Value Engineering
For Transportation Improvements

I-4 Truck Parking Facilities
(447724-1)

Value Engineering Study Final Report

FM Number: 447724-1

Fed. Aid Project: Yes

Project Description: I-4 Truck Parking Facilities

Study Dates: June 5 – 9, 2023

Project Development Phase			Study Identification Number		
PD&E	Design	Other	VE Item No.		
			Yr.	Dist.	No.
VHB, Inc.			23	005	01

This study has been performed in accordance with current applicable FDOT Value Engineering Procedures and Techniques

RICHARD L. JOHNSON LICENSE No. 38681 STATE OF FLORIDA PROFESSIONAL ENGINEER

Richard L. Johnson, CVS No. 20030201, PE No. 38681

September 12, 2023

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EXECUTIVE SUMMARY

STUDY RESULTS

A Value Engineering (VE) study was held during June 5 – 9, 2023, using the VE methodology to study the Interstate 4 (I-4) projects from the Polk/Osceola County Line through Orange, Seminole and Volusia County, Florida. The projects will provide freight and truck parking along or near the I-4 corridor for private and public operator use.

The VE team generated and evaluated 49 ideas during the Creative Idea, Evaluation, and Development phases of the VE Job Plan. The ideas were rated based on the evaluation criteria for this project. The objective of this evaluation was to identify ideas with the most promise to achieve savings or adding value while preserving functions or improving the facility's life span.

RECOMMENDED ALTERNATIVES

The recommendations for further consideration are shown in **Table ES – 1**, **Summary of Highest Rated Recommendations.** Potential cost savings are shown in present day dollars. The recommendations in the following table indicate the anticipated initial cost, operation and maintenance cost, future cost and life cycle cost (when appropriate) of the proposed recommendations. Acceptance of these recommendations would improve the value and be incorporated in the design of the facility. These recommendations appear to be the most cost-effective way to satisfy the required functions.

MANAGEMENT ACCEPTANCE & IMPLEMENTATION

Management action on each of the recommendations taken at the subsequent resolution meeting will be included in **Table ES - 1** in the "Management Action" column. The FDOT design project manager must ensure that all accepted recommendations are implemented and all pending actions are resolved for possible inclusion in the project design. Close coordination with the District Value Engineer is encouraged to ensure timely resolution of management action.

TABLE ES – 1
SUMMARY OF HIGHEST RATED RECOMMENDATIONS

		PRESENT WORTH (PW) OF COST (FUTURE COST)		
Rec. No.	**Description**	**Management Action**	**Comments**	**Potential Cost Savings (Value Added)**
1	Centralize the restrooms: A. Osceola County B. Volusia County Eastbound C. Volusia County Westbound			 $2,415,000 $914,000 $914,000
3	Reconfigure the middle aisles of the parking spaces with one-way circulation: A. Osceola County B. Orange County C. Volusia County Eastbound D. Volusia County Westbound			 $401,000 $504,000 $1,062,000 $842,000
8	Modify an entrance/exit at the Orange County site:			$81,000 – $354,000
12	Consider high mast lighting			$98,000
18	Reconsider the control vehicle to the WB 67D			$214,000
19	Re-purpose the existing building at the northern end of the property			$2,086,000
20	Put the restrooms in the middle of the parking area and add a row of parking by the mainline			$914,000
24/30	Dig the ponds deep in order to have enough fill for the site			$122,000
32	Enlarge the existing pond to the west and reduce the pond on the east side of the site (includes ideas 26 and 27)			$1,877,000
33	Consider roller compacted concrete for the entire site			$11,535,000

TABLE ES – 1 SUMMARY OF HIGHEST RATED RECOMMENDATIONS				
		PRESENT WORTH (PW) OF COST (FUTURE COST)		
Rec. No.	**Description**	**Management Action**	**Comments**	**Potential Cost Savings (Value Added)**
35	Phase the buildout of the parking area (assume 50% of pavement)			$27,800,000

Management Action Legend: A=Approved, R=Rejected, FS=Further Study

INTRODUCTION TO THE VALUE ENGINEERING STUDY 1

1.1 INTRODUCTION

A Value Engineering (VE) study was held during June 5 – 9, 2023, using the VE methodology to study the Interstate 4 (I-4) projects from the Polk/Osceola County Line through Orange, Seminole and Volusia County, Florida. The projects will provide freight and truck parking along or near the I-4 corridor for private and public operator use.

The purpose of this project is to provide needed truck parking facilities to serve regional truck parking demand within or along the I-4 corridor to address safety and mobility. The need for this project is based on existing and future truck parking demand along the 1-4 corridor. The parking demand is a function of both freight mobility and federal hours of service regulations for commercial vehicle operators. These regulations involve mandated maximum hours of service, maximum consecutive hours and days, and required regular minimum 30-minute breaks after eight cumulative hours. Without the appropriate freight parking facilities, drivers may be forced to spend unnecessary time searching for available parking, or they may be required to park in unsafe and/or improper locations due to unforeseen circumstances such as weather ,congestion, and other traffic incidents.

The nationwide shortage of truck parking capacity continues to be a critical transportation industry focus. According to data published by the American Trucking Association (ATA) in 2022, there are about 3.5 million truck drivers nationwide and approximately 313,000 truck parking spaces; for every 11drivers, there is one truck parking space. Truck parking needs have been ranked as a top critical issue in the trucking industry and are a national safety concern. According to Trucker Path survey (2018), 48% of truck drivers spend over an hour searching for a place to park. This equates to a $5 billion loss in revenue annually, including wasted fuel, wages lost, maintenance, and associated crashes.

The project locations and study area can be found on, **Figure 1.1 – 1, Project Location Map** (Orange County Sites 2 & 4 did not move forward due to funding constraints). By building these facilities, the Florida Department of Transportation will improve mobility and add truck parking spaces in the region for the I-4 corridor. The project will provide parking, rest, and recovery time for truckers along the I-4 corridor.

Table 1.1-1 Preliminary Construction Cost Estimate for 447724-1, on page 6, shows the project preliminary estimated construction costs for the improvements for the concept sites being studied. The proposed improvements are to enhance regional mobility, safety, and level of service in the design year of 2040. The VE team used VHB's site estimates for the basis of consideration for the cost of construction comparisons.

1.2 GOALS AND OBJECTIVES

The objective of the VE study was to identify opportunities and recommend concepts that may improve value in terms of capital cost improvements, improved constructability, maintenance of traffic and provide the basic functional requirements of the project. This report documents the value engineering analysis performed to support decisions related to the planned project designs. Additionally, it summarizes existing conditions, documents the purpose and need for the project as well as documents other engineering, environmental, and social data related to preliminary PD&E concepts. Although several pre-existing conditions were stated during the initial briefing at the beginning of the VE study, there was only one project constraint identified.

The basic project functions are to improve LOS, mobility, and replace existing structures. As shown in **Section 5**, the Function Analysis System Technique (FAST) Diagram illustrates the various functions as determined by the VE team needed to satisfy the project requirements.

Figure 1.1 – 1
Project Location Map

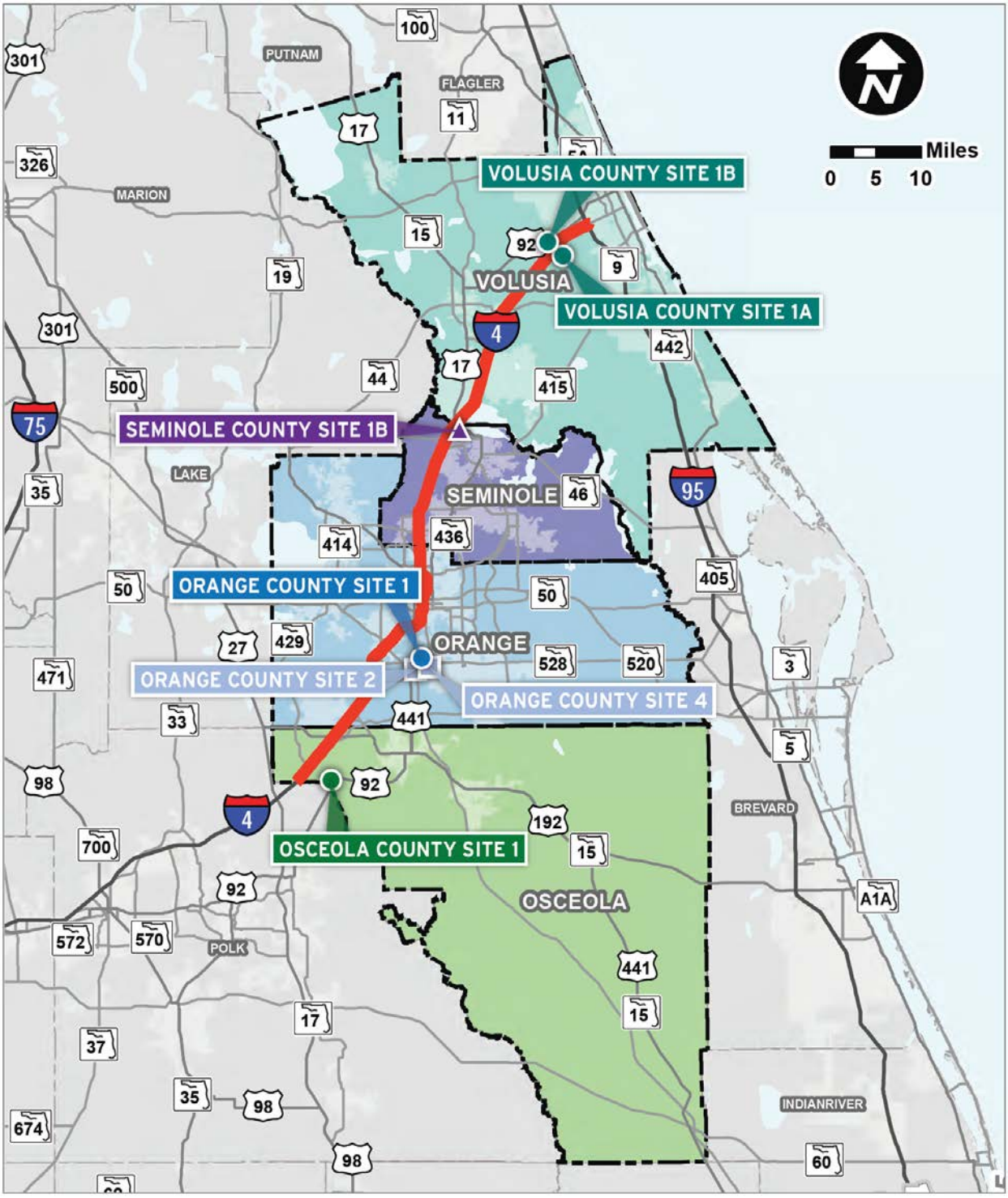


Table 1.1 – 1

Preliminary Cost Estimate for 447724-1

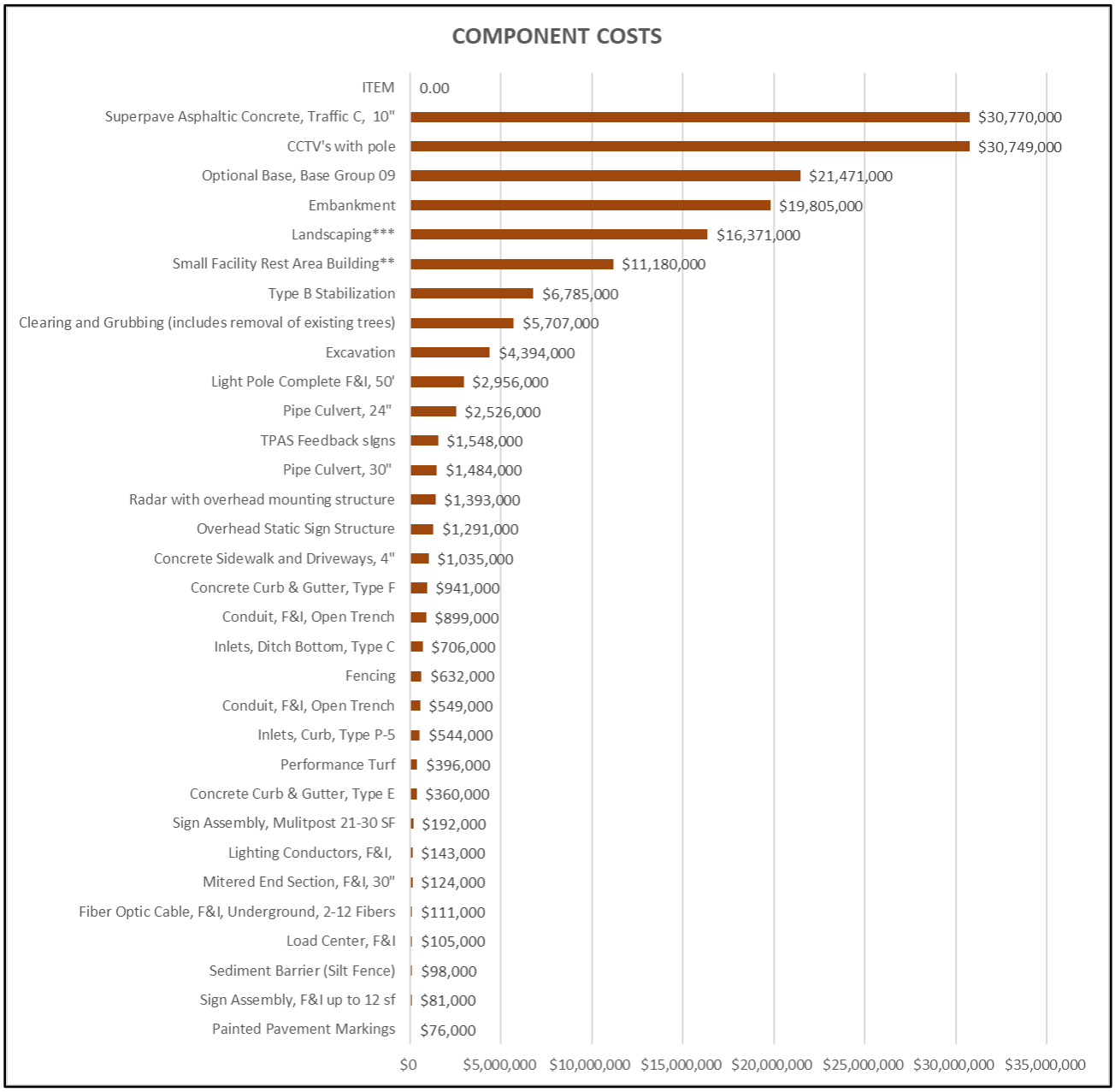
	ITEM	UNIT	PROJECT QUANTITY	UNIT COST*	OSCEOLA	ORANGE	SEMINOLE	VOLUSIA EB 1A	VOLUSIA WB 1A	TOTAL COSTS
1	Clearing and Grubbing (includes removal of existing trees)	AC	171	$25,186	$1,083,000	$555,000	$479,000	$1,857,000	$1,733,000	$5,707,000
3	Sediment Barrier (Silt Fence)	LF	27,950	$3	$23,000	$20,000	$13,000	$22,000	$20,000	$98,000
4	Excavation	CY	535,000	$8	$657,000	$411,000	$329,000	$1,355,000	$1,642,000	$4,394,000
5	Embankment	CY	1,215,000	$16	$2,608,000	$1,630,000	$897,000	$6,520,000	$8,150,000	$19,805,000
6	Type B Stabilization	SY	446,000	$10	$1,124,000	$532,000	$572,000	$2,319,000	$2,238,000	$6,785,000
7	Optional Base, Base Group 09	SY	446,000	$44	$4,920,000	$2,328,000	$2,504,000	$5,964,000	$5,755,000	$21,471,000
8	Concrete Sidewalk and Driveways, 4"	SY	15,600	$69	$343,000	$151,000	$131,000	$221,000	$189,000	$1,035,000
9	Sign Assembly, F&I up to 12 sf	EA	140	$517	$11,000	$11,000	$11,000	$24,000	$24,000	$81,000
10	Sign Assembly, Mulitpost 21-30 SF	EA	25	$6,363	$32,000	$32,000	$32,000	$48,000	$48,000	$192,000
11	Overhead Static Sign Structure	EA	10	$154,451	$309,000	$309,000	$309,000	$182,000	$182,000	$1,291,000
12	Superpave Asphaltic Concrete, Traffic C, 10"	TN	232,600	$147	$9,056,000	$4,264,000	$2,764,000	$7,474,000	$7,212,000	$30,770,000
13	Performance Turf	SY	222,500	$1	$71,000	$38,000	$43,000	$122,000	$122,000	$396,000
15	Fencing	LF	29,650	$13	$93,000	$79,000	$64,000	$208,000	$188,000	$632,000
16	Painted Pavement Markings	GM	50	$1,522	$16,000	$16,000	$16,000	$14,000	$14,000	$76,000
17	Light Pole Complete F&I, 50'	EA	241	$15,539	$1,026,000	$467,000	$389,000	$537,000	$537,000	$2,956,000
18	Lighting Conductors, F&I,	LF	45700	$4	$25,000	$20,000	$16,000	$41,000	$41,000	$143,000
19	Load Center, F&I	EA	5	$24,747	$25,000	$25,000	$25,000	$15,000	$15,000	$105,000
20	Conduit, F&I, Open Trench	LF	45700	$17	$111,000	$89,000	$69,000	$315,000	$315,000	$899,000
21	Concrete Curb & Gutter, Type F	LF	20400	$42	$175,000	$121,000	$205,000	$220,000	$220,000	$941,000
22	Concrete Curb & Gutter, Type E	LF	8720	$37	$67,000	$56,000	$41,000	$98,000	$98,000	$360,000
23	Inlets, Curb, Type P-5	EA	55	$10,125	$152,000	$102,000	$102,000	$94,000	$94,000	$544,000
24	Inlets, Ditch Bottom, Type C	EA	115	$6,691	$168,000	$101,000	$101,000	$168,000	$168,000	$706,000
25	Pipe Culvert, 24"	LF	15000	$193	$774,000	$387,000	$387,000	$489,000	$489,000	$2,526,000
26	Pipe Culvert, 30"	LF	7600	$222	$444,000	$222,000	$222,000	$298,000	$298,000	$1,484,000
27	Mitered End Section, F&I, 30"	EA	22	$6,279	$32,000	$32,000	$26,000	$17,000	$17,000	$124,000
28	*Large Facility Rest Area Building***		2					$4,000,000	$4,000,000	$8,000,000
29	*Small Facility Rest Area Building***	AS	6	$2,500,000	$5,000,000	$2,500,000	$2,500,000	$2,500,000	$2,500,000	$15,000,000
30	*Landscaping****	AS	5	$1,210,000	$1,210,000	$629,000	$551,000	$1,421,000	$1,472,000	$5,283,000
31	*CCTV's with pole*	EA	156	$272,600	$9,814,000	$7,088,000	$5,180,000	$10,359,000	$10,087,000	$42,528,000
32	*Radar with overhead mounting structure*	EA	8	$162,600	$163,000	$326,000	$163,000	$326,000	$326,000	$1,304,000
33	*TPAS Feedback sIgns*	EA	7	$288,150	$289,000	$289,000	$289,000	$577,000	$577,000	$2,021,000
34	Conduit, F&I, Open Trench	LF	36600	$17	$103,000	$60,000	$45,000	$215,000	$203,000	$626,000
35	*Fiber Optic Cable, F&I, Underground, 2-12 Fibers*	LF	36600	$5	$28,000	$16,000	$12,000	$43,000	$40,000	$139,000
	Subtotal (Excludes Mobilization and MOT)				$39,952,000	$22,919,000	$19,102,000	$48,174,000	$49,125,000	$179,272,000
	Mobilization and MOT (15% of construction cost)				$5,993,000	$3,438,000	$2,866,000	$7,227,000	$7,369,000	$26,893,000
	Estimated Construction Cost				$45,945,000	$26,357,000	$21,968,000	$55,401,000	$56,494,000	$206,165,000
	Contingency (20%)				$9,189,000	$5,272,000	$4,394,000	$11,081,000	$11,299,000	$41,235,000
	Total Estimated Construction Costs				**$55,134,000**	**$31,629,000**	**$26,362,000**	**$66,482,000**	**$67,793,000**	**$247,400,000**
	Right of Way				**$9,850,000**	**$0**	**$30,578,000**	**$10,978,000**	**$18,160,000**	**$69,566,000**
	Total Project Costs				**$64,984,000**	**$31,629,000**	**$56,940,000**	**$77,460,000**	**$85,953,000**	**$316,966,000**

* Unit Cost are provided by FDOT's Current 12 Month Moving Market 6 Average Cost (Obtained 3/27/2023)
** Inflated values based on the 2010 Facilities Design Manual, Chapter 4-10.4
***Approximately 3.5% of construction cost

Reference: Cost Estimate, provided by VHB on June 5, 2023

Figure 1.1 – 2

All Component Costs for 447724-1



VALUE ENGINEERING METHODOLOGY 2

2.1 GENERAL

This section describes the value analysis procedure used during the VE study. A systematic approach was used in the VE study and the key procedures involved were organized into three distinct parts: 1) pre-study preparations, 2) VE workshop study, and 3) post-study.

2.2 PRE-STUDY PREPARATIONS

Pre-study preparations for the VE effort consisted of scheduling study participants and tasks, review of documents, gathering necessary background information on the project, and compiling project data into a cost model. Information relating to the design, construction, and operation of the facility is important as it forms the basis of comparison for the study effort. Information relating to funding, project planning, operating needs, systems evaluations, basis of cost, production scheduling, and construction of the facility were also a part of the analysis.

2.3 VE WORKSHOP STUDY

The VE workshop was a 5-day effort and followed the FDOT/SAVE International® Job Plan. During the workshop, the VE job plan was followed. The job plan guided the search for high value areas in the project and included procedures for developing alternative solutions for consideration while at the same time considering efficiency. It includes these phases:

- Information Gathering Phase
- Function Identification and Cost Analysis Phase
- Creative Phase
- Evaluation Phase
- Development Phase
- Presentation and Reporting Phase

2.3.1 Information Gathering Phase

At the beginning of the study, the conditions and decisions that have influenced the development of the project must be reviewed and understood. For this reason, the PD&E consultant and the FDOT design Project Managers provided conceptual information about the project to the VE team. Following the presentation, on the first day of the study, the VE team discussed the project using the documents listed in **Section 3.3**.

2.3.2 Function Identification and Cost Analysis Phase

Based on the preliminary cost estimate and statewide historical background data, a cost model was developed for this project organized by major construction components. It was used to distribute costs by project element to serve as a basis for alternative functional categorization. The VE team identified the functions of the various project elements and subsystems and created a FAST Diagram to display the inter-relationships of the functions.

2.3.3 Creative Phase

This VE study phase involved the creation and listing of ideas. During this phase, the VE team identified and captured as many ideas as possible to provide a creative atmosphere and to help team members "think outside the box." Judgment of the ideas was restricted at this point to ensure vocal critics did not inhibit creativity. The VE team's intent was to consider a multitude of ideas and association of ideas. FDOT may wish to review the creative design suggestions that are listed in **Section 6**, because they may contain ideas that can be further evaluated for potential use in the design.

2.3.4 Evaluation Phase

During this phase of the workshop, the VE team judged the ideas generated during the creative phase. Advantages and disadvantages of each idea were discussed, and a matrix was developed to help determine the highest-ranking ideas. Ideas found to be irrelevant or not worthy of additional study were discarded. Those that represented the greatest potential for cost savings or improvement to the project were advanced for further development.

The creative listing was re-evaluated frequently during the process of developing ideas. As the relationship between creative ideas became more clearly defined, their importance and ratings may have changed, or they may have been combined into a single idea. For these reasons, some of the originally high-rated ideas may not have been further developed.

2.3.5 Development Phase

During the development phase, each highly rated idea was expanded into a workable solution. The development consisted of a description of the idea, life cycle cost comparisons (where applicable), and a descriptive evaluation of the advantages and disadvantages of the proposed ideas. Each idea was written with a brief narrative to compare the original design to the proposed change. Sketches and design calculations (where appropriate), were also prepared in this part of the study. The developed VE ideas are summarized in the section entitled **Section 7 – Recommendations**.

2.4 POST-STUDY

The post-study portion of the VE study includes the draft and final report preparation of this Value Engineering Study and the discussions and resolution meetings with FDOT personnel. The FDOT management team should analyze each alternative and prepare a short response, recommending incorporating the idea into the project, offering modifications before implementation, or presenting reasons for rejection. The VE team is available for consultation after the ideas are reviewed. PMA Consultants LLC can be contacted for clarification or further information for considerations to implement any of the presented ideas.

2.4.1 Presentation and Reporting Phase

The final phase of the VE study began with the presentation of the ideas on the last day of the VE study. The VE team screened the VE ideas before draft copies of the report were prepared. The initial VE ideas were arranged in the order indicated to facilitate cross-referencing to the final recommendations for inclusion in the contract documents.

2.4.2 Final Report

The acceptance or rejection of ideas described in this report is subject to FDOT's review and approval. The VE team is available to address any final draft report comments for incorporation into the final report.

WORKSHOP PARTICIPANTS AND PROJECT INFORMATION 3

3.1 PARTICIPANTS

The project managers for the project presented an overview of the project design for Seminole County and the Project Development & Environment (PD&E) documents for the other sites on June 5, 2023. The purpose of this meeting was to acquaint the VE team with the overall project and present the main areas the VE team needed to focus on during this VE study.

The VE facilitator also reviewed and explained the value engineering methodology and study agenda. He acquainted the team with the goals for the study based on how to improve the project. The study team included the following specialists who participated in the study:

Participant Name	Role	Affiliation
Matthew Gallup, PE	Roadway Design	FDOT, District 5
Henri Belrose, PE	Site Layout	WGI
Johnny Demosthenes, PE	Project Management	FDOT, District 5
Presley Blackburn, EI	Drainage	FDOT, District 5
Josh Callahan	Geotechnical	FDOT, District 5
Tushar Patel	Construction	FDOT, District 5
Lauren Pearson	Traffic Operations	FDOT, District 5
Heather Chasez	Environmental	FDOT, District 5
Greg Muller	Maintenance	FDOT, District 5
Tom Pridgen, PE	Utilities	T2 Utility Engineers
Nick Truncone, MAI	Right of Way	Florida Property Consultants
Rick Johnson, PE, CVS	VE Team Leader	PMA Consultants LLC

3.2 PROJECT INFORMATION

The purpose of the project orientation meeting on June 5, 2023, in addition to being an integral part of the Information Gathering Phase of the VE study, was to bring the VE team "up-to-speed" regarding the overall project scope. The project background, issues and items of importance were discussed. In the afternoon the VE team made a site visit to see the areas of interest along the corridor and the connecting roads.

3.3 LIST OF VE STUDY MATERIALS REVIEWED

1. Donnie Myers RV Sales, Wetland Area Exhibit, prepared by Tannath Design, Inc., dated June 3, 2011
2. Florida's Turnpike and Sand Lake Road proposed Interchange Plan, undated
3. D5 Truck Parking Facility Central Corridor, Design Documentation, prepared by Bentley Group, Inc., dated April 2023
4. Overall Site and Roadway Plan, prepared by FDOT, undated
5. Truck and Freight Alternative Site Analysis PD&E Study, Contamination Screening Evaluation Report, prepared by Vanasse Hanjen Brustlin, Inc., dated August 2022
6. Site Selection Guidance Technical Memorandum, prepared by FDOT, undated
7. Truck and Freight Alternative Site Analysis PD&E Study, Final Conceptual Drainage Report, prepared by Inwood Consulting Engineers, Inc., dated August 2022

8. Truck and Freight Alternative Site Analysis PD&E Study, Final Project Traffic Analysis Report, prepared by Vanasse Hanjen Brustlin, Inc., dated August 2022
9. Truck and Freight Alternative Site Analysis PD&E Study, Revised Draft Preliminary Engineering Report, prepared by Vanasse Hanjen Brustlin, Inc., dated May 2023
10. Truck and Freight Alternative Site Analysis PD&E Study, Cultural Resource Desktop Analysis, prepared by Vanasse Hanjen Brustlin, Inc., dated August 2022
11. Truck and Freight Alternative Site Analysis PD&E Study, Phase 1 Cultural Resource Assessment Survey of the Preferred I-4 Truck Parking Site Location: Seminole County Site 1B, prepared by Vanasse Hanjen Brustlin, Inc., dated August 2022
12. Truck and Freight Alternative Site Analysis PD&E Study, Natural Resources Technical Memorandum, prepared by Inwood Consulting Engineers, Inc., dated September 2022
13. Truck and Freight Alternative Site Analysis PD&E Study, Natural Resources Technical Memorandum Seminole County Site 1B, prepared by Inwood Consulting Engineers, Inc., dated September 2022
14. Truck and Freight Alternative Site Analysis PD&E Study, Natural Resources Technical Memorandum Orange County Site 1 – Sand Lake Road at John Young Parkway, prepared by Inwood Consulting Engineers, Inc., dated September 2022
15. Truck and Freight Alternative Site Analysis PD&E Study, Natural Resources Technical Memorandum Osceola County Site 1 – Osceola-Polk County Line Road – Southside, prepared by Inwood Consulting Engineers, Inc., dated September 2022
16. Next Steps for Project Development Draft, dated August 31, 2022
17. Memorandum for Project 447723-1, FDOT District 5Truck Parking Study, Re: Public Private Partnership (P3) Options for Truck Parking Facilities, dated August 18, 2022
18. I-4 Truck and Freight Parking PD&E Study, Slide Presentation, dated March 16, 2021
19. Truck and Freight Alternative Site Analysis PD&E Study, Draft Preliminary Engineering Report, prepared by Vanasse Hanjen Brustlin, Inc., dated July 2022
20. Truck and Freight Site Analysis, PD&E Study, Pass the Torch Meeting (Seminole Site) Presentation, undated
21. Truck and Freight Alternative Site Analysis PD&E Study, Comment & Coordination Report, prepared by Inwood Consulting Engineers, Inc., dated September 2022
22. Technical Special Provision for SR 400/i-4 Central Corridor Truck Parking Facility, Seminole County, prepared by Bentley Group Inc., dated April 26, 2023
23. Long Range Estimate, 446445-1-51-01 Central Florida Truck Parking Landscape Estimate, dated April 11, 2023
24. Irrigation Feasibility Report, 446445-1-51-01, Prepared by Miller Legg, dated April 11, 2023
25. Truck Parking PD&E Public Involvement Plan, between VHB and FDOT District 5, dated June 30, 2022

3.4 SUMMARY OF GENERAL PROJECT INPUT - OBJECTIVES, POLICIES, DIRECTIVES, CONSTRAINTS, CONDITIONS & CONSIDERATIONS

The following is a summary of general project input, including the goals, objectives, directives, policies, constraints, conditions and considerations presented to the study team. In the Ideas Tables in Section 6, the component function is indicated by parentheses (i.e., right-of-way, roadway, drainage).

3.4.1 Project Functions, Goals & Objectives (what the project should do as determined at the kickoff meeting and subsequent Workshop):

1. Accommodate Trucks
2. Provide Parking
3. Operate System
4. Construct Project
5. Relocate Utilities
6. Construct Stations
7. Minimize Disruption
8. Inspect Work
9. Maintain Traffic
10. Acquire Right of Way
11. Relocate Occupants
12. Clear ROW
13. Design Projects
14. Design Layout
15. Permit Projects
16. Treat Stormwater
17. Convey Water
18. Upgrade ITS
19. Coordinate Utilities
20. Provide Aesthetics
21. Recommend Alternatives
22. Obtain LDCA
23. Study Alternatives
24. Minimize Maintenance
25. Gather Data
26. Analyze Data
27. Estimate Costs
28. Consult Agencies
29. Determine Needs
30. Protect Environment
31. Satisfy Stakeholders
32. Engage Public
33. Ensure Quality

These functions were used to create/brainstorm new ideas for potential improvement to the project.

3.4.2 Project Policies & Directives (documented things the project must or must not do):

1. The project shall meet economic, engineering design, environmental and social/cultural criteria requirements.
2. Meet the goals of the Long Range Transportation Plan for each County and the Metroplan and the R2CTPO.

3.4.3 General Project Constraints (unchangeable project restrictions):

1. Florida Power & Light Transmission Line

3.4.4 General Project Conditions & Considerations:

Refer to the documents and backup documentation prepared and provided by VHB and the FDOT Project Managers.

Site review comments and other observations:

1. There are billboards at the Orange County site that we need to determine who holds the lease.
2. Is there any right of way to take on the concrete plant property at Seminole?
3. The swale along School Street will be hard piped.
4. There is a considerable difference in grade between the site and the John Young Parkway at the Orange County site.
5. Connectivity to the Turnpike at the Orange County site is something that needs to be addressed.

ECONOMIC DATA, COST MODEL AND ESTIMATE 4

4.1 ECONOMIC DATA

The Study team developed economic criteria used for evaluation with information gathered from the FDOT design and PD&E consultant team. To express costs in a meaningful manner, the cost comparisons associated with alternatives are presented on the basis of total life cycle cost and discounted present worth. Project period interest rates are based on the following parameters:

Year of Analysis:	2023
Economic Planning Life:	15 Years
Discount Rate/Interest:	5.00%
Inflation/Escalation Rate:	3.00%

Construction is planned but is not funded or scheduled at this point in time for the sites other than Seminole County. The design year is 2040. The VHB costs, summarized in **Table 4.1 – 1 Construction Cost Estimate for 447724-1** were used by the team for the component items for the project. The cost for the associated work is $286,367,000 and the anticipated right of way costs are estimated at $38,988,000.

