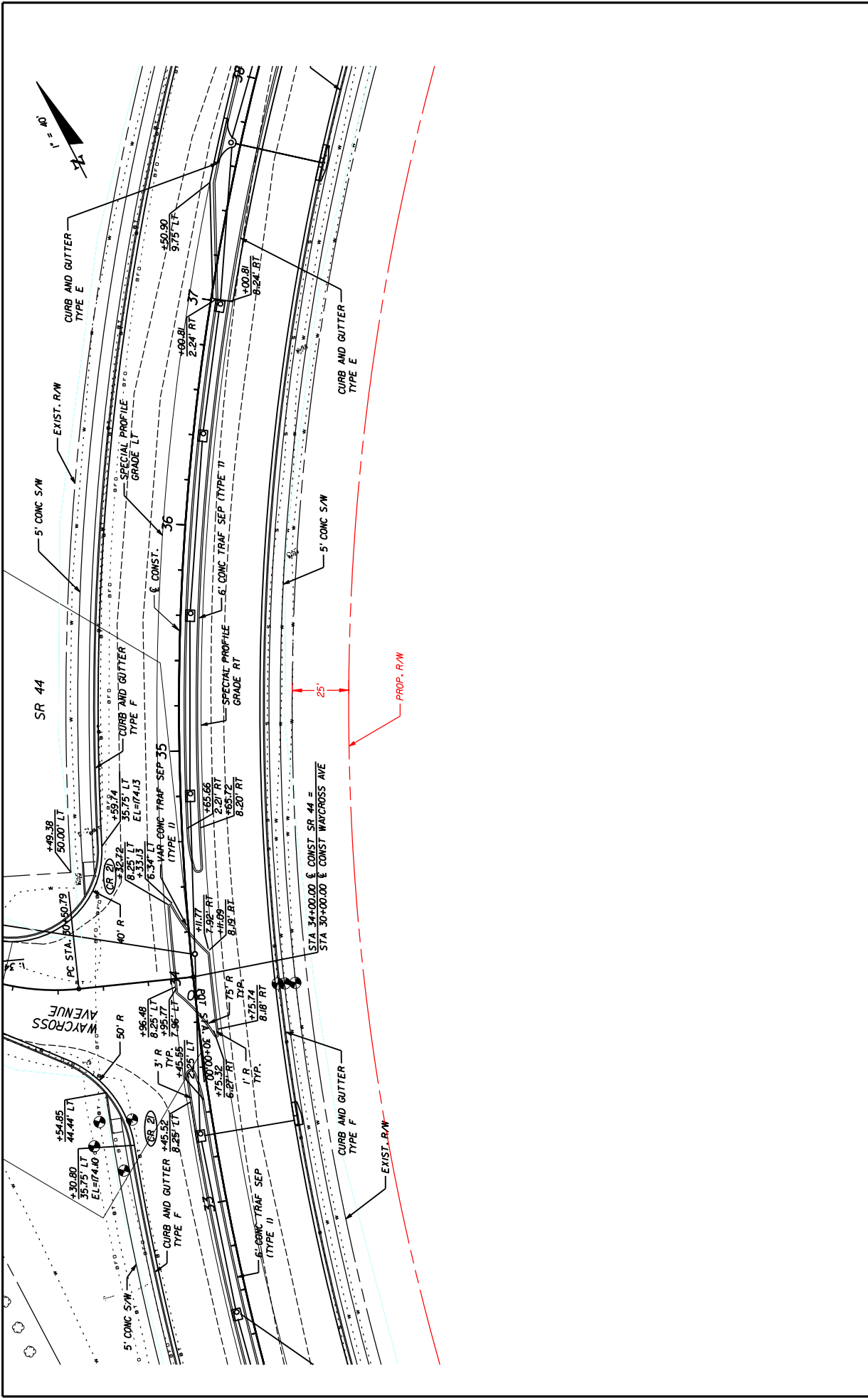
BRUNO J. BOYLE, P.E., * FL LICENSE NO. 49150		STATE OF FLORIDA	
ENGINEERING CORPORATION		DEPARTMENT OF TRANSPORTATION	
102 N. HIGHWAY 90, SUITE 250 MELBOURNE, FL 32950 TEL: (888) 630-2900, FAX: (813) 821-2300 CERTIFICATE OF AUTHORIZATION NO. 2005	ROAD NO. 44	COUNTY LAKE	FINANCIAL PROJECT ID 409870-1-52-01

SHEET NO. 3	PROPOSED RIGHT OF WAY
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SR 44

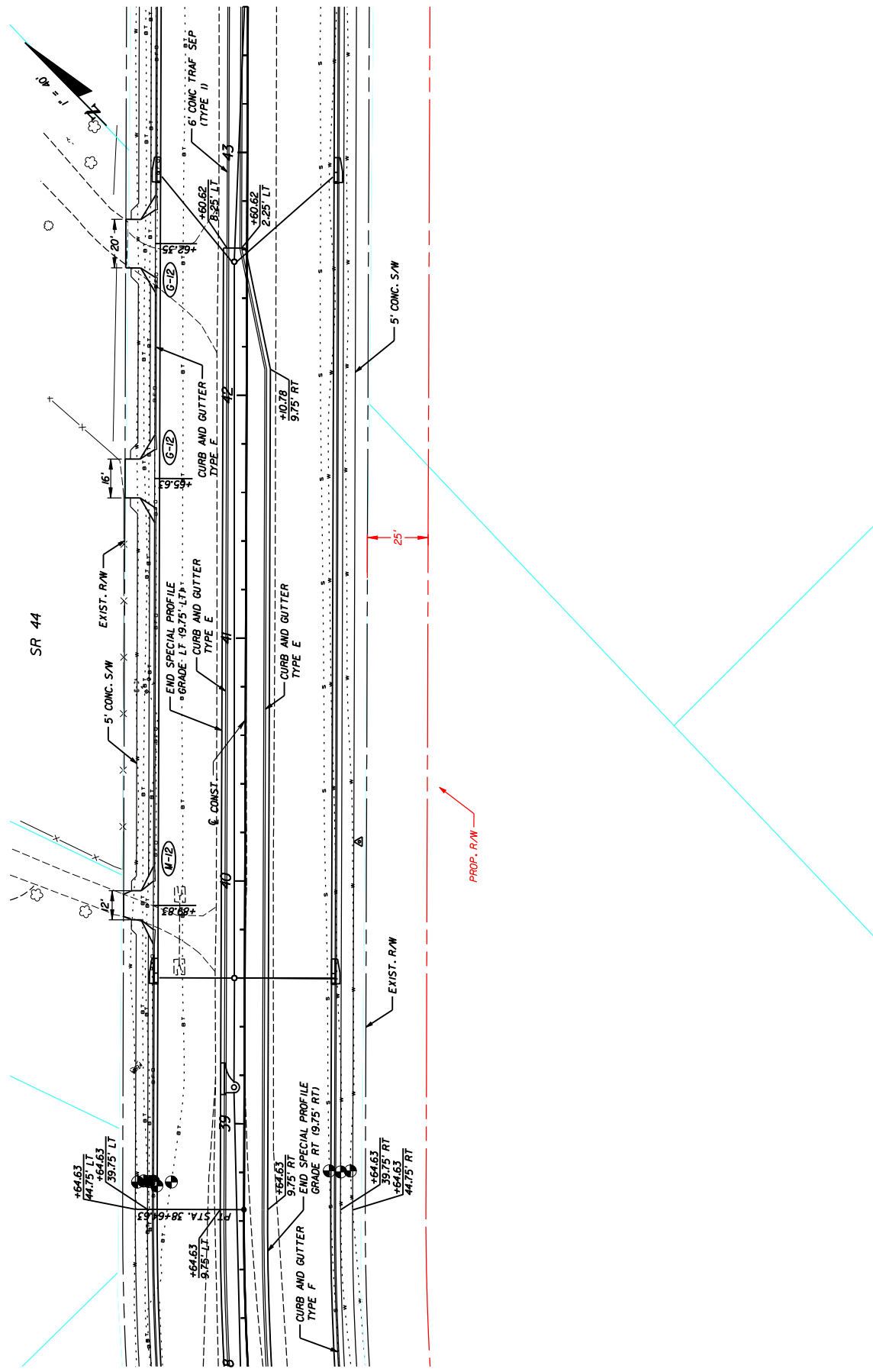
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DATE	DESCRIPTION	DEPARTMENT OF TRANSPORTATION	FINANCIAL PROJECT ID
		ROAD NO. 44	409870-1-52-01
		COUNTY LAKE	
		BRUND J. BOYLE, P.E., FL LICENSE NO. 49150 BOYLE ENGINEERING CORPORATION 1020 W. HIGHLAND AVE., SUITE 250, AUSTIN, TX 78703 TEL: (817) 330-2500, FAX: (817) 821-2300 CERTIFICATE OF AUTHORIZATION NO. 2005	
		PROPOSED RIGHT OF WAY STINES 87ILES	
		SHEET NO. 4	



REVISIONS		NOTES	
DATE	DESCRIPTION	DATE	DESCRIPTION

BRUND J. FURRY, P.E., FL LICENSE NO. 49150		STATE OF FLORIDA	
1025 HIGHLAND AVENUE, SUITE 250, GAITHERSBURG, MD 20878-4210 TEL: (301) 530-2500, FAX: (301) 821-2300 CERTIFICATE OF AUTHORIZATION NO. 2005		DEPARTMENT OF TRANSPORTATION	
BOYLE ENGINEERING CORPORATION		ROAD NO.	44
		COUNTY	LAKE
		FINANCIAL PROJECT ID	409870-1-52-01

PROPOSED RIGHT OF WAY	
SHEET NO.	5

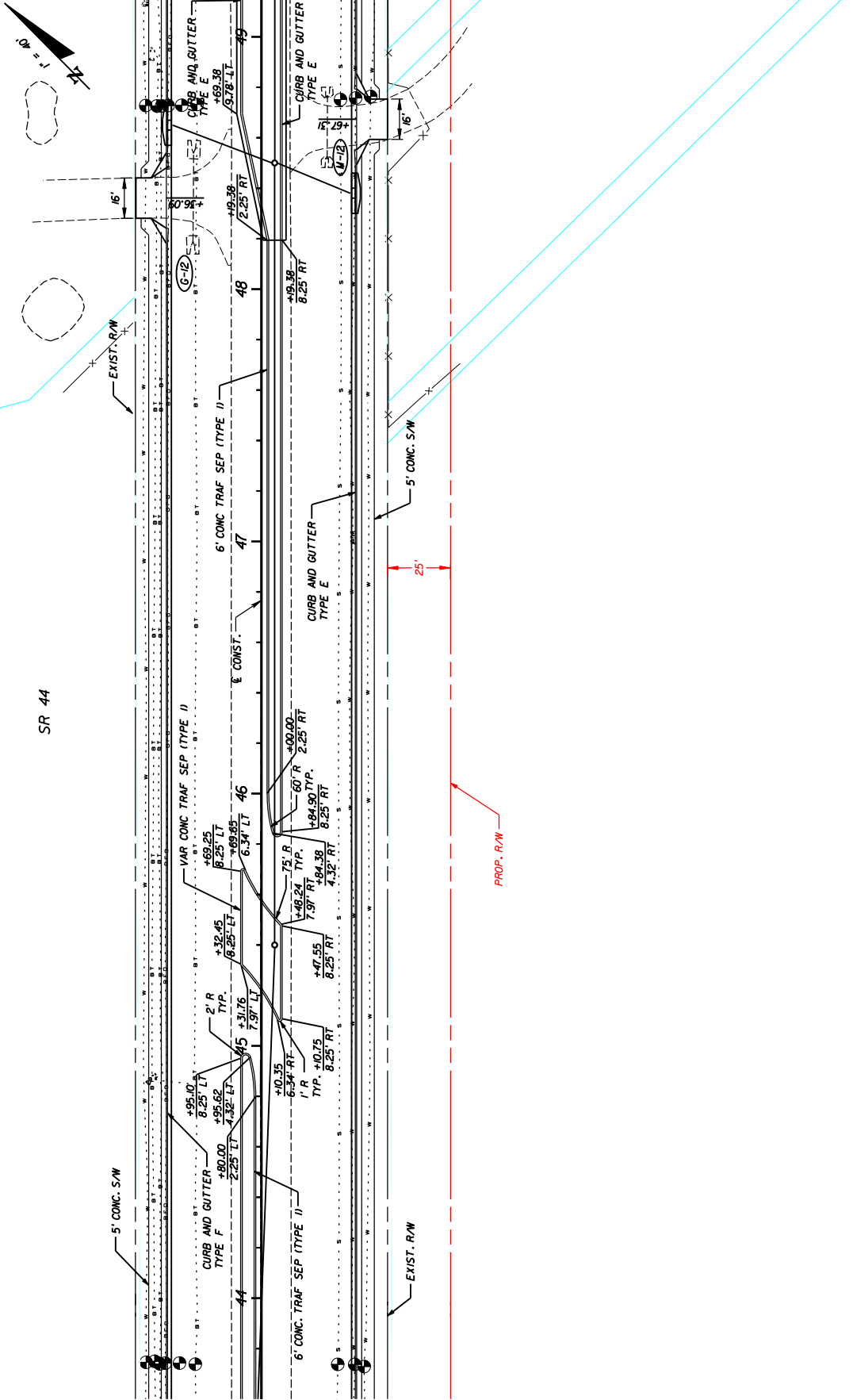


REVISIONS		STATE OF FLORIDA		DEPARTMENT OF TRANSPORTATION		SHEET NO.	
DATE	DESCRIPTION	ROAD NO.	COUNTY	FINANCIAL PROJECT ID			
		44	LAKE	409870-1-52-01	6		

BRUNO J. BOYLE, P.E., FL LICENSE NO. 49150
BOYLE
 ENGINEERING CORPORATION
 102 N. HIGHLAND AVE., SUITE 250
 FORT LAUDERDALE, FL 33304
 TEL: (954) 530-2500, FAX: (954) 531-8212
 CERTIFICATE OF AUTHORIZATION NO. 2005

