



**US 190 (LA 433 to US 11) Interim Capacity/Widening Improvements  
Stage 0 Feasibility Study  
ST Tammany Parish**



***SUBMITTED BY:***



***June 30, 2014  
FINAL REPORT***

***IN ASSOCIATION WITH:***

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Stage 0 Feasibility Study

US 190 (LA 433 TO US 11) Interim Capacity / Widening Improvements –  
ST Tammany Parish

Project Summary

## SUMMARY

### INTRODUCTION:

*This project includes a safety and capacity evaluation of the US 190 corridor within St. Tammany Parish extending from LA 433 to US 11. Proceeding from the west terminus of the project at the US 190 intersection with LA 433, US 190 crosses Bayou Liberty as a 2-lane rural route and then transitions to a 3-lane roadway with open ditch drainage. It remains as a 3-lane roadway for approximately 2.5 miles until Bayou Bonfouca at which point it transitions back to a 2-lane roadway as it crosses the Bayou. The roadway returns to a 3-lane section east of Bayou Bonfouca to the eastern project terminus at US 11. The US 190 intersection with US 11 also includes a crossing of the main line of Norfolk Southern Railroad. The corridor under study includes the following signalized intersection as well as the Dixie Ranch Road intersection, the Camp Villere Road intersection and the Carnation Street intersections:*

- *US 190 @ LA 433*
- *US 190 @ Northshore Boulevard*
- *US 190 @ Grand 16 Theatre Entrance*
- *US 190 @ Westminster Drive*
- *US 190 @ Carroll Road / Sunset Drive*
- *US 190 @ Maris Stella Street*
- *US 190 @ Plaza Shopping Center*
- *US 190 @ US 11*

*The existing 3-lane facility as constructed does not provide for pedestrian or bicycle facilities. However, the developed portion of the Tammany Trace Trail parallels US 190 from LA 433 to Nelso Road approximately 200' to the south of the US 190 ROW. The undeveloped portion of the Trace extends east from Nelso Road to its intersection with US 190. The Tammany Trace intersects the US 190 ROW approximately 150' east of Cherry Street.*

*The project limits and Average Daily Traffic are shown in Exhibit S-1*

*A review draft of the Stage 0 report was prepared and distributed to stakeholders. A project meeting was conducted at LADOTD District 62 offices on May 21, 2014 to review the Draft Stage 0 Report and a copy of the meeting minutes is enclosed as Attachment 1 to this Summary. The following changes were made to the final report reflecting meeting comments:*

- ***Driveway Access at Northshore Boulevard.*** *Plate 2 was modified to show the two driveways on the Chevron site (one facing Northshore Boulevard, one facing US 190) as right-in, right-out and the driveway fronting US 190 on the McDonalds site as right-in, right-out.*
- ***Access at Cherry Street, Plate 2*** – *A note was added to the Plate 2 indicating that the follow-up environmental document should consider a roundabout intersection at Cherry Street and US 190, or possible J-turn locations for motorists accessing/egressing Cherry Street.*

- **N. Harrison Road** – Consensus was to remove the u-turn movement from the turn lane onto N. Harrison Road from US 190 and this was accomplished. A note was added to the drawing suggesting that the u-turn be eliminated in lieu of providing a pair of u-turns at St. Tammany Avenue.
- **Establishment of an Additional Analysis Link** – The review draft Stage 0 Report included the widening of the bridge over Bayou Bonfouca in Link 5. The projected Link 5 cost was estimated to be over \$14 million. It was suggested that an additional corridor link be established. The link would extend on the west side of the Bayou approximately from the approach to the left turn at North Harrison Street, across the Bayou and to St. Tammany Avenue. The new link would include the bridge widening to accommodate pedestrian movements, and potential U-turn locations. The new Link was developed for this final report and it is shown as Link 5-A. Notes were added to Plate 6 showing locations where U-turns will be studied in the follow-up environmental document. The cost of u-turns was included in the cost estimate for new link 5-A and the cost of the bridge widening is shown on the project cost estimate summary.

In addition to the changes to the draft Stage 0 document as noted above, the following concerns associated with the Carnation Street to US 11 Link are noted for consideration in follow-up engineering studies and environmental documents.