Table 4.1 – 1 Construction Cost Estimate for 447724-1

	ITEM	UNIT	PROJECT QUANTITY	UNIT COST*	OSCEOLA	ORANGE	SEMINOLE	VOLUSIA EB 1A	VOLUSIA WB 1A	TOTAL COSTS	FUNCTION
1	Clearing and Grubbing (includes removal of existing trees)	AC	171	$25,186	$1,083,000	$555,000	$479,000	$1,857,000	$1,733,000	$5,707,000	Prepare Site
3	Sediment Barrier (Silt Fence)	LF	27,950	$3	$23,000	$20,000	$13,000	$22,000	$20,000	$98,000	Prevent Migration
4	Excavation	CY	535,000	$8	$657,000	$411,000	$329,000	$1,355,000	$1,642,000	$4,394,000	Remove Soil
5	Embankment	CY	1,215,000	$16	$2,608,000	$1,630,000	$897,000	$6,520,000	$8,150,000	$19,805,000	Place Soil
6	Type B Stabilization	SY	446,000	$10	$1,124,000	$532,000	$572,000	$2,319,000	$2,238,000	$6,785,000	Prepare Roadbed
7	Optional Base, Base Group 09	SY	446,000	$44	$4,920,000	$2,328,000	$2,504,000	$5,964,000	$5,755,000	$21,471,000	Support Load
8	Concrete Sidewalk and Driveways, 4"	SY	15,600	$69	$343,000	$151,000	$131,000	$221,000	$189,000	$1,035,000	Accommodate Pedestrians
9	Sign Assembly, F&I up to 12 sf	EA	140	$517	$11,000	$11,000	$11,000	$24,000	$24,000	$81,000	Inform Public
10	Sign Assembly, Mulitpost 21-30 SF	EA	25	$6,363	$32,000	$32,000	$32,000	$48,000	$48,000	$192,000	Inform Public
11	Overhead Static Sign Structure	EA	10	$154,451	$309,000	$309,000	$309,000	$182,000	$182,000	$1,291,000	Inform Public
12	Superpave Asphaltic Concrete, Traffic C, 10"	TN	232,600	$147	$9,056,000	$4,264,000	$2,764,000	$7,474,000	$7,212,000	$30,770,000	Support Load
13	Performance Turf	SY	222,500	$1	$71,000	$38,000	$43,000	$122,000	$122,000	$396,000	Stabilize Earth
15	Fencing	LF	29,650	$13	$93,000	$79,000	$64,000	$208,000	$188,000	$632,000	Enclose Area
16	Painted Pavement Markings	GM	50	$1,522	$16,000	$16,000	$16,000	$14,000	$14,000	$76,000	Direct Drivers
17	Light Pole Complete F&I, 50'	EA	241	$15,539	$1,026,000	$467,000	$389,000	$537,000	$537,000	$2,956,000	Illuminate Site
18	Lighting Conductors, F&I,	LF	45700	$4	$25,000	$20,000	$16,000	$41,000	$41,000	$143,000	Provide Power
19	Load Center, F&I	EA	5	$24,747	$25,000	$25,000	$25,000	$15,000	$15,000	$105,000	Distribute Power
20	Conduit, F&I, Open Trench	LF	45700	$17	$111,000	$89,000	$69,000	$315,000	$315,000	$899,000	Enclose Wires
21	Concrete Curb & Gutter, Type F	LF	20400	$42	$175,000	$121,000	$205,000	$220,000	$220,000	$941,000	Convey Stormwater
22	Concrete Curb & Gutter, Type E	LF	8720	$37	$67,000	$56,000	$41,000	$98,000	$98,000	$360,000	Channelize Travel
23	Inlets, Curb, Type P-5	EA	55	$10,125	$152,000	$102,000	$102,000	$94,000	$94,000	$544,000	Collect Stormwater
24	Inlets, Ditch Bottom, Type C	EA	115	$6,691	$168,000	$101,000	$101,000	$168,000	$168,000	$706,000	Collect Stormwater
25	Pipe Culvert, 24"	LF	15000	$193	$774,000	$387,000	$387,000	$489,000	$489,000	$2,526,000	Convey Stormwater
26	Pipe Culvert, 30"	LF	7600	$222	$444,000	$222,000	$222,000	$298,000	$298,000	$1,484,000	Convey Stormwater
27	Mitered End Section, F&I, 30"	EA	22	$6,279	$32,000	$32,000	$26,000	$17,000	$17,000	$124,000	Protect Pipe
28	*Large Facility Rest Area Building***		2					$4,000,000	$4,000,000	$8,000,000	Accommodate Drivers
29	*Small Facility Rest Area Building***	AS	6	$2,500,000	$5,000,000	$2,500,000	$2,500,000	$2,500,000	$2,500,000	$15,000,000	Accommodate Drivers
30	*Landscaping****	AS	5	$1,210,000	$1,210,000	$629,000	$551,000	$1,421,000	$1,472,000	$5,283,000	Provide Buffer
31	*CCTV's with pole*	EA	156	$272,600	$9,814,000	$7,088,000	$5,180,000	$10,359,000	$10,087,000	$42,528,000	Monitor Site
32	*Radar with overhead mounting structure*	EA	8	$162,600	$163,000	$326,000	$163,000	$326,000	$326,000	$1,304,000	Count Trucks
33	*TPAS Feedback signs*	EA	7	$288,150	$289,000	$289,000	$289,000	$577,000	$577,000	$2,021,000	Inform Drivers
34	Conduit, F&I, Open Trench	LF	36600	$17	$103,000	$60,000	$45,000	$215,000	$203,000	$626,000	Enclose Wires
35	*Fiber Optic Cable, F&I, Underground, 2-12 Fibers*	LF	36600	$5	$28,000	$16,000	$12,000	$43,000	$40,000	$139,000	Communicate Information
	Subtotal (Excludes Mobilization and MOT)				$39,952,000	$22,919,000	$19,102,000	$48,174,000	$49,125,000	$179,272,000	
	Mobilization and MOT (15% of construction cost)				$5,993,000	$3,438,000	$2,866,000	$7,227,000	$7,369,000	$26,893,000	Mobilize Contractor
											Maintain Traffic
	Estimated Construction Cost				$45,945,000	$26,357,000	$21,968,000	$55,401,000	$56,494,000	$206,165,000	
	Contingency (20%)				$9,189,000	$5,272,000	$4,394,000	$11,081,000	$11,299,000	$41,235,000	Address Unknowns
	Total Estimated Construction Costs				**$55,134,000**	**$31,629,000**	**$26,362,000**	**$66,482,000**	**$67,793,000**	**$247,400,000**	
	Right of Way				**$9,850,000**	**$0**	**$30,578,000**	**$10,978,000**	**$18,160,000**	**$69,566,000**	Provide Area
	Total Project Costs				**$64,984,000**	**$31,629,000**	**$56,940,000**	**$77,460,000**	**$85,953,000**	**$316,966,000**	

* Unit Cost are provided by FDOT's Current 12 Month Moving Market 6 Average Cost (Obtained 3/27/2023)
** Inflated values based on the 2010 Facilities Design Manual, Chapter 4-10.4
***Approximately 3.5% of construction cost
Reference: Cost Estimate, provided by VHB on June 5, 2023

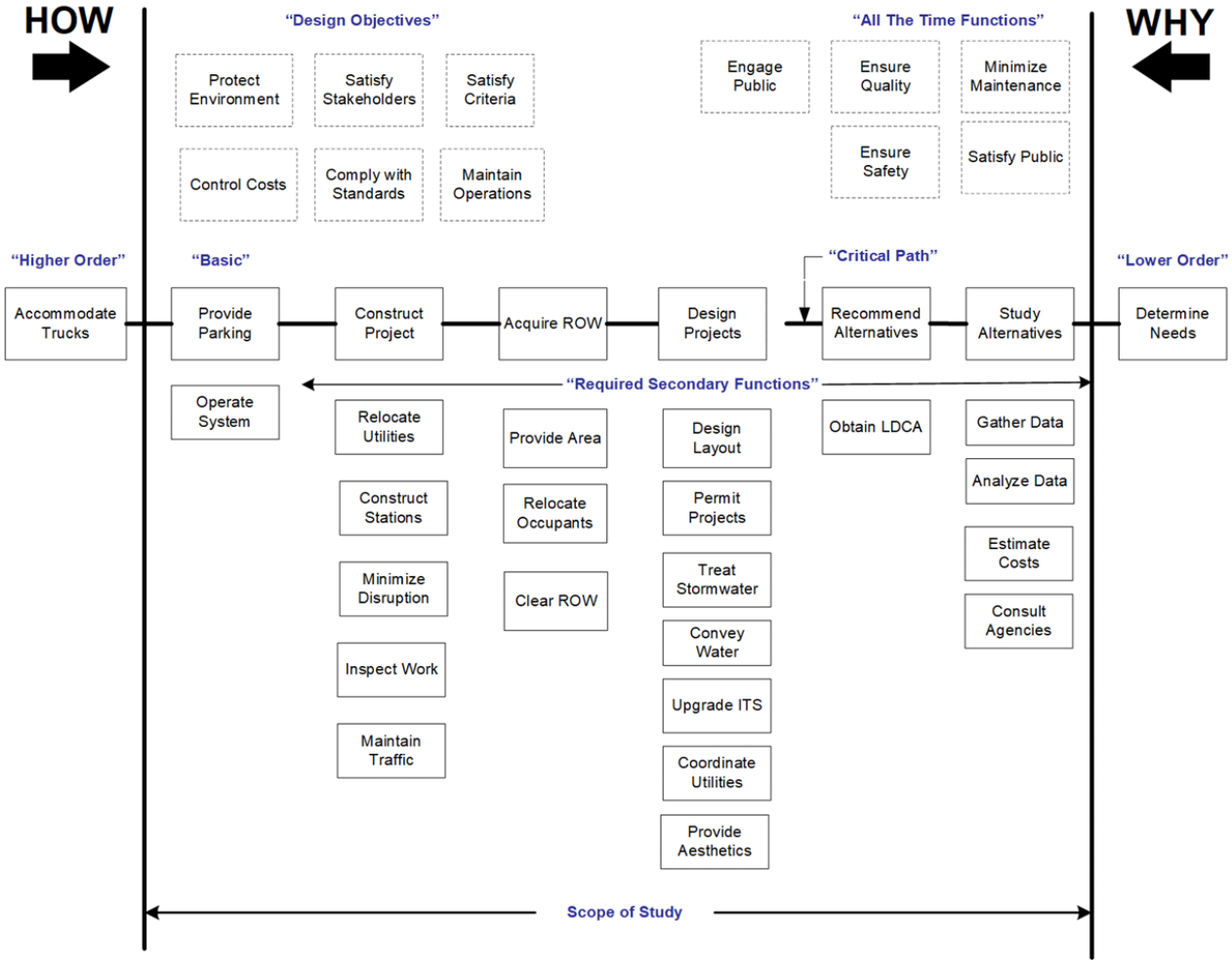
FUNCTION ANALYSIS AND FAST DIAGRAM 5

This project's function analysis was reviewed and developed by the VE team to define the requirements for the overall project (and each project element, if required) and to ensure that the VE team had a complete and thorough understanding of the functions (basic and others) needed to satisfy the project requirements. The primary Function Analysis System Technique (FAST) Diagram for the project is illustrated in **Figure 5.1-1 FAST Diagram**. The development of FAST diagrams helps stimulate team members to think in terms of required functions, not just normal solutions, to enhance their creative idea development. The project's primary tasks, the critical path functions, the project's primary basic functions and other required functions that must be satisfied were identified and are indicated in the diagram.

A function analysis was performed to determine the basic function of the overall project and each area shown in the cost model. Function Analysis is a means of evaluating the functions of each element to see if the expenditures for each of those elements provide the requirements of the process, or if there are disproportionate amounts of money being proposed to be spent for support functions. These elements add cost to the final product but may have a relatively low worth to the basic function. This creates a high cost-to-worth ratio.

A FAST diagram was developed to identify and display the critical functions path for the overall project. The basic and supporting secondary functions are illustrated on the following FAST diagram.

Figure 5.1-1 FAST Diagram
I-4 Truck Parking Facilities



EVALUATION 6

During the creative phase numerous ideas, alternative proposals and/or recommendations were generated for each required function using conventional brainstorming techniques and are recorded on the following pages. These ideas were discussed and evaluation criteria were determined. The team identified seven weighted evaluation criteria that included Capital Costs, Utilities, Maintenance of Traffic, Environmental Issues, Future Maintenance, Constructability, and Right of Way. The evaluation criteria were assigned a weighted value from 1 to 7 based on a VE team consensus on the importance of each item. Criteria with the most importance received an 7-weight and the least important received a 1-weight. The ideas were then individually discussed and given a score, on a scale of 1 to 5 with 1 being the least beneficial and 5 being the most beneficial. The score for each item was multiplied by the weighted criteria value and each multiplication product was added to obtain a total score for the idea.

The PD&E was assigned a neutral value (3) for each category to establish a baseline score. The total score for the PD&E documents became the baseline score for all VE alternatives. The VE alternatives were then scored by comparing the idea or element of the project to the PD&E. If a VE alternative scored equal to or greater than the baseline score, it was considered for research and development. If an idea scored close to the baseline score and the VE team believed it may have some validity it was also developed to investigate its value to the project. During development, some ideas may be eliminated or evolve into a more refined version of the original idea.

Table 6.1 – 1 Value Engineering Study Ideas is a list of ideas generated during the creative phase and how each idea scored in the individual evaluation criteria. **Table 6.1 – 2 Value Engineering Study Weighted Values** illustrates the weighted values for the evaluation criteria and **Table 6.1 – 3 Value Engineering Study Evaluation Scores** shows the evaluation matrix for idea ranking total scores for all ideas carried forward. The ideas that scored equal to or greater than the PD&E and design documents total score were sufficiently rated to warrant further development. The ideas in the table with strike-through were not developed because they were combined with other ideas, not feasible, or were eliminated from consideration for other reasons.

There were 48 creative ideas, and all were evaluated and 44 were scored. The VE team discussed the evaluated ideas with the FDOT and PD&E consultant project managers during a mid-point review meeting on Wednesday, June 7, 2023. The VE team and the consultant project managers discussed each idea before developing the group of ideas for final development and analysis.

The write-ups for those ideas are contained in **Section 7 Recommendations**. The tables that follow show the original 48 ideas, with the ideas that endured the evaluation becoming viable recommendations for value improvements. During the evaluation process the VE team redefined some of the creative ideas as design suggestions. Ideas that became design suggestions at the mid-point review are designated as "DS" on the evaluation worksheets. During the Development Phase a new recommendation (9B) was developed and added to the mix. The major suggestion identified by the VE team is shown below:

DS-1 Consider vender provided EV stations with fire suppression included

This design suggestion is presented for consideration at the discretion of the consultants and FDOT. The VE team presents design suggestions for the consultants' and FDOT's consideration. No specific action is normally required to accept or reject the design suggestions, though it is often helpful for documentation purposes, to formally list those design suggestions that will be decided by FDOT.

TABLE 6.1 –1 Value Engineering Study Ideas

Idea No.	Ideas	Capital Costs	Utilities	Maintenance of Traffic	Environmental Issues	Future Maintenance	Constructability	Right of Way
	Original Concept							
	PD&E Documents for each Truck Parking Station	3	3	3	3	3	3	3
	Osceola County 1							
1	Centralize the restrooms	4	3.5	3	3.25	3.5	4	3
2	Consider a joint use pond	2.5	3	3	3.25	2	2.75	3.5
3	Reconfigure the north-south middle aisles of the parking spaces with one-way	3.25	3	3	3.25	3.25	3.25	3
4	Provide an acceleration lane eastbound out of the facility	2.5	1	2.75	2.75	2.75	2.75	3
5	~~Consider vender provided EV stations with fire suppression included~~	4	3	3	3	3	2.5	3
6	Consider high mast lighting	2.75	3.25	3	2.5	3.25	2.5	3
	Orange County 1							
7	Expand the existing pond and reconfigure the site	3.25	3	3	3	3	2	3
8	Eliminate the entrance/exit on the John Young Parkway ramp	4	3.25	4	3	3.5	4	3
9	Eliminate the entrance/exit on the Sand Lake Road ramp	3.5	3.25	3.5	3.15	3.5	3.5	3
9B	Modify the Sand Lake Road to right turn in only							
10	Reconfigure the floodplain compensation area to another location	2	3	3	2	3	2.5	2
11	Consider one-direction aisles and reduce the impervious area	3.5	3	3	3.5	3.25	3.25	3
12	Relocate the restrooms to the south side of the John Young Parkway entrance	3	3.5	3	3.5	3	3	3
13	Consider high mast lighting	3.25	3.25	3	3	3.25	2.5	3
14	~~Consider joint use pond with the turnpike~~							
	Seminole County 1B							
15	Consider high mast lighting	3	3.25	3	2.5	3.25	2.5	3
16	Shorten the right turn out radius from 50 ft. to something less to really discourage right turns and force left outs	3.25	3	3	3	2.75	3	3
17	Provide an interim porkchop at School Street and Monroe Street to force right turn only	2.75	3	2.75	3	2.75	2.9	3
18	Reconsider the control vehicle for the Seminole County Site	3.25	3	3	3.15	3.25	3.25	3
19	Re-purpose the existing building at the northern end of the property	3.5	3.5	3	3	3	2.5	3
	Volusia County 1A - EB Side							
20	Put the restrooms in the middle of the parking area and add a row of parking by the mainline	3.5	3.25	3	2.5	3.25	3.25	3
21	~~Rotate the configuration 90 degrees closer to I-4 (consider with idea 20~~)	3	3.25	3	3.1	3	3	3
22	Reconfigure the aisles with one-way circulation	3.5	3	3	3.25	3.5	3.25	3
23	Consider solar panels for electric use	2.5	2.75	3	3.25	2.5	2.5	3
24	Dig the ponds deep in order to have enough fill for the site	3.25	3	3	3	3	2.75	3
25	Provide septic tank and well at the site	3.5	4	3	2	2	2	3

TABLE 6.1 –1 Value Engineering Study Ideas

Idea No.	Ideas	Capital Costs	Utilities	Maintenance of Traffic	Environmental Issues	Future Maintenance	Constructability	Right of Way
	Original Concept							
	PD&E Documents for each Truck Parking Station	3	3	3	3	3	3	3
	Volusia County 1B - WB Side							
26	Put the restrooms in the middle of the parking area and add a row of parking by the mainline	3.5	3.25	3	2.5	3.25	3.25	3
27	~~Rotate the configuration 90 degrees closer to I-4 (consider with idea 26~~)	3	3.25	3	3.1	3	3	3
28	Reconfigure the aisle with one-way circulation	3.5	3	3	3.25	3.5	3.25	3
29	Consider solar panel for electric use	2.5	2.75	3	3.25	2.5	2.5	3
30	Dig the ponds deep in order to have enough fill for the site	3.25	3	3	3	3	2.75	3
31	Provide septic tank and well at the site	3.5	4	3	2	2	2	3
32	Enlarge the existing pond to the west and reduce the pond on the east side of the site (includes ideas 26 and 27)	3.25	3	3	3.1	3.25	3.25	3
	Common Ideas for Each Site							
33	Consider roller compacted concrete for the entire site	3.25	3	3	3	4	2	3
34	Install concrete for the travel lanes and asphalt for the parking spaces	2.25	3	3	3	3.5	2.5	3
35	Phase the buildout of the parking area (assume 50% of pavement)	4.75	3	3	3	2	3.25	3
36	~~Consider a pervious surface for parking areas~~							
DS-1	Consider vender provided EV stations with fire suppression included	3.1	3.1	3	3	3	3.25	3
38	~~Consider a Smart Pond~~	4	2.9	3	3.25	2.75	2.75	3.25
39	TPAs per aisle	2.5	2.9	3	3	2.75	2.75	3
40	Construct stormwater vaults under the parking area	1.5	2	3	3.25	1	2	3.25
41	Construct a French drain system to minimize the ponds	2	2	3	3.15	2	2	3.25
42	~~Consider Aero Aggregate~~							
43	Ensure there is a dedicated security office with a view of the parking lot	2.5	2.75	3	3	2.75	2.75	3
44	Provide a windshield wash station	2.9	2.9	3	3	2.75	2.9	3
45	Add weigh scales	2	2	3	3	2	2	3
46	~~Provide a security room with a view of the parking lot~~							
47	Put the HVAC and the generator on top of the building to increase parking	2	2	3	3	3	2.25	3
48	Consider precast tilt-up walls instead of CMUs	3.5	3	3	3	3	3.5	3

TABLE 6.1 –2 Value Engineering Study Weighted Values

Capital Costs	Utilities	Maintenance of Traffic	Environmental Issues	Future Maintenance	Constructability	Right of Way
5	3	1	7	6	4	2

TABLE 6.1 –3 Value Engineering Study Evaluation Scores

Idea No.	Ideas	Capital Costs	Utilities	Maintenance of Traffic	Environmental Issues	Future Maintenance	Constructability	Right of Way	TOTAL	FHWA CATEGORIES				
	Original Concept									Safety	Construction	Operations	Environment	Other
	PD&E Documents for each Truck Parking Station	15	9	3	21	18	12	6	**78**					
	Osceola County 1													
1	Centralize the restrooms	20	10.5	3	22.75	21	16	6	**93.25**					X
2	Consider a joint use pond	12.5	9	3	22.75	12	11	7	**70.25**		X			
3	Reconfigure the north-south middle aisles of the parking spaces with one-way	16.25	9	3	22.75	19.5	13	6	**83.5**					
4	Provide an acceleration lane eastbound out of the facility	12.5	3	2.75	19.25	16.5	11	6	**65**					
5	~~Consider vender provided EV stations with fire suppression included~~	20	9	3	21	18	10	6	**81**					
6	Consider high mast lighting	13.75	9.75	3	17.5	19.5	10	6	**73.5**					
	Orange County 1													
7	Expand the existing pond and reconfigure the site	16.25	9	3	21	18	8	6	**75.25**					
8	Eliminate the entrance/exit on the John Young Parkway ramp	20	9.75	4	21	21	16	6	**91.75**		X			
9	Eliminate the entrance/exit on the Sand Lake Road ramp	17.5	9.75	3.5	22.05	21	14	6	**87.8**		X		X	
9B	Modify the Sand Lake Road to right turn in only	0	0	0	0	0	0	0	**0**		X			
10	Reconfigure the floodplain compensation area to another location	10	9	3	14	18	10	4	**64**					
11	Consider one-direction aisles and reduce the impervious area	17.5	9	3	24.5	19.5	13	6	**86.5**		X			
12	Relocate the restrooms to the south side of the John Young Parkway entrance	15	10.5	3	24.5	18	12	6	**83**					
13	Consider high mast lighting	16.25	9.75	3	21	19.5	10	6	**79.5**					
14	~~Consider joint use pond with the turnpike~~	0	0	0	0	0	0	0	**0**					
	Seminole County 1B													
15	Consider high mast lighting	15	9.75	3	17.5	19.5	10	6	**74.75**					
16	Shorten the right turn out radius from 50 ft. to something less to really discourage right turns and force left outs	16.25	9	3	21	16.5	12	6	**77.75**					
17	Provide an interim porkchop at School Street and Monroe Street to force right turn only	13.75	9	2.75	21	16.5	11.6	6	**74.6**					
18	Reconsider the control vehicle for the Seminole County Site	16.25	9	3	22.05	19.5	13	6	**82.8**		X			
19	Re-purpose the existing building at the northern end of the property	17.5	10.5	3	21	18	10	6	**80**					
	Volusia County 1A - EB Side													
20	Put the restrooms in the middle of the parking area and add a row of parking by the mainline	17.5	9.75	3	17.5	19.5	13	6	**80.25**		X			X
21	~~Rotate the configuration 90 degrees closer to I-4 (consider with idea 20~~)	15	9.75	3	21.7	18	12	6	**79.45**					
22	Reconfigure the aisles with one-way circulation	17.5	9	3	22.75	21	13	6	**86.25**		X			
23	Consider solar panels for electric use	12.5	8.25	3	22.75	15	10	6	**71.5**					
24	Dig the ponds deep in order to have enough fill for the site	16.25	9	3	21	18	11	6	**78.25**		X		X	
25	Provide septic tank and well at the site	17.5	12	3	14	12	8	6	**66.5**					
	Volusia County 1B - WB Side													
26	Put the restrooms in the middle of the parking area and add a row of parking by the mainline	17.5	9.75	3	17.5	19.5	13	6	**80.25**		X			
27	~~Rotate the configuration 90 degrees closer to I-4 (consider with idea 26~~)	15	9.75	3	21.7	18	12	6	**79.45**					
28	Reconfigure the aisle with one-way circulation	17.5	9	3	22.75	21	13	6	**86.25**		X			
29	Consider solar panel for electric use	12.5	8.25	3	22.75	15	10	6	**71.5**					
30	Dig the ponds deep in order to have enough fill for the site	16.25	9	3	21	18	11	6	**78.25**					
31	Provide septic tank and well at the site	17.5	12	3	14	12	8	6	**66.5**					
32	Enlarge the existing pond to the west and reduce the pond on the east side of the site (includes ideas 26 and 27)	16.25	9	3	21.7	19.5	13	6	**82.45**		X	X	X	

TABLE 6.1 –3 Value Engineering Study Evaluation Scores

Idea No.	Ideas	Capital Costs	Utilities	Maintenance of Traffic	Environmental Issues	Future Maintenance	Constructability	Right of Way	TOTAL	FHWA CATEGORIES				
	Original Concept									Safety	Construction	Operations	Environment	Other
	PD&E Documents for each Truck Parking Station	15	9	3	21	18	12	6	**78**					
	Common Ideas for Each Site													
33	Consider roller compacted concrete for the entire site	16.25	9	3	21	24	8	6	**81.25**		X			
34	Install concrete for the travel lanes and asphalt for the parking spaces	11.25	9	3	21	21	10	6	**75.25**					
35	Phase the buildout of the parking area (assume 50% of pavement)	23.75	9	3	21	12	13	6	**81.75**		X			
38	~~Consider a Smart Pond~~	20	8.7	3	22.75	16.5	11	6.5	**81.95**					
39	TPAs per aisle	12.5	8.7	3	21	16.5	11	6	**72.7**					
40	Construct stormwater vaults under the parking area	7.5	6	3	22.75	6	8	6.5	**53.25**					
41	Construct a French drain system to minimize the ponds	10	6	3	22.05	12	8	6.5	**61.05**					
43	Ensure there is a dedicated security office with a view of the parking lot	12.5	8.25	3	21	16.5	11	6	**72.25**					
44	Provide a windshield wash station	14.5	8.7	3	21	16.5	11.6	6	**75.3**					
45	Add weigh scales	10	6	3	21	12	8	6	**60**					
47	Put the HVAC and the generator on top of the building to increase parking	10	6	3	21	18	9	6	**67**					
48	Consider precast tilt-up walls instead of CMUs	17.5	9	3	21	18	14	6	**82.5**					

RECOMMENDATIONS 7

The results of this VE study are shown as individual alternatives developed for each area of the project. These alternatives include a comparison between the VE team's alternative and the PD&E's original concept. Each proposal consists of a summary of the proposed design, a description of the VE proposed change, and descriptive evaluation of the advantages and disadvantages of the VE alternative. Sketches and calculations are shown, if appropriate. The estimated cost comparisons reflect unit prices and quantities on a comparative basis. Value improvement is the primary basis for comparison of competing ideas. To ensure that costs are comparable within the ideas proposed by the VE team, the FDOT Long Range Estimates, statewide average costs, and preliminary right of way cost estimates were used as the pricing basis.

7.1 EVALUATION OF ALTERNATIVES

The VE alternatives' potential savings are not interrelated, if one is accepted another one may or may not need to be added. If one VE recommendation is accepted it may preclude another from being accepted. The VE team identified potential savings as shown on **Table ES – 1**, **Summary of Highest Rated Recommendations**. The write-ups for the individual developed ideas are included in this section and are presented in numerical order.

The FDOT and the PD&E team should evaluate and determine whether to accept or not accept each alternative. The alternatives that are accepted should be identified and listed for documentation purposes. For each idea that will not be accepted, the PD&E team normally documents, in writing, the reason or reasons for non-acceptance. The design suggestions are for consideration by FDOT and the designers. No specific action is normally required to accept or not accept the suggestions, though it is often helpful, for documentation purposes, to formally list those suggestions that will be incorporated by the designers.

7.2 CONSIDERATIONS AND ASSUMPTIONS

In the preparation of this report and the alternatives that follow, the study team made some assumptions with respect to conditions that may occur in the future. In addition, the study team reviewed the listed project documentation, relying solely upon the information provided by the designer and owner, and relying on that information as being true, complete and accurate. This value analysis and report are based on the following considerations, assumptions and conditions:

- The alternatives rendered herein are as of the date of this report. The study team or leader assumes no duty to monitor events after the date, or to advise or incorporate into any of the alternatives, any new, previously unknown technology.
- The study team or leaders assume there are no material documents affecting the design or construction costs that the team has not seen. The existence of any such documents may possibly alter the alternatives contained herein.
- The study team or leader do not warrant the feasibility of these alternatives or the advisability of their implementation. It is solely the responsibility of the designer in accordance with FDOT, to explore the technical feasibility and make the determination for implementation.

Because of the commonality of concepts at the various sites, options are provided for consideration at the individual sites. Therefore, Ideas 1, 20, and 26 are offered for the recommendation to centralize the Restroom facilities. Likewise, for Ideas 3, 11, 22 and 28 for the one-way aisles and Ideas 8, 9, and 9B for connections to John Young Parkway and Sand Lake Road.

RECOMMENDATION No. 1: Centralize the Restrooms

Proposed Alternative:
The PD&E Documents show two separate restroom facilities at either end of the sites at Osceola County and Volusia County Eastbound and Westbound.

OPTION 1A – VOLUSIA COUNTY:

VE Alternative:
The VE team recommends only having one restroom facility in a centralized location at the Volusia County site.

Advantages:

- Less building capital cost
- One utility connection
- Additional parking if desired or additional green space
- Centralized security area

Disadvantages:

- None apparent

OPTION 1A – OSCEOLA COUNTY SITE:

Potential Cost Savings: $2,415,000

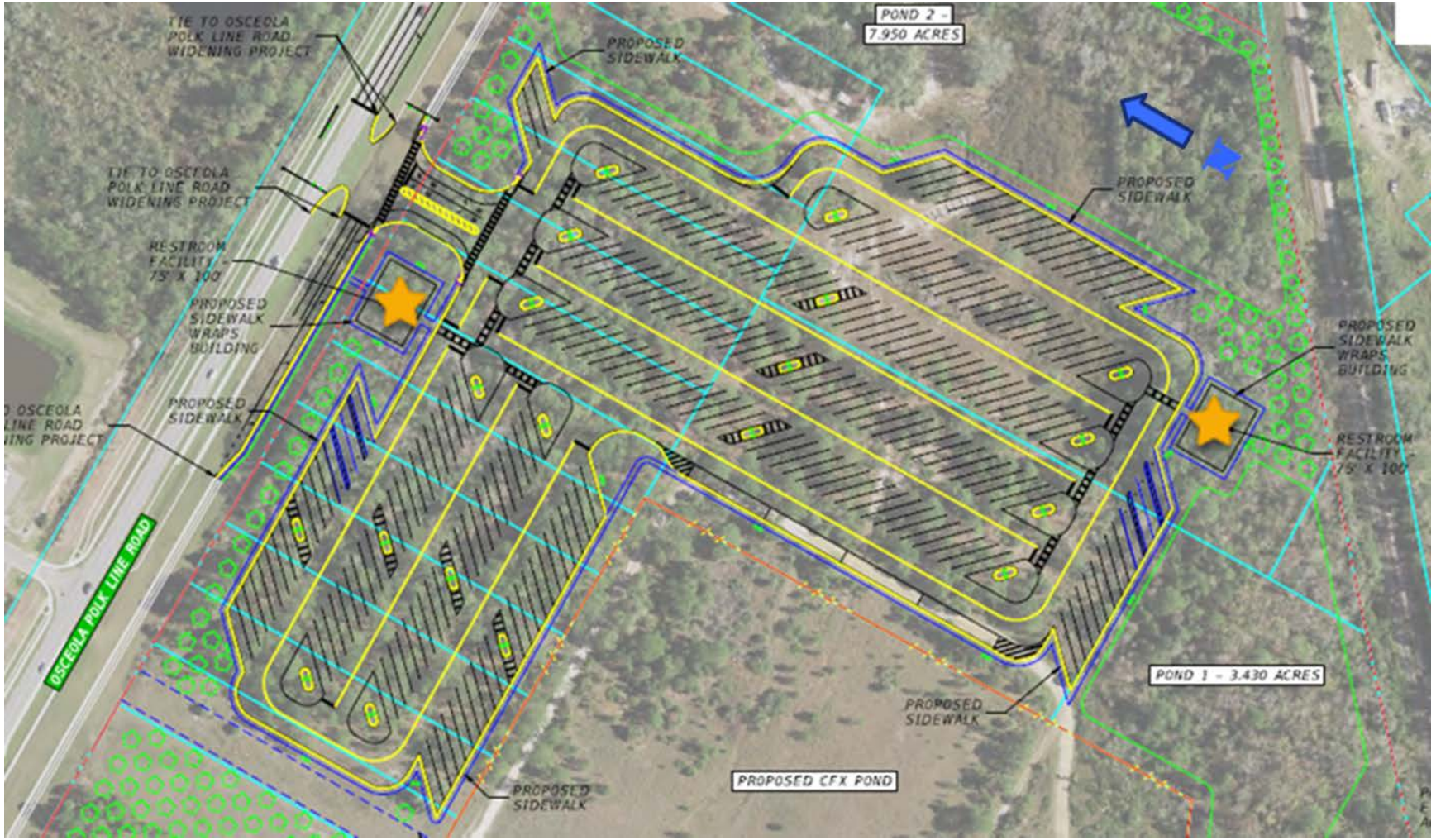
FHWA CATEGORIES

___Safety ___Construction ___Operations ___Environment _X_Other

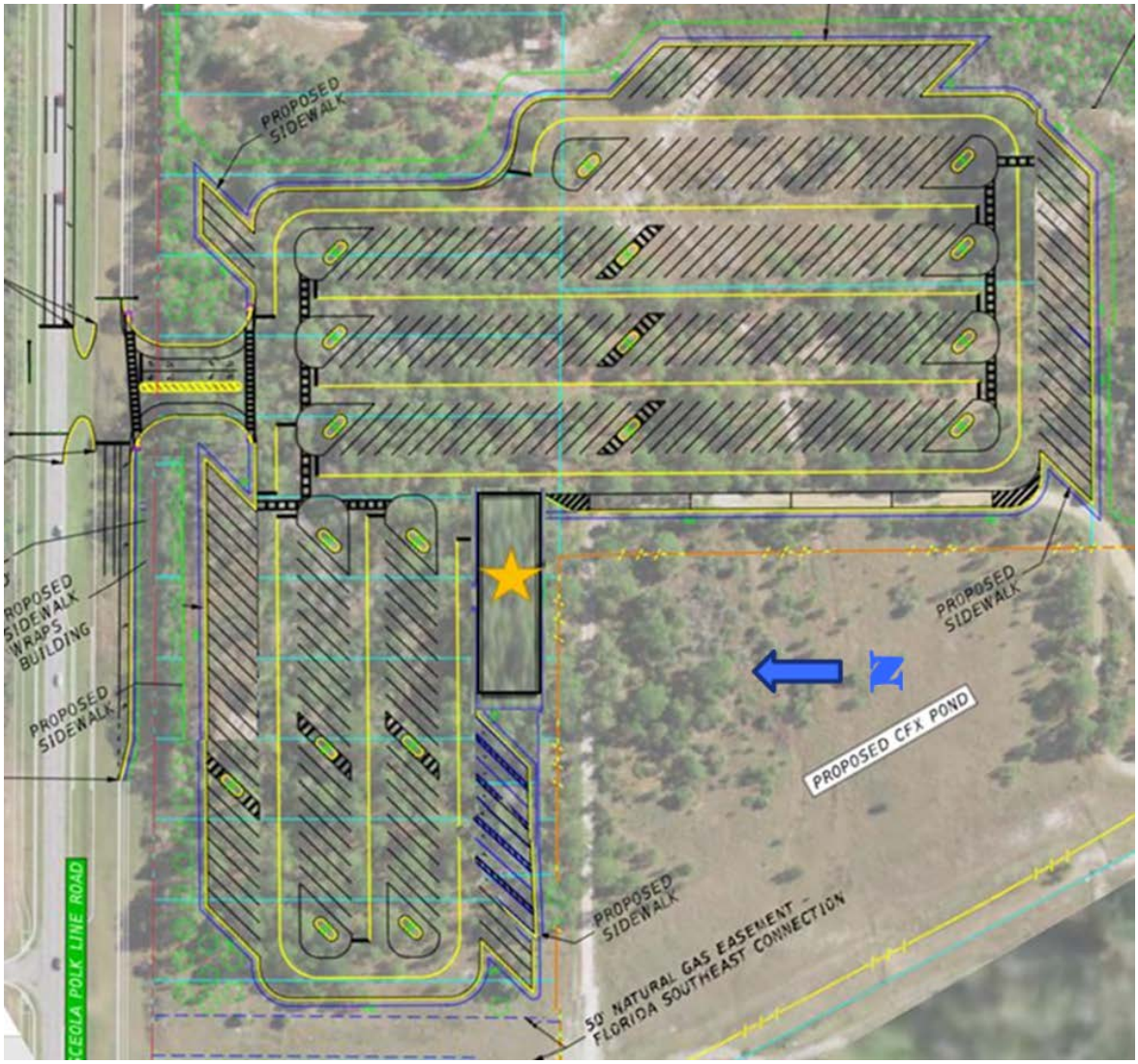
Calculations:

Description	Quantity	Unit	Unit Price	Extended Amount
Medium Rest Area Building 150 X 100	1	AS	$3,250,000.00	$3,250,000
Existing Rest Area Building 75 X100	-2	AS	$2,500,000.00	($5,000,000)
Subtotal				($1,750,000)
Mobilization & MOT (15%)				($262,500)
Contingency (20%)				($402,500)
		CONSTRUCTION TOTAL		**($2,415,000)**

RECOMMENDATION No. 1: Centralize the Restrooms (Osceola County)



RECOMMENDATION No. 1: Centralize the Restrooms (Osceola County)



RECOMMENDATION No. 1: Centralize the Restrooms

OPTION 1B – VOLUSIA COUNTY EASTBOUND

VE Alternative:

The VE team recommends only having one large restroom facility in a centralized location at the Volusia County eastbound site. This can also add an additional row of truck parking spaces (44) to the north side of the site.

Advantages:

- Less building capital cost.
- One utility connection.
- Additional parking and green space if desired.
- Centralized security area

Disadvantages:

Truck Driver must use one central rest area.