NOTES: 8/15/05

SR 44



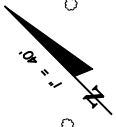
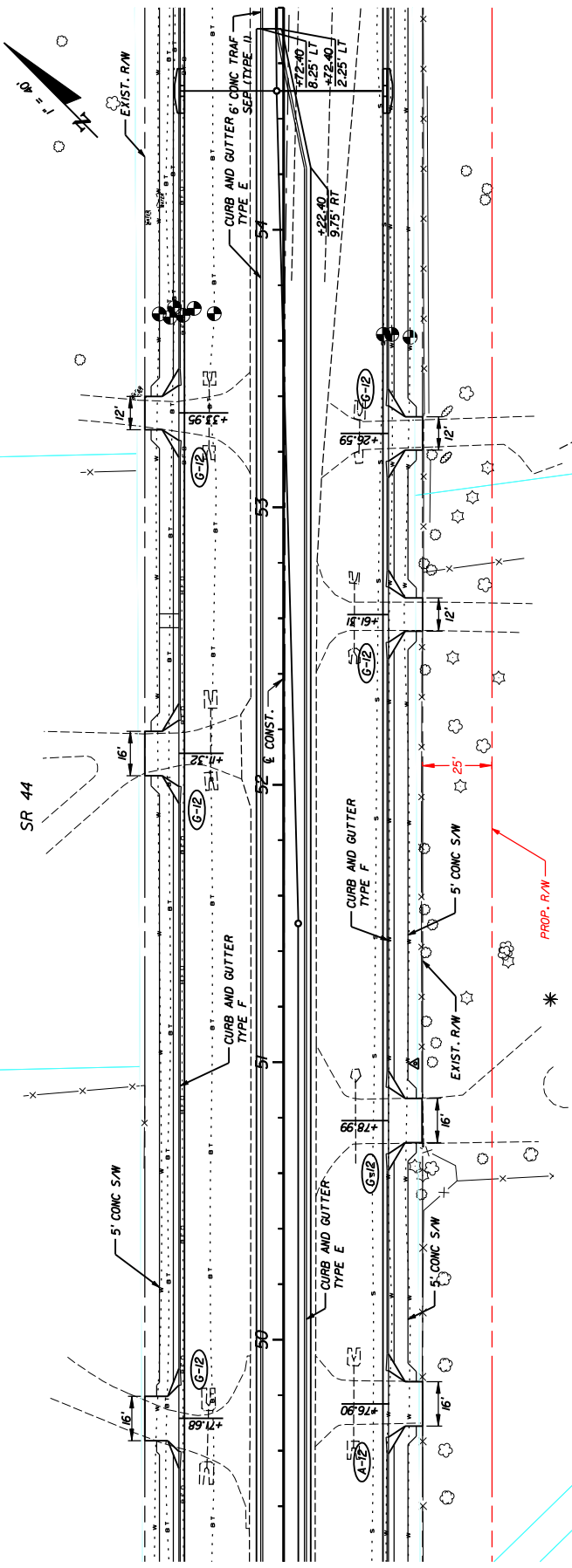
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DATE	DESCRIPTION	REVISIONS	DATE	DESCRIPTION

STATE OF FLORIDA		DEPARTMENT OF TRANSPORTATION	
BRUNO J. BOYLE, P.E.* FL LICENSE NO. 49150	ENGINEERING CORPORATION	ROAD NO.	44
102 P. HIGHWAY 90, SUITE 250, WEST PALM BEACH, FL 33411 TEL: (561) 830-2900, FAX: (561) 831-8212 CERTIFICATE OF AUTHORIZATION NO. 2005	COUNTY	LAKE	FINANCIAL PROJECT ID
			409870-1-52-01

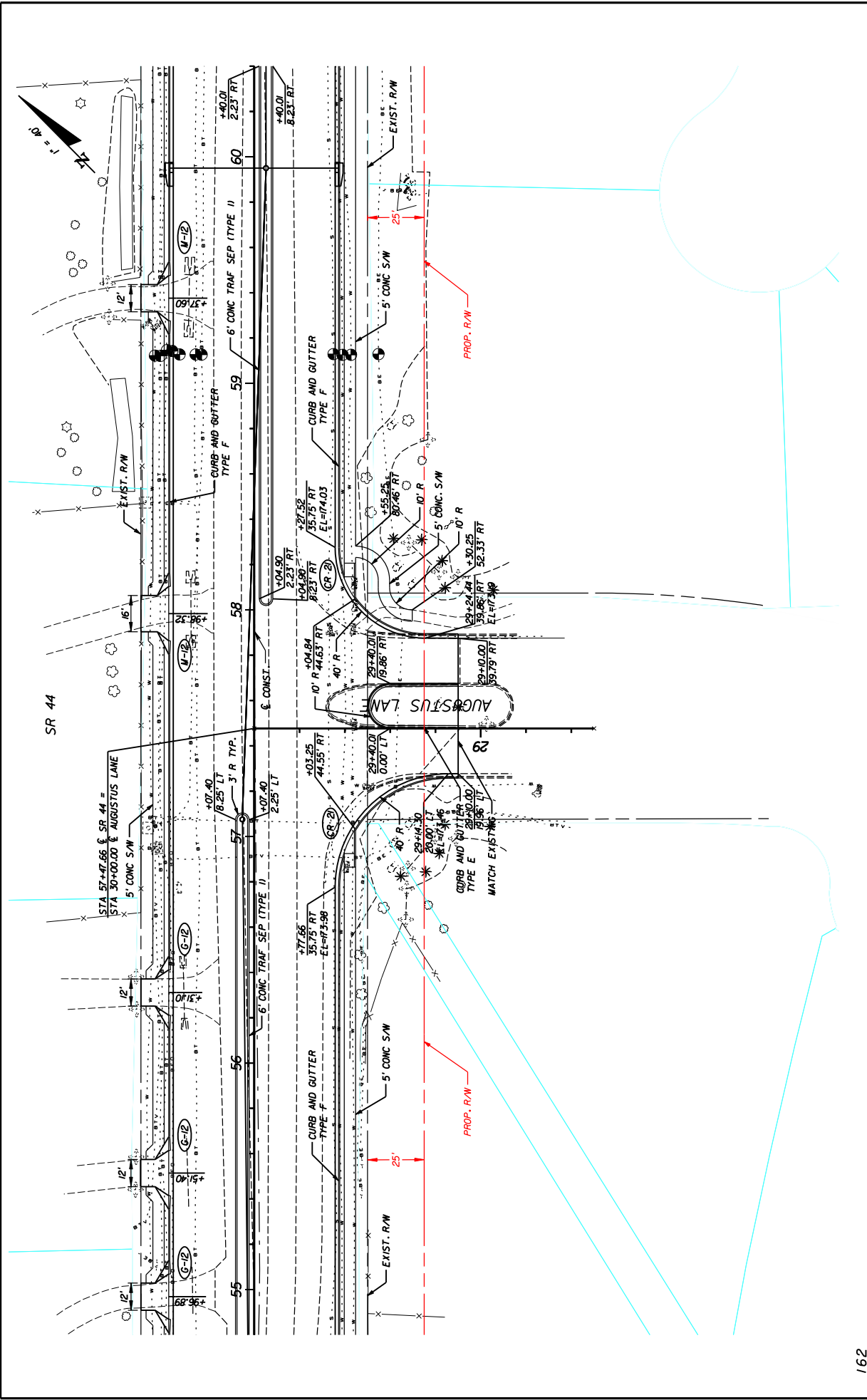
PROPOSED RIGHT OF WAY	SHEET NO. 7
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NOTES: STINES BOYLES



REVISIONS		STATE OF FLORIDA	
DATE	DESCRIPTION	ROAD NO.	FINANCIAL PROJECT ID
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		COUNTY	LAKE
		DEPARTMENT OF TRANSPORTATION	
		NOTES	
		STILES	
		8	
		SHEET NO.	

BRUND J. BOYLE, P.E., FL LICENSE NO. 49150
BOYLE
 ENGINEERING CORPORATION
 1020 PINEHURST DR., SUITE 250
 FORT LAUDERDALE, FL 33404
 TEL: 813/330-2500, FAX: 813/331-8212
 CERTIFICATE OF AUTHORIZATION NO. 2005



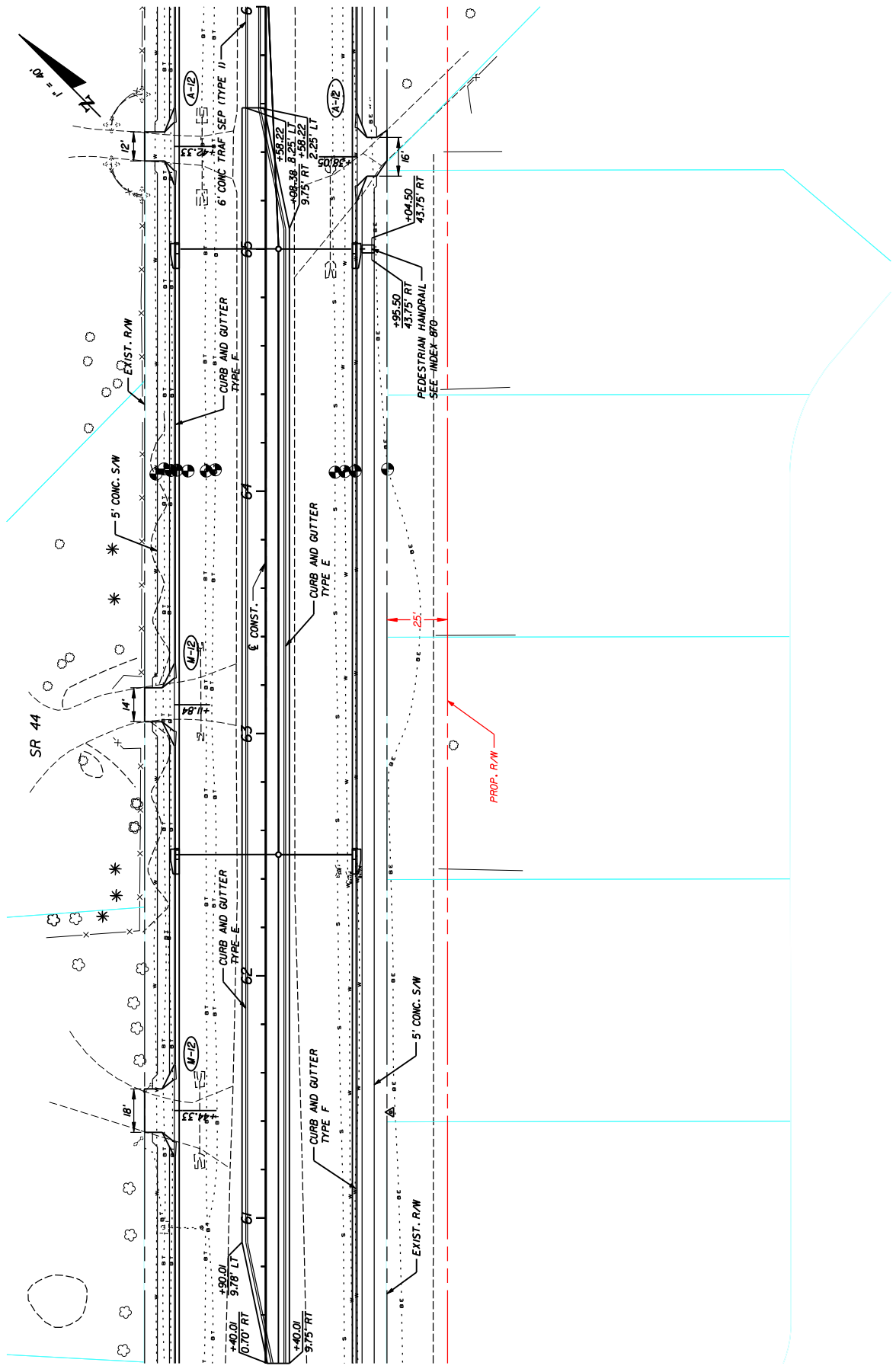
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REVISIONS		NOTES	
DATE	DESCRIPTION	DATE	DESCRIPTION

