



Texas U-turn Benefit Cost Analysis Technical Traffic Report

SR 55 (US 19) PD&E Study from Pinellas County to Hernando County, Pasco County

Financial Project Identification No: 418860-1
Federal Aid Project No: S138-001-R



Prepared for:

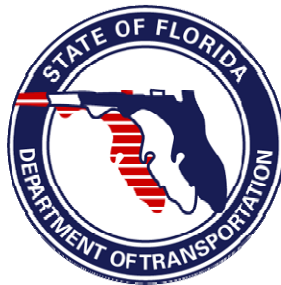
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June 2008

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FPID: 418860-1-22-01



Prepared For:

Florida Department of Transportation, District Seven



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June 2008

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Section 1 Introduction

The purpose of this draft technical memorandum is to document the results of a traffic analysis conducted to determine the operational benefit of modifying the “Preferred Build” Alternative of the SR 55 (US 19) Project Development and Environment (PD&E) Study to include a Texas U-turn. This geometric enhancement is intended to be applied to the modified Tight Urban Diamond Interchange (TDUI) Alternative¹, which is identified in the Preliminary Engineering Report (PER) as the preferred design for four key intersections along the SR 55 (US 19) study corridor: SR 54, Ridge Road, SR 52 and County Line Road.

A benefit-to-cost analysis was performed as part of this study to provide financial justification for implementing the proposed geometric enhancement. Retrofitting the preferred alternative to include a Texas U-turn could reduce travel delay for motorists by minimizing the effects of traffic friction, enhance circulation of traffic movements, and improve overall vehicle safety within the subject interchange areas. The benefit-to-cost analysis is intended to assist Department staff in making an informed decision as to whether or not the benefit of improved intersection operations at each of the grade-separated ramp terminal intersections is substantial enough to offset the capital cost of implementation.

1.1 BACKGROUND

A progress meeting was held at the Florida Department of Transportation (FDOT), District Seven on March 12, 2008 to discuss the merits of the preferred design alternative identified in the ongoing SR 55 (US 19) PD&E Study. In this meeting, FDOT staff agreed that retrofitting the conceptual design of the modified tight urban diamond interchange alternative to include a Texas U-turn would be beneficial from a traffic operations standpoint. **Appendix A** provides an illustration of the Texas U-turn design for the four interchange locations along the SR 55 (US 19) study corridor. The question that remained unanswered from this meeting was whether the cost of modifying the interchange design to include Texas U-turns would outweigh the operational benefit of the proposed modification. This technical memorandum summarizes the results of the benefit-to-cost analyses.

Section 2 Study Methodology and Procedures

In order to assess the operational benefit of providing a Texas U-turn as part of the modified TUDI alternative, a specific methodology was developed to estimate U-turn volumes during both the a.m. and p.m. peak hours of the design year 2030. This methodology utilizes the design year (2030) traffic forecasts from the HDR Engineering, Inc. *Final Traffic Memorandum*, January 2007, and the conceptual lane geometry assumed in the preferred build alternative. Outlined below are four of the main tasks undertaken to estimate future U-turn traffic volumes and conduct the traffic analyses:

1. Estimate the trip generation for existing land uses in the immediate four quadrants of the proposed interchanges, impacted by new controlled access right-of-way limits.
2. Assess the traffic impact of median closures caused by grade separation of mainline SR 55 (US 19) through quantifying existing vehicle use. Trip generation of the land uses serviced by the existing median openings are also estimated as part of developing future U-turn traffic volumes.

¹ Alternative 3 of the *Draft Preliminary Engineering Report (PER)* for the SR 55 (US 19) PD&E Study.

3. Assume a directional distribution of trip ends based on the combination of existing peak hour travel patterns on SR 55 (US 19) and future (Design Year 2030) daily traffic volumes derived from the Tampa Bay Regional Planning Model (TBRPM), Version 5.1.
4. Provide a conservative analysis of future traffic conditions by adding the estimated U-turn volumes on SR 55 (US 19) to the previously documented turning movement volumes forecasted in the SR 55 (US 19) PD&E Study *Final Traffic Memorandum* at each intersection where grade separation is proposed.

2.1 TRIP GENERATION ESTIMATES

Estimates of Design Year (2030) U-turn and frontage road through volumes were developed for the four key intersections where grade separation is proposed on SR 55 (US 19): SR 54, Ridge Road, SR 52 and County Line Road. These traffic volume estimates are derived from the trip generation of existing land uses located immediately adjacent to SR 55 (US 19) mainline whose access will be impacted by new limited access right-of-way. In general, trip generation for existing businesses along the SR 55 (US 19) study corridor is contingent upon the size and type of land use. The types of existing land uses were field verified and information on the size and number of units was obtained from either the Pasco County or Hernando County Property Appraiser's Offices.

Trip generation estimates were derived through use of either average rates or fitted curved equations published in the Institute of Transportation Engineer's (ITE) *Trip Generation Report*, 7th Edition. Given the fact that the magnitude and directional distribution of trips generated by each land use will vary depending upon the time of day time, trip generation estimates were developed for both the a.m. and p.m. peak hours of the adjacent street traffic.

Upon reviewing the existing land use data, it was realized that much of the existing land use along the SR 55 (US 19) corridor is primarily "strip" commercial. The trip making characteristics of the "strip" commercial land use differs from its shopping center counterpart. Trip generation rates for commercial development were allowed to vary according to parcel size. The smaller, more specialty retail developments would likely have less of a traffic impact on the adjacent street system (in terms of traffic loading) than a large regional mall. The following stratification of trip generation rates was utilized to estimate vehicle trip ends for existing commercial uses and vacant lands zoned commercial that are located adjacent to the SR 55 (US 19) study corridor:

- Gross Leasable Area (GLA) less than 25,000 square feet – ITE Land Use Code 814, Specialty Retail, Fitted Curve Equations;
- GLA greater than 25,000 square feet, but less than 50,000 square feet – ITE Land Use Code 820, Shopping Center, Weighted Average Rates; and
- GLA greater than 50,000 square feet – ITE Land Use Code 820, Shopping Center, Fitted Curve Equations.

Given the potential for future new growth in land development or redevelopment along the study corridor, the trip generation potential of vacant lands adjacent to the SR 55 (US 19) mainline was considered in this study. A floor area ratio (FAR) of 0.25 was applied to parcel acreage to estimate the useable area of square footage of vacant parcels zoned commercial. In addition, surrogate ITE land uses were employed to estimate traffic generation for instances where a specific ITE land use code was not available. Worksheets summarizing the trip generation analyses are contained in **Appendix B**.

2.2 TRIP DIRECTIONAL DISTRIBUTION

The distribution of vehicle trips entering and exiting driveways located adjacent to the SR 55 (US 19) travel lanes, which are affected by new controlled access right-of-way, are estimated based on a pseudo *Gravity Model*. The directional trip distribution of the pseudo Gravity Model utilizes the forecasted design year (2030) Annual Average Daily Traffic (AADT) volumes as the basis for estimating trip origin and destination patterns. The magnitude of traffic volume at each intersection approach relative to the sum of volume for all approaches, gives an indication of the direction motorists will likely travel. **Table 2-1** includes the traffic percentages used for estimating the directional distribution of ingress and egress of traffic movements at each study interchange.

Table 2-1
Summary of Trip Distribution for SR 55 (US 19) Grade Separated Intersections

SR 55 (US 19) Intersection	Design Year (2030) AADT Volumes				
	West	East	South	North	Total
SR 54	7,000	29,000	74,900	70,600	181,500
	4%	16%	41%	39%	
Ridge Road	12,200	30,700	68,600	71,500	183,000
	7%	17%	37%	39%	
SR 52	11,200	38,800	70,200	61,700	181,900
	6%	21%	39%	34%	
County Line Road	1,100	31,600	70,500	67,400	170,600
	1%	19%	41%	39%	

Source: HDR Engineering, Inc. (June 2008)

2.3 ROUTE ASSIGNMENT

The number of vehicles performing the northbound-to-southbound and southbound-to-northbound U-turn movements on SR 55 (US 19), as well as the northbound and southbound through movements on the frontage roads, were estimated using the driveway ingress/egress travel patterns shown in **Table 2-2** and the trip generation estimates provided in **Appendix B**. The land uses or median closures impacted by the new controlled right-of-way were included in this analysis. In many cases, the median openings that are expected to be closed under grade separation currently serve as primary accesses to large residential communities. The number of trips entering and exiting these median openings is dependant on the off-system roadway network supporting access to these residential developments. If the median opening to be closed is the sole access to a residential community, then vehicle trips from all homes in the development are assumed to be diverted to alternative routes under median closure. If there is an existing grid system of supporting parallel streets to the SR 55 (US 19) mainline and numerous access points to enter/exit the development, then the number of affected residential units is based on an area of influence. The area of influence is assumed to be a logical travel shed of vehicle trips.

Table 2-2
Summary of Route Assignment for SR 55 (US 19) Grade Separation

Quadrant	U-turns				Thru Movement			
	North		South		North		South	
	In	Out	In	Out	In	Out	In	Out
Northeast	✓						✓	
Southeast				✓		✓		
Southwest			✓		✓			
Northwest		✓						✓

Vehicle trips from the affected land uses were assigned to the adjacent street network according to the trip distribution shown in **Table 2-1** and driveway route assignment portrayed in **Table 2-2**. Land uses having access to both the SR 55 (US 19) mainline and an adjacent side street intersecting SR 55 (US 19) were reduced proportionally (typically by half) based on the number of driveways accessing the parcel and orientation of a business's façade and parking area. The design year 2030 traffic volumes estimated as a result of the steps outlined above are shown in **Table 2-3**.

Table 2-3
Summary of Estimated U-turn and Thru Traffic Volumes at SR 55 (US 19)

Intersection	Peak Hour Turning Movements			
	U-turn		Through	
	NB-to-SB	SB-to-NB	Northbound	Southbound
SR 54	120	240	190	190
	(140)	(350)	(310)	(250)
Ridge Road	110	180	130	190
	(380)	(340)	(340)	(430)
SR 52	300	210	250	260
	(660)	(570)	(630)	(670)
County Line Road	100	40	90	40
	(370)	(210)	(410)	(140)

Source: HDR Engineering, Inc. (June 2008)
AM (PM) – Peak Hour Traffic Volumes

2.4 TRAFFIC ANALYSES

In order to quantify the operational benefit of providing a Texas U-turn as part of the preferred build alternative, a highway capacity analysis was conducted using the SYNCHRO Software Package, Version 7.0 (Build 746). The SYNCHRO software integrates the standard methodologies and procedures of the *Highway Capacity Manual (HCM)* with enhanced algorithms designed to optimize signal timing for closely spaced intersections. With the use of this analytical tool, a comparative analysis of future operating conditions during the a.m. and p.m. peak hours of the design year (2030) was conducted for two scenarios: Texas U-turn and modified TDUI.

The modified TDUI scenario assumes that motorists making a U-turn movement on SR 55 (US 19) at the grade-separated intersections will perform this movement in the same lane as the northbound-to-westbound or southbound-to-eastbound left-turn movement. The U-turn movements will only be allowed to operate when a protective green arrow indication is displayed for the corresponding left-turn movement. A Texas U-turn scenario assumes that a single lane is dedicated for the U-turn movement, which in turn separates the U-turn movement from the turning paths of the associated left-turn movement. Besides the U-turn movement operating in a protected phase concurrent with the northbound-to-westbound and southbound-to-eastbound left-turn movements, it also operates permissively, concurrent with the eastbound and westbound through movements. These two scenarios were analyzed independently and alongside each other to establish the difference in measures of effectiveness during both the a.m. and p.m. peak hours of the design year (2030). **Table 2-4** summarizes the traffic forecasts used to analyze the future traffic operations of the grade-separated intersections under both design scenarios.

The average delay per vehicle (measured in seconds per vehicle) is the key measure of effectiveness used to compare the operational benefit of the two design scenarios. To quantify the monetary benefit of reduced vehicle delay associated with the Texas U-turn, contemporary estimates of user costs were applied to the average vehicle delay estimates. The user costs were adopted from the *2007 Urban Mobility Report* prepared by the Texas Transportation Institute (TTI), which are separately assigned according to vehicle use/type: \$13.00 per one-hour of passenger delay and \$21.00 per one-hour of truck delay. The benefit-to-cost analysis of the Texas U-turn scenario centers upon the cost savings associated with reduced Vehicle Hours of Travel (VHT) when compared to the modified TUDI.

Table 2-4
Design Year (2030) Peak Hour Turning Movement Volumes for Preferred Build Alternative

Intersection	Peak Hour Turning Movement Volumes													
	Eastbound			Westbound			Northbound				Southbound			
	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right	U-turn	Left	Thru	Right
SR 54	140	90	50	800	40	340	120	30	190	420	230	280	190	40
	(220)	(90)	(80)	(970)	(100)	(520)	(140)	(20)	(310)	(460)	(310)	(320)	(250)	(20)
Ridge Road	160	240	90	710	170	360	110	130	130	530	180	610	190	30
	(270)	(320)	(80)	(670)	(400)	(610)	(380)	(70)	(340)	(530)	(340)	(680)	(430)	(50)
SR 52	150	170	140	1,020	200	360	300	110	250	660	210	650	260	50
	(260)	(270)	(80)	(1,240)	(340)	(550)	(660)	(250)	(630)	(760)	(570)	(680)	(670)	(30)
County Line Road	30	10	30	1,350	10	370	100	20	90	810	40	440	40	10
	(20)	(10)	(20)	(800)	(10)	(480)	(370)	(20)	(410)	(1,310)	(210)	(640)	(140)	(30)

Source: HDR Engineering, Inc. (June 2008)
AM (PM) – Peak Hour Traffic Volumes

Section 3 Benefit-to-Cost Analysis

A reduction in vehicle delay is anticipated to occur as a result of modifying the preferred build alternative to include specific accommodations for U-turn movements on SR 55 (US 19). This reduction in delay is associated with the proposed U-turn accommodation providing a less circuitous route for motorists and the ability to divert traffic away from highly congested intersections. The savings in vehicle hours of travel is the primary measure of effectiveness used to quantify the benefits of modifying the build alternative to include a Texas U-turn. The monetary estimate of hourly operational benefit is converted to an annual value as a means of comparing annual operating/maintenance costs and capital costs associated with the proposed design modification. The benefit-to-cost analysis considers both the initial benefit in the year 2030, as well as the benefit over a 20-year period from 2030 to 2050.

3.1 BENEFIT-TO-COST METHODOLOGY AND PROCEDURES

In addition to estimates of time value obtained from the *2007 Urban Mobility Report*, there are other parameters/key assumptions made in the benefit-to-cost analysis worth noting. **Table 3-1** summarizes the key metrics used to perform the benefit-to-cost analysis, along with their corresponding values. Many of the values used in the benefit-to-cost analysis are based on guidelines of the Minnesota Department of Transportation (Mn/DOT).²

Table 3-1
Summary of Key Metrics and Assumptions

Description of Key Metric	Value	Units	Notes
Discount Rate	2.8	Percentage	(1)
Vehicle Occupancy	1.5	Persons/Passenger Vehicle	
	1.0	Persons/Truck	
Percent Trucks	5.0	Percentage	
Peak-To-Daily Ratio	9.52	Percentage	
Number of Working Days	250	Days	
Annual Operating and Maintenance (O&M) Cost	7,970	Dollars per Lane Mile	(2)
Annual Increase in O&M Costs	4.5	Percentage	(3)
Value of Time			
Automobile	13.00	Dollars per person hour	(4)
Truck	21.00	Dollars per person hour	

(1) Based on current interest rate for 20-year treasury notes and bonds.

(2) FDOT District Seven Maintenance Office, June 2008.

(3) Average rate for inflation factors adopted from the FDOT "Transportation Costs", Office of Financial Development, (July 2007).

(4) Source: 2007 Urban Mobility Report, TTI.

In order to assess the monetary benefit of reduced vehicular delay with the proposed geometric enhancement, the Texas U-turn scenario was compared to a base scenario (modified TUDI). An analysis period of twenty years (from opening/design year 2030 to horizon year 2050) was selected for the evaluation of benefit and costs. This assumes the proposed grade separations along the SR 55 (US 19) corridor are not financially feasible until the design year 2030. The specific steps in performing the benefit-to-cost analysis are listed as follows:

- Step 1: Estimate the present year (2008) value of project benefits;
- Step 2: Calculate the present value of project costs; and
- Step 3: Evaluate the analysis results (benefit-to-cost analysis).

² Mn/DOT Benefit Cost Analysis Guidance, June 2005

3.1.1 BENEFIT-TO-COST STUDY PROCESS

Step 1: Estimate the present year (2008) value of project benefits:

The operational benefit of providing the Texas U-turn is quantified through the comparison of VHT for the build alternative alongside a base alternative. Under the modified TDUI, the northbound-to-southbound and southbound-to-northbound U-turn movements are assumed to operate simultaneously with a corresponding left-turn movement. Both the U-turn and left-turn movements occupy the same turn lane and operate only when a green arrow signal indication is provided. The addition of the Texas U-turn eliminates impedance to the left-turn movement by removing u-turning vehicles from the paths of left-turn traffic. The U-turn movement is allowed to operate permissively when it is not in direct conflict with another traffic movement (i.e., eastbound and westbound through movements).

The average vehicle delay saved by eliminating impedance to left-turning vehicles is quantified by analyzing the a.m. and p.m. peak hours of the design year 2030 in SYNCHRO. Subtracting the lower VHT of the Texas U-Turn scenario from the base alternative scenario provides an estimate of VHT savings. **Table 3-2** provides estimates for travel time savings during the a.m. and p.m. peak hours of the design year 2030 at each of the grade-separated intersections using the Texas U-turn. As **Table 3-2** indicates, constructing a Texas U-turn at each of the study interchanges will reduce total VHT during both peak periods. The travel time savings associated with this improvement range from a low of 11 vehicle-hours at the SR 55 (US 19)/SR 54 interchange to a high of 209 vehicle-hours at the US Highway 19 (SR 55)/SR 52 interchange. The total VHT savings for the entire corridor is estimated to be 286 vehicle-hours.

This delay savings is then converted to VHT for a 24-hour period assuming that the sum of a.m. and p.m. peak hour VHT constitutes two times the corridor approved peak-to-daily ratio of 9.52 percent. Dividing the sum of the a.m. and p.m. peak hour VHT by the value of 19.04 ($2 \times 9.52 = 19.04$) results in the estimate of daily VHT.

Table 3-2
Vehicle Hours of Travel (VHT) Time Savings with Texas U-turn

SR 55 (US 19) Interchange	Analysis Scenario	A.M. Peak Hour (vehicle-hours)	P.M. Peak Hour (vehicle-hours)	Total Peak Period Travel Time (Vehicle-Hours)
SR 54	Modified TDUI	29.33	68.31	97.64
	Texas U-turn	26.27	60.36	86.63
	Travel Time Savings	3.06	7.95	11.01
Ridge Road	Modified TDUI	39.41	184.05	223.46
	Texas U-turn	34.00	139.08	173.08
	Travel Time Savings	5.41	44.97	50.38
SR 52	Modified TDUI	80.33	598.78	679.11
	Texas U-turn	63.77	405.87	469.64
	Travel Time Savings	16.56	192.91	209.47
County Line Road	Modified TDUI	34.39	74.87	109.26
	Texas U-turn	32.95	61.31	94.26
	Travel Time Savings	1.44	13.56	15.00
Corridor Total	Modified TDUI	183.46	926.01	1109.47
	Texas U-turn	156.99	666.62	823.61
	Travel Time Savings	26.47	259.39	285.86

Source: HDR Engineering, Inc. (June 2008)
SYNCHRO, Version 7.0 (Build 746)

As traffic volumes increase with time, average vehicle delay will also increase at a certain rate. The rate of increase is estimated for the 20-year period from 2030 to 2050 assuming a similar historical rate of increase in traffic volumes along the SR 55 (US 19) study corridor during the period from 2006 to 2030. **Table C2-5**, located in **Appendix C2**, shows an annual growth of 0.71 percent in AADT volumes along the study corridor. This annual growth rate was applied to the 2030 estimate of VHT to evaluate operational benefit during the twenty-year analysis period.

The analysis to determine the monetary benefit of reduced VHT associated with the Texas U-turn improvement is based on estimates for the dollar value of time. The *2007 Urban Mobility Report* documents the hourly cost for a person to operate a passenger vehicle at \$13.00, while the cost incurred to the operator of a commercial truck is estimated at \$21.00. It is assumed that 1.5 persons occupy a passenger vehicle, as opposed to a single driver in a commercial truck. The magnitude of truck traffic traveling on SR 55 (US 19) during the peak hour periods is estimated at 5 percent, which is derived from the T_{24} – factor approved in the *Final Traffic Memorandum*. The annual benefit is calculated by multiplying the daily VHT by the cost of time on a per vehicle basis. The daily VHT is then converted to an annual savings by multiplying the daily VHT estimate by the number of working days (250) in a calendar year. The monetary benefit of providing the Texas U-turn in the year 2030 is discounted at a rate of 2.8 percent/year to achieve present year value.

Step 2: Calculate the present value of project costs:

The majority of the capital cost to construct the Texas U-turn improvement centers upon lengthening the main SR 55 (US 19) bridge structures over SR 54, Ridge Road, SR 52 and County Line Road and extending the limits of bridge cantilevered sections required to accommodate the footprint of left- and U-turn lanes. Construction of cantilevered bridge sections is necessary in the preferred design of the SR 55 (US 19) interchanges to minimize right-of-way impacts. The construction cost estimates formerly derived in the FDOT's Long Range Estimating (LRE) System for the preferred build alternative were updated to reflect the proposed geometric modification. Specific details of the engineering cost estimates are provided in **Appendix A2**. **Table 3-3** shows the present day (2008) dollars required to retrofit the preferred build alternative to include a Texas U-turn at each of the intersections where grade separation is proposed.

Table 3-3
Capital Cost of Texas U-turn Addition – Modified Tight Urban Diamond Interchange

US Highway 19 (SR 55) Interchange	Total Interchange Construction Cost		Texas U-Turn Construction Cost Only
	Modified TUDI	Texas U-turn	
SR 54	\$34,958,000	\$46,284,000	\$11,326,000
Ridge Road	\$81,717,000	\$90,674,000	\$8,957,000
SR 52	\$38,142,000	\$52,836,000	\$14,694,000
County Line Road	\$24,902,000	\$42,714,000	\$17,812,000

Source: FDOT Long Range Estimating (LRE) System; Present Day Cost (PDC) Year 2008 dollars

As shown in **Table 3-3**, the cost to construct the Texas U-turn improvement varies among the four subject interchanges; with estimates ranging from a low of approximately \$9 million at Ridge Road to a high of \$17 million at County Line Road. This \$8 million difference in construction costs is due to the extent cantilevered bridge structures are utilized in the original and revised conceptual designs to minimize right-of-way acquisition along the SR 55 (US 19) mainline.

In the case of the SR 55 (US 19)/Ridge Road interchange, a substantial amount of bridge structure was formerly assumed in the design of the preferred build alternative. The larger quantity of bridge structure (as evidenced in the higher overall construction cost) used in the conceptual design of this interchange was necessary to fulfill the purpose of reducing right-of-way impacts to the adjacent businesses. More specifically, the on- and off-ramps at the SR 55 (US 19)/Ridge Road interchange are “tucked” under the SR 55 (US 19) mainline in all four quadrants of the interchange, as opposed to the other three interchanges where cantilevering is utilized only on the exit ramps (southeast and northwest quadrants) to accommodate the footprints of left- and U-turning lanes. The cost to retrofit the preferred design alternative at this interchange is low relative to the other interchanges because the required cantilevered structures are already in place, and new construction would generally require the removal of fill and mechanically stabilized earth (MSE) walls that are overall less expensive than adding new bridge structures.

The conceptual design of the proposed SR 55 (US 19)/County Line Road interchange was originally designed without the bridge structures needed to cantilever the SR 55 (US 19) mainline over the left- and U-turn lanes. With the addition of the Texas U-turn, the SR 55 (US 19)/County Line Road interchange will have to use cantilevered structures on the northbound and southbound off-ramps to avoid right-of-way impact to adjacent land uses. As seen in **Table 3-3**, the addition of cantilevered structures at the SR 55 (US 19)/County Line Road interchange under the Texas U-turn alternative increases the overall cost estimate to be in a similar range of cost (between \$42 and \$52 million) as the proposed interchanges at SR 54 and SR 52. The variation in cost among these three interchanges is a function of the length of northbound/southbound left- and U-turn lanes and the cross-street angle with the SR 55 (US 19) mainline. A larger angle requires the turning radii of the northbound/southbound left-turn lanes to increase, thereby triggering the need to lengthen the span of the US Highway 19 bridge structure over the cross-street. A lengthened bridge span would increase overall construction cost of the proposed grade separation.

Since the cost of providing the proposed Texas U-turn will not be incurred until the opening/design year 2030, it is pertinent to estimate the present day worth (in terms of year 2008 dollars) of the future design modification. During this 22-year period, the “spending power” of the dollar is expected to depreciate as a result of inflation; and similarly, the ability of programmed dollars to earn interest if the cost is not incurred in the present year reduces the capital cost of the future improvement. The present day worth of the Texas U-turn improvement is derived by applying a 2.8 percent/year discount rate to the capital cost estimates for a 22-year period spanning the years 2008 through 2030. The 2.8 percent/year discount rate is based on the current interest rate for 20-year treasury notes and bonds.

In addition to capital costs incurred during initial construction of the proposed design modification, annual operating and maintenance costs of grade separation were estimated assuming the FDOT District Seven’s average maintenance cost of \$7,970 per lane mile. The lane miles for each interchange were calculated and found to be approximately eight lane miles. The operating and maintenance cost were assumed to grow at an annual rate of 4.5 percent, which is consistent with the FDOT’s *Transportation Costs Report* prepared by the Office of Financial Development.

Step 3: Evaluate the benefit-to-cost results:

The benefit-to-cost ratio is established after both benefits and costs are discounted to present year 2008 dollars, and the discounted benefit is divided by the discounted rate. If the resultant benefit-to-cost ratio is greater than 1.0, then it can be implied that implementation of the proposed improvement is economically justified. The benefit-to-cost ratios developed to assess the suitability of providing a Texas U-turn at the four interchanges along SR 55 (US 19) are presented in this study at the initial year of opening and for a twenty-year period from 2030 to 2050.

3.2 TEXAS U-TURN BENEFIT-TO-COST RESULTS

The results of the benefit-to-cost analysis of the Texas U-turn improvement are summarized in **Table 3-4**. The calculated benefit-to-cost ratios for two of the SR 55 (US 19) interchange alternatives are in excess of unity (i.e. greater than 1.0), indicating that providing a Texas U-turn will have a greater benefit than the projected cost during the 20-year analysis period from 2030 to 2050. **Table 3-4** also shows that a substantial benefit is achieved with the proposed design modification even at opening/design year (2030). The capital cost of providing the Texas U-turn at the proposed SR 55 (US 19)/Ridge Road and SR 55 (US 19)/SR 52 interchanges will be recovered within less than seven years. These results support the implementation of the proposed design modification at the two referenced interchanges. Although the cost of implementing the Texas U-turn as part of the SR 55 (US 19)/SR 54 and SR 55 (US 19)/County Line Road interchanges is projected to not be recovered during the 20-year analysis period between 2030 and 2050, there is still justification for implementation of the Texas U-turn when the results are viewed on the basis of the entire corridor. This is evidenced by a benefit-to-cost ratio greater than 2.0 for the SR 55 (US 19) corridor total.

Table 3-4
Summary of Benefit-to-Cost Analysis for Texas U-turn Alternatives

SR 55 (US 19) Interchange	Present Day (2008) Worth ¹			Initial Benefit-to- Cost (Year 2030)	20-Year Benefit-to-Cost (Year 2030-50)	Years to Recover Capital Cost
	Initial Benefit (Year 2030)	20-Year Benefit (Year 2030-50)	Capital Cost			
SR 54	\$119,000	\$2,668,000	\$6,169,000	0.02	0.42	>20
Ridge Road	\$671,000	\$12,326,000	\$4,879,000	0.14	2.48	7
SR 52	\$2,897,000	\$51,357,000	\$8,004,000	0.36	6.29	2
County Line Road	\$173,000	\$3,644,000	\$9,702,000	0.02	0.37	>20
Corridor Total	\$3,860,000	\$69,994,000	\$28,754,000	0.13	2.43	7

Source: HDR Engineering, Inc. (June 2008)

¹Assumes future capital costs are discounted at a rate of 2.8 percent per year for a 22-year period from 2008 to 2030.

Section 4 Summary and Conclusions

The Florida Department of Transportation (FDOT), District Seven retained HDR Engineering, Inc. to assist with determining the most suitable design for possible grade-separation of several key intersections along the SR 55 (US 19) PD&E Study Corridor. A benefit-to-cost analysis was conducted to assess the financial suitability of modifying the preferred build alternative of the SR 55 (US 19) PD&E Study to include a Texas U-turn on both the northbound and southbound approaches of SR 55 (US 19).

The results of the benefit-to-cost analysis indicate that providing a Texas U-turn at the locations where grade-separation is proposed would have a positive effect on traffic operations and safety within the subject interchange areas. This is evidenced by reduced Vehicle Hours of Travel (VHT) during peak travel periods at each of the study interchanges with the implementation of the Texas U-turn. The travel time savings associated with this improvement range from a low of 11 vehicle-hours at the SR 55 (US 19)/SR 54 interchange to a high of 209 vehicle-hours at the SR 55 (US 19)/SR 52 interchange. Moreover, the implementation of the Texas U-turn is projected to reduce VHT by as much as 285 vehicle-hours along the SR 55 (US 19) study corridor.

The benefit-to-cost (B/C) ratios greater than unity (i.e., B/C Ratio = 1.0) were obtained for two of the four locations analyzed during the twenty-year analysis period from year 2030 to 2050. A benefit-to-cost ratio greater than 1.0 indicates that the proposed geometric modification is financially justified. A favorable benefit-to-cost ratio greater than 2.0 was obtained for the corridor as a whole. The operational benefit the Texas U-turn would provide the traveling public is greater than the capital cost incurred to construct the special U-turn accommodation. Retrofitting the preferred alternative to include a Texas U-turn could reduce travel delay for motorists by minimizing the effects of traffic friction, enhance circulation of traffic movements, and improve overall vehicle safety within the subject interchange areas.

The results of the benefit-to-cost analysis indicate that the capital cost incurred by the proposed geometric modification can be recovered within seven years of use for the SR 55 (US 19) interchange at Ridge Road and within two years for the SR 55 (US 19) interchange at SR 52. Likewise, the cost of constructing Texas U-turns at all study interchanges could be recovered within seven years after the opening year 2030 (by the year 2037).

Appendix A1

Conceptual Design Plans

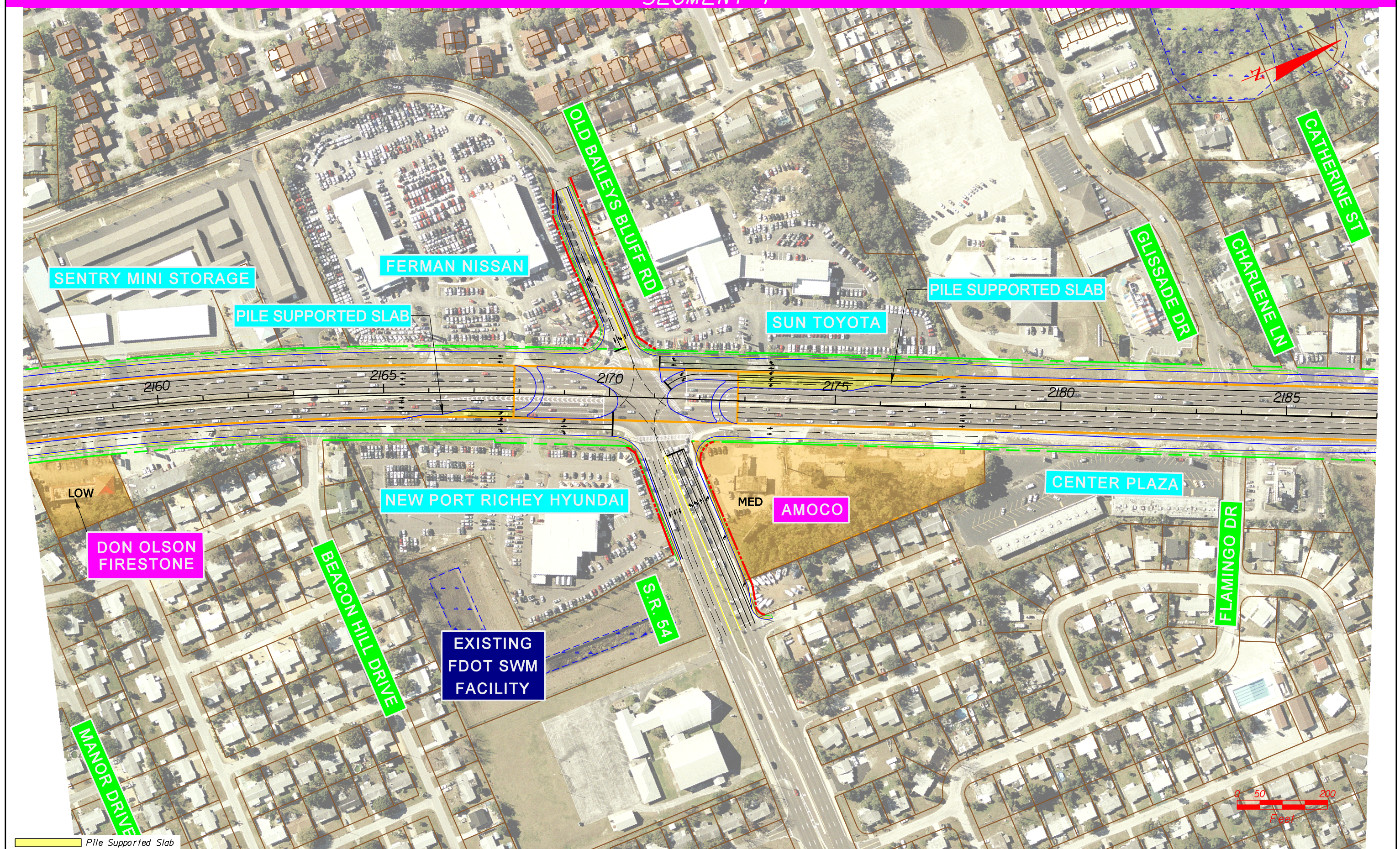
(Alternative 3 – Modified Tight Urban Diamond Interchange with Texas U-turns)

SEGMENT 1



LEGEND: - - - Existing ROW - - - Proposed ROW - - - Proposed EOP - - - Property Lines - - - Bridge/Structure - - - Contamination Sites - - - Wetland Boundary - - - Centerline Alignment - - - Place/Street Name - - - Relocation FLORA AVENUE BI	SEGMENT: ONE FLIGHT DATE: JANUARY 2006	HDR HDR Engineering, Inc. 5426 Bay Center Drive, Suite 400 Tampa, FL 33609-3444 CERTIFICATE OF AUTHORIZATION 4213	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			S.R. 55 (U.S. 19) CONCEPT PLANS ALT. 3 - MOD. TUDI - W/ TEXAS U-TURNS	SHEET NO. 1
			ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
			S.R. 55	PASCO	418860-1-22-01		

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LEGEND:

- Existing ROW
- Proposed ROW
- Proposed EOP
- Property Lines
- Bridge/Structure
- Contamination Sites
- Wetland Boundary
- Centerline Alignment
- Place/Street Name
- Relocation

SEGMENT: ONE

FLIGHT DATE: JANUARY 2006

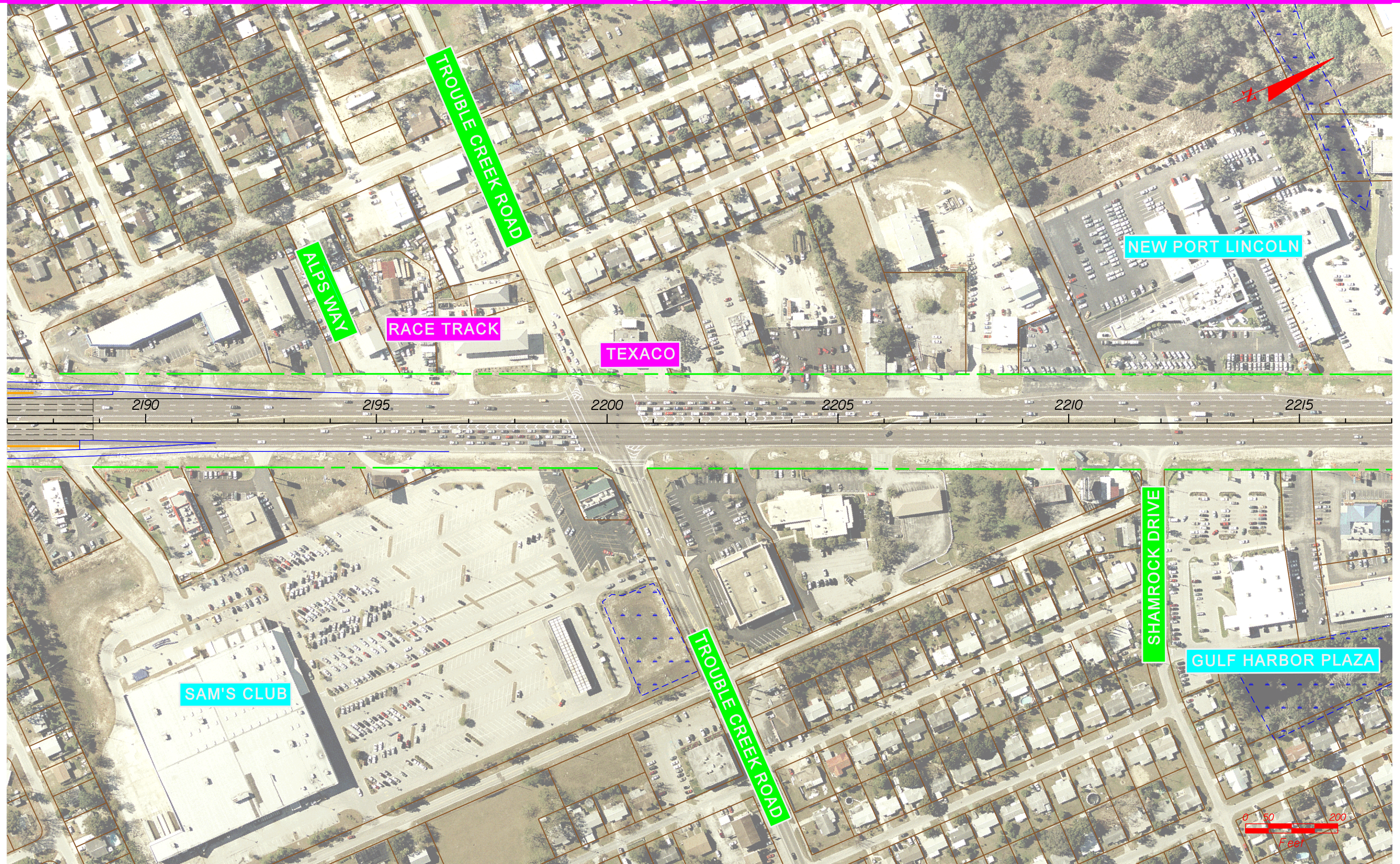
HDR HDR Engineering, Inc.
5426 Bay Center Drive, Suite 400
Tampa, FL 33609-3444
CERTIFICATE OF AUTHORIZATION 4213