Potential Cost Savings: $914,000

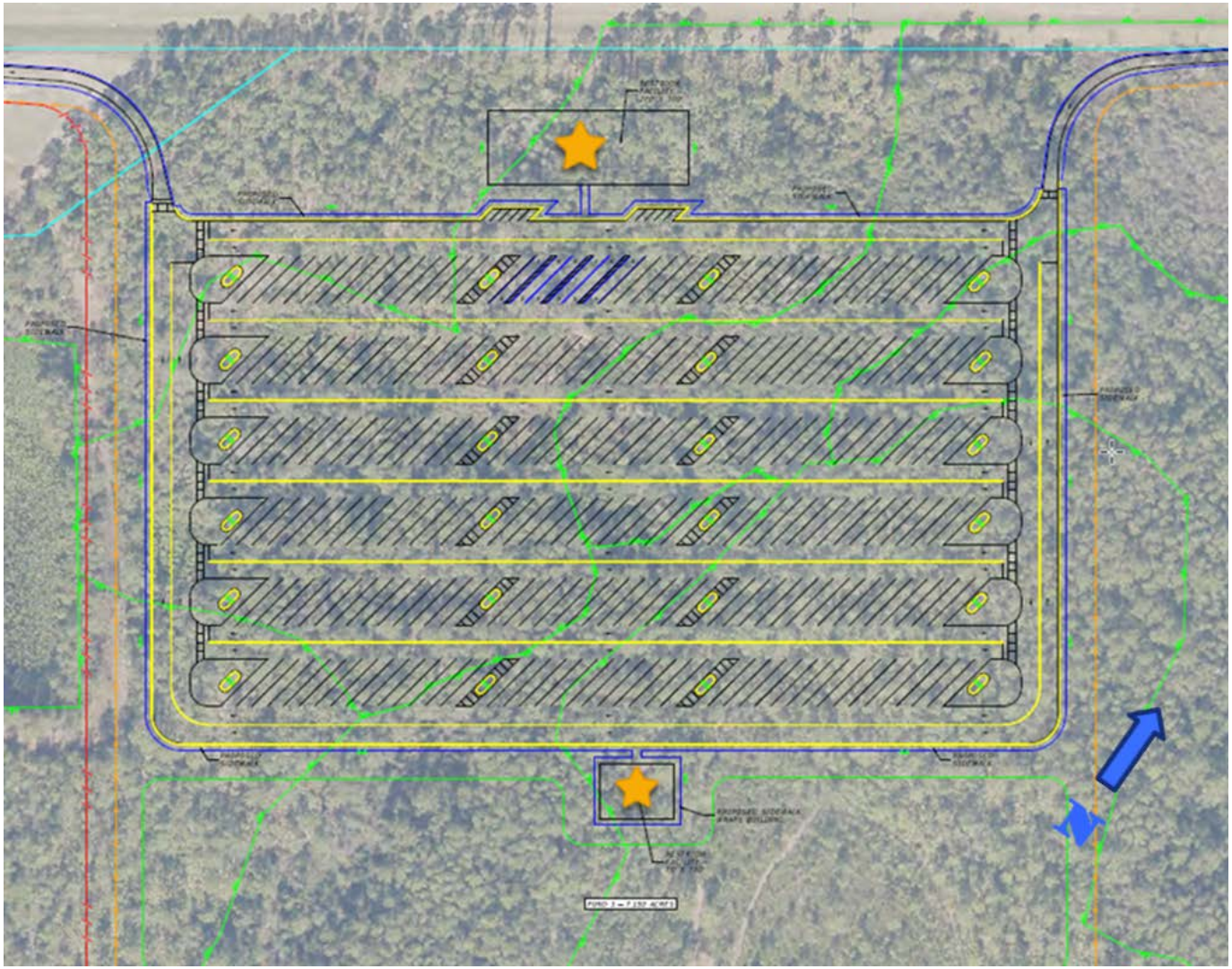
FHWA CATEGORIES

___Safety _X_ Construction ___Operations ___Environment _X_ Other

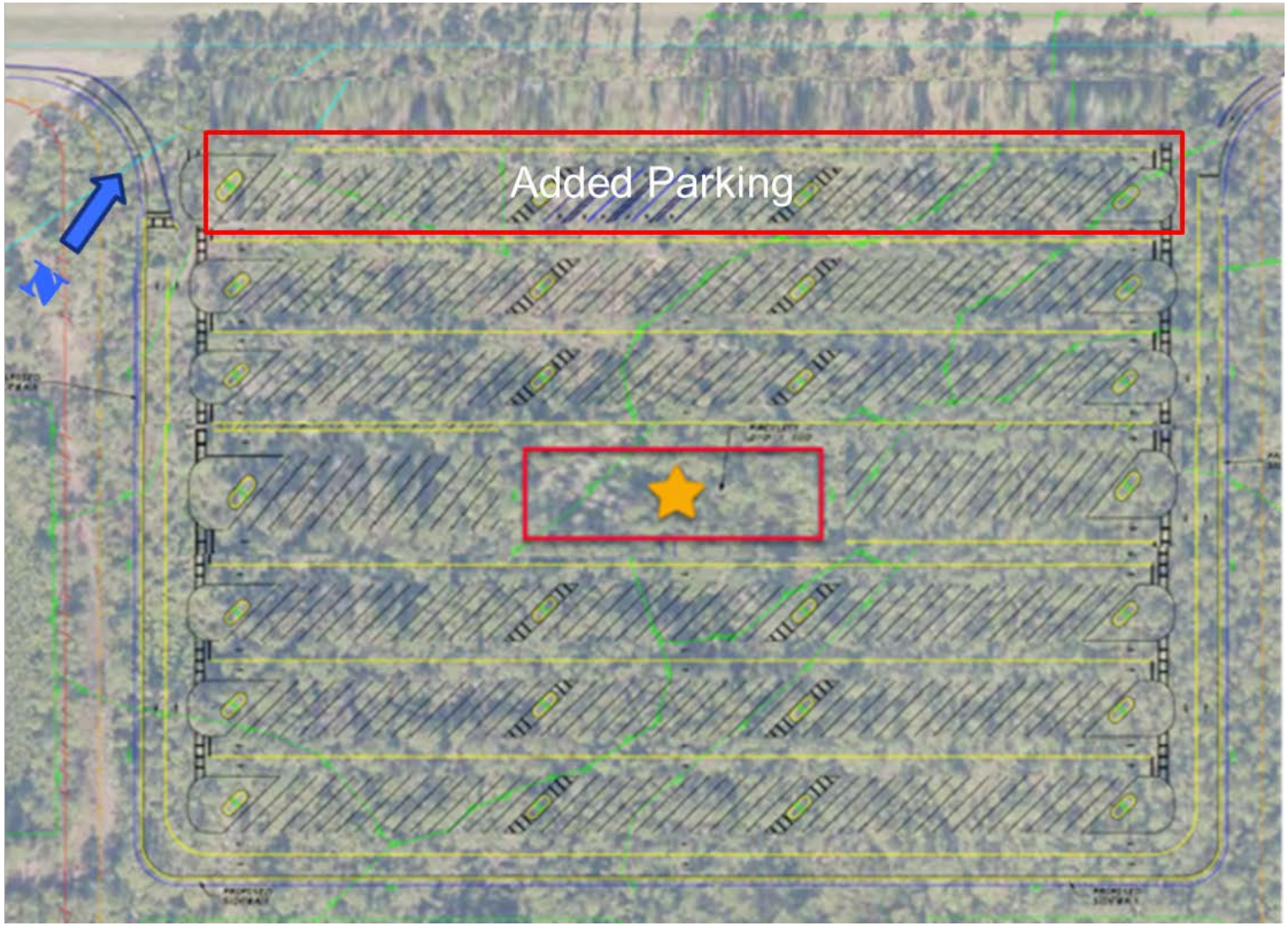
Calculations:

Description	Quantity	Unit	Unit Price	Extended Amount
Existing Rest Area Building 75 X100	-1	AS	$2,500,000.00	($2,500,000)
Embankment	18,519	CY	$16.30	$301,860
Type B stablalizataion	11,111	SY	$20.34	$225,998
Optional Base Group 09	11,111	SY	$52.31	$581,216
Superpave type	6,111	TN	$119.20	$728,431
Subtotal				($662,495)
Mobilization & MOT (15%)				($99,374)
Contingency (20%)				($152,374)
			CONSTRUCTION TOTAL	**($914,243)**

RECOMMENDATION No. 1: Centralize the Restrooms (Volusia County Eastbound)



RECOMMENDATION No. 1: Centralize the Restrooms (Volusia County Eastbound)



RECOMMENDATION No. 1: Centralize the Restrooms

OPTION 1C – VOLUSIA COUNTY WESTBOUND

VE Alternative:
The VE team recommends only having one large restroom facility in a centralized location at the Volusia County westbound site. Also, adds an additional row of truck parking spaces (44) to the North. Building is being centralized would remove 20 spaces. Therefore, there is a net of 24 additional parking spaces.

Advantages:

- Less building capital cost
- One utility connection
- Additional parking and green space if desired
- Centralized security area
- Uses fill material from deeper pond mitigates increased pond size

Disadvantages:

- Parking space reduction in the center for septic is proposed
- Increased pond area (0.75)

Potential Cost Savings: $914,000

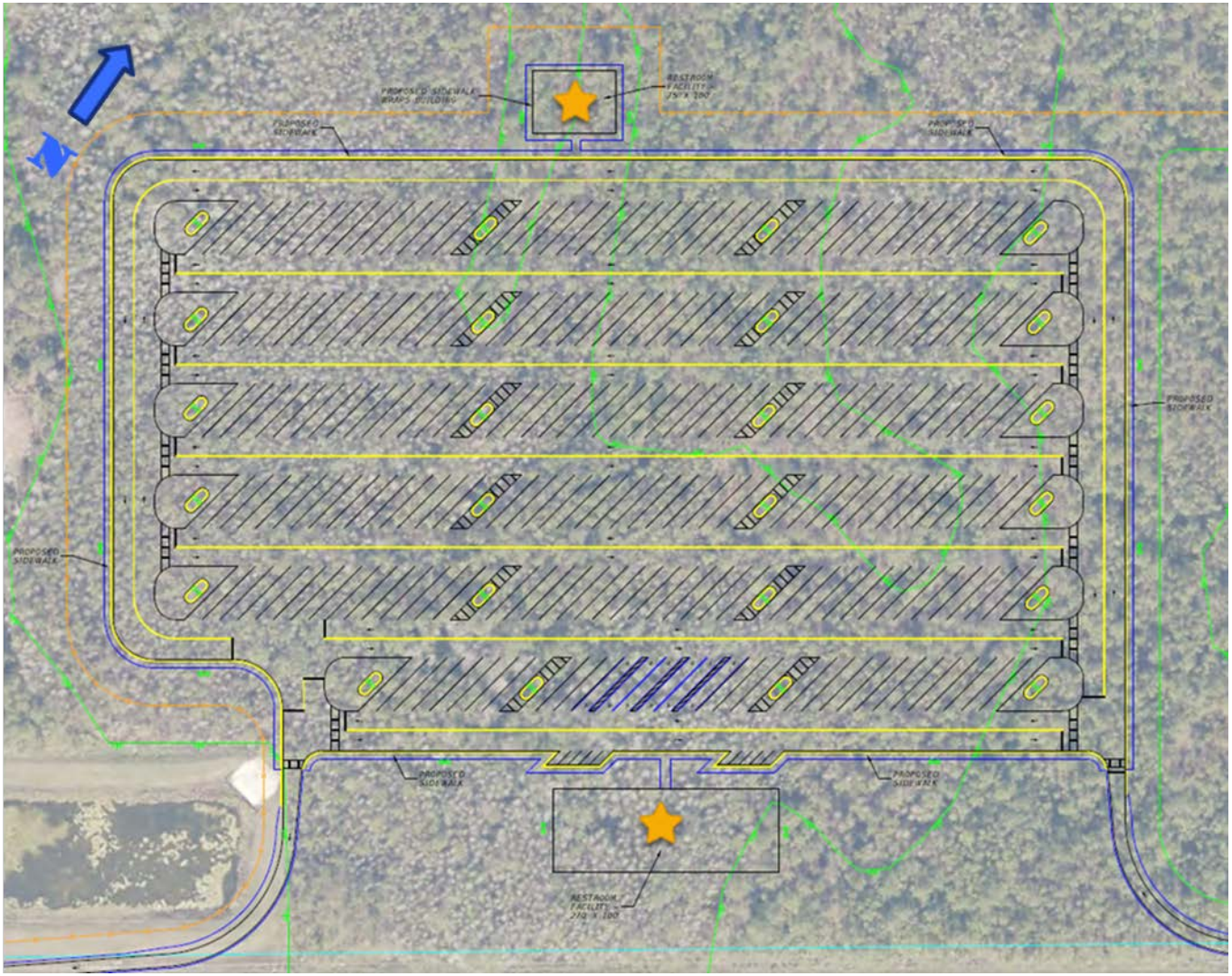
FHWA CATEGORIES

___Safety _X_ Construction ___Operations ___Environment ___Other

Calculations:

Description	Quantity	Unit	Unit Price	Extended Amount
Existing Rest Area Building 75 X100	-1	AS	$2,500,000.00	($2,500,000)
Embankment	18519	CY	$16.30	$301,860
Type B stablalizataion	11111	SY	$20.34	$225,998
Optional Base Group 09	11111	SY	$52.31	$581,216
Superpave type	6111	TN	$119.20	$728,431
				$0
Subtotal				($662,495)
Mobilization & MOT (15%)				($99,374)
Contingency (20%)				($152,374)
			CONSTRUCTION TOTAL	**($914,243)**

RECOMMENDATION No. 1: Centralize the Restrooms (Volusia County Westbound)



RECOMMENDATION No. 1: Centralize the Restrooms (Volusia County Westbound)

RECOMMENDATION No. 3: Reconfigure the middle aisles of the parking spaces with one-way circulation

Proposed Alternative:
The PD&E Documents show the site configuration for all parking facilities with multiple two-way aisles for single parking spaces set at a 45° angle relative to the drive aisle. The current two-way aisles are set currently at forty-five (45) feet in width, twenty-two and a half (22.5) feet per direction. The aisles are available for either pull-in or back in based on the current configuration. The outer circulation lanes around the site have a total width of fifty (50) feet.

OPTION 3A – OSCEOLA COUNTY:

VE Alternative:
The VE team recommends reconfiguring the interior drive aisles to a one-way drive aisle with the spaces oriented in a manner to promote same direction travel within these aisles. This location currently proposes 234 parking spaces total. The reconfiguration provides the opportunity to reduce the total aisle width by seven (7) feet for the full length of the aisle and the widths of the circulating lanes the aisles connect to. For the Osceola County site, the north-south aisles are 870-ft and the east-west aisle is 573-ft in length. For the three interior aisles reconfigured to one-way aisles, a total of 1,993 SY of impervious area encompassing 10 inches of asphalt, 10 inches of optional base, stabilization, and assumed 2-ft of embankment that could be reduced.

Advantages:

- Reduced material quantities and cost
- Potential to reduce pond sizes or increase on-site floodplain compensation area
- Slightly improved construction time
- Reduced aisle width reduces the pedestrian crossing distances accessing the restroom facilities
- Drivers pull through

Disadvantages:

- Less excess room for drivers to maneuver to and from the parking spaces

Potential Cost Savings: $401,000

FHWA CATEGORIES

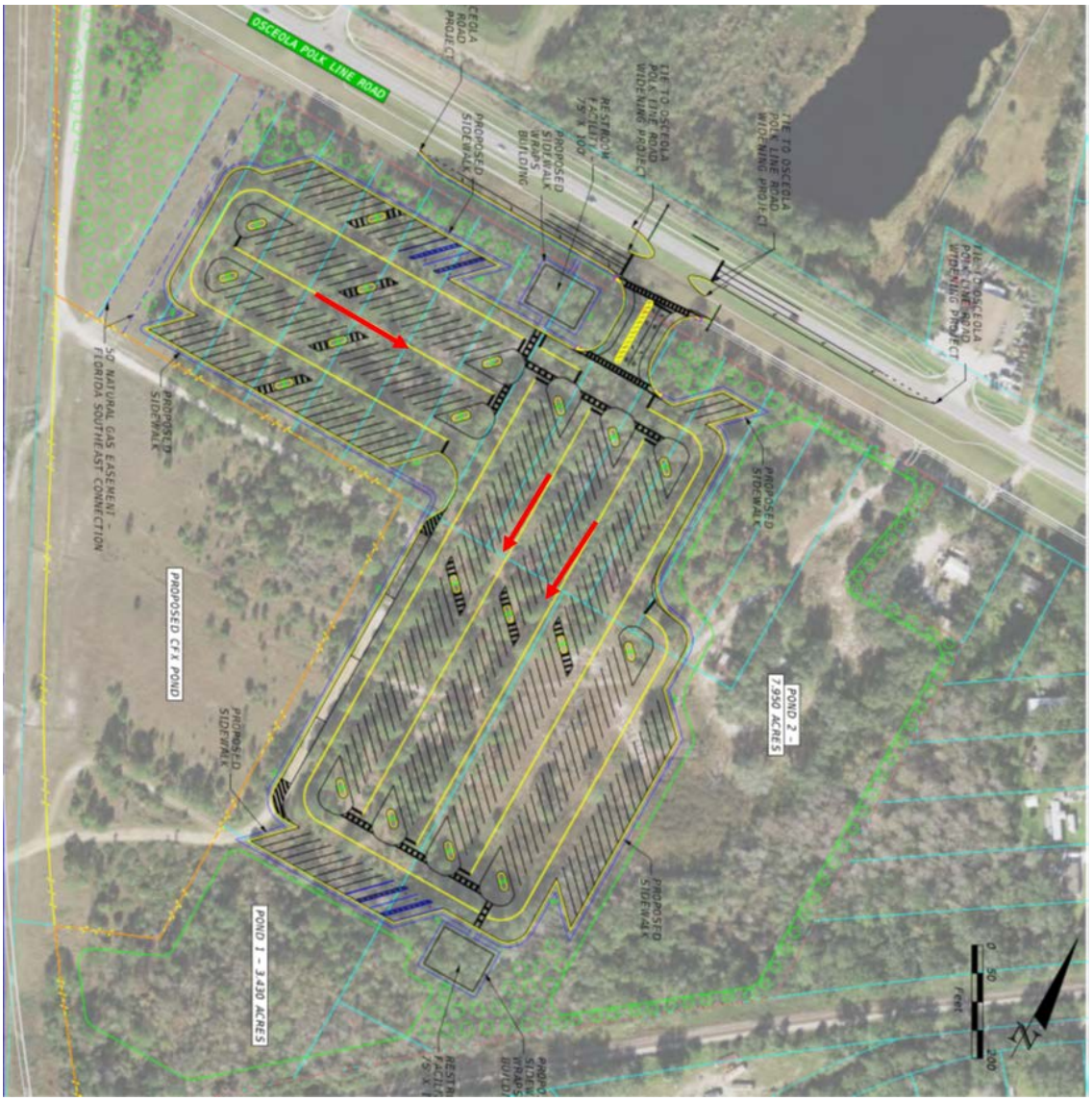
___Safety _X_ Construction ___Operations ___Environment ___Other

RECOMMENDATION No. 3: Reconfigure the middle aisles of the parking spaces with one-way circulation

Calculations:

Description	Quantity	Unit	Unit Price	Extended Amount
Embankment	-1329	CY	$16.30	($21,657)
Type B Stabilization	-1993	SY	$10.03	($19,990)
Optional Base, Base Group 09	-1993	SY	$43.92	($87,533)
Superpave Asphaltic Concrete, Traffic	-1096	TN	$147.01	($161,145)
				$0
Subtotal				($290,325)
Mobilization & MOT (15%)				($43,549)
Contingency (20%)				($66,775)
		CONSTRUCTION TOTAL		**($400,648)**

RECOMMENDATION No. 3: Reconfigure the middle aisles of the parking spaces with one-way circulation



RECOMMENDATION No. 3: Reconfigure the middle aisles of the parking spaces with one-way circulation

OPTION 3B ORANGE COUNTY

VE Alternative:
The VE team recommends reconfiguring the interior drive aisles to a one-way drive aisle with the spaces oriented in a manner to promote same direction travel within these aisles. The reconfiguration provides the opportunity to reduce the total aisle width by eight (8) feet for the full length of the aisle and the widths of the circulating lanes the aisles connect to. For the Orange County site, there are a total of five (5) interior aisles which vary in length due to the shape of the site. The total length including all 5 aisles is 2,650 feet. This would calculate to a total of 2,356 SY of impervious area encompassing 10 inches of asphalt, 10 inches of optional base, stabilization, and assumed 3.5-ft of embankment that could be reduced.

Advantages:

- Reduced material quantities and cost
- Potential to reduce pond sizes or increase on-site floodplain compensation area
- Improved construction time
- Reduced pedestrian crossing distances accessing the restroom facilities
- Drivers pull through

Disadvantages:

- Less excess room for drivers to maneuver to and from the parking spaces.

Potential Cost Savings: $504,000

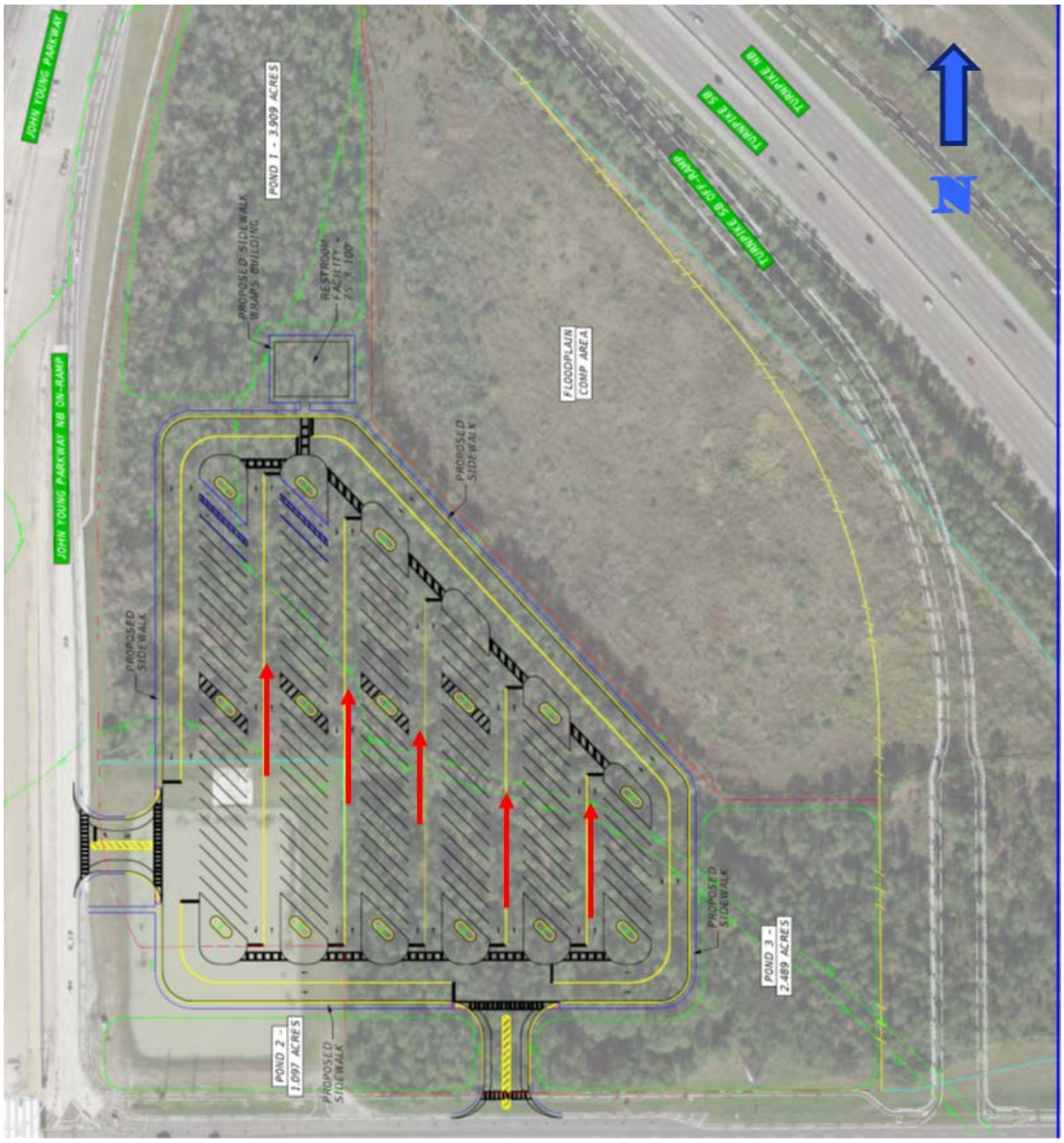
FHWA CATEGORIES

___Safety _X_ Construction ___Operations ___Environment ___Other

Calculations:

Description	Quantity	Unit	Unit Price	Extended Amount
Embankment	-2767	CY	$16.30	($45,108)
Type B Stabilization	-2372	SY	$10.03	($23,791)
Optional Base, Base Group 09	-2372	SY	$43.92	($104,178)
Superpave Asphaltic Concrete, Traffic	-1305	TN	$147.01	($191,789)
Subtotal				($364,866)
Mobilization & MOT (15%)				($54,730)
Contingency (20%)				($83,919)
		CONSTRUCTION TOTAL		**($503,515)**

RECOMMENDATION No. 3: Reconfigure the middle aisles of the parking spaces with one-way circulation



RECOMMENDATION No. 22: Reconfigure the aisles with one-way circulation (Volusia 1A)

OPTION 3C – VOLUSIA COUNTY EASTBOUND

Proposed Alternative:
The PD&E Documents show the site configuration for Volusia County Site 1A (Eastbound I-4) to be a rectangular parking area with multiple two-way aisles for single parking spaces set at a 45° angle relative to the drive aisle. The current two-way aisles are set currently at forty-five (45) feet in width, twenty-two and a half (22.5) feet per direction. The aisles are available for either pull-in or back in based on the current configuration. The outer circulation lanes around the site have a total width of fifty (50) feet. This location currently proposes 275 parking spaces total.

VE Alternative:
The VE team recommends reconfiguring the interior drive aisles to a one-way drive aisle with the spaces oriented in a manner to promote same direction travel within these aisles. The reconfiguration provides the opportunity to reduce the total aisle width by seven (7) feet for the full length of the aisle and the widths of the circulating lanes the aisles connect to. For the Eastbound Volusia County site, there are a total of five (5) interior aisles with an aisle length of 1,222 feet. The total length including all 5 aisles is 6,110 feet. This would calculate to a total of 4,752 SY of impervious area encompassing 10 inches of asphalt, 10 inches of optional base, stabilization, and assumed 5-ft of embankment that could be reduced.

Advantages:

- Reduced material quantities and cost
- Potential to reduce pond sizes or increase on-site floodplain compensation area
- Potential reduced footprint with less impact to wetlands
- Improved construction time
- Reduced pedestrian crossing distances accessing the restroom facility(ies)
- Maintain pull-through parking opportunity

Disadvantages:

- Less excess room for drivers to maneuver to and from the parking spaces.

Potential Cost Savings: $1,062,000

FHWA CATEGORIES

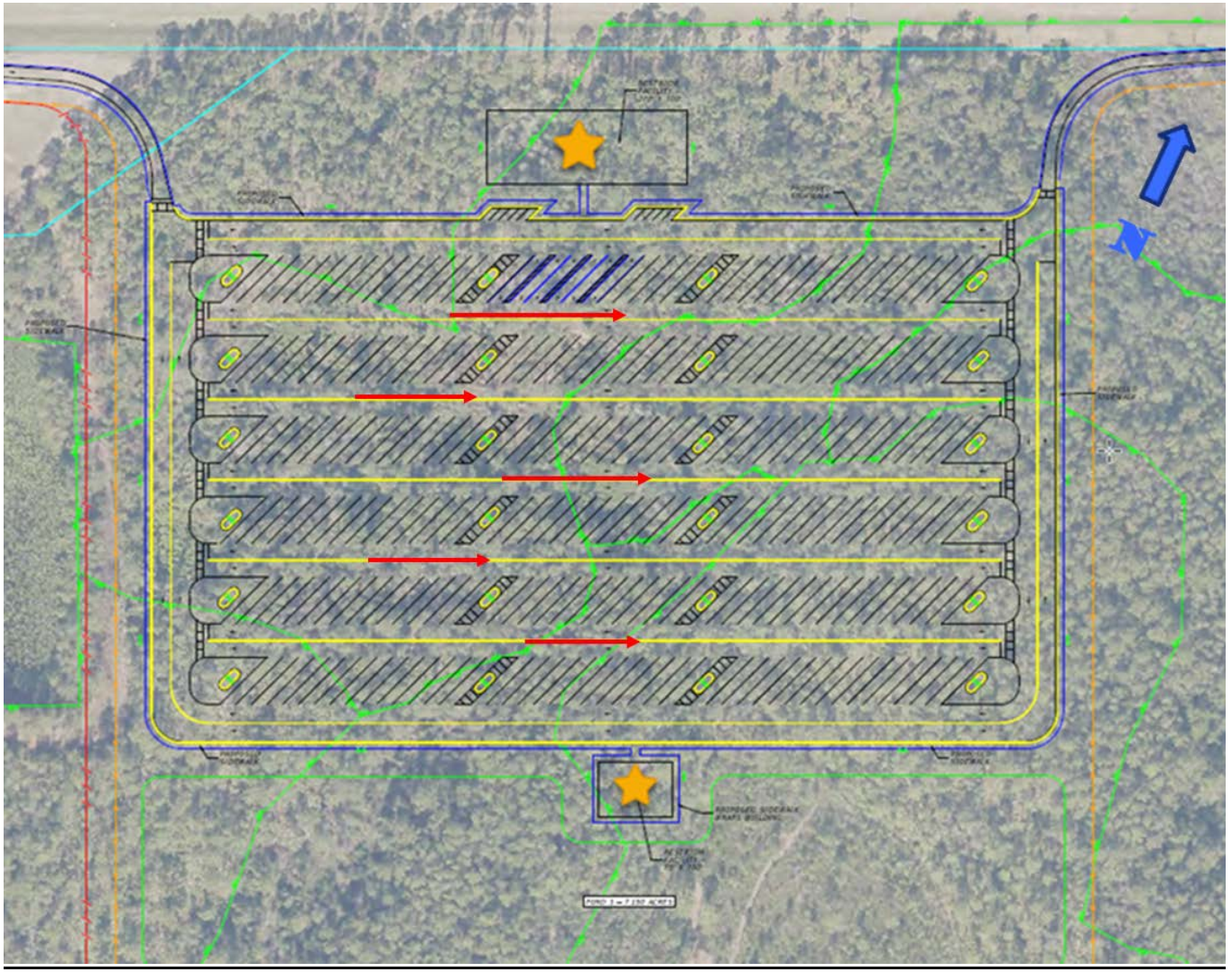
___Safety _X_ Construction ___Operations ___Environment ___Other

RECOMMENDATION No. 3: Reconfigure the aisles with one-way circulation

Calculations:

Description	Quantity	Unit	Unit Price	Extended Amount
Embankment	-7920	CY	$16.30	($129,096)
Type B Stabilization	-4752	SY	$10.03	($47,663)
Optional Base, Base Group 09	-4752	SY	$43.92	($208,708)
Superpave Asphaltic Concrete, Traffic	-2614	TN	$147.01	($384,225)
				$0
Subtotal				($769,692)
Mobilization & MOT (15%)				($115,454)
Contingency (20%)				($177,029)
		CONSTRUCTION TOTAL		**($1,062,175)**

RECOMMENDATION No. 3: Reconfigure the aisles with one-way circulation



RECOMMENDATION No. 3: Reconfigure the middle aisles of the parking spaces with one-way circulation

OPTION 3D – VOLUSIA COUNTY WESTBOUND

VE Alternative:
The VE team recommends reconfiguring the interior drive aisles to a one-way drive aisle with the spaces oriented in a manner to promote same direction travel within these aisles. The reconfiguration provides the opportunity to reduce the total aisle width by seven (7) feet for the full length of the aisle and the widths of the circulating lanes the aisles connect to. For the Westbound Volusia County site, there are a total of four (4) interior aisles with an aisle length of 1,211 feet. The total length including all 4 aisles is 4,844 feet. This would calculate to a total of 3,768 SY of impervious area encompassing 10 inches of asphalt, 10 inches of optional base, stabilization, and assumed 5-ft of embankment that could be reduced.

Advantages:

- Reduced material quantities and cost
- Potential to reduce pond sizes or increase on-site floodplain compensation area
- Potential reduced footprint with less impact to wetlands
- Improved construction time
- Reduced pedestrian crossing distances accessing the restroom facilities
- Maintain pull-through parking opportunity

Disadvantages:

- Less excess room for drivers to maneuver to and from the parking spaces.

Potential Cost Savings: $842,000

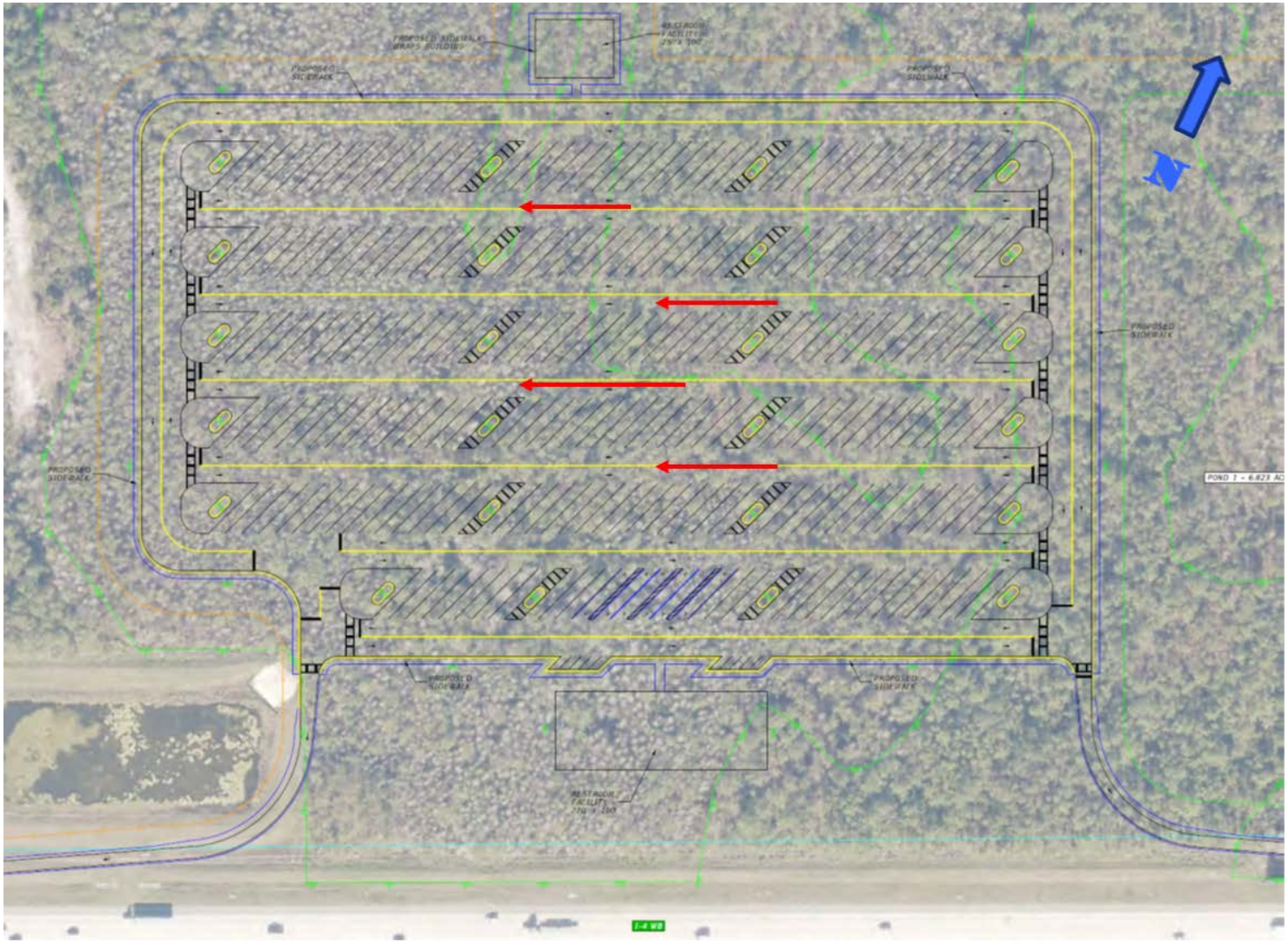
FHWA CATEGORIES

___Safety _X_ Construction ___Operations ___Environment ___Other

Calculations:

Description	Quantity	Unit	Unit Price	Extended Amount
Embankment	-6280	CY	$16.30	($102,364)
Type B Stabilization	-3768	SY	$10.03	($37,793)
Optional Base, Base Group 09	-3768	SY	$43.92	($165,491)
Superpave Asphaltic Concrete, Traffic	-2072	TN	$147.01	($304,664)
Subtotal				($610,311)
Mobilization & MOT (15%)				($91,547)
Contingency (20%)				($140,372)
		CONSTRUCTION TOTAL		**($842,229)**

RECOMMENDATION No. 3: Reconfigure the middle aisles of the parking spaces with one-way circulation



RECOMMENDATION No. 8: Modify an entrance/exit at the Orange County site

Proposed Alternative:
The PD&E Documents show ingress/egress on both John Young Parkway and Sand Lake Road.