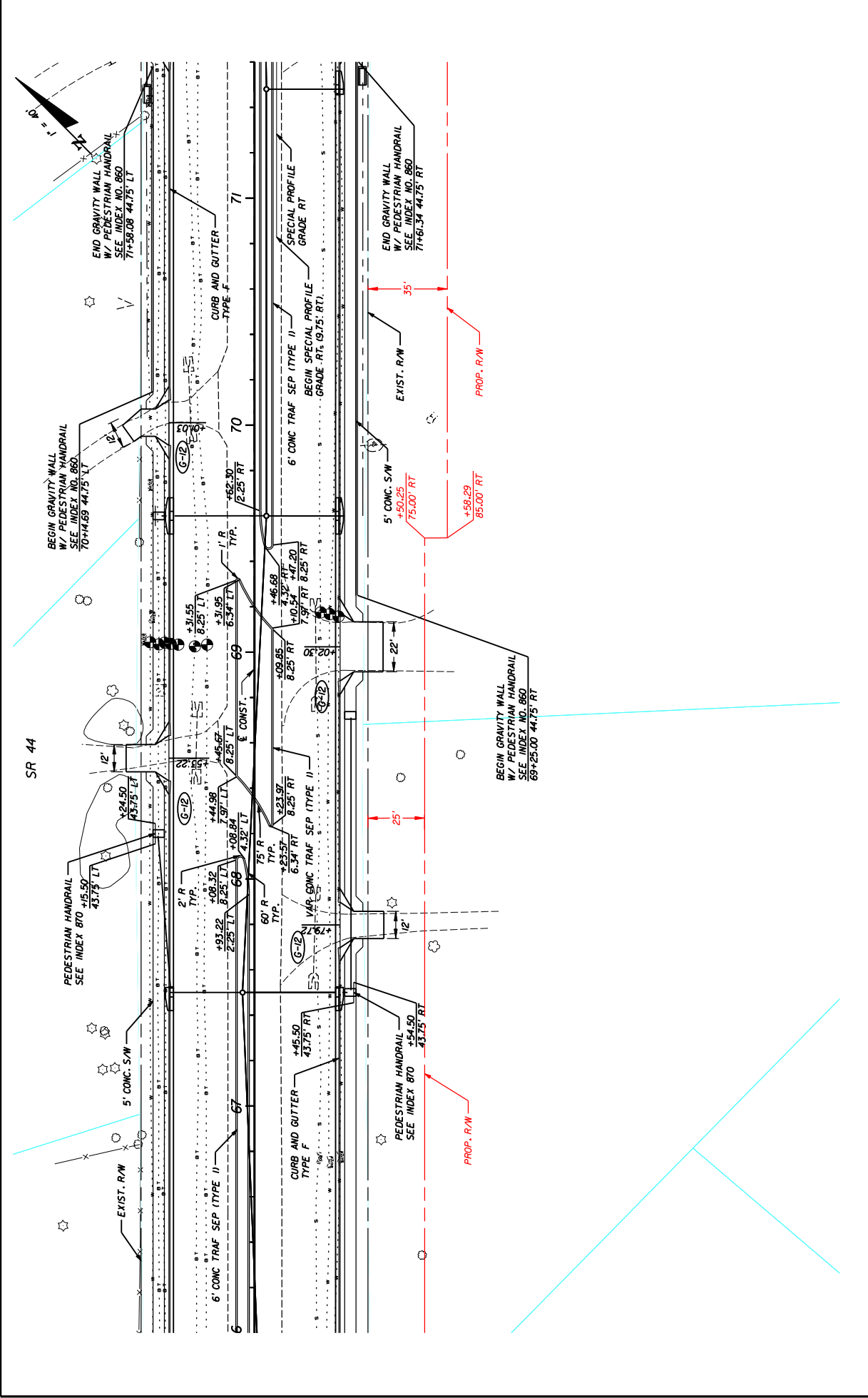
BRUNO J. FIORI, P.E., FL LICENSE NO. 49150		STATE OF FLORIDA	
BOYLE ENGINEERING CORPORATION		DEPARTMENT OF TRANSPORTATION	
102 N. HIGHLAND AVE., SUITE 250 LAKE LAKE, FL 34901, FAX 813/421-2300 TEL 813/420-2900		FINANCIAL PROJECT ID	
CERTIFICATE OF AUTHORIZATION NO. 2005		409870-1-52-01	
		ROAD NO.	44
		COUNTY	LAKE

PROPOSED RIGHT OF WAY		SHEET NO.	9
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BOYLE ENGINEERS

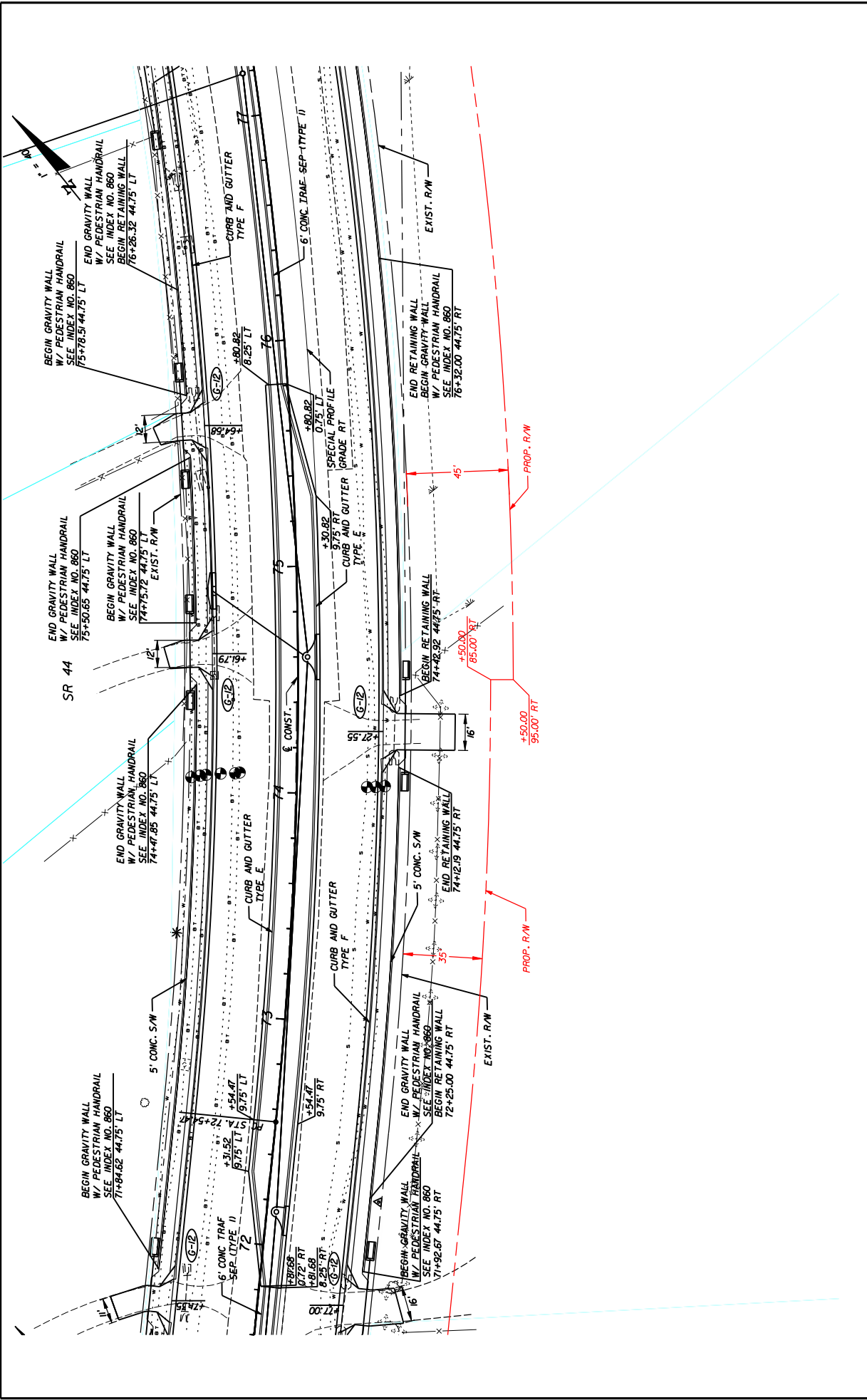


REVISIONS		STATE OF FLORIDA	
DATE	DESCRIPTION	DEPARTMENT OF TRANSPORTATION	FINANCIAL PROJECT ID
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		COUNTY LAKE	
		BRUNO J. BOYLE, P.E., FL LICENSE NO. 49150 BOYLE ENGINEERING CORPORATION 102 S. HIGHLAND AVE., SUITE 250, LAKE LAKE, FL 34939 TEL: (813) 330-2900, FAX: (813) 321-2300 CERTIFICATE OF AUTHORIZATION NO. 2005	
		PROPOSED RIGHT OF WAY STILES 87 LINES	
		SHEET NO.	10



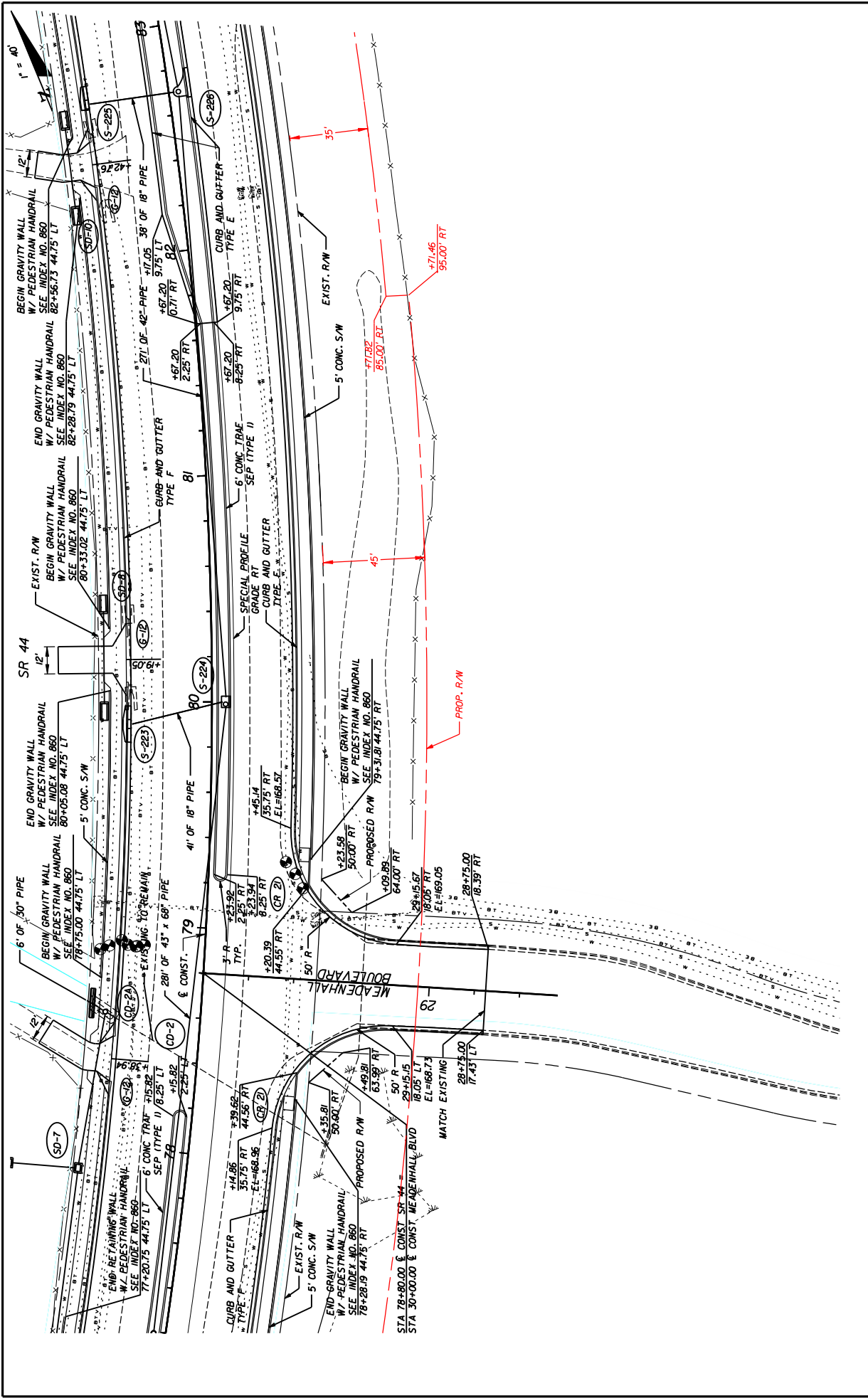
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DESCRIPTION		DATE		BRUNO J. BOYLE, P.E., * FL LICENSE NO. 49150		FINANCIAL PROJECT ID		11	
DESCRIPTION		DATE		BOYLE ENGINEERING CORPORATION 1025 HIGHLAND PARK, SUITE 250 FT. LAUDERDALE, FL 33304 TEL: (954) 530-2900, FAX: (954) 8131-8212 * CERTIFICATE OF AUTHORIZATION NO. 2005		ROAD NO.		LAKE	
DESCRIPTION		DATE		44		COUNTY		LAKE	
DESCRIPTION		DATE		409870-1-52-01		FINANCIAL PROJECT ID		NOTES	
DESCRIPTION		DATE				COUNTY		STILES	

PROPOSED RIGHT OF WAY



REVISIONS		STATE OF FLORIDA	
DATE	DESCRIPTION	DEPARTMENT OF TRANSPORTATION	FINANCIAL PROJECT ID
		ROAD NO. 44	409870-1-52-01
		COUNTY LAKE	

BRUNO J. BOYLE, P.E. * FL LICENSE NO. 49150	SR 44
BOYLE ENGINEERING CORPORATION	
102 N. HIGHLAND AVE., SUITE 200, TAMPA, FL 33610 TEL: (813) 330-2900, FAX: (813) 821-2300 CERTIFICATE OF AUTHORIZATION NO. 2005	