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
S.R. 55	PASCO	418860-1-22-01

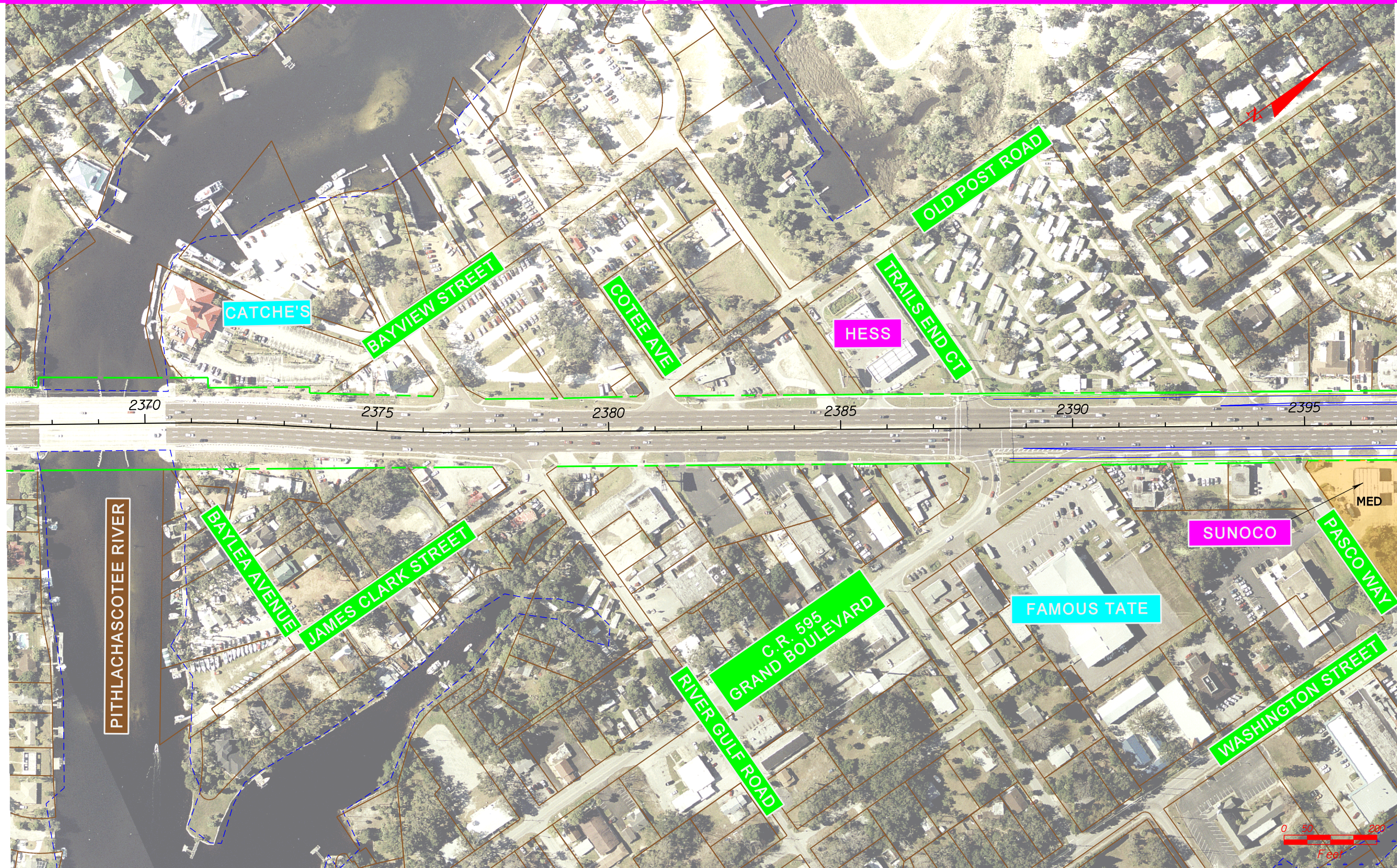
**S.R. 55 (U.S. 19)
CONCEPT PLANS
ALT. 3 - MOD. TUDI - W/ TEXAS U-TURNS**

SHEET NO. 2

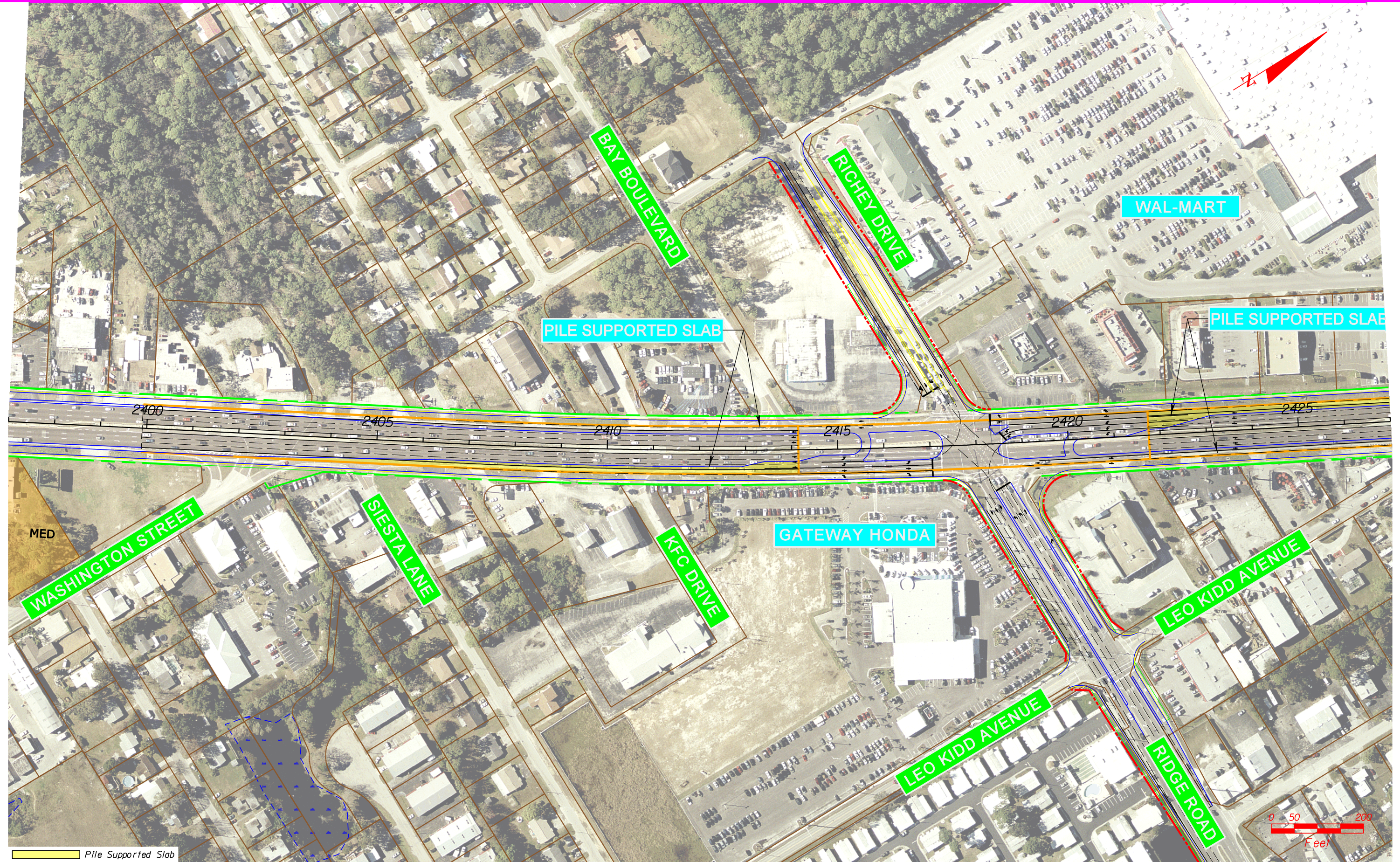
SEGMENT 1



LEGEND: Existing ROW Proposed ROW Proposed EOP Property Lines Bridge/Structure Contamination Sites Wetland Boundary 2075 Centerline Alignment FLORA AVENUE Place/Street Name BI Relocation	SEGMENT: ONE FLIGHT DATE: JANUARY 2006 HDR HDR Engineering, Inc. 5426 Bay Center Drive, Suite 400 Tampa, FL 33609-3444 CERTIFICATE OF AUTHORIZATION 4213	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION <table><tr><td>ROAD NO.</td><td>COUNTY</td><td>FINANCIAL PROJECT ID</td></tr><tr><td>S.R. 55</td><td>PASCO</td><td>418860-1-22-01</td></tr></table>			ROAD NO.	COUNTY	FINANCIAL PROJECT ID	S.R. 55	PASCO	418860-1-22-01	S.R. 55 (U.S. 19) CONCEPT PLANS ALT. 3 - MOD. TUDI - W/ TEXAS U-TURNS		SHEET NO. 3
		ROAD NO.	COUNTY	FINANCIAL PROJECT ID									
		S.R. 55	PASCO	418860-1-22-01									



LEGEND: Existing ROW Proposed ROW Proposed EOP Property Lines Bridge/Structure Contamination Sites Wetland Boundary Centerline Alignment Place/Street Name Relocation		SEGMENT: TWO FLIGHT DATE: JANUARY 2006	HDR Engineering, Inc. 5426 Bay Center Drive, Suite 400 Tampa, FL 33609-3444 CERTIFICATE OF AUTHORIZATION 4213	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION ROAD NO. COUNTY FINANCIAL PROJECT ID S.R. 55 PASCO 418860-1-22-01	S.R. 55 (U.S. 19) CONCEPT PLANS ALT. 3 - MOD. TUDI - W/ TEXAS U-TURNS	SHEET NO. 4
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LEGEND:

- Existing ROW
- Proposed ROW
- Proposed EOP
- Property Lines
- Bridge/Structure
- Contamination Sites
- Wetland Boundary
- Centerline Alignment
- Place/Street Name
- Relocation

SEGMENT: TWO

FLIGHT DATE: JANUARY 2006

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Tampa, FL 33609-3444
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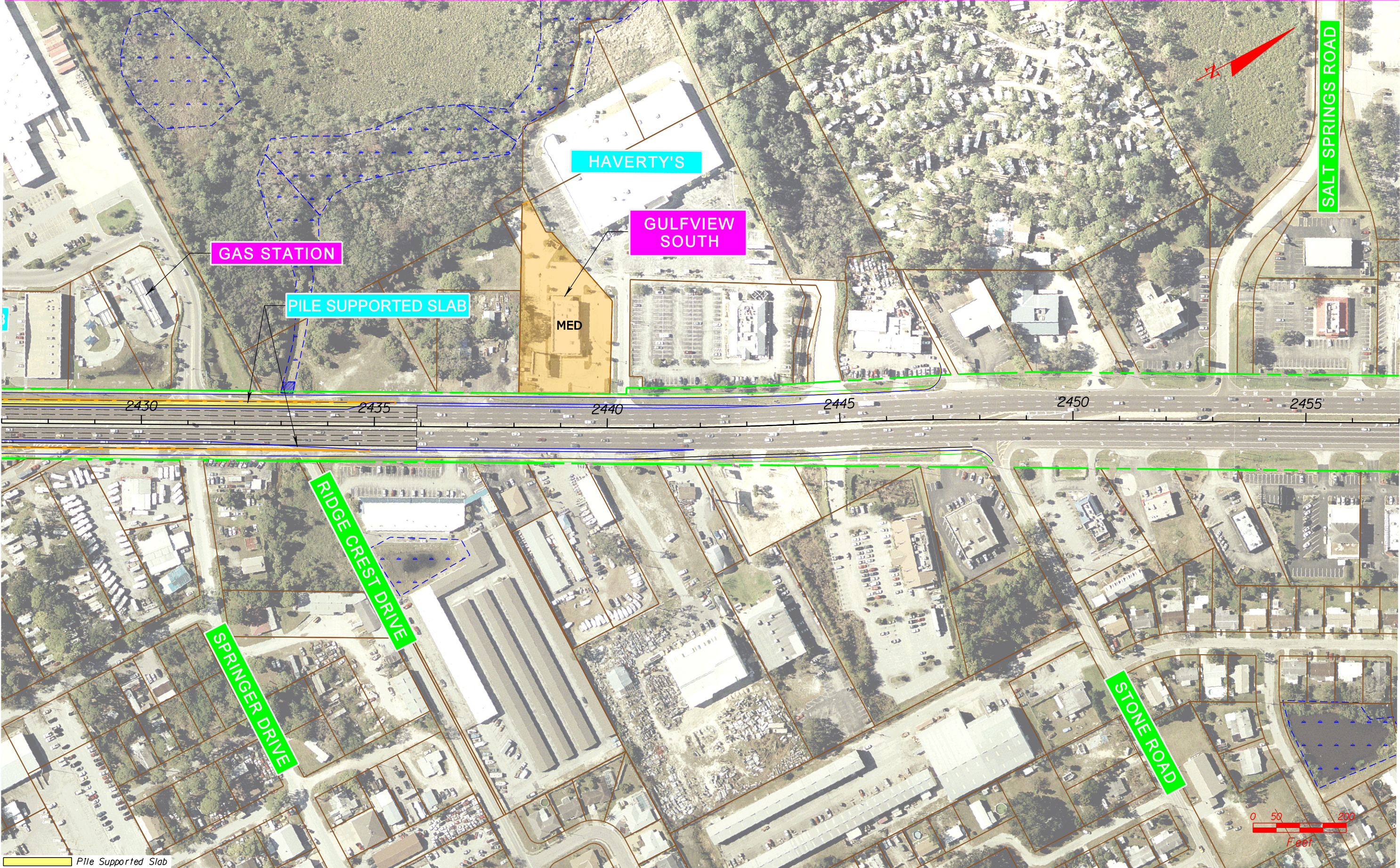
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
S.R. 55	PASCO	418860-1-22-01

S.R. 55 (U.S. 19)

CONCEPT PLANS

ALT. 3 - MOD. TUDI - W/ TEXAS U-TURNS

SHEET NO. 5



LEGEND:

	Existing ROW		Contamination Sites
	Proposed ROW		Wetland Boundary
	Proposed EOP		Centerline Alignment
	Property Lines		Place/Street Name
	Bridge/Structure		Relocation

**SEGMENT:
TWO & THREE**

**FLIGHT DATE:
JANUARY 2006**

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Tampa, FL 33609-3444
CERTIFICATE OF AUTHORIZATION 4213

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
S.R. 55	PASCO	418860-1-22-01

**S.R. 55 (U.S. 19)
CONCEPT PLANS**

ALT. 3 - MOD. TUDI - W/ TEXAS U-TURNS

SHEET NO.

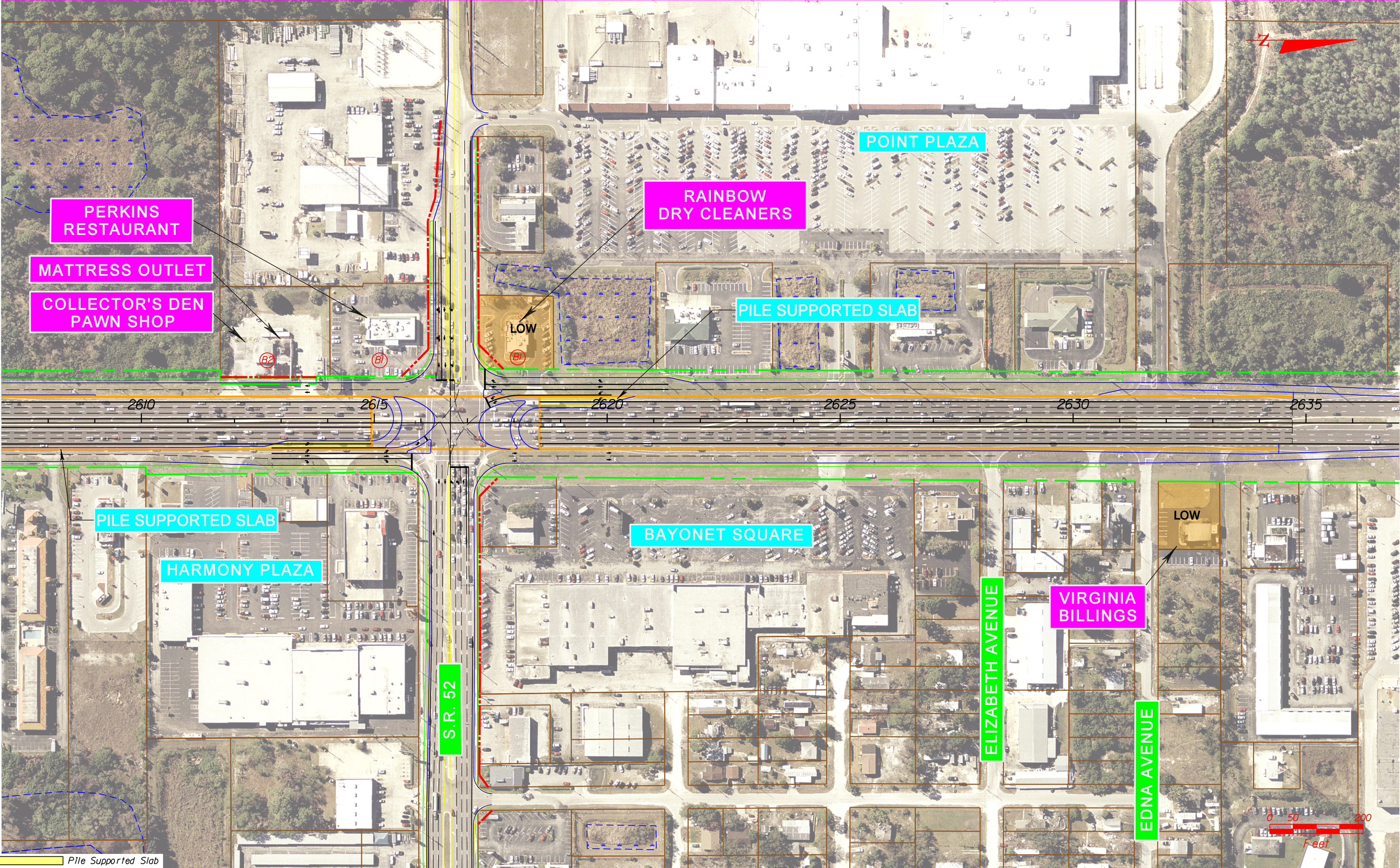
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SEGMENT 3



LEGEND: Existing ROW Proposed ROW Proposed EOP Property Lines Bridge/Structure		Contamination Sites Wetland Boundary Centerline Alignment Place/Street Name Relocation	SEGMENT: THREE FLIGHT DATE: JANUARY 2006	 HDR Engineering, Inc. 5426 Bay Center Drive, Suite 400 Tampa, FL 33609-3444 CERTIFICATE OF AUTHORIZATION 4213	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			S.R. 55 (U.S. 19) CONCEPT PLANS ALT. 3 - MOD. TUDI - W/ TEXAS U-TURNS	SHEET NO. 7
					ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					S.R. 55	PASCO	418860-1-22-01		

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LEGEND:

- Existing ROW
- Proposed ROW
- Proposed EOP
- Property Lines
- Bridge/Structure
- Contamination Sites
- Wetland Boundary
- Centerline Alignment
- Place/Street Name
- Relocation

SEGMENT: THREE & FOUR

FLIGHT DATE: JANUARY 2006

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CERTIFICATE OF AUTHORIZATION 4213

STATE OF FLORIDA

DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
S.R. 55	PASCO	418860-1-22-01

S.R. 55 (U.S. 19)

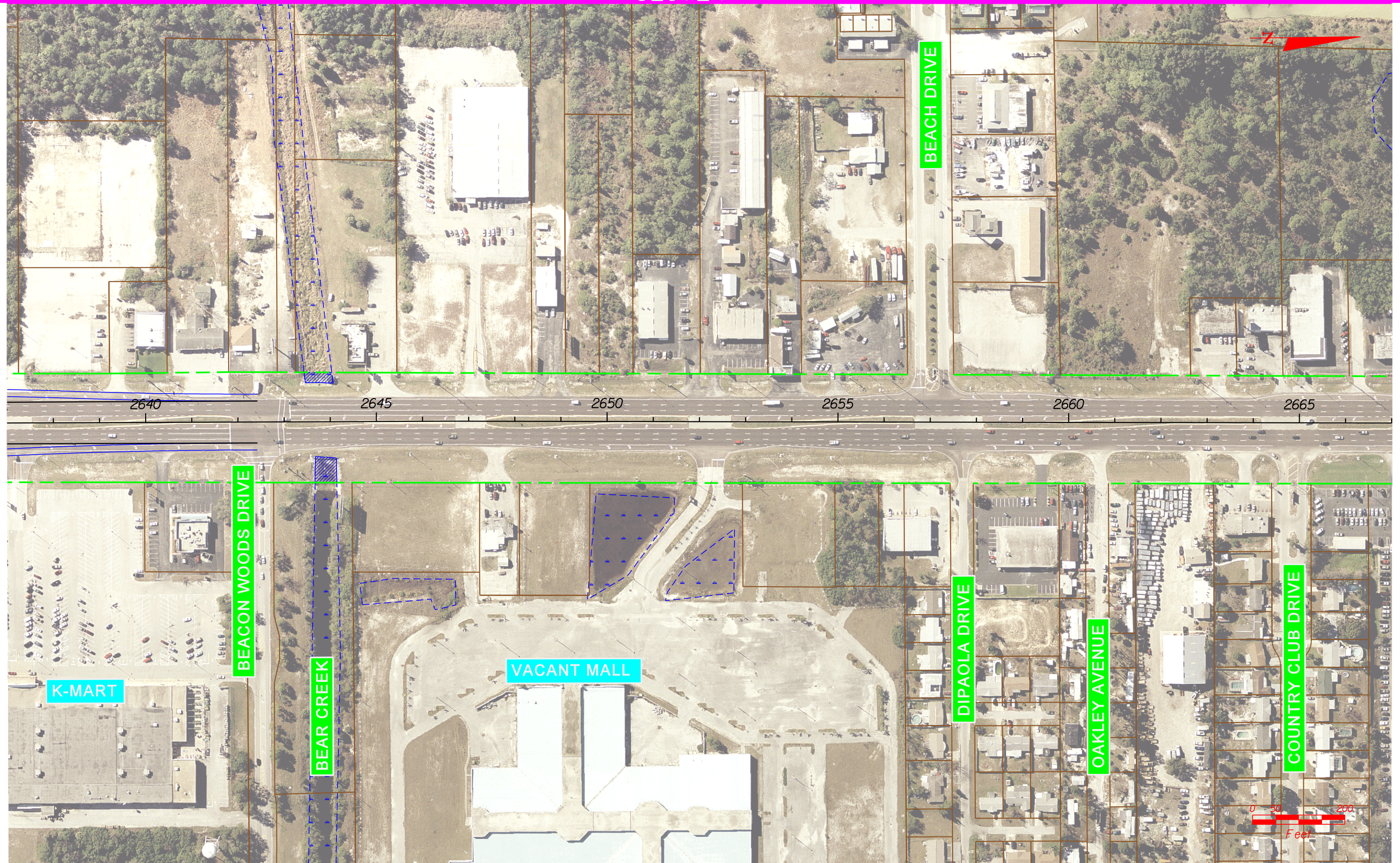
CONCEPT PLANS

ALT. 3 - MOD. TUDI - W/ TEXAS U-TURNS

SHEET NO.

8

SEGMENT 4



LEGEND:

- Existing ROW
- Proposed ROW
- Proposed EOP
- Property Lines
- Bridge/Structure

 Contamination Sites
 Wetland Boundary
 Centerline Alignment
 Place/Street Name
 Relocation

**SEGMENT:
FOUR**

**FLIGHT DATE:
JANUARY 2006**

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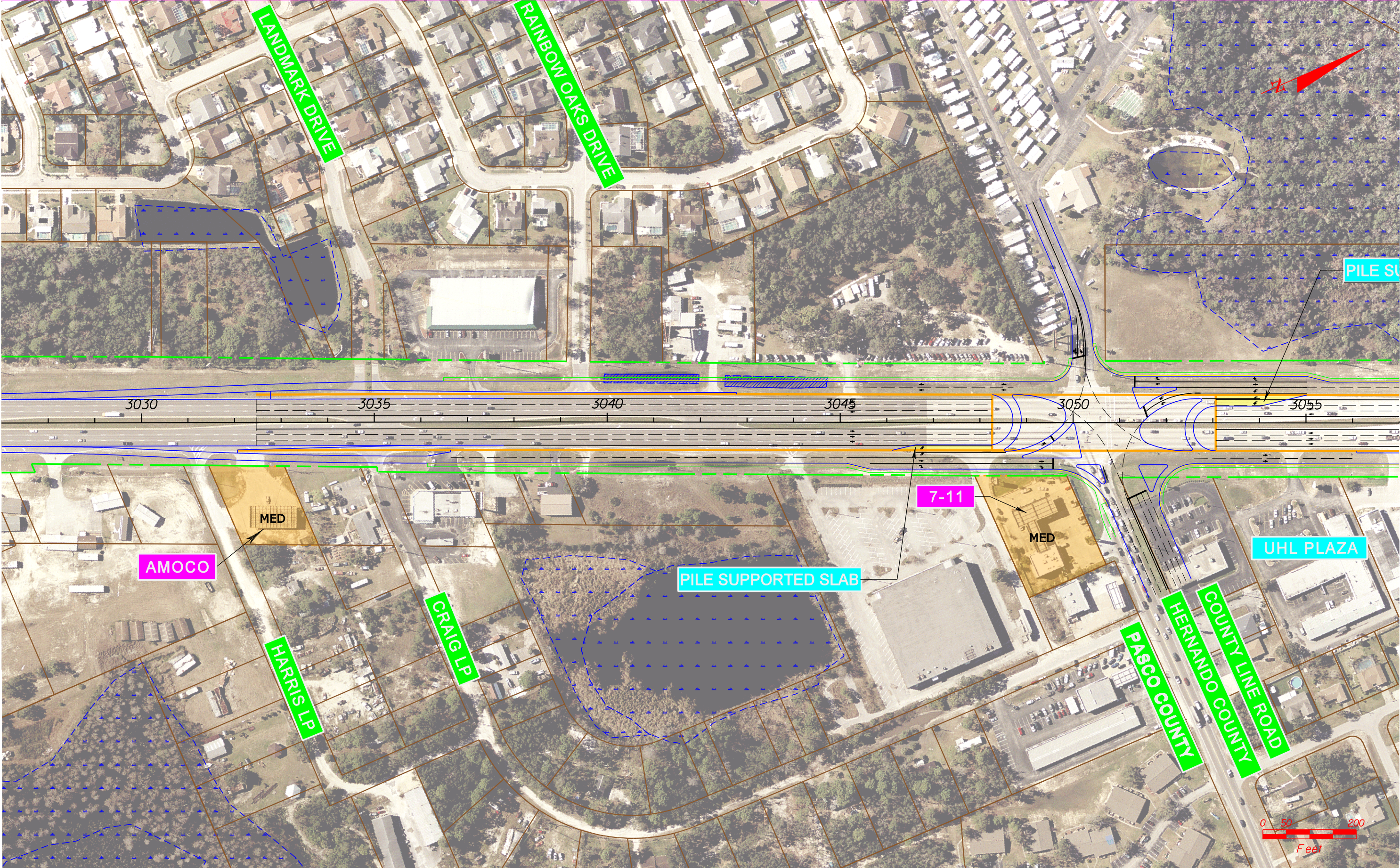
**STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION**

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
S.R. 55	PASCO	418860-1-22-01

S.R. 55 (U.S. 19)
CONCEPT PLANS
ALT. 3 - MOD. TUDI - W/ TEXAS U-TURNS

SHEET
NO.

9



LEGEND:

	Existing ROW		Contamination Sites
	Proposed ROW		Wetland Boundary
	Proposed EOP		Centerline Alignment
	Property Lines		Place/Street Name
	Bridge/Structure		Relocation

SEGMENT: FOUR

FLIGHT DATE: JANUARY 2006

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CERTIFICATE OF AUTHORIZATION 4213

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
S.R. 55	PASCO	418860-1-22-01

**S.R. 55 (U.S. 19)
CONCEPT PLANS
ALT. 3 - MOD. TUDI - W/ TEXAS U-TURNS**

SHEET NO. 10



LEGEND: Existing ROW Proposed ROW Proposed EOP Property Lines Bridge/Structure Contamination Sites Wetland Boundary 275 Centerline Alignment FLORA AVENUE Place/Street Name (B) Relocation	SEGMENT: FOUR FLIGHT DATE: JANUARY 2006	HDR HDR Engineering, Inc. HDR Engineering, Inc. 5426 Bay Center Drive, Suite 400 Tampa, FL 33609-3444 CERTIFICATE OF AUTHORIZATION 4213	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			S.R. 55 (U.S. 19) CONCEPT PLANS ALT. 3 - MOD. TUDI - W/ TEXAS U-TURNS	SHEET NO. 11
			ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
			S.R. 55	PASCO	418860-1-22-01		

Appendix A2

Engineer's Construction Cost Estimates

(Alternative 3 – Modified Tight Urban Diamond Interchange with Texas U-turns)

FDOT Long Range Estimating System - Production

R3: Project Details by Sequence Report

Project: 418860-2-52-01**Letting Date:** 07/2010**Description:** US 19 (SR 55) CONTINUOUS RIGHT TURN LANE**District:** 07**County:** 14 PASCO**Market Area:** 07**Units:** English**Contract Class:** 1 Lump Sum Project: N**Design/Build:** N**Project Length:** 19.673 MI**Project Manager:** PRD-ANN-JCI**Version 19 Project Grand Total****\$46,283,655.17****Description:** SR 54 INTERSECTION**Sequence:** 14 NDR - New Construction, Divided, Rural**Net Length:** 0.622 MI**Description:** SR 54/US 19 Interchange (MODIFIED TUDI). RECONSTRUCT 6 LANES ROADWAY, NEW OVERPASS BRIDGES, RETAINING WALL AND CONCRETE BARRIER (MAINLINE US 19)**Special Conditions:** INCLUDE 15% ADDITION PAV'T FOR INTERSECTION UNDER THE OVERPASS

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	100.00 / 100.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.069
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	110.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	0 to 1 / 0 to 1
Median Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	5.00 % / 5.00 %
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %
Alignment Number	2
Distance	0.242
Top of Structural Course For Begin Section	110.00
Top of Structural Course For End Section	130.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	0 to 1 / 0 to 1
Median Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	5.00 % / 5.00 %
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %
Alignment Number	3
Distance	0.242
Top of Structural Course For Begin Section	130.00
Top of Structural Course For End Section	110.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	0 to 1 / 0 to 1
Median Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	5.00 % / 5.00 %
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %

Roadway Cross Slope L/R 2.00 % / 2.00 %

Alignment Number 4
Distance 0.069
Top of Structural Course For Begin Section 110.00
Top of Structural Course For End Section 105.00
Horizontal Elevation For Begin Section 100.00
Horizontal Elevation For End Section 100.00
Front Slope L/R 0 to 1 / 0 to 1
Median Slope L/R 6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R 5.00 % / 5.00 %
Outside Shoulder Cross Slope L/R 6.00 % / 6.00 %
Roadway Cross Slope L/R 2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	15.08	AC	\$22,042.89	\$332,406.78
120-6	EMBANKMENT	218,409.10	CY	\$20.00	\$4,368,182.00
Earthwork Component Total					\$4,700,588.78

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	6
Roadway Pavement Width L/R	36.00 / 36.00
Structural Spread Rate	500
Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	STABILIZATION TYPE B	41,599.36	SY	\$4.99	\$207,580.81
285-715	BASE OPTIONAL (BASE GROUP 15)	26,754.96	SY	\$48.85	\$1,306,979.80
334-1-14	SUPERPAVE ASPH CONC (TRAFFIC D)	6,568.32	TN	\$105.00	\$689,673.60
337-7-5	ASPH CONC FC(INC BIT/RUBBER) (FC-5)	1,050.93	TN	\$125.00	\$131,366.25

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
109-71-5	FIELD OFFICE (1500 SQ FT)	720.00	DA	\$110.00	\$79,200.00

Turnouts/Crossovers Subcomponent

Description	Value
Asphalt Adjustment	15.00
Stabilization Code	N
Base Code	Y
Friction Course Code	Y

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-715	BASE OPTIONAL (BASE GROUP 15)	4,013.24	SY	\$48.85	\$196,046.77
334-1-14	SUPERPAVE ASPH CONC (TRAFFIC D)	985.25	TN	\$105.00	\$103,451.25
337-7-5	ASPH CONC FC(INC BIT/RUBBER) (FC-5)	157.64	TN	\$125.00	\$19,705.00

Pavement Marking Subcomponent

Description	Value
Solid Stripe No. of Stripes	4
Solid Stripe No. of Applications	2
Skip Stripe No. of Stripes	4
Skip Stripe No. of Applications	2
Top Layer Thermoplastic	Y

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	420.00	EA	\$4.67	\$1,961.40
710-21	TRAFFIC STRIPE SKIP (WHITE/BLACK)	2.49	GM	\$519.31	\$1,293.08
710-23-61	TRAFFIC STRIPE SOLID (WHITE/BLACK) (6")	2.49	NM	\$1,119.22	\$2,786.86
711-31	TRAFFIC STRIPE SKIP (THERMO) (WH)	2.49	GM	\$1,377.26	\$3,429.38
711-37-61	TRAF STRIPE SOLID (THERMO) (WH)(6")	2.49	NM	\$3,920.06	\$9,760.95
Roadway Component Total					\$2,753,235.15

SHOULDER COMPONENT**User Input Data**

Description	Value
Total Outside Shoulder Width L/R	12.00 / 12.00
Total Outside Shoulder Sod Width L/R	0.00 / 0.00
Paved Outside Shoulder Width L/R	10.00 / 10.00
Structural Spread Rate	220
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	O
Rumble Strips No. of Sides	2

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-704	BASE OPTIONAL (BASE GROUP 04)	7,538.97	SY	\$14.10	\$106,299.48
334-1-14	SUPERPAVE ASPH CONC (TRAFFIC D)	802.79	TN	\$105.00	\$84,292.95
337-7-5	ASPH CONC FC(INC BIT/RUBBER) (FC-5)	19.27	TN	\$125.00	\$2,408.75
546-72-51	RUMBLE STRIP (GROUND-IN) (16" MIN. W)	1.24	PM	\$1,047.15	\$1,298.47
Shoulder Component Total					\$194,299.65

MEDIAN COMPONENT**User Input Data**

Description	Value
Total Median Width	18.00
Sod Width	0.00
Total Median Shoulder Width L/R	9.00 / 9.00
Paved Median Shoulder Width L/R	9.00 / 9.00
Structural Spread Rate	220
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	O
Rumble Strips No. of Sides	2

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
285-704	BASE OPTIONAL (BASE GROUP 04)	6,809.16 SY	\$14.10	\$96,009.16
334-1-14	SUPERPAVE ASPH CONC (TRAFFIC D)	722.52 TN	\$105.00	\$75,864.60
337-7-5	ASPH CONC FC(INC BIT/RUBBER) (FC-5)	19.27 TN	\$125.00	\$2,408.75
521-1	BARRIER WALL CONCRETE	3,284.00 LF	\$119.28	\$391,715.52
546-72-51	RUMBLE STRIP (GROUND-IN) (16" MIN. W)	1.00 PM	\$1,047.15	\$1,047.15

EX-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
521-72-4	SHLDR CONC BARRIER WALL, RIGID RETAIN	6,160.52 LF	\$128.00	\$788,546.56

Median Component Total

\$1,355,591.74

DRAINAGE COMPONENT**Pay Items**

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II (ENDWALLS)	11.20 CY	\$1,156.47	\$12,952.46
425-1-551	INLETS (DT BOT) (TYPE E) (<10')	4.00 EA	\$3,530.62	\$14,122.48
430-172-101	PIPE CULV OPT MATL, ROUND, 0-24", CD	216.00 LF	\$108.04	\$23,336.64
430-172-102	PIPE CULV OPT MATL, ROUND, 25-36", CD	192.00 LF	\$112.55	\$21,609.60
430-174-101	PIPE CULV, OPT MATL, ROUND,0-24"SD	504.00 LF	\$100.00	\$50,400.00
430-984-129	MITERED END SECT (OPTIONAL RD) (24" SD)	25.00 EA	\$1,390.17	\$34,754.25