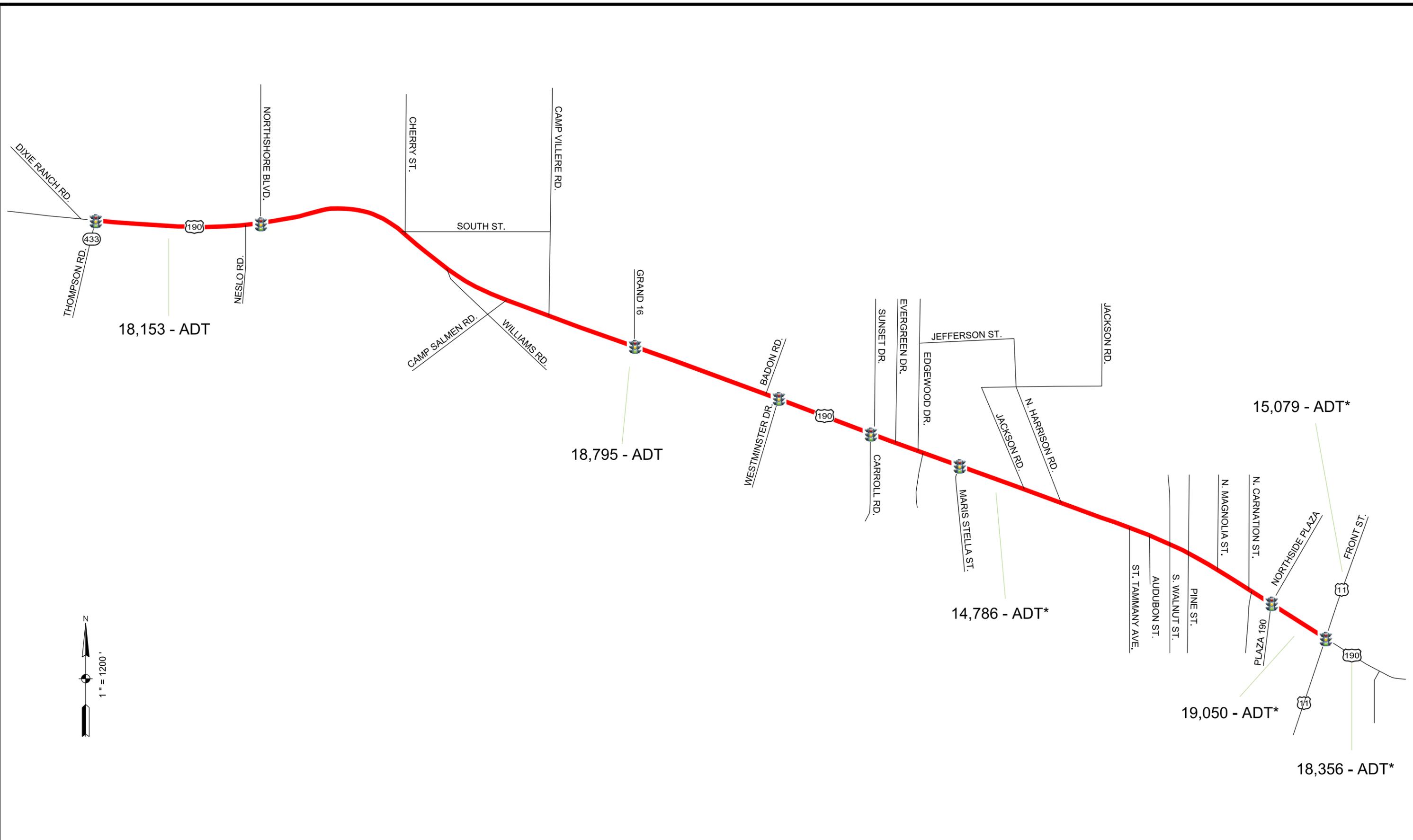
- LADOTD has an environmental assessment in progress studying US 11 from US 190 to Interstate -12. This study may affect traffic patterns extending along US 190 from Carnation Street to US 11. The future environmental document for US 190 should consider the findings of the US 11 EA.
- A traffic signal is located just to the east of the Carnation Street roundabout. LADOTD expressed concern that his signal would not meet the requirements for a signal warrant at that location. There was also concern from the City of Slidell with the placement of the sidewalk adjacent to the travel lanes with no separation.
- Overall, the access to / from shopping centers abutting US 190 was a concern. The follow-up environmental document should study more thoroughly how access can be provided from / to the shopping center parking areas; and how traffic circulation within the shopping center parking areas could be improved to accommodate appropriate access to US 190.