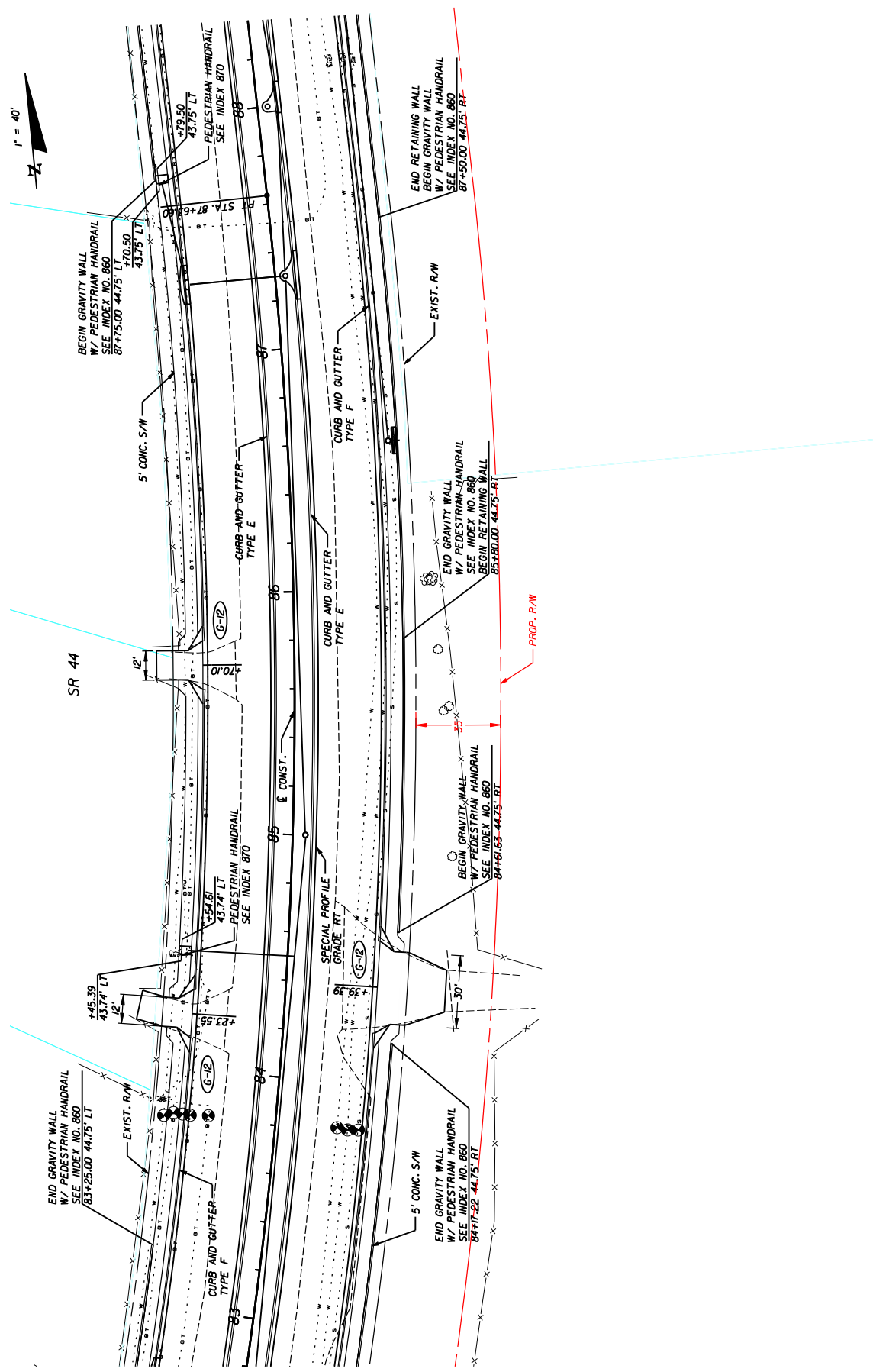
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ENGINEERING CORPORATION		DEPARTMENT OF TRANSPORTATION	
102 N. HIGHWAY 90, SUITE 250 LAKE LAKE PARK, FL 34901 TEL: 813/330-2900, FAX: 813/31-821-2300 CERTIFICATE OF AUTHORIZATION NO. 2005	ROAD NO. 44	COUNTY LAKE	FINANCIAL PROJECT ID 409870-1-52-01

SHEET NO. 13	REVIEWS	DATE
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PROPOSED RIGHT OF WAY

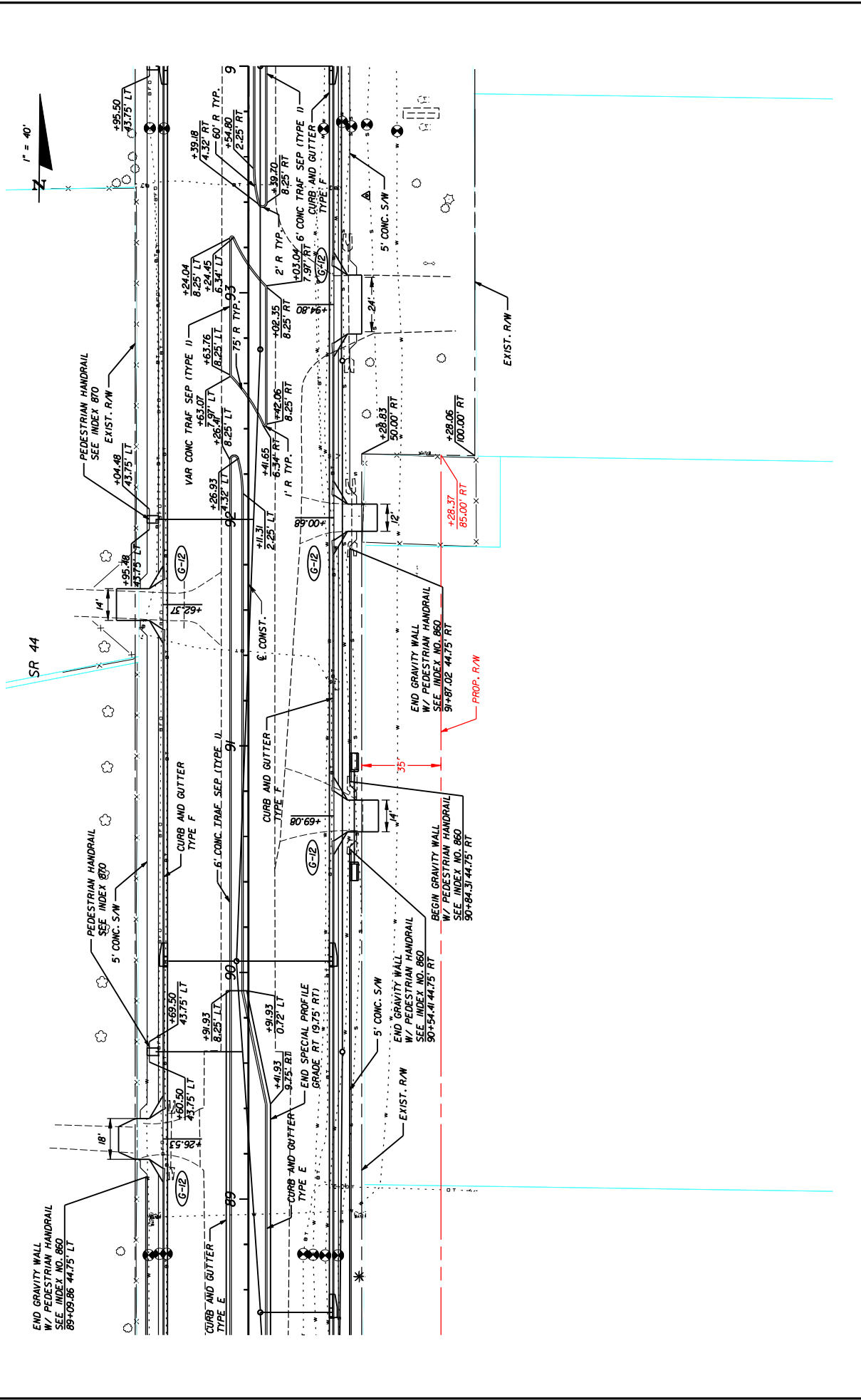
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BOYLE ENGINEERING CORPORATION		ROAD NO.	FINANCIAL PROJECT ID
		44	409870-1-52-01
		COUNTY	LAKE

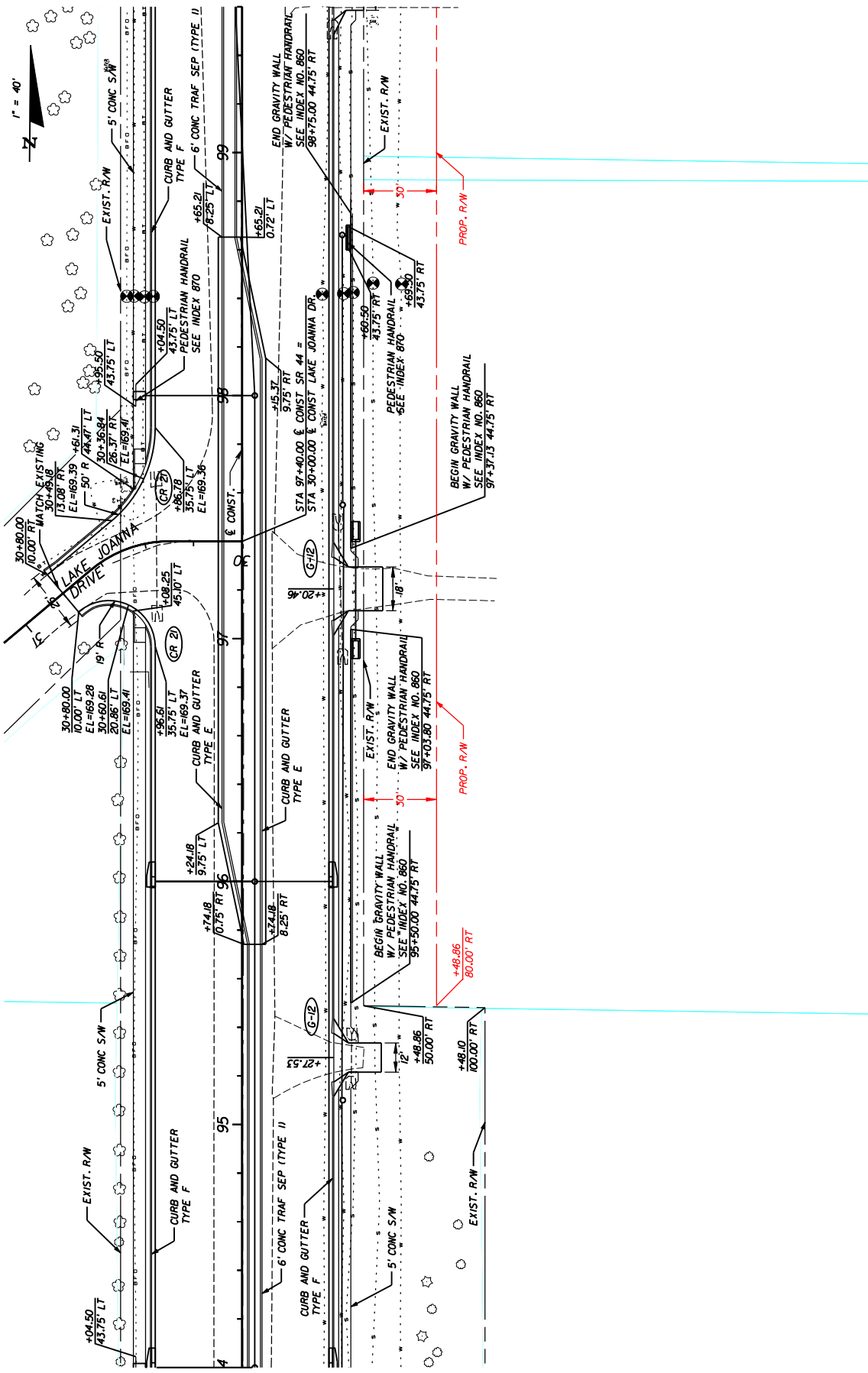
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		ROAD NO.	
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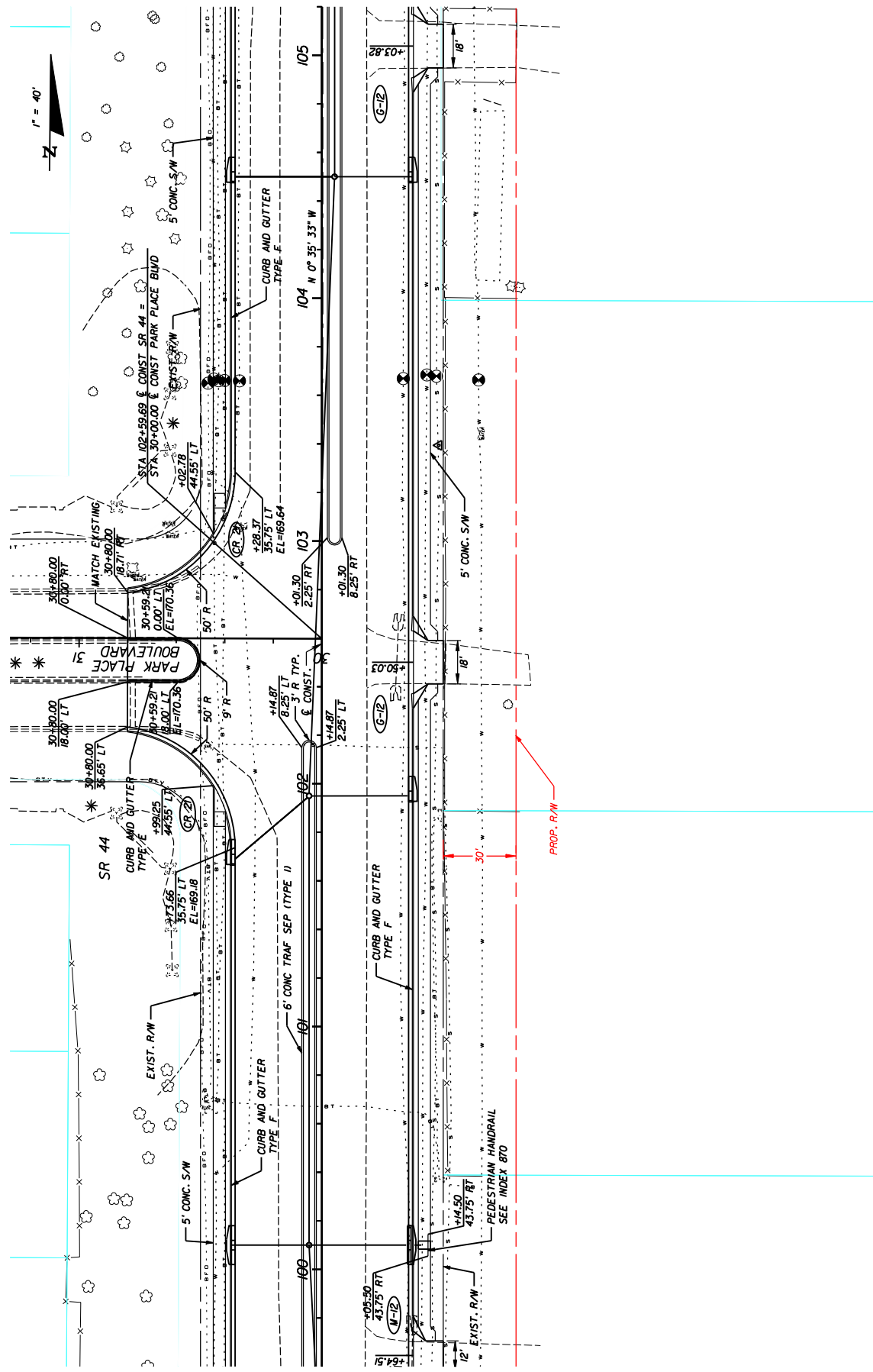
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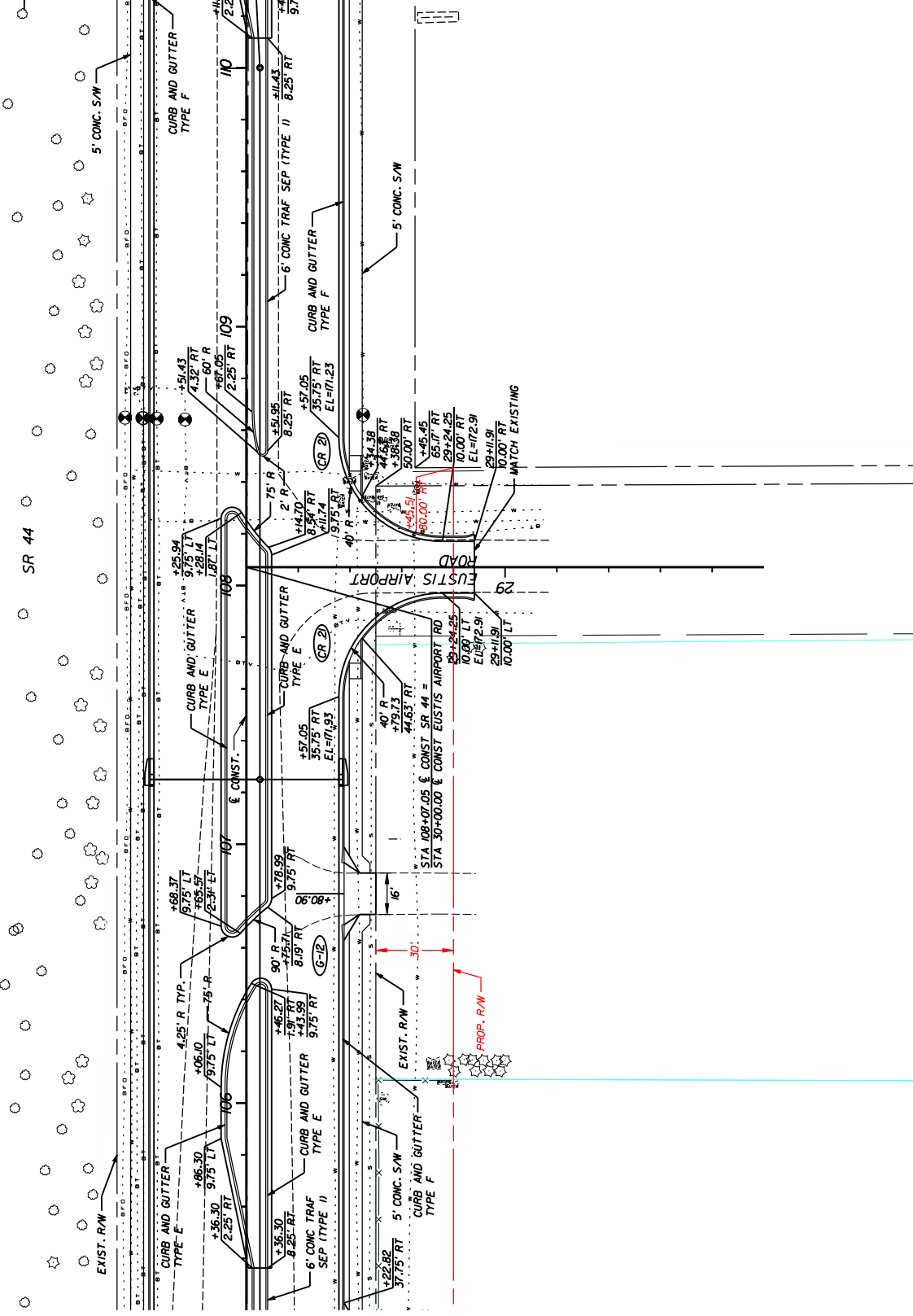