Drainage Component Total

\$157,175.43

SIGNING COMPONENT**Pay Items**

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
700-40-1	SIGN SINGLE POST (LESS THAN 12)	2.00 AS	\$262.26	\$524.52
700-40-2	SIGN SINGLE POST (12 - 25)	8.00 AS	\$743.45	\$5,947.60
700-41-10	SIGN MULTI POST (50 OR LESS)	2.00 AS	\$3,147.52	\$6,295.04
700-41-11	SIGN MULTI-POST (51-100)	2.00 AS	\$4,824.80	\$9,649.60

Signing Component Total

\$22,416.76

BRIDGES COMPONENT**Bridge BR 01**

Description	Value
Length	224.00
Width	57.00
Type	Overpass Bridge
Substructure Type	
Superstructure Type	
Cost Factor	1.65
Removal of existing structures area	0.00

Default Cost per SF	\$120.00
Factored Cost per SF	\$198.00
Final Cost per SF	\$205.10
Basic Bridge Cost	\$2,528,064.00
Description	

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
400-2-10	CONC CLASS II (APPROACH SLABS)	126.67 CY	\$535.13	\$67,784.92
415-1-9	REINF STEEL (APPROACH SLABS)	22,167.25 LB	\$1.03	\$22,832.27
Bridge BR 01 Total				\$2,618,681.19

Bridge BR 02

Description	Value
Length	472.00
Width	57.00
Type	Overpass Bridge
Substructure Type	
Superstructure Type	
Cost Factor	1.65
Removal of existing structures area	0.00
Default Cost per SF	\$120.00
Factored Cost per SF	\$198.00
Final Cost per SF	\$201.37
Basic Bridge Cost	\$5,326,992.00
Description	

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
400-2-10	CONC CLASS II (APPROACH SLABS)	126.67 CY	\$535.13	\$67,784.92
415-1-9	REINF STEEL (APPROACH SLABS)	22,167.25 LB	\$1.03	\$22,832.27
Bridge BR 02 Total				\$5,417,609.19

Bridge MAIN

Description	Value
Length	496.00
Width	115.00
Type	Overpass Bridge
Substructure Type	
Superstructure Type	
Cost Factor	1.65
Removal of existing structures area	0.00
Default Cost per SF	\$120.00
Factored Cost per SF	\$198.00
Final Cost per SF	\$201.21
Basic Bridge Cost	\$11,293,920.00
Description	

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
400-2-10	CONC CLASS II (APPROACH SLABS)	255.56 CY	\$535.13	\$136,757.82
415-1-9	REINF STEEL (APPROACH SLABS)	44,723.00 LB	\$1.03	\$46,064.69
Bridge MAIN Total				\$11,476,742.51
Bridges Component Total				\$19,513,032.89

RETAINING WALLS COMPONENT**Retaining Wall 1**

Description	Value
Length	1,278.00
Begin height	30.00
End Height	10.00
Multiplier	4

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
548-12	RETAINING WALL (PERMANENT)	102,240.00	SF	\$34.39	\$3,516,033.60

Retaining Wall 2

Description	Value
Length	115.00
Begin height	21.50
End Height	21.50
Multiplier	2

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
548-12	RETAINING WALL (PERMANENT)	4,945.00	SF	\$34.39	\$170,058.55

Retaining Wall 3

Description	Value
Length	1,197.00
Begin height	10.00
End Height	30.00
Multiplier	1

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
548-13	RETAINING WALL SYSTEM(TEMP) EXC BAR.	23,940.00	SF	\$15.22	\$364,366.80

Retaining Walls Component Total	\$4,050,458.96
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Sequence 14 Total	\$32,746,799.36
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Sequence: 15 NUU - New Construction, Undivided, Urban

Net 0.563 MI
Length:

Description: 3 LANE FRONTAGE RD WITH 6' S/W, MAST ARM SIGNAL (CALCULATED AS THREE LANE IN ONE DIRECTION)

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	0.00 / 54.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.563
Top of Structural Course For Begin Section	101.50
Top of Structural Course For End Section	101.50
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	3.69	AC	\$22,042.89	\$81,338.26
120-6	EMBANKMENT	1,680.09	CY	\$20.00	\$33,601.80
Earthwork Component Total					\$114,940.06

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	3
Roadway Pavement Width L/R	0.00 / 41.00
Structural Spread Rate	330
Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	STABILIZATION TYPE B	14,394.18	SY	\$4.99	\$71,826.96
285-709	BASE OPTIONAL (BASE GROUP 09)	13,542.03	SY	\$18.36	\$248,631.67
334-1-14	SUPERPAVE ASPH CONC (TRAFFIC D)	2,234.43	TN	\$105.00	\$234,615.15
337-7-5	ASPH CONC FC(INC BIT/RUBBER) (FC-5)	541.68	TN	\$125.00	\$67,710.00

Pavement Marking Subcomponent

Description	Value
Solid Stripe No. of Stripes	2
Solid Stripe No. of Applications	2
Skip Stripe No. of Stripes	2
Skip Stripe No. of Applications	2
Top Layer Thermoplastic	Y

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	304.00	EA	\$4.67	\$1,419.68
710-11-111	PAINTED PAVT	1.13	NM	\$1,117.04	\$1,262.26

710-11-331	MARK,STD,WHITE,SOLID,6" PAINTED PAVT MARK,STD,BLACK,SKIP,6"	1.13 GM	\$557.26	\$629.70
711-31	TRAFFIC STRIPE SKIP (THERMO) (WH)	1.13 GM	\$1,377.26	\$1,556.30
711-37-61	TRAF STRIPE SOLID (THERMO) (WH)(6")	1.13 NM	\$3,920.06	\$4,429.67
Roadway Component Total				\$632,081.39

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	0.00 / 10.25
Total Outside Shoulder Sod Width L/R	0.00 / 2.00
Sidewalk Width L/R	0.00 / 6.00

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
520-1-10	CURB & GUTTER CONC (TYPE F)	2,972.64 LF	\$27.59	\$82,015.14
522-1	SIDEWALK CONCRETE (4" THICK)	1,981.76 SY	\$50.00	\$99,088.00
575-1	SODDING	660.59 SY	\$2.43	\$1,605.23
Shoulder Component Total				\$182,708.37

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II (ENDWALLS)	10.13 CY	\$1,156.47	\$11,715.04
425-1-351	INLETS (CURB) (TYPE P-5) (<10')	21.00 EA	\$4,284.68	\$89,978.28
425-1-451	INLETS (CURB) (TYPE J-5) (<10')	6.00 EA	\$5,925.50	\$35,553.00
425-1-521	INLETS (DT BOT) (TYPE C) (<10')	3.00 EA	\$2,805.58	\$8,416.74
425-2-41	MANHOLES (P-7) (<10')	3.00 EA	\$3,369.58	\$10,108.74
430-171-101	PIPE CULV OPT MATL, ROUND, 0-24", SS	1,312.00 LF	\$100.00	\$131,200.00
430-171-103	PIPE CULV OPT MATL, ROUND, 37-48", SS	2,816.00 LF	\$175.75	\$494,912.00
430-172-102	PIPE CULV OPT MATL, ROUND, 25-36", CD	120.00 LF	\$112.55	\$13,506.00
570-1-2	PERFORMANCE TURF, SOD	171.15 SY	\$3.16	\$540.83
Drainage Component Total				\$795,930.63

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
700-40-1	SIGN SINGLE POST (LESS THAN 12)	4.00 AS	\$262.26	\$1,049.04
700-40-2	SIGN SINGLE POST (12 - 25)	2.00 AS	\$743.45	\$1,486.90
700-41-10	SIGN MULTI POST (50 OR LESS)	2.00 AS	\$3,147.52	\$6,295.04
Signing Component Total				\$8,830.98

SIGNALIZATIONS COMPONENT

Signalization 1**Description**

Type

Multiplier

Value

6 Lane Mast Arm

1

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-1-12	CONDUIT (F&I) (UNDERGROUND)	700.00	LF	\$7.55	\$5,285.00
630-1-14	CONDUIT (F&I) (UG - JACKED)	300.00	LF	\$18.34	\$5,502.00
632-7-1	CABLE (SIGNAL) (F&I)	1.00	PI	\$4,339.67	\$4,339.67
635-1-11	PULL & JUNC BOX (F&I) (PULL BOX)	22.00	EA	\$304.60	\$6,701.20
639-1-22	ELECTRIC POWER SVC (UNDERGROUND)	1.00	AS	\$1,449.78	\$1,449.78
639-2-1	ELECTRICAL SERVICE WIRE	60.00	LF	\$1.97	\$118.20
649-417-006	M/ARM(F&I/HL)(1ST(B7)2ND(0) POLE(Q6)	4.00	EA	\$35,700.24	\$142,800.96
650-51-311	SIGNAL TRAFFIC(F&I)(3 SECT 1 WAY)(STD)	16.00	AS	\$969.26	\$15,508.16
653-111	SIGNAL PEDESTRIAN (12" INCANDESCENT)	8.00	AS	\$400.00	\$3,200.00
659-101	SIGNAL HEAD AUX (BACK PLT 3 SECT)	10.00	EA	\$99.28	\$992.80
659-108	SIGNAL HEAD AUX (STEEL PEDESTAL)	4.00	EA	\$1,183.85	\$4,735.40
659-109	SGNL HEAD AUX (CONC PED TYPE II)	1.00	EA	\$925.70	\$925.70
660-1-102	LOOP DETECT INDUC (TYPE 2) (F&I)	20.00	EA	\$194.93	\$3,898.60
660-2-106	LOOP ASSEMBLY (F&I) (TYPE F)	20.00	AS	\$757.23	\$15,144.60
665-11	DET PED(F&I)(DET STA POLE OR CAB MTD)	8.00	EA	\$200.47	\$1,603.76
670-5-111	CNTL ASSEM ACT SS F&I NEMA PRE(ONE)	1.00	AS	\$21,113.17	\$21,113.17
700-48-19	SIGN PANEL (F & I) (16 - 100)	4.00	EA	\$1,449.37	\$5,797.48

Signalization 2**Description**

Type

Multiplier

Value

6 Lane Mast Arm

1

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-1-12	CONDUIT (F&I) (UNDERGROUND)	700.00	LF	\$7.55	\$5,285.00
630-1-14	CONDUIT (F&I) (UG - JACKED)	300.00	LF	\$18.34	\$5,502.00
632-7-1	CABLE (SIGNAL) (F&I)	1.00	PI	\$4,339.67	\$4,339.67
635-1-11	PULL & JUNC BOX (F&I) (PULL BOX)	22.00	EA	\$304.60	\$6,701.20
639-1-22	ELECTRIC POWER SVC (UNDERGROUND)	1.00	AS	\$1,449.78	\$1,449.78
639-2-1	ELECTRICAL SERVICE WIRE	60.00	LF	\$1.97	\$118.20
649-417-006	M/ARM(F&I/HL)(1ST(B7)2ND(0) POLE(Q6)	4.00	EA	\$35,700.24	\$142,800.96
650-51-311	SIGNAL TRAFFIC(F&I)(3 SECT 1 WAY)(STD)	16.00	AS	\$969.26	\$15,508.16
653-111	SIGNAL PEDESTRIAN (12" INCANDESCENT)	8.00	AS	\$400.00	\$3,200.00
659-101	SIGNAL HEAD AUX (BACK PLT 3 SECT)	10.00	EA	\$99.28	\$992.80
659-108	SIGNAL HEAD AUX (STEEL PEDESTAL)	4.00	EA	\$1,183.85	\$4,735.40

659-109	SGNL HEAD AUX (CONC PED TYPE II)	1.00 EA	\$925.70	\$925.70
660-1-102	LOOP DETECT INDUC (TYPE 2) (F&I)	20.00 EA	\$194.93	\$3,898.60
660-2-106	LOOP ASSEMBLY (F&I) (TYPE F)	20.00 AS	\$757.23	\$15,144.60
665-11	DET PED(F&I)(DET STA POLE OR CAB MTD)	8.00 EA	\$200.47	\$1,603.76
670-5-111	CNTL ASSEM ACT SS F&I NEMA PRE(ONE)	1.00 AS	\$21,113.17	\$21,113.17
700-48-19	SIGN PANEL (F & I) (16 - 100)	4.00 EA	\$1,449.37	\$5,797.48
Signalizations Component Total				\$478,232.96
Sequence 15 Total				\$2,212,724.39

Sequence: 16 NUU - New Construction, Undivided, Urban

Net 0.615 MI

Length:

Description: 2 LANE FRONTAGE RD WITH 6' S/W (CALCULATED AS TWO LANE IN ONE DIRECTION)

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	44.00 / 0.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.615
Top of Structural Course For Begin Section	101.50
Top of Structural Course For End Section	101.50
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	3.28	AC	\$22,042.89	\$72,300.68
120-6	EMBANKMENT	2,746.89	CY	\$20.00	\$54,937.80
Earthwork Component Total					\$127,238.48

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	2
Roadway Pavement Width L/R	30.00 / 0.00
Structural Spread Rate	330
Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	STABILIZATION TYPE B	11,754.86	SY	\$4.99	\$58,656.75
285-709	BASE OPTIONAL (BASE GROUP 09)	10,824.00	SY	\$18.36	\$198,728.64
334-1-14	SUPERPAVE ASPH CONC (TRAFFIC D)	1,785.96	TN	\$105.00	\$187,525.80
337-7-5	ASPH CONC FC(INC BIT/RUBBER) (FC-5)	432.96	TN	\$125.00	\$54,120.00

Pavement Marking Subcomponent

Description	Value
Solid Stripe No. of Stripes	2
Solid Stripe No. of Applications	2
Skip Stripe No. of Stripes	1
Skip Stripe No. of Applications	2
Top Layer Thermoplastic	Y

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	83.00	EA	\$4.67	\$387.61
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	1.23	NM	\$1,117.04	\$1,373.96

710-11-331	PAINTED PAVT MARK,STD,BLACK,SKIP,6"	0.62 GM	\$557.26	\$345.50
711-31	TRAFFIC STRIPE SKIP (THERMO) (WH)	0.62 GM	\$1,377.26	\$853.90
711-37-61	TRAF STRIPE SOLID (THERMO) (WH)(6")	1.23 NM	\$3,920.06	\$4,821.67
Roadway Component Total				\$506,813.83

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	10.25 / 0.00
Total Outside Shoulder Sod Width L/R	2.00 / 0.00
Sidewalk Width L/R	6.00 / 0.00

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
520-1-10	CURB & GUTTER CONC (TYPE F)	3,247.20 LF	\$27.59	\$89,590.25
522-1	SIDEWALK CONCRETE (4" THICK)	2,164.80 SY	\$50.00	\$108,240.00
570-1-2	PERFORMANCE TURF, SOD	721.60 SY	\$3.16	\$2,280.26
Shoulder Component Total				\$200,110.51

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II (ENDWALLS)	11.07 CY	\$1,156.47	\$12,802.12
425-1-351	INLETS (CURB) (TYPE P-5) (<10')	23.00 EA	\$4,284.68	\$98,547.64
425-1-451	INLETS (CURB) (TYPE J-5) (<10')	7.00 EA	\$5,925.50	\$41,478.50
425-1-521	INLETS (DT BOT) (TYPE C) (<10')	4.00 EA	\$2,805.58	\$11,222.32
425-2-41	MANHOLES (P-7) (<10')	4.00 EA	\$3,369.58	\$13,478.32
430-171-101	PIPE CULV OPT MATL, ROUND, 0-24", SS	1,432.00 LF	\$100.00	\$143,200.00
430-171-103	PIPE CULV OPT MATL, ROUND, 37-48", SS	3,080.00 LF	\$175.75	\$541,310.00
430-172-102	PIPE CULV OPT MATL, ROUND, 25-36", CD	128.00 LF	\$112.55	\$14,406.40
570-1-2	PERFORMANCE TURF, SOD	186.96 SY	\$3.16	\$590.79
Drainage Component Total				\$877,036.09

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
700-40-1	SIGN SINGLE POST (LESS THAN 12)	4.00 AS	\$262.26	\$1,049.04
700-40-2	SIGN SINGLE POST (12 - 25)	2.00 AS	\$743.45	\$1,486.90
700-41-10	SIGN MULTI POST (50 OR LESS)	2.00 AS	\$3,147.52	\$6,295.04
Signing Component Total				\$8,830.98

Sequence 16 Total \$1,720,029.89

Sequence: 17 RSU - Resurfacing, Undivided

Net 0.075 MI

Length:

Description: MILLING AND RESURFACING 3 LANES OF SR 54 WEST OF US 19. PROVIDE NEW S/W TIE INTO EXIST S/W

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	3
Roadway Pavement Width L/R	28.00 / 16.00
Structural Spread Rate	330
Friction Course Spread Rate	160

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
327-70-4	MILLING EXIST ASPH PAVT (3" AVG DEPTH)	1,936.00 SY	\$2.37	\$4,588.32
334-1-14	SUPERPAVE ASPH CONC (TRAFFIC D)	319.44 TN	\$105.00	\$33,541.20
337-7-35	ASPH CONC FC,TRAFFIC D,FC-12.5,RUBBER	154.88 TN	\$120.00	\$18,585.60

Pavement Marking Subcomponent

Description	Value
Solid Stripe No. of Stripes	3
Solid Stripe No. of Applications	2
Skip Stripe No. of Stripes	2
Skip Stripe No. of Applications	1
Top Layer Thermoplastic	Y

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	40.00 EA	\$4.67	\$186.80
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.22 NM	\$1,117.04	\$245.75
711-31	TRAFFIC STRIPE SKIP (THERMO) (WH)	0.15 GM	\$1,377.26	\$206.59
711-37-61	TRAF STRIPE SOLID (THERMO) (WH)(6")	0.22 NM	\$3,920.06	\$862.41

Roadway Component Total \$58,216.67

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	0.00 / 0.00
Total Outside Shoulder Sod Width L/R	0.00 / 0.00
Paved Outside Shoulder Width L/R	0.00 / 0.00
Structural Spread Rate	110
Friction Course Spread Rate	160
Total Width (T) / 8" Overlap (O)	T
Rumble Strips No. of Sides	0

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
520-1-10	CURB & GUTTER CONC (TYPE F)	800.00 LF	\$27.59	\$22,072.00

522-1	SIDEWALK CONCRETE (4" THICK)	518.00 SY	\$50.00	\$25,900.00
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Shoulder Component Total				\$47,972.00
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DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
430-94-1	DESILTING PIPE, 0 - 24"	60.00	LF	\$8.49	\$509.40
430-94-2	DESILTING PIPE, 25 - 36"	12.60	LF	\$14.52	\$182.95
Drainage Component Total					\$692.35

Sequence 17 Total	\$106,881.02
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Sequence: 18 RSD - Resurfacing, Divided

Net 0.088 MI
Length:

Description: MILLING AND RESURFACING 6 LANES OF SR 54 EAST OF US 19. PROVIDE NEW S/W TIE INTO EXIST S/W

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	6
Roadway Pavement Width L/R	41.00 / 53.00
Structural Spread Rate	330
Friction Course Spread Rate	160

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
327-70-4	MILLING EXIST ASPH PAVT (3" AVG DEPTH)	4,852.91	SY	\$2.37	\$11,501.40
334-1-14	SUPERPAVE ASPH CONC (TRAFFIC D)	800.73	TN	\$105.00	\$84,076.65
337-7-35	ASPH CONC FC,TRAFFIC D,FC-12.5,RUBBER	388.23	TN	\$120.00	\$46,587.60

Pavement Marking Subcomponent

Description	Value
Solid Stripe No. of Stripes	4
Solid Stripe No. of Applications	2
Skip Stripe No. of Stripes	4
Skip Stripe No. of Applications	2
Top Layer Thermoplastic	Y

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	59.00	EA	\$4.67	\$275.53
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.35	NM	\$1,117.04	\$390.96
710-11-331	PAINTED PAVT MARK,STD,BLACK,SKIP,6"	0.35	GM	\$557.26	\$195.04
711-31	TRAFFIC STRIPE SKIP (THERMO) (WH)	0.35	GM	\$1,377.26	\$482.04
711-37-61	TRAF STRIPE SOLID (THERMO) (WH)(6")	0.35	NM	\$3,920.06	\$1,372.02

Roadway Component Total \$144,881.24

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	0.00 / 0.00
Total Outside Shoulder Sod Width L/R	0.00 / 0.00
Paved Outside Shoulder Width L/R	0.00 / 0.00
Structural Spread Rate	110
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	T
Rumble Strips No. of Sides	0

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
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			Price	
520-1-10	CURB & GUTTER CONC (TYPE F)	930.00 LF	\$27.59	\$25,658.70
522-1	SIDEWALK CONCRETE (4" THICK)	518.00 SY	\$50.00	\$25,900.00
Shoulder Component Total				\$51,558.70

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
430-94-1	DESILTING PIPE, 0 - 24"	70.40 LF	\$8.49	\$597.70
430-94-2	DESILTING PIPE, 25 - 36"	26.05 LF	\$14.52	\$378.25
Drainage Component Total				\$975.95

Sequence 18 Total	\$197,415.89
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FDOT Long Range Estimating System - Production

R3: Project Details by Sequence Report

Project: 418860-2-52-01

Letting Date: 07/2010

Description: US 19 (SR 55) CONTINUOUS RIGHT TURN LANE

District: 07

County: 14 PASCO

Market Area: 07

Units: English

Contract Class: 1 Lump Sum Project: N

Design/Build: N

Project Length: 19.673 MI

Project Manager: PRD-ANN-JCI

Version 19 Project Grand Total

\$46,283,655.17

Description: SR 54 INTERSECTION

Project Sequences Subtotal

\$36,983,850.55

102-1 Maintenance of Traffic

8.00 %

\$2,958,708.04

101-1 Mobilization

10.00 %

\$3,994,255.86

Project Sequences Total

\$43,936,814.45

Project Unknowns

5.00 %

\$2,196,840.72

Non-Bid Components:

Pay item

Description

Quantity Unit

Unit Price

Extended Amount

999-25

INITIAL CONTINGENCY (DO NOT
BID)

LS

\$150,000.00

\$150,000.00

Project Non-Bid Subtotal

\$150,000.00

Version 19 Project Grand Total

\$46,283,655.17

APPENDIX A2-2
US HIGHWAY 19 (SR 55)/RIDGE ROAD INTERCHANGE – TEXAS U-TURN
ENGINEER’S COST ESTIMATE

FDOT Long Range Estimating System - Production

R3: Project Details by Sequence Report

Project: 418860-2-52-01

Letting Date: 07/2010

Description: US 19 (SR 55) CONTINUOUS RIGHT TURN LANE

District: 07

County: 14 PASCO

Market Area: 07

Units: English

Contract Class: 1 Lump Sum Project: N

Design/Build: N

Project Length: 19.673 MI

Project Manager: PRD-ANN-JCI

Version 20 Project Grand Total

\$90,674,194.46

Description: RIDGE RD INTERSECTION

Sequence: 19 NDR - New Construction, Divided, Rural

Net Length: 0.800 MI

Description: RIDGE RD/US 19 Interchange (MODIFIED TUDI). RECONSTRUCT 6 LANES ROADWAY, NEW OVERPASS BRIDGES, RETAINING WALL AND CONCRETE BARRIER (MAINLINE US 19)

Special Conditions: INCLUDE 30% ADDITION PAV'T FOR INTERSECTION UNDER THE OVERPASS

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	100.00 / 100.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.100
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	110.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	0 to 1 / 0 to 1
Median Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	5.00 % / 5.00 %
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %
Alignment Number	2
Distance	0.300
Top of Structural Course For Begin Section	110.00
Top of Structural Course For End Section	130.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	0 to 1 / 0 to 1
Median Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	5.00 % / 5.00 %
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %
Alignment Number	3
Distance	0.300
Top of Structural Course For Begin Section	130.00
Top of Structural Course For End Section	110.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	0 to 1 / 0 to 1
Median Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	5.00 % / 5.00 %

Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Alignment Number	4
Distance	0.100
Top of Structural Course For Begin Section	110.00
Top of Structural Course For End Section	105.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	0 to 1 / 0 to 1
Median Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	5.00 % / 5.00 %
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	19.39	AC	\$22,042.89	\$427,411.64
120-6	EMBANKMENT	274,639.78	CY	\$20.00	\$5,492,795.60
Earthwork Component Total					\$5,920,207.24

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	6
Roadway Pavement Width L/R	36.00 / 36.00
Structural Spread Rate	500
Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	STABILIZATION TYPE B	53,504.00	SY	\$4.99	\$266,984.96
285-715	BASE OPTIONAL (BASE GROUP 15)	34,411.52	SY	\$48.85	\$1,681,002.75
334-1-14	SUPERPAVE ASPH CONC (TRAFFIC D)	8,448.00	TN	\$105.00	\$887,040.00
337-7-5	ASPH CONC FC(INC BIT/RUBBER) (FC-5)	1,351.68	TN	\$125.00	\$168,960.00

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
109-71-5	FIELD OFFICE (1500 SQ FT)	720.00	DA	\$110.00	\$79,200.00

Turnouts/Crossovers Subcomponent

Description	Value
Asphalt Adjustment	30.00
Stabilization Code	N
Base Code	Y
Friction Course Code	Y

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-715	BASE OPTIONAL (BASE GROUP 15)	10,323.46	SY	\$48.85	\$504,301.02
334-1-14	SUPERPAVE ASPH CONC (TRAFFIC D)	2,534.40	TN	\$105.00	\$266,112.00
337-7-5	ASPH CONC FC(INC BIT/RUBBER) (FC-5)	405.50	TN	\$125.00	\$50,687.50

Pavement Marking Subcomponent

Description	Value
Solid Stripe No. of Stripes	4
Solid Stripe No. of Applications	2
Skip Stripe No. of Stripes	4
Skip Stripe No. of Applications	2
Top Layer Thermoplastic	Y

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	540.00	EA	\$4.67	\$2,521.80
710-21	TRAFFIC STRIPE SKIP (WHITE/BLACK)	3.20	GM	\$519.31	\$1,661.79
710-23-61	TRAFFIC STRIPE SOLID (WHITE/BLACK) (6")	3.20	NM	\$1,119.22	\$3,581.50
711-31	TRAFFIC STRIPE SKIP (THERMO) (WH)	3.20	GM	\$1,377.26	\$4,407.23
711-37-61	TRAF STRIPE SOLID (THERMO) (WH)(6")	3.20	NM	\$3,920.06	\$12,544.19

Roadway Component Total

\$3,929,004.75

SHOULDER COMPONENT**User Input Data**

Description	Value
Total Outside Shoulder Width L/R	12.00 / 12.00
Total Outside Shoulder Sod Width L/R	0.00 / 0.00
Paved Outside Shoulder Width L/R	10.00 / 10.00
Structural Spread Rate	220
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	O
Rumble Strips No. of Sides	2

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-704	BASE OPTIONAL (BASE GROUP 04)	9,696.43	SY	\$14.10	\$136,719.66
334-1-14	SUPERPAVE ASPH CONC (TRAFFIC D)	1,032.53	TN	\$105.00	\$108,415.65
337-7-5	ASPH CONC FC(INC BIT/RUBBER) (FC-5)	24.78	TN	\$125.00	\$3,097.50
546-72-51	RUMBLE STRIP (GROUND-IN) (16" MIN. W)	1.60	PM	\$1,047.15	\$1,675.44

Erosion Control**Pay Items**

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-4	MOWING	2.56	AC	\$70.37	\$180.15
104-10-2	SYNTHETIC BALES	2,534.40	LF	\$12.35	\$31,299.84
104-11	TURBIDITY BARRIER FLOATING	200.00	LF	\$8.86	\$1,772.00
104-12	TURBIDITY BARRIER STAKED	200.00	LF	\$3.86	\$772.00
104-13-1	SILT FENCE STAKED (TYPE III)	8,448.00	LF	\$1.25	\$10,560.00
104-15	PREVENTION DEVICE SOIL TRACKING	1.00	EA	\$1,963.18	\$1,963.18

Shoulder Component Total

\$296,455.42

MEDIAN COMPONENT**User Input Data**

Description	Value
Total Median Width	18.00
Sod Width	0.00
Total Median Shoulder Width L/R	9.00 / 9.00
Paved Median Shoulder Width L/R	9.00 / 9.00
Structural Spread Rate	220
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	O
Rumble Strips No. of Sides	2

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
285-704	BASE OPTIONAL (BASE GROUP 04)	8,757.76 SY	\$14.10	\$123,484.42
334-1-14	SUPERPAVE ASPH CONC (TRAFFIC D)	929.28 TN	\$105.00	\$97,574.40
337-7-5	ASPH CONC FC(INC BIT/RUBBER) (FC-5)	24.78 TN	\$125.00	\$3,097.50
521-1	BARRIER WALL CONCRETE	3,384.00 LF	\$119.28	\$403,643.52
546-72-51	RUMBLE STRIP (GROUND-IN) (16" MIN. W)	2.00 PM	\$1,047.15	\$2,094.30

EX-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
521-72-4	SHLDR CONC BARRIER WALL, RIGID RETAIN	8,400.00 LF	\$128.00	\$1,075,200.00

Median Component Total

\$1,705,094.14

DRAINAGE COMPONENT**Pay Items**

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II (ENDWALLS)	14.40 CY	\$1,156.47	\$16,653.17
425-1-551	INLETS (DT BOT) (TYPE E) (<10')	5.00 EA	\$3,530.62	\$17,653.10
430-172-101	PIPE CULV OPT MATL, ROUND, 0-24", CD	272.00 LF	\$108.04	\$29,386.88
430-172-102	PIPE CULV OPT MATL, ROUND, 25-36", CD	240.00 LF	\$112.55	\$27,012.00
430-174-101	PIPE CULV, OPT MATL, ROUND, 0-24"SD	640.00 LF	\$100.00	\$64,000.00
430-984-129	MITERED END SECT (OPTIONAL RD) (24" SD)	32.00 EA	\$1,390.17	\$44,485.44
524-1-1	DITCH PAVT CONC (3")	1,600.00 SY	\$56.47	\$90,352.00
570-1-2	PERFORMANCE TURF, SOD	563.20 SY	\$3.16	\$1,779.71

Drainage Component Total

\$291,322.30

SIGNING COMPONENT**Pay Items**

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
700-20-11	SINGLE POST SIGN, F&I, LESS THAN 12 SF	2.00 AS	\$247.26	\$494.52
700-20-12	SINGLE POST SIGN, F&I, 12-20 SF	20.00 AS	\$1,081.00	\$21,620.00
700-21-11	MULTI- POST SIGN, F&I, 50 OR <	2.00 AS	\$3,827.50	\$7,655.00
700-21-12	MULTI- POST SIGN, F&I, 51-100	5.00 AS	\$4,997.84	\$24,989.20

BRIDGES COMPONENT**Bridge BR 01**

Description	Value
Length	1,350.00
Width	57.00
Type	Overpass Bridge
Substructure Type	
Superstructure Type	
Cost Factor	1.65
Removal of existing structures area	0.00
Default Cost per SF	\$120.00
Factored Cost per SF	\$198.00
Final Cost per SF	\$199.18
Basic Bridge Cost	\$15,236,100.00
Description	

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
400-2-10	CONC CLASS II (APPROACH SLABS)	126.67 CY	\$535.13	\$67,784.92
415-1-9	REINF STEEL (APPROACH SLABS)	22,167.25 LB	\$1.03	\$22,832.27
Bridge BR 01 Total				\$15,326,717.19

Bridge BR 02

Description	Value
Length	1,450.00
Width	57.00
Type	Overpass Bridge
Substructure Type	
Superstructure Type	
Cost Factor	1.65
Removal of existing structures area	0.00
Default Cost per SF	\$120.00
Factored Cost per SF	\$198.00
Final Cost per SF	\$199.10
Basic Bridge Cost	\$16,364,700.00
Description	

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
400-2-10	CONC CLASS II (APPROACH SLABS)	126.67 CY	\$535.13	\$67,784.92
415-1-9	REINF STEEL (APPROACH SLABS)	22,167.25 LB	\$1.03	\$22,832.27
Bridge BR 02 Total				\$16,455,317.19

Bridge MAIN

Description	Value
Length	760.00
Width	113.00
Type	Overpass Bridge
Substructure Type	
Superstructure Type	
Cost Factor	1.65
Removal of existing structures area	0.00
Default Cost per SF	\$120.00

Factored Cost per SF	\$198.00
Final Cost per SF	\$200.09
Basic Bridge Cost	\$17,004,240.00
Description	

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
400-2-10	CONC CLASS II (APPROACH SLABS)	251.11 CY	\$535.13	\$134,376.49
415-1-9	REINF STEEL (APPROACH SLABS)	43,944.25 LB	\$1.03	\$45,262.58
Bridge MAIN Total				\$17,183,879.07
Bridges Component Total				\$48,965,913.45

RETAINING WALLS COMPONENT

Retaining Wall 1

Description	Value
Length	1,584.00
Begin height	30.00
End Height	10.00
Multiplier	4

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
548-12	RETAINING WALL (PERMANENT)	126,720.00 SF	\$34.39	\$4,357,900.80

Retaining Wall 2

Description	Value
Length	103.50
Begin height	21.50
End Height	21.50
Multiplier	2

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
548-12	RETAINING WALL (PERMANENT)	4,450.50 SF	\$34.39	\$153,052.70

Retaining Wall 3

Description	Value
Length	6,000.00
Begin height	10.00
End Height	30.00
Multiplier	1

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
548-13	RETAINING WALL SYSTEM(TEMP) EXC BAR.	120,000.00 SF	\$15.22	\$1,826,400.00

Retaining Walls Component Total \$6,337,353.50

Sequence 19 Total \$67,500,109.52

Sequence: 20 NUU - New Construction, Undivided, Urban

Net 0.642 MI
Length:

Description: 3 LANE FRONTAGE RD WITH 6' S/W, MAST ARM SIGNAL (CALCULATED AS THREE LANE IN ONE DIRECTION)

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	0.00 / 54.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.642
Top of Structural Course For Begin Section	101.50
Top of Structural Course For End Section	101.50
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	4.20	AC	\$22,042.89	\$92,580.14
120-6	EMBANKMENT	133.08	CY	\$20.00	\$2,661.60
Earthwork Component Total					\$95,241.74

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	3
Roadway Pavement Width L/R	0.00 / 41.00
Structural Spread Rate	330
Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	STABILIZATION TYPE B	16,413.97	SY	\$4.99	\$81,905.71
285-709	BASE OPTIONAL (BASE GROUP 09)	15,442.24	SY	\$18.36	\$283,519.53
334-1-14	SUPERPAVE ASPH CONC (TRAFFIC D)	2,547.97	TN	\$105.00	\$267,536.85
337-7-5	ASPH CONC FC(INC BIT/RUBBER) (FC-5)	617.69	TN	\$125.00	\$77,211.25

Pavement Marking Subcomponent

Description	Value
Solid Stripe No. of Stripes	2
Solid Stripe No. of Applications	2
Skip Stripe No. of Stripes	2
Skip Stripe No. of Applications	2
Top Layer Thermoplastic	Y

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	347.00	EA	\$4.67	\$1,620.49
710-11-111	PAINTED PAVT	1.28	NM	\$1,117.04	\$1,429.81

710-11-331	MARK,STD,WHITE,SOLID,6" PAINTED PAVT MARK,STD,BLACK,SKIP,6"	1.28 GM	\$557.26	\$713.29
711-31	TRAFFIC STRIPE SKIP (THERMO) (WH)	1.28 GM	\$1,377.26	\$1,762.89
711-37-61	TRAF STRIPE SOLID (THERMO) (WH)(6")	1.28 NM	\$3,920.06	\$5,017.68
Roadway Component Total				\$720,717.50

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	0.00 / 0.00
Total Outside Shoulder Sod Width L/R	0.00 / 0.00
Sidewalk Width L/R	0.00 / 0.00

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
520-1-10	CURB & GUTTER CONC (TYPE F)	5,731.00 LF	\$27.59	\$158,118.29
522-1	SIDEWALK CONCRETE (4" THICK)	3,821.00 SY	\$50.00	\$191,050.00
570-1-2	PERFORMANCE TURF, SOD	1,274.00 SY	\$3.16	\$4,025.84
Shoulder Component Total				\$353,194.13

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II (ENDWALLS)	11.56 CY	\$1,156.47	\$13,368.79
425-1-351	INLETS (CURB) (TYPE P-5) (<10')	24.00 EA	\$4,284.68	\$102,832.32
425-1-451	INLETS (CURB) (TYPE J-5) (<10')	7.00 EA	\$5,925.50	\$41,478.50
425-1-521	INLETS (DT BOT) (TYPE C) (<10')	4.00 EA	\$2,805.58	\$11,222.32
425-2-41	MANHOLES (P-7) (<10')	4.00 EA	\$3,369.58	\$13,478.32
430-171-101	PIPE CULV OPT MATL, ROUND, 0-24", SS	1,496.00 LF	\$100.00	\$149,600.00
430-171-103	PIPE CULV OPT MATL, ROUND, 37-48", SS	3,216.00 LF	\$175.75	\$565,212.00
430-172-102	PIPE CULV OPT MATL, ROUND, 25-36", CD	136.00 LF	\$112.55	\$15,306.80
570-1-2	PERFORMANCE TURF, SOD	195.17 SY	\$3.16	\$616.74
Drainage Component Total				\$913,115.79

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
700-40-1	SIGN SINGLE POST (LESS THAN 12)	4.00 AS	\$262.26	\$1,049.04
700-40-2	SIGN SINGLE POST (12 - 25)	2.00 AS	\$743.45	\$1,486.90
700-41-10	SIGN MULTI POST (50 OR LESS)	2.00 AS	\$3,147.52	\$6,295.04
Signing Component Total				\$8,830.98