OPTION 8A – ELIMINATE THE JOHN YOUNG PARKWAY CONNECTION

VE Alternative:
The VE team recommends eliminating access to the parking lot on John Young Parkway.

Advantages:

- Less cost
- Less MOT
- Less future maintenance
- Less construction
- Less utilities

Disadvantages:

- One ingress and egress for the parking facility

Potential Cost Savings: $354,000

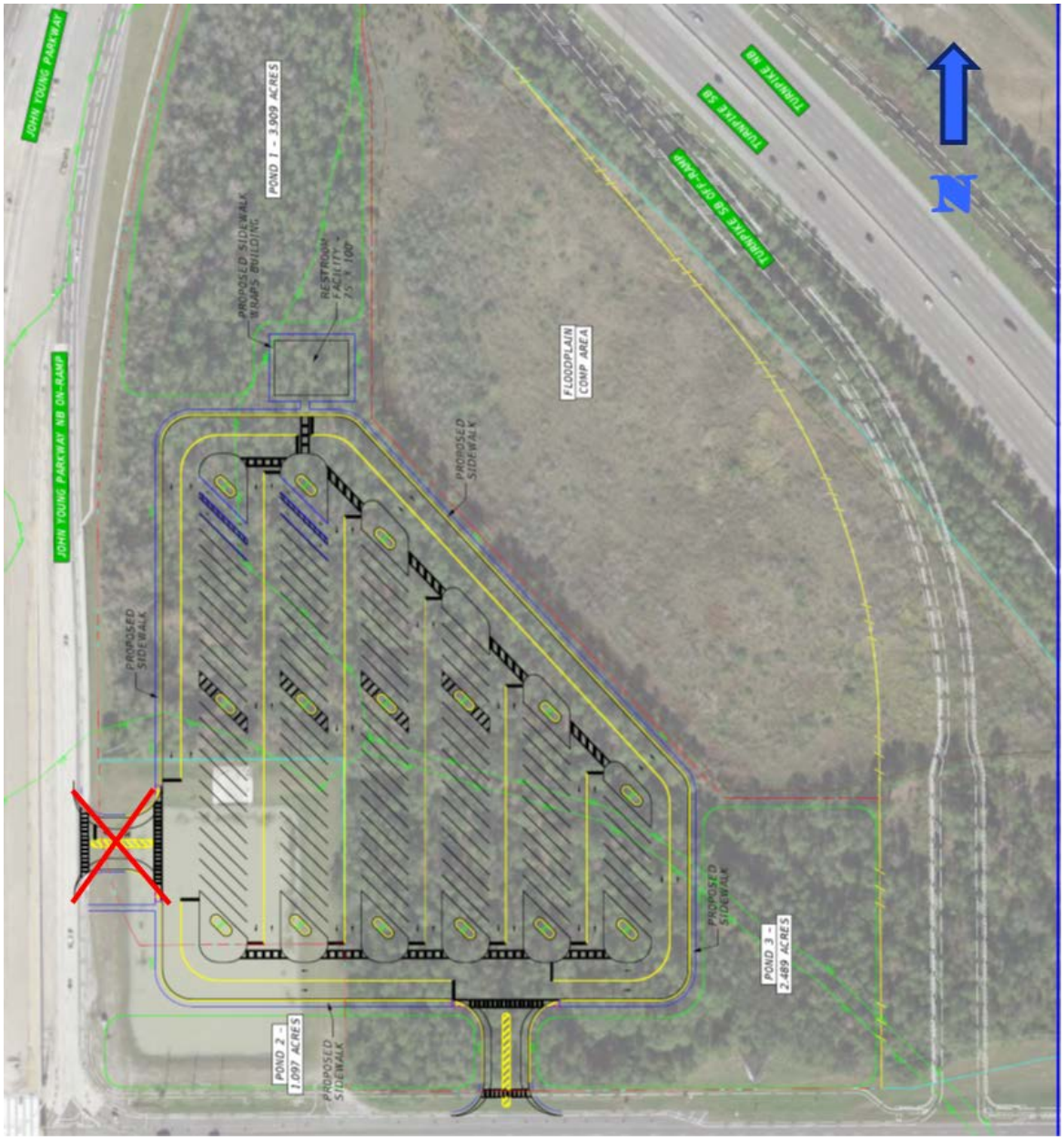
FHWA CATEGORIES

___Safety _X_ Construction ___Operations ___Environment ___Other

Calculations:

Description	Quantity	Unit	Unit Price	Extended Amount
Removal of Existing Concrete	-170	SY	$33.60	($5,712)
Excavation	-6500	CY	$8.21	($53,365)
Embankment	-7500	CY	$16.30	($122,250)
Concrete Sidewalk	-1100	SY	$68.52	($75,372)
Subtotal				($256,699)
Mobilization & MOT (15%)				($38,505)
Contingency (20%)				($59,041)
		CONSTRUCTION TOTAL		**($354,245)**

RECOMMENDATION No. 8A: Eliminate the John Young Parkway connection



RECOMMENDATION No. 8: Modify an entrance/exit at the Orange County site

OPTION 8B – ELIMINATE THE SAND LAKE ROAD CONNECTION

VE Alternative:
The VE team recommends eliminating the driveway into and out of the parking facility.

Advantages:

- Less cost
- Less MOT
- Less utilities
- Less environmental impacts
- Less construction
- Less future maintenance

Disadvantages:

- One ingress and egress for the parking facility

Potential Cost Savings: $361,000

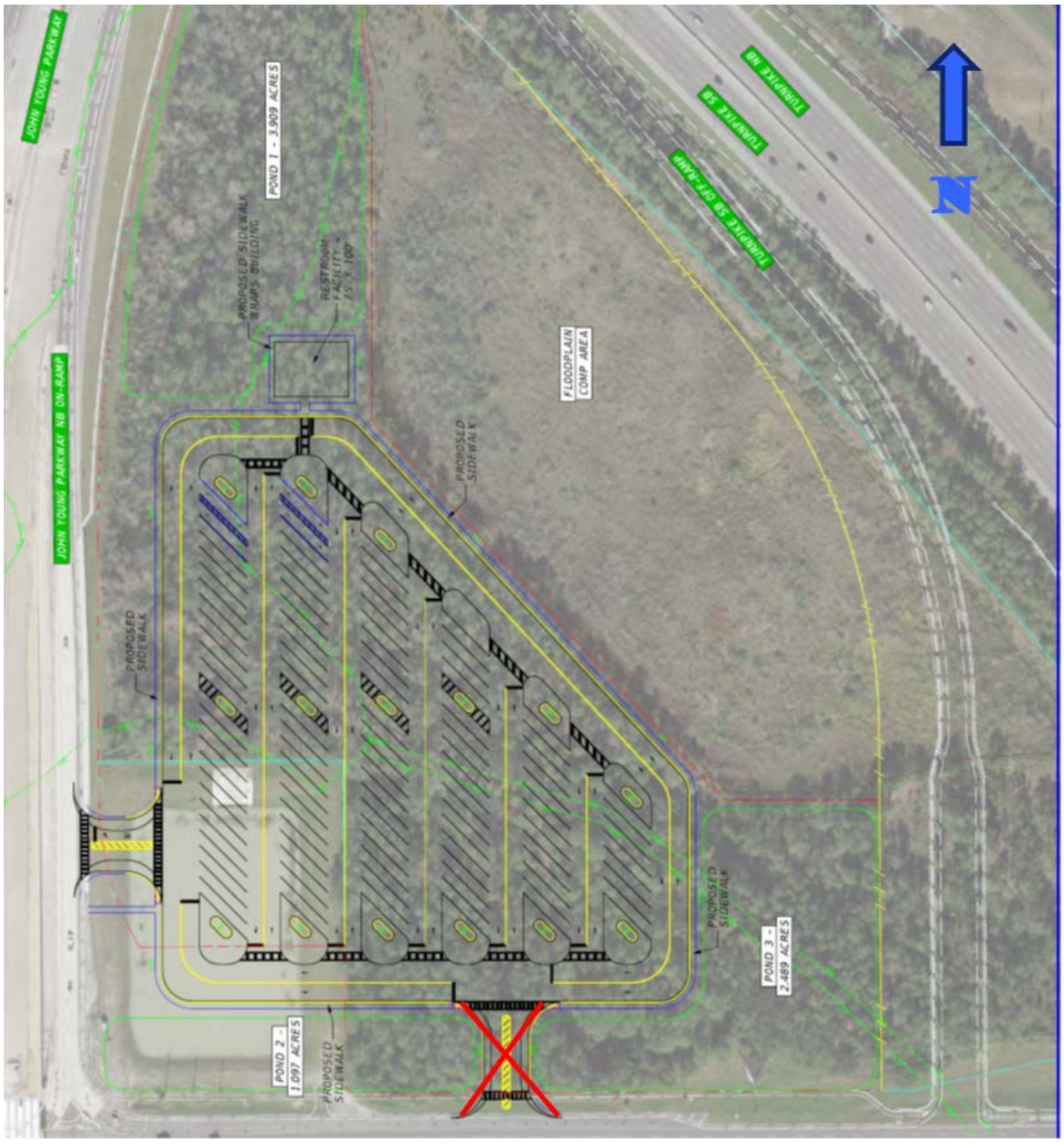
FHWA CATEGORIES

___Safety _X_ Construction ___Operations _X_ Environment ___Other

Calculations:

Description	Quantity	Unit	Unit Price	Extended Amount
Removing of existing concrete	-200	SY	$33.60	($6,720)
Excavation	-7000	CY	$8.21	($57,470)
Embankment	-7500	CY	$16.30	($122,250)
Concrete Sidewalk	-1100	SY	$68.52	($75,372)
Subtotal				($261,812)
Mobilization & MOT (15%)				($39,272)
Contingency (20%)				($60,217)
		CONSTRUCTION TOTAL		**($361,301)**

RECOMMENDATION No. 8B: Eliminate the entrance/exit on the Sand Lake Road ramp



RECOMMENDATION No. 8: Modify an entrance/exit at the Orange County site

OPTION 8C – MODIFY THE SAND LAKE ROAD TO RIGHT TURN IN ONLY

VE Alternative:
The VE team recommends modifying the Sand Lake Road access to ingress only. (Entrance only, no exiting).

Advantages:

- No truckers exiting into a right turn lane
- Avoid weaving pattern on Sand Lake with an egress too close to the signal
- Reduces congestion
- Lower construction costs
- Less environmental impacts

Disadvantages:

- Drivers looking to travel westbound on Sand Lake Road will be required to utilize Presidents Drive to return to Sand Lake

Potential Cost Savings: $81,000

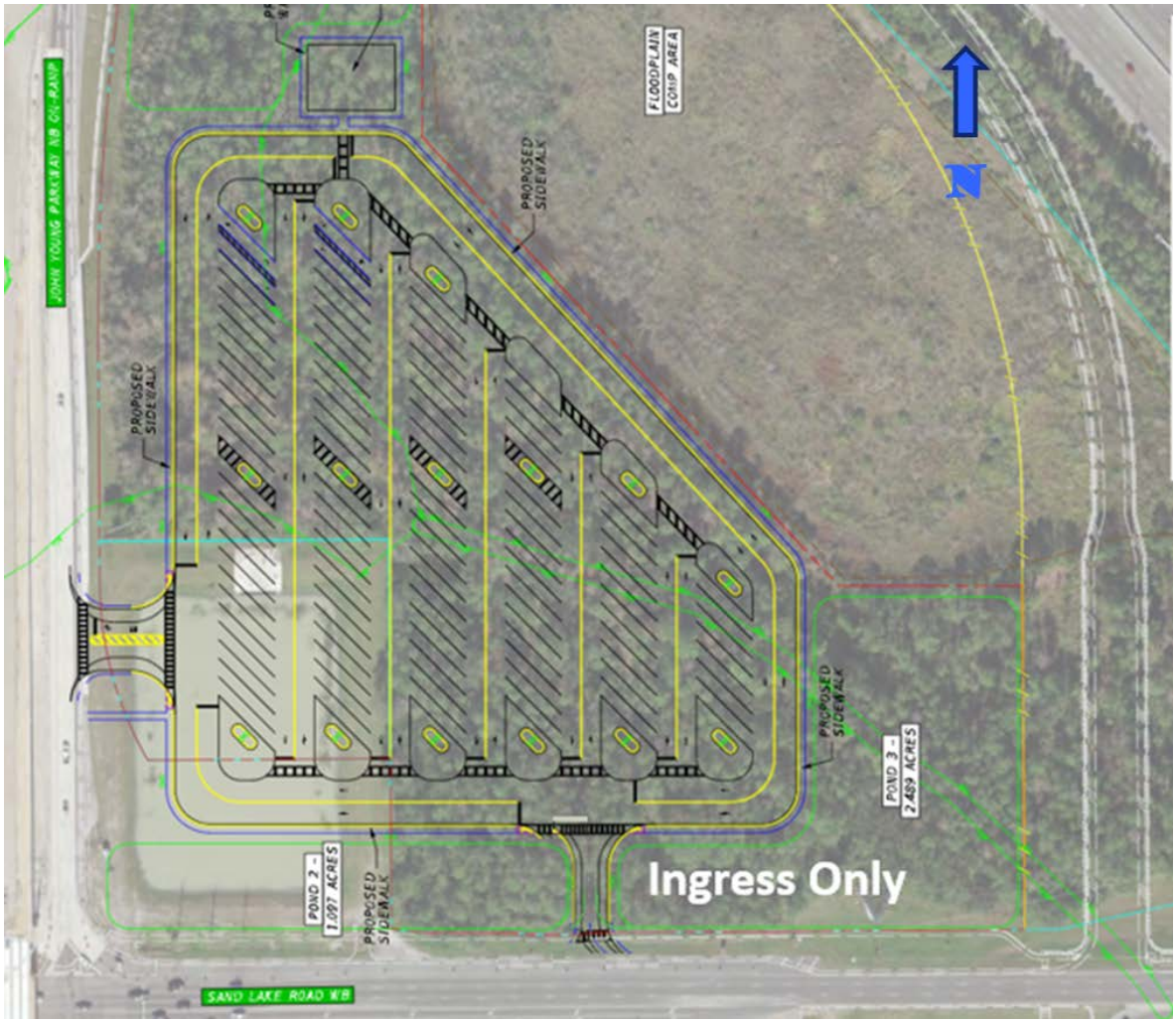
FHWA CATEGORIES

_X__Safety _X__Construction ___Operations ___Environment ___Other

Calculations:

Description	Quantity	Unit	Unit Price	Extended Amount
Removing of existing concrete	-50	SY	$33.60	($1,680)
Excavation	-2000	CY	$8.21	($16,420)
Embankment	-2500	CY	$16.30	($40,750)
Subtotal				($58,850)
Mobilization & MOT (15%)				($8,828)
Contingency (20%)				($13,536)
		CONSTRUCTION TOTAL		**($81,213)**

RECOMMENDATION No. 8C: Modify the Sand Lake Road to right turn in only



RECOMMENDATION No. 12: Install High Mast Lighting (Orange County 1)

Proposed Alternative:
The PD&E Documents show furnishing and installation of 30 Light Poles at 50 ft., one load center, 5,200 ft. conduit.

VE Alternative:
The VE team recommends High Mast Lighting for the facility.

Advantages:

- Less luminaires
- Less maintenance

Disadvantages:

- May require a larger space to lower the fixture for maintenance

Potential Cost Savings: $98,000

FHWA CATEGORIES

___Safety ___Construction ___Operations ___Environment ___Other

Calculations:

Description	Quantity	Unit	Unit Price	Extended Amount
Light Pole Complete F&I, 50'	-30	EA	$8,941.63	($268,249)
Lighting Conductors, F&I	-5,200	LF	$2.70	($14,040)
Load Center	-1	EA	$24,746.54	($24,747)
Conduit, F&I, Open Trench	-5,200	LF	$17.05	($88,660)
FURNISH AND INSTALL, 120'	2	EA	$124,371.69	$248,743
Lighting Conductors, F&I	2600	LF	$2.70	$7,020
Load Center	1	EA	$24,746.54	$24,747
Conduit, F&I, Open Trench	2600	LF	$17.05	$44,330
Subtotal				($70,856)
Mobilization & MOT (15%)				($10,628)
Contingency (20%)				($16,297)
		CONSTRUCTION TOTAL		**($97,781)**

RECOMMENDATION No. 12: Install High Mast Lighting

RECOMMENDATION No. 18: Reconsider the control vehicle for the Seminole County Site

Proposed Alternative:
The Design Documents show the accommodation of a WB-109D tractor-trailer circulating the site and utilizing the oversize parking spaces. The spaces accommodating extended length loads maintaining the parking space width of 15 feet. The two-way circulation lanes are currently shown at 50-ft in width.

VE Alternative:
The VE team recommends using a modified WB 67 tractor-trailer vehicle for the oversized vehicle control vehicle. Extending the standard WB-67 tractor-trailer from 67 feet to 74 feet would accommodate a more reasonable oversize load anticipated to use the site. Superloads would not look to navigate tight configuration sites for parking during non-permitted hours. The current control vehicle (WB-109D) is commercially authorized to be used only on the Florida Turnpike Enterprise (FTE) roadway. The change in the control vehicle will provide the ability to reduce 1,200 feet of two-way circulation lanes from 50-ft to 42 ft. in width. This will result in a net reduction of 1,067 SY of asphalt, optional base, stabilization, and an average of 2-ft of embankment.

Advantages:

- Reduced material quantities and cost
- Potential to reduce pond sizes or increase on-site floodplain compensation area
- Improved construction time
- Reduced pedestrian crossing distances accessing the restroom facilities

Disadvantages:

- Less excess room for drivers to maneuver to and from the parking spaces.

Potential Cost Savings: $214,000

FHWA CATEGORIES

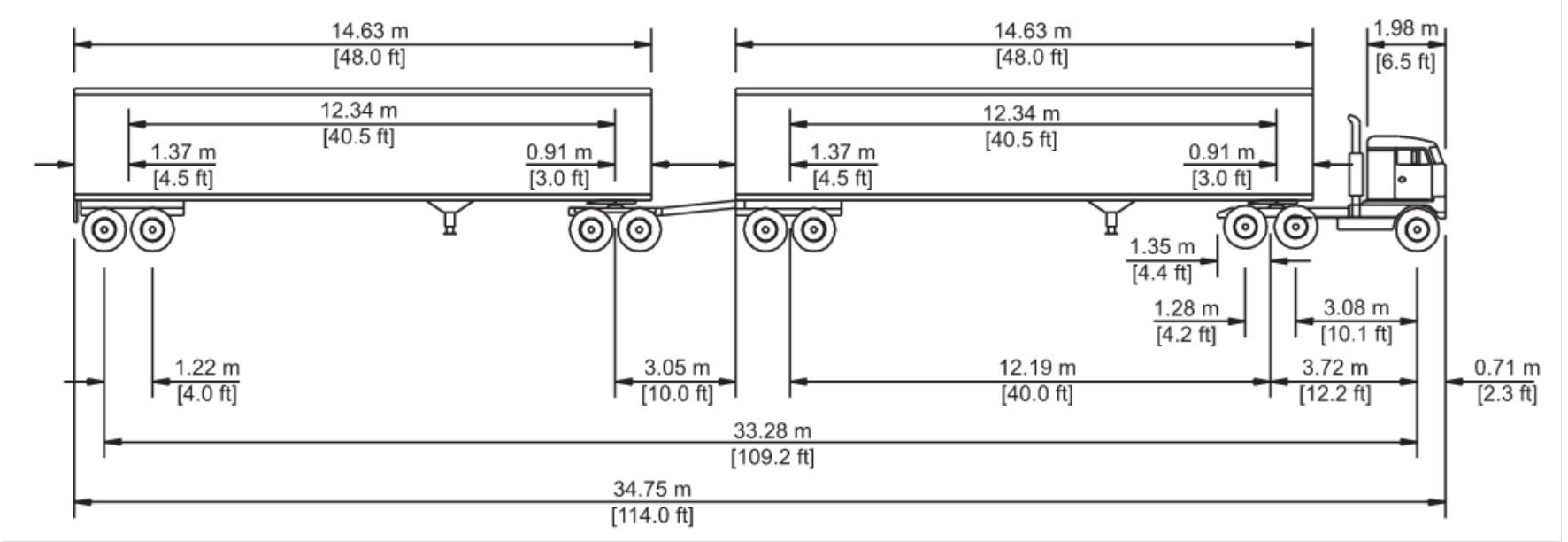
___Safety __X_ Construction ___Operations ___Environment ___Other

Calculations:

Description	Quantity	Unit	Unit Price	Extended Amount
Embankment	-711	CY	$16.30	($11,595)
Type B Stabilization	-1067	SY	$10.03	($10,702)
Optional Base, Base Group 09	-1067	SY	$43.92	($46,863)
Superpave Asphaltic Concrete, Traffic	-587	TN	$147.01	($86,273)
				$0
Subtotal				($155,432)
Mobilization & MOT (15%)				($23,315)
Contingency (20%)				($35,749)
		CONSTRUCTION TOTAL		**($214,496)**

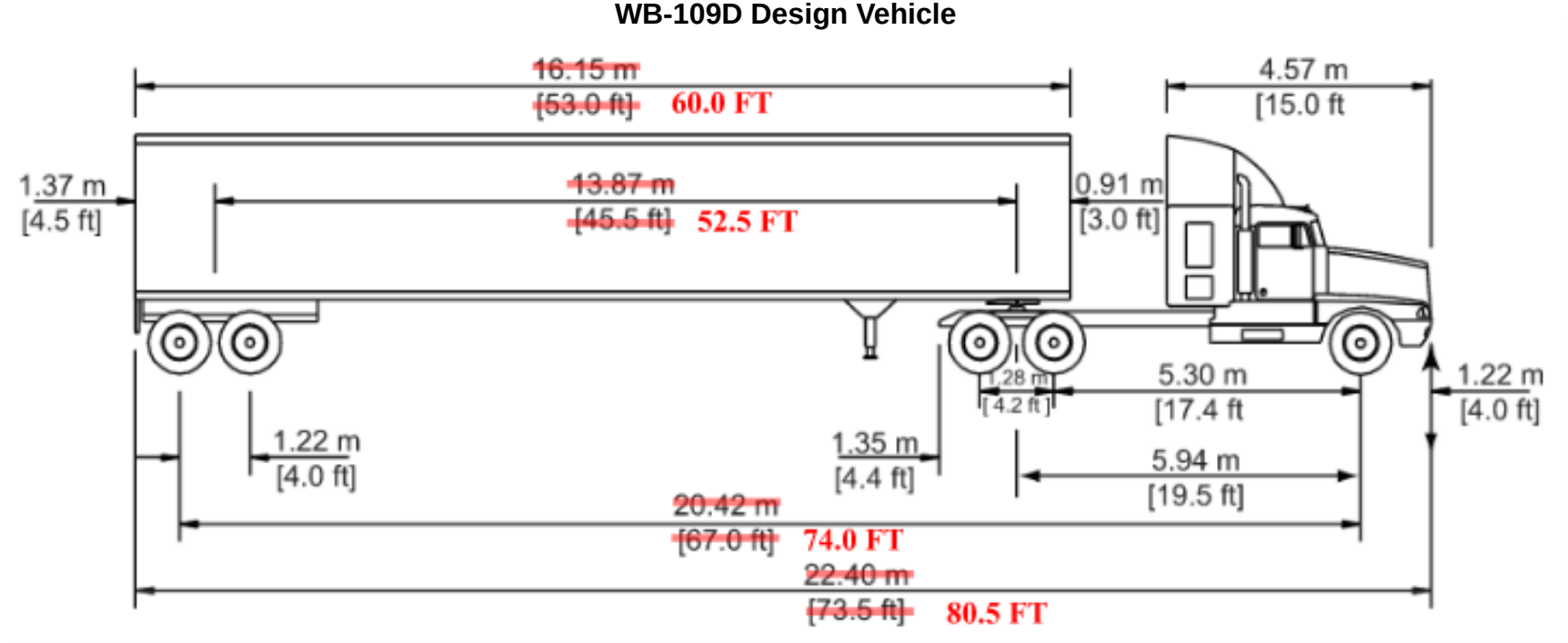
RECOMMENDATION No. 18: Reconsider the control vehicle for the Seminole County Site

WB-109D Design Vehicle



RECOMMENDATION No. 18: Reconsider the control vehicle for the Seminole County Site

WB-109D Design Vehicle



RECOMMENDATION No. 19: Re-purpose the existing building at the northern end of the property

Proposed Alternative:
The PD&E Documents show a total site area of 18.69 acres with a total of 132 truck parking spaces. The existing site includes several buildings which are planned to be razed to accommodate the proposed facility. The PD&E shows a proposed restroom building providing men's and women's facilities as required according to the number of parking spaces proposed. The building will also include a unisex bathroom, a security office, and a vending area.

VE Alternative:
The VE team recommends repurposing one of the existing buildings on the Donnie Myers property to accommodate the required restrooms, security, and vending.

Advantages:

- Significantly Less Cost
- Less Waste
- Possibly Improves Site Circulation
- Increases parking

Disadvantages:

- Requires pond design modification
- Need to coordinate with Seminole County commitment regarding buffer

Potential Cost Savings: $2,086,000

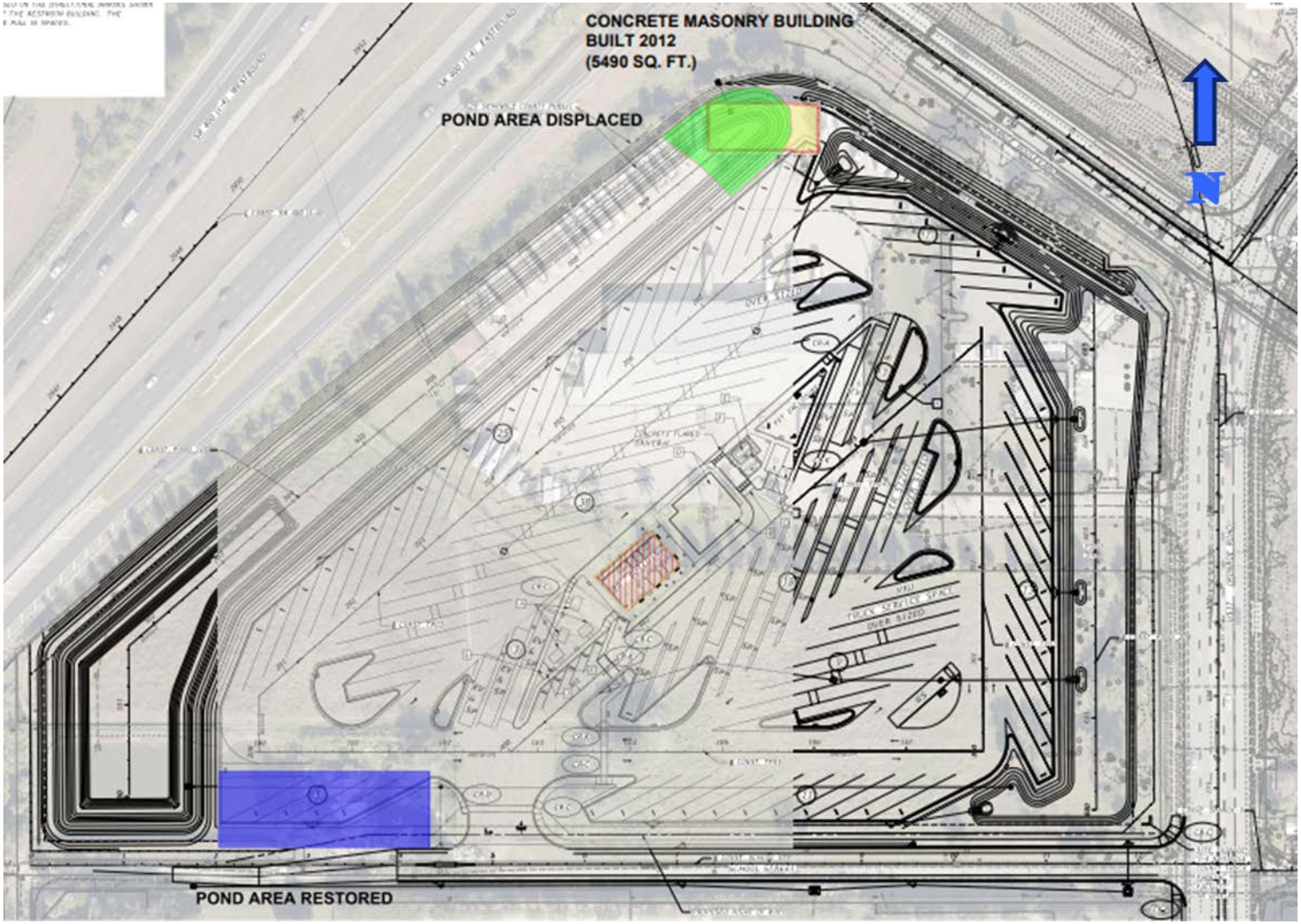
FHWA CATEGORIES

___Safety ___Construction ___Operations ___Environment ___Other

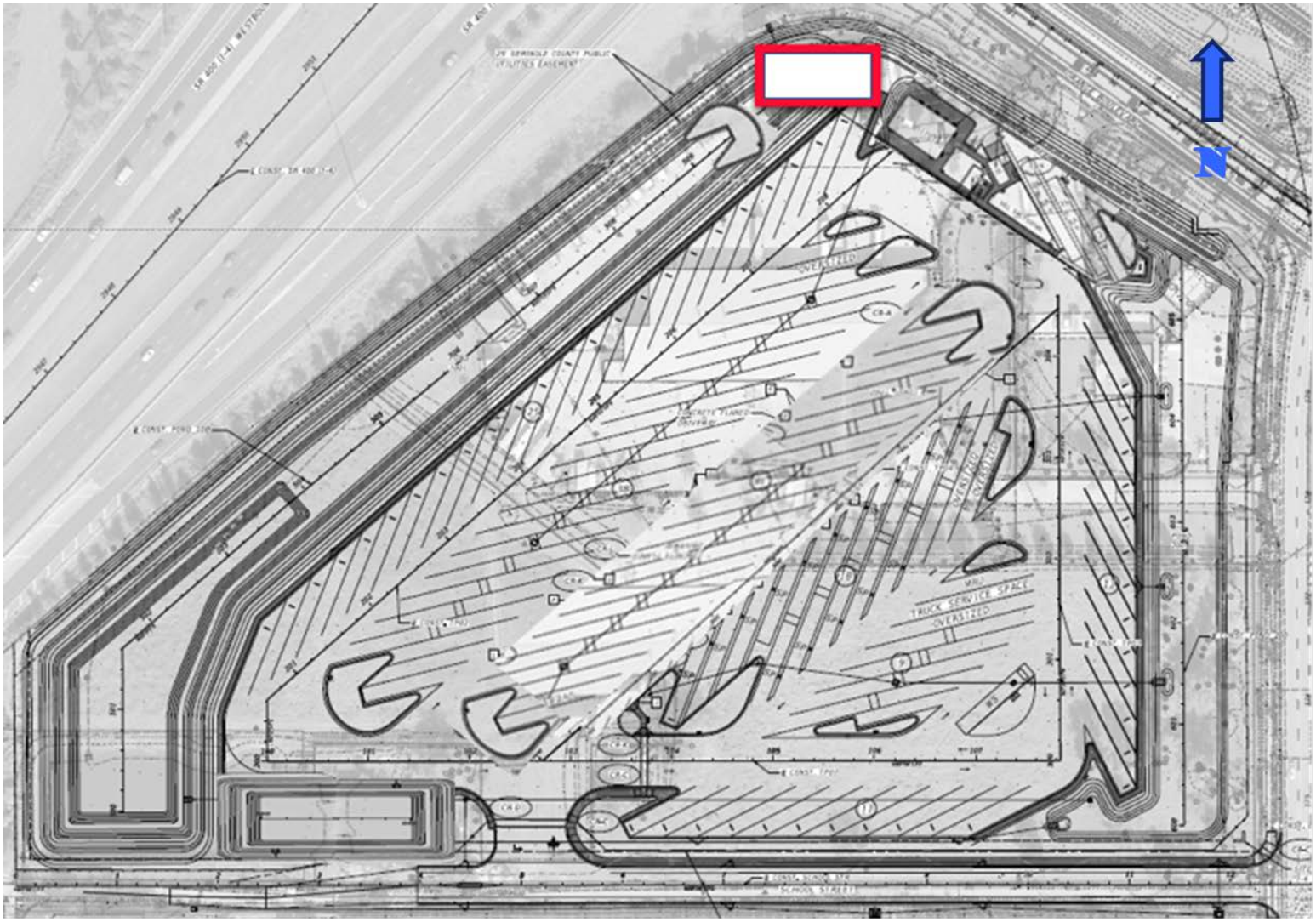
Calculations:

Description	Quantity	Unit	Unit Price	Extended Amount
Demo of Exist Building	5490	SF	($20.00)	($109,800)
Renovate Existing Building	5490	SF	$200.00	$1,098,000
Construct New Building	7500	LS	($2,500,000.00)	($2,500,000)
				$0
Subtotal				($1,511,800)
Mobilization & MOT (15%)				($226,770)
Contingency (20%)				($347,714)
		CONSTRUCTION TOTAL		**($2,086,284)**

RECOMMENDATION No. 19: Re-purpose the existing building at the northern end of the property



RECOMMENDATION No. 19: Re-purpose the existing building at the northern end of the property



RECOMMENDATION No. 24 and 30 (Volusia site EB and WB)

Proposed Alternative:
The PD&E Documents show a large amount of fill being trucked to the site.

VE Alternative:
The VE team recommends utilizing existing fill on site. One way this can be done is by digging the ponds 2' deeper to provide additional fill. (Assume 75% of excavation is usable)

Excavate an additional 22,000 cubic yards of fill.