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DATE	DESCRIPTION	DATE	DESCRIPTION

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ENGINEERING CORPORATION		DEPARTMENT OF TRANSPORTATION	
102 N. HIGHWAY 30, SUITE 250 LAKE COUNTY, FL 32050-2500 TEL: 813/330-2500, FAX: 813/331-8212-2500 FL CERTIFICATE OF AUTHORIZATION NO. 2005	ROAD NO. 44	COUNTY LAKE	FINANCIAL PROJECT ID 409870-1-52-01

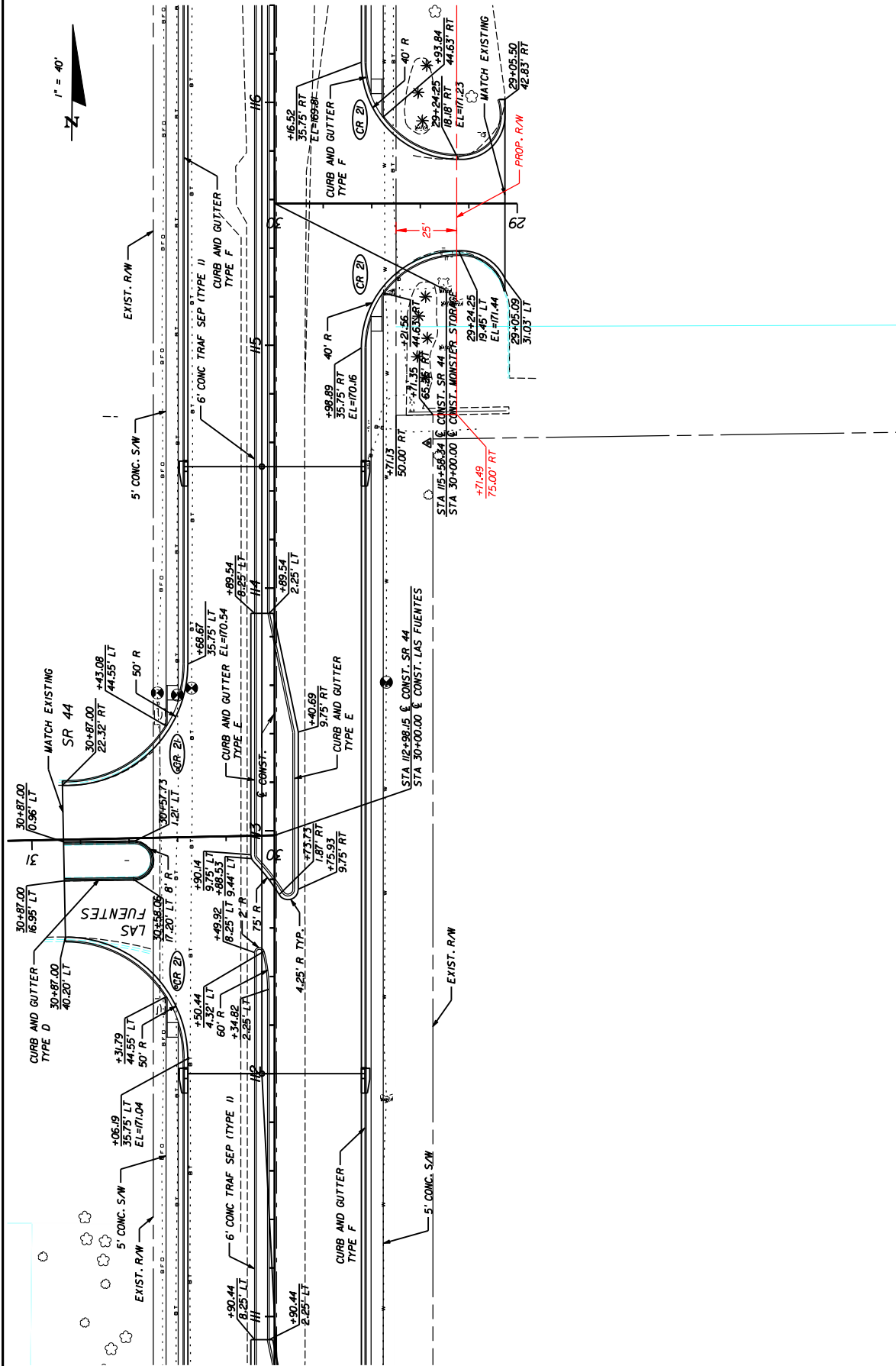
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1" = 40'



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		44	LAKE	409870-1-52-01	PROPOSED RIGHT OF WAY		
		BRUNO J. BOYLE, P.E. * EL. LICENSE NO. 49150					
		BOYLE ENGINEERING CORPORATION 1027 HIGHLAND PARK DR., SUITE 250 TALLAHASSEE, FLORIDA 32310 TEL: (904) 830-2900, FAX: (904) 831-8212/2300 CERTIFICATE OF AUTHORIZATION NO. 2005					
				NOTES: STILES			

1" = 40'

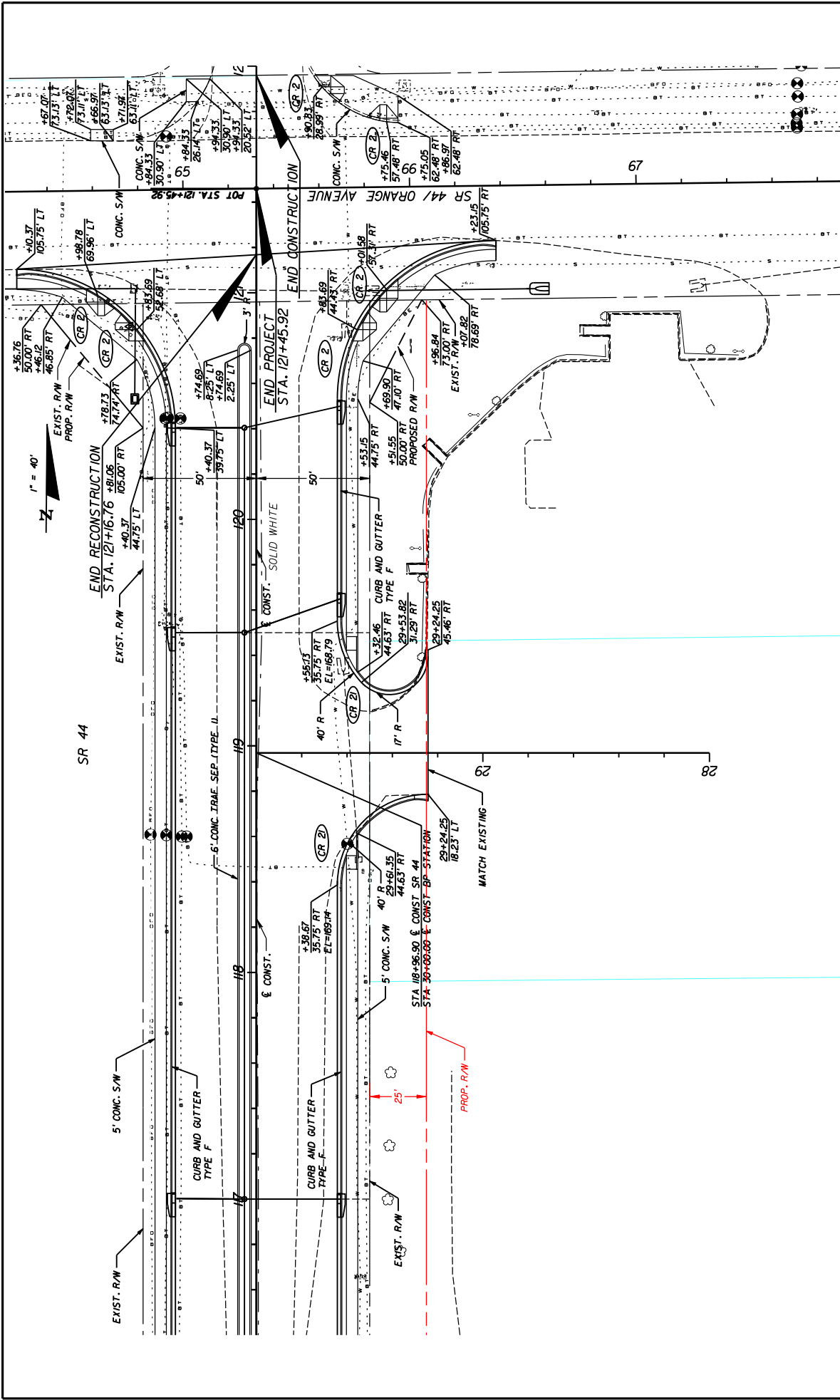


REVISIONS		NOTES	
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA		DEPARTMENT OF TRANSPORTATION	
BRUNO J. FIORI, P.E. * EL LICENSE NO. 49150		FINANCIAL PROJECT ID	
ENGINEERING CORPORATION		COUNTY	LAKE
102 N. HIGHLAND AVE., SUITE 250 LAKE WORTH, FL 33460 * FAX 813/421-2300 TEL 813/430-2900 * CERTIFICATE OF AUTHORIZATION NO. 2005		ROAD NO.	409870-1-52-01