SIGNALIZATIONS COMPONENT

Signalization 1**Description**

Type

Multiplier

Value

6 Lane Mast Arm

1

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-1-12	CONDUIT (F&I) (UNDERGROUND)	700.00	LF	\$7.55	\$5,285.00
630-1-14	CONDUIT (F&I) (UG - JACKED)	300.00	LF	\$18.34	\$5,502.00
632-7-1	CABLE (SIGNAL) (F&I)	1.00	PI	\$4,339.67	\$4,339.67
635-1-11	PULL & JUNC BOX (F&I) (PULL BOX)	22.00	EA	\$304.60	\$6,701.20
639-1-22	ELECTRIC POWER SVC (UNDERGROUND)	1.00	AS	\$1,449.78	\$1,449.78
639-2-1	ELECTRICAL SERVICE WIRE	60.00	LF	\$1.97	\$118.20
649-417-006	M/ARM(F&I/HL)(1ST(B7)2ND(0) POLE(Q6)	4.00	EA	\$35,700.24	\$142,800.96
650-51-311	SIGNAL TRAFFIC(F&I)(3 SECT 1 WAY)(STD)	16.00	AS	\$969.26	\$15,508.16
653-111	SIGNAL PEDESTRIAN (12" INCANDESCENT)	8.00	AS	\$400.00	\$3,200.00
659-101	SIGNAL HEAD AUX (BACK PLT 3 SECT)	10.00	EA	\$99.28	\$992.80
659-108	SIGNAL HEAD AUX (STEEL PEDESTAL)	4.00	EA	\$1,183.85	\$4,735.40
659-109	SGNL HEAD AUX (CONC PED TYPE II)	1.00	EA	\$925.70	\$925.70
660-1-102	LOOP DETECT INDUC (TYPE 2) (F&I)	20.00	EA	\$194.93	\$3,898.60
660-2-106	LOOP ASSEMBLY (F&I) (TYPE F)	20.00	AS	\$757.23	\$15,144.60
665-11	DET PED(F&I)(DET STA POLE OR CAB MTD)	8.00	EA	\$200.47	\$1,603.76
670-5-111	CNTL ASSEM ACT SS F&I NEMA PRE(ONE)	1.00	AS	\$21,113.17	\$21,113.17
700-48-19	SIGN PANEL (F & I) (16 - 100)	4.00	EA	\$1,449.37	\$5,797.48

Signalization 2**Description**

Type

Multiplier

Value

6 Lane Mast Arm

1

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-1-12	CONDUIT (F&I) (UNDERGROUND)	700.00	LF	\$7.55	\$5,285.00
630-1-14	CONDUIT (F&I) (UG - JACKED)	300.00	LF	\$18.34	\$5,502.00
632-7-1	CABLE (SIGNAL) (F&I)	1.00	PI	\$4,339.67	\$4,339.67
635-1-11	PULL & JUNC BOX (F&I) (PULL BOX)	22.00	EA	\$304.60	\$6,701.20
639-1-22	ELECTRIC POWER SVC (UNDERGROUND)	1.00	AS	\$1,449.78	\$1,449.78
639-2-1	ELECTRICAL SERVICE WIRE	60.00	LF	\$1.97	\$118.20
649-417-006	M/ARM(F&I/HL)(1ST(B7)2ND(0) POLE(Q6)	4.00	EA	\$35,700.24	\$142,800.96
650-51-311	SIGNAL TRAFFIC(F&I)(3 SECT 1 WAY)(STD)	16.00	AS	\$969.26	\$15,508.16
653-111	SIGNAL PEDESTRIAN (12" INCANDESCENT)	8.00	AS	\$400.00	\$3,200.00
659-101	SIGNAL HEAD AUX (BACK PLT 3 SECT)	10.00	EA	\$99.28	\$992.80
659-108	SIGNAL HEAD AUX (STEEL PEDESTAL)	4.00	EA	\$1,183.85	\$4,735.40

659-109	SGNL HEAD AUX (CONC PED TYPE II)	1.00 EA	\$925.70	\$925.70
660-1-102	LOOP DETECT INDUC (TYPE 2) (F&I)	20.00 EA	\$194.93	\$3,898.60
660-2-106	LOOP ASSEMBLY (F&I) (TYPE F)	20.00 AS	\$757.23	\$15,144.60
665-11	DET PED(F&I)(DET STA POLE OR CAB MTD)	8.00 EA	\$200.47	\$1,603.76
670-5-111	CNTL ASSEM ACT SS F&I NEMA PRE(ONE)	1.00 AS	\$21,113.17	\$21,113.17
700-48-19	SIGN PANEL (F & I) (16 - 100)	4.00 EA	\$1,449.37	\$5,797.48
Signalizations Component Total				\$478,232.96
Sequence 20 Total				\$2,569,333.10

Sequence: 21 NUU - New Construction, Undivided, Urban

Net 0.691 MI

Length:

Description: 2 LANE FRONTAGE RD WITH 6' S/W (CALCULATED AS TWO LANE IN ONE DIRECTION)

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	44.00 / 0.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.691
Top of Structural Course For Begin Section	101.50
Top of Structural Course For End Section	101.50
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	3.69	AC	\$22,042.89	\$81,338.26
120-6	EMBANKMENT	825.64	CY	\$20.00	\$16,512.80
Earthwork Component Total					\$97,851.06

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	2
Roadway Pavement Width L/R	30.00 / 0.00
Structural Spread Rate	330
Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	STABILIZATION TYPE B	13,207.50	SY	\$4.99	\$65,905.42
285-709	BASE OPTIONAL (BASE GROUP 09)	12,161.60	SY	\$18.36	\$223,286.98
334-1-14	SUPERPAVE ASPH CONC (TRAFFIC D)	2,006.66	TN	\$105.00	\$210,699.30
337-7-5	ASPH CONC FC(INC BIT/RUBBER) (FC-5)	486.46	TN	\$125.00	\$60,807.50

Pavement Marking Subcomponent

Description	Value
Solid Stripe No. of Stripes	2
Solid Stripe No. of Applications	2
Skip Stripe No. of Stripes	1
Skip Stripe No. of Applications	2
Top Layer Thermoplastic	Y

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	93.00	EA	\$4.67	\$434.31
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	1.38	NM	\$1,117.04	\$1,541.52

710-11-331	PAINTED PAVT MARK,STD,BLACK,SKIP,6"	0.69 GM	\$557.26	\$384.51
711-31	TRAFFIC STRIPE SKIP (THERMO) (WH)	0.69 GM	\$1,377.26	\$950.31
711-37-61	TRAF STRIPE SOLID (THERMO) (WH)(6")	1.38 NM	\$3,920.06	\$5,409.68
Roadway Component Total				\$569,419.54

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	0.00 / 0.00
Total Outside Shoulder Sod Width L/R	0.00 / 0.00
Sidewalk Width L/R	0.00 / 0.00

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
520-1-10	CURB & GUTTER CONC (TYPE F)	5,591.28 LF	\$27.59	\$154,263.42
522-1	SIDEWALK CONCRETE (4" THICK)	3,728.00 SY	\$50.00	\$186,400.00
570-1-2	PERFORMANCE TURF, SOD	1,242.50 SY	\$3.16	\$3,926.30
Shoulder Component Total				\$344,589.72

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II (ENDWALLS)	12.44 CY	\$1,156.47	\$14,386.49
425-1-351	INLETS (CURB) (TYPE P-5) (<10')	25.00 EA	\$4,284.68	\$107,117.00
425-1-451	INLETS (CURB) (TYPE J-5) (<10')	7.00 EA	\$5,925.50	\$41,478.50
425-1-521	INLETS (DT BOT) (TYPE C) (<10')	4.00 EA	\$2,805.58	\$11,222.32
425-2-41	MANHOLES (P-7) (<10')	4.00 EA	\$3,369.58	\$13,478.32
430-171-101	PIPE CULV OPT MATL, ROUND, 0-24", SS	1,608.00 LF	\$100.00	\$160,800.00
430-171-103	PIPE CULV OPT MATL, ROUND, 37-48", SS	3,456.00 LF	\$175.75	\$607,392.00
430-172-102	PIPE CULV OPT MATL, ROUND, 25-36", CD	144.00 LF	\$112.55	\$16,207.20
570-1-2	PERFORMANCE TURF, SOD	210.06 SY	\$3.16	\$663.79
Drainage Component Total				\$972,745.62

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
700-40-1	SIGN SINGLE POST (LESS THAN 12)	4.00 AS	\$262.26	\$1,049.04
700-40-2	SIGN SINGLE POST (12 - 25)	2.00 AS	\$743.45	\$1,486.90
700-41-10	SIGN MULTI POST (50 OR LESS)	2.00 AS	\$3,147.52	\$6,295.04
Signing Component Total				\$8,830.98

Sequence 21 Total \$1,993,436.92

Sequence: 22 RSU - Resurfacing, Undivided

Net Length: 0.117 MI

Description: MILLING AND RESURFACING 4 LANES OF RIDGE RD WEST OF US 19. PROVIDE NEW S/W TIE INTO EXIST S/W

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	4
Roadway Pavement Width L/R	40.00 / 16.00
Structural Spread Rate	330
Friction Course Spread Rate	160

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
327-70-4	MILLING EXIST ASPH PAVT (3" AVG DEPTH)	3,843.84 SY	\$2.37	\$9,109.90
334-1-14	SUPERPAVE ASPH CONC (TRAFFIC D)	634.23 TN	\$105.00	\$66,594.15
337-7-35	ASPH CONC FC,TRAFFIC D,FC-12.5,RUBBER	307.51 TN	\$120.00	\$36,901.20

Pavement Marking Subcomponent

Description	Value
Solid Stripe No. of Stripes	3
Solid Stripe No. of Applications	2
Skip Stripe No. of Stripes	3
Skip Stripe No. of Applications	1
Top Layer Thermoplastic	Y

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	79.00 EA	\$4.67	\$368.93
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.35 NM	\$1,117.04	\$390.96
711-31	TRAFFIC STRIPE SKIP (THERMO) (WH)	0.35 GM	\$1,377.26	\$482.04
711-37-61	TRAF STRIPE SOLID (THERMO) (WH)(6")	0.35 NM	\$3,920.06	\$1,372.02

Roadway Component Total \$115,219.20

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	0.00 / 0.00
Total Outside Shoulder Sod Width L/R	0.00 / 0.00
Paved Outside Shoulder Width L/R	0.00 / 0.00
Structural Spread Rate	110
Friction Course Spread Rate	160
Total Width (T) / 8" Overlap (O)	T
Rumble Strips No. of Sides	0

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
520-1-10	CURB & GUTTER CONC (TYPE F)	800.00 LF	\$27.59	\$22,072.00

522-1	SIDEWALK CONCRETE (4" THICK)	519.00 SY	\$50.00	\$25,950.00
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Shoulder Component Total				\$48,022.00
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DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
430-94-1	DESILTING PIPE, 0 - 24"	93.60	LF	\$8.49	\$794.66
430-94-2	DESILTING PIPE, 25 - 36"	19.66	LF	\$14.52	\$285.46
Drainage Component Total					\$1,080.12

Sequence 22 Total				\$164,321.32
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Sequence: 23 RSU - Resurfacing, Undivided

Net 0.163 MI
Length:

Description: MILLING AND RESURFACING 6 LANES OF RIDGE RD EAST OF US 19. PROVIDE NEW S/W TIE INTO EXIST S/W

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	6
Roadway Pavement Width L/R	40.00 / 52.00
Structural Spread Rate	330
Friction Course Spread Rate	160

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
327-70-4	MILLING EXIST ASPH PAVT (3" AVG DEPTH)	8,797.65	SY	\$2.37	\$20,850.43
334-1-14	SUPERPAVE ASPH CONC (TRAFFIC D)	1,451.61	TN	\$105.00	\$152,419.05
337-7-35	ASPH CONC FC,TRAFFIC D,FC-12.5,RUBBER	703.81	TN	\$120.00	\$84,457.20

Pavement Marking Subcomponent

Description	Value
Solid Stripe No. of Stripes	4
Solid Stripe No. of Applications	2
Skip Stripe No. of Stripes	5
Skip Stripe No. of Applications	2
Top Layer Thermoplastic	Y

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	154.00	EA	\$4.67	\$719.18
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.65	NM	\$1,117.04	\$726.08
710-11-331	PAINTED PAVT MARK,STD,BLACK,SKIP,6"	0.82	GM	\$557.26	\$456.95
711-31	TRAFFIC STRIPE SKIP (THERMO) (WH)	0.82	GM	\$1,377.26	\$1,129.35
711-37-61	TRAF STRIPE SOLID (THERMO) (WH)(6")	0.65	NM	\$3,920.06	\$2,548.04

Roadway Component Total \$263,306.28

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	0.00 / 0.00
Total Outside Shoulder Sod Width L/R	0.00 / 0.00
Paved Outside Shoulder Width L/R	0.00 / 0.00
Structural Spread Rate	110
Friction Course Spread Rate	160
Total Width (T) / 8" Overlap (O)	T
Rumble Strips No. of Sides	0

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
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			Price	
520-1-10	CURB & GUTTER CONC (TYPE F)	1,000.00 LF	\$27.59	\$27,590.00
522-1	SIDEWALK CONCRETE (4" THICK)	1,014.00 SY	\$50.00	\$50,700.00
Shoulder Component Total				\$78,290.00

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
430-94-1	DESILTING PIPE, 0 - 24"	130.40 LF	\$8.49	\$1,107.10
430-94-2	DESILTING PIPE, 25 - 36"	27.38 LF	\$14.52	\$397.56
Drainage Component Total				\$1,504.66

Sequence 23 Total	\$343,100.94
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FDOT Long Range Estimating System - Production

R3: Project Details by Sequence Report

Project: 418860-2-52-01

Letting Date: 07/2010

Description: US 19 (SR 55) CONTINUOUS RIGHT TURN LANE

District: 07

County: 14 PASCO

Market Area: 07

Units: English

Contract Class: 1 Lump Sum Project: N

Design/Build: N

Project Length: 19.673 MI

Project Manager: PRD-ANN-JCI

Version 20 Project Grand Total

\$90,674,194.46

Description: RIDGE RD INTERSECTION

Project Sequences Subtotal**\$72,570,301.80**

102-1 Maintenance of Traffic

8.00 %

\$5,805,624.14

101-1 Mobilization

10.00 %

\$7,837,592.59

Project Sequences Total**\$86,213,518.53**

Project Unknowns

5.00 %

\$4,310,675.93

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

999-25

INITIAL CONTINGENCY (DO NOT
BID)

LS

\$150,000.00

\$150,000.00

Project Non-Bid Subtotal

\$150,000.00

Version 20 Project Grand Total

\$90,674,194.46

APPENDIX A2-3
US HIGHWAY 19 (SR 55)/SR 52 INTERCHANGE – TEXAS U-TURN
ENGINEER’S COST ESTIMATE

FDOT Long Range Estimating System - Production

R3: Project Details by Sequence Report

Project: 418860-2-52-01**Letting Date:** 07/2010**Description:** US 19 (SR 55) CONTINUOUS RIGHT TURN LANE**District:** 07**County:** 14 PASCO**Market Area:** 07**Units:** English**Contract Class:** 1 Lump Sum Project: N**Design/Build:** N**Project Length:** 19.673 MI**Project Manager:** PRD-ANN-JCI**Version 21 Project Grand Total****\$52,836,256.16****Description:** SR 52**Sequence:** 24 NDR - New Construction, Divided, Rural**Net Length:** 0.632 MI**Description:** SR 52/US 19 Interchange (MODIFIED TUDI). RECONSTRUCT 6 LANES ROADWAY, NEW OVERPASS BRIDGES, RETAINING WALL AND CONCRETE BARRIER (MAINLINE US 19)**Special Conditions:** INCLUDE 10% ADDITION PAV'T FOR INTERSECTION UNDER THE OVERPASS

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	100.00 / 100.00
Incidental Clearing and Grubbing Area	0.00

Alignment Number	1
Distance	0.069
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	110.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	0 to 1 / 0 to 1
Median Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	5.00 % / 5.00 %
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Alignment Number	2
Distance	0.247
Top of Structural Course For Begin Section	110.00
Top of Structural Course For End Section	130.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	0 to 1 / 0 to 1
Median Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	5.00 % / 5.00 %
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Alignment Number	3
Distance	0.247
Top of Structural Course For Begin Section	130.00
Top of Structural Course For End Section	110.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	0 to 1 / 0 to 1
Median Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	5.00 % / 5.00 %
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %

Roadway Cross Slope L/R 2.00 % / 2.00 %

Alignment Number 4
Distance 0.069
Top of Structural Course For Begin Section 110.00
Top of Structural Course For End Section 105.00
Horizontal Elevation For Begin Section 100.00
Horizontal Elevation For End Section 100.00
Front Slope L/R 0 to 1 / 0 to 1
Median Slope L/R 6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R 5.00 % / 5.00 %
Outside Shoulder Cross Slope L/R 6.00 % / 6.00 %
Roadway Cross Slope L/R 2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	15.32	AC	\$22,042.89	\$337,697.07
120-6	EMBANKMENT	222,538.76	CY	\$20.00	\$4,450,775.20
Earthwork Component Total					\$4,788,472.27

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	6
Roadway Pavement Width L/R	36.00 / 36.00
Structural Spread Rate	500
Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	STABILIZATION TYPE B	42,268.16	SY	\$4.99	\$210,918.12
285-715	BASE OPTIONAL (BASE GROUP 15)	27,185.10	SY	\$48.85	\$1,327,992.14
334-1-14	SUPERPAVE ASPH CONC (TRAFFIC D)	6,673.92	TN	\$105.00	\$700,761.60
337-7-5	ASPH CONC FC(INC BIT/RUBBER) (FC-5)	1,067.83	TN	\$125.00	\$133,478.75

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
109-71-5	FIELD OFFICE (1500 SQ FT)	720.00	DA	\$110.00	\$79,200.00

Turnouts/Crossovers Subcomponent

Description	Value
Asphalt Adjustment	10.00
Stabilization Code	N
Base Code	Y
Friction Course Code	Y

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-715	BASE OPTIONAL (BASE GROUP 15)	2,718.51	SY	\$48.85	\$132,799.21
334-1-14	SUPERPAVE ASPH CONC (TRAFFIC D)	667.39	TN	\$105.00	\$70,075.95
337-7-5	ASPH CONC FC(INC BIT/RUBBER) (FC-5)	106.78	TN	\$125.00	\$13,347.50

Pavement Marking Subcomponent

Description	Value
Solid Stripe No. of Stripes	4
Solid Stripe No. of Applications	2
Skip Stripe No. of Stripes	4
Skip Stripe No. of Applications	2
Top Layer Thermoplastic	Y

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	427.00	EA	\$4.67	\$1,994.09
710-21	TRAFFIC STRIPE SKIP (WHITE/BLACK)	2.53	GM	\$519.31	\$1,313.85
710-23-61	TRAFFIC STRIPE SOLID (WHITE/BLACK) (6")	2.53	NM	\$1,119.22	\$2,831.63
711-31	TRAFFIC STRIPE SKIP (THERMO) (WH)	2.53	GM	\$1,377.26	\$3,484.47
711-37-61	TRAF STRIPE SOLID (THERMO) (WH)(6")	2.53	NM	\$3,920.06	\$9,917.75
Roadway Component Total					\$2,688,115.06

SHOULDER COMPONENT**User Input Data**

Description	Value
Total Outside Shoulder Width L/R	12.00 / 12.00
Total Outside Shoulder Sod Width L/R	0.00 / 0.00
Paved Outside Shoulder Width L/R	10.00 / 10.00
Structural Spread Rate	220
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	O
Rumble Strips No. of Sides	2

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-704	BASE OPTIONAL (BASE GROUP 04)	7,660.18	SY	\$14.10	\$108,008.54
334-1-14	SUPERPAVE ASPH CONC (TRAFFIC D)	815.70	TN	\$105.00	\$85,648.50
337-7-5	ASPH CONC FC(INC BIT/RUBBER) (FC-5)	19.58	TN	\$125.00	\$2,447.50
546-72-51	RUMBLE STRIP (GROUND-IN) (16" MIN. W)	1.26	PM	\$1,047.15	\$1,319.41
Shoulder Component Total					\$197,423.95

MEDIAN COMPONENT**User Input Data**

Description	Value
Total Median Width	18.00
Sod Width	0.00
Total Median Shoulder Width L/R	9.00 / 9.00
Paved Median Shoulder Width L/R	9.00 / 9.00
Structural Spread Rate	220
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	O
Rumble Strips No. of Sides	2

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
285-704	BASE OPTIONAL (BASE GROUP 04)	6,918.63 SY	\$14.10	\$97,552.68
334-1-14	SUPERPAVE ASPH CONC (TRAFFIC D)	734.13 TN	\$105.00	\$77,083.65
337-7-5	ASPH CONC FC(INC BIT/RUBBER) (FC-5)	19.58 TN	\$125.00	\$2,447.50
521-1	BARRIER WALL CONCRETE	3,336.00 LF	\$119.28	\$397,918.08
546-72-51	RUMBLE STRIP (GROUND-IN) (16" MIN. W)	1.00 PM	\$1,047.15	\$1,047.15

EX-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
521-72-4	SHLDR CONC BARRIER WALL, RIGID RETAIN	4,931.00 LF	\$128.00	\$631,168.00

Median Component Total

\$1,207,217.06

DRAINAGE COMPONENT**Pay Items**

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II (ENDWALLS)	11.38 CY	\$1,156.47	\$13,160.63
425-1-551	INLETS (DT BOT) (TYPE E) (<10')	4.00 EA	\$3,530.62	\$14,122.48
430-172-101	PIPE CULV OPT MATL, ROUND, 0-24", CD	216.00 LF	\$108.04	\$23,336.64
430-172-102	PIPE CULV OPT MATL, ROUND, 25-36", CD	192.00 LF	\$112.55	\$21,609.60
430-174-101	PIPE CULV, OPT MATL, ROUND,0-24"SD	512.00 LF	\$100.00	\$51,200.00
430-984-129	MITERED END SECT (OPTIONAL RD) (24" SD)	26.00 EA	\$1,390.17	\$36,144.42
524-1-1	DITCH PAVT CONC (3")	1,264.00 SY	\$56.47	\$71,378.08
570-1-2	PERFORMANCE TURF, SOD	444.93 SY	\$3.16	\$1,405.98

Drainage Component Total

\$232,357.83

SIGNING COMPONENT**Pay Items**

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
700-40-1	SIGN SINGLE POST (LESS THAN 12)	2.00 AS	\$262.26	\$524.52
700-40-2	SIGN SINGLE POST (12 - 25)	8.00 AS	\$743.45	\$5,947.60
700-41-10	SIGN MULTI POST (50 OR LESS)	2.00 AS	\$3,147.52	\$6,295.04
700-41-11	SIGN MULTI-POST (51-100)	2.00 AS	\$4,824.80	\$9,649.60

Signing Component Total

\$22,416.76

BRIDGES COMPONENT**Bridge BR 01**

Description	Value
Length	1,206.00
Width	57.00
Type	Overpass Bridge
Substructure Type	
Superstructure Type	

Cost Factor	1.65
Removal of existing structures area	0.00
Default Cost per SF	\$120.00
Factored Cost per SF	\$198.00
Final Cost per SF	\$199.32
Basic Bridge Cost	\$13,610,916.00
Description	

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
400-2-10	CONC CLASS II (APPROACH SLABS)	126.67 CY	\$535.13	\$67,784.92
415-1-9	REINF STEEL (APPROACH SLABS)	22,167.25 LB	\$1.03	\$22,832.27
Bridge BR 01 Total				\$13,701,533.19

Bridge BR 02

Description	Value
Length	206.00
Width	57.00
Type	Overpass Bridge
Substructure Type	
Superstructure Type	
Cost Factor	1.65
Removal of existing structures area	0.00
Default Cost per SF	\$120.00
Factored Cost per SF	\$198.00
Final Cost per SF	\$205.72
Basic Bridge Cost	\$2,324,916.00
Description	

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
400-2-10	CONC CLASS II (APPROACH SLABS)	126.67 CY	\$535.13	\$67,784.92
415-1-9	REINF STEEL (APPROACH SLABS)	22,167.25 LB	\$1.03	\$22,832.27
Bridge BR 02 Total				\$2,415,533.19

Bridge MAIN

Description	Value
Length	360.00
Width	113.00
Type	Overpass Bridge
Substructure Type	
Superstructure Type	
Cost Factor	1.65
Removal of existing structures area	0.00
Default Cost per SF	\$120.00
Factored Cost per SF	\$198.00
Final Cost per SF	\$202.42
Basic Bridge Cost	\$8,054,640.00
Description	

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
400-2-10	CONC CLASS II (APPROACH SLABS)	251.11 CY	\$535.13	\$134,376.49
415-1-9	REINF STEEL (APPROACH SLABS)	43,944.25 LB	\$1.03	\$45,262.58
Bridge MAIN Total				\$8,234,279.07

RETAINING WALLS COMPONENT

Retaining Wall 1

Description	Value
Length	1,304.00
Begin height	30.00
End Height	10.00
Multiplier	4

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
548-12	RETAINING WALL (PERMANENT)	104,320.00	SF	\$34.39	\$3,587,564.80

Retaining Wall 2

Description	Value
Length	113.00
Begin height	21.50
End Height	21.50
Multiplier	2

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
548-12	RETAINING WALL (PERMANENT)	4,859.00	SF	\$34.39	\$167,101.01

Retaining Wall 3

Description	Value
Length	1,520.00
Begin height	10.00
End Height	30.00
Multiplier	1

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
548-13	RETAINING WALL SYSTEM(TEMP) EXC BAR.	30,400.00	SF	\$15.22	\$462,688.00

Retaining Walls Component Total	\$4,217,353.82
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Sequence 24 Total

\$37,704,702.20

Sequence: 25 NUU - New Construction, Undivided, Urban

Net 0.542 MI
Length:

Description: 3 LANE FRONTAGE RD WITH 6' S/W, MAST ARM SIGNAL (CALCULATED AS THREE LANE IN ONE DIRECTION)

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	0.00 / 54.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.542
Top of Structural Course For Begin Section	101.50
Top of Structural Course For End Section	101.50
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	3.55	AC	\$22,042.89	\$78,252.26
120-6	EMBANKMENT	112.35	CY	\$20.00	\$2,247.00
Earthwork Component Total					\$80,499.26

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	3
Roadway Pavement Width L/R	0.00 / 41.00
Structural Spread Rate	330
Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	STABILIZATION TYPE B	13,857.28	SY	\$4.99	\$69,147.83
285-709	BASE OPTIONAL (BASE GROUP 09)	13,036.91	SY	\$18.36	\$239,357.67
334-1-14	SUPERPAVE ASPH CONC (TRAFFIC D)	2,151.09	TN	\$105.00	\$225,864.45
337-7-5	ASPH CONC FC(INC BIT/RUBBER) (FC-5)	521.48	TN	\$125.00	\$65,185.00

Pavement Marking Subcomponent

Description	Value
Solid Stripe No. of Stripes	2
Solid Stripe No. of Applications	2
Skip Stripe No. of Stripes	2
Skip Stripe No. of Applications	2
Top Layer Thermoplastic	Y

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	293.00	EA	\$4.67	\$1,368.31
710-11-111	PAINTED PAVT	1.08	NM	\$1,117.04	\$1,206.40

710-11-331	MARK,STD,WHITE,SOLID,6" PAINTED PAVT MARK,STD,BLACK,SKIP,6"	1.08 GM	\$557.26	\$601.84
711-31	TRAFFIC STRIPE SKIP (THERMO) (WH)	1.08 GM	\$1,377.26	\$1,487.44
711-37-61	TRAF STRIPE SOLID (THERMO) (WH)(6")	1.08 NM	\$3,920.06	\$4,233.66
Roadway Component Total				\$608,452.60

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	0.00 / 0.00
Total Outside Shoulder Sod Width L/R	0.00 / 0.00
Sidewalk Width L/R	0.00 / 0.00

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
520-1-10	CURB & GUTTER CONC (TYPE F)	2,626.50 LF	\$27.59	\$72,465.13
522-1	SIDEWALK CONCRETE (4" THICK)	1,751.00 SY	\$50.00	\$87,550.00
570-1-2	PERFORMANCE TURF, SOD	584.00 SY	\$3.16	\$1,845.44
Shoulder Component Total				\$161,860.58

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II (ENDWALLS)	9.76 CY	\$1,156.47	\$11,287.15
425-1-351	INLETS (CURB) (TYPE P-5) (<10')	20.00 EA	\$4,284.68	\$85,693.60
425-1-451	INLETS (CURB) (TYPE J-5) (<10')	6.00 EA	\$5,925.50	\$35,553.00
425-1-521	INLETS (DT BOT) (TYPE C) (<10')	3.00 EA	\$2,805.58	\$8,416.74
425-2-41	MANHOLES (P-7) (<10')	3.00 EA	\$3,369.58	\$10,108.74
430-171-101	PIPE CULV OPT MATL, ROUND, 0-24", SS	1,264.00 LF	\$100.00	\$126,400.00
430-171-103	PIPE CULV OPT MATL, ROUND, 37-48", SS	2,712.00 LF	\$175.75	\$476,634.00
430-172-102	PIPE CULV OPT MATL, ROUND, 25-36", CD	112.00 LF	\$112.55	\$12,605.60
570-1-2	PERFORMANCE TURF, SOD	164.77 SY	\$3.16	\$520.67
Drainage Component Total				\$767,219.50

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
700-40-1	SIGN SINGLE POST (LESS THAN 12)	4.00 AS	\$262.26	\$1,049.04
700-40-2	SIGN SINGLE POST (12 - 25)	2.00 AS	\$743.45	\$1,486.90
700-41-10	SIGN MULTI POST (50 OR LESS)	2.00 AS	\$3,147.52	\$6,295.04
Signing Component Total				\$8,830.98

SIGNALIZATIONS COMPONENT

Signalization 1**Description**

Type

Multiplier

Value

6 Lane Mast Arm

1

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-1-12	CONDUIT (F&I) (UNDERGROUND)	700.00	LF	\$7.55	\$5,285.00
630-1-14	CONDUIT (F&I) (UG - JACKED)	300.00	LF	\$18.34	\$5,502.00
632-7-1	CABLE (SIGNAL) (F&I)	1.00	PI	\$4,339.67	\$4,339.67
635-1-11	PULL & JUNC BOX (F&I) (PULL BOX)	22.00	EA	\$304.60	\$6,701.20
639-1-22	ELECTRIC POWER SVC (UNDERGROUND)	1.00	AS	\$1,449.78	\$1,449.78
639-2-1	ELECTRICAL SERVICE WIRE	60.00	LF	\$1.97	\$118.20
649-417-006	M/ARM(F&I/HL)(1ST(B7)2ND(0) POLE(Q6)	4.00	EA	\$35,700.24	\$142,800.96
650-51-311	SIGNAL TRAFFIC(F&I)(3 SECT 1 WAY)(STD)	16.00	AS	\$969.26	\$15,508.16
653-111	SIGNAL PEDESTRIAN (12" INCANDESCENT)	8.00	AS	\$400.00	\$3,200.00
659-101	SIGNAL HEAD AUX (BACK PLT 3 SECT)	10.00	EA	\$99.28	\$992.80
659-108	SIGNAL HEAD AUX (STEEL PEDESTAL)	4.00	EA	\$1,183.85	\$4,735.40
659-109	SGNL HEAD AUX (CONC PED TYPE II)	1.00	EA	\$925.70	\$925.70
660-1-102	LOOP DETECT INDUC (TYPE 2) (F&I)	20.00	EA	\$194.93	\$3,898.60
660-2-106	LOOP ASSEMBLY (F&I) (TYPE F)	20.00	AS	\$757.23	\$15,144.60
665-11	DET PED(F&I)(DET STA POLE OR CAB MTD)	8.00	EA	\$200.47	\$1,603.76
670-5-111	CNTL ASSEM ACT SS F&I NEMA PRE(ONE)	1.00	AS	\$21,113.17	\$21,113.17
700-48-19	SIGN PANEL (F & I) (16 - 100)	4.00	EA	\$1,449.37	\$5,797.48

Signalization 2**Description**

Type

Multiplier

Value

6 Lane Mast Arm

1

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-1-12	CONDUIT (F&I) (UNDERGROUND)	700.00	LF	\$7.55	\$5,285.00
630-1-14	CONDUIT (F&I) (UG - JACKED)	300.00	LF	\$18.34	\$5,502.00
632-7-1	CABLE (SIGNAL) (F&I)	1.00	PI	\$4,339.67	\$4,339.67
635-1-11	PULL & JUNC BOX (F&I) (PULL BOX)	22.00	EA	\$304.60	\$6,701.20
639-1-22	ELECTRIC POWER SVC (UNDERGROUND)	1.00	AS	\$1,449.78	\$1,449.78
639-2-1	ELECTRICAL SERVICE WIRE	60.00	LF	\$1.97	\$118.20
649-417-006	M/ARM(F&I/HL)(1ST(B7)2ND(0) POLE(Q6)	4.00	EA	\$35,700.24	\$142,800.96
650-51-311	SIGNAL TRAFFIC(F&I)(3 SECT 1 WAY)(STD)	16.00	AS	\$969.26	\$15,508.16
653-111	SIGNAL PEDESTRIAN (12" INCANDESCENT)	8.00	AS	\$400.00	\$3,200.00
659-101	SIGNAL HEAD AUX (BACK PLT 3 SECT)	10.00	EA	\$99.28	\$992.80
659-108	SIGNAL HEAD AUX (STEEL PEDESTAL)	4.00	EA	\$1,183.85	\$4,735.40

659-109	SGNL HEAD AUX (CONC PED TYPE II)	1.00 EA	\$925.70	\$925.70
660-1-102	LOOP DETECT INDUC (TYPE 2) (F&I)	20.00 EA	\$194.93	\$3,898.60
660-2-106	LOOP ASSEMBLY (F&I) (TYPE F)	20.00 AS	\$757.23	\$15,144.60
665-11	DET PED(F&I)(DET STA POLE OR CAB MTD)	8.00 EA	\$200.47	\$1,603.76
670-5-111	CNTL ASSEM ACT SS F&I NEMA PRE(ONE)	1.00 AS	\$21,113.17	\$21,113.17
700-48-19	SIGN PANEL (F & I) (16 - 100)	4.00 EA	\$1,449.37	\$5,797.48
Signalizations Component Total				\$478,232.96
Sequence 25 Total				\$2,105,095.88

Sequence: 26 NUU - New Construction, Undivided, Urban

Net 0.695 MI

Length:

Description: 2 LANE FRONTAGE RD WITH 6' S/W (CALCULATED AS TWO LANE IN ONE DIRECTION)

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	44.00 / 0.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.695
Top of Structural Course For Begin Section	101.50
Top of Structural Course For End Section	101.50
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	3.71	AC	\$22,042.89	\$81,779.12
120-6	EMBANKMENT	830.42	CY	\$20.00	\$16,608.40
Earthwork Component Total					\$98,387.52

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	2
Roadway Pavement Width L/R	30.00 / 0.00
Structural Spread Rate	330
Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	STABILIZATION TYPE B	13,283.95	SY	\$4.99	\$66,286.91
285-709	BASE OPTIONAL (BASE GROUP 09)	12,232.00	SY	\$18.36	\$224,579.52
334-1-14	SUPERPAVE ASPH CONC (TRAFFIC D)	2,018.28	TN	\$105.00	\$211,919.40
337-7-5	ASPH CONC FC(INC BIT/RUBBER) (FC-5)	489.28	TN	\$125.00	\$61,160.00

Pavement Marking Subcomponent

Description	Value
Solid Stripe No. of Stripes	2
Solid Stripe No. of Applications	2
Skip Stripe No. of Stripes	1
Skip Stripe No. of Applications	2
Top Layer Thermoplastic	Y

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	94.00	EA	\$4.67	\$438.98
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	1.39	NM	\$1,117.04	\$1,552.69

710-11-331	PAINTED PAVT MARK,STD,BLACK,SKIP,6"	0.70 GM	\$557.26	\$390.08
711-31	TRAFFIC STRIPE SKIP (THERMO) (WH)	0.70 GM	\$1,377.26	\$964.08
711-37-61	TRAF STRIPE SOLID (THERMO) (WH)(6")	1.39 NM	\$3,920.06	\$5,448.88
Roadway Component Total				\$572,740.54

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	0.00 / 0.00
Total Outside Shoulder Sod Width L/R	0.00 / 0.00
Sidewalk Width L/R	0.00 / 0.00

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
520-1-10	CURB & GUTTER CONC (TYPE F)	2,563.50 LF	\$27.59	\$70,726.96
522-1	SIDEWALK CONCRETE (4" THICK)	1,709.00 SY	\$50.00	\$85,450.00
570-1-2	PERFORMANCE TURF, SOD	570.00 SY	\$3.16	\$1,801.20
Shoulder Component Total				\$157,978.17

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II (ENDWALLS)	12.51 CY	\$1,156.47	\$14,467.44
425-1-351	INLETS (CURB) (TYPE P-5) (<10')	26.00 EA	\$4,284.68	\$111,401.68
425-1-451	INLETS (CURB) (TYPE J-5) (<10')	7.00 EA	\$5,925.50	\$41,478.50
425-1-521	INLETS (DT BOT) (TYPE C) (<10')	4.00 EA	\$2,805.58	\$11,222.32
425-2-41	MANHOLES (P-7) (<10')	4.00 EA	\$3,369.58	\$13,478.32
430-171-101	PIPE CULV OPT MATL, ROUND, 0-24", SS	1,616.00 LF	\$100.00	\$161,600.00
430-171-103	PIPE CULV OPT MATL, ROUND, 37-48", SS	3,480.00 LF	\$175.75	\$611,610.00
430-172-102	PIPE CULV OPT MATL, ROUND, 25-36", CD	144.00 LF	\$112.55	\$16,207.20
570-1-2	PERFORMANCE TURF, SOD	211.28 SY	\$3.16	\$667.64
Drainage Component Total				\$982,133.10

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
700-40-1	SIGN SINGLE POST (LESS THAN 12)	4.00 AS	\$262.26	\$1,049.04
700-40-2	SIGN SINGLE POST (12 - 25)	2.00 AS	\$743.45	\$1,486.90
700-41-10	SIGN MULTI POST (50 OR LESS)	2.00 AS	\$3,147.52	\$6,295.04
Signing Component Total				\$8,830.98

Sequence 26 Total \$1,820,070.31

Sequence: 27 RSU - Resurfacing, Undivided

Net 0.161 MI
Length:

Description: MILLING AND RESURFACING 5 LANES OF SR 52 WEST OF US 19. PROVIDE NEW S/W TIE INTO EXIST S/W

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	5
Roadway Pavement Width L/R	40.00 / 28.00
Structural Spread Rate	330
Friction Course Spread Rate	160