Advantages:

- Less cost
- Less dump trucks on the road

Disadvantages:

- Soil may not be suitable for fill

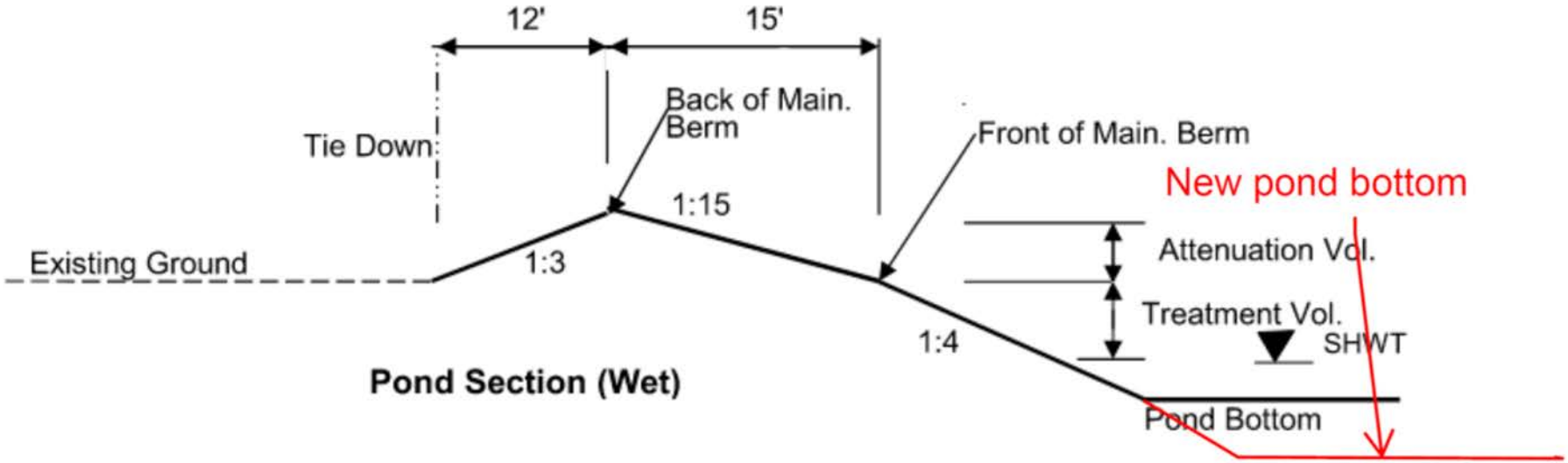
Potential Cost Savings: $122,000

FHWA CATEGORIES

__Safety _X_ Construction ___Operations _X_ Environment ___Other

Calculations:

Description	Quantity	Unit	Unit Price	Extended Amount
Excavation	22000	CY	$8.21	$180,620
Embankment	-16500	CY	$16.30	($268,950)
Subtotal				($88,330)
Mobilization & MOT (15%)				($13,250)
Contingency (20%)				($20,316)
		CONSTRUCTION TOTAL		**($121,895)**


12'
15'
Back of Main. Berm
Front of Main. Berm
Tie Down
New pond bottom
1:15
Existing Ground
1:3
Attenuation Vol.
Treatment Vol.
1:4
SHWT
Pond Section (Wet)
Pond Bottom

RECOMMENDATION No. 32: Enlarge the existing pond to the west and reduce the pond on the east side of the site (includes ideas 26 and 27)

Proposed Alternative:
The PD&E document recommends the parking area run parallel longwise to I-4, with a large pond along the east of the facility, and two restroom structures.

VE Alternative:
The VE team recommends combining and centralizing the restroom, rotating the site 90 degrees, widening the existing pond abutting the west of the westbound on-ramp, adding an additional parking row to the west side of the site and reducing the size of the pond to the east.

Advantages:

- Potential for less wetland impacts = less mitigation and shows avoidance and minimization for permitting efforts
- Preserves a larger wildlife corridor further addressing stakeholder concerns
- Moves the ramp farther from the wildlife bridge
- Adds another row of parking (gaining 15 spaces)
- Maintenance to one restroom facility instead of two
- Utilities installed to one facility instead of two
- Reduces the size of the restroom facility
- Centralized security area

Disadvantages:

- None apparent

Potential Cost Savings: $1,877,000

FHWA CATEGORIES

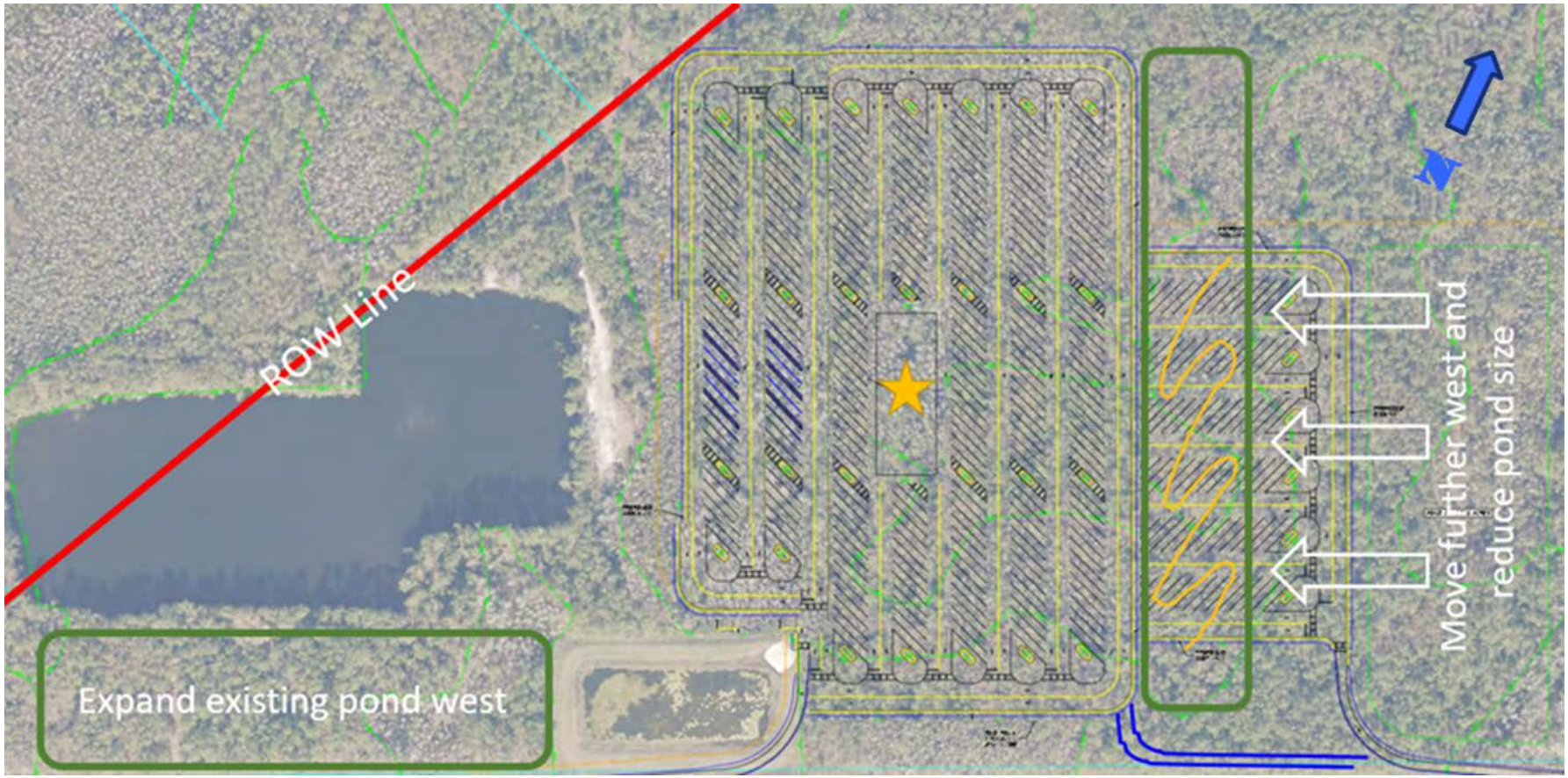
___Safety _X_ Construction _X_ Operation _X_ Environment ___Other

Calculations:

Description	Quantity	Unit	Unit Price	Extended Amount
Remove Small Building	-1	1	$2,500,000.00	($2,500,000)
Type B Stabalization	12300	SY	$16.30	$200,490
Optional Base Group 09	12300	SY	$20.34	$250,182
Fencing	260	LF	$35.40	$9,204
Sidewalk	144	SY	$62.88	$9,055
Asphalt	2184	TN	$119.20	$260,333
Enbankment	21000	CY	$16.30	$342,300
Pipe Culvert 30"	300	LF	$165.38	$49,614
Curb Inlet Type P-5	2	Each	$9,394.33	$18,789
Subtotal				($1,360,034)
Mobilization & MOT (15%)				($204,005)
Contingency (20%)				($312,808)
		CONSTRUCTION TOTAL		**($1,876,847)**

RECOMMENDATION No. 32: Enlarge the existing pond to the west and reduce the pond on the east side of the site (includes ideas 26 and 27)

RECOMMENDATION No. 32: Enlarge the existing pond to the west and reduce the pond on the east side of the site (includes ideas 26 and 27)



RECOMMENDATION No. 33: Consider roller compacted concrete for the entire site

Proposed Alternative:
The PD&E cost estimates for each truck parking facility use asphalt pavement for access to and internal traffic flow and parking within each facility.

VE Alternative:
The VE team recommends roller compacted concrete (RCC) pavement as an alternative to asphalt pavement. The June 2016 Technical Brief prepared by FHWA[1] lists the following applications for RCC pavement:

- Heavy-duty applications
  - Ports and airports
  - Military installations
  - Intermodal facilities
- Light commercial industrial applications
  - Warehouses and manufacturing facilities
  - Commercial and industrial parking lots
  - Maintenance and storage yards
- Roadway applications
  - Highway frontage roads and shoulders
  - Minor arterials
  - City streets and local roads

Source: 1. https://www.fhwa.dot.gov/pavement/concrete/pubs/hif16003.pdf

Advantages:

- Superior durability of concrete pavement compared to asphalt pavement
- RCC pavement is placed with asphalt-type pavers and does not require placement using slip-form concrete paving machines or vibrating screeds
- RCC pavement does not require reinforcement or dowel bars at joints
- A variety of subbase types can be used under an RCC pavement structure, but due to the tightness of the transverse cracks in RCC pavement, it is not always necessary to use a stabilized base layer
- Opportunity for low-risk pilot-project to demonstrate RCC pavement as an innovative cost-effective construction method and which could be used for development of standard specifications and testing requirements for future projects.

Disadvantages:

- RCC pavement is not a standard FDOT construction method and will require approval
- Limited availability of contractors with experience and expertise constructing RCC pavement

The PD&E cost estimates for asphalt pavement (optional base group 9 plus 10-in superpave asphalt) at each site are as follows:

- Osceola County = $13.976M
- Orange County = $6.592M
- Seminole County = $5.268M
- Volusia County EB = $13.438M
- Volusia County WB = $12.967M

RECOMMENDATION No. 33: Consider roller compacted concrete for the entire site

RCC pavement potentially offers 16% reduced cost compared to asphalt pavement, depending on fuel costs.[2] RCC pavement potentially offers 25% to 30% reduced cost compared to conventional concrete paving.[3]

Estimated RCC pavement costs and potential cost savings for each site are as follows:

- Osceola County
  - Pavement (16% reduction vs asphalt cost) = $2.24M
  - Mobilization/MOT (15% of pavement subtotal) = $335K
  - Contingency (20% of pavement subtotal) = $447K
  - Total cost savings = **$3M**
- Orange County
  - Pavement (16% reduction vs asphalt cost) = $1.05M
  - Mobilization/MOT (15% of pavement subtotal) = $158K
  - Contingency (20% of pavement subtotal) = $211K
  - Total cost savings = **$1.4M**
- Seminole County
  - Pavement (16% reduction vs asphalt cost) = $843K
  - Mobilization/MOT (15% of pavement subtotal) = $126K
  - Contingency (20% of pavement subtotal) = $169K
  - Total cost savings = **$1.1M**
- Volusia County EB
  - Pavement (16% reduction vs asphalt cost) = $2.15M
  - Mobilization/MOT (15% of pavement subtotal) = $323K
  - Contingency (20% of pavement subtotal) = $430K
  - Total cost savings = **$2.9M**
- Volusia County WB
  - Pavement (16% reduction vs asphalt cost) = $2.07M
  - Mobilization/MOT (15% of pavement subtotal) = $311K
  - Contingency (20% of pavement subtotal) = $415K
  - Total cost savings = **$2.8M**
-

Source: 2. https://www.liveabout.com/rcc-roller-compacted-concrete-844456
3. https://www.rollercompacted.org/benefits.html

Potential Cost Savings: $11,535,000

FHWA CATEGORIES

___Safety _X_ Construction ___Operations ___Environment ___Other

RECOMMENDATION No. 33: Consider roller compacted concrete for the entire site

Calculations:

Description	Quantity	Unit	Unit Price	Extended Amount
Superpace Asphalt	-1	LS	$52,241,000.00	($52,241,000)
Roller Compacted Concrete	1	LS	$43,882,000.00	$43,882,000
Subtotal				($8,359,000)
Mobilization & MOT (15%)				($1,253,850)
Contingency (20%)				($1,922,570)
		CONSTRUCTION TOTAL		**($11,535,420)**

RECOMMENDATION No. 35: Phase the buildout of the parking area (assume 50% of pavement)

Proposed Alternative:
The PD&E concept plans show full build-out of the truck parking facilities with estimated parking capacity as follows:

- Osceola County = 234 parking spaces
- Orange County = 109 parking spaces
- Seminole County = 156 parking spaces
- Volusia County EB = 275 parking spaces
- Volusia County WB = 253 parking spaces
- Estimated total = 1,027 parking spaces

VE Alternative:
The VE team recommends a phased build-out of the truck parking facilities. This recommendation has greater applicability to the larger sites in Osceola County and Volusia County. Restroom buildings, MEP facilities, clearing and grubbing, earthwork, stormwater treatment and attenuation needs, floodplain compensation needs for each site would be permitted and constructed to their ultimate capacity. This recommendation contemplates approximately 50% reduction in parking areas and associated lighting for initial construction. Construction of the remaining parking and lighting for ultimate capacity is deferred to future years.

Advantages:

- Reduced initial construction cost

Disadvantages:

- The PD&E study identified the demand for truck parking as 750 parking spaces by 2025 and 883 parking spaces by 2040
- Phased build-out of the larger truck parking facilities will fall short of 2025 truck parking demand
- Osceola County = 117 initial parking spaces (117 deferred parking spaces)
- Orange County = 109 parking spaces
- Seminole County = 156 parking spaces
- Volusia County EB = 138 initial parking spaces (137 deferred parking spaces)
- Volusia County WB = 127 initial parking spaces (126 deferred parking spaces)
- Estimated total = 647 initial parking spaces (380 deferred parking spaces)

Potential Cost Savings: $27,800,000

Estimated reduced initial construction costs are summarized below. Reduced costs were applied only to the Osceola County and Volusia County sites. Reduced costs consist of 50% reductions in PD&E cost estimates for pavement (optional base group 9 plus 10-in superpave asphalt) and light poles.

- Osceola County
    b. $6.6M pavement cost savings
    c. $295K light pole cost savings
    d. $1.01M mobilization/MOT cost savings (15% of pavement and light pole subtotal)
    e. $1.38M contingency cost savings (20% of pavement and light pole subtotal)
    f. Total cost savings = **$9.3M**

RECOMMENDATION No. 35: Phase the buildout of the parking area (assume 50% of pavement)

- Volusia County EB
    g. $6.7M pavement cost savings

h. $268K light pole cost savings
i. $1.05M mobilization/MOT cost savings (15% of pavement and light pole subtotal)
j. $1.4M contingency cost savings (20% of pavement and light pole subtotal)
k. Total cost savings = **$9.4M**

- Volusia County WB
  l. $6.5M pavement cost savings
  m. $268K light pole cost savings
  n. $1.01M mobilization/MOT cost savings (15% of pavement and light pole subtotal)
  o. $1.35M contingency cost savings (20% of pavement and light pole subtotal)
  p. Total cost savings = **$9.1M**

FHWA CATEGORIES

___Safety _X_ Construction ___Operations ___Environment ___Other

APPENDICES

Agenda
Sign In Sheets
Slide Presentation

VE Workshop Agenda
I-4 Truck Parking Facility VE Study
June 5 – 9, 2023

Day One (Sanborn Center)	Kickoff Intro by VE Team Leader	8:00 am – 8:15 am
	Team Review and Discussions of Documents	8:15 am – 9:00 am
	Designer Orientation	9:00 am – 10:30 am
	Questions for Designers	10:30 am – 12:00 am
	Lunch	12:00 pm – 1:00 pm
	Site Review	1:00 pm – 4:00 pm
	Return to DeLand	4:00 pm – 4:30 pm
	Summarize Site Review & Constraints	4:30 pm – 5:00 pm
Day Two (Sanborn Center)	Cost Model & Function Analysis	8:00 am –9:00 am
	FAST Diagram	9:00 am – 9:30 am
	Intro to Creative Thinking	10:00 am – 10:15 am
	Creative Idea Listing/Function	10:15 am – 12:00 pm
	Lunch	12:00 pm – 1:00 pm
	Evaluation Phase	1:00 pm – 5:00 pm
Day Three (Sanborn Center)	Continue Evaluation of Ideas	8:00 am –12:30 pm
	Lunch	12:30 pm – 1:30 pm
	Mid-point review	1:30 pm - 2:30 pm
	Begin Development	2:30 pm – 5:00 pm
Day Four (Sanborn Center)	Continue Development	8:00 am – 12:00 pm
	Lunch	12:00 pm – 1:00 pm
	Continue Development/Prepare Oral Presentation	1:00 pm – 6:00 pm
Day Five (District 5 HQ)	Oral Presentation to FDOT/others (at District Office)	8:30 am – 10:00 pm
	Begin VE Report	10:00 am – 5:00 pm

Florida Department of Transportation
Value Engineering Study of:
Financial Project ID No. 447724-1
I- 4 Truck Parking Facility
Attendance Sheet – Kickoff Meeting
June 5, 2023

NAME	ORGANIZATION & TITLE	EMAIL	TELEPHONE #
Henri Belrose	WGI, Sr. Proj. Mgr.	henri.belrose@wginc.com	407-581-1221
Matthew Gallup	FDOT, Roadway Eng.	Matthew.Gallup@dot.state.fl.us	386-943-5189
Josh Callahan	FDOT, Geo Tech	Joshua.Callahan@dot.state.fl.us	386-740-3517
Tushar Patel	FDOT Const -	Tushar.Patel@dot.state.fl.us	407-625-5624
Lauren Pearson	FDOT; Traffic Ops	Lauren.Pearson@dot.state.	386.956.6738
Heather Chasez	FDOT, EMO	heather.chasez@dot.state.fl.us	386-943-5893
Gregory Muller	FDOT - Maint. Mngr. Field Ops	gregory.muller@dot.state.fl.us	407 278 2775
Thomas Pridgen	T2 Utility Engineers	thomas.pridgen@T2UE.com	863 450-8553
Nick Truncone	Florida Property Consult.	Nick@FPC-Group.com	850 933-4832
Molly deVivero	Bentley Group Inc.	molly@bentleygroupinc.com	407 [illegible] ext 122
Johnny Demosthenes	FDOT - Project Manager	johnny.demosthenes@dot.state.fl.us	(386)-943-5206
Presley Blackburn	FDOT - Drainage Designer	presley.blackburn@dot.state.fl.us	(386)-943-5601
Mark Trebitz	FDOT – PLEMO	mark.trebitz@dot.state.fl.us	(386)943 5157
Maria Serrano-Acosta	FDOT-PLEMO	Maria.Serrano-Acosta@DOT.STATE.FL.US	(386) 943-5063
Kevin Freeman	VHB	kfreeman@vhb.com	(407) 965-0500
Sunseria Gates	VHB	sgates@vhb.com	"
Megan Owens	FDOT PM	megan.owens@dot...	x5140
Rick Johnson	PMA Consultants	rjohnson@pmaconsultants.com	321-217-5182

Florida Department of Transportation
Value Engineering Study of:
Financial Project ID No. 447724-1
I- 4 Truck Parking Facility
Attendance Sheet – Mid-point Review
June 7, 2023

NAME	ORGANIZATION & TITLE	EMAIL	TELEPHONE #
Matthew Gallup	FDOT - Roadway Eng	Matthew.Gallup@dot.state.fl.us	386-943-5189
Henri Belrose	WGI	henri.belrose@wginc.com	407-581-1221
Johnny Demosthenes	FDOT – CPM	johnny.demosthenes@dot.state.fl.us	386-943-5206
Presley Blackburn	FDOT - Drainage	presley.blackburn@dot.state.fl.us	386-943-5601
Nick Truncone	Florida Property Cons.	Nick@FPC-Group.com	(850) 933-4832
Thomas Pridgen	T2 Utility Engineers	thomas.pridgen@T2ue.com	(863) 450-8553
Gregory Muller	FDOT - Oviedo Operations - Maint.	gregory.muller@dot.state.fl.us	407 278 2775
Josh Callahan	FDOT - Geotech	Joshua.Callahan@dot.state.fl.us	386-740-3517
Heather Chasez	FDOT - EMO	heather.chasez@dot.state.fl.us	386-943-5393
Lauren M. Pearson	FDOT Traffic Ops	Lauren.Pearson@dot.state.fl.us	386.956.6738
Tushar Patel	FDOT – Const. Oviedo	Tushar.Patel@dot.state.fl.us	407-278-2733
Tyler Burgett	FDOT	Tyler.burgett@dot	386-943-5388
Mark Trebitz	FDOT	mark.trebitz@dot.state.fl.us	386-943-5601
Megan Owens	FDOT	megan.owens@dot.state.fl.us	x 5140
Maria Serrano-Acosto	FDOT	Maria.Serrano-Acosto@dot.state.fl.us	(386) 943-5063
Molly de Vivero	FDOT	molly.devivero@dot.state.fl.us	(407) 331-6116
Sunserea Gates	VHB	sgates@vhb.com	(407) 965-0500
Kevin Freeman	VHB	Kfreeman@vhb.com	(407) 965-0500
Renato Chuk	Inwood Inc	rchuk@inwoodinc	

Subject : **Value Engineering Final Presentation to FDOT Management**

Location : **Cypress Conference Room** **Sign-in Sheet** **Monday, June 19, 2023**

Initials	Last Name	First Name	Representing	E-Mail
	Adkins	Jack	FDOT - Director of Transportation Development	Jack.Adkins@dot.state.fl.us
	Bizzio	Mario	FDOT - Structures Maintenance	Mario.Bizzio@dot.state.fl.us
	Bobo	Loreen	FDOT - Safety Administrator	Loreen.Bobo@dot.state.fl.us
	Bracken	Joseph	FDOT - Right of Way	Joseph.Bracken@dot.state.fl.us
	Buck	Steven	FDOT - Project Development Administrator	Steven.Buck@dot.state.fl.us
	Burgett	Tyler	FDOT - D5 VE Program	Tyler.Burgett@dot.state.fl.us
	Byerly	Michael	FDOT - Geotechnical	Michael.Byerly@dot.state.fl.us
	Chacon	Catalina	FDOT - Strategic Initiatives Manager	Catalina .Chacon@dot.state.fl.us
	Cicerello	Jeffrey	FDOT - District Design Engineer	Jeffrey.Cicerello@dot.state.fl.us
	Cucek	Lorena	FDOT - PLEMO	Lorena.Cucek@dot.state.fl.us
	Elmaghraby	Ashraf	FDOT - VE and Project Management	Ashraf.Elmaghraby@dot.state.fl.us
	Garcia	Mark	FDOT - District Materials and Research Engineer	Mark.Garcia@dot.state.fl.us
	Hatfield	John	FDOT - District Construction Engineer	John .Hatfield@dot.state.fl.us
	Heffinger	Mike	FDOT - Director of Operations	Mike.Heffinger@dot.state.fl.us
	Hickson	Ferrell	FDOT - Drainage	Ferrell.Hickson@dot.state.fl.us
	Isaac	Naziru	FDOT - Roadway Design Engineer	Naziru.Isaac@dot.state.fl.us
	Johnson	Rick	PMA - VE Consultant Facilitator	rjohnson@pmaconsultants.com
	Kestory	Ed	FDOT - Consultant Project Management Engineer	Ed.Kestory@dot.state.fl.us

FPN# : **447724-1** **Project : Truck and Freight Alternative Site Analysis**

Subject : **Value Engineering Final Presentation to FDOT Management**

Location : **Cypress Conference Room** **Sign-in Sheet** **Monday, June 19, 2023**

Initials	Last Name	First Name	Representing	E-Mail
	Lyon	Casey	FDOT - Environmental & Permitting	Casey.Lyon@dot.state.fl.us
	McPhail	Michael	FDOT - Right of Way	Michael.McPhail@dot.state.fl.us
	Meade	Ron	FDOT - District Maintenance Engineer	Ron.Meade@dot.state.fl.us
	Nester	Staci	FDOT - Utilities	Staci.Nester@dot.state.fl.us
MO	Owens	Megan	FDOT - Consultant Project Manager	Megan.Owens@dot.state.fl.us
MSA	Serrano-Acosta	Maria	FDOT - PD&E Project Manager	Maria.Serrano-Acosta@dot.state.fl.us
	Skofronick	Gary	FDOT - Structures	Gary.Skofronick@dot.state.fl.us
	Smith	Kellie	FDOT - District PLEMO Administrator	Kellie.Smith@dot.state.fl.us
	Stanger	Brian	FDOT - Modal Development	Brian.Stanger@dot.state.fl.us
	Stroz	Jim	FDOT - Traffic Operations	Jim.Stroz@dot.state.fl.us
MT	Trebitz	Mark	FDOT - Project Development Manager	mark.trebitz@dot.state.fl.us
	Tyler	John	FDOT - District Five Secretary	john.tyler@dot.state.fl.us
	Callahan	Josh	FDOT - Geotech	Joshua.Callahan@dot.state.fl.us
	Pearson	Lauren	FDOT - Traffic Ops	Lauren.Pearson@dot.state.fl.us
	Smith	Lilli	WGI	lilli.smith@wginc.com
X	Chasez	Heather	FDOT - EMO	heather.Chasez@dot.state.fl.us
X	Gallup	Matthew	FDOT - Roadway Design	Matthew.Gallup@dot.state.fl.us
X	Truncone	Nick	R/W	Nick.Truncone@dot.state.fl.us

FPN# : 447724-1 Project : Truck and Freight Alternative Site Analysis

Subject : Value Engineering Final Presentation to FDOT Management

Location : Cypress Conference Room Sign-in Sheet Monday, June 19, 2023

Initials	Last Name	First Name	Representing	E-Mail
	PATEL	TUSHAR	Quiedo Const.	TUSHAR.Patel@dot.State.fl.us
	SACIBA	ASSAAD	Orlando Operations	assaad.saciba@dot.state.fl.us
	Gates	Sunserea	VHB	Sgates@vhb.com
	Conti	Matthew	Bentley Group	Mconti@BentleygroupINC.com
	Wabi	Paul	FDOT D5 Maintenance	paul.wabi@dot.state.fl.us
	Demosthenes	Johnny	FDOT CPM	johnny.demosthenes@dot.state.fl.us
	Mackenzie	Jack	FDOT	jack.mackenzie@dot.state.fl.us
	Freeman	Kevin	VHB	kfreeman@vhb.com
	McCuddy	Allison	FDOT Modal	allison.mccuddy@dot.state.fl.us
	Pridgen	Thomas	T2 Utility Engineers	thomas.pridgen@T2ue.com
	Wood	Jim	FDOT - Traffic Ops	Jim.Wood@DOT.STATE.FL.US

FPN# : **447724-1** **Project : Truck and Freight Alternative Site Analysis**

Subject : **Value Engineering Final Presentation to FDOT Management**

Location : **Cypress Conference Room** **Sign-in Sheet** **Monday, June 19, 2023**

Initials	Last Name	First Name	Representing	E-Mail
	BARONE	CHRISTIE	DeLand Ops FDOT	
	Hassan	MO	Oviedo OPS FDOT	mo.hassan@dot.state.fl.us
	Hoomon	Bita	CPM	bita.hoomon@dot.state.fl.us
	HATFIELD	JOHN	FDOT - CONSTR	JOHN.HATFIELD@DOT.STATE.FL.US
	Blackburn	Presley	FDOT - Drainage	presley.blackburn@dot.state.fl.us
	TEW	JAMES	FDOT - DRAINAGE	TEW.JAMES@DOT.STATE.FL.US
	Andrews	Tammie	FDOT - Oviedo	tammie.andrews

Florida Department of Transportation
719 S. Woodland Boulevard
DeLand, Florida 32720-6834

RON DESANTIS
GOVERNOR

JARED W. PERDUE, P.E
SECRETARY

Value Engineering Final Resolution Memorandum

Date:	08/21/2023
Subject:	Value Engineering Study Resolution Memo
Financial Project ID No.:	447724-1
County:	Osceola, Orange, Seminole, Volusia
State Road No.:	SR 400
Limits:	Osceola/Polk County Line to SR 9 (I-95)

This memorandum is in response to the subject Value Engineering (VE) review conducted during the week of June 5 through June 9, 2023. The purpose of this memorandum is to document the responses to the subject alternative recommendations and the results of the VE Resolution Meeting held July 31, 2023.

DISCIPLINE: SITE LAYOUT

VE Recommendation #1A: Centralize the Restrooms (Osceola County Site 1)

Potential Value Added: $2,480,000

Response: Accepted

The VE Recommendation is to combine the two 75' x 100' restrooms at the north and south ends of the site to one larger, combined restroom in a more centralized location. The total square footage of restroom capacity would remain the same as the PD&E concept in this recommendation.

After developing a revised preliminary concept for Osceola County Site 1 with a centralized restroom, the PD&E study team determined that the number of parking spaces would remain constant at 230 parking spaces. Centralizing the restrooms centralizes the security area, reduces the utility and maintenance costs, and doesn't increase impervious surface area.

Centralizing the restroom will not change the right-of-way footprint or the general layout of the site, but will result in impact to the PD&E schedule to include in all the completed draft documents. The PD&E scope does not include detailed building analysis and additional coordination with Central Office is needed in the Design phase to confirm the number of restrooms, building layout/details and the building size along with more detailed design refinements of the site layout. Due to decreased building capital and maintenance costs with the centralized restroom, the VE Recommendation is accepted but is recommended to be deferred to the Design phase to maintain the PD&E Schedule and avoid duplication of design efforts that will need to be revisited in the Design phase regardless of this change. The incorporation of the centralized restroom will be included as a PD&E project commitment.

VE Resolution: *This recommendation was* ***accepted*** *by FDOT due to lower maintenance costs. It was discussed the site layout should be configured to minimize walking distance to the centralized restroom where feasible.*

VE Recommendation #1B: Centralize the Restrooms (Volusia County Site 1A)
Potential Value Added: $3,450,000
Response: Accepted
The VE Recommendation is to combine the 100' x 270' restroom at the north end of the site and the 75' x 100' restroom at the south end of the site to one larger, combined restroom in a more centralized location, which allows an additional row of parking spaces in the place of the restroom at the north end of the site. The size of the combined restroom would be 100' x 270'.

After developing a revised preliminary concept for Volusia County Site 1A with a centralized restroom, the PD&E study team determined that the number of parking spaces would increase from 275 to 285 parking spaces. Centralizing the restrooms reduces the total impervious area of the site, centralizes the security area, and allows for one single utility connection to the site. Two rows will need to be located adjacent to each other with back-in parking in order to create the necessary room for a centralized 100' x 270' restroom facility. Locating the restroom facility between only one parking row allows for only a 64' wide restroom facility.

Centralizing the restroom will not change the right-of-way footprint or the general layout of the site, but will result in impact to the PD&E schedule to include in all the completed draft documents. Due to decreased building capital and maintenance costs with the centralized restroom, the VE Recommendation is accepted but is recommended to be deferred to the Design phase to maintain the PD&E Schedule and avoid duplication of building design efforts that will need to be revisited in the Design phase regardless of this change. The incorporation of the centralized restroom will be included as a PD&E project commitment.

VE Resolution: *This recommendation was* ***accepted*** *by FDOT due to lower maintenance costs. It was discussed the site layout should be configured to minimize walking distance to the centralized restroom where feasible.*

VE Recommendation #1C: Centralize the Restrooms (Volusia County Site 1B)
Potential Value Added: $2,043,000
Response: Accepted
The VE Recommendation is to combine the 100' x 270' restroom at the south end of the site and the 75' x 100' restroom at the north end of the site to one larger, combined restroom in a more centralized location, and to add an additional row of parking spaces in the place of the restroom at the north end of the site. The size of the combined restroom would be 100' x 270'.

After developing a revised preliminary concept for Volusia County Site 1B with a centralized restroom, the PD&E study team determined that the number of parking spaces would increase from 253 to 267 parking spaces. Centralizing the restrooms centralizes the security area and allows for just a single utility connection to the site, however it does minimally increase the total site impervious area. Two rows will

need to be located adjacent to each other with back-in parking in order to create enough room for a centralized 100' x 270' restroom facility. Locating the restroom facility between only one parking row allows for only a 64' wide restroom facility.

Due to decreased building capital and maintenance costs with the centralized restroom, the VE Recommendation is accepted with the condition that two adjacent back-in parking rows are provided to create the necessary room for a 100' x 270' restroom. This recommendation should be incorporated in the PD&E phase along with the proposed site layout revisions included in VE Recommendation #32.

VE Resolution: *This recommendation was* ***accepted*** *by FDOT due to lower maintenance costs. It was discussed the site layout should be configured to minimize walking distance to the centralized restroom where feasible.*

VE Recommendation #3A: One-Way Aisles (Osceola County Site 1)
Potential Value Added: $401,000
Response: Not Accepted
The VE Recommendation is for the three internal aisles in this site to be one-way aisles with the parking spaces oriented in a manner to promote same direction of travel, while maintaining pull-through parking. The VE Study team used a WB-62FL design vehicle when analyzing the parking area, which only requires 38' of lane width to make a pull-through movement and allows for narrower aisles. The WB-62FL is often used as the design vehicle on the SHS per FDM 201.6 except in the case where tandem tractor trailers are involved.

Conversely, the PD&E Team used a WB-67 design vehicle, which requires a minimum 41' of lane width, to provide flexibility to accommodate varying oversize tractor trailers and additional flexibility for driving maneuvers and error. The PD&E concept included an additional 3' of lane width to provide additional room for parking or turning errors. With a 38' lane width, there is no flexibility for drivers that are not parking at optimum capability (close to or over the line) or increased articulating angles with the WB-67. Based on driver feedback during public involvement activities, more flexibility in maneuvers is needed especially after a long shift of driving. Additionally, having a two-way aisle next to a one-way aisle can lead to a truck on the two-way aisle pulling through a parking space and driving the wrong way on a one-way aisle. The additional flexibility in lane width is recommended for maneuverability to enhance safety for drivers and the VE recommendation is not accepted.

VE Resolution: *This recommendation was* ***not accepted****. FDOT prefers to provide more flexibility and space in the aisles at the PD&E stage of project development.*

VE Recommendation #3B: One-Way Aisles (Orange County Site 1)
Potential Value Added: $504,000
Response: Not Accepted
Similar to VE Recommendation 3A, the VE Recommendation is for the internal aisles in this site to be one-way aisles with the parking spaces oriented in a manner to promote same direction of travel, while maintaining pull-through parking. For the same reasons outlined in the Response to VE

Recommendation 3A, the additional flexibility in lane width is recommended for maneuverability to enhance safety for drivers and the VE recommendation is not accepted.

VE Resolution: *This recommendation was* ***not accepted****. FDOT prefers to provide more flexibility and space in the aisles at the PD&E stage of project development.*

VE Recommendation #3C: One-Way Aisles (Volusia County Site 1A)
Potential Value Added: $842,000
Response: Not Accepted
Similar to VE Recommendation 3A, the VE Recommendation is for the internal aisles in this site to be one-way aisles with the parking spaces oriented in a manner to promote same direction of travel, while maintaining pull-through parking. For the same reasons outlined in the Response to VE Recommendation 3A, the additional flexibility in lane width is recommended for maneuverability to enhance safety for drivers and the VE recommendation is not accepted.

VE Resolution: *This recommendation was* ***not accepted****. FDOT prefers to provide more flexibility and space in the aisles at the PD&E stage of project development.*

VE Recommendation #3D: One-Way Aisles (Volusia County Site 1B)
Potential Value Added: $354,000
Response: Not Accepted
Similar to VE Recommendation 3A, the VE Recommendation is for the internal aisles in this site to be one-way aisles with the parking spaces oriented in a manner to promote same direction of travel, while maintaining pull-through parking. For the same reasons outlined in the Response to VE Recommendation 3A, the additional flexibility in lane width is recommended for maneuverability to enhance safety for drivers and the VE recommendation is not accepted.

VE Resolution: *This recommendation was* ***not accepted****. FDOT prefers to provide more flexibility and space in the aisles at the PD&E stage of project development.*

VE Recommendation #18: Reconsider Control Vehicle (Seminole County Site 1)
Potential Cost Savings: $214,000
Response: Accepted
The VE Recommendation is to change the vehicle used as the oversized control vehicle from a WB-62FL to a modified WB-67 tractor-trailer.