PROPOSED RIGHT OF WAY

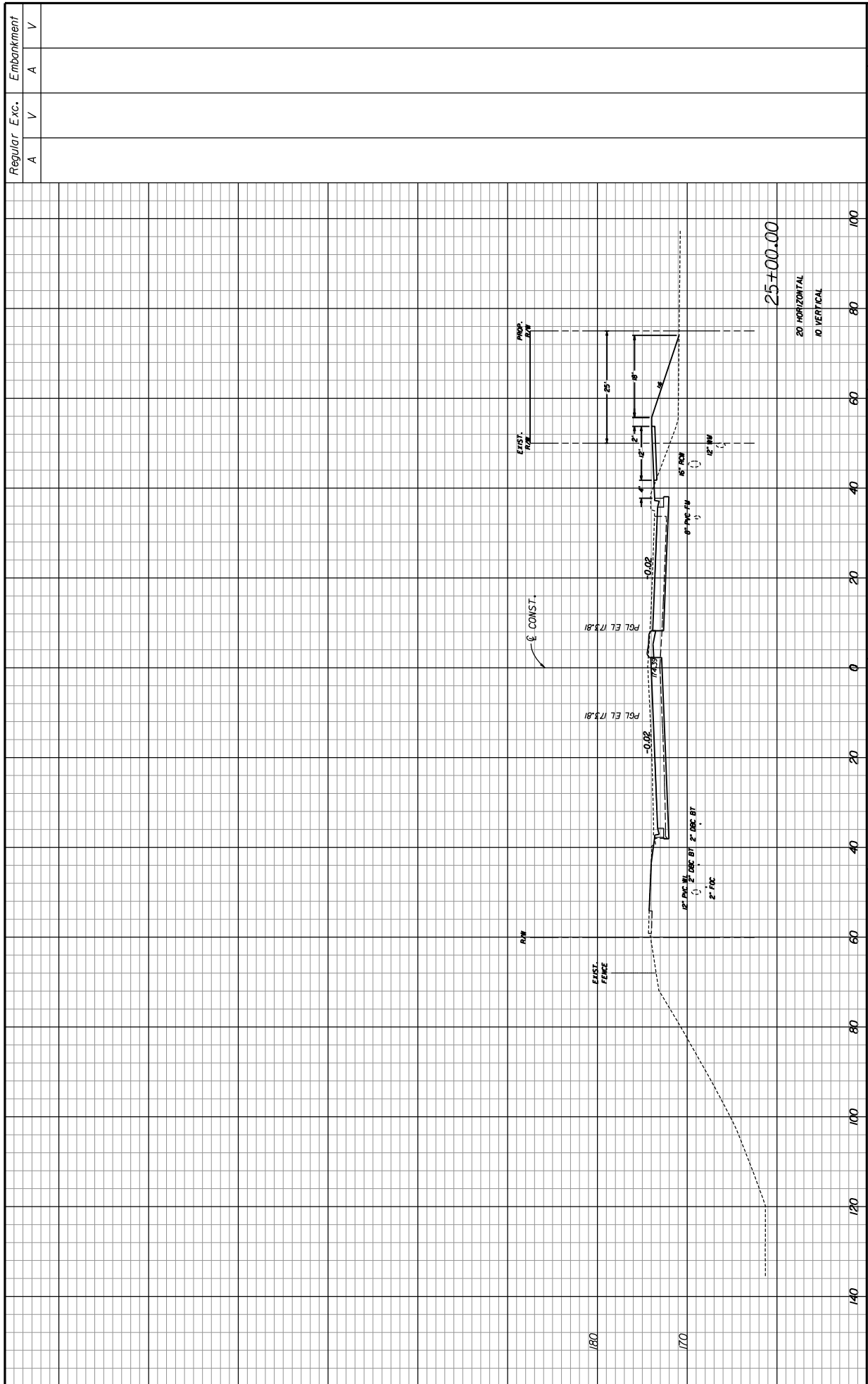
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REVISIONS		NOTES	
DATE	DESCRIPTION	DATE	DESCRIPTION

BRUNO J. FIORI, P.E., * FL LICENSE NO. 49150		STATE OF FLORIDA	
ENGINEERING CORPORATION		DEPARTMENT OF TRANSPORTATION	
1025 HIGHLAND PARK, STA 250, SUITE 1510 TALLAHASSEE, FL 32310 TEL: 904.530-2900, FAX: 904.531-8212/2300 CERTIFICATE OF AUTHORIZATION NO. 2005	ROAD NO. 44	COUNTY LAKE	FINANCIAL PROJECT ID 409870-1-52-01

SHEET NO. 20	PROPOSED RIGHT OF WAY
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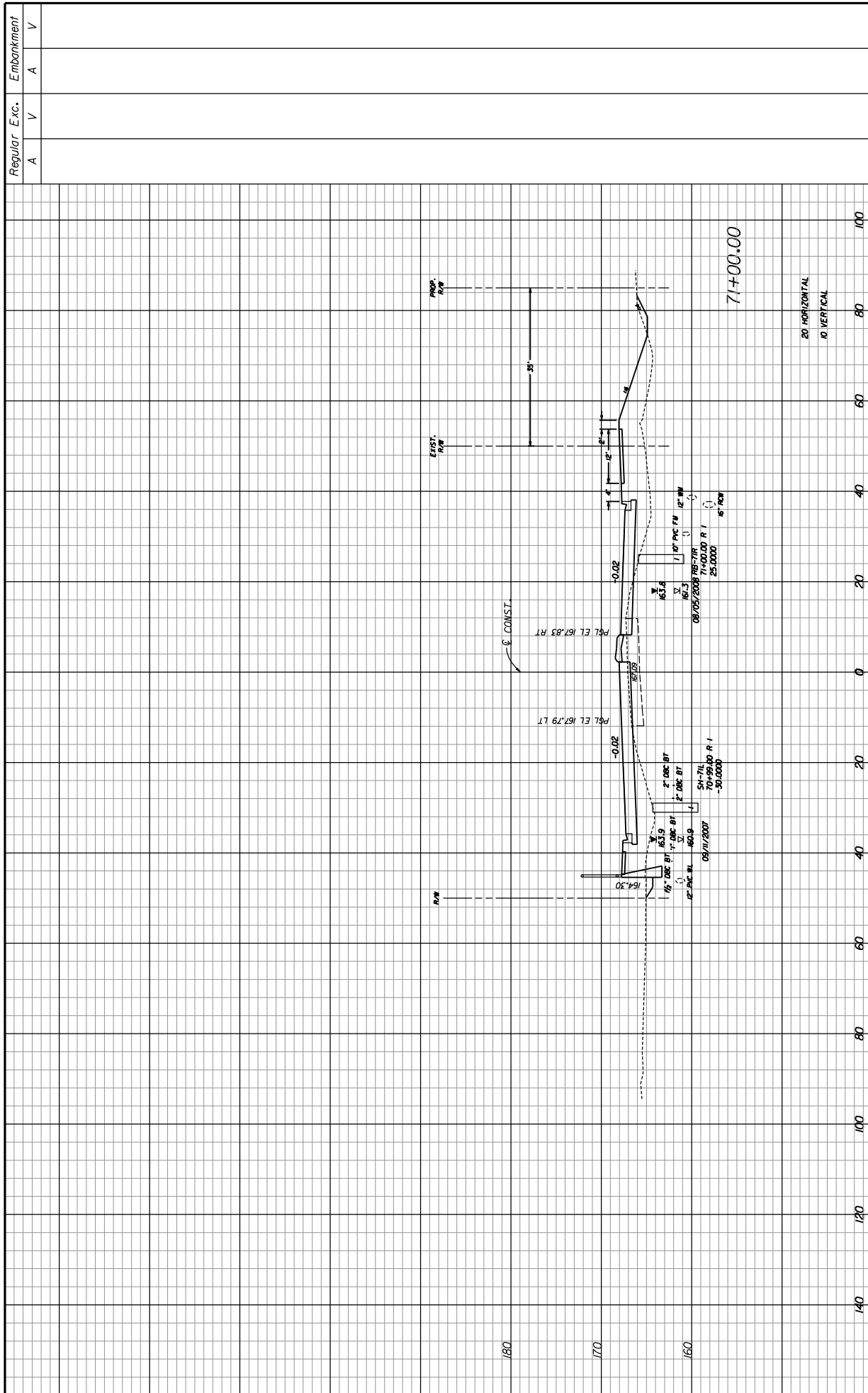
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DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA		DEPARTMENT OF TRANSPORTATION	
BRUNO J. BOYLE, P.E., FL LICENSE NO. 49150		FINANCIAL PROJECT ID	
ENGINEERING CORPORATION		COUNTY	
10210 HIGHWAY 90, SUITE 350 TAMPA, FL 33610		ROAD NO.	
TEL: 813-281-2386 FAX: 813-281-2388		44	
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		409870-1-52-01	

DATE	DESCRIPTION	DATE	DESCRIPTION

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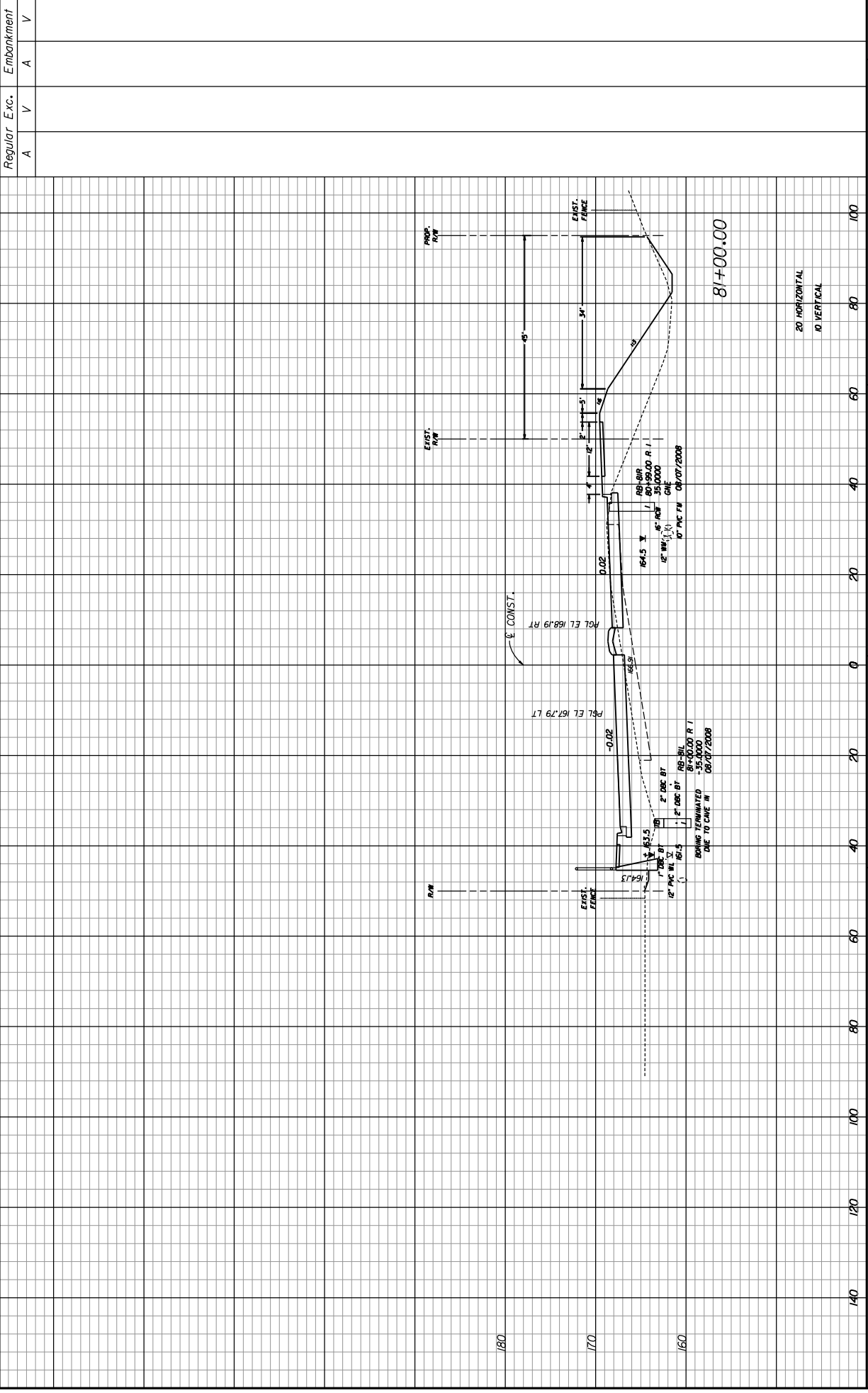
Embankment A V A V



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DATE	DESCRIPTION	ROAD NO.	COUNTY	ROAD NO.	COUNTY	ROAD NO.	COUNTY
		44	LAKE	409870-1-52-01			

BRIND J. BOYLE, P.E., FL LICENSE NO. 49150	 BOYLE ENGINEERING CORPORATION <small>10210 HIGHWAY 9998, SUITE 350 TAMPA, FL 33610 TEL: 813-239-0300 FAX: 813-239-0300 CERTIFICATE OF AUTHORIZATION NO. 2005</small>
BRIND J. BOYLE, P.E., FL LICENSE NO. 49150	
BRIND J. BOYLE, P.E., FL LICENSE NO. 49150	
BRIND J. BOYLE, P.E., FL LICENSE NO. 49150	