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
327-70-4	MILLING EXIST ASPH PAVT (3" AVG DEPTH)	6,422.83 SY	\$2.37	\$15,222.11
334-1-14	SUPERPAVE ASPH CONC (TRAFFIC D)	1,059.77 TN	\$105.00	\$111,275.85
337-7-35	ASPH CONC FC,TRAFFIC D,FC-12.5,RUBBER	513.83 TN	\$120.00	\$61,659.60

Pavement Marking Subcomponent

Description	Value
Solid Stripe No. of Stripes	3
Solid Stripe No. of Applications	2
Skip Stripe No. of Stripes	4
Skip Stripe No. of Applications	1
Top Layer Thermoplastic	Y

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	130.00 EA	\$4.67	\$607.10
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.48 NM	\$1,117.04	\$536.18
711-31	TRAFFIC STRIPE SKIP (THERMO) (WH)	0.64 GM	\$1,377.26	\$881.45
711-37-61	TRAF STRIPE SOLID (THERMO) (WH)(6")	0.48 NM	\$3,920.06	\$1,881.63

Roadway Component Total \$192,063.92

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	0.00 / 0.00
Total Outside Shoulder Sod Width L/R	0.00 / 0.00
Paved Outside Shoulder Width L/R	0.00 / 0.00
Structural Spread Rate	110
Friction Course Spread Rate	160
Total Width (T) / 8" Overlap (O)	T
Rumble Strips No. of Sides	0

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
520-1-10	CURB & GUTTER CONC (TYPE F)	800.00 LF	\$27.59	\$22,072.00

522-1	SIDEWALK CONCRETE (4" THICK)	641.00 SY	\$50.00	\$32,050.00
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Shoulder Component Total				\$54,122.00
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DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
430-94-1	DESILTING PIPE, 0 - 24"	128.80	LF	\$8.49	\$1,093.51
430-94-2	DESILTING PIPE, 25 - 36"	27.05	LF	\$14.52	\$392.77
Drainage Component Total					\$1,486.28

Sequence 27 Total				\$247,672.20
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Sequence: 28 RSU - Resurfacing, Undivided

Net Length: 0.171 MI

Description: MILLING AND RESURFACING 6 LANES OF SR 52 EAST OF US 19. PROVIDE NEW S/W TIE INTO EXIST S/W

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	6
Roadway Pavement Width L/R	40.00 / 52.00
Structural Spread Rate	330
Friction Course Spread Rate	160

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
327-70-4	MILLING EXIST ASPH PAVT (3" AVG DEPTH)	9,229.44 SY	\$2.37	\$21,873.77
334-1-14	SUPERPAVE ASPH CONC (TRAFFIC D)	1,522.86 TN	\$105.00	\$159,900.30
337-7-35	ASPH CONC FC,TRAFFIC D,FC-12.5,RUBBER	738.36 TN	\$120.00	\$88,603.20

Pavement Marking Subcomponent

Description	Value
Solid Stripe No. of Stripes	3
Solid Stripe No. of Applications	2
Skip Stripe No. of Stripes	5
Skip Stripe No. of Applications	2
Top Layer Thermoplastic	Y

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	162.00 EA	\$4.67	\$756.54
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.51 NM	\$1,117.04	\$569.69
710-11-331	PAINTED PAVT MARK,STD,BLACK,SKIP,6"	0.86 GM	\$557.26	\$479.24
711-31	TRAFFIC STRIPE SKIP (THERMO) (WH)	0.86 GM	\$1,377.26	\$1,184.44
711-37-61	TRAF STRIPE SOLID (THERMO) (WH)(6")	0.51 NM	\$3,920.06	\$1,999.23

Roadway Component Total \$275,366.41

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	0.00 / 0.00
Total Outside Shoulder Sod Width L/R	0.00 / 0.00
Paved Outside Shoulder Width L/R	0.00 / 0.00
Structural Spread Rate	110
Friction Course Spread Rate	160
Total Width (T) / 8" Overlap (O)	T
Rumble Strips No. of Sides	0

X-Items

Pay item	Description	Quantity Unit	Unit	Extended Amount
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			Price	
520-1-10	CURB & GUTTER CONC (TYPE F)	800.00 LF	\$27.59	\$22,072.00
522-1	SIDEWALK CONCRETE (4" THICK)	1,206.00 SY	\$50.00	\$60,300.00
Shoulder Component Total				\$82,372.00

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
430-94-1	DESILTING PIPE, 0 - 24"	136.80 LF	\$8.49	\$1,161.43
430-94-2	DESILTING PIPE, 25 - 36"	28.73 LF	\$14.52	\$417.16
Drainage Component Total				\$1,578.59

Sequence 28 Total	\$359,317.00
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FDOT Long Range Estimating System - Production

R3: Project Details by Sequence Report

Project: 418860-2-52-01

Letting Date: 07/2010

Description: US 19 (SR 55) CONTINUOUS RIGHT TURN LANE

District: 07

County: 14 PASCO

Market Area: 07

Units: English

Contract Class: 1 Lump Sum Project: N

Design/Build: N

Project Length: 19.673 MI

Project Manager: PRD-ANN-JCI

Version 21 Project Grand Total

\$52,836,256.16

Description: SR 52

Project Sequences Subtotal**\$42,236,857.59**

102-1 Maintenance of Traffic

8.00 %

\$3,378,948.61

101-1 Mobilization

10.00 %

\$4,561,580.62

Project Sequences Total**\$50,177,386.82**

Project Unknowns

5.00 %

\$2,508,869.34

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

999-25

INITIAL CONTINGENCY (DO NOT
BID)

LS

\$150,000.00

\$150,000.00

Project Non-Bid Subtotal

\$150,000.00

Version 21 Project Grand Total

\$52,836,256.16

APPENDIX A2-4
US HIGHWAY 19 (SR 55)/COUNTY LINE ROAD INTERCHANGE –
TEXAS U-TURN
ENGINEER’S COST ESTIMATE

FDOT Long Range Estimating System - Production

R3: Project Details by Sequence Report

Project: 418860-2-52-01

Letting Date: 07/2010

Description: US 19 (SR 55) CONTINUOUS RIGHT TURN LANE

District: 07

County: 14 PASCO

Market Area: 07

Units: English

Contract Class: 1 Lump Sum Project: N

Design/Build: N

Project Length: 19.673 MI

Project Manager: PRD-ANN-JCI

Version 22 Project Grand Total

\$42,713,923.70

Description: COUNTY LINE ROAD

Sequence: 29 NDR - New Construction, Divided, Rural

Net Length: 0.633 MI

Description: COUNTY LINE RD/US 19 Interchange (MODIFIED TUDI). RECONSTRUCT 6 LANES ROADWAY, NEW OVERPASS BRIDGE, RETAINING WALL AND CONCRETE BARRIER (MAINLINE US 19)

Special Conditions: INCLUDE 15% ADDITION PAV'T FOR INTERSECTION UNDER THE OVERPASS

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	100.00 / 100.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.069
Top of Structural Course For Begin Section	105.00
Top of Structural Course For End Section	110.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	0 to 1 / 0 to 1
Median Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	5.00 % / 5.00 %
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %
Alignment Number	2
Distance	0.248
Top of Structural Course For Begin Section	110.00
Top of Structural Course For End Section	130.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	0 to 1 / 0 to 1
Median Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	5.00 % / 5.00 %
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %
Alignment Number	3
Distance	0.248
Top of Structural Course For Begin Section	130.00
Top of Structural Course For End Section	110.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	0 to 1 / 0 to 1
Median Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	5.00 % / 5.00 %

Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Alignment Number	4
Distance	0.069
Top of Structural Course For Begin Section	110.00
Top of Structural Course For End Section	105.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	0 to 1 / 0 to 1
Median Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	5.00 % / 5.00 %
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	15.35	AC	\$22,042.89	\$338,358.36
120-6	EMBANKMENT	243,714.12	CY	\$20.00	\$4,874,282.40
Earthwork Component Total					\$5,212,640.76

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	6
Roadway Pavement Width L/R	36.00 / 36.00
Structural Spread Rate	500
Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	STABILIZATION TYPE B	42,335.04	SY	\$4.99	\$211,251.85
285-715	BASE OPTIONAL (BASE GROUP 15)	27,228.12	SY	\$48.85	\$1,330,093.66
334-1-14	SUPERPAVE ASPH CONC (TRAFFIC D)	6,684.48	TN	\$105.00	\$701,870.40
337-7-5	ASPH CONC FC(INC BIT/RUBBER) (FC-5)	1,069.52	TN	\$125.00	\$133,690.00

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
109-71-5	FIELD OFFICE (1500 SQ FT)	720.00	DA	\$110.00	\$79,200.00

Turnouts/Crossovers Subcomponent

Description	Value
Asphalt Adjustment	15.00
Stabilization Code	N
Base Code	Y
Friction Course Code	Y

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-715	BASE OPTIONAL (BASE GROUP 15)	4,084.22	SY	\$48.85	\$199,514.15
334-1-14	SUPERPAVE ASPH CONC (TRAFFIC D)	1,002.67	TN	\$105.00	\$105,280.35
337-7-5	ASPH CONC FC(INC BIT/RUBBER) (FC-5)	160.43	TN	\$125.00	\$20,053.75

Pavement Marking Subcomponent

Description	Value
Solid Stripe No. of Stripes	4
Solid Stripe No. of Applications	2
Skip Stripe No. of Stripes	4
Skip Stripe No. of Applications	2
Top Layer Thermoplastic	Y

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	427.00	EA	\$4.67	\$1,994.09
710-21	TRAFFIC STRIPE SKIP (WHITE/BLACK)	2.53	GM	\$519.31	\$1,313.85
710-23-61	TRAFFIC STRIPE SOLID (WHITE/BLACK) (6")	2.53	NM	\$1,119.22	\$2,831.63
711-31	TRAFFIC STRIPE SKIP (THERMO) (WH)	2.53	GM	\$1,377.26	\$3,484.47
711-37-61	TRAF STRIPE SOLID (THERMO) (WH)(6")	2.53	NM	\$3,920.06	\$9,917.75

Roadway Component Total

\$2,800,495.95

SHOULDER COMPONENT**User Input Data**

Description	Value
Total Outside Shoulder Width L/R	12.00 / 12.00
Total Outside Shoulder Sod Width L/R	0.00 / 0.00
Paved Outside Shoulder Width L/R	10.00 / 10.00
Structural Spread Rate	220
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	O
Rumble Strips No. of Sides	2

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-704	BASE OPTIONAL (BASE GROUP 04)	7,672.30	SY	\$14.10	\$108,179.43
334-1-14	SUPERPAVE ASPH CONC (TRAFFIC D)	816.99	TN	\$105.00	\$85,783.95
337-7-5	ASPH CONC FC(INC BIT/RUBBER) (FC-5)	19.61	TN	\$125.00	\$2,451.25
546-72-51	RUMBLE STRIP (GROUND-IN) (16" MIN. W)	1.27	PM	\$1,047.15	\$1,329.88

Shoulder Component Total

\$197,744.51

MEDIAN COMPONENT**User Input Data**

Description	Value
Total Median Width	28.00
Sod Width	0.00
Total Median Shoulder Width L/R	9.00 / 9.00
Paved Median Shoulder Width L/R	9.00 / 9.00
Structural Spread Rate	220
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	O
Rumble Strips No. of Sides	2

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
285-704	BASE OPTIONAL (BASE GROUP 04)	6,929.58	SY	\$14.10	\$97,707.08
334-1-14	SUPERPAVE ASPH CONC (TRAFFIC D)	735.29	TN	\$105.00	\$77,205.45
337-7-5	ASPH CONC FC(INC BIT/RUBBER) (FC-5)	19.61	TN	\$125.00	\$2,451.25
521-1	BARRIER WALL CONCRETE	3,342.00	LF	\$119.28	\$398,633.76
546-72-51	RUMBLE STRIP (GROUND-IN) (16" MIN. W)	1.00	PM	\$1,047.15	\$1,047.15

EX-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
521-72-4	SHLDR CONC BARRIER WALL, RIGID RETAIN	6,330.00	LF	\$128.00	\$810,240.00

Median Component Total

\$1,387,284.69

DRAINAGE COMPONENT**Pay Items**

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II (ENDWALLS)	11.39	CY	\$1,156.47	\$13,172.19
425-1-551	INLETS (DT BOT) (TYPE E) (<10')	4.00	EA	\$3,530.62	\$14,122.48
430-172-101	PIPE CULV OPT MATL, ROUND, 0-24", CD	216.00	LF	\$108.04	\$23,336.64
430-172-102	PIPE CULV OPT MATL, ROUND, 25-36", CD	192.00	LF	\$112.55	\$21,609.60
430-174-101	PIPE CULV, OPT MATL, ROUND,0-24"SD	512.00	LF	\$100.00	\$51,200.00
430-984-129	MITERED END SECT (OPTIONAL RD) (24" SD)	26.00	EA	\$1,390.17	\$36,144.42
524-1-1	DITCH PAVT CONC (3")	1,266.00	SY	\$56.47	\$71,491.02
570-1-2	PERFORMANCE TURF, SOD	445.63	SY	\$3.16	\$1,408.19

Drainage Component Total

\$232,484.54

SIGNING COMPONENT**Pay Items**

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-40-1	SIGN SINGLE POST (LESS THAN 12)	2.00	AS	\$262.26	\$524.52
700-40-2	SIGN SINGLE POST (12 - 25)	4.00	AS	\$743.45	\$2,973.80
700-41-10	SIGN MULTI POST (50 OR LESS)	2.00	AS	\$3,147.52	\$6,295.04
700-41-11	SIGN MULTI-POST (51-100)	2.00	AS	\$4,824.80	\$9,649.60

Signing Component Total

\$19,442.96

BRIDGES COMPONENT**Bridge BR 01**

Description	Value
Length	215.00
Width	57.00
Type	Overpass Bridge
Substructure Type	

Superstructure Type	
Cost Factor	1.65
Removal of existing structures area	0.00
Default Cost per SF	\$120.00
Factored Cost per SF	\$198.00
Final Cost per SF	\$205.39
Basic Bridge Cost	\$2,426,490.00
Description	

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
400-2-10	CONC CLASS II (APPROACH SLABS)	126.67 CY	\$535.13	\$67,784.92
415-1-9	REINF STEEL (APPROACH SLABS)	22,167.25 LB	\$1.03	\$22,832.27
Bridge BR 01 Total				\$2,517,107.19

Bridge BR 02

Description	Value
Length	157.00
Width	57.00
Type	Overpass Bridge
Substructure Type	
Superstructure Type	
Cost Factor	1.65
Removal of existing structures area	0.00
Default Cost per SF	\$120.00
Factored Cost per SF	\$198.00
Final Cost per SF	\$208.13
Basic Bridge Cost	\$1,771,902.00
Description	

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
400-2-10	CONC CLASS II (APPROACH SLABS)	126.67 CY	\$535.13	\$67,784.92
415-1-9	REINF STEEL (APPROACH SLABS)	22,167.25 LB	\$1.03	\$22,832.27
Bridge BR 02 Total				\$1,862,519.19

Bridge MAIN

Description	Value
Length	480.00
Width	120.00
Type	Overpass Bridge
Substructure Type	
Superstructure Type	
Cost Factor	1.65
Removal of existing structures area	0.00
Default Cost per SF	\$120.00
Factored Cost per SF	\$198.00
Final Cost per SF	\$201.31
Basic Bridge Cost	\$11,404,800.00
Description	

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
400-2-10	CONC CLASS II (APPROACH SLABS)	266.67 CY	\$535.13	\$142,703.12
415-1-9	REINF STEEL (APPROACH SLABS)	46,667.25 LB	\$1.03	\$48,067.27

Bridge MAIN Total

\$11,595,570.39

Bridges Component Total

\$15,975,196.77

RETAINING WALLS COMPONENT

Retaining Wall 1

Description	Value
Length	1,310.00
Begin height	30.00
End Height	10.00
Multiplier	4

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
548-12	RETAINING WALL (PERMANENT)	104,800.00	SF	\$34.39	\$3,604,072.00

Retaining Wall 2

Description	Value
Length	120.00
Begin height	21.50
End Height	21.50
Multiplier	2

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
548-12	RETAINING WALL (PERMANENT)	5,160.00	SF	\$34.39	\$177,452.40

Retaining Walls Component Total

\$3,781,524.40

Sequence 29 Total

\$29,606,814.58

Sequence: 30 NUU - New Construction, Undivided, Urban

Net 0.520 MI
Length:

Description: 3 LANE FRONTAGE RD WITH 6' S/W, MAST ARM SIGNAL (CALCULATED AS THREE LANE IN ONE DIRECTION)

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	0.00 / 54.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.520
Top of Structural Course For Begin Section	101.50
Top of Structural Course For End Section	101.50
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	3.40	AC	\$22,042.89	\$74,945.83
120-6	EMBANKMENT	162.70	CY	\$20.00	\$3,254.00
Earthwork Component Total					\$78,199.83

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	3
Roadway Pavement Width L/R	0.00 / 40.00
Structural Spread Rate	330
Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	STABILIZATION TYPE B	12,989.74	SY	\$4.99	\$64,818.80
285-709	BASE OPTIONAL (BASE GROUP 09)	12,202.67	SY	\$18.36	\$224,041.02
334-1-14	SUPERPAVE ASPH CONC (TRAFFIC D)	2,013.44	TN	\$105.00	\$211,411.20
337-7-5	ASPH CONC FC(INC BIT/RUBBER) (FC-5)	488.11	TN	\$125.00	\$61,013.75

Pavement Marking Subcomponent

Description	Value
Solid Stripe No. of Stripes	2
Solid Stripe No. of Applications	2
Skip Stripe No. of Stripes	2
Skip Stripe No. of Applications	2
Top Layer Thermoplastic	Y

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	281.00	EA	\$4.67	\$1,312.27
710-11-111	PAINTED PAVT	1.04	NM	\$1,117.04	\$1,161.72

710-11-331	MARK,STD,WHITE,SOLID,6" PAINTED PAVT MARK,STD,BLACK,SKIP,6"	1.04 GM	\$557.26	\$579.55
711-31	TRAFFIC STRIPE SKIP (THERMO) (WH)	1.04 GM	\$1,377.26	\$1,432.35
711-37-61	TRAF STRIPE SOLID (THERMO) (WH)(6")	1.04 NM	\$3,920.06	\$4,076.86
Roadway Component Total				\$569,847.52

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	0.00 / 0.00
Total Outside Shoulder Sod Width L/R	0.00 / 0.00
Sidewalk Width L/R	0.00 / 0.00

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
520-1-10	CURB & GUTTER CONC (TYPE F)	2,607.00 LF	\$27.59	\$71,927.13
522-1	SIDEWALK CONCRETE (4" THICK)	1,738.00 SY	\$50.00	\$86,900.00
570-1-2	PERFORMANCE TURF, SOD	580.00 SY	\$3.16	\$1,832.80
Shoulder Component Total				\$160,659.93

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II (ENDWALLS)	9.36 CY	\$1,156.47	\$10,824.56
425-1-351	INLETS (CURB) (TYPE P-5) (<10')	19.00 EA	\$4,284.68	\$81,408.92
425-1-451	INLETS (CURB) (TYPE J-5) (<10')	6.00 EA	\$5,925.50	\$35,553.00
425-1-521	INLETS (DT BOT) (TYPE C) (<10')	3.00 EA	\$2,805.58	\$8,416.74
425-2-41	MANHOLES (P-7) (<10')	3.00 EA	\$3,369.58	\$10,108.74
430-171-101	PIPE CULV OPT MATL, ROUND, 0-24", SS	1,216.00 LF	\$100.00	\$121,600.00
430-171-103	PIPE CULV OPT MATL, ROUND, 37-48", SS	2,600.00 LF	\$175.75	\$456,950.00
430-172-102	PIPE CULV OPT MATL, ROUND, 25-36", CD	112.00 LF	\$112.55	\$12,605.60
570-1-2	PERFORMANCE TURF, SOD	158.08 SY	\$3.16	\$499.53
Drainage Component Total				\$737,967.09

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
700-40-1	SIGN SINGLE POST (LESS THAN 12)	4.00 AS	\$262.26	\$1,049.04
700-40-2	SIGN SINGLE POST (12 - 25)	2.00 AS	\$743.45	\$1,486.90
700-41-10	SIGN MULTI POST (50 OR LESS)	2.00 AS	\$3,147.52	\$6,295.04
Signing Component Total				\$8,830.98

SIGNALIZATIONS COMPONENT

Signalization 1**Description**

Type

Multiplier

Value

6 Lane Mast Arm

1

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-1-12	CONDUIT (F&I) (UNDERGROUND)	700.00	LF	\$7.55	\$5,285.00
630-1-14	CONDUIT (F&I) (UG - JACKED)	300.00	LF	\$18.34	\$5,502.00
632-7-1	CABLE (SIGNAL) (F&I)	1.00	PI	\$4,339.67	\$4,339.67
635-1-11	PULL & JUNC BOX (F&I) (PULL BOX)	22.00	EA	\$304.60	\$6,701.20
639-1-22	ELECTRIC POWER SVC (UNDERGROUND)	1.00	AS	\$1,449.78	\$1,449.78
639-2-1	ELECTRICAL SERVICE WIRE	60.00	LF	\$1.97	\$118.20
649-417-006	M/ARM(F&I/HL)(1ST(B7)2ND(0) POLE(Q6)	4.00	EA	\$35,700.24	\$142,800.96
650-51-311	SIGNAL TRAFFIC(F&I)(3 SECT 1 WAY)(STD)	16.00	AS	\$969.26	\$15,508.16
653-111	SIGNAL PEDESTRIAN (12" INCANDESCENT)	8.00	AS	\$400.00	\$3,200.00
659-101	SIGNAL HEAD AUX (BACK PLT 3 SECT)	10.00	EA	\$99.28	\$992.80
659-108	SIGNAL HEAD AUX (STEEL PEDESTAL)	4.00	EA	\$1,183.85	\$4,735.40
659-109	SGNL HEAD AUX (CONC PED TYPE II)	1.00	EA	\$925.70	\$925.70
660-1-102	LOOP DETECT INDUC (TYPE 2) (F&I)	20.00	EA	\$194.93	\$3,898.60
660-2-106	LOOP ASSEMBLY (F&I) (TYPE F)	20.00	AS	\$757.23	\$15,144.60
665-11	DET PED(F&I)(DET STA POLE OR CAB MTD)	8.00	EA	\$200.47	\$1,603.76
670-5-111	CNTL ASSEM ACT SS F&I NEMA PRE(ONE)	1.00	AS	\$21,113.17	\$21,113.17
700-48-19	SIGN PANEL (F & I) (16 - 100)	4.00	EA	\$1,449.37	\$5,797.48

Signalization 2**Description**

Type

Multiplier

Value

6 Lane Mast Arm

1

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-1-12	CONDUIT (F&I) (UNDERGROUND)	700.00	LF	\$7.55	\$5,285.00
630-1-14	CONDUIT (F&I) (UG - JACKED)	300.00	LF	\$18.34	\$5,502.00
632-7-1	CABLE (SIGNAL) (F&I)	1.00	PI	\$4,339.67	\$4,339.67
635-1-11	PULL & JUNC BOX (F&I) (PULL BOX)	22.00	EA	\$304.60	\$6,701.20
639-1-22	ELECTRIC POWER SVC (UNDERGROUND)	1.00	AS	\$1,449.78	\$1,449.78
639-2-1	ELECTRICAL SERVICE WIRE	60.00	LF	\$1.97	\$118.20
649-417-006	M/ARM(F&I/HL)(1ST(B7)2ND(0) POLE(Q6)	4.00	EA	\$35,700.24	\$142,800.96
650-51-311	SIGNAL TRAFFIC(F&I)(3 SECT 1 WAY)(STD)	16.00	AS	\$969.26	\$15,508.16
653-111	SIGNAL PEDESTRIAN (12" INCANDESCENT)	8.00	AS	\$400.00	\$3,200.00
659-101	SIGNAL HEAD AUX (BACK PLT 3 SECT)	10.00	EA	\$99.28	\$992.80
659-108	SIGNAL HEAD AUX (STEEL PEDESTAL)	4.00	EA	\$1,183.85	\$4,735.40

659-109	SGNL HEAD AUX (CONC PED TYPE II)	1.00 EA	\$925.70	\$925.70
660-1-102	LOOP DETECT INDUC (TYPE 2) (F&I)	20.00 EA	\$194.93	\$3,898.60
660-2-106	LOOP ASSEMBLY (F&I) (TYPE F)	20.00 AS	\$757.23	\$15,144.60
665-11	DET PED(F&I)(DET STA POLE OR CAB MTD)	8.00 EA	\$200.47	\$1,603.76
670-5-111	CNTL ASSEM ACT SS F&I NEMA PRE(ONE)	1.00 AS	\$21,113.17	\$21,113.17
700-48-19	SIGN PANEL (F & I) (16 - 100)	4.00 EA	\$1,449.37	\$5,797.48
Signalizations Component Total				\$478,232.96
Sequence 30 Total				\$2,033,738.31

Sequence: 31 NUU - New Construction, Undivided, Urban

Net 0.712 MI

Length:

Description: 2 LANE FRONTAGE RD WITH 6' S/W (CALCULATED AS TWO LANE IN ONE DIRECTION)

EARTHWORK COMPONENT

User Input Data

Description	Value
Standard Clearing and Grubbing Limits L/R	44.00 / 0.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.712
Top of Structural Course For Begin Section	101.50
Top of Structural Course For End Section	101.50
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Front Slope L/R	6 to 1 / 6 to 1
Outside Shoulder Cross Slope L/R	2.00 % / 2.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	3.80	AC	\$22,042.89	\$83,762.98
120-6	EMBANKMENT	946.80	CY	\$20.00	\$18,936.00
Earthwork Component Total					\$102,698.98

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	2
Roadway Pavement Width L/R	28.00 / 0.00
Structural Spread Rate	330
Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	STABILIZATION TYPE B	12,773.47	SY	\$4.99	\$63,739.62
285-709	BASE OPTIONAL (BASE GROUP 09)	11,695.79	SY	\$18.36	\$214,734.70
334-1-14	SUPERPAVE ASPH CONC (TRAFFIC D)	1,929.80	TN	\$105.00	\$202,629.00
337-7-5	ASPH CONC FC(INC BIT/RUBBER) (FC-5)	467.83	TN	\$125.00	\$58,478.75

Pavement Marking Subcomponent

Description	Value
Solid Stripe No. of Stripes	2
Solid Stripe No. of Applications	2
Skip Stripe No. of Stripes	1
Skip Stripe No. of Applications	2
Top Layer Thermoplastic	Y

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	96.00	EA	\$4.67	\$448.32
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	1.42	NM	\$1,117.04	\$1,586.20

710-11-331	PAINTED PAVT MARK,STD,BLACK,SKIP,6"	0.71 GM	\$557.26	\$395.65
711-31	TRAFFIC STRIPE SKIP (THERMO) (WH)	0.71 GM	\$1,377.26	\$977.85
711-37-61	TRAF STRIPE SOLID (THERMO) (WH)(6")	1.42 NM	\$3,920.06	\$5,566.49
Roadway Component Total				\$548,556.58

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	0.00 / 0.00
Total Outside Shoulder Sod Width L/R	0.00 / 0.00
Sidewalk Width L/R	0.00 / 0.00

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
520-1-10	CURB & GUTTER CONC (TYPE F)	2,487.00 LF	\$27.59	\$68,616.33
522-1	SIDEWALK CONCRETE (4" THICK)	1,658.00 SY	\$50.00	\$82,900.00
570-1-2	PERFORMANCE TURF, SOD	554.00 SY	\$3.16	\$1,750.64
Shoulder Component Total				\$153,266.97

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II (ENDWALLS)	12.82 CY	\$1,156.47	\$14,825.95
425-1-351	INLETS (CURB) (TYPE P-5) (<10')	26.00 EA	\$4,284.68	\$111,401.68
425-1-451	INLETS (CURB) (TYPE J-5) (<10')	8.00 EA	\$5,925.50	\$47,404.00
425-1-521	INLETS (DT BOT) (TYPE C) (<10')	4.00 EA	\$2,805.58	\$11,222.32
425-2-41	MANHOLES (P-7) (<10')	4.00 EA	\$3,369.58	\$13,478.32
430-171-101	PIPE CULV OPT MATL, ROUND, 0-24", SS	1,656.00 LF	\$100.00	\$165,600.00
430-171-103	PIPE CULV OPT MATL, ROUND, 37-48", SS	3,560.00 LF	\$175.75	\$625,670.00
430-172-102	PIPE CULV OPT MATL, ROUND, 25-36", CD	152.00 LF	\$112.55	\$17,107.60
570-1-2	PERFORMANCE TURF, SOD	216.45 SY	\$3.16	\$683.98
Drainage Component Total				\$1,007,393.85

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
700-40-1	SIGN SINGLE POST (LESS THAN 12)	4.00 AS	\$262.26	\$1,049.04
700-40-2	SIGN SINGLE POST (12 - 25)	2.00 AS	\$743.45	\$1,486.90
700-41-10	SIGN MULTI POST (50 OR LESS)	2.00 AS	\$3,147.52	\$6,295.04
Signing Component Total				\$8,830.98

Sequence 31 Total	\$1,820,747.36
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Sequence: 32 RSU - Resurfacing, Undivided

Net 0.116 MI
Length:

Description: MILLING AND RESURFACING 3 LANES OF COUNTY LINE RD WEST OF US 19. PROVIDE
NEW S/W TIE INTO EXIST S/W

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	3
Roadway Pavement Width L/R	28.00 / 16.00
Structural Spread Rate	330
Friction Course Spread Rate	160

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
327-70-4	MILLING EXIST ASPH PAVT (3" AVG DEPTH)	2,994.35 SY	\$2.37	\$7,096.61
334-1-14	SUPERPAVE ASPH CONC (TRAFFIC D)	494.07 TN	\$105.00	\$51,877.35
337-7-35	ASPH CONC FC,TRAFFIC D,FC-12.5,RUBBER	239.55 TN	\$120.00	\$28,746.00

Pavement Marking Subcomponent

Description	Value
Solid Stripe No. of Stripes	3
Solid Stripe No. of Applications	2
Skip Stripe No. of Stripes	2
Skip Stripe No. of Applications	1
Top Layer Thermoplastic	Y

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	63.00 EA	\$4.67	\$294.21
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.35 NM	\$1,117.04	\$390.96
711-31	TRAFFIC STRIPE SKIP (THERMO) (WH)	0.23 GM	\$1,377.26	\$316.77
711-37-61	TRAF STRIPE SOLID (THERMO) (WH)(6")	0.35 NM	\$3,920.06	\$1,372.02

Roadway Component Total \$90,093.92

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	0.00 / 0.00
Total Outside Shoulder Sod Width L/R	0.00 / 0.00
Paved Outside Shoulder Width L/R	0.00 / 0.00
Structural Spread Rate	110
Friction Course Spread Rate	160
Total Width (T) / 8" Overlap (O)	T
Rumble Strips No. of Sides	0

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
520-1-10	CURB & GUTTER CONC (TYPE F)	400.00 LF	\$27.59	\$11,036.00

522-1	SIDEWALK CONCRETE (4" THICK)	396.00 SY	\$50.00	\$19,800.00
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Shoulder Component Total				\$30,836.00
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DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
430-94-1	DESILTING PIPE, 0 - 24"	92.80	LF	\$8.49	\$787.87
430-94-2	DESILTING PIPE, 25 - 36"	19.49	LF	\$14.52	\$282.99
Drainage Component Total					\$1,070.86

Sequence 32 Total				\$122,000.78
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Sequence: 33 RSU - Resurfacing, Undivided

Net Length: 0.342 MI

Description: MILLING AND RESURFACING 5 LANES OF COUNTY LINE RD EAST OF US 19. PROVIDE NEW S/W TIE INTO EXIST S/W

ROADWAY COMPONENT

User Input Data

Description	Value
Number of Lanes	5
Roadway Pavement Width L/R	28.00 / 40.00
Structural Spread Rate	330
Friction Course Spread Rate	160

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
327-70-4	MILLING EXIST ASPH PAVT (3" AVG DEPTH)	13,643.52	SY	\$2.37	\$32,335.14
334-1-14	SUPERPAVE ASPH CONC (TRAFFIC D)	2,251.18	TN	\$105.00	\$236,373.90
337-7-35	ASPH CONC FC,TRAFFIC D,FC-12.5,RUBBER	1,091.48	TN	\$120.00	\$130,977.60

Pavement Marking Subcomponent

Description	Value
Solid Stripe No. of Stripes	3
Solid Stripe No. of Applications	2
Skip Stripe No. of Stripes	4
Skip Stripe No. of Applications	2
Top Layer Thermoplastic	Y

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE PAVEMENT MARKERS	277.00	EA	\$4.67	\$1,293.59
710-11-111	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	1.03	NM	\$1,117.04	\$1,150.55
710-11-331	PAINTED PAVT MARK,STD,BLACK,SKIP,6"	1.37	GM	\$557.26	\$763.45
711-31	TRAFFIC STRIPE SKIP (THERMO) (WH)	1.37	GM	\$1,377.26	\$1,886.85
711-37-61	TRAF STRIPE SOLID (THERMO) (WH)(6")	1.03	NM	\$3,920.06	\$4,037.66

Roadway Component Total \$408,818.74

SHOULDER COMPONENT

User Input Data

Description	Value
Total Outside Shoulder Width L/R	0.00 / 0.00
Total Outside Shoulder Sod Width L/R	0.00 / 0.00
Paved Outside Shoulder Width L/R	0.00 / 0.00
Structural Spread Rate	110
Friction Course Spread Rate	160
Total Width (T) / 8" Overlap (O)	T
Rumble Strips No. of Sides	0

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
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			Price	
520-1-10	CURB & GUTTER CONC (TYPE F)	400.00 LF	\$27.59	\$11,036.00
522-1	SIDEWALK CONCRETE (4" THICK)	2,316.00 SY	\$50.00	\$115,800.00
Shoulder Component Total				\$126,836.00

DRAINAGE COMPONENT

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
430-94-1	DESILTING PIPE, 0 - 24"	273.60 LF	\$8.49	\$2,322.86
430-94-2	DESILTING PIPE, 25 - 36"	57.46 LF	\$14.52	\$834.32
Drainage Component Total				\$3,157.18

Sequence 33 Total	\$538,811.92
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FDOT Long Range Estimating System - Production

R3: Project Details by Sequence Report

Project: 418860-2-52-01

Letting Date: 07/2010

Description: US 19 (SR 55) CONTINUOUS RIGHT TURN LANE

District: 07

County: 14 PASCO

Market Area: 07

Units: English

Contract Class: 1 Lump Sum Project: N

Design/Build: N

Project Length: 19.673 MI

Project Manager: PRD-ANN-JCI

Version 22 Project Grand Total

\$42,713,923.70

Description: COUNTY LINE ROAD

Project Sequences Subtotal

\$34,122,112.95

102-1 Maintenance of Traffic

8.00 %

\$2,729,769.04

101-1 Mobilization

10.00 %

\$3,685,188.20

Project Sequences Total

\$40,537,070.19

Project Unknowns

5.00 %

\$2,026,853.51

Non-Bid Components:

Pay item

Description

Quantity Unit

Unit Price

Extended Amount

999-25

INITIAL CONTINGENCY (DO NOT
BID)

LS

\$150,000.00

\$150,000.00

Project Non-Bid Subtotal

\$150,000.00

Version 22 Project Grand Total

\$42,713,923.70

Appendix B

Trip Generation Work Sheets

Table B-1: Summary of Trip Generation for Existing Adjacent Land Uses - US Highway 19 at SR 54