The site layout was based on the WB-62FL and WB-67D to provide sufficient travel way widths appropriate for "average driver skill", and to provide two-way traffic along three sides of the site for recirculation, and to access the mobile repair vehicle and windshield wash. The WB-109D design vehicle was used only to confirm that the vehicle could access the site if this vehicle were to be routed onto I-4. The use of this vehicle results in minor modifications to island radii only. The WB-109D is limited in the number of on-site routes that would not require multiple maneuvers. The modified WB-67 tractor trailer can access and maneuver the site with fewer on-site routes that require multiple maneuvers.

The recommendation is accepted. However, after the revised site layout was reviewed the use of the modified WB-67 tractor trailer does not reduce the site footprint or yield additional parking sites.

***VE Resolution**: This recommendation was **accepted** by FDOT with the acknowledgement that further review by the Design team indicated there is no reduction in footprint or additional parking sites.*

VE Recommendation #32: Rotate Site 90 Degrees (Volusia County Site 1B)
Potential Value Added: ($438,000)
Response: Accepted
The VE Recommendation proposes a revised site layout for Volusia County Site 1B to combine and centralize the restroom (consistent with **VE Recommendation #1C**), rotate the site 90 degrees, widen the existing pond abutting the west end of the westbound on-ramp, add an additional parking row to the west side of the site, and reduce the size of the pond to the east.

The PD&E Study team redesigned the concept plan for Volusia Site 1B and determined that rotating the site 90 degrees increases the number of available parking spaces from 253 to 267 (14 additional spaces). This recommendation also increases the size of the wildlife corridor and moves the entrance ramp farther away from the existing wildlife crossing.

The recommendation is accepted with the condition that two adjacent back-in parking rows are provided to create the necessary room for the recommended centralized 100' x 270' restroom. Locating the restroom facility between only one parking row allows for only a 64' wide restroom facility. The cost savings for the centralized restroom is included in Recommendation #1C. This VE Recommendation results in a slight increase in cost due to additional impervious related to the additional spaces and minor additional pavement and fencing due to rotating the site. However, this revised concept enhances wildlife connectivity and is recommended for incorporation.

***VE Resolution**: This recommendation was **accepted** and it was noted that further PD&E drainage analysis would be initiated to implement the refined conceptual layout prior to the Design phase.*

DISCIPLINE: ROADWAY

VE Recommendation #8A: Access Management (Orange County Site 1)
Potential Cost Savings: $214,000
Response: Not Accepted
The VE Recommendation eliminates access to Orange County Site 1 via John Young Parkway. Removing this access results in a slight reduction in construction costs, utility work, and future maintenance work; however, it reduces the site access to a single ingress and egress along Sand Lake Road, redirecting all of the truck traffic (an additional 21 trucks during peak hours) onto the egress driveway on Sand Lake Road, thus increasing queueing and congestion on Sand Lake Road.

Due to the negative impacts to site access and surrounding traffic conditions, this recommendation is not accepted.

***VE Resolution:** This recommendation was **not accepted**. Due to the already constrained access of this site, FDOT traffic operations recommended retaining the PD&E concept for improved access.*

VE Recommendation #8B: Access Management (Orange County Site 1)
Potential Cost Savings: $361,000
Response: Not Accepted
The VE Recommendation eliminates access to Orange County Site 1 via Sand Lake Road. Removing this access results in a slight reduction in construction costs, utility work, maintenance of traffic (MOT), and future maintenance work; however, it reduces the site access to a single ingress and egress along John Young Parkway, redirecting all of the truck traffic (an additional 34 trucks during peak hours) onto the egress driveway on John Young Parkway, thus increasing congestion on John Young Parkway. It also results in trucks travelling southbound on John Young Parkway and on Sand Lake Road having to travel an additional 2.7 miles via Presidents Drive to reach the Sand Lake Road/John Young Parkway intersection.

Due to the negative impacts to site access and surrounding traffic conditions, and the increased travel times for truck drivers, this recommendation is not accepted.

***VE Resolution:** This recommendation was **not accepted**. Due to the already constrained access of this site, FDOT traffic operations recommended retaining the PD&E concept for improved access.*

VE Recommendation #8C: Access Management (Orange County Site 1)
Potential Cost Savings: $81,000
Response: Not Accepted
The VE Recommendation reduces access to Orange County Site 1 via Sand Lake Road to ingress only. The egress onto Sand Lake Road is eliminated. Removing this access results in a negligible reduction in construction costs, and removes the trucks that would exit into a right turn lane; however, it causes an increase in delay and queueing at the John Young Parkway egress. It also results in trucks travelling southbound on John Young Parkway and on Sand Lake Road having to travel an additional 2.7 miles via Presidents Drive to reach the Sand Lake Road/John Young Parkway intersection.

Due to the negative impacts to site access and surrounding traffic conditions, and the increased travel times for truck drivers, this recommendation is not accepted.

***VE Resolution:** This recommendation was **not accepted**. Due to the already constrained access of this site, FDOT traffic operations recommended retaining the PD&E concept for improved access.*

VE Recommendation #12: High Mast Lighting (Orange County Site 1)
Potential Cost Savings: $98,000
Response: Add to List of Design Suggestions
The VE Recommendation is for high mast lighting for Orange County Site 1, which would require fewer luminaires and a lower maintenance cost than traditional 30' light poles. The use of taller luminaires may reduce the number of parking spaces, and may require a larger space to lower the fixture for maintenance.

Lighting analysis was not part of the PD&E study scope and no specific lighting was recommended; however, conventional lighting was included in the cost estimate.

The VE Recommendation is added to the list of design suggestions. Further analysis will be required to ensure a proper level of illumination throughout the site, along with any potential impacts to the design of the parking site.

VE Resolution: *FDOT agreed this recommendation should be added to the* ***list of design suggestions.*** *FDOT noted that high-mast lighting is becoming less preferred by FDOT due to the viewshed but it could be reviewed further in Design phase.*

VE Recommendation #33: Roller Compacted Concrete (All Sites)
Potential Value Added: $11,535,000
Response: Add to List of Design Suggestions
The VE Recommendation proposes the use of roller compacted concrete (RCC) pavement as an alternative to asphalt pavement at all of the truck parking sites. While RCC does have superior durability to asphalt and does not require the reinforcement that traditional concrete pavement requires, RCC is not a standard FDOT material, and there are a limited number of contractors that have experience with it. Therefore, the use of RCC will be added to the list of design suggestions; additional research of the pavement, along with qualified contractors will be required in order to use this pavement. The PD&E team conducted additional coordination with Central Office and District Five materials based on this VE suggestion and FDOT offered to develop a Technical Special Provision (TSP) and specifications if recommended by D5 leadership and suggested a pilot project for RCC be considered.

VE Resolution: *FDOT agreed this recommendation should be added to the* ***list of design suggestions.*** *FDOT indicated if there is an opportunity to consider this as a pilot project then FDOT should move forward with development of a TSP so design schedules are not impacted. FDOT discussed that Seminole is not an ideal pilot project as it is the first truck parking facility to be constructed and FDOT does not want schedule or construction concerns.*

Discipline: Drainage

VE Recommendations #24 and #30: Increase Pond Depth (Volusia County Sites 1A and 1B)
Potential Cost Savings: $122,000
Response: Add to List of Design Suggestions
The VE Recommendations propose increasing the depths of the proposed pond for each site by 2' in order to provide additional fill that can remain on site during the construction phase of the sites, thereby reducing construction cost. A Design phase survey will be required in order to determine the amount of fill that can remain on each site, and therefore the cost benefit of these recommendations. These recommendations will be added to the list of design suggestions.

VE Resolution: *FDOT agreed this recommendation should be added to the* ***list of design suggestions.***

VE Recommendation #19: Repurpose Existing Building (Seminole County Site 1)
Potential Cost Savings: $2,086,000
Response: Not Accepted
This VE Recommendation proposes repurposing one of the existing buildings on the Donnie Myers property to accommodate the required restrooms, security, and vending facilities. The existing floor plans would need to be obtained, along with any previous modifications, in order to determine the extent of modifications required to retrofit the building for the new use. Utility rerouting is anticipated due to current utility locations. Therefore, potential cost savings or additional construction cost are unknown.

The building is also not centrally located on the site, which is the preferred location based on trucking industry input. The existing building has a floor elevation beneath the current design's proposed pond maintenance berm. Modifying the pond to provide the same treatment and attenuation volumes would require a decrease in the number of parking spaces. Using this building would necessitate redesigning the site and would result in a decrease in the number of parking spaces.

Due to a significant redesign of the site, a decrease in the number of parking spaces, and a non-centralized restroom facility, this recommendation is not accepted.

VE Resolution: *This recommendation was* ***not accepted****. After further review of the building structure, the VE team and design team agreed a retrofit is not feasible.*

DISCIPLINE: SCHEDULE

VE Recommendation #35: Phased Buildout of Sites (Osceola County Site 1 and Volusia County Sites)
Potential Value Added: ($18,493,600)
Response: Add to List of Design Suggestions
The VE Recommendation is that the construction of Osceola County Site 1, Volusia County Site 1A, and Volusia County Site 1B be phased. Each site would be constructed to 50% of each sites' final parking capacity initially.

As part of the PD&E Study, phasing of the Volusia County Sites 1A and 1B have been previously considered consistent with the VE Recommendation. The PD&E study team determined that phased construction of these three sites would make 647 parking spaces available initially, with 380 spaces deferred to a later date. The future parking demand is 750 parking spaces by 2025 and 883 parking spaces by 2040. Therefore, phased construction would not fully meet the purpose and need of the project. Additionally, implementing this recommendation would decrease the upfront cost of construction but would result in higher overall total construction costs due to additional MOT, mobilization and design costs.

The PD&E Study team recommends the full site be documented in PD&E for environmental clearance and to satisfy the projected parking demand. Due to increased Design and MOT/mobilization costs, this recommendation is not accepted. Grant applications for additional funding is under development with Central Office/District Five. In the Design phase, phasing of the site should be considered if Construction

funding is not identified for the full site. This VE recommendation is added to the list of design suggestions for further consideration pending further analysis of funding in the Design phase.
VE Resolution: *FDOT agreed this recommendation should be added to the* ***list of design suggestions.***

Value Engineering Team:

Name	Discipline
Rick Johnson	Team Leader
Heather Chasez	Environmental
Tushar Patel	Construction
Greg Muller	Maintenance
Presley Blackburn	Drainage
Josh Callahan	Geotechnical
Matthew Gallup	Roadway
Johnny Demosthenes	Project Management
Tom Pridgen	Utilities
Nick Truncone	Right of Way
Lauren Pearson	Traffic Ops
Henri Belrose	Site Layout

DocuSigned by:
C. Jack Adkins
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09/12/2023 | 3:32 PM EDT

Jack Adkins
District Director of Transportation Development

Date

SLIDE PRESENTATION

I-4 Truck Parking Facilities

VE Study Recommendations

Conducted June 5 – 19, 2023

I-4 Truck Parking Facilities

Team Members:

- Matthew Gallup, PE, Roadway Design
- Henri Belrose, PE, Site Layout
- Johnny Demosthenes, PE, Project Management
- Presley Blackburn, EI, Drainage
- Josh Callahan, Geotechnical
- Tushar Patel, Construction

I-4 Truck Parking Facilities

Team Members:

- Lauren Pearson, Traffic Operations
- Heather Chasez, Environmental
- Greg Muller, Maintenance
- Tom Pridgen, PE, Utilities
- Nick Truncone, MAI, Right of Way
- Rick Johnson, PE, CVS, Team Leader

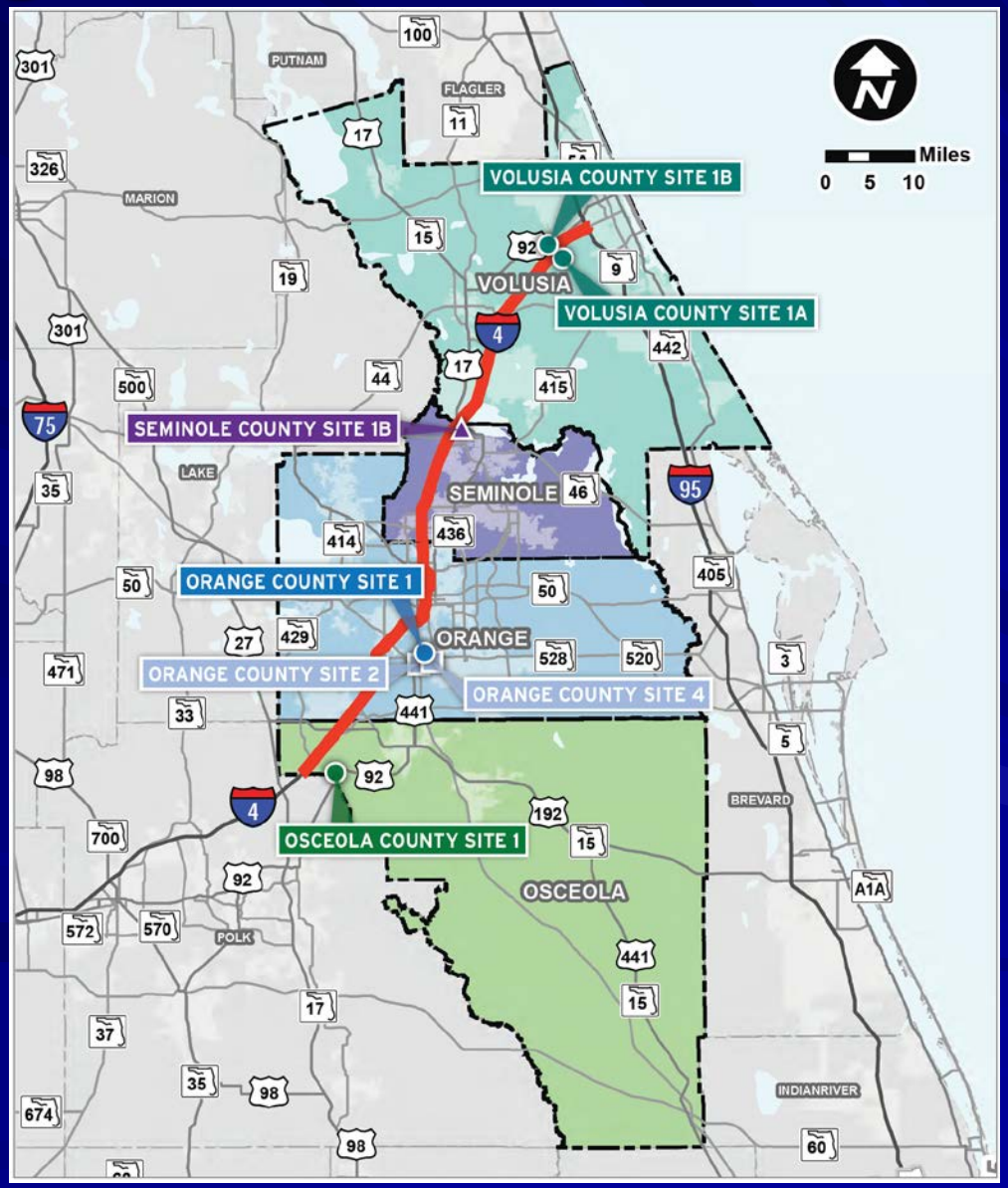
SAVE International and FDOT Job Plan

- Information/Function Analysis
- Creative Brainstorming
- Evaluation
- Development
- Recommendation/Presentation
- Report

Information

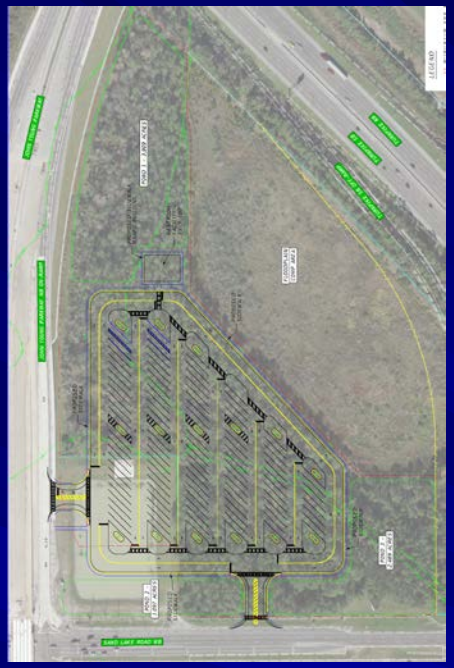
- Information Gathering
- Reviewed Project Information
- Site Visit
- Verified Constraints
- Identified Functions

Project Location

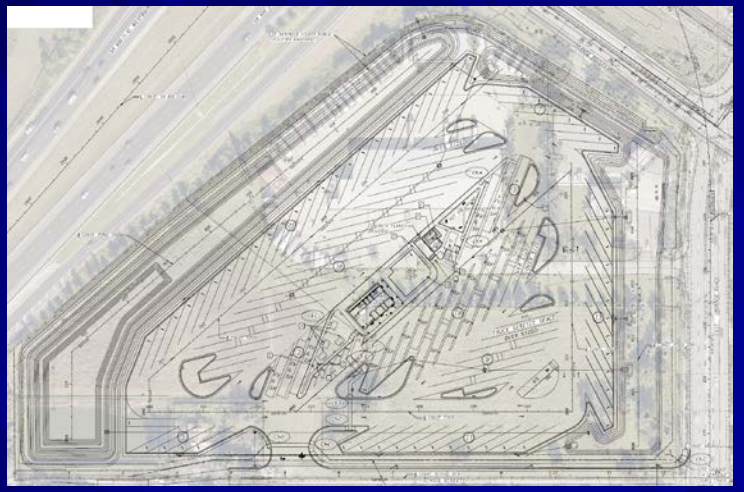


Project Location

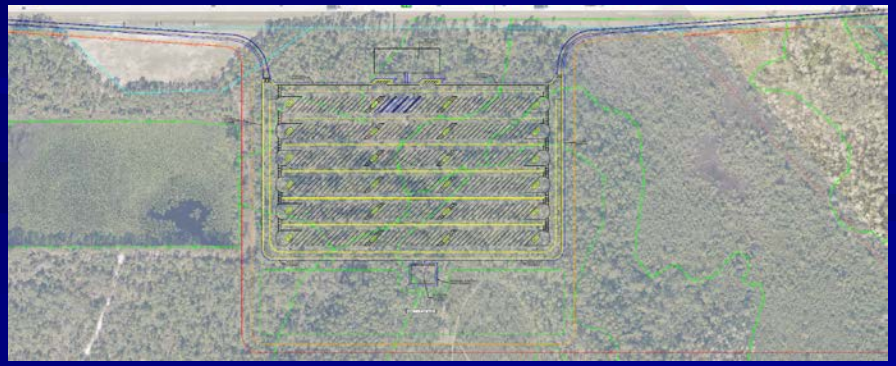
Osceola



Orange



Seminole



Volusia EB

Volusia WB

Project Scope

The proposed project consists of five truck parking facilities for I-4 truck parking and rest areas. There is a facility in Osceola, Orange, Seminole, and two in Volusia County. Each site will be lighted, have restrooms, dog walking area, sidewalks, vending, security CCTV, and TPAS. There are an estimated total of 1,027 parking spaces.

Work Program Estimate: $247.4M
Right of Way: $ 39.0M

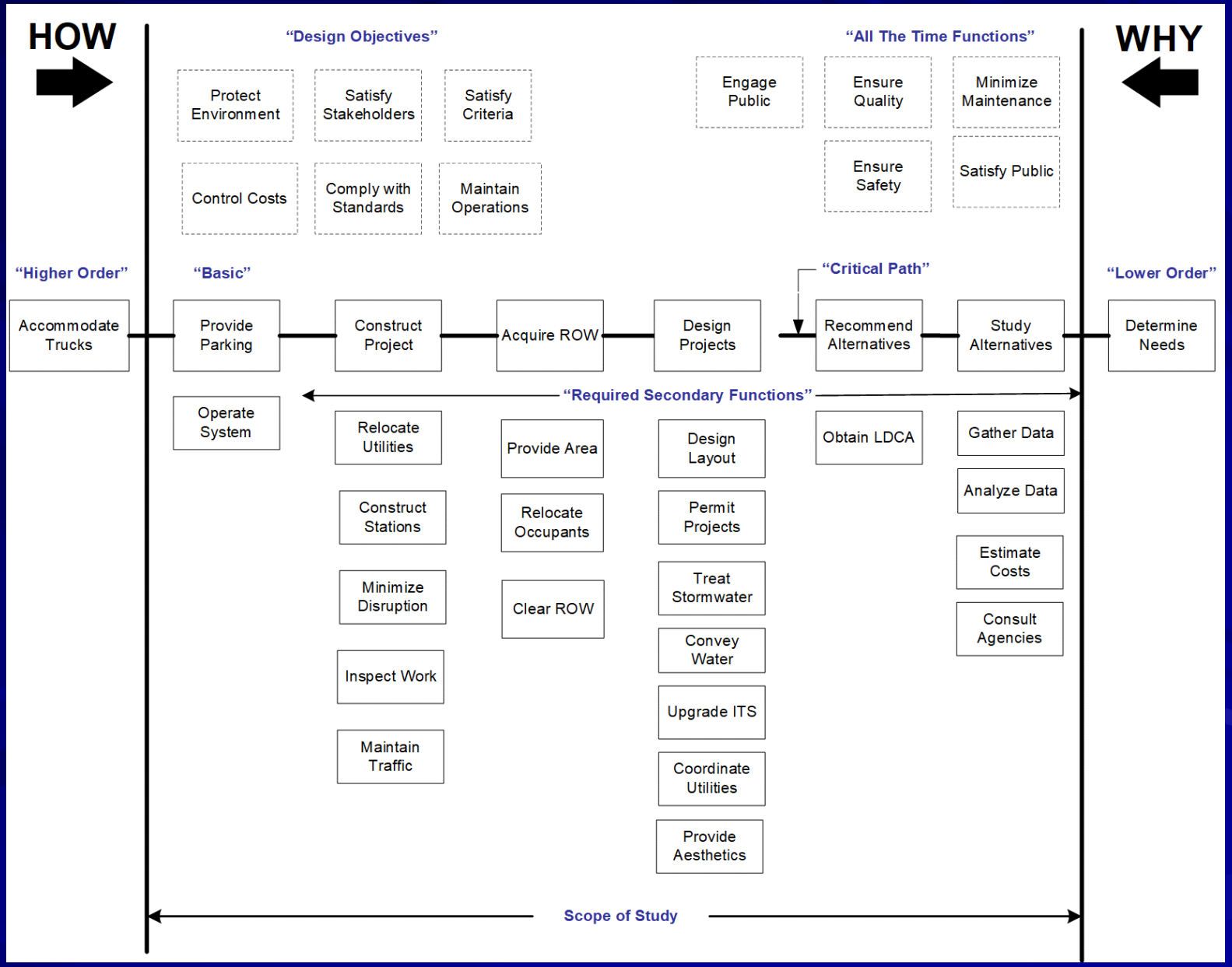
Constraints

- Proposed Central Florida Expressway Extension
- Community Commitments
- CR 532 Widening
- Turnpike-Sand Lake Interchange
- Environmental Stakeholder Concerns
- I-4/BtU Segment 3

Function Analysis

- Accommodate Trucks
- Provide Parking
- Construct Project
- Acquire R/W
- Design Projects
- Recommend Alternatives
- Evaluate Alternatives
- Determine Needs

FAST Diagram



Creative Brainstorming

- Generated and Recorded Any and All Ideas Regarding the Project Components
- Developed and Weighted Evaluation Criteria
- Ideas Were Evaluated for Development Consideration

Evaluation

Capital Costs	Utilities	Maintenance of Traffic	Environmental Issues	Future Maintenance	Constructability	Right of Way
5	3	1	7	6	4	2

Evaluation/Development

- Generated 48 Ideas and added 1 during Development
- 17 Ideas That Improved the PD&E Concept Were Developed
- Compare the PD&E to the VE Alternatives
- List Advantages and Disadvantages

Centralize the Restroom Facility (Osceola & Volusia)

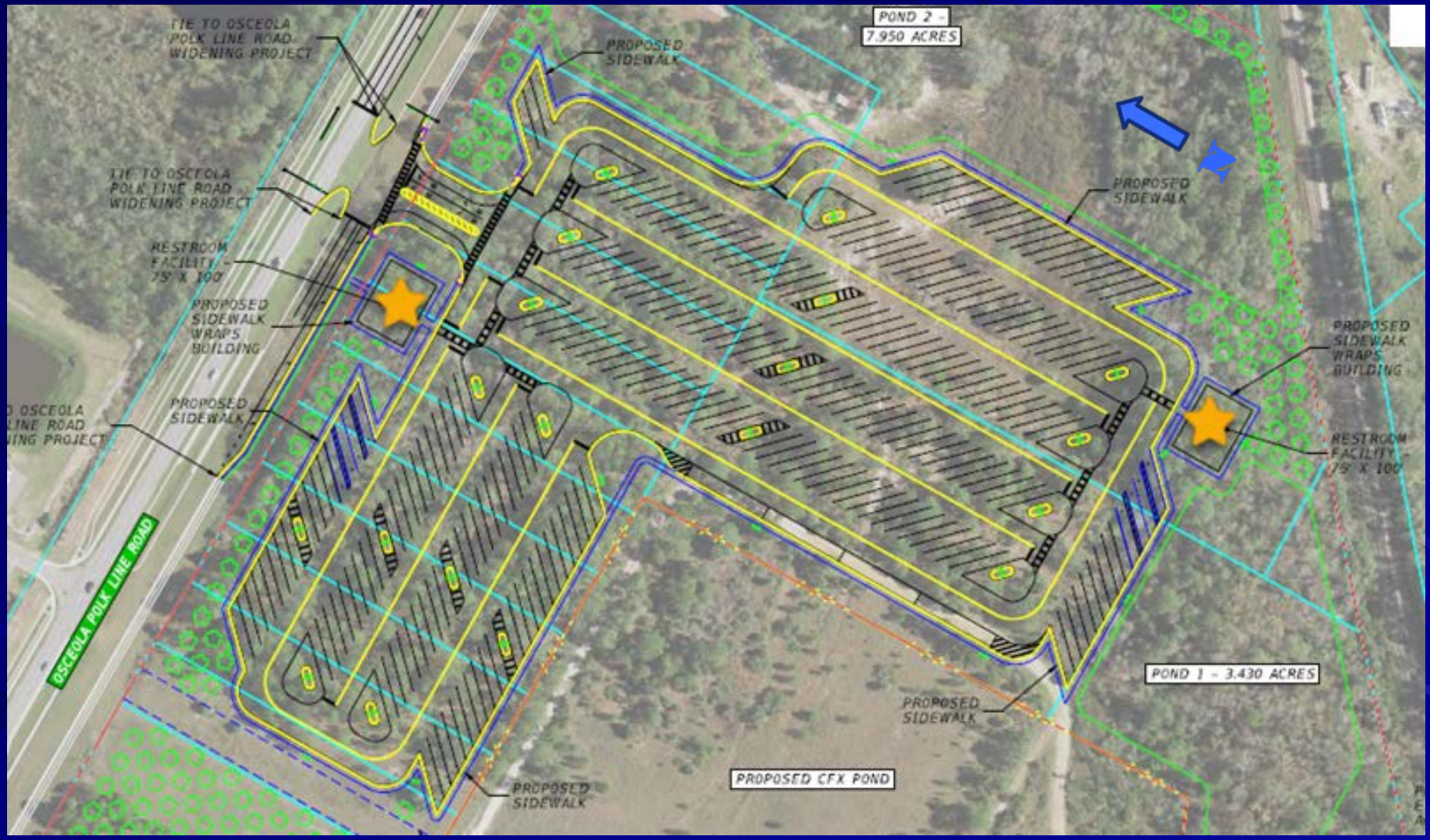
Centralize the Restrooms

- **PD&E Alternative**: The PD&E Documents show two separate restroom facilities at either end of the site.

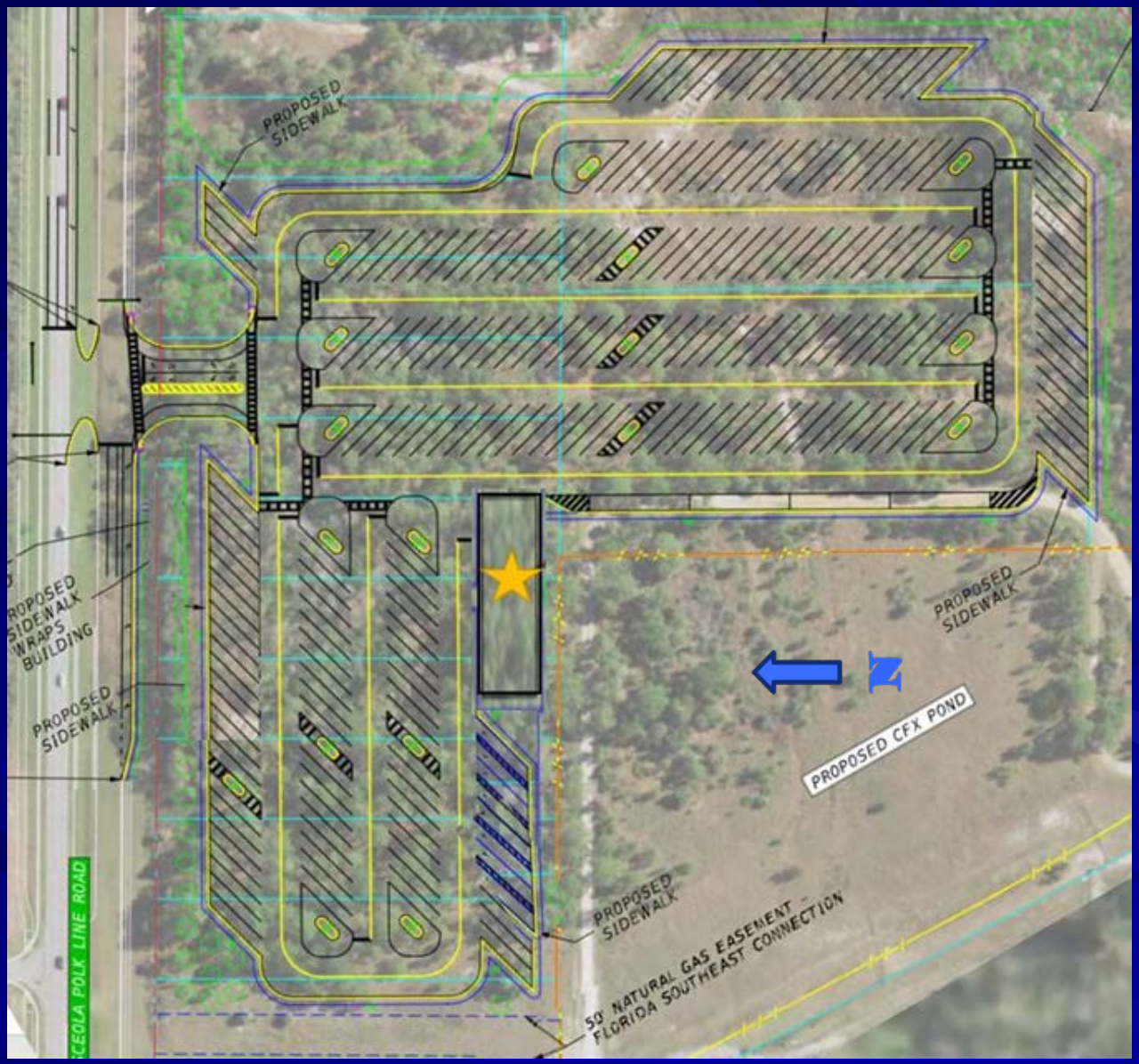
Centralize the Restrooms

- **VE Alternative 1, 20, & 26: The VE team recommends only having one restroom facility in a centralized area.**

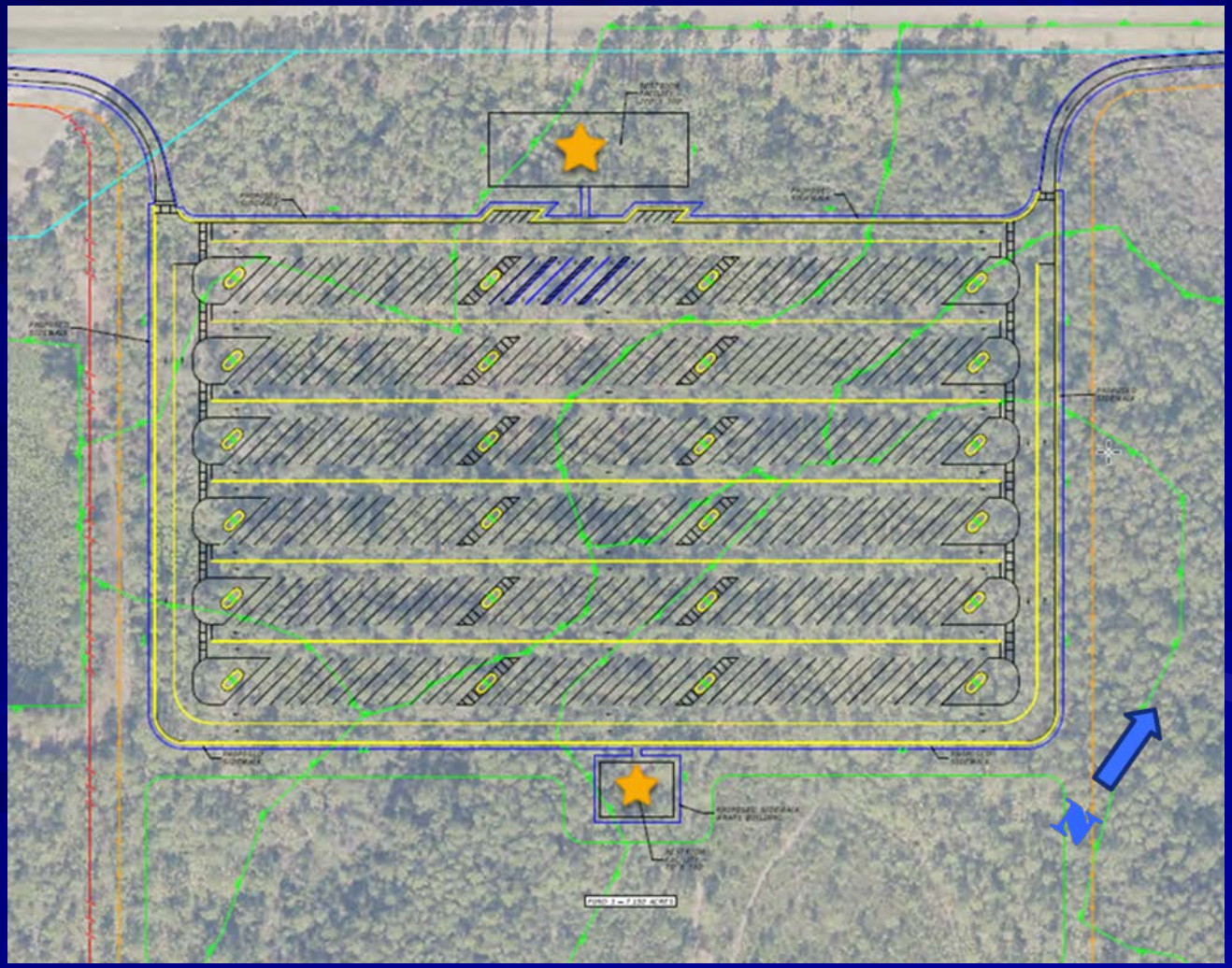
Osceola PD&E Concept



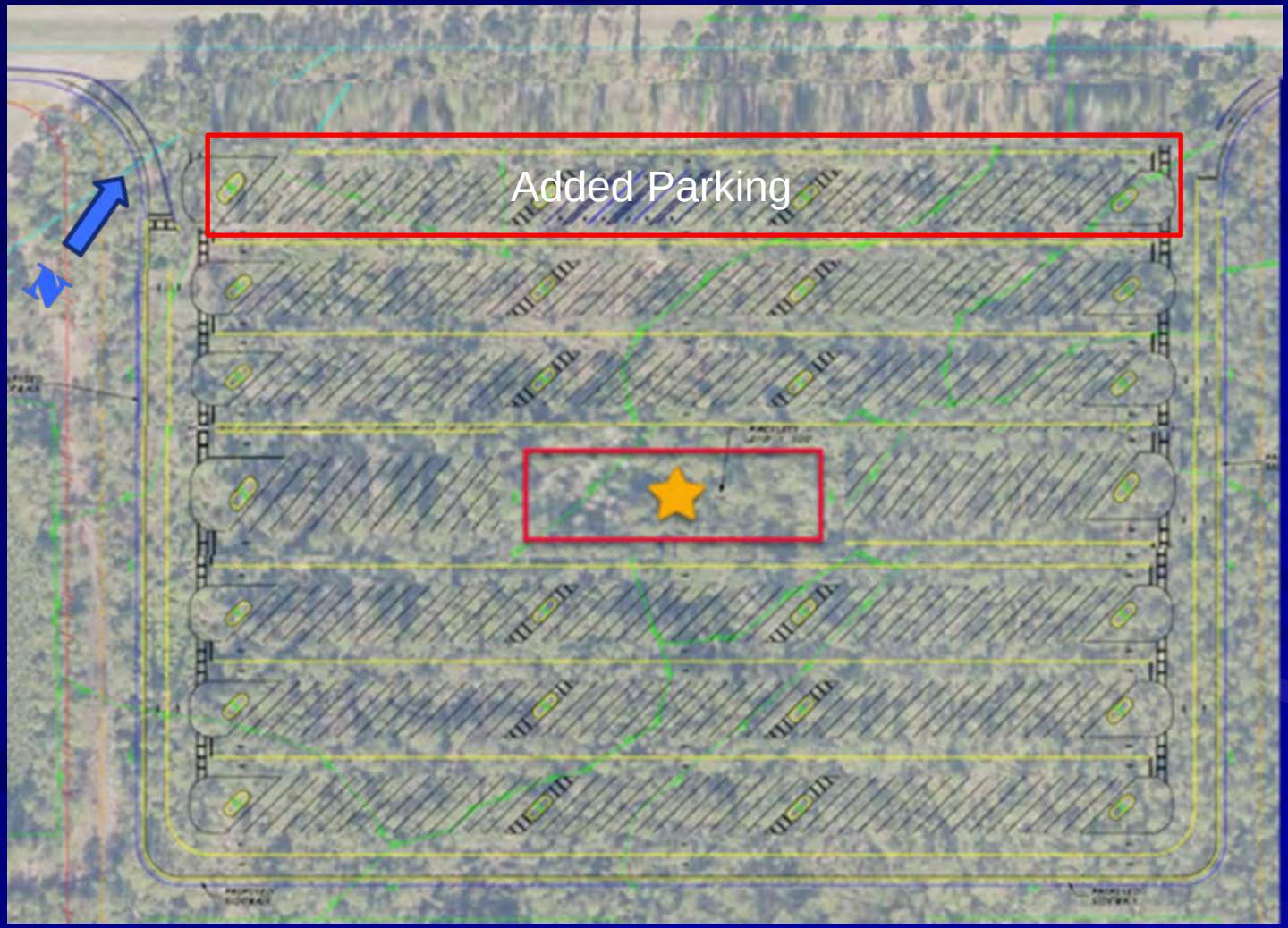
Osceola VE Recommendation



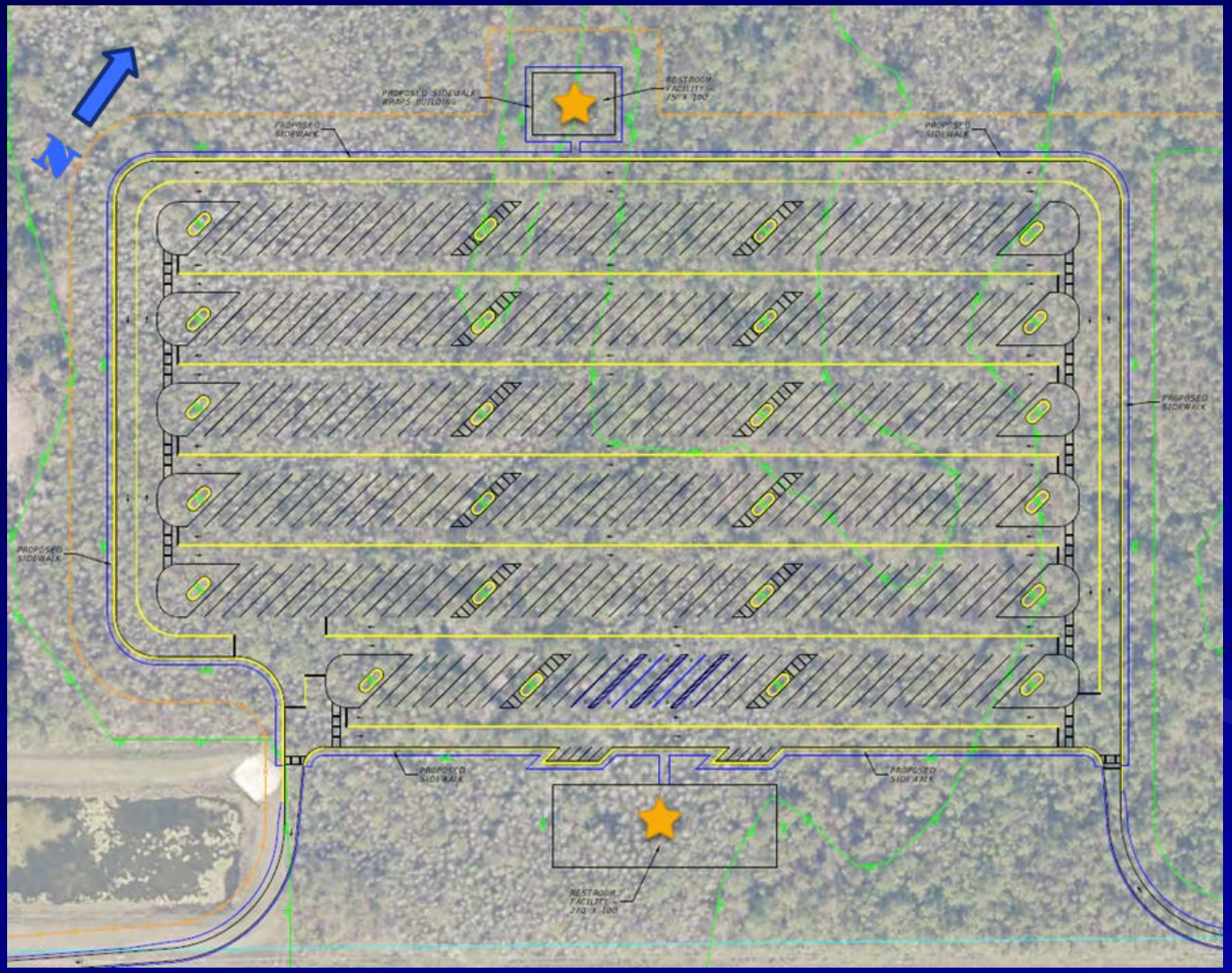
Volusia 1A EB PD&E Concept



Volusia 1A EB
VE Recommendation



Volusia 1B WB PD&E Concept



Volusia 1B WB
VE Recommendation

Centralize the Restrooms

- **Advantages:**
  - Less building capital and maintenance cost
  - Single utility connection
  - Centralized security area
  - Additional parking or green space, if desired
- **Disadvantages:**
  - Increased impervious area

Centralize the Restrooms

- **Potential Total Cost Savings:**

$4,243,000

Recommendation	Site	Location	Cost Savings
1	Osceola County	CR 532	$ 2,415,000.00
20	Volusia County	I-4 EB	$ 914,243.00
26	Volusia County	I-4 WB	$ 914,243.00
		Total	**$ 4,243,486.00**

Reconfigure Inner Aisles to One-Way (Osceola, Orange, and Volusia)

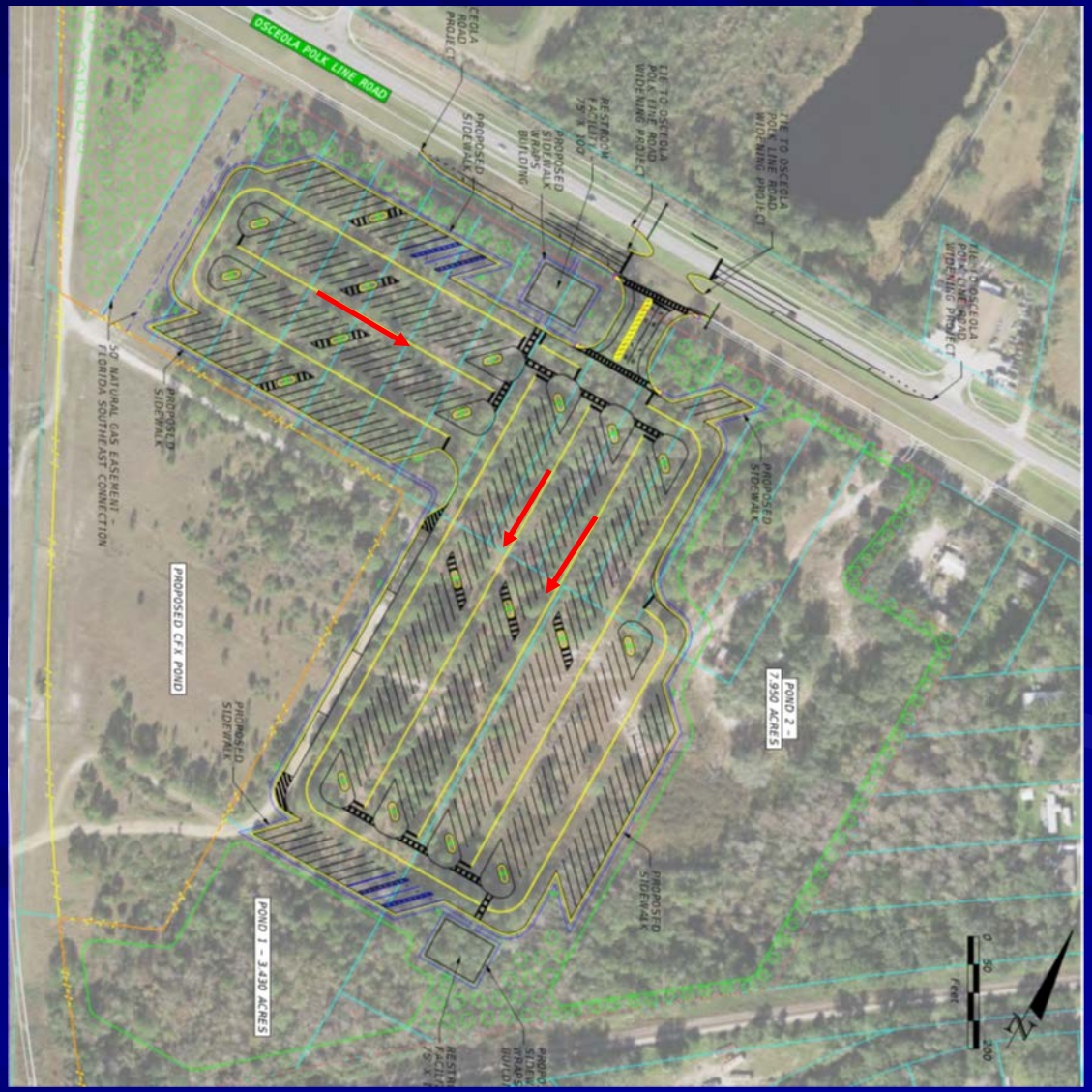
Reconfigure Sites to One-Way Aisles

- **PD&E Alternative**: The PD&E Documents show the site configuration for all sites having bi-directional aisles at various lengths. All sites have 45-foot interior aisles.

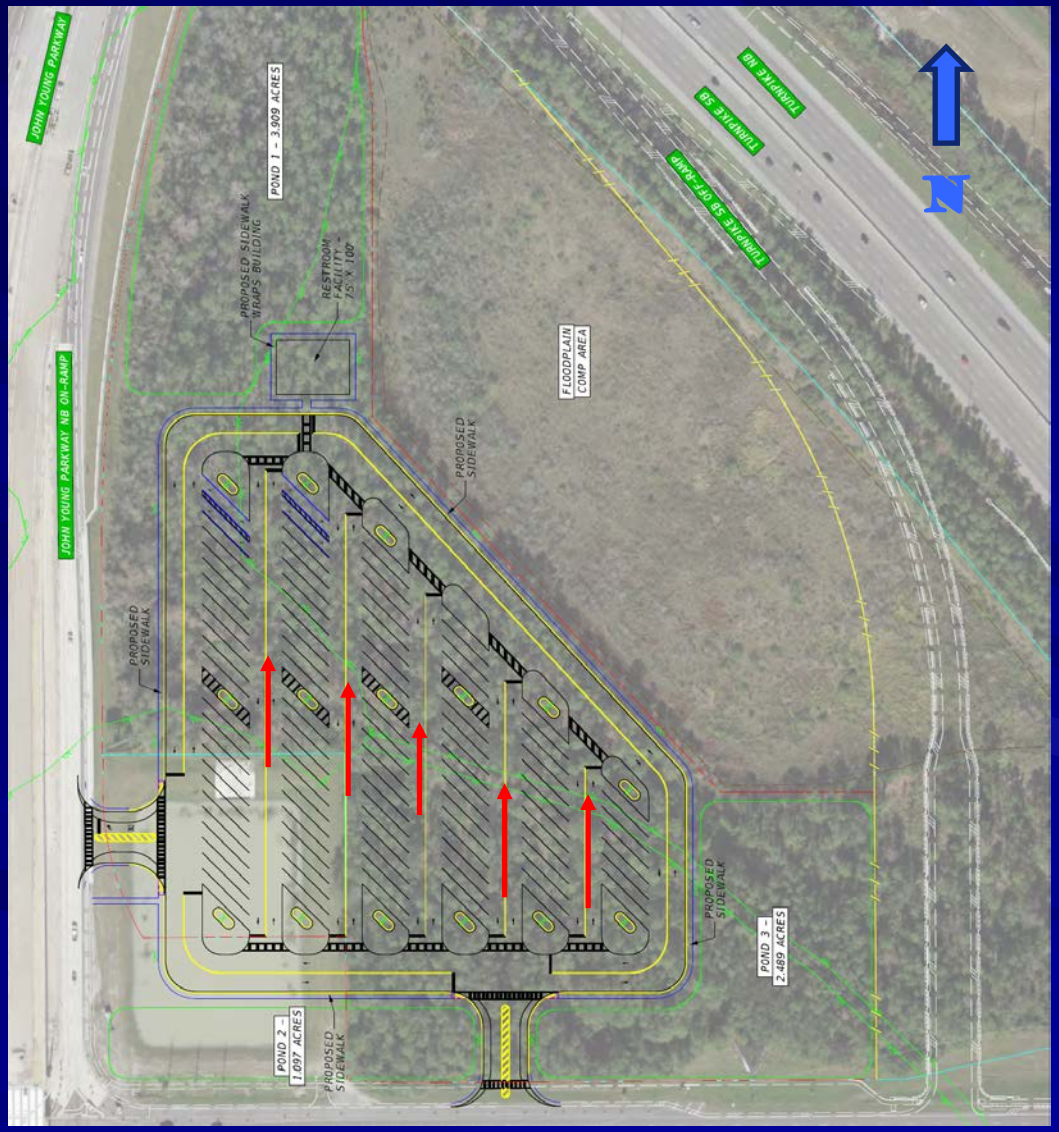
Reconfigure Sites to One-Way Aisles

- **VE Alternatives 3, 10, 22, & 28:** The VE team recommends modifying the interior aisles to a one-way configuration with the spaces oriented in a manner to promote same direction of travel and maintain pull-through parking.

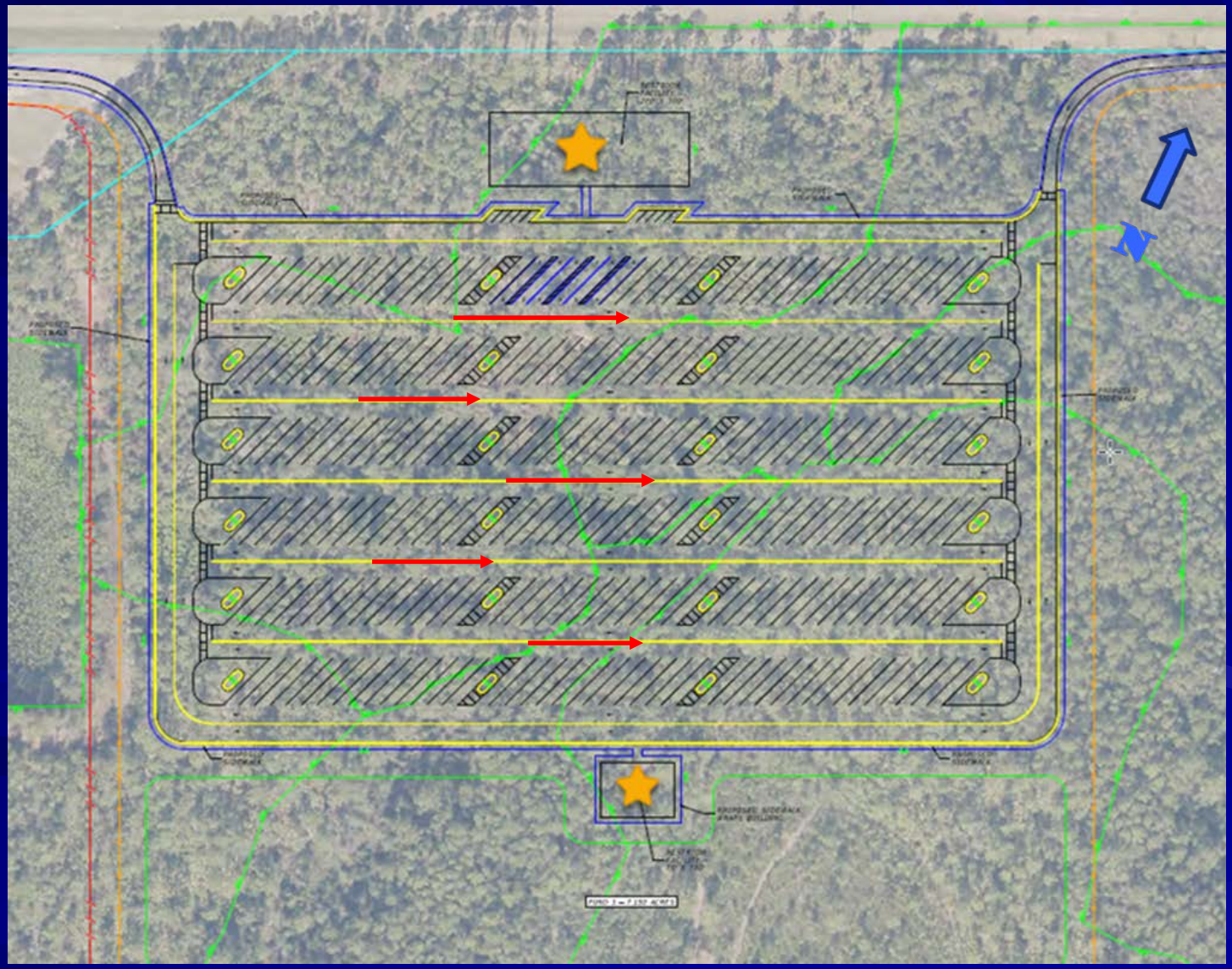
Osceola VE Recommendation



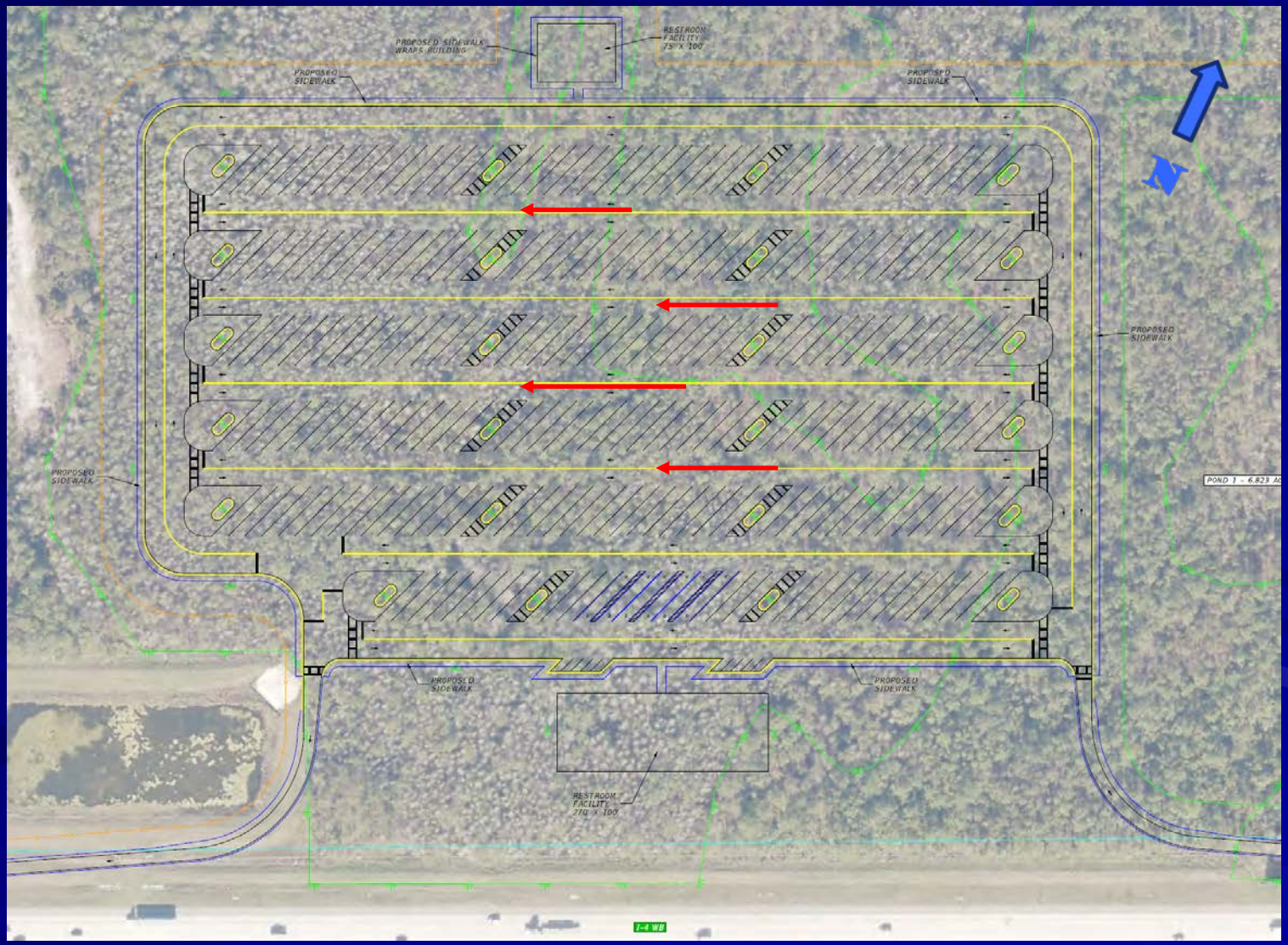
Orange VE Recommendation



Volusia Eastbound VE Recommendation



Volusia Westbound VE Recommendation



Reconfigure Sites to One-Way Aisles

- **Advantages:**
  - Reduced material quantities and cost
  - Potential to reduce environmental impacts
  - Improved construction time
  - Reduced pedestrian crossing distances accessing the restroom
  - Reduced Maintenance
- **Disadvantages:**
  - Reduced driver maneuverability

Reconfigure Inner Aisles to One-Way

- **Potential Total Cost Savings:**

$2,809,000

Recommendation	Site	Location	Cost Savings
11	Orange County	Sand Lake/JYP	$ 504,000
3	Osceola County	CR 532	$ 401,000
22	Volusia County	I-4 EB	$ 1,062,000
28	Volusia County	I-4 WB	$ 842,000
		Total	**$ 2,809,000**

Install High Mast Lighting (Orange)

- **PD&E Alternative**: The PD&E Documents show furnishing and installation of 30 Light Poles at 50 ft., one load center, 5,200 ft. conduit.

Install High Mast Lighting (Orange)

- **VE Alternative 13: The VE team recommends High Mast Lighting for the site.**

Install High Mast Lighting (Orange)

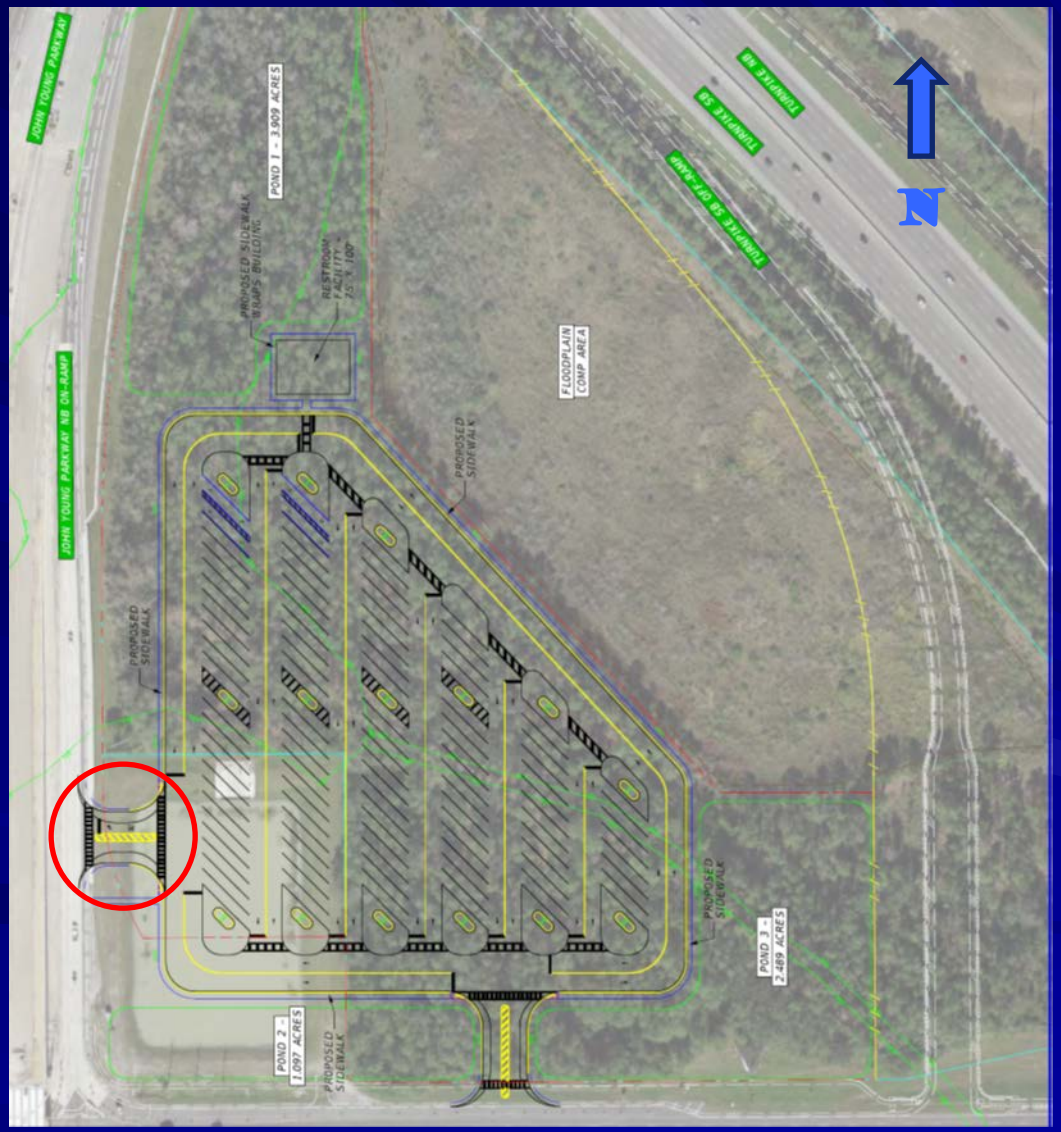
Install High Mast Lighting (Orange)

- **Advantages:**
  - Less luminaires
  - Less maintenance
- **Disadvantages:**
  - May require a larger space to lower the fixture for maintenance
- **Potential Cost Savings: $98,000**

Eliminate John Young Parkway Access (Orange)

- **PD&E Alternative**: The PD&E Documents show ingress/egress onto John Young Parkway.

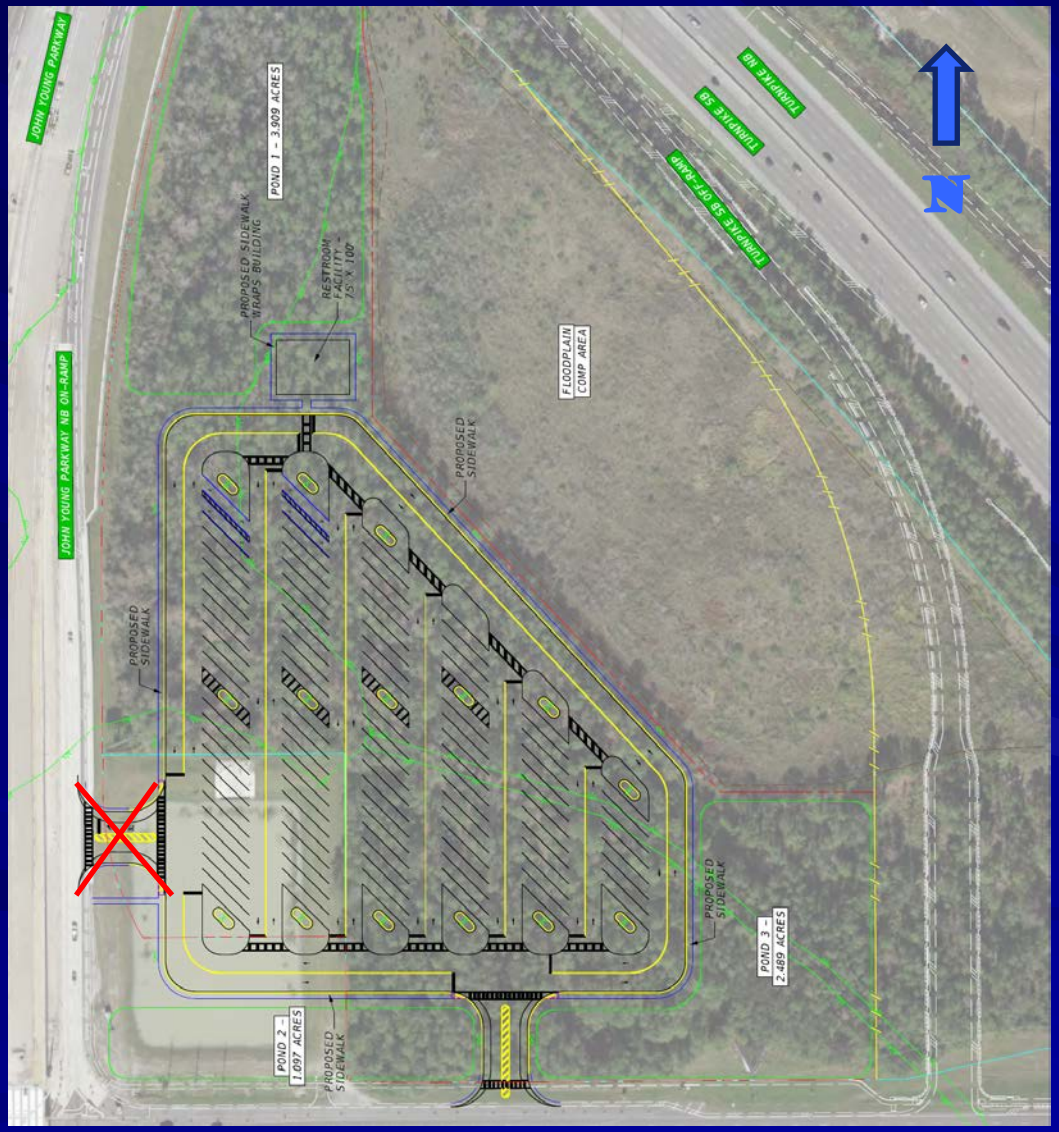
Orange PD&E Concept



Eliminate John Young Parkway Access (Orange)

- **VE Alternative 8: The VE team recommends eliminating the access to parking lot on John Young Parkway.**

Orange VE Recommendation



Eliminate John Young Parkway Access (Orange)

- **Advantages:**
  - Less cost
  - Less future maintenance
  - Less utilities
- **Disadvantages:**
  - One way in and one way out of parking facility
- **Potential Cost Savings: $354,000**

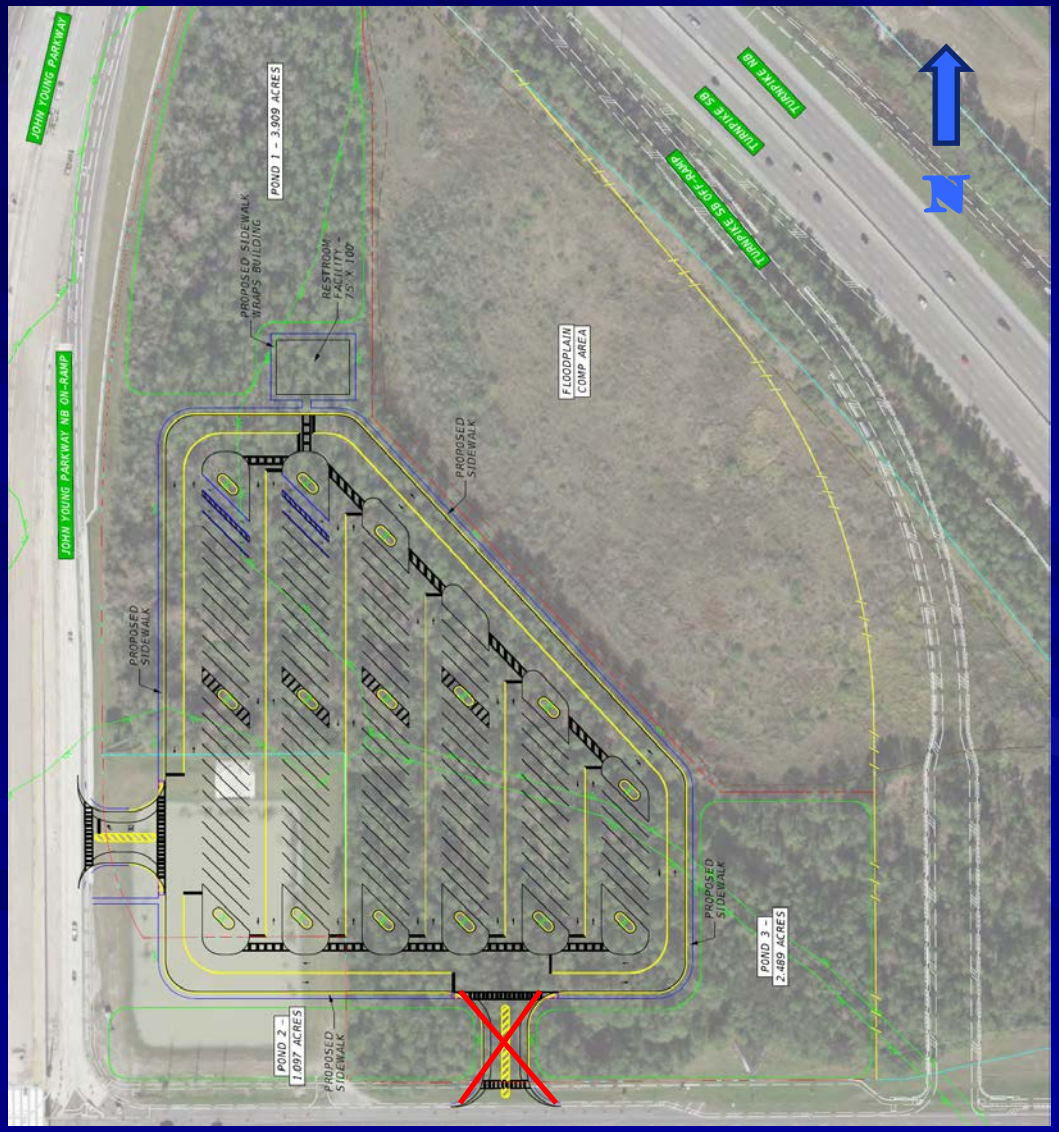
Eliminate Sand Lake Road Access (Orange)

- **PD&E Alternative**: The PD&E Documents show a bi-directional driveway into parking facility off Sand Lake Road.

Eliminate Sand Lake Road Access (Orange)

- **VE Alternative 9: The VE team recommends eliminating driveway into and out of the parking facility.**

Orange VE Recommendation



Modify Sand Lake Road Access (Orange)

- **Advantages:**
  - Less cost
  - Less MOT
  - Less utilities
  - Less environmental impacts
- **Disadvantages:**
  - One way in and one way out of parking facility
- **Potential Cost Savings: $361,000**

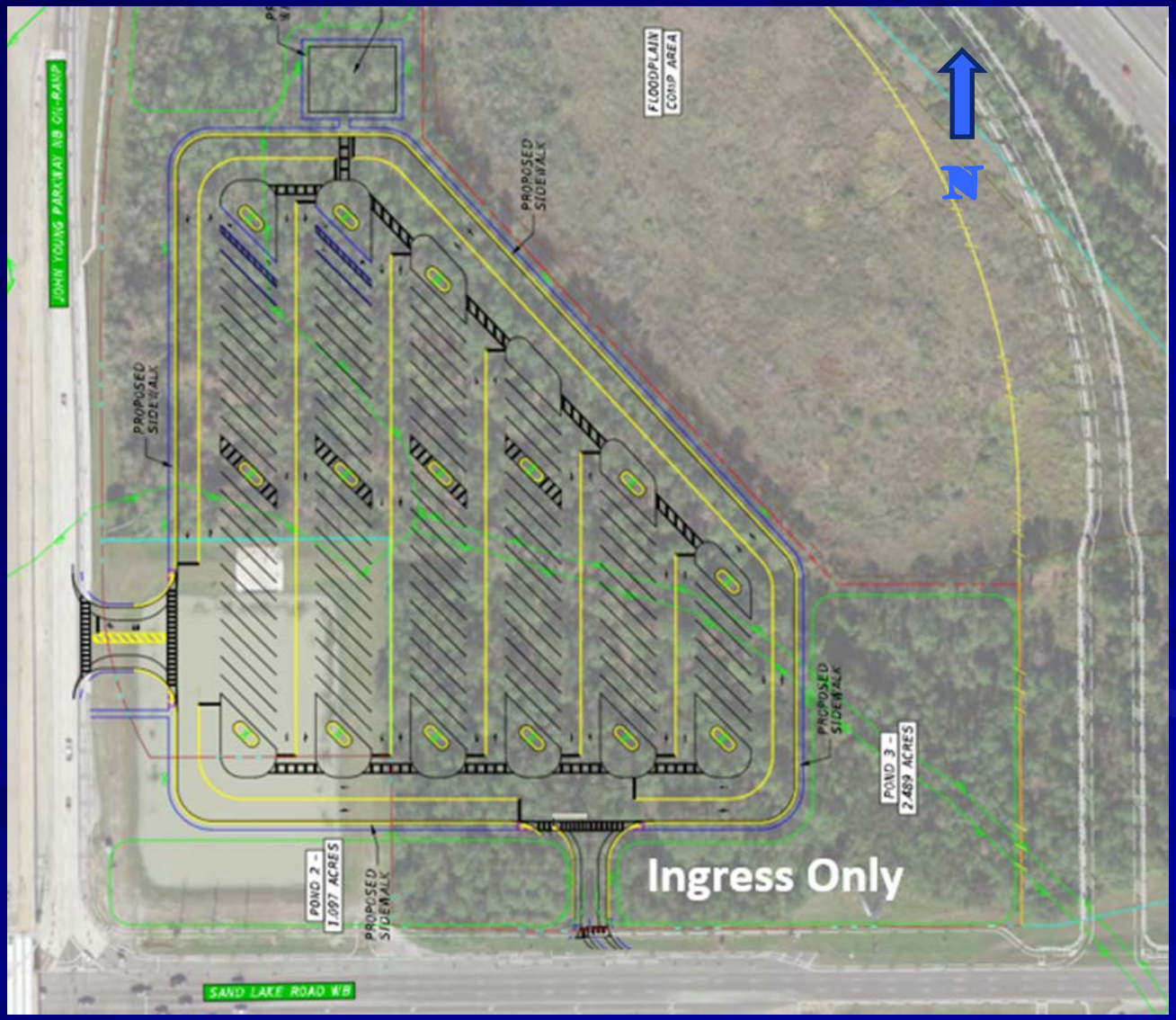
Modify Sand Lake Road Access (Orange)

- **PD&E Alternative**: The PD&E Documents show an ingress and egress to the site on both Sand Lake Road and John Young Parkway.

Modify Sand Lake Road Access (Orange)

- **VE Alternative 9B: The VE team recommends modifying the Sand Lake Rd access to ingress only. (Entrance only, no exiting).**

Orange VE Recommendation



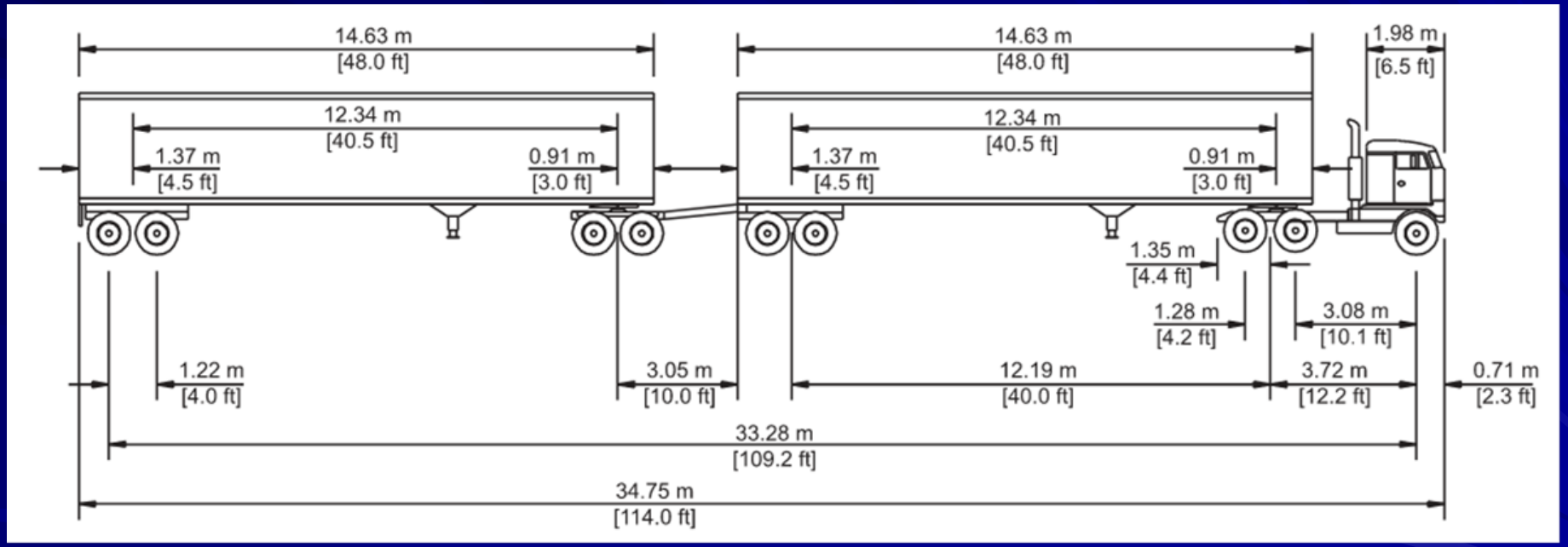
Modify Sand Lake Road Access (Orange)

- **Advantages:**
  - No truckers exiting into a right turn lane
  - Avoid weaving pattern on Sand Lake with an egress too close to the signal
  - Reduces congestion
  - Lower construction costs
- **Disadvantages:**
  - WB Sand Lake Rd required to utilize Presidents Drive to return to Sand Lake
- **Potential Cost Savings: $81,000**

Reconsider the control vehicle (Seminole)

- **Design Alternative**: The Design Documents show the accommodation of a WB-109D tractor-trailer circulating the site and utilizing the oversize parking spaces. The spaces accommodating extended length loads maintaining the parking space width of 15 feet. The two-way circulation lanes are currently shown at 50-ft in width.

Reconsider the control vehicle (Seminole)

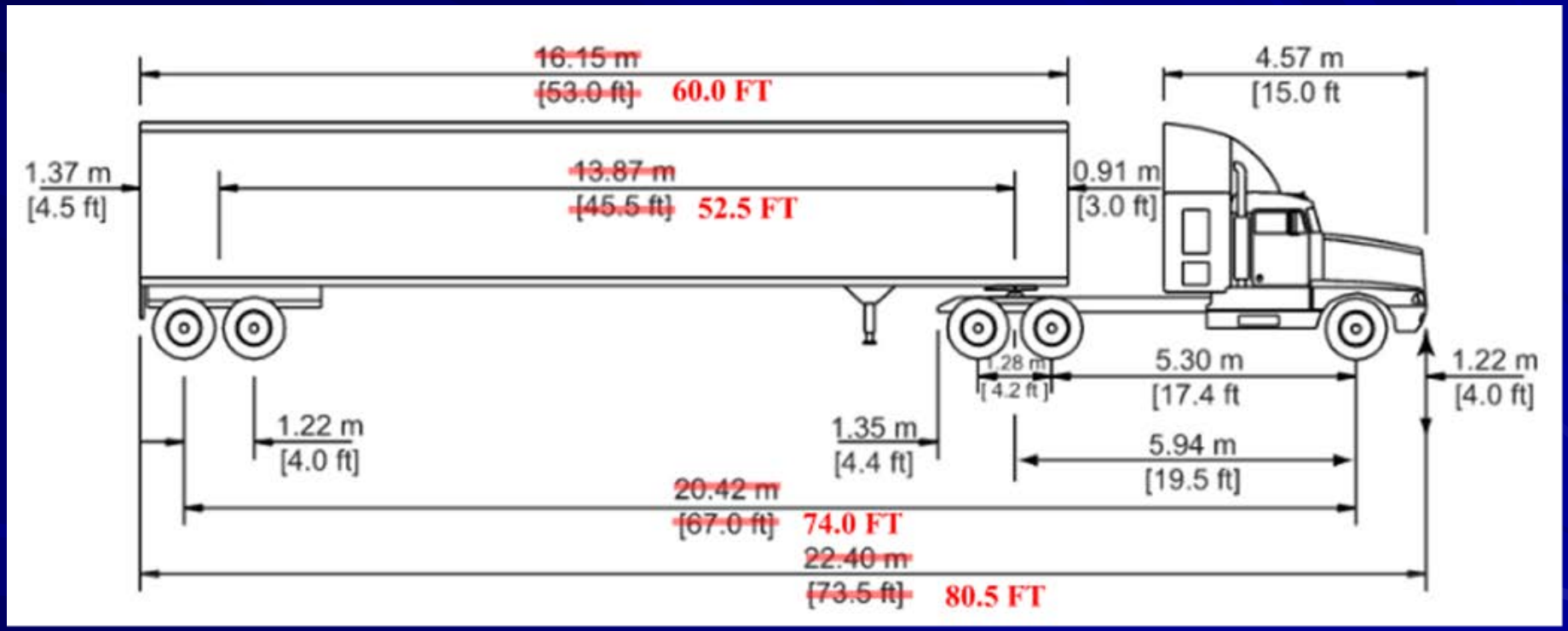


WB-109D Design Vehicle

Reconsider the control vehicle (Seminole)

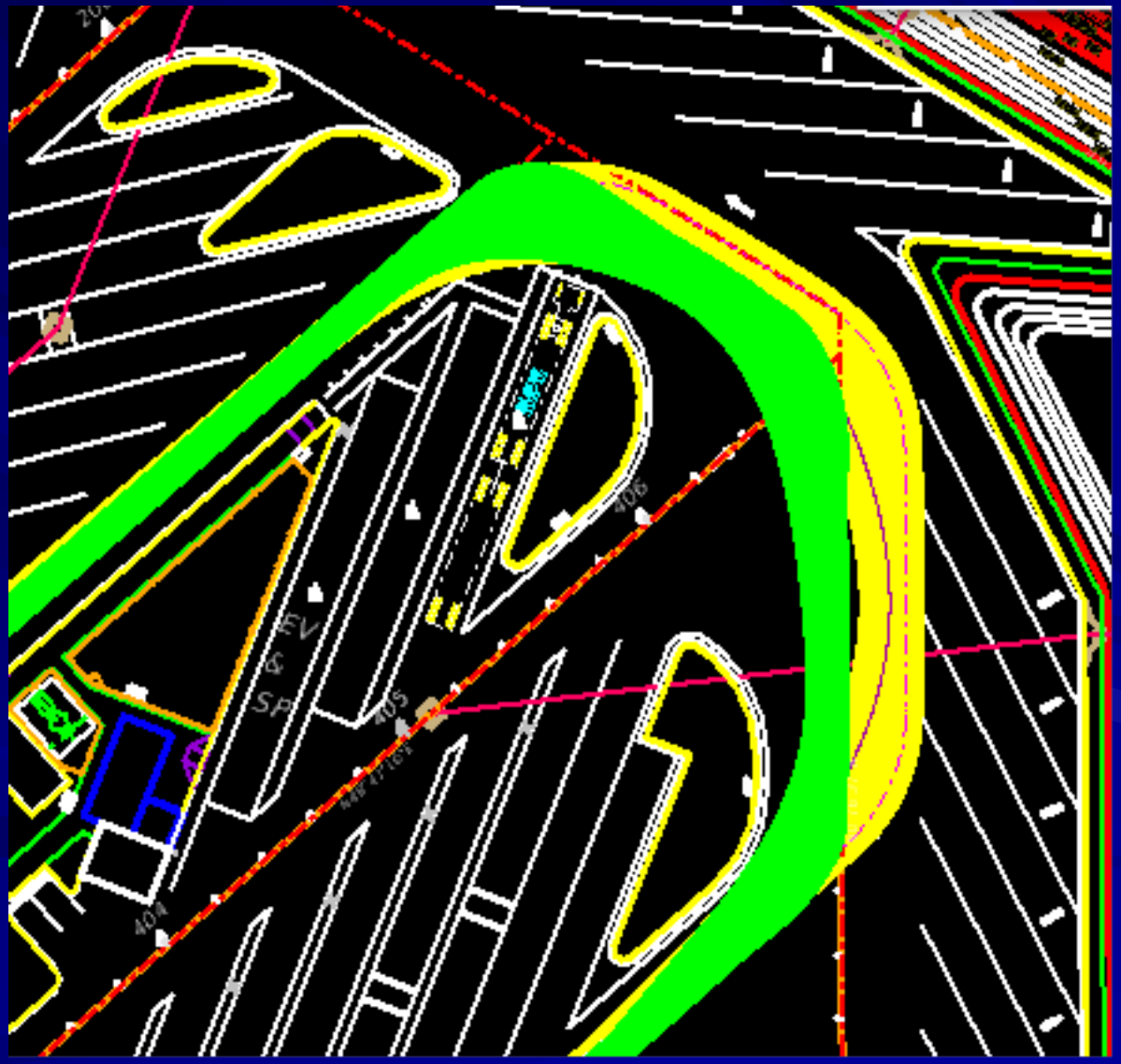
- **VE Alternative 18: The VE team recommends using a modified WB 67 tractor-trailer vehicle for the oversized vehicle control vehicle. Extending the standard WB-67 tractor-trailer from 67 feet to 74 feet would accommodate a more reasonable oversize load anticipated to use the site.**

Reconsider the control vehicle (Seminole)



VE Design Vehicle

Reconsider the control vehicle (Seminole)



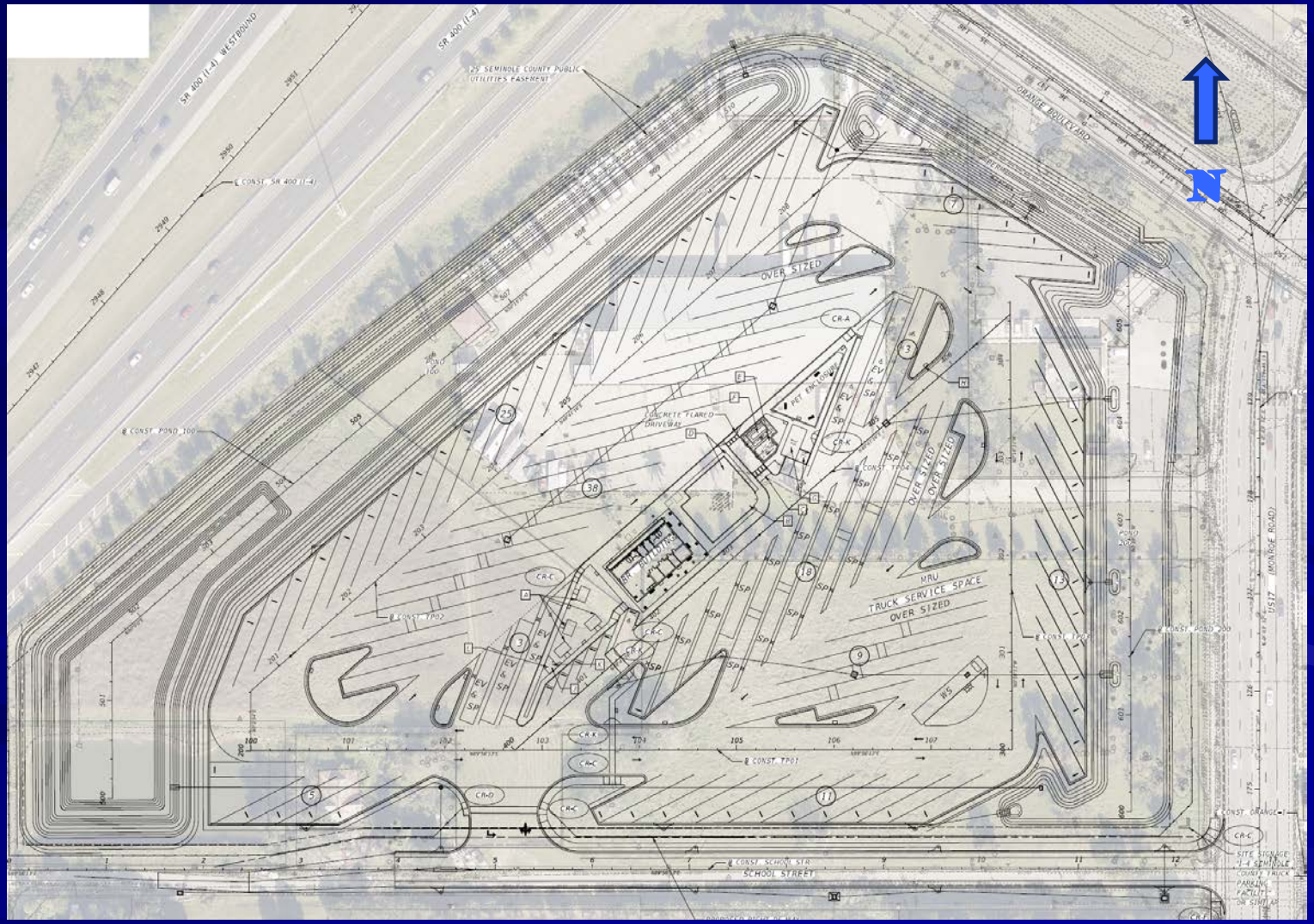
Reconsider the control vehicle (Seminole)

- **Advantages:**
  - Reduced material quantities and cost
  - Potential to reduce pond sizes or increase on-site floodplain compensation area
  - Improved construction time
  - Reduced pedestrian crossing distances accessing the restroom facilities
- **Disadvantages:**
  - Less excess room for drivers to maneuver
- **Potential Cost Savings: $214,000**

Re-purpose the Existing Building (Seminole)

- **Design Alternative**: The Design Documents show a proposed restroom building providing men's and women's facilities as required according to the number of parking spaces proposed. The building will also include a unisex bathroom, a security office, and a vending area.

Seminole Design Concept

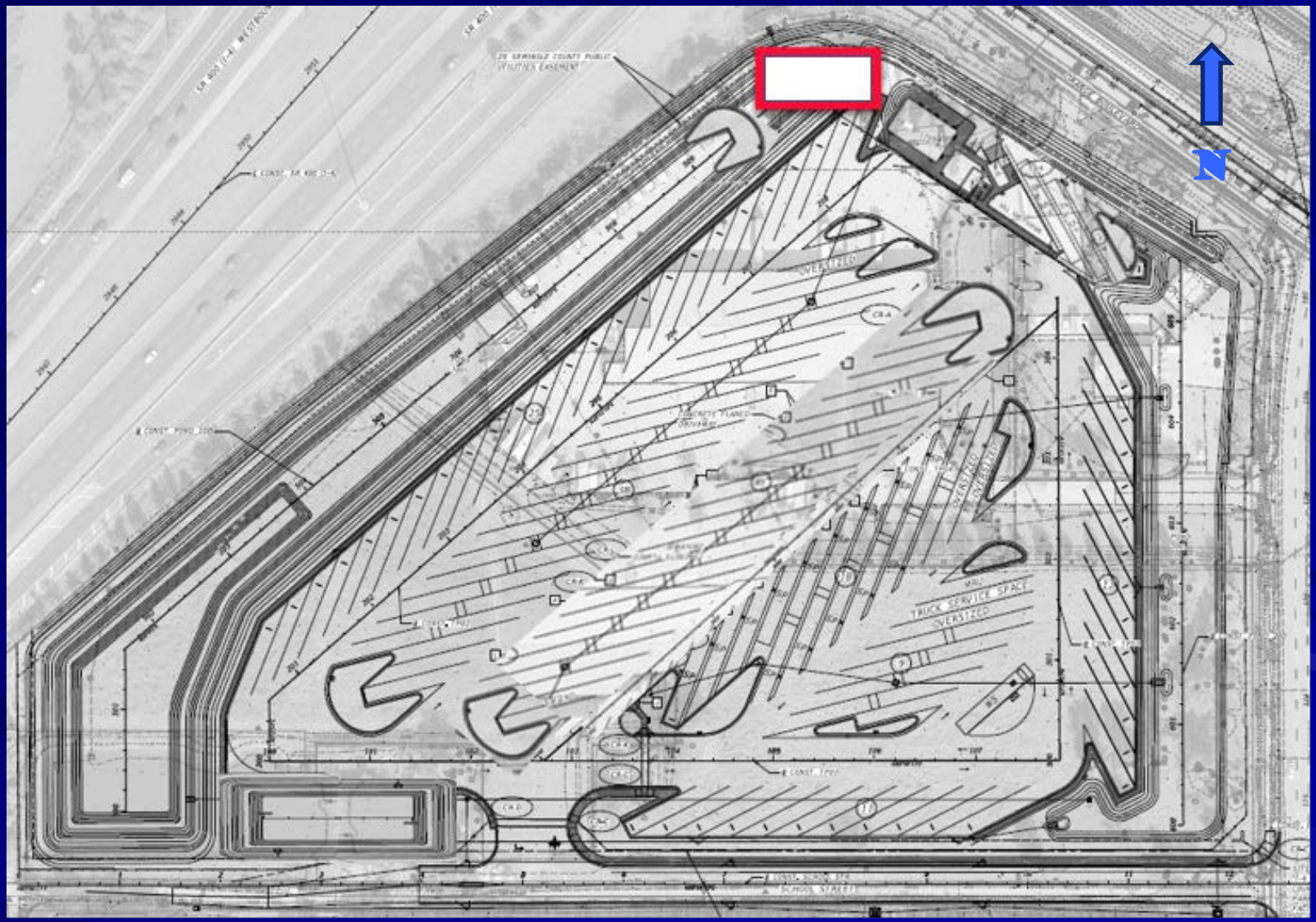


Re-purpose the Existing Building (Seminole)

- **VE Alternative 19: The VE team recommends repurposing one of the existing buildings on the Donnie Myers property to accommodate the required restrooms, security, and vending.**

Seminole VE Recommendation

Seminole VE Recommendation



Re-purpose the Existing Building (Seminole)

- **Advantages:**
  - Less Cost
  - Less Waste
  - Possibly Improves Site Circulation
  - Increases parking
- **Disadvantages:**
  - Requires pond design modification
  - Need to coordinate with Seminole County
- **Potential Cost Savings: $2,100,000**

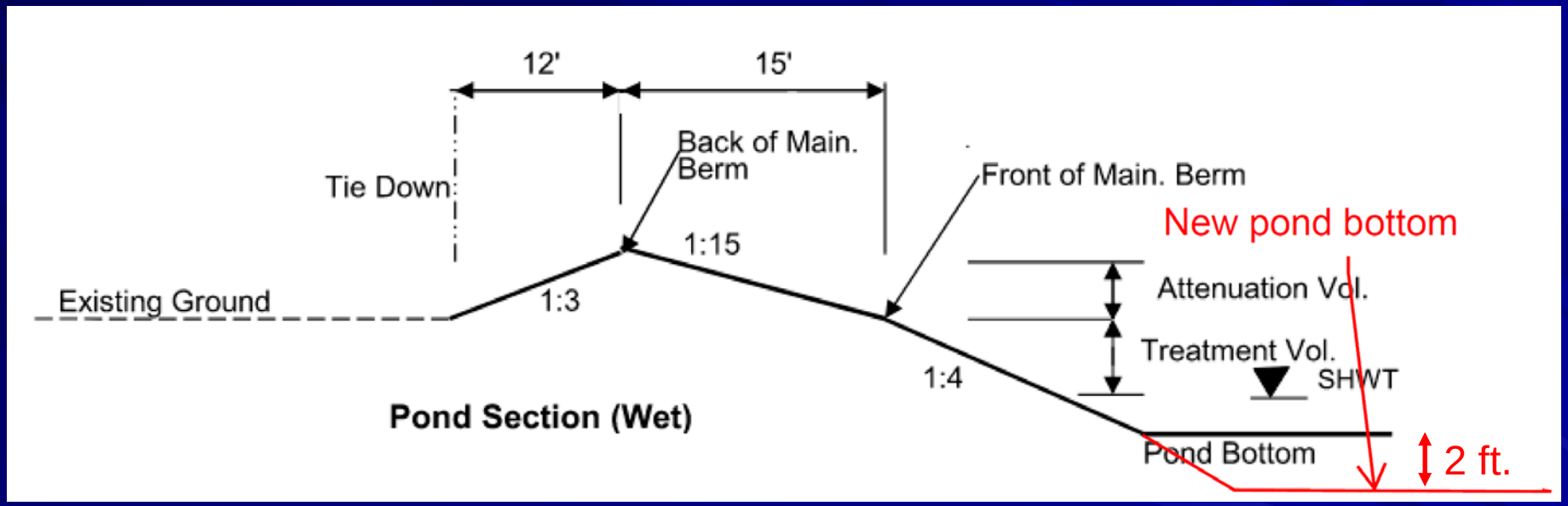
Increase Pond Depth (Volusia 1A & 1B)

- **PD&E Alternative**: The PD&E Documents show a large amount of fill being trucked to the site.

Increase Pond Depth (Volusia 1A & 1B)

- **VE Alternative 24**: The VE team recommends utilizing existing fill on site. One way this can be done is by digging the ponds 2 ft. deeper to provide additional fill. (Assume 75% of excavation is usable)

Increase Pond Depth (Volusia 1A & 1B)



Increase Pond Depth (Volusia 1A & 1B)

- **Advantages:**
  - Less cost
  - Less dump trucks on road
- **Disadvantages:**
  - None apparent
- **Potential Cost Savings: $122,000**

Enlarge Existing Pond (Volusia 1B WB)

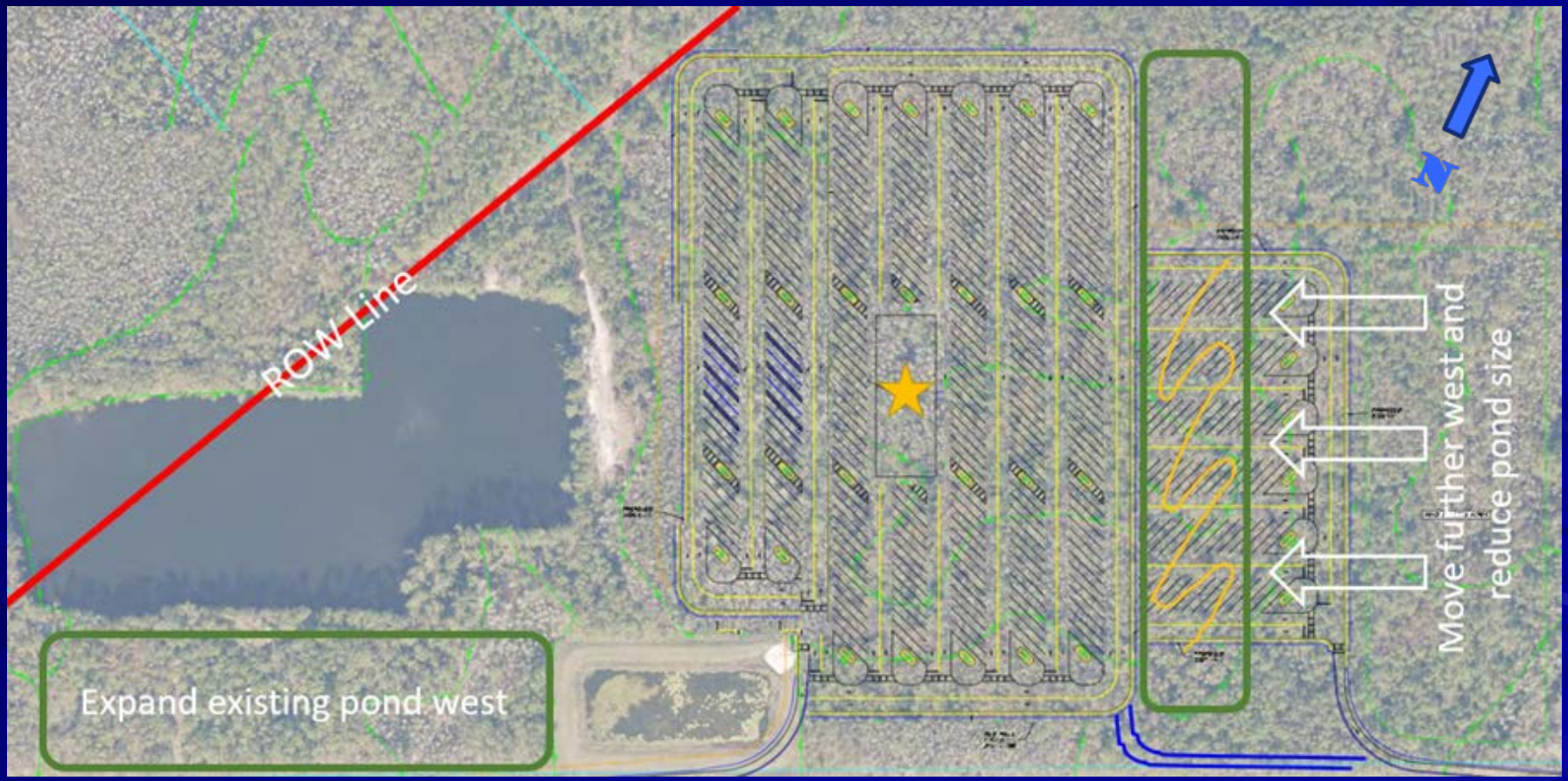
- **PD&E Alternative**: The PD&E Documents show the parking area run parallel longwise to I-4, with a large pond along the east of the facility, and two restroom structures.

Volusia WB PD&E Concept

Enlarge Existing Pond (Volusia 1B WB)

- **VE Alternative 32:** The VE team recommends combining and centralizing the restroom, rotating the site 90 degrees, widening the existing pond abutting the west of the westbound on-ramp, adding an additional parking row to the west side of the site and reducing the size of the pond to the east.

Volusia WB
VE Recommendation



Enlarge Existing Pond (Volusia 1B WB)

- **Advantages:**
  - Preserves a larger wildlife corridor
  - Moves the ramp farther from the wildlife bridge
  - Adds another row of parking (gaining 15 spaces)
  - Maintenance to one restroom facility instead of two
- **Disadvantages:**
  - None apparent
- **Potential Cost Savings: $1,877,000**

Consider Roller-Compacted Concrete (All Sites)

Consider Roller-Compacted Concrete for All Sites

- **PD&E Alternative**: The PD&E Documents show to construct the truck parking facilities using asphalt pavement due to lower construction costs compared to concrete pavement.

Consider Roller-Compacted Concrete for All Sites

- **VE Alternative 33:** The VE team recommends roller compacted concrete (RCC) pavement as an alternative to asphalt pavement. The June 2016 Technical Brief prepared by FHWA lists the applications for RCC pavement.

Consider Roller-Compacted Concrete for All Sites

Consider Roller-Compacted Concrete for All Sites

- **Advantages:**
  - Superior durability of concrete
  - RCC pavement does not require reinforcement
- **Disadvantages:**
  - RCC pavement is not a standard for FDOT
  - Limited availability of contractors
- **Potential Cost Savings: $11,535,000**

Phased Build-Out of Large Truck Parking Sites (Osceola & Volusia)

Phased Buildout of Large Truck Parking Sites

- **PD&E Alternative**: The PD&E Documents show full build-out of the truck parking facilities by 2040 with estimated parking capacity as follows:
  - Osceola County = 234 parking spaces
  - Orange County = 109 parking spaces
  - Seminole County = 156 parking spaces
  - Volusia County EB = 275 parking spaces
  - Volusia County WB = 253 parking spaces
  - Estimated total = 1,027 parking spaces

Phased Buildout of Large Truck Parking Sites

- **VE Alternative 35:** The VE team recommends a phased build-out of the truck parking facilities. This recommendation would call for the permitting and construction of all elements except parking and lighting. For this estimate, we anticipated 50% of the spaces for initial construction.

Phased Buildout of Large Truck Parking Sites

- **Advantages:**
  - Reduced initial construction cost
  - Less initial maintenance
  - Easier path to construction
- **Disadvantages:**
  - 647 initial parking spaces (380 deferred parking spaces)
- **Potential Cost Savings: $27,800,000**

Design Suggestions

- Consider vendor provided EV stations with fire suppression included at all sites

Savings Summary

Idea No.	Recommendation	Savings	Maximum Savings	Mutually Exclusive Ideas
1	Centralize the restrooms	$2,415,000	$2,415,000	
3	Reconfigure the north-south middle aisles of the parking spaces with one-way	$401,000	$401,000	
8	Eliminate the entrance/exit on the John Young Parkway ramp	$354,000		9 and 9B
9	Eliminate the entrance/exit on the Sand Lake Road ramp	$361,000	$361,000	8 and 9B
9B	Modify the Sand Lake Road to right turn in only	$81,000		8 and 9A
11	Consider one-direction aisles and reduce the impervious area	$504,000	$504,000	
13	Consider high mast lighting	$98,000	$98,000	
18	Reconsider the control vehicle to the WB 67D	$214,000	$214,000	
19	Re-purpose the existing building at the northern end of the property	$2,086,000	$2,086,000	
20	Put the restrooms in the middle of the parking area and add a row of parking by the mainline	$914,000	$914,000	
22	Reconfigure the aisles with one-way circulation	$1,062,000	$1,062,000	
24	Dig the ponds deep in order to have enough fill for the site	$122,000	$122,000	
26	Put the restrooms in the middle of the parking area and add a row of parking by the mainline	$914,000	$914,000	
28	Reconfigure the aisle with one-way circulation	$842,000	$842,000	
32	Enlarge the existing pond to the west and reduce the pond on the east side of the site (includes ideas 26 and 27)	$1,877,000	$1,877,000	
33	Consider roller compacted concrete for the entire site	$11,535,000	$11,535,000	
35	Phase the buildout of the parking area (assume 50% of pavement)	$27,800,000	$27,800,000	
			$51,145,000	**$50,865,000**

Action Plan

- Receive Draft VE Report 6/23/2023
- Draft Report Routed for Comments
- Receive and Incorporate District 5 Comments and Revisions 7/31/2023
- Issue Final VE Report after receipt of the Resolution Memorandum

Questions?