## **PURPOSE AND NEED**

The Purpose of the Study is to develop an Interim Capacity Improvement Program which can be funded incrementally with projects in the range \$3 million to \$6 million. The program would address capacity issues throughout the corridor and support complete streets improvements.

Table S-1 shows the year 2013 Level of Service analysis for intersections within the corridor under study for AM and PM peak hours for all movements through the intersection. Also presented is the Delay (in seconds). The PM Analyses for the Grand Theatre access was undertaken at the peak operating time of the theaters, not the PM peak hour of the corridor.

Most of the intersections experience deficient level of service (E or F) through at least one intersection movement.



**LEGEND**

 PROJECT LIMITS  
 SIGNALIZED INTERSECTIONS  
 (XX - ADT) OBTAINED FROM 2013 PROJECT COUNTS  
 (XX - ADT\*) OBTAINED FROM 2012 DOTD COUNT STATIONS

**EXHIBIT S-1**  
**US 190 STAGE 0**  
**AVERAGE DAILY TRAFFIC**

**Stage 0 Feasibility Study**  
**US 190 (LA 433 TO US 11) Interim Capacity / Widening Improvements – St. Tammany Parish**

Table S-1 Intersection Level of Service, Year 2013					
Intersecting Street	Movement	AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS
Dixie Ranch Road	NB	---	---	---	---
	SB	186.4	F	115.1	F
	WB	0	N/A	0	N/A
	EB	0	N/A	0	N/A
	Intersection	N/A	N/A	N/A	N/A
Thompson Road (LA 433)	NB	56.1	E	26.1	C
	SB	---	---	---	---
	WB	15.5	B	16.9	B
	EB	31.9	C	24.9	C
	Intersection	34.3	C	20.8	C
Northshore Boulevard	NB	---	---	---	---
	SB	25.1	C	102.6	F
	WB	21.2	C	20.4	C
	EB	21.8	C	16	B
	Intersection	22.6	C	53.4	D
Camp Villere Road	NB	---	---	---	---
	SB	130.7	F	202.1	F
	WB	0	N/A	0	N/A
	EB	0	N/A	0	N/A
	Intersection	N/A	N/A	N/A	N/A
Grand 16 Theatre Entrance	NB	---	---	---	---
	SB	22.7	C	46.6	D
	WB	14	B	41.3	D
	EB	5.6	A	10.1	B
	Intersection	9.5	A	26.9	C
Westminster Drive	NB	25.1	C	29.4	C
	SB	---	---	---	---
	WB	6.9	A	9.4	A
	EB	14.5	B	14.9	B
	Intersection	13.1	B	13.6	B
Sunset Drive / Carroll Road	NB	83.4	F	104.6	F
	SB	110.8	F	108.5	F
	WB	24.2	C	69.4	E
	EB	32.2	D	27.9	C
	Intersection	37.2	D	46.5	D
Maris Stella Street	NB	34.4	C	26.3	C
	SB	39.7	D	39.7	D
	WB	11.3	B	20.6	C
	EB	25.5	C	13.3	B
	Intersection	21	C	17.9	B
N. Carnation Street	NB	---	---	---	---
	SB	133.3	F	278.8	F
	WB	0	N/A	0	N/A
	EB	0	N/A	0	N/A
	Intersection	N/A	N/A	N/A	N/A
S. Carnation Street	NB	167	F	99.8	F
	SB	---	---	---	---
	WB	0	N/A	0	N/A
	EB	0	N/A	0	N/A
	Intersection	N/A	N/A	N/A	N/A

LOS E or worse

Source: Neel-Schaffer, Inc.

To further document the Need for improvements within the corridor, the study team undertook a Design Life Analysis of intersections along the project corridor. The Design Life Analysis objective is to predict the last year before any of the subject intersection movements exceed a volume-to-capacity ratio (V/C) of 1.0 (i.e., capacity). Annual traffic growth within the corridor is