Reference Number	Parcel Number	Description	Address	Land Use	ITE Land Use Code	Size	Units	Daily Peak	AM Peak			PM Peak			Directional Trip Distribution		Frontage Road U-Turn Volumes						Frontage Road Thru Volumes						
																	AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour			
									In	Out	Total	In	Out	Total	U-Turn%	Thru%	NB-to-SB	SB-to-NB	Total	NB-to-SB	SB-to-NB	Total	NB	SB	Total	NB	SB	Total	
Southeast Quadrant																													
80R	19-26-16-0000-0040-0020	New Port Richey Hyundai	3936 US Highway 19	Car Dealership	841	19,569	x 1,000 Sq. Ft.	652	30	10	40	25	38	63	41%	39%	4	--	4	16	--	16	4	--	4	15	--	15	
B.	Median Opening	Beacon Hill Subdivision		Single Family Detached Homes	210	155,000	Units	1,556	30	89	118	100	59	159	41%	39%	37	--	37	24	--	24	34	--	34	23	--	23	
77R	19-26-16-0000-00400-0050	Davis Christos Strip Shopping Center	3752 US Highway 19	Retail Stores, One-Story	814	6,160	x 1,000 Sq. Ft.	301	--	--	--	16	20	36	41%	39%	--	--	0	8	--	8	--	--	0	8	--	8	
76R	19-26-16-0000-00400-0080	Don Olson - Tires Plus	3732 US Highway 19	Auto Service Center	848	4,600	x 1,000 Sq. Ft.	111	8	5	13	8	11	19	41%	39%	2	--	2	4	--	4	2	--	2	4	--	4	
75R	19-26-16-0010-01300-0040	City Electric Supply	3720 US Highway 19	Retail Stores, One-Story	812	3,600	x 1,000 Sq. Ft.	200	6	3	9	6	7	13	41%	39%	1	--	1	3	--	3	1	--	1	3	--	3	
A.	Median Opening	Manor Drive		Single Family Detached Homes	210	145,000	Units	1,464	28	83	111	95	56	150	41%	39%	34	--	34	23	--	23	32	--	32	22	--	22	
74R	19-26-16-0010-01300-0021	Vacant - Formerly Emerson Trailers	3706 US Highway 19	Auto Sales and Service	843	1,540	x 1,000 Sq. Ft.	95	2	1	3	4	5	9	41%	39%	0	--	0	2	--	2	0	--	0	2	--	2	
73R	19-26-16-0010-01300-0020	Mrs. Mobility	4604 Professional Loop	Store, Office	710	1,763	x 1,000 Sq. Ft.	19	3	0	3	1	2	3	41%	39%	0	--	0	1	--	1	0	--	0	1	--	1	
72R	19-26-16-0010-01400-0022	UPLIFT Mobility	3606 US Highway 10	Retail Stores, One-Story	814	1,590	x 1,000 Sq. Ft.	106	--	--	--	11	14	25	41%	39%	--	--	0	6	--	6	--	--	0	5	--	5	
71R	1926-16-0010-01400-0021	Innovative Kitchen Solutions	3530 US Highway 19	One-Story Office	710	2,068	x 1,000 Sq. Ft.	23	3	0	3	1	2	3	21%	39%	0	--	0	1	--	1	0	--	0	1	--	1	
70R	19-26-16-0010-01400-0020	Vacant - Formerly Popeye's Restaurant	3516 US Highway 19	Restaurant	932	2,682	x 1,000 Sq. Ft.	341	16	15	31	18	11	29	21%	0%	3	--	3	2	--	2	0	--	0	0	--	0	
69R	19-26-16-0010-01400-0030	Ice Cold Air Discount/Auto Repair	3508 US Highway 19	Automotive Service Shops	942	1,587	x 1,000 Sq. Ft.	--	3	2	5	3	3	6	21%	0%	0	--	0	1	--	1	0	--	0	0	--	0	
X1	19-26-16-0010-01300-0022	Gehrig, Craig	4620 Professional Loop	Store, Office	710	3,572	x 1,000 Sq. Ft.	39	5	1	6	1	4	5	41%	39%	0	--	0	2	--	2	0	--	0	2	--	2	
X2	19-26-16-0010-01300-0023	Gehrig, Craig	4610 Professional Loop	Store, Office	710	1,575	x 1,000 Sq. Ft.	17	2	0	2	0	2	2	41%	39%	0	--	0	1	--	1	0	--	0	1	--	1	
Total (Southeast Quadrant)									4,924	134	209	344	288	234	522			81	0	81	94	0	94	73	0	73	87	0	87
Northeast Quadrant																													
81R	18-26-16-0040-04800-0040	Huntley - Formerly Wagon Wheel Flea Market	4016 US Highway 19	Retail Stores, One Story	814	2,676	x 1,000 Sq. Ft.	152	--	--	--	12	16	28	39%	41%	--	--	0	--	5	5	--	--	0	5	--	5	
82R	18-26-16-0060-00F00-00AO	Center Plaza	4106 US Highway 19	Shopping Center	814	19,160	x 1,000 Sq. Ft.	857	--	--	--	29	38	67	39%	41%	--	--	0	--	11	11	--	--	0	12	--	12	
D.	Median Opening	Flamingo Dr		Single Family Detached Homes	210	79,000	Units	837	16	49	65	55	32	87	39%	41%	--	6	6	--	21	21	7	--	7	23	--	23	
83R	18-26-16-0060-00E00-00B0	Subway Restaurant	4218 US Highway 19	Drive-In Restaurant	934	2,068	x 1,000 Sq. Ft.	1,026	56	54	110	37	35	72	39%	41%	--	22	22	--	15	15	23	--	23	15	--	15	
85R	18-26-16-0000-01500-0020	Wendy's Restaurant	4240 US Highway 19	Drive-In Restaurant	934	2,165	x 1,000 Sq. Ft.	1,074	59	56	115	39	36	75	39%	41%	--	23	23	--	15	15	24	--	24	16	--	16	
84R/86R	18-26-16-0000-01500-0010	Sam's Club	4350 US Highway 19	Discount Club	861	134,589	x 1,000 Sq. Ft.	5,626	53	22	75	286	286	571	25%	41%	--	13	13	--	72	72	22	--	22	118	--	118	
87R	18-26-16-0000-01500-0000	Taco Bell/KFC/Pizza Hut Restaurant	4300 US Highway 19	Drive-In Restaurant	934	3,258	x 1,000 Sq. Ft.	1,616	88	85	173	59	54	113	39%	41%	--	34	34	--	23	23	36	--	36	24	--	24	
88R	18-26-16-0010-00400-0010	Mobility Express	4316 US Highway 19	Retail Stores, One-Story	814	7,241	x 1,000 Sq. Ft.	347	--	--	--	17	22	39	39%	41%	--	--	0	--	7	7	--	--	0	7	--	7	
89R	18-26-16-0010-00400-0030	Miller's Liquidators, Gourmet Discount Groceries, V	4408 and 4412 US Highway 19	Retail Stores, One-Story	814	1,332	x 1,000 Sq. Ft.	95	--	--	--	11	14	25	39%	0%	--	--	0	--	4	4	--	--	0	0	--	0	
Total (Northeast Quadrant)									11,630	272	266	538	545	532	1,077			0	98	98	0	173	173	112	0	112	220	0	220
Northwest Quadrant																													
69L/ 70L	18-26-16-0040-04700-0000	Sun Toyota	4601 Old Bailey's Bluff Rd	Car Dealership	841	39,660	x 1,000 Sq. Ft.	1,322	60	21	81	38	60	98	19%	21%	--	4	4	--	12	12	--	4	4	--	12	12	
71L	18-26-16-0040-04800-0020	Westminster Presbyterian Church	4125 US Highway 19	Church	560	18,874	x 1,000 Sq. Ft.	172	8	6	14	6	6	12	39%	41%	--	3	3	--	2	2	--	3	3	--	2	2	
72L	18-26-16-0510-00001-8090	Whataburger Restaurant	4205 US Highway 19	Fast-Food Restaurant	934	3,051	x 1,000 Sq. Ft.	1,514	83	79	162	55	51	106	39%	41%	--	31	31	--	20	20	--	33	33	--	21	21	
D.	Median Opening	Glissade Dr		Single Family Detached Homes	210	174,000	Units	1,731	33	98	131	111	65	176	39%	41%	--	38	38	--	25	25	--	41	41	--	27	27	
		Garden of Beach Square Condominiums		Multi-Family Homes	230	286,000	Units	1,568	20	100	120	95	47	142	39%	41%	--	39	39	--	18	18	--	41	41	--	19	19	
73LA	18-26-16-0510-00001-8100	Porcelli Executive Centre	4644 Glissade Dr	Retail Stores, One Story	814	7,000	x 1,000 Sq. Ft.	337	--	--	--	17	21	38	39%	41%	--	--	0	--	8	8	--	--	0	--	9	9	
73LB	18-26-16-0510-00001-8110	Pallard	4630 Glissade Dr	Retail Stores, One Story	814	5,400	x 1,000 Sq. Ft.	269	--	--	--	15	19	34	39%	41%	--	--	0	--	7	7	--	--	0	--	8	8	
73LC	18-26-16-0510-00001-8020	St. Andrews Orthodox Church	4633 Glissade Dr	Church	560	4,496	x 1,000 Sq. Ft.	41	2	1	3	2	1	3	39%	41%	--	1	1	--	1	1	--						

Table B-2: Summary of Trip Generation for Existing Adjacent Land Uses - US Highway 19 at Ridge Road

Reference Number	Parcel Number	Description	Address	Land Use	ITE Land Use Code	Size	Units	Daily Peak	AM Peak			PM Peak			Directional Trip Distribution		Frontage Road U-Turn Volumes						Frontage Road Thru Volumes						
									In	Out	Total	In	Out	Total	U-Turn%	Thru%	AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour			
																	NB-to-SB	SB-to-NB	Total	NB-to-SB	SB-to-NB	Total	NB	SB	Total	NB	SB	Total	
Southeast Quadrant																													
212R	29-25-16-0160-00000-0010	Gateway Honda	8442 US Highway 19	Car Dealership	841	47.879	x 1,000 Sq. Ft.	1,596	73	25	98	44	68	112	9%	20%	2	--	2	6	--	6	5	--	5	13	--	13	
211R	29-25-16-0110-00R00-0080	Headlight Medic Inc./West Coast Truck Accessories	8338 US Highway 19	Retail Stores, One Story	814	1.160	x 1,000 Sq. Ft.	87	--	--	--	11	13	24	37%	39%	--	--	0	5	--	5	--	--	0	5	--	5	
210R	29-25-16-0110-00S00-0020	Fermano Car Wash and Detail Center	8326 US Highway 19	Automated Car Wash	948	6.160	x 1,000 Sq. Ft.	--	--	--	--	44	44	87	37%	39%	--	--	0	16	--	16	--	--	0	17	--	17	
210RA	29-25-16-0110-00S00-0000	Columbian #1, Inc.	5850 K of C Dr	Clubs, Lodges, Halls	931	15.400	x 1,000 Sq. Ft.	1,385	10	2	12	77	38	115	37%	39%	1	--	1	14	--	14	1	--	1	15	--	15	
209R	29-25-16-0110-00S00-0010	Brooklyn's Auto Service	8312 US Highway 19	Auto Service Center	848	1.920	x 1,000 Sq. Ft.	42	4	2	6	3	5	8	37%	39%	1	--	1	2	--	2	1	--	1	2	--	2	
208R	29-25-16-0030-00000-0030	Raybould	Not Applicable	Warehouse	150	3.724	x 1,000 Sq. Ft.	18	7	1	8	1	4	5	37%	39%	1	--	1	1	--	1	1	--	1	1	--	1	
207R	29-25-16-0030-00000-0010	Pasco Patio	8300 US Highway 19	Retail Stores, One Story	814	3.448	x 1,000 Sq. Ft.	185	--	--	--	13	17	30	37%	39%	--	--	0	6	--	6	--	--	0	7	--	7	
		Right-In/Right-Out		Single Family Detached Homes	210	13.000	Units	159	5	14	19	11	6	17	37%	39%	5	--	5	2	--	2	6	--	6	2	--	2	
206R	29-25-16-0030-00000-0330/0340	George's Wholesale Tires, George's Automotive, Rowe's Auto Sales	8228 US Highway 19	Auto Sales and Service	849	10.132	x 1,000 Sq. Ft.	206	9	5	14	10	11	21	37%	39%	2	--	2	4	--	4	2	--	2	4	--	4	
206R1	29-25-16-0020-04100-0010	Miller	8202 Washington St	Professional Service Building	710	20.678	x 1,000 Sq. Ft.	396	47	6	53	17	85	102	19%	39%	1	--	1	16	--	16	2	--	2	33	--	33	
206R2	29-25-16-0020-04100-0020	Economou	8152 Washington St	Professional Service Building	710	3.128	x 1,000 Sq. Ft.	34	4	1	5	1	4	5	19%	39%	0	--	0	1	--	1	0	--	0	2	--	2	
206R3	29-25-16-0100-00000-0010	Galeano	8136 Washington St	Retail Stores, One Story	814	1.920	x 1,000 Sq. Ft.	120	--	--	--	11	15	26	19%	39%	--	--	0	3	--	3	--	--	0	6	--	6	
206R4	29-25-16-0100-00000-0360	St. Martin	8120 Washington St	Office, One Story	710	2.751	x 1,000 Sq. Ft.	30	4	0	4	1	3	4	19%	39%	0	--	0	1	--	1	0	--	0	1	--	1	
G.	Median Opening	Washington Street	Sun Glo Ave	Single Family Detached Homes	210	10.000	Units	125	4	12	16	8	5	13	19%	39%	2	--	2	1	--	1	5	--	5	2	--	2	
			Sun Glo Ave	Multi-Family	220	26.000	Units	175	3	10	13	10	6	16	19%	39%	2	--	2	1	--	1	4	--	4	2	--	2	
205R	29-25-16-0000-02300-0000	Vacant - Sanchez	Not Applicable	Commercial	814	14.463	x 1,000 Sq. Ft.	656	--	--	--	25	31	56	37%	39%	--	--	0	12	--	12	--	--	0	12	--	12	
203R/204R	29-25-16-0000-02000-0000	Sunoco Gas Food Mart	8124 US Highway 19	Gasoline/Service Station with Conven	945	12.000	Fueling Positions	2,023	69	69	138	83	83	166	19%	39%	13	--	13	16	--	16	27	--	27	32	--	32	
201R/202R	29-25-16-0000-02200-0000	Marie Powell Reality, Inc./Secure Close Title and Mortgage Services	8106 US Highway 19	Office, One Story	710	2.682	x 1,000 Sq. Ft.	30	4	0	4	1	3	4	19%	39%	0	--	0	1	--	1	0	--	0	1	--	1	
202R1	29-25-16-0000-02400-0000	U.S. Postal Office	8101 Washington St	U.S. Postal Office	732	8.624	x 1,000 Sq. Ft.	933	36	33	69	48	38	94	19%	39%	6	--	6	7	--	7	13	--	13	15	--	15	
200R	29-25-16-0000-03600-0000	Jade's Auto Sale, Inc.	8032 US Highway 19	Car Dealership	841	1.305	x 1,000 Sq. Ft.	44	2	1	3	12	20	32	37%	39%	0	--	0	7	--	7	0	--	0	8	--	8	
Total (Southeast Quadrant)									8,244	278	184	462	431	498	937			36	0	36	122	0	122	67	0	67	180	0	180
Northeast Quadrant																													
213R	29-25-16-0020-01200-0080	Bank Atlantic	8522 US Highway 19	Financial Institution	912	11.097	x 1,000 Sq. Ft.	2,280	77	60	137	254	254	508	39%	37%	--	30	30	--	99	99	29	--	29	95	--	95	
214R	29-25-16-0020-01200-0070	D&G Motors	8532 US Highway 19	Auto Sales and Service	841	0.576	x 1,000 Sq. Ft.	19	1	0	1	12	19	31	39%	37%	--	0	0	--	5	5	0	--	0	5	--	5	
215R	29-25-16-0020-01200-0050	Checkers Restaurant	8602 US Highway 19	Drive-In Restaurant	934	0.683	Units	339	18	18	36	12	12	24	39%	37%	--	7	7	--	5	5	7	--	7	5	--	5	
216R	29-25-16-0020-01200-0060	Centry 21 Realty of Pasco, Inc.	8616 US Highway 19	Office, One Story	710	2.948	x 1,000 Sq. Ft.	32	4	1	5	1	3	4	39%	37%	--	2	2	--	0	0	2	--	2	0	--	0	
216RA	Leo Kidd Avenue	Sunshine Mobile Park	8626 Leo Kidd Ave1	Mobile Home Park	240	37.000	Units	408	5	21	26	14	9	23	39%	37%	--	2	2	--	6	6	2	--	2	5	--	5	
217R/218R	28-25-16-0040-00000-0060	Henkel's RV Sales	8640 US Highway 19	Auto Sales and Service	841	2.644	x 1,000 Sq. Ft.	88	4	1	5	13	21	34	39%	37%	--	1	1	--	5	5	1	--	1	5	--	5	
J.	Median Opening	Springer Drive																											
219R	28-25-16-0050-00A00-0010	Red Carpet Motors	6041 Springer Dr	Auto Sales and Service	841	1.352	x 1,000 Sq. Ft.	45	2	1	3	12	20	32	39%	37%	--	1	1	--	5	5	1	--	1	5	--	5	
		Right-In/Right-Out		Single Family Detached Homes	210	46.000	Units	509	11	32	42	33	20	53	39%	37%	--	4	4	--	13	13	4	--	4	13	--	13	
				Retail Stores, One Story	814	12.991	x 1,000 Sq. Ft.	593	--	--	--	23	30	53	39%	37%	--	--	0	--	9	9	--	--	0	9	--	9	
220R	28-25-16-0010-02400-0020	Extra Space Storage	6109 Ridge Crest Dr	Warehouse	151	71.025	x 1,000 Sq. Ft.	168	6	5	11	8	9	17	39%	37%	--	3	3	--	3	3	2	--	2	3	--	3	
221R	28-25-16-0080-00100-00A0	Gator Office Insurance	8812 US Highway 19	Office, One Story	710	1.575	x 1,000 Sq. Ft.	17	2	0	2	0	2	2	39%	37%	--	1	1	--	0	0	1	--	1	0	--	0	
222R	28-25-16-0080-00100-0010	Gulf Coast Motor Sports	8822 US Highway 19	ATV Sales and Service	843	3.780	x 1,000 Sq. Ft.	156	3	3	6	7	8	15	39%	37%	--	1	1	--	3	3	1	--	1	3	--	3	
				Warehouse	150	8.816	x 1,000 Sq. Ft.	383	12	3	15	3	8	10	39%	37%	--	5	5	--	1	1	5	--	5	1	--	1	
223R	28-25-16-0010-02100-0010	Nico's Restaurant Suppliers	8826 US Highway 19	Light Manufacturing	140	20.250	x 1,000 Sq. Ft.	58	12	3	15	5	10	15	39%	37%	--	5	5	--	2	2	4	--	4	2	--	2	
224R	28-25-16-0080-00100-0050	Hubcap and Wheels; Marine Electronics Service, Inc.	8830 US Highway 19	Retail Stores, One Story	814	2.292	x 1,000 Sq. Ft.	136	--	--	--	12	15	27	39%	37%	--	--	0	--	5	5	--	--	0	4	--	4	
225R	28-25-16-0080-00100-0060	Vacant - West Central Florida Properties	8900 US Highway 19	Commercial	814	7.656	x 1,000 Sq. Ft.	365	--	--	--	18	22	40	39%	37%	--	--	0	--	7	7	--	--	0	7	--	7	
Total (Northeast Quadrant)									5,996	157	147	304	429	459	8888														

Table B-3: Summary of Trip Generation for Existing Adjacent Land Uses - US Highway 19 at SR 52

Reference Number	Parcel Number	Description	Address	Land Use	ITE Land Use Code	Size	Units	Daily Peak	AM Peak			PM Peak			Directional Trip Distribution	Frontage Road U-Turn Volumes						Frontage Road Thru Volumes																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
									In	Out	Total	In	Out	Total		U-Turn%	Thru%	AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
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Table B-4: Summary of Trip Generation for Existing Adjacent Land Uses - US Highway 19 at County Line Road

Reference Number	Parcel Number	Description	Address	Land Use	ITE Land Use Code	Size	Units	Daily Peak	AM Peak			PM Peak			Directional Trip Distribution		Frontage Road U-Turn Volumes						Frontage Road Thru Volumes					
									In	Out	Total	In	Out	Total	U-Turn%	Thru%	AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
																	NB-to-SB	SB-to-NB	Total	NB-to-SB	SB-to-NB	Total	NB	SB	Total	NB	SB	Total
Southeast Quadrant																												
495R	06-24-17-0010-00C00-0250	Seven Eleven	18934 US Highway 19	Convenience Market with Gasoline Pumps	853	2.940	x1,000 sq. feet	2,486	67	67	134	89	89	178	41%	40%	28	0	28	37	0	37	26	0	26	35	0	35
494R	06-24-17-0010-00C00-0220	American Builders and Contractors Supply Company	18906 US Highway 19	Warehousing	150	44.000	x1,000 sq. feet	218	38	8	46	9	26	34	41%	40%	3	0	3	11	0	11	3	0	3	10	0	10
493R	06-24-17-0010-00C00-0080	Vacant - Higinbotham	Not Applicable	Commercial	814	16.300	x1,000 sq. feet	735	--	--	--	27	34	61	41%	40%	0	0	0	14	0	14	0	0	0	13	0	13
492R	06-24-17-0010-00C00-0060	Sprecacenera	18800 US Highway 19	Auto Service	942	2.520	x1,000 sq. feet	--	5	2	7	5	5	9	41%	40%	1	0	1	2	0	2	1	0	1	2	0	2
491R	06-24-17-0010-00C00-0040	Tribbro Co	18740 US Highway 19	Warehousing	150	1.900	x1,000 sq. feet	9	4	1	5	1	2	3	41%	40%	0	0	0	1	0	1	0	0	0	1	0	1
490R	06-24-17-0010-00C00-0010	Family Meat Market; The Player's Club Restaurant & Lounge	18718 US Highway 19	Retail Stores, One Story	814	6.900	x1,000 sq. feet	333	--	--	--	17	21	38	41%	40%	0	0	0	9	0	9	0	0	0	8	0	8
V.	Median Opening	Craig Lane		Commercial	820	46.620	x1,000 sq. feet	2,002	29	19	48	84	91	175	41%	40%	8	0	8	38	0	38	7	0	7	36	0	36
				Single Family	210	4.000	Units	54	3	9	12	4	2	6	41%	40%	4	1	5	1	1	2	4	1	5	1	1	2
489R	06-24-17-0010-00C00-0010	Sunset Junction (U-Haul, Amerigas, Pottery, pond supplies)	18714 Craig Loop	Retail Stores, One Story	814	2.392	x1,000 sq. feet	140	--	--	--	12	15	27	41%	40%	0	0	0	6	0	6	0	0	0	6	0	6
488R	06-24-17-0010-00B00-0010	Tampa Acquisitions, Inc.	18638 US Highway 19	Service Station	942	0.786	x1,000 sq. feet	--	1	1	2	2	2	3	41%	40%	0	0	0	1	0	1	0	0	0	1	0	1
	Right-In/Right-Out Access	Harris Loop		Commercial	820	59.401	x1,000 sq. feet	4,841	70	45	115	213	231	444	41%	40%	19	0	19	95	0	95	18	0	18	91	0	91
				Warehousing	150	9.600	x1,000 sq. feet	48	13	3	16	3	8	10	41%	40%	1	1	2	3	1	4	1	1	2	3	1	4
487R	06-24-17-0010-00A00-0171	Vacant - Krysher	10522 Harris Loop	Commercial	814	6.865	x1,000 sq. feet	331	--	--	--	17	21	38	41%	40%	0	0	0	9	0	9	0	0	0	8	0	8
486R	06-24-17-0010-00A00-0130	Vacant - Krysher	Not Applicable	Commercial	814	8.880	x1,000 sq. feet	418	--	--	--	19	24	43	41%	0%	0	0	0	10	0	10	0	0	0	0	0	0
485R	06-24-17-0010-00A00-0121	Vacant - Krysher	Not Applicable	Commercial	814	2.007	x1,000 sq. feet	123	--	--	--	11	15	26	41%	0%	0	0	0	6	0	6	0	0	0	0	0	0
484R	06-24-17-0010-00A00-0090	Vacant - Krysher	Not Applicable	Commercial	814	6.020	x1,000 sq. feet	295	--	--	--	16	20	36	41%	0%	0	0	0	8	0	8	0	0	0	0	0	0
483R	06-24-17-0010-00A00-0070	Carroll	18522 US Highway 19	Manufacturing	140	1.680	x1,000 sq. feet	6	1	0	1	0	1	1	41%	0%	0	0	0	0	0	0	0	0	0	0	0	0
482R	06-24-17-0010-00A00-0040	Naglieri	18508 US Highway 19	Manufacturing	140	6.606	x1,000 sq. feet	25	4	1	5	2	3	5	41%	0%	0	0	0	1	0	1	0	0	0	0	0	0
Total (Southeast Quadrant)								12,064	235	156	391	528	609	1137			64	2	66	252	2	254	60	2	62	215	2	217
Northeast Quadrant																												
496R	R31-223-17-1880-0000-0010	SunTrust Bank	10 Commercial Wy	Drive-In Bank	912	4.123	x1,000 sq. feet	1,009	29	22	51	95	95	189	40%	41%	--	11	11	--	37	37	12	--	12	39	--	39
497R	R31-223-17-1880-0000-0110	Uhl Plaza	50 Commercial Wy	Shopping Center	814	20.190	x1,000 sq. feet	901	--	--	--	31	39	70	40%	41%	--	--	0	--	12	12	--	--	0	13	--	13
498R	R31-223-17-1880-0000-0160	Stockton Plaza	120 Commercial Wy	Shopping Center	814	12.600	x1,000 sq. feet	577	--	--	--	23	29	52	40%	41%	--	--	0	--	9	9	--	--	0	9	--	9
499R	R31 -223-17-1880-0000-0200	Curtin Plaza	146 Commercial Wy	Shopping Center	814	5.000	x1,000 sq. feet	252	--	--	--	15	18	33	40%	41%	--	--	0	--	6	6	--	--	0	6	--	6
500R	R31-223-17-1880-0000-0220	Vacant - Sadoyan	Not Applicable	Commercial	814	3.172	x1,000 sq. feet	173	--	--	--	13	16	29	40%	41%	--	--	0	--	5	5	--	--	0	5	--	5
501R	R31-223-17-1880-0000-0290	Vacant - Holman	Not Applicable	Commercial	814	0.750	x1,000 sq. feet	70	--	--	--	10	13	23	40%	41%	--	--	0	--	4	4	--	--	0	4	--	4
502R	R29-223-17-3582-0007-0010	Vacant - BSBZ	201 Della Ct	Commercial	814	21.775	x1,000 sq. feet	969	--	--	--	33	41	74	40%	41%	--	--	0	--	13	13	--	--	0	13	--	13
503R	R29-223-17-3582-0007-0020	Credential Leasing Corp of Florida; Palace Grand Caterers	275 Della Ct	Restaurant/Lounge	931	15.690	x1,000 sq. feet	1,411	11	2	13	79	39	118	40%	41%	--	4	4	--	31	31	4	--	4	33	--	33
504R	R29-223-17-3582-0007-0040	Vacant - Tsantes, Gemelas, and Spiliotis	Not Applicable	Commercial	814	13.429	x1,000 sq. feet	612	--	--	--	24	30	54	40%	41%	--	--	0	--	9	9	--	--	0	10	--	10
505R	R29-223-17-3582-0008-0010	Vacant - Nikolakakos	5085 Caribbean Dr	Commercial	814	15.338	x1,000 sq. feet	694	--	--	--	26	32	58	40%	41%	--	--	0	--	10	10	--	--	0	11	--	11
506R	R29-223-17-3582-0007-0050	Vacant - Rodriguez	5122 Caribbean Dr	Commercial	814	18.495	x1,000 sq. feet	829	--	--	--	29	37	66	40%	41%	--	--	0	--	11	11	--	--	0	12	--	12
507R	R29-223-17-3582-0009-0010	Senica Air Conditioning, Inc.; Sprint	5121 Caribbean Dr	Warehousing	150	7.000	x1,000 sq. feet	35	11	2	13	2	6	8	40%	41%	--	4	4	--	1	1	4	--	4	1	--	1
508R	R29-223-17-3582-0009-0020	Middleton Pest Control, Inc.; Ron Fee Lawn Spraying and Chemical/Fert	306 Beverly Ct	Warehousing	150	5.975	x1,000 sq. feet	30	9	2	11	2	5	7	40%	41%	--	4	4	--	1	1	4	--	4	1	--	1
509R	R29-223-17-3582-0009-0030	Vacant - Ruppe	322 Beverly Ct	Commercial	814	11.925	x1,000 sq. feet	548	--	--	--	22	28	50	40%	41%	--	--	0	--	9	9	--	--	0	9	--	9
510R	R29-223-17-3582-0009-0040	Vacant - Jan De Ruijter	352 Beverly Ct	Commercial	814	14.290	x1,000 sq. feet	649	--	--	--	25	31	56	40%	41%	--	--	0	--	10	10	--	--	0	10	--	10
511R	R29-223-17-3582-0009-0050	Floor World	392 Beverly Ct	Warehousing	150	6.840	x1,000 sq. feet	34	10	2	12	2	6	8	40%	41%	--	4	4	--	1	1	4	--	4	1	--	1
Y.	Median Opening	Caribbean Drive		Single Family	210	42.000	units	468	10	29	39	31	18	49	40%	41%	--	4	4	--	12	12	4	--	4	13	--	13
Total (Northeast Quadrant)								9,261	78	61	139	459	485	944			0	31	31</									

Appendix C1

SYNCHRO Output – Texas U-Turn Analysis

HCM Signalized Intersection Capacity Analysis

1: SR 54 & Southbound US 19 Ramps

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Volume (vph)	140	90	50	800	40	340	120	30	190	420	230	280	190	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.3		4.5	5.3	5.3		5.0	5.0	4.0		5.0	5.0	5.0
Lane Util. Factor	1.00	1.00		0.97	1.00	1.00		1.00	1.00	1.00		0.97	1.00	1.00
Frt	1.00	0.95		1.00	1.00	0.85		1.00	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1752	1746		3400	1845	1568		1752	1845	1568		3400	1845	1568
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.95	1.00	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1752	1746		3400	1845	1568		1752	1845	1568		3400	1845	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	152	98	54	870	43	370	130	33	207	457	250	304	207	43
RTOR Reduction (vph)	0	16	0	0	0	196	0	0	0	0	0	0	0	34
Lane Group Flow (vph)	152	136	0	870	43	174	0	163	207	457	0	554	207	9
Turn Type	Prot			Prot		Perm	Prot	Prot		Free	Prot	Prot		Perm
Protected Phases	5	2		1	6		3	3	8		7	7	4	
Permitted Phases						6				Free				4
Actuated Green, G (s)	14.0	15.4		31.1	32.5	32.5		15.0	17.1	104.2		20.8	22.9	22.9
Effective Green, g (s)	14.0	15.4		31.1	32.5	32.5		15.0	17.1	104.2		20.8	22.9	22.9
Actuated g/C Ratio	0.13	0.15		0.30	0.31	0.31		0.14	0.16	1.00		0.20	0.22	0.22
Clearance Time (s)	4.5	5.3		4.5	5.3	5.3		5.0	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	235	258		1015	575	489		252	303	1568		679	405	345
v/s Ratio Prot	0.09	c0.08		c0.26	0.02			0.09	c0.11			c0.16	0.11	
v/s Ratio Perm						0.11				0.29				0.01
v/c Ratio	0.65	0.53		0.86	0.07	0.36		0.65	0.68	0.29		0.82	0.51	0.03
Uniform Delay, d1	42.8	41.0		34.5	25.3	27.7		42.1	41.0	0.0		39.9	35.7	31.9
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	6.0	1.9		7.3	0.1	0.4		5.6	6.2	0.5		7.5	1.1	0.0
Delay (s)	48.8	43.0		41.7	25.3	28.2		47.7	47.2	0.5		47.4	36.8	31.9
Level of Service	D	D		D	C	C		D	D	A		D	D	C
Approach Delay (s)		45.9			37.3			21.5					43.8	
Approach LOS		D			D			C					D	
Intersection Summary														
HCM Average Control Delay			35.7											
HCM Volume to Capacity ratio			0.75											
Actuated Cycle Length (s)			104.2											
Intersection Capacity Utilization			76.4%											
Analysis Period (min)			15											
c Critical Lane Group														

HCM Signalized Intersection Capacity Analysis

1: SR 54 & Southbound US 19 Ramps

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Volume (vph)	140	90	50	800	40	340	120	30	190	420	230	280	190	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.3		4.5	5.3	5.3	5.0	5.0	5.0	4.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00		0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95	1.00	1.00
Satd. Flow (prot)	1752	1746		3400	1845	1568	1752	1752	1845	1568	1752	3400	1845	1568
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.12	0.95	1.00	1.00	0.07	0.95	1.00	1.00
Satd. Flow (perm)	1752	1746		3400	1845	1568	226	1752	1845	1568	138	3400	1845	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	152	98	54	870	43	370	130	33	207	457	250	304	207	43
RTOR Reduction (vph)	0	16	0	0	0	183	0	0	0	0	0	0	0	34
Lane Group Flow (vph)	152	136	0	870	43	187	130	33	207	457	250	304	207	9
Turn Type	Prot			Prot		Perm	custom	Prot		Free	custom	Prot		Perm
Protected Phases	5	2		1	6		3	8		7		4		
Permitted Phases						6	2 8			Free	4 6			4
Actuated Green, G (s)	13.5	16.0		30.1	32.6	32.6	43.4	10.7	16.7	97.6	68.6	15.0	21.0	21.0
Effective Green, g (s)	13.5	16.0		30.1	32.6	32.6	43.4	10.7	16.7	97.6	68.6	15.0	21.0	21.0
Actuated g/C Ratio	0.14	0.16		0.31	0.33	0.33	0.44	0.11	0.17	1.00	0.70	0.15	0.22	0.22
Clearance Time (s)	4.5	5.3		4.5	5.3	5.3	5.0	5.0	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	242	286		1049	616	524	268	192	316	1568	345	523	397	337
v/s Ratio Prot	0.09	0.08		c0.26	0.02		0.05	0.02	0.11		c0.11	0.09	0.11	
v/s Ratio Perm						0.12	0.16			0.29	c0.40			0.01
v/c Ratio	0.63	0.48		0.83	0.07	0.36	0.49	0.17	0.66	0.29	0.72	0.58	0.52	0.03
Uniform Delay, d1	39.7	37.0		31.4	22.2	24.6	41.8	39.4	37.8	0.0	37.4	38.4	33.9	30.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.0	1.3		5.5	0.0	0.4	1.4	0.4	4.8	0.5	7.4	1.6	1.2	0.0
Delay (s)	44.7	38.2		36.9	22.2	25.0	43.2	39.9	42.6	0.5	44.7	40.0	35.1	30.3
Level of Service	D	D		D	C	C	D	D	D	A	D	D	D	C
Approach Delay (s)		41.5			33.0				19.3				39.7	
Approach LOS		D			C				B				D	
Intersection Summary														
HCM Average Control Delay			31.9			HCM Level of Service							C	
HCM Volume to Capacity ratio			0.76											
Actuated Cycle Length (s)			97.6			Sum of lost time (s)					14.5			
Intersection Capacity Utilization			74.6%			ICU Level of Service					D			
Analysis Period (min)			15											
c Critical Lane Group														

HCM Signalized Intersection Capacity Analysis

1: SR 54 & Southbound US 19 Ramps

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Volume (vph)	220	90	80	970	100	520	140	20	310	460	310	320	250	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.3		4.5	5.3	5.3		5.0	5.0	4.0		5.0	5.0	5.0
Lane Util. Factor	1.00	1.00		0.97	1.00	1.00		1.00	1.00	1.00		0.97	1.00	1.00
Frt	1.00	0.93		1.00	1.00	0.85		1.00	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1752	1715		3400	1845	1568		1752	1845	1568		3400	1845	1568
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.95	1.00	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1752	1715		3400	1845	1568		1752	1845	1568		3400	1845	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	239	98	87	1054	109	565	152	22	337	500	337	348	272	22
RTOR Reduction (vph)	0	24	0	0	0	86	0	0	0	0	0	0	0	16
Lane Group Flow (vph)	239	161	0	1054	109	479	0	174	337	500	0	685	272	6
Turn Type	Prot			Prot		Perm	Prot	Prot		Free	Prot	Prot		Perm
Protected Phases	5	2		1	6		3	3	8		7	7	4	
Permitted Phases						6				Free				4
Actuated Green, G (s)	18.5	16.7		42.5	40.7	40.7		18.0	26.8	133.8		28.0	36.8	36.8
Effective Green, g (s)	18.5	16.7		42.5	40.7	40.7		18.0	26.8	133.8		28.0	36.8	36.8
Actuated g/C Ratio	0.14	0.12		0.32	0.30	0.30		0.13	0.20	1.00		0.21	0.28	0.28
Clearance Time (s)	4.5	5.3		4.5	5.3	5.3		5.0	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	242	214		1080	561	477		236	370	1568		712	507	431
v/s Ratio Prot	0.14	0.09		c0.31	0.06			0.10	c0.18			c0.20	0.15	
v/s Ratio Perm						c0.31				0.32				0.00
v/c Ratio	0.99	0.75		0.98	0.19	1.01		0.74	0.91	0.32		0.96	0.54	0.01
Uniform Delay, d1	57.5	56.6		45.1	34.4	46.6		55.6	52.3	0.0		52.4	41.2	35.3
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	53.8	14.0		21.5	0.2	42.5		11.4	25.9	0.5		24.6	1.1	0.0
Delay (s)	111.4	70.5		66.7	34.6	89.0		67.0	78.2	0.5		77.0	42.3	35.3
Level of Service	F	E		E	C	F		E	E	A		E	D	D
Approach Delay (s)		93.6			72.0				37.9				66.4	
Approach LOS		F			E				D				E	
Intersection Summary														
HCM Average Control Delay			64.5				HCM Level of Service			E				
HCM Volume to Capacity ratio			0.99											
Actuated Cycle Length (s)			133.8				Sum of lost time (s)			19.8				
Intersection Capacity Utilization			95.2%				ICU Level of Service			F				
Analysis Period (min)			15											
c Critical Lane Group														

HCM Signalized Intersection Capacity Analysis

1: SR 54 & Southbound US 19 Ramps

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Volume (vph)	220	90	80	970	100	520	140	20	310	460	310	320	250	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.3		4.5	5.3	5.3	5.0	5.0	5.0	4.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00		0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt	1.00	0.93		1.00	1.00	0.85	1.00	1.00	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95	1.00	1.00
Satd. Flow (prot)	1752	1715		3400	1845	1568	1752	1752	1845	1568	1752	3400	1845	1568
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.09	0.95	1.00	1.00	0.05	0.95	1.00	1.00
Satd. Flow (perm)	1752	1715		3400	1845	1568	160	1752	1845	1568	100	3400	1845	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	239	98	87	1054	109	565	152	22	337	500	337	348	272	22
RTOR Reduction (vph)	0	24	0	0	0	80	0	0	0	0	0	0	0	16
Lane Group Flow (vph)	239	161	0	1054	109	485	152	22	337	500	337	348	272	6
Turn Type	Prot			Prot		Perm	custom	Prot		Free	custom	Prot		Perm
Protected Phases	5	2		1	6		3	8			7	4		
Permitted Phases						6	2 8			Free	4 6			4
Actuated Green, G (s)	19.4	19.6		42.3	42.5	42.5	58.8	12.7	26.5	131.0	96.8	22.8	36.6	36.6
Effective Green, g (s)	19.4	19.6		42.3	42.5	42.5	58.8	12.7	26.5	131.0	96.8	22.8	36.6	36.6
Actuated g/C Ratio	0.15	0.15		0.32	0.32	0.32	0.45	0.10	0.20	1.00	0.74	0.17	0.28	0.28
Clearance Time (s)	4.5	5.3		4.5	5.3	5.3	5.0	5.0	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	259	257		1098	599	509	226	170	373	1568	361	592	515	438
v/s Ratio Prot	0.14	0.09		c0.31	0.06		0.07	0.01	0.18		c0.16	0.10	0.15	
v/s Ratio Perm						c0.31	0.24			0.32	c0.53			0.00
v/c Ratio	0.92	0.63		0.96	0.18	0.95	0.67	0.13	0.90	0.32	0.93	0.59	0.53	0.01
Uniform Delay, d1	55.1	52.3		43.5	31.8	43.3	55.2	54.1	51.0	0.0	55.3	49.8	39.9	34.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	35.7	4.7		18.1	0.1	28.3	7.7	0.3	24.3	0.5	30.7	1.5	1.0	0.0
Delay (s)	90.8	57.0		61.6	31.9	71.6	62.8	54.4	75.3	0.5	86.0	51.3	40.9	34.2
Level of Service	F	E		E	C	E	E	D	E	A	F	D	D	C
Approach Delay (s)		76.0			63.0				36.0				60.0	
Approach LOS		E			E				D				E	
Intersection Summary														
HCM Average Control Delay			57.0											
HCM Volume to Capacity ratio			0.91											
Actuated Cycle Length (s)			131.0											
Intersection Capacity Utilization			94.4%											
Analysis Period (min)			15											
c Critical Lane Group														