CROSS SECTIONS	
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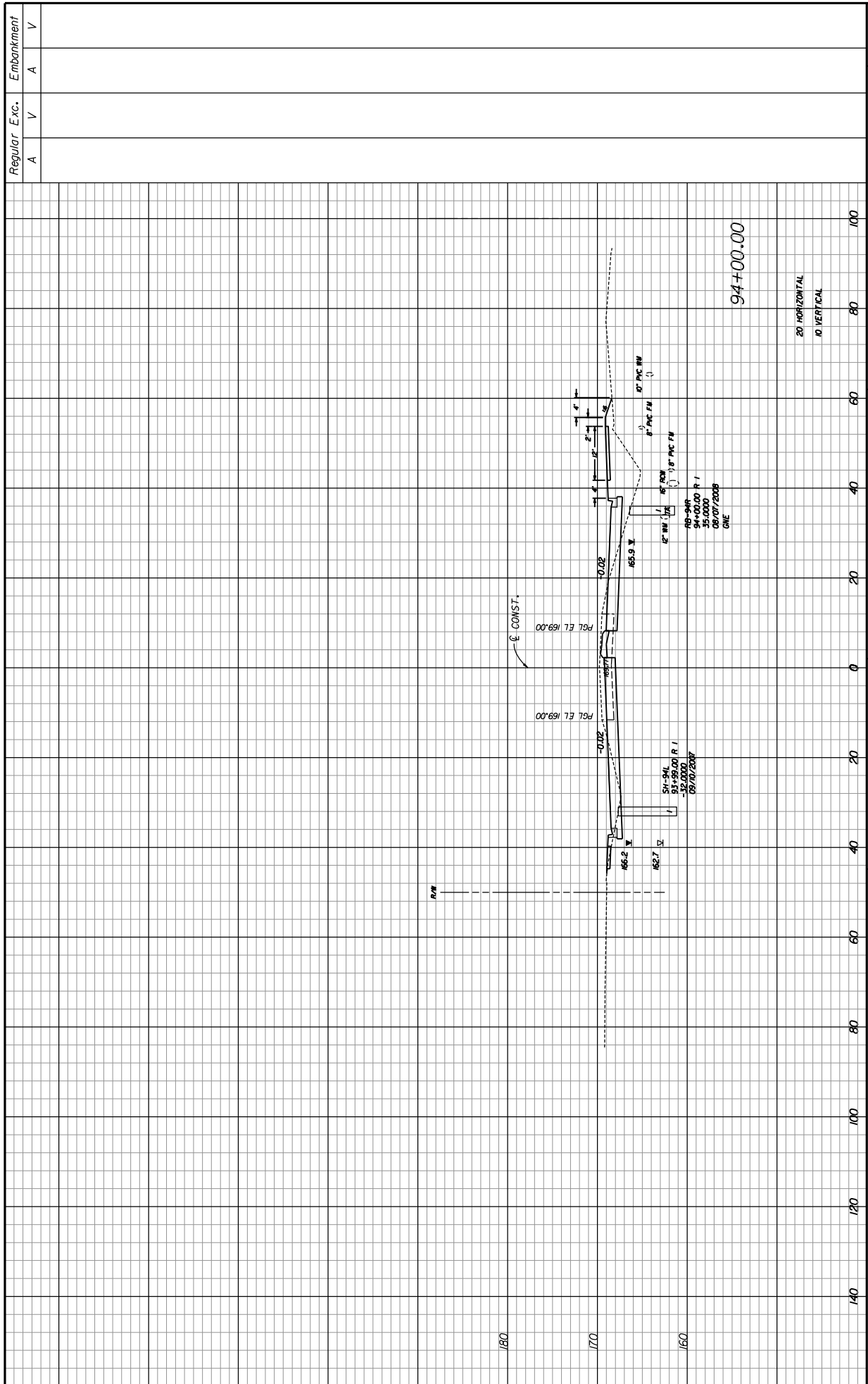


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BRIND I. FIORI, P.E., FL LICENSE NO. 49150
 ENGINEERING CORPORATION
 10210 HIGHWAY 9099, SUITE 350 TAMPA, FL 33610
 TEL: 813-973-9999 FAX: 813-973-2366
 CERTIFICATE OF AUTHORIZATION NO. 2005

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		ROAD NO. 44		COUNTY LAKE	FINANCIAL PROJECT ID 409870-1-52-01
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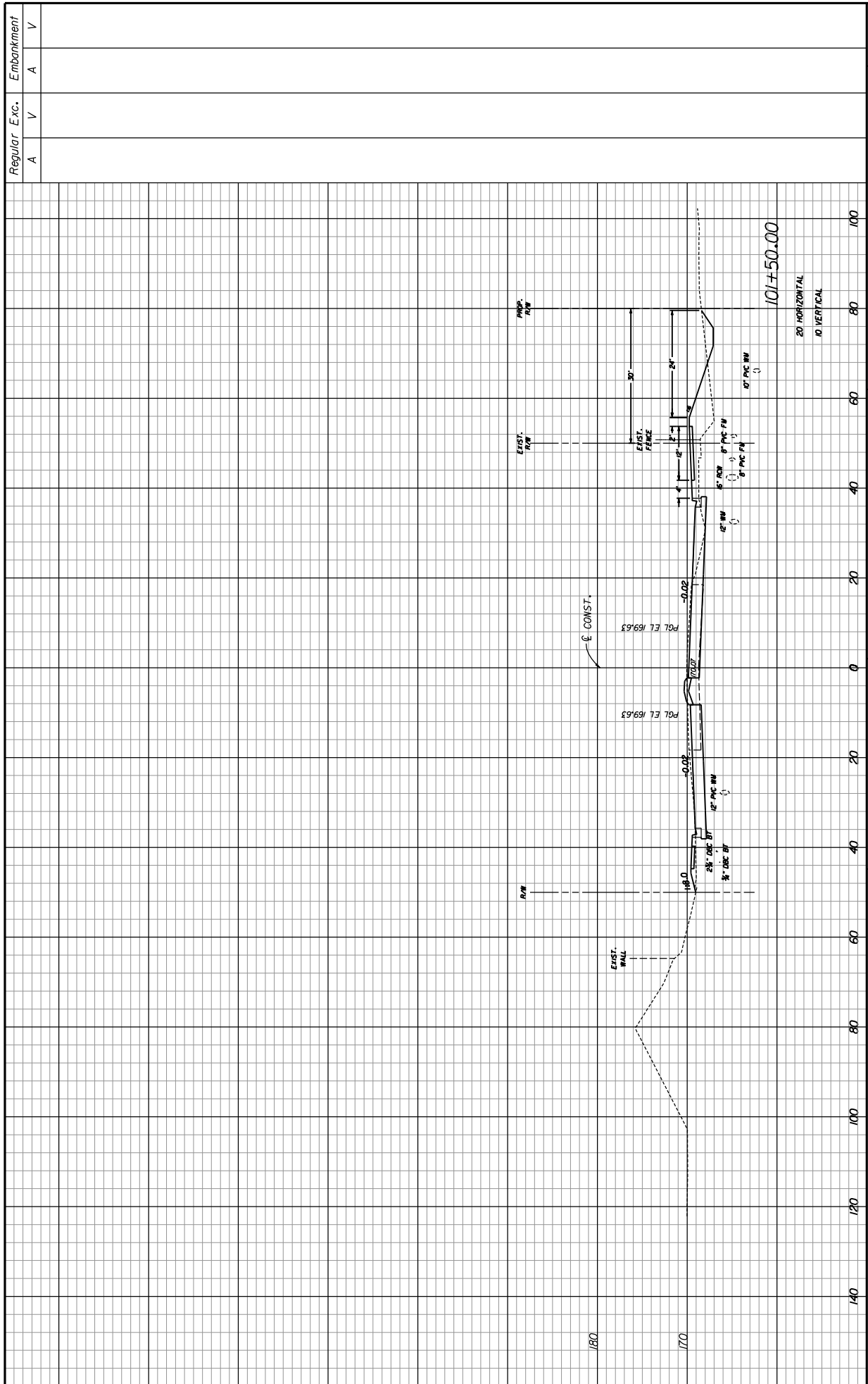
Regular Exc. A V A V
 Embankment A V A V



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BRIND I. BOYLE, P.E., FL LICENSE NO. 49150
BOYLE
ENGINEERING CORPORATION
 10210 HIGHWAY 9099, SUITE 350 TAMPA, FL 33610
 TEL: 813-973-9000 FAX: 813-973-2800
 CERTIFICATE OF AUTHORIZATION NO. 2005

STATE OF FLORIDA	FINANCIAL PROJECT ID
DEPARTMENT OF TRANSPORTATION	409870-1-52-01
ROAD NO.	COUNTY
44	LAKE



DATE	DESCRIPTION	REVISIONS	DATE	DESCRIPTION

STATE OF FLORIDA		DEPARTMENT OF TRANSPORTATION	
COUNTY		FINANCIAL PROJECT ID	
LAKE	44	409870-1-52-01	

BRIND I. FIORI, P.E., * FL LICENSE NO. 49150	
BOYLE	
ENGINEERING CORPORATION	
10210 HIGHWAY 9098, SUITE 350 TAMPA, FL 33610	
TEL: 813-973-9000 FAX: 813-973-9000	
CERTIFICATE OF AUTHORIZATION NO. 2005	



REVISIONS		DESCRIPTION	
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA		DEPARTMENT OF TRANSPORTATION	
COUNTY		FINANCIAL PROJECT ID	
44	LAKE	409870-1-52-01	

BRIND I. BOYLE, P.E., * FL LICENSE NO. 49150	
BOYLE	
ENGINEERING CORPORATION	
10210 N. GARDNER AVENUE, SUITE 350 TAMPA, FL 33610	
TEL: 813-971-2300 FAX: 813-971-2300	
CERTIFICATE OF AUTHORIZATION NO. 2005	

Regular Exc. A V A V

Embankment A V A V

Florence, Ryan

From: Johnson, Richard [Richard.Johnson@dot.state.fl.us]
Sent: Monday, February 23, 2009 3:45 PM
To: Florence, Ryan
Cc: McPhail, Michael; Kneale, Patricia
Subject: 30 foot multi use path estimate

Ryan,

Per our phone conversation today and your request, the thirty foot wide proposed multi use path right of way cost estimate was completed on 1/22/09, and the total estimated cost for that proposal was \$16,584,000. This was assuming that all of the new r/w would be taken off of the east side of SR 44B, and was exclusive to any other cost estimates that were done prior to this one. This proposal would involve an estimated 43 property owners. Although a map with a scale of 1 to 50 was provided, all of the proposed takings were estimated by this estimator. If I can be of any further assistance, please let me know.

Richard Y. Johnson
Cost Estimate Coordinator
386-943-5034

2/23/2009

Chapter 8

Pedestrian, Bicycle and Public Transit Facilities

8.1 General

8.1.1 Pedestrians and Bicyclists

It is the goal of the Department and in accordance with [REDACTED]

- [REDACTED]
- (b) Notwithstanding the provisions of paragraph (a), bicycle and pedestrian ways are not required to be established:
1. Where their establishment would be contrary to public safety;
 2. When the cost would be excessively disproportionate to the need or probable use;
 3. Where other available means or factors indicate an absence of need.”

Projects that comply with the design criteria contained within the PPM are considered to meet the requirements of the statute. If the design criteria contained within the PPM for pedestrian and bicycle facilities are not met, a Design Variation is required. The documentation shall reference which of the three conditions under **Section 335.065 (1)(b), Florida Statutes** support not providing a bicycle or pedestrian facility.

Sidewalks and [REDACTED] for all types of projects and locations. **Table 8.1.1** identifies appropriate bicycle facilities for various types of projects.

Table 8.1.1 Bicycle Facilities

Location	Condition	Type of Work		
		New Construction, Reconstruction	Resurfacing, Restoration, Rehabilitation (RRR) ^{1, 2}	Traffic Operations, Intersection Improvements
			Bicycle Lane or Wide Curb Lane	Bicycle Lane or Wide Curb Lane
Beyond one mile of an urban area	Curb and gutter (DS ≤ 45mph)	Bicycle Lane	Bicycle Lane or Wide Curb Lane	Bicycle Lane or Wide Curb Lane
	All other	Bicycle Lane or Paved Shoulder	Bicycle Lane, Paved Shoulder or Wide Curb Lane	Bicycle Lane, Paved Shoulder or Wide Curb Lane
<p>1. Widening existing curbed sections for the project length on RRR projects for the sole purpose of providing a bicycle lane is considered to be an excessively disproportionate cost, given the costs associated with relocating/reconstructing the curb, sidewalk, and drainage system, acquisition of additional right of way, or utility impacts. No Design Variation is necessary.</p> <p>2. On existing multilane roadways without bicycle lanes, if truck volumes are 10% or less, consideration shall be given to reducing traffic lane width(s) to provide a bicycle lane or wide curb lane.</p>				

Bicyclists and pedestrians should be expected on all of Florida's state roadways except where restricted on limited access facilities and interstate highways (**Section 316.091 Florida Statutes**).

Decisions on appropriate pedestrian and bicycle facilities shall be determined with input from the District Pedestrian/Bicycle Coordinator, throughout the project development and implementation process. Further coordination may also be necessary with the District Americans with Disabilities Act (ADA) Coordinator.

When considering other available means, the alternate route or facility should include accommodation for cyclists and pedestrians which meet the design criteria for bicycle and pedestrian facilities on state roadways, and provide access to the same services, origination and destination sites, and transit connections as the project corridor. The alternate route shall not result in a significant increase in travel time or trip length, exposure to motorized traffic or substantial elevation changes. If the alternate route requires the pedestrian or bicyclist to cross limited access, arterial or collector roadways, or rail corridors, appropriate crossing locations shall be provided.

8.1.2 Transit

For projects within the operational limits of a local transit agency service area, consideration should be given to connectivity of pedestrian and bicycle facilities with transit stops. Bicycle access to transit facilities should be provided because most bus service has bike-on-bus (bicycle rack) capability.

Decisions on appropriate pedestrian and bicycle facilities to connect with transit service shall be determined with input from the District Pedestrian/Bicycle Coordinators, District Modal Development Office Coordinators, District Americans with Disabilities Act (ADA) Coordinators, and the District Public Transportation staff. Where there is a demand for pedestrian and bicycle facilities, there could also be a demand for public transit or public transportation facilities. Public transit street side facilities should be considered in all phases of a project, including planning, preliminary design and engineering, design, and construction. Coordination with the District Modal Development Office and/or the local public transit provider(s) will help determine the need for and justification of bus bays and transit shelters on a project by project basis.

Multimodalism is the ultimate goal of the Department. The integration of public transit street facilities along with pedestrian and bicycle facilities furthers the implementation of this goal.

8.3 Pedestrian Facilities

All roadways and bridges where pedestrian travel is expected should have separate walking areas such as sidewalks or shared use paths that are outside the vehicle travel lanes. Refer to **Section 8.6** for shared use paths.

8.3.1 Sidewalks

Sidewalks are walkways parallel to the roadway and designed for use by pedestrians.

However, the construction of sidewalks on both sides of the street would not be required in such cases as when the roadway parallels a railroad or drainage canal and pedestrians would not be expected. If sidewalks are constructed on the approaches to bridges, they should be continued across the structure. If continuous sidewalks are constructed on only one side of the street, pedestrians should be provided access to transit facilities located on the opposite side of the street.

On curbed roadways, the minimum width of a sidewalk shall be 5 ft. when separated from the curb by a buffer strip. The minimum separation for a 5 ft. sidewalk from the back of curb is 2 ft. The buffer strip should be 6 ft. where possible to eliminate the need to narrow or reroute sidewalks around driveways. If the sidewalk is located adjacent to the curb, the minimum width of sidewalk is 6 ft.

Grades on sidewalks should not exceed 5% when not adjacent to a travel way. There should be enough sidewalk cross slope to allow for adequate drainage, however the maximum shall be no more than 2% to comply with ADA requirements. Edge drop-offs should be avoided. When drop-offs cannot be avoided, they should be shielded as discussed in **Section 8.8**.

A 5-foot wide sidewalk that connects a transit stop or facility with an existing sidewalk or shared use path shall be included to comply with ADA accessibility standards.

Particular attention should be given to pedestrian accommodations at the termini of each project. If full accommodations cannot be provided due to the limited scope or an existing sidewalk isn't present at the termini, then temporary measures should be considered such as extending the sidewalk and project limits to next appropriate pedestrian crossing or access point. If special accommodations are made, it is equally important to address these measures on the adjoining projects. In all cases, the District Pedestrian/Bicycle

8.4 Bicycle Facilities

Appropriately designed and located bicycle facilities play an important role in supporting safe bicycle travel. Bicycle facilities include bicycle lanes, paved shoulders, wide curb lanes, shared use paths, traffic control devices, and bicycle parking facilities.

Measures that can considerably enhance a corridor's safety and capacity for bicycle travel are:

1. Providing bicycle facilities.
2. Maintaining a smooth, clean riding surface, free of obstructions. This includes ensuring drainage inlets and utility covers that cannot be moved out of the travel way are flush with grade, well seated, and use bicycle-safe grates and covers.
3. Responsive and appropriate traffic control devices, consistent with guidance in the **MUTCD**, including providing bicycle oriented directional signage.

8.4.1 Bicycle Lanes

Where required by **Table 8.1.1**, a bicycle lane shall be provided for each direction of travel on the roadway. Bicycle lanes shall be marked in accordance with **Design Standards** and the **MUTCD**.

This provides for a 5.5-foot width to the face of curb when FDOT Type F curb and gutter is used. The 1.5-foot gutter width should not be considered as part of the rideable surface area, but this width provides useable clearance to the curb face. A minimum width of 5 feet shall be provided when the bicycle lane is adjacent to on-street parking, a right-turn lane, guardrail or other barrier.

On flush shoulder roadways, the paved shoulder described in **Section 8.4.2** should be marked as a bicycle lane in or within 1 mile of an urban area.

Where parking is present, the bicycle lane shall be placed between the parking lane and the travel lane and have a minimum width of 5 feet. If the parking volume is substantial or the turnover is high, an additional 1 to 2 feet of width should be provided if available.

At intersections with right turn lanes, the bicycle lane shall continue adjacent to the through lane; between the through lane and the right turn lane, and shall be 5 feet in width for new

construction and reconstruction projects. On RRR projects where the bicycle lane is required in accordance with **Chapter 25**, a 5-foot bicycle lane width should be provided (4-foot minimum).

Bicycle lanes shall be one-way facilities and carry bicycle traffic in the same direction as adjacent motor vehicle traffic. On one-way streets, bicycle lanes should generally be placed on the right side of the street. A bicycle lane on the left side of the street can be considered if it will substantially reduce the number of potential conflicts, such as those caused by frequent bus traffic, heavy right-turn movements, high-turnover parking lanes, or if there is a significant number of left-turning bicyclists.

8.4.2 Paved Shoulders

A paved shoulder is a portion of a roadway which has been delineated by edge line striping, but does not include special pavement markings or signing for the preferential use by bicyclists. Paved shoulders shall be 5 feet in width for new construction, reconstruction and RRR projects, however existing 4-foot paved shoulders on RRR projects may be retained. A paved shoulder of at least 4 feet in width is considered to be a bicycle facility, however a minimum 5-foot clear width between the traveled way and the face of curb, guardrail or other roadside barrier is required.



8.4.4 Bicycle Route Systems

Bicycle route systems are linked by signs to aid bicyclists. Bicycle route systems are ineffectual unless signs are highly specific, giving a clear indication of destination. It may be advantageous to sign some urban and rural roadways as bicycle route systems. Bicycle route signing should not end at a barrier. Information directing the bicyclists around the barrier should be provided.

8.5 Drainage and Utility Considerations

Drainage inlets, grates and utility covers are potential problems to bicyclists. When a new roadway is designed, all such grates and covers should be kept out of the bicyclists' expected path. Refer to the **Design Standards** for required grates and inlet tops.

See **Chapter 2** of this volume for horizontal clearances for light poles.

8.6 Shared Use Paths

They are almost always used by pedestrians, joggers, in-line skaters, bicyclists, and in some cases equestrians. However, the bicycle's operating characteristics will dictate the design of shared use paths. The criteria in this section apply to paved shared use paths. The term *path* as used in this section refers to these paved shared use paths. An example typical design is provided for guidance in **Volume 2, Exhibit TYP-15**.

Shared use paths should be thought of as extensions of the highway system that are intended for the exclusive or preferential use of bicycles and pedestrians in much the same way as freeways are intended for the exclusive or preferential use of motor vehicles. Well-planned and designed paths can provide good pedestrian and bicycle mobility.

Shared use paths can serve a variety of purposes. They can provide a school age child or a bicycle commuter with a shortcut away from busy roadways.

Shared use paths can be located along abandoned railroad rights of way, the banks of rivers and other similar areas. They can provide bicycle access to areas that are otherwise served only by limited access highways and closed to bicycles.

8.6.1 Considerations

-
-
-
-

[REDACTED]

[REDACTED]

- [REDACTED]
- [REDACTED]
- [REDACTED]

8.6.2 Widths

[REDACTED] It should be recognized, however, that one-way paths will often be used as two-way facilities unless effective measures are taken to assure one-way operation.

[REDACTED] Under certain conditions it may be necessary or desirable to increase the width of a path due to substantial use by bicyclists, joggers, skaters and pedestrians, by large maintenance or emergency vehicles and steep grades. [REDACTED]

8.6.3 Cross Slopes

Since pedestrian use is expected on shared use paths, ADA requirements must be met. Therefore, the maximum cross-slope should be 2%.

The maximum cross-slope for a path used exclusively by bicyclists is 6%.

8.6.4 Grades

To meet ADA the maximum grade is 5%. Grades greater than 5% should be considered ramps and designed accordingly. Maximum ramp slopes are 8.33% and can have a maximum rise of 30 inches, with a level landing at least 60 inches in length.

To accommodate bicycles exclusively, grades should not exceed 5%, since steeper grades cause difficulties for many bicyclists. If the terrain makes it necessary to use steeper grades on short sections, the following restrictions are recommended:

Table 8.6.4 Maximum Grade Lengths

Grade (%)	Maximum Length
6%	For up to 800 feet
7%	For up to 400 feet
8%	For up to 300 feet
9%	For up to 200 feet
10%	For up to 100 feet
11+%	For up to 50 feet

NOTE: When using a longer grade, 4 to 6 feet of additional width should be added to the path to allow some bicyclists to dismount and walk their bikes. Additional clear distances should be provided and sight distances must be modified to accommodate longer grades.

Refer to **Section 8.6.9** for controls on grade changes.

8.6.5 Horizontal Clearance

Edge drop-offs should be avoided. When drop-offs cannot be avoided they should be shielded as discussed in **Section 8.8**.

Table 8.6.8.2 Minimum Stopping Sight Distances

MINIMUM STOPPING SIGHT DISTANCE (FEET) FOR 20 MPH PATH = 127 FEET, FOR 30 MPH PATH = 230 FEET														
Design Speed	GRADES													
	-9%	-8%	-7%	-6%	-5%	-4%	-3%	3%	4%	5%	6%	7%	8%	9%
20 MPH	Use 30 MPH Values					137	134	121	119	118	116	115	114	113
30 MPH	298	287	277	268	260	Use 20 MPH Values								

8.6.9 Vertical Alignment

The minimum length of vertical curve necessary to provide minimum stopping sight distance at various speeds on crest vertical curves is selected by using the formula listed below:

When $S > L$: $L = 2S - (900 / A)$ $L = \text{Min. Length of Vertical Curve (ft.)}$
 $A = \text{Algebraic Grade Difference (\%)}$

When $S < L$: $L = AS^2 / 900$ $S = \text{Stopping Sight Distance (ft.)}$

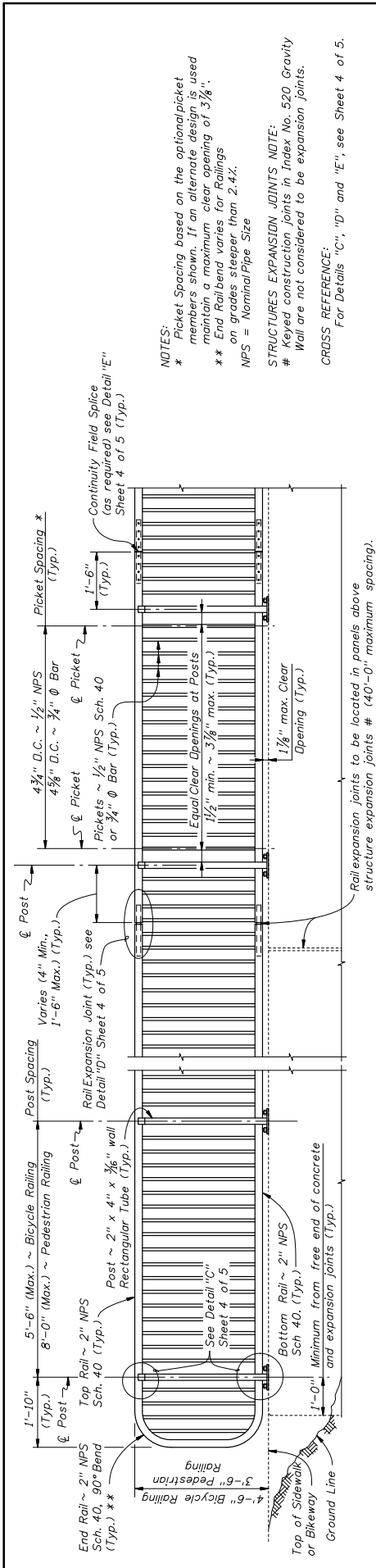
8.6.10 Separation Between Shared Use Path and Roadway

When two-way shared use paths are located adjacent to a roadway, a separation shall be provided. This demonstrates to both path users and motorists that the shared use path is a separate facility.

On roadways with flush shoulders, this separation is 5 feet measured from the outside edge of shoulder to the inside edge of the path.

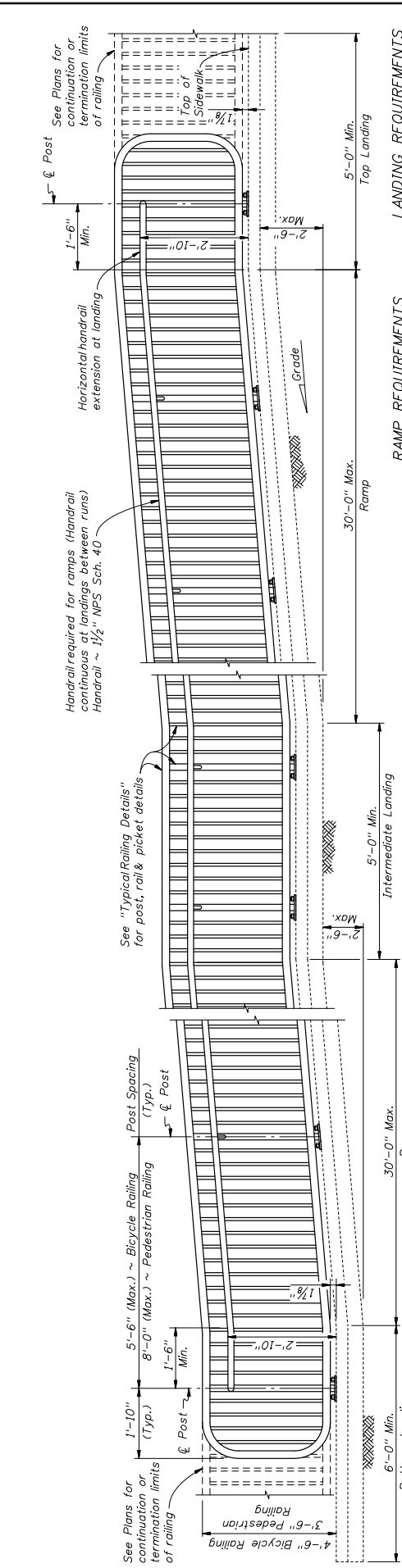
8.6.11 Path Railings

Railings or fences shall be provided as indicated in **Section 8.8**.



TYPICAL RAILING DETAILS & RAILINGS ON GRADES 5% TO 5%

ELEVATION (Showing Outside Face of Railing)



RAILINGS ON GRADES STEEPER THAN 5% TO 8.33%

ELEVATION (Showing Inside Face of Railing)

- NOTES:**
- * Picket Spacing based on the optional picket members shown. If an alternate design is used maintain a maximum clear opening of 3 3/4".
 - ** End Rail bend varies for Railings on grades steeper than 2.4%.
 - NPS = Nominal Pipe Size
- STRUCTURES EXPANSION JOINTS NOTE:**
- # Keyed construction joints in Index No. 520 Gravity Wall are not considered to be expansion joints.
- CROSS REFERENCE:**
- For Details "C", "D", and "E", see Sheet 4 of 5.

RAMP REQUIREMENTS

- For slopes greater than 5%: Max. ramp slope = 8.33%; Max. ramp cross-slope = 2.0%

LANDING REQUIREMENTS

- Max. landing slope = 2%;
- Max. landing cross-slope = 2%;