HCM Signalized Intersection Capacity Analysis

1: Ridge Road & Southbound US 19 Ramps

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Volume (vph)	160	240	90	710	170	360	110	130	130	530	180	610	190	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.3		4.5	5.3	5.3		5.0	5.0	4.0		5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		0.97	1.00	1.00		1.00	1.00	1.00		0.97	1.00	1.00
Frt	1.00	0.96		1.00	1.00	0.85		1.00	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1752	3361		3400	1845	1568		1752	1845	1568		3400	1845	1568
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.95	1.00	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1752	3361		3400	1845	1568		1752	1845	1568		3400	1845	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	261	98	772	185	391	120	141	141	576	196	663	207	33
RTOR Reduction (vph)	0	32	0	0	0	269	0	0	0	0	0	0	0	26
Lane Group Flow (vph)	174	327	0	772	185	122	0	261	141	576	0	859	207	7
Turn Type	Prot			Prot		Perm	Prot	Prot		Free	Prot	Prot		Perm
Protected Phases	5	2		1	6		3	3	8		7	7	4	
Permitted Phases						6				Free				4
Actuated Green, G (s)	14.2	15.8		27.8	29.4	29.4		20.9	14.3	108.6		30.9	24.3	24.3
Effective Green, g (s)	14.2	15.8		27.8	29.4	29.4		20.9	14.3	108.6		30.9	24.3	24.3
Actuated g/C Ratio	0.13	0.15		0.26	0.27	0.27		0.19	0.13	1.00		0.28	0.22	0.22
Clearance Time (s)	4.5	5.3		4.5	5.3	5.3		5.0	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	229	489		870	499	424		337	243	1568		967	413	351
v/s Ratio Prot	0.10	c0.10		c0.23	0.10			0.15	0.08			c0.25	c0.11	
v/s Ratio Perm						0.08				0.37				0.00
v/c Ratio	0.76	0.67		0.89	0.37	0.29		0.77	0.58	0.37		0.89	0.50	0.02
Uniform Delay, d1	45.6	43.9		38.9	32.1	31.3		41.6	44.3	0.0		37.2	36.9	32.9
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	13.5	3.4		10.8	0.5	0.4		10.6	3.5	0.7		10.0	1.0	0.0
Delay (s)	59.0	47.4		49.7	32.6	31.7		52.2	47.8	0.7		47.2	37.8	32.9
Level of Service	E	D		D	C	C		D	D	A		D	D	C
Approach Delay (s)		51.2			42.1			21.2				45.0		
Approach LOS		D			D			C				D		
Intersection Summary														
HCM Average Control Delay			39.0				HCM Level of Service			D				
HCM Volume to Capacity ratio			0.76											
Actuated Cycle Length (s)			108.6				Sum of lost time (s)			14.8				
Intersection Capacity Utilization			80.1%				ICU Level of Service			D				
Analysis Period (min)			15											
c Critical Lane Group														

HCM Signalized Intersection Capacity Analysis

1: Ridge Road & Southbound US 19 Ramps

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Volume (vph)	160	240	90	710	170	360	110	130	130	530	180	610	190	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.3		4.5	5.3	5.3	5.0	5.0	5.0	4.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt	1.00	0.96		1.00	1.00	0.85	1.00	1.00	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95	1.00	1.00
Satd. Flow (prot)	1752	3361		3400	1845	1568	1752	1752	1845	1568	1752	3400	1845	1568
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.13	0.95	1.00	1.00	0.08	0.95	1.00	1.00
Satd. Flow (perm)	1752	3361		3400	1845	1568	248	1752	1845	1568	152	3400	1845	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	261	98	772	185	391	120	141	141	576	196	663	207	33
RTOR Reduction (vph)	0	32	0	0	0	256	0	0	0	0	0	0	0	25
Lane Group Flow (vph)	174	327	0	772	185	135	120	141	141	576	196	663	207	8
Turn Type	Prot			Prot		Perm	custom	Prot		Free	custom	Prot		Perm
Protected Phases	5	2		1	6		3	8			7	4		
Permitted Phases						6	2 8			Free	6 4			4
Actuated Green, G (s)	14.5	16.0		28.2	29.7	29.7	43.4	13.6	13.8	102.3	73.0	24.5	24.7	24.7
Effective Green, g (s)	14.5	16.0		28.2	29.7	29.7	43.4	13.6	13.8	102.3	73.0	24.5	24.7	24.7
Actuated g/C Ratio	0.14	0.16		0.28	0.29	0.29	0.42	0.13	0.13	1.00	0.71	0.24	0.24	0.24
Clearance Time (s)	4.5	5.3		4.5	5.3	5.3	5.0	5.0	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	248	526		937	536	455	305	233	249	1568	492	814	445	379
v/s Ratio Prot	0.10	c0.10		c0.23	0.10		0.05	0.08	c0.08		0.10	c0.20	0.11	
v/s Ratio Perm						0.09	0.11			0.37	0.19			0.01
v/c Ratio	0.70	0.62		0.82	0.35	0.30	0.39	0.61	0.57	0.37	0.40	0.81	0.47	0.02
Uniform Delay, d1	41.8	40.3		34.7	28.6	28.2	38.7	41.8	41.4	0.0	33.3	36.8	33.2	29.6
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.7	2.3		6.0	0.4	0.4	0.8	4.4	2.9	0.7	0.5	6.3	0.8	0.0
Delay (s)	50.5	42.6		40.7	29.0	28.6	39.6	46.2	44.4	0.7	33.8	43.0	33.9	29.6
Level of Service	D	D		D	C	C	D	D	D	A	C	D	C	C
Approach Delay (s)		45.2			35.6				18.3				39.3	
Approach LOS		D			D				B				D	
Intersection Summary														
HCM Average Control Delay			33.6											
HCM Volume to Capacity ratio			0.74											
Actuated Cycle Length (s)			102.3											
Intersection Capacity Utilization			75.0%											
Analysis Period (min)			15											
c Critical Lane Group														

HCM Signalized Intersection Capacity Analysis

1: Ridge Road & Southbound US 19 Ramps

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Volume (vph)	270	320	80	670	400	610	380	70	340	530	340	680	430	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.3		4.5	5.3	5.3		5.0	5.0	4.0		5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		0.97	1.00	1.00		1.00	1.00	1.00		0.97	1.00	1.00
Frt	1.00	0.97		1.00	1.00	0.85		1.00	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1752	3400		3400	1845	1568		1752	1845	1568		3400	1845	1568
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.95	1.00	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1752	3400		3400	1845	1568		1752	1845	1568		3400	1845	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	293	348	87	728	435	663	413	76	370	576	370	739	467	54
RTOR Reduction (vph)	0	13	0	0	0	78	0	0	0	0	0	0	0	27
Lane Group Flow (vph)	293	422	0	728	435	585	0	489	370	576	0	1109	467	27
Turn Type	Prot			Prot		Perm	Prot	Prot		Free	Prot	Prot		Perm
Protected Phases	5	2		1	6		3	3	8		7	7	4	
Permitted Phases						6				Free				4
Actuated Green, G (s)	23.5	35.8		39.4	51.7	51.7		38.0	30.0	170.0		45.0	37.0	37.0
Effective Green, g (s)	23.5	35.8		39.4	51.7	51.7		38.0	30.0	170.0		45.0	37.0	37.0
Actuated g/C Ratio	0.14	0.21		0.23	0.30	0.30		0.22	0.18	1.00		0.26	0.22	0.22
Clearance Time (s)	4.5	5.3		4.5	5.3	5.3		5.0	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	242	716		788	561	477		392	326	1568		900	402	341
v/s Ratio Prot	c0.17	0.12		0.21	0.24			0.28	0.20			c0.33	c0.25	
v/s Ratio Perm						c0.37				0.37				0.02
v/c Ratio	1.21	0.59		0.92	0.78	1.23		1.25	1.13	0.37		1.23	1.16	0.08
Uniform Delay, d1	73.2	60.5		63.8	53.9	59.1		66.0	70.0	0.0		62.5	66.5	53.0
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	126.8	1.2		16.4	6.6	119.4		131.0	91.5	0.7		114.2	96.9	0.1
Delay (s)	200.0	61.7		80.2	60.5	178.5		197.0	161.5	0.7		176.7	163.4	53.1
Level of Service	F	E		F	E	F		F	F	A		F	F	D
Approach Delay (s)		117.4			111.2			109.1				168.8		
Approach LOS		F			F			F				F		
Intersection Summary														
HCM Average Control Delay			128.2				HCM Level of Service			F				
HCM Volume to Capacity ratio			1.19											
Actuated Cycle Length (s)			170.0				Sum of lost time (s)			14.8				
Intersection Capacity Utilization			116.2%				ICU Level of Service			H				
Analysis Period (min)			15											
c Critical Lane Group														

HCM Signalized Intersection Capacity Analysis

1: Ridge Road & Southbound US 19 Ramps

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Volume (vph)	270	320	80	670	400	610	380	70	340	530	340	680	430	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.3		4.5	5.3	5.3	5.0	5.0	5.0	4.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95	1.00	1.00
Satd. Flow (prot)	1752	3400		3400	1845	1568	1752	1752	1845	1568	1752	3400	1845	1568
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.07	0.95	1.00	1.00	0.05	0.95	1.00	1.00
Satd. Flow (perm)	1752	3400		3400	1845	1568	125	1752	1845	1568	95	3400	1845	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	293	348	87	728	435	663	413	76	370	576	370	739	467	54
RTOR Reduction (vph)	0	15	0	0	0	59	0	0	0	0	0	0	0	33
Lane Group Flow (vph)	293	420	0	728	435	604	413	76	370	576	370	739	467	21
Turn Type	Prot			Prot		Perm	custom	Prot		Free	custom	Prot		Perm
Protected Phases	5	2		1	6		3	8			7	4		
Permitted Phases						6	2 8			Free	4 6			4
Actuated Green, G (s)	19.5	33.2		33.0	46.7	46.7	82.2	23.0	26.0	140.0	105.7	28.0	31.0	31.0
Effective Green, g (s)	19.5	33.2		33.0	46.7	46.7	82.2	23.0	26.0	140.0	105.7	28.0	31.0	31.0
Actuated g/C Ratio	0.14	0.24		0.24	0.33	0.33	0.59	0.16	0.19	1.00	0.76	0.20	0.22	0.22
Clearance Time (s)	4.5	5.3		4.5	5.3	5.3	5.0	5.0	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	244	806		801	615	523	341	288	343	1568	403	680	409	347
v/s Ratio Prot	c0.17	0.12		0.21	0.24		c0.20	0.04	0.20		0.18	0.22	c0.25	
v/s Ratio Perm						c0.39	0.51			0.37	0.51			0.01
v/c Ratio	1.20	0.52		0.91	0.71	1.16	1.21	0.26	1.08	0.37	0.92	1.09	1.14	0.06
Uniform Delay, d1	60.2	46.5		52.0	40.7	46.6	60.7	51.1	57.0	0.0	56.8	56.0	54.5	43.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	122.8	0.6		14.0	3.7	89.9	119.2	0.5	71.2	0.7	25.4	60.5	89.2	0.1
Delay (s)	183.1	47.1		66.1	44.4	136.6	179.9	51.6	128.2	0.7	82.2	116.5	143.7	43.1
Level of Service	F	D		E	D	F	F	D	F	A	F	F	F	D
Approach Delay (s)		101.8			86.5				87.8				114.0	
Approach LOS		F			F				F				F	
Intersection Summary														
HCM Average Control Delay			96.8											
HCM Volume to Capacity ratio			1.17											
Actuated Cycle Length (s)			140.0											
Intersection Capacity Utilization			106.0%											
Analysis Period (min)			15											
c Critical Lane Group														

HCM Signalized Intersection Capacity Analysis

1: SR 52 & Southbound US 19 Ramps

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Volume (vph)	150	170	140	1020	200	360	300	110	250	660	210	650	260	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.3		4.5	5.3	5.3		5.0	5.0	4.0		5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		0.97	1.00	1.00		1.00	1.00	1.00		0.97	1.00	1.00
Frt	1.00	0.93		1.00	1.00	0.85		1.00	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1752	3268		3400	1845	1568		1752	1845	1568		3400	1845	1568
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.95	1.00	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1752	3268		3400	1845	1568		1752	1845	1568		3400	1845	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	163	185	152	1109	217	391	326	120	272	717	228	707	283	54
RTOR Reduction (vph)	0	98	0	0	0	190	0	0	0	0	0	0	0	45
Lane Group Flow (vph)	163	239	0	1109	217	201	0	446	272	717	0	935	283	9
Turn Type	Prot			Prot		Perm	Prot	Prot		Free	Prot	Prot		Perm
Protected Phases	5	2		1	6		3	3	8		7	7	4	
Permitted Phases						6				Free				4
Actuated Green, G (s)	18.6	15.4		49.5	46.3	46.3		39.0	23.5	149.2		41.0	25.5	25.5
Effective Green, g (s)	18.6	15.4		49.5	46.3	46.3		39.0	23.5	149.2		41.0	25.5	25.5
Actuated g/C Ratio	0.12	0.10		0.33	0.31	0.31		0.26	0.16	1.00		0.27	0.17	0.17
Clearance Time (s)	4.5	5.3		4.5	5.3	5.3		5.0	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	218	337		1128	573	487		458	291	1568		934	315	268
v/s Ratio Prot	0.09	c0.07		c0.33	0.12			0.25	0.15			c0.28	c0.15	
v/s Ratio Perm						0.13				c0.46				0.01
v/c Ratio	0.75	0.71		0.98	0.38	0.41		0.97	0.93	0.46		1.00	0.90	0.03
Uniform Delay, d1	63.0	64.7		49.4	40.2	40.7		54.6	62.1	0.0		54.1	60.6	51.6
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	13.1	6.7		22.6	0.4	0.6		35.0	35.6	1.0		29.7	26.4	0.1
Delay (s)	76.1	71.5		72.1	40.6	41.3		89.6	97.7	1.0		83.8	87.0	51.6
Level of Service	E	E		E	D	D		F	F	A		F	F	D
Approach Delay (s)		73.0			61.1			46.8				83.1		
Approach LOS		E			E			D				F		
Intersection Summary														
HCM Average Control Delay			63.8				HCM Level of Service			E				
HCM Volume to Capacity ratio			0.93											
Actuated Cycle Length (s)			149.2				Sum of lost time (s)			14.8				
Intersection Capacity Utilization			95.8%				ICU Level of Service			F				
Analysis Period (min)			15											
c Critical Lane Group														

HCM Signalized Intersection Capacity Analysis

1: SR 52 & Southbound US 19 Ramps

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Volume (vph)	150	170	140	1020	200	360	300	110	250	660	210	650	260	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.3		4.5	5.3	5.3	5.0	5.0	5.0	4.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt	1.00	0.93		1.00	1.00	0.85	1.00	1.00	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95	1.00	1.00
Satd. Flow (prot)	1752	3268		3400	1845	1568	1752	1752	1845	1568	1752	3400	1845	1568
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.11	0.95	1.00	1.00	0.06	0.95	1.00	1.00
Satd. Flow (perm)	1752	3268		3400	1845	1568	198	1752	1845	1568	108	3400	1845	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	163	185	152	1109	217	391	326	120	272	717	228	707	283	54
RTOR Reduction (vph)	0	77	0	0	0	170	0	0	0	0	0	0	0	43
Lane Group Flow (vph)	163	260	0	1109	217	221	326	120	272	717	228	707	283	11
Turn Type	Prot			Prot		Perm	custom	Prot		Free	custom	Prot		Perm
Protected Phases	5	2		1	6		3	8			7	4		
Permitted Phases						6	2 8			Free	4 6			4
Actuated Green, G (s)	16.7	15.4		43.0	41.7	41.7	59.5	22.2	21.9	127.1	95.4	27.0	26.7	26.7
Effective Green, g (s)	16.7	15.4		43.0	41.7	41.7	59.5	22.2	21.9	127.1	95.4	27.0	26.7	26.7
Actuated g/C Ratio	0.13	0.12		0.34	0.33	0.33	0.47	0.17	0.17	1.00	0.75	0.21	0.21	0.21
Clearance Time (s)	4.5	5.3		4.5	5.3	5.3	5.0	5.0	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	230	396		1150	605	514	364	306	318	1568	430	722	388	329
v/s Ratio Prot	0.09	0.08		c0.33	0.12		0.16	0.07	0.15		0.11	c0.21	0.15	
v/s Ratio Perm						0.14	c0.26			c0.46	0.29			0.01
v/c Ratio	0.71	0.66		0.96	0.36	0.43	0.90	0.39	0.86	0.46	0.53	0.98	0.73	0.03
Uniform Delay, d1	52.9	53.3		41.3	32.5	33.4	53.2	46.5	51.1	0.0	45.3	49.8	46.8	39.9
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.6	3.9		18.4	0.4	0.6	23.4	0.8	19.6	1.0	1.3	28.0	6.7	0.0
Delay (s)	62.5	57.2		59.7	32.9	34.0	76.5	47.3	70.6	1.0	46.6	77.8	53.6	40.0
Level of Service	E	E		E	C	C	E	D	E	A	D	E	D	D
Approach Delay (s)		58.9			50.5				35.2				65.2	
Approach LOS		E			D				D				E	
Intersection Summary														
HCM Average Control Delay			50.7											
HCM Volume to Capacity ratio			0.94											
Actuated Cycle Length (s)			127.1											
Intersection Capacity Utilization			89.8%											
Analysis Period (min)			15											
c Critical Lane Group														

HCM Signalized Intersection Capacity Analysis

1: SR 52 & Southbound US 19 Ramps

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Volume (vph)	260	270	80	1240	340	550	660	250	630	760	570	680	670	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.3		4.5	5.3	5.3		5.0	5.0	4.0		5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		0.97	1.00	1.00		1.00	1.00	1.00		0.97	1.00	1.00
Frt	1.00	0.97		1.00	1.00	0.85		1.00	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1752	3384		3400	1845	1568		1752	1845	1568		3400	1845	1568
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.95	1.00	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1752	3384		3400	1845	1568		1752	1845	1568		3400	1845	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	283	293	87	1348	370	598	717	272	685	826	620	739	728	33
RTOR Reduction (vph)	0	15	0	0	0	38	0	0	0	0	0	0	0	13
Lane Group Flow (vph)	283	365	0	1348	370	560	0	989	685	826	0	1359	728	20
Turn Type	Prot			Prot		Perm	Prot	Prot		Free	Prot	Prot		Perm
Protected Phases	5	2		1	6		3	3	8		7	7	4	
Permitted Phases						6				Free				4
Actuated Green, G (s)	18.5	20.7		40.5	42.7	42.7		57.0	63.0	185.0		41.0	47.0	47.0
Effective Green, g (s)	18.5	20.7		40.5	42.7	42.7		57.0	63.0	185.0		41.0	47.0	47.0
Actuated g/C Ratio	0.10	0.11		0.22	0.23	0.23		0.31	0.34	1.00		0.22	0.25	0.25
Clearance Time (s)	4.5	5.3		4.5	5.3	5.3		5.0	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	175	379		744	426	362		540	628	1568		754	469	398
v/s Ratio Prot	0.16	0.11		c0.40	0.20			c0.56	0.37			0.40	c0.39	
v/s Ratio Perm						c0.36				0.53				0.01
v/c Ratio	1.62	0.96		1.81	0.87	1.55		1.83	1.09	0.53		1.80	1.55	0.05
Uniform Delay, d1	83.2	81.8		72.2	68.4	71.2		64.0	61.0	0.0		72.0	69.0	52.1
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	302.5	36.3		370.6	16.9	259.8		381.4	63.1	1.3		366.4	258.9	0.1
Delay (s)	385.7	118.1		442.9	85.3	331.0		445.4	124.1	1.3		438.4	327.9	52.2
Level of Service	F	F		F	F	F		F	F	A		F	F	D
Approach Delay (s)		232.3			356.9				210.6				394.4	
Approach LOS		F			F				F				F	
Intersection Summary														
HCM Average Control Delay			308.4				HCM Level of Service			F				
HCM Volume to Capacity ratio			1.68											
Actuated Cycle Length (s)			185.0				Sum of lost time (s)			14.5				
Intersection Capacity Utilization			150.1%				ICU Level of Service			H				
Analysis Period (min)			15											
c Critical Lane Group														

HCM Signalized Intersection Capacity Analysis

1: SR 52 & Southbound US 19 Ramps

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Volume (vph)	260	270	80	1240	340	550	660	250	630	760	570	680	670	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.3		4.5	5.3	5.3	5.0	5.0	5.0	4.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	0.95		0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95	1.00	1.00
Satd. Flow (prot)	1752	3384		3400	1845	1568	1752	1752	1845	1568	1752	3400	1845	1568
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.05	0.95	1.00	1.00	0.04	0.95	1.00	1.00
Satd. Flow (perm)	1752	3384		3400	1845	1568	94	1752	1845	1568	73	3400	1845	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	283	293	87	1348	370	598	717	272	685	826	620	739	728	33
RTOR Reduction (vph)	0	15	0	0	0	29	0	0	0	0	0	0	0	13
Lane Group Flow (vph)	283	365	0	1348	370	569	717	272	685	826	620	739	728	20
Turn Type	Prot			Prot		Perm	custom	Prot		Free	custom	Prot		Perm
Protected Phases	5	2		1	6		3	8			7	4		
Permitted Phases						6	2 8			Free	4 6			4
Actuated Green, G (s)	20.5	21.7		47.5	48.7	48.7	122.7	44.0	57.0	185.0	139.7	39.0	52.0	52.0
Effective Green, g (s)	20.5	21.7		47.5	48.7	48.7	122.7	44.0	57.0	185.0	139.7	39.0	52.0	52.0
Actuated g/C Ratio	0.11	0.12		0.26	0.26	0.26	0.66	0.24	0.31	1.00	0.76	0.21	0.28	0.28
Clearance Time (s)	4.5	5.3		4.5	5.3	5.3	5.0	5.0	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	194	397		873	486	413	457	417	568	1568	409	717	519	441
v/s Ratio Prot	0.16	0.11		c0.40	0.20		c0.37	0.16	0.37		0.32	0.22	0.39	
v/s Ratio Perm						0.36	c0.67			0.53	c0.82			0.01
v/c Ratio	1.46	0.92		1.54	0.76	1.38	1.57	0.65	1.21	0.53	1.52	1.03	1.40	0.05
Uniform Delay, d1	82.2	80.8		68.8	62.8	68.2	72.7	63.6	64.0	0.0	71.1	73.0	66.5	48.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	232.6	25.8		250.6	6.9	184.9	266.5	3.6	108.5	1.3	244.4	41.7	192.6	0.0
Delay (s)	314.9	106.6		319.3	69.7	253.0	339.1	67.2	172.5	1.3	315.5	114.7	259.1	48.5
Level of Service	F	F		F	E	F	F	E	F	A	F	F	F	D
Approach Delay (s)		195.5			262.3				152.3				222.0	
Approach LOS		F			F				F				F	
Intersection Summary														
HCM Average Control Delay			209.0											
HCM Volume to Capacity ratio			1.51											
Actuated Cycle Length (s)			185.0											
Intersection Capacity Utilization			136.2%											
Analysis Period (min)			15											
c Critical Lane Group														

HCM Signalized Intersection Capacity Analysis

1: County Line Road & Southbound US 19 Ramps

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Volume (vph)	30	10	30	1350	10	370	100	20	90	810	40	440	40	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.3		4.5	5.3	5.3		5.0	5.0	4.0		5.0	5.0	5.0
Lane Util. Factor	1.00	1.00		0.97	1.00	1.00		1.00	1.00	1.00		0.97	1.00	1.00
Frt	1.00	0.89		1.00	1.00	0.85		1.00	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1752	1637		3400	1845	1568		1752	1845	1568		3400	1845	1568
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.95	1.00	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1752	1637		3400	1845	1568		1752	1845	1568		3400	1845	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	11	33	1467	11	402	109	22	98	880	43	478	43	11
RTOR Reduction (vph)	0	29	0	0	0	179	0	0	0	0	0	0	0	10
Lane Group Flow (vph)	33	15	0	1467	11	223	0	131	98	880	0	521	43	1
Turn Type	Prot			Prot		Perm	Prot	Prot		Free	Prot	Prot		Perm
Protected Phases	5	2		1	6		3	3	8		7	7	4	
Permitted Phases						6				Free				4
Actuated Green, G (s)	4.4	16.9		63.7	76.2	76.2		21.1	14.0	137.5		23.1	16.0	16.0
Effective Green, g (s)	4.4	16.9		63.7	76.2	76.2		21.1	14.0	137.5		23.1	16.0	16.0
Actuated g/C Ratio	0.03	0.12		0.46	0.55	0.55		0.15	0.10	1.00		0.17	0.12	0.12
Clearance Time (s)	4.5	5.3		4.5	5.3	5.3		5.0	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	56	201		1575	1022	869		269	188	1568		571	215	182
v/s Ratio Prot	0.02	0.01		c0.43	0.01			0.07	0.05			c0.15	0.02	
v/s Ratio Perm						0.14				c0.56				0.00
v/c Ratio	0.59	0.07		0.93	0.01	0.26		0.49	0.52	0.56		0.91	0.20	0.01
Uniform Delay, d1	65.7	53.4		34.8	13.7	15.9		53.2	58.6	0.0		56.2	55.0	53.7
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	14.9	0.2		10.3	0.0	0.2		1.4	2.6	1.5		19.0	0.5	0.0
Delay (s)	80.5	53.5		45.2	13.8	16.1		54.6	61.2	1.5		75.2	55.4	53.7
Level of Service	F	D		D	B	B		D	E	A		E	E	D
Approach Delay (s)		65.1			38.8				13.0				73.3	
Approach LOS		E			D				B				E	
Intersection Summary														
HCM Average Control Delay			36.9				HCM Level of Service			D				
HCM Volume to Capacity ratio			0.82											
Actuated Cycle Length (s)			137.5				Sum of lost time (s)			9.5				
Intersection Capacity Utilization			74.1%				ICU Level of Service			D				
Analysis Period (min)			15											
c Critical Lane Group														

HCM Signalized Intersection Capacity Analysis

1: County Line Road & Southbound US 19 Ramps

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Volume (vph)	30	10	30	1350	10	370	100	20	90	810	40	440	40	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.3		4.5	5.3	5.3	5.0	5.0	5.0	4.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00		0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00	1.00
Frt	1.00	0.89		1.00	1.00	0.85	1.00	1.00	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95	1.00	1.00
Satd. Flow (prot)	1752	1637		3400	1845	1568	1752	1752	1845	1568	1752	3400	1845	1568
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.13	0.95	1.00	1.00	0.04	0.95	1.00	1.00
Satd. Flow (perm)	1752	1637		3400	1845	1568	240	1752	1845	1568	80	3400	1845	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	11	33	1467	11	402	109	22	98	880	43	478	43	11
RTOR Reduction (vph)	0	29	0	0	0	178	0	0	0	0	0	0	0	9
Lane Group Flow (vph)	33	15	0	1467	11	224	109	22	98	880	43	478	43	2
Turn Type	Prot			Prot		Perm	custom	Prot		Free	custom	Prot		Perm
Protected Phases	5	2		1	6		3	8			7	4		
Permitted Phases						6	2 8			Free	4 6			4
Actuated Green, G (s)	4.3	16.9		61.6	74.2	74.2	47.1	16.4	13.8	133.2	113.8	21.1	18.5	18.5
Effective Green, g (s)	4.3	16.9		61.6	74.2	74.2	47.1	16.4	13.8	133.2	113.8	21.1	18.5	18.5
Actuated g/C Ratio	0.03	0.13		0.46	0.56	0.56	0.35	0.12	0.10	1.00	0.85	0.16	0.14	0.14
Clearance Time (s)	4.5	5.3		4.5	5.3	5.3	5.0	5.0	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	57	208		1572	1028	873	271	216	191	1568	333	539	256	218
v/s Ratio Prot	0.02	0.01		c0.43	0.01		0.05	0.01	0.05		0.02	c0.14	0.02	
v/s Ratio Perm						0.14	0.09			c0.56	0.09			0.00
v/c Ratio	0.58	0.07		0.93	0.01	0.26	0.40	0.10	0.51	0.56	0.13	0.89	0.17	0.01
Uniform Delay, d1	63.6	51.2		33.9	13.1	15.2	51.8	51.9	56.5	0.0	47.2	54.9	50.6	49.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.5	0.1		10.5	0.0	0.2	1.0	0.2	2.3	1.5	0.2	16.1	0.3	0.0
Delay (s)	77.0	51.4		44.4	13.1	15.4	52.8	52.1	58.8	1.5	47.3	71.0	50.9	49.4
Level of Service	E	D		D	B	B	D	D	E	A	D	E	D	D
Approach Delay (s)		62.4			38.0				12.6				67.3	
Approach LOS		E			D				B				E	
Intersection Summary														
HCM Average Control Delay			35.4											
HCM Volume to Capacity ratio			0.81											
Actuated Cycle Length (s)			133.2											
Intersection Capacity Utilization			73.0%											
Analysis Period (min)			15											
c Critical Lane Group														

HCM Signalized Intersection Capacity Analysis

1: County Line Road & Southbound US 19 Ramps

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Volume (vph)	20	10	20	800	10	480	370	20	410	1310	210	640	140	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.3		4.5	5.3	5.3		5.0	5.0	4.0		5.0	5.0	5.0
Lane Util. Factor	1.00	1.00		0.97	1.00	1.00		1.00	1.00	1.00		0.97	1.00	1.00
Frt	1.00	0.90		1.00	1.00	0.85		1.00	1.00	0.85		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.95	1.00	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1752	1660		3400	1845	1568		1752	1845	1568		3400	1845	1568
Flt Permitted	0.95	1.00		0.95	1.00	1.00		0.95	1.00	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1752	1660		3400	1845	1568		1752	1845	1568		3400	1845	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	11	22	870	11	522	402	22	446	1424	228	696	152	33
RTOR Reduction (vph)	0	19	0	0	0	189	0	0	0	0	0	0	0	26
Lane Group Flow (vph)	22	14	0	870	11	333	0	424	446	1424	0	924	152	7
Turn Type	Prot			Prot		Perm	Prot	Prot		Free	Prot	Prot		Perm
Protected Phases	5	2		1	6		3	3	8		7	7	4	
Permitted Phases						6				Free				4
Actuated Green, G (s)	4.4	16.9		34.5	47.0	47.0		38.9	33.0	141.2		37.0	31.1	31.1
Effective Green, g (s)	4.4	16.9		34.5	47.0	47.0		38.9	33.0	141.2		37.0	31.1	31.1
Actuated g/C Ratio	0.03	0.12		0.24	0.33	0.33		0.28	0.23	1.00		0.26	0.22	0.22
Clearance Time (s)	4.5	5.3		4.5	5.3	5.3		5.0	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	55	199		831	614	522		483	431	1568		891	406	345
v/s Ratio Prot	0.01	0.01		c0.26	0.01			0.24	c0.24			c0.27	0.08	
v/s Ratio Perm						0.21				c0.91				0.00
v/c Ratio	0.40	0.07		1.05	0.02	0.64		0.88	1.03	0.91		1.04	0.37	0.02
Uniform Delay, d1	67.1	55.2		53.4	31.6	39.9		48.9	54.1	0.0		52.1	46.8	43.1
Progression Factor	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.7	0.1		44.2	0.0	2.6		16.3	52.6	9.3		40.1	0.6	0.0
Delay (s)	71.8	55.3		97.6	31.6	42.5		65.2	106.7	9.3		92.2	47.4	43.1
Level of Service	E	E		F	C	D		E	F	A		F	D	D
Approach Delay (s)		61.9			76.5			38.6					84.6	
Approach LOS		E			E			D					F	
Intersection Summary														
HCM Average Control Delay			60.3				HCM Level of Service			E				
HCM Volume to Capacity ratio			0.97											
Actuated Cycle Length (s)			141.2				Sum of lost time (s)			5.0				
Intersection Capacity Utilization			97.9%				ICU Level of Service			F				
Analysis Period (min)			15											
c Critical Lane Group														

HCM Signalized Intersection Capacity Analysis

1: County Line Road & Southbound US 19 Ramps

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Volume (vph)	20	10	20	800	10	480	370	20	410	1310	210	640	140	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	5.3		4.5	5.3	5.3	5.0	5.0	5.0	4.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00		0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt	1.00	0.90		1.00	1.00	0.85	1.00	1.00	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	0.95	1.00	1.00	0.95	0.95	1.00	1.00
Satd. Flow (prot)	1752	1660		3400	1845	1568	1752	1752	1845	1568	1752	3400	1845	1568
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.08	0.95	1.00	1.00	0.05	0.95	1.00	1.00
Satd. Flow (perm)	1752	1660		3400	1845	1568	154	1752	1845	1568	101	3400	1845	1568
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	11	22	870	11	522	402	22	446	1424	228	696	152	33
RTOR Reduction (vph)	0	19	0	0	0	170	0	0	0	0	0	0	0	26
Lane Group Flow (vph)	22	14	0	870	11	352	402	22	446	1424	228	696	152	7
Turn Type	Prot			Prot		Perm	custom	Prot		Free	custom	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4			
Permitted Phases						6	2 8			Free	4 6			4
Actuated Green, G (s)	4.4	16.9		32.5	45.0	45.0	76.9	29.0	31.0	126.2	99.0	26.0	28.0	28.0
Effective Green, g (s)	4.4	16.9		32.5	45.0	45.0	76.9	29.0	31.0	126.2	99.0	26.0	28.0	28.0
Actuated g/C Ratio	0.03	0.13		0.26	0.36	0.36	0.61	0.23	0.25	1.00	0.78	0.21	0.22	0.22
Clearance Time (s)	4.5	5.3		4.5	5.3	5.3	5.0	5.0	5.0		5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	61	222		876	658	559	461	403	453	1568	419	700	409	348
v/s Ratio Prot	0.01	0.01		c0.26	0.01		0.20	0.01	c0.24		0.11	0.20	0.08	
v/s Ratio Perm						0.22	0.33			c0.91	0.31			0.00
v/c Ratio	0.36	0.06		0.99	0.02	0.63	0.87	0.05	0.98	0.91	0.54	0.99	0.37	0.02
Uniform Delay, d1	59.5	47.7		46.7	26.3	33.7	44.8	37.9	47.4	0.0	45.7	50.0	41.6	38.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.6	0.1		28.6	0.0	2.2	16.4	0.1	38.0	9.3	1.4	32.4	0.6	0.0
Delay (s)	63.1	47.9		75.3	26.3	35.9	61.2	38.0	85.3	9.3	47.2	82.4	42.2	38.4
Level of Service	E	D		E	C	D	E	D	F	A	D	F	D	D
Approach Delay (s)		54.0			60.3				33.4				68.3	
Approach LOS		D			E				C				E	
Intersection Summary														
HCM Average Control Delay			49.4											
HCM Volume to Capacity ratio			0.91											
Actuated Cycle Length (s)			126.2											
Intersection Capacity Utilization			85.3%											
Analysis Period (min)			15											
c Critical Lane Group														

Appendix C2

Benefit-to-Cost Worksheets – Texas U-Turn Analysis

Table C2: Benefit-to-Cost Summary
US 19 PD&E Study - Analysis of Texas U-Turn

Project Name: US 19 PD&E Study from Pinellas County to Hernando County
B/C Analysis Base Year: 2030
B/C Analysis Horizon Year: 2050

Present Value Year: 2008
Opening Year: 2030
Analysis Period: 20

U-Turn Volume Thresholds	Present Day (2008) Worth					Benefit-to-Cost Ratio	Years to Recover Cost
	Initial Benefit	Capital Cost	Initial Benefit-to-Cost Ratio	20-Year Net Benefit	Percent of Total Benefit		
SR 54	\$118,815.92	\$6,169,188.42	0.02	\$2,667,597.18	4%	0.43	>20
Ridge Road	\$670,694.49	\$4,878,811.64	0.14	\$12,325,570.81	18%	2.53	7
SR 52	\$2,897,192.12	\$8,003,713.11	0.36	\$51,357,387.49	73%	6.42	2
County Line Road	\$172,643.65	\$9,702,064.64	0.02	\$3,643,633.51	5%	0.38	>20
Corridor Total	\$3,859,346.18	\$28,753,777.82	0.13	\$69,994,188.99	100%	2.43	7

Table C2-1A: Summary of Cost Savings as a Result of Reduced Intersection Delay (Alternative 3) - US Highway 19 at SR 54

Year	Analysis Period	Hourly VHT ⁽¹⁾ (Veh-hr)		Peak VHT Savings (Veh-hr)	Daily VHT ⁽²⁾ Savings (Veh-hr/day)	Annual Savings ⁽³⁾	Annual Maintenance	Annual Savings Benefit	Present Value Savings	Cumulative Present Value Savings
		Base (without Texas U-Turn)	Build (with Texas U-Turn)							
2030	0	97.6	86.6	11.0	58	\$ 283,176.95	\$ 65,043.05	\$ 218,133.90	\$ 118,815.92	\$ 118,815.92
2031	1	98.6	87.4	11.1	58	\$ 285,843.07	\$ 67,969.99	\$ 217,873.08	\$ 151,455.84	\$ 270,271.76
2032	2	99.5	88.3	11.2	59	\$ 288,509.19	\$ 71,028.64	\$ 217,480.56	\$ 148,704.77	\$ 418,976.54
2033	3	100.4	89.1	11.3	59	\$ 291,175.32	\$ 74,224.92	\$ 216,950.39	\$ 145,991.20	\$ 564,967.74
2034	4	101.3	89.9	11.4	60	\$ 293,841.44	\$ 77,565.05	\$ 216,276.40	\$ 143,315.14	\$ 708,282.88
2035	5	102.2	90.7	11.5	61	\$ 296,507.57	\$ 81,055.47	\$ 215,452.09	\$ 140,676.54	\$ 848,959.42
2036	6	103.2	91.5	11.6	61	\$ 299,173.69	\$ 84,702.97	\$ 214,470.72	\$ 138,075.36	\$ 987,034.78
2037	7	104.1	92.3	11.7	62	\$ 301,839.81	\$ 88,514.60	\$ 213,325.21	\$ 135,511.51	\$ 1,122,546.30
2038	8	105.0	93.1	11.8	62	\$ 304,505.94	\$ 92,497.76	\$ 212,008.18	\$ 132,984.90	\$ 1,255,531.20
2039	9	105.9	94.0	12.0	63	\$ 307,172.06	\$ 96,660.16	\$ 210,511.90	\$ 130,495.39	\$ 1,386,026.58
2040	10	106.8	94.8	12.1	63	\$ 309,838.19	\$ 101,009.87	\$ 208,828.32	\$ 128,042.83	\$ 1,514,069.41
2041	11	107.8	95.6	12.2	64	\$ 312,504.31	\$ 105,555.31	\$ 206,949.00	\$ 125,627.07	\$ 1,639,696.48
2042	12	108.7	96.4	12.3	64	\$ 315,170.43	\$ 110,305.30	\$ 204,865.14	\$ 123,247.91	\$ 1,762,944.40
2043	13	109.6	97.2	12.4	65	\$ 317,836.56	\$ 115,269.04	\$ 202,567.52	\$ 120,905.16	\$ 1,883,849.56
2044	14	110.5	98.0	12.5	65	\$ 320,502.68	\$ 120,456.14	\$ 200,046.54	\$ 118,598.59	\$ 2,002,448.15
2045	15	111.4	98.9	12.6	66	\$ 323,168.81	\$ 125,876.67	\$ 197,292.14	\$ 116,327.98	\$ 2,118,776.13
2046	16	112.3	99.7	12.7	67	\$ 325,834.93	\$ 131,541.12	\$ 194,293.81	\$ 114,093.07	\$ 2,232,869.21
2047	17	113.3	100.5	12.8	67	\$ 328,501.05	\$ 137,460.47	\$ 191,040.58	\$ 111,893.61	\$ 2,344,762.82
2048	18	114.2	101.3	12.9	68	\$ 331,167.18	\$ 143,646.19	\$ 187,520.99	\$ 109,729.32	\$ 2,454,492.14
2049	19	115.1	102.1	13.0	68	\$ 333,833.30	\$ 150,110.27	\$ 183,723.03	\$ 107,599.92	\$ 2,562,092.07
2050	20	116.0	102.9	13.1	69	\$ 336,499.43	\$ 156,865.23	\$ 179,634.19	\$ 105,505.11	\$ 2,667,597.18
Total Benefit During Analysis Period (2030-2050)									\$ 2,667,597	

Notes:

- (1) Year 2050 VHT is derived by applying an annual growth rate in VMT to the estimated 2030 VHT throughout the 20-year analysis period
(2) Daily VHT was estimated by dividing the hourly VHT by a factor representing two times the K₃₀-factor
(3) Assumes 250 working days in a calendar year

Present Value (Year 2008) of Project Costs - Alternative 3 (Modified Tight Urban Diamond Interchange with Texas U-Turn)

Capital Cost	Remaining Capital Value ⁽¹⁾	Present Value of Cost	Present Value of Remaining Capital	Present Value of Net Cost
\$ 11,326,000.00	\$ 9,627,100.00	\$ 6,169,188.42	\$ 5,541,574.67	\$ 627,613.75

Notes:

- (1) Remaining Capital Value is estimated as 85% of the Capital cost assuming the expected life of the major improvements is 60 years

Table C2-1B: Design Year 2030 Build US 19/SR 54 Intersection Vehicle Hours Traveled
Alternative 3 - Modified Tight Urban Diamond Interchange (TDUI)

Without Texas U-turn

Measure of Effectiveness/ Movement	Eastbound			Westbound			Northbound				Southbound				Total
	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
AM Peak Hour															
Delay (s)	48.8	43.0	43.0	41.7	25.3	28.2	47.7	47.7	47.2	0.5	47.4	47.4	36.8	31.9	
Volume (Veh)	140	90	50	800	40	340	120	30	190	420	230	280	190	40	
Vehicle Hours Traveled (Veh-Hr)	1.90	1.08	0.60	9.27	0.28	2.66	1.59	0.40	2.49	0.06	3.03	3.69	1.94	0.35	29.33
PM Peak Hour															
Delay (s)	111.4	70.5	70.5	66.7	34.6	89.0	67.0	67.0	78.2	0.5	77.0	77.0	42.3	35.3	
Volume (Veh)	220	90	80	970	100	520	140	20	310	460	310	320	250	20	
Vehicle Hours Traveled (Veh-Hr)	6.81	1.76	1.57	17.97	0.96	12.86	2.61	0.37	6.73	0.06	6.63	6.84	2.94	0.20	68.31

With Texas U-turn

Measure of Effectiveness/ Movement	Eastbound			Westbound			Northbound				Southbound				Total
	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
AM Peak Hour															
Delay (s)	44.7	38.2	38.2	36.9	22.2	25.0	43.2	39.9	42.6	0.5	44.7	40.0	35.1	30.3	
Volume (Veh)	140	90	50	800	40	340	120	30	190	420	230	280	190	40	
Vehicle Hours Traveled (Veh-Hr)	1.74	0.96	0.53	8.20	0.25	2.36	1.44	0.33	2.25	0.06	2.86	3.11	1.85	0.34	26.27
PM Peak Hour															
Delay (s)	90.8	57.0	57.0	61.6	31.9	71.6	62.8	54.4	75.3	0.5	86.0	51.3	40.9	34.2	
Volume (Veh)	220	90	80	970	100	520	140	20	310	460	310	320	250	20	
Vehicle Hours Traveled (Veh-Hr)	5.55	1.43	1.27	16.60	0.89	10.34	2.44	0.30	6.48	0.06	7.41	4.56	2.84	0.19	60.36

Table C2-2A: Summary of Cost Savings as a Result of Reduced Intersection Delay (Alternative 3) - US Highway 19 at Ridge Road

Year	Analysis Period	Hourly VHT ⁽¹⁾ (Veh-hr)		Peak VHT Savings (Veh-hr)	Daily VHT Savings (Veh-hr/day)	Annual Savings ⁽³⁾	Annual Maintenance	Annual Savings Benefit	Present Value Savings	Cumulative Present Value Savings
		Base (without Texas U-Turn)	Build (with Texas U-Turn)							
2030	0	223.5	173.1	50.4	265	\$ 1,294,890.36	\$ 63,563.77	\$ 1,231,326.59	\$ 670,694.49	\$ 670,694.49
2031	1	225.6	174.7	50.9	267	\$ 1,307,081.81	\$ 66,424.14	\$ 1,240,657.68	\$ 692,565.95	\$ 1,363,260.44
2032	2	227.7	176.3	51.3	270	\$ 1,319,273.27	\$ 69,413.22	\$ 1,249,860.04	\$ 679,986.06	\$ 2,043,246.50
2033	3	229.8	178.0	51.8	272	\$ 1,331,464.72	\$ 72,536.82	\$ 1,258,927.90	\$ 667,577.66	\$ 2,710,824.16
2034	4	231.9	179.6	52.3	275	\$ 1,343,656.17	\$ 75,800.98	\$ 1,267,855.20	\$ 655,340.74	\$ 3,366,164.91
2035	5	234.0	181.2	52.8	277	\$ 1,355,847.62	\$ 79,212.02	\$ 1,276,635.60	\$ 643,275.17	\$ 4,009,440.08
2036	6	236.1	182.9	53.2	280	\$ 1,368,039.08	\$ 82,776.56	\$ 1,285,262.52	\$ 631,380.69	\$ 4,640,820.76
2037	7	238.2	184.5	53.7	282	\$ 1,380,230.53	\$ 86,501.51	\$ 1,293,729.02	\$ 619,656.92	\$ 5,260,477.68
2038	8	240.3	186.1	54.2	285	\$ 1,392,421.98	\$ 90,394.07	\$ 1,302,027.91	\$ 608,103.40	\$ 5,868,581.08
2039	9	242.4	187.8	54.6	287	\$ 1,404,613.43	\$ 94,461.81	\$ 1,310,151.63	\$ 596,719.55	\$ 6,465,300.63
2040	10	244.5	189.4	55.1	290	\$ 1,416,804.89	\$ 98,712.59	\$ 1,318,092.30	\$ 585,504.69	\$ 7,050,805.32
2041	11	246.6	191.0	55.6	292	\$ 1,428,996.34	\$ 103,154.66	\$ 1,325,841.68	\$ 574,458.07	\$ 7,625,263.38
2042	12	248.7	192.6	56.1	294	\$ 1,441,187.79	\$ 107,796.62	\$ 1,333,391.18	\$ 563,578.84	\$ 8,188,842.22
2043	13	250.8	194.3	56.5	297	\$ 1,453,379.24	\$ 112,647.46	\$ 1,340,731.78	\$ 552,866.07	\$ 8,741,708.29
2044	14	252.9	195.9	57.0	299	\$ 1,465,570.70	\$ 117,716.60	\$ 1,347,854.10	\$ 542,318.78	\$ 9,284,027.08
2045	15	255.0	197.5	57.5	302	\$ 1,477,762.15	\$ 123,013.85	\$ 1,354,748.30	\$ 531,935.89	\$ 9,815,962.97
2046	16	257.1	199.2	58.0	304	\$ 1,489,953.60	\$ 128,549.47	\$ 1,361,404.13	\$ 521,716.28	\$ 10,337,679.25
2047	17	259.2	200.8	58.4	307	\$ 1,502,145.05	\$ 134,334.20	\$ 1,367,810.86	\$ 511,658.74	\$ 10,849,337.99
2048	18	261.3	202.4	58.9	309	\$ 1,514,336.51	\$ 140,379.23	\$ 1,373,957.27	\$ 501,762.04	\$ 11,351,100.04
2049	19	263.4	204.0	59.4	312	\$ 1,526,527.96	\$ 146,696.30	\$ 1,379,831.66	\$ 492,024.88	\$ 11,843,124.91
2050	20	265.5	205.7	59.9	314	\$ 1,538,719.41	\$ 153,297.63	\$ 1,385,421.78	\$ 482,445.90	\$ 12,325,570.81
Total Benefit During Analysis Period (2030-2050)									\$ 12,325,571	

Notes:

- (1) Year 2050 VHT is derived by applying an annual growth rate in VMT to the estimated 2030 VHT throughout the 20-year analysis period
(2) Daily VHT was estimated by dividing the hourly VHT by a factor representing two times the K₉₀ factor
(3) Assumes 250 working days in a calendar year

Present Value (Year 2008) of Project Costs - Alternative 3 (Modified Tight Urban Diamond Interchange with Texas U-Turn)

Capital Cost	Remaining Capital Value ⁽¹⁾	Present Value of Cost	Present Value of Remaining Capital	Present Value of Net Cost
\$ 8,957,000.00	\$ 7,613,450.00	\$ 4,878,811.64	\$ 4,382,472.57	\$ 496,339.07

Notes:

- (1) Remaining Capital Value is estimated as 85% of the Capital cost assuming the expected life of the major improvements is 60 years

Table C2-2B: Design Year 2030 Build US 19/Ridge Road Intersection Vehicle Hours Traveled
Alternative 3 - Modified Tight Urban Diamond Interchange (TDUI)

Without Texas U-turn

Measure of Effectiveness/ Movement	Eastbound			Westbound			Northbound				Southbound				Total
	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
AM Peak Hour															
Delay (s)	59.0	47.4	47.4	49.7	32.6	31.7	52.2	52.2	47.8	0.7	47.2	47.2	37.8	32.9	
Volume (Veh)	160	240	90	710	170	360	110	130	130	530	180	610	190	30	
Vehicle Hours Traveled (Veh-Hr)	2.62	3.16	1.19	9.80	1.54	3.17	1.60	1.89	1.73	0.10	2.36	8.00	2.00	0.27	39.41
PM Peak Hour															
Delay (s)	200.0	61.7	61.7	80.2	60.5	178.5	197.0	197.0	161.5	0.7	176.7	176.7	163.4	53.1	
Volume (Veh)	270	320	80	670	400	610	380	70	340	530	340	680	430	50	
Vehicle Hours Traveled (Veh-Hr)	15.00	5.48	1.37	14.93	6.72	30.25	20.79	3.83	15.25	0.10	16.69	33.38	19.52	0.74	184.05

With Texas U-turn

Measure of Effectiveness/ Movement	Eastbound			Westbound			Northbound				Southbound				Total
	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
AM Peak Hour															
Delay (s)	50.5	42.6	42.6	40.7	29.0	28.6	39.6	46.2	44.4	0.7	33.8	43.0	33.9	29.6	
Volume (Veh)	160	240	90	710	170	360	110	130	130	530	180	610	190	30	
Vehicle Hours Traveled (Veh-Hr)	2.24	2.84	1.07	8.03	1.37	2.86	1.21	1.67	1.60	0.10	1.69	7.29	1.79	0.25	34.00
PM Peak Hour															
Delay (s)	183.1	47.1	47.1	66.1	44.4	136.6	179.9	51.6	128.2	0.7	82.2	116.5	143.7	43.1	
Volume (Veh)	270	320	80	670	400	610	380	70	340	530	340	680	430	50	
Vehicle Hours Traveled (Veh-Hr)	13.73	4.19	1.05	12.30	4.93	23.15	18.99	1.00	12.11	0.10	7.76	22.01	17.16	0.60	139.08

Table C2-3A: Summary of Cost Savings as a Result of Reduced Intersection Delay (Alternative 3) - US Highway 19 at SR 52

Year	Analysis Period	Hourly VHT ⁽¹⁾ (Veh-hr)		Peak VHT Savings (Veh-hr)	Daily VHT ⁽²⁾ Savings (Veh-hr/day)	Annual Savings ⁽³⁾	Annual Maintenance	Annual Savings Benefit	Present Value Savings	Cumulative Present Value Savings
		Base (without Texas U-Turn)	Build (with Texas U-Turn)							
2030	0	679.1	469.6	209.5	1,100	\$ 5,384,067.42	\$ 65,118.52	\$ 5,318,948.90	\$ 2,897,192.12	\$ 2,897,192.12
2031	1	685.5	474.1	211.4	1,111	\$ 5,434,758.67	\$ 68,048.86	\$ 5,366,709.81	\$ 2,879,642.85	\$ 5,776,834.97
2032	2	691.9	478.5	213.4	1,121	\$ 5,485,449.91	\$ 71,111.05	\$ 5,414,338.86	\$ 2,827,336.51	\$ 8,604,171.48
2033	3	698.3	482.9	215.4	1,131	\$ 5,536,141.15	\$ 74,311.05	\$ 5,461,830.10	\$ 2,775,743.22	\$ 11,379,914.70
2034	4	704.7	487.3	217.4	1,142	\$ 5,586,832.40	\$ 77,655.05	\$ 5,509,177.35	\$ 2,724,862.94	\$ 14,104,777.64
2035	5	711.1	491.7	219.3	1,152	\$ 5,637,523.64	\$ 81,149.53	\$ 5,556,374.11	\$ 2,674,695.09	\$ 16,779,472.73
2036	6	717.5	496.2	221.3	1,162	\$ 5,688,214.88	\$ 84,801.26	\$ 5,603,413.63	\$ 2,625,238.62	\$ 19,404,711.34
2037	7	723.9	500.6	223.3	1,173	\$ 5,738,906.13	\$ 88,617.31	\$ 5,650,288.81	\$ 2,576,491.98	\$ 21,981,203.33
2038	8	730.3	505.0	225.3	1,183	\$ 5,789,597.37	\$ 92,605.09	\$ 5,696,992.28	\$ 2,528,453.22	\$ 24,509,656.54
2039	9	736.7	509.4	227.2	1,193	\$ 5,840,288.61	\$ 96,772.32	\$ 5,743,516.29	\$ 2,481,119.92	\$ 26,990,776.46
2040	10	743.1	513.9	229.2	1,204	\$ 5,890,979.85	\$ 101,127.07	\$ 5,789,852.78	\$ 2,434,489.29	\$ 29,425,265.75
2041	11	749.4	518.3	231.2	1,214	\$ 5,941,671.10	\$ 105,677.79	\$ 5,835,993.30	\$ 2,388,558.18	\$ 31,813,823.93
2042	12	755.8	522.7	233.1	1,224	\$ 5,992,362.34	\$ 110,433.29	\$ 5,881,929.05	\$ 2,343,323.07	\$ 34,157,147.00
2043	13	762.2	527.1	235.1	1,235	\$ 6,043,053.58	\$ 115,402.79	\$ 5,927,650.79	\$ 2,298,780.12	\$ 36,455,927.11
2044	14	768.6	531.5	237.1	1,245	\$ 6,093,744.83	\$ 120,595.92	\$ 5,973,148.91	\$ 2,254,925.18	\$ 38,710,852.30
2045	15	775.0	536.0	239.1	1,256	\$ 6,144,436.07	\$ 126,022.73	\$ 6,018,413.34	\$ 2,211,753.83	\$ 40,922,606.12
2046	16	781.4	540.4	241.0	1,266	\$ 6,195,127.31	\$ 131,693.76	\$ 6,063,433.56	\$ 2,169,261.35	\$ 43,091,867.48
2047	17	787.8	544.8	243.0	1,276	\$ 6,245,818.56	\$ 137,619.98	\$ 6,108,198.58	\$ 2,127,442.80	\$ 45,219,310.27
2048	18	794.2	549.2	245.0	1,287	\$ 6,296,509.80	\$ 143,812.87	\$ 6,152,696.92	\$ 2,086,292.98	\$ 47,305,603.26
2049	19	800.6	553.6	246.9	1,297	\$ 6,347,201.04	\$ 150,284.45	\$ 6,196,916.59	\$ 2,045,806.50	\$ 49,351,409.75
2050	20	807.0	558.1	248.9	1,307	\$ 6,397,892.29	\$ 157,047.25	\$ 6,240,845.03	\$ 2,005,977.74	\$ 51,357,387.49
Total Benefit During Analysis Period (2030-2050)									\$ 51,357,387	

Notes:

- (1) Year 2050 VHT is derived by applying an annual growth rate in VMT to the estimated 2030 VHT throughout the 20-year analysis period
(2) Daily VHT was estimated by dividing the hourly VHT by a factor representing two times the K_{30} factor
(3) Assumes 250 working days in a calendar year

Present Value (Year 2008) of Project Costs - Alternative 3 (Modified Tight Urban Diamond Interchange with Texas U-Turn)

Capital Cost	Remaining Capital Value ⁽¹⁾	Present Value of Cost	Present Value of Remaining Capital	Present Value of Net Cost
\$ 14,694,000.00	\$ 12,489,900.00	\$ 8,003,713.11	\$ 7,189,466.56	\$ 814,246.55

Notes:

- (1) Remaining Capital Value is estimated as 85% of the Capital cost assuming the expected life of the major improvements is 60 years

Table C2-3B: Design Year 2030 Build US 19/SR 52 Road Intersection Vehicle Hours Traveled
Alternative 3 - Modified Tight Urban Diamond Interchange (TDUI)

Without Texas U-turn

Measure of Effectiveness/ Movement	Eastbound			Westbound			Northbound				Southbound			
	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
AM Peak Hour														
Delay (s)	76.1	71.5	71.5	72.1	40.6	41.3	89.6	89.6	97.7	1.0	83.8	83.8	87.0	51.6
Volume (Veh)	150	170	140	1,020	200	360	300	110	250	660	210	650	260	50
Vehicle Hours Traveled (Veh-Hr)	3.17	3.38	2.78	20.43	2.26	4.13	7.47	2.74	6.78	0.18	4.89	15.13	6.28	0.72
PM Peak Hour														
Delay (s)	385.7	118.1	118.1	442.9	85.3	331.0	445.4	445.4	124.1	1.3	438.4	438.4	327.9	52.2
Volume (Veh)	260	270	80	1,240	340	550	660	250	630	760	570	680	670	30
Vehicle Hours Traveled (Veh-Hr)	27.86	8.86	2.62	152.55	8.06	50.57	81.66	30.93	21.72	0.27	69.41	82.81	61.03	0.44

With Texas U-turn

Measure of Effectiveness/ Movement	Eastbound			Westbound			Northbound				Southbound			
	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
AM Peak Hour														
Delay (s)	62.5	57.2	57.2	59.7	32.9	34.0	76.5	47.3	70.6	1.0	46.6	77.8	53.6	40.0
Volume (Veh)	150	170	140	1,020	200	360	300	110	250	660	210	650	260	50
Vehicle Hours Traveled (Veh-Hr)	2.60	2.70	2.22	16.92	1.83	3.40	6.38	1.45	4.90	0.18	2.72	14.05	3.87	0.56
PM Peak Hour														
Delay (s)	314.9	106.6	106.6	319.3	69.7	253.0	339.1	67.2	172.5	1.3	315.5	114.7	259.1	48.5
Volume (Veh)	260	270	80	1,240	340	550	660	250	630	760	570	680	670	30
Vehicle Hours Traveled (Veh-Hr)	22.74	8.00	2.37	109.98	6.58	38.65	62.17	4.67	30.19	0.27	49.95	21.67	48.22	0.40

Table C2-4A: Summary of Cost Savings as a Result of Reduced Intersection Delay (Alternative 3) - US Highway 19 at County Line Road

Year	Analysis Period	Hourly VHT ⁽¹⁾ (Veh-hr)		Peak VHT Savings (Veh-hr)	Daily VHT Savings (Veh-hr/day)	Annual Savings ⁽³⁾	Annual Maintenance	Annual Savings Benefit	Present Value Savings	Cumulative Present Value Savings
		Base (without Texas U-Turn)	Build (with Texas U-Turn)							
2030	0	109.3	94.3	15.0	79	\$ 385,636.98	\$ 68,680.87	\$ 316,956.11	\$ 172,643.65	\$ 172,643.65
2031	1	110.3	95.1	15.1	80	\$ 389,267.77	\$ 71,771.51	\$ 317,496.26	\$ 206,256.10	\$ 378,899.75
2032	2	111.3	96.0	15.3	80	\$ 392,898.56	\$ 75,001.23	\$ 317,897.33	\$ 202,509.63	\$ 581,409.39
2033	3	112.3	96.9	15.4	81	\$ 396,529.35	\$ 78,376.28	\$ 318,153.07	\$ 198,814.23	\$ 780,223.62
2034	4	113.4	97.8	15.6	82	\$ 400,160.14	\$ 81,903.22	\$ 318,256.92	\$ 195,169.90	\$ 975,393.52
2035	5	114.4	98.7	15.7	83	\$ 403,790.93	\$ 85,588.86	\$ 318,202.07	\$ 191,576.60	\$ 1,166,970.12
2036	6	115.4	99.6	15.9	83	\$ 407,421.72	\$ 89,440.36	\$ 317,981.36	\$ 188,034.25	\$ 1,355,004.38
2037	7	116.5	100.5	16.0	84	\$ 411,052.51	\$ 93,465.18	\$ 317,587.33	\$ 184,542.75	\$ 1,539,547.12
2038	8	117.5	101.4	16.1	85	\$ 414,683.30	\$ 97,671.11	\$ 317,012.19	\$ 181,101.94	\$ 1,720,649.07
2039	9	118.5	102.2	16.3	85	\$ 418,314.09	\$ 102,066.31	\$ 316,247.78	\$ 177,711.67	\$ 1,898,360.73
2040	10	119.5	103.1	16.4	86	\$ 421,944.88	\$ 106,659.29	\$ 315,285.59	\$ 174,371.72	\$ 2,072,732.45
2041	11	120.6	104.0	16.6	87	\$ 425,575.67	\$ 111,458.96	\$ 314,116.71	\$ 171,081.88	\$ 2,243,814.33
2042	12	121.6	104.9	16.7	88	\$ 429,206.46	\$ 116,474.61	\$ 312,731.85	\$ 167,841.89	\$ 2,411,656.22
2043	13	122.6	105.8	16.8	88	\$ 432,837.25	\$ 121,715.97	\$ 311,121.28	\$ 164,651.47	\$ 2,576,307.69
2044	14	123.7	106.7	17.0	89	\$ 436,468.04	\$ 127,193.19	\$ 309,274.85	\$ 161,510.34	\$ 2,737,818.03
2045	15	124.7	107.6	17.1	90	\$ 440,098.83	\$ 132,916.88	\$ 307,181.95	\$ 158,418.16	\$ 2,896,236.19
2046	16	125.7	108.5	17.3	91	\$ 443,729.62	\$ 138,898.14	\$ 304,831.48	\$ 155,374.61	\$ 3,051,610.80
2047	17	126.7	109.3	17.4	91	\$ 447,360.41	\$ 145,148.56	\$ 302,211.85	\$ 152,379.34	\$ 3,203,990.14
2048	18	127.8	110.2	17.5	92	\$ 450,991.20	\$ 151,680.25	\$ 299,310.95	\$ 149,431.96	\$ 3,353,422.10
2049	19	128.8	111.1	17.7	93	\$ 454,621.99	\$ 158,505.86	\$ 296,116.13	\$ 146,532.09	\$ 3,499,954.18
2050	20	129.8	112.0	17.8	94	\$ 458,252.78	\$ 165,638.62	\$ 292,614.16	\$ 143,679.33	\$ 3,643,633.51
Total Benefit During Analysis Period (2030-2050)									\$ 3,643,634	

Notes:

- (1) Year 2050 VHT is derived by applying an annual growth rate in VMT to the estimated 2030 VHT throughout the 20-year analysis period
(2) Daily VHT was estimated by dividing the hourly VHT by a factor representing two times the K₃₀ factor
(3) Assumes 250 working days in a calendar year

Present Value (Year 2008) of Project Costs - Alternative 3 (Modified Tight Urban Diamond Interchange with Texas U-Turn)

Capital Cost	Remaining Capital Value ⁽¹⁾	Present Value of Cost	Present Value of Remaining Capital	Present Value of Net Cost
\$ 17,812,000.00	\$ 15,140,200.00	\$ 9,702,064.64	\$ 8,715,038.68	\$ 987,025.96

Notes:

- (1) Remaining Capital Value is estimated as 85% of the Capital cost assuming the expected life of the major improvements is 60 years

**Table C2-4B: Design Year 2030 Build US 19/County Line Road Intersection Vehicle Hours Traveled
Alternative 3 - Modified Tight Urban Diamond Interchange (TDUI)**

Without Texas U-turn

Measure of Effectiveness/ Movement	Eastbound			Westbound			Northbound				Southbound				Total
	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
AM Peak Hour															34.39
Delay (s)	80.5	53.5	53.5	45.2	13.8	16.1	54.6	54.6	61.2	1.5	75.2	75.2	55.4	53.7	
Volume (Veh)	30	10	30	1,350	10	370	100	20	90	810	40	440	40	10	
Vehicle Hours Traveled (Veh-Hr)	0.67	0.15	0.45	16.95	0.04	1.65	1.52	0.30	1.53	0.34	0.84	9.19	0.62	0.15	
PM Peak Hour															74.87
Delay (s)	71.8	55.3	55.3	97.6	31.6	42.5	65.2	65.2	106.7	9.3	92.2	92.2	47.4	43.1	
Volume (Veh)	20	10	20	800	10	480	370	20	410	1,310	210	640	140	30	
Vehicle Hours Traveled (Veh-Hr)	0.40	0.15	0.31	21.69	0.09	5.67	6.70	0.36	12.15	3.38	5.38	16.39	1.84	0.36	

With Texas U-turn

Measure of Effectiveness/ Movement	Eastbound			Westbound			Northbound				Southbound				Total
	Left	Thru	Right	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
AM Peak Hour															32.95
Delay (s)	77.0	51.4	51.4	44.4	13.1	15.4	52.8	52.1	58.8	1.5	47.3	71.0	50.9	49.4	
Volume (Veh)	30	10	30	1,350	10	370	100	20	90	810	40	440	40	10	
Vehicle Hours Traveled (Veh-Hr)	0.64	0.14	0.43	16.65	0.04	1.58	1.47	0.29	1.47	0.34	0.53	8.68	0.57	0.14	
PM Peak Hour															61.31
Delay (s)	63.1	47.9	47.9	75.3	26.3	35.9	61.2	38.0	85.3	9.3	47.2	82.4	42.2	38.4	
Volume (Veh)	20	10	20	800	10	480	370	20	410	1,310	210	640	140	30	
Vehicle Hours Traveled (Veh-Hr)	0.35	0.13	0.27	16.73	0.07	4.79	6.29	0.21	9.71	3.38	2.75	14.65	1.64	0.32	

Table C2-5A: Summary of Cost Savings as a Result of Reduced Intersection Delay (Alternative 3) - US Highway 19 Corridor

Year	Analysis Period	Hourly VHT ⁽¹⁾ (Veh-hr)		Peak VHT Savings (Veh-hr)	Daily VHT ⁽²⁾ Savings (Veh-hr/day)	Annual Savings ⁽³⁾	Annual Maintenance	Annual Savings Benefit	Present Value Savings	Cumulative Present Value Savings
		Base (without Texas U-Turn)	Build (with Texas U-Turn)							
2030	0	1,109.5	823.6	285.9	1,501	\$ 7,347,771.71	\$ 262,406.21	\$ 7,085,365.50	\$ 3,859,346.18	\$ 3,859,346.18
2031	1	1,119.9	831.4	288.6	1,516	\$ 7,416,951.32	\$ 274,214.49	\$ 7,142,736.83	\$ 3,929,920.74	\$ 7,789,266.92
2032	2	1,130.4	839.1	291.3	1,530	\$ 7,486,130.93	\$ 286,554.14	\$ 7,199,576.79	\$ 3,858,536.98	\$ 11,647,803.90
2033	3	1,140.8	846.9	294.0	1,544	\$ 7,555,310.54	\$ 299,449.08	\$ 7,255,861.46	\$ 3,788,126.32	\$ 15,435,930.22
2034	4	1,151.3	854.6	296.6	1,558	\$ 7,624,490.15	\$ 312,924.29	\$ 7,311,565.86	\$ 3,718,688.72	\$ 19,154,618.95
2035	5	1,161.7	862.4	299.3	1,572	\$ 7,693,669.76	\$ 327,005.88	\$ 7,366,663.88	\$ 3,650,223.40	\$ 22,804,842.35
2036	6	1,172.2	870.1	302.0	1,586	\$ 7,762,849.37	\$ 341,721.15	\$ 7,421,128.22	\$ 3,582,728.92	\$ 26,387,571.26
2037	7	1,182.6	877.9	304.7	1,600	\$ 7,832,028.98	\$ 357,098.60	\$ 7,474,930.38	\$ 3,516,203.17	\$ 29,903,774.43
2038	8	1,193.0	885.6	307.4	1,615	\$ 7,901,208.59	\$ 373,168.04	\$ 7,528,040.56	\$ 3,450,643.46	\$ 33,354,417.89
2039	9	1,203.5	893.4	310.1	1,629	\$ 7,970,388.20	\$ 389,960.60	\$ 7,580,427.60	\$ 3,386,046.52	\$ 36,740,464.40
2040	10	1,213.9	901.1	312.8	1,643	\$ 8,039,567.81	\$ 407,508.82	\$ 7,632,058.99	\$ 3,322,408.53	\$ 40,062,872.94
2041	11	1,224.4	908.9	315.5	1,657	\$ 8,108,747.42	\$ 425,846.72	\$ 7,682,900.70	\$ 3,259,725.19	\$ 43,322,598.13
2042	12	1,234.8	916.7	318.2	1,671	\$ 8,177,927.03	\$ 445,009.82	\$ 7,732,917.21	\$ 3,197,991.70	\$ 46,520,589.83
2043	13	1,245.3	924.4	320.9	1,685	\$ 8,247,106.64	\$ 465,035.27	\$ 7,782,071.37	\$ 3,137,202.82	\$ 49,657,792.66
2044	14	1,255.7	932.2	323.6	1,699	\$ 8,316,286.25	\$ 485,961.85	\$ 7,830,324.40	\$ 3,077,352.89	\$ 52,735,145.55
2045	15	1,266.2	939.9	326.3	1,714	\$ 8,385,465.86	\$ 507,830.14	\$ 7,877,635.72	\$ 3,018,435.87	\$ 55,753,581.42
2046	16	1,276.6	947.7	328.9	1,728	\$ 8,454,645.47	\$ 530,682.49	\$ 7,923,962.98	\$ 2,960,445.32	\$ 58,714,026.73
2047	17	1,287.1	955.4	331.6	1,742	\$ 8,523,825.08	\$ 554,563.20	\$ 7,969,261.87	\$ 2,903,374.49	\$ 61,617,401.23
2048	18	1,297.5	963.2	334.3	1,756	\$ 8,593,004.69	\$ 579,518.55	\$ 8,013,486.14	\$ 2,847,216.31	\$ 64,464,617.53
2049	19	1,307.9	970.9	337.0	1,770	\$ 8,662,184.30	\$ 605,596.88	\$ 8,056,587.41	\$ 2,791,963.38	\$ 67,256,580.92
2050	20	1,318.4	978.7	339.7	1,784	\$ 8,731,363.90	\$ 632,848.74	\$ 8,098,515.16	\$ 2,737,608.08	\$ 69,994,188.99
Total Benefit During Analysis Period (2030-2050)									\$ 69,994,189	

Notes:

- (1) Year 2050 VHT is derived by applying an annual growth rate in VMT to the estimated 2030 VHT throughout the 20-year analysis period
(2) Daily VHT was estimated by dividing the hourly VHT by a factor representing two times the K₃₀-factor
(3) Assumes 250 working days in a calendar year

Present Value (Year 2008) of Project Costs - Alternative 3 (Modified Tight Urban Diamond Interchange with Texas U-Turn)

Capital Cost	Remaining Capital Value ⁽¹⁾	Present Value of Cost	Present Value of Remaining Capital	Present Value of Net Cost
\$ 52,789,000.00	\$ 44,870,650.00	\$ 28,753,777.82	\$ 25,828,552.49	\$ 2,925,225.33

Notes:

- (1) Remaining Capital Value is estimated as 85% of the Capital cost assuming the expected life of the major improvements is 60 years

Table C2-6: Comparison of Vehicle Miles Traveled (VMT) for Existing Year (2006) and Design Year (2030)

Segment	Segment Length (Miles)	Existing Year (2006)		Design Year (2030)	
		AADT (Veh/Day)	VMT (Veh-Mile)	AADT (Veh/Day)	VMT (Veh-Mile)
Pinellas County Line to SR 54	3.03	488,900	213,901	529,200	230,846
Pinellas County Line to Flora Avenue	0.26	59,300	15,418	67,800	17,628
Flora Avenue to Alt 19	0.38	66,200	25,156	71,000	26,980
Alt 19 to Mile Stretch Drive	0.37	78,100	28,897	83,000	30,710
Mile Stretch Drive to Darlington Road	0.50	71,300	35,650	77,000	38,500
Darlington Road to Sunray Drive	0.20	71,600	14,320	77,200	15,440
Sunray Drive to Moog Road	0.80	72,900	58,320	78,300	62,640
Moog Road to SR 54	0.52	69,500	36,140	74,900	38,948
SR 54 to Main Street	2.41	400,700	159,929	432,400	172,928
SR 54 to Trouble Creek Road	0.56	65,200	36,512	70,600	39,536
Trouble Creek Road to Floramar Terrace	0.38	66,900	25,422	72,100	27,398
Floramar Terrace to Marine Parkway	0.21	68,500	14,385	73,600	15,456
Marine Parkway to Gulf Drive	0.49	67,600	33,124	72,500	35,525
Gulf Drive to Cross Bayou Blvd.	0.19	67,600	12,844	72,500	13,775
Cross Bayou Blvd. to Main Street	0.58	64,900	37,642	71,100	41,238
Main Street to Ridge Road	2.28	125,300	143,925	138,000	157,776
Main Street to Grand Blvd.	1.71	63,600	108,756	69,400	118,674
Grand Blvd. to Ridge Road	0.57	61,700	35,169	68,600	39,102
Ridge Road to SR 52	3.76	491,500	233,268	554,700	262,401
Ridge Road to Holiday Hills Blvd.	0.77	64,300	49,511	71,500	55,055
Holiday Hills Blvd. to Embassy Blvd.	0.27	58,800	15,876	67,900	18,333
Embassy Blvd. to Scenic Drive	0.30	59,200	17,760	67,800	20,340
Scenic Drive to Fox Hollow Drive	0.35	59,200	20,720	67,800	23,730
Fox Hollow Drive to Regency Drive	0.32	60,700	19,424	67,400	21,568
Regency Drive to Jasmine Blvd.	0.27	64,000	17,280	71,600	19,332
Jasmine Blvd. to Ranch Road	0.49	62,700	30,723	70,500	34,545
Ranch Road to SR 52	0.99	62,600	61,974	70,200	69,498
SR 52 to County Line Road	8.21	261,800	304,213	327,300	469,727
SR 52 to Beacon Woods Drive	0.49	55,900	27,391	61,700	30,233
Beacon Woods Drive to Hudson Avenue	1.88	49,800	93,624	53,700	100,956
Hudson Avenue to New York Avenue	0.97	40,400	39,188	48,900	47,433
New York Avenue to Denton Avenue	1.32	38,800	1	48,200	63,624
Denton Avenue to Little Road	0.87	34,300	29,841	44,300	38,541
Little Road to County Line Road	2.68	42,600	114,168	70,500	188,940
Pinellas County Line to County Line Road	19.69	1,768,200	1,055,236	1,981,600	1,293,678
Vehicle Miles Traveled Difference:					238,442
Annual Growth Rate:					0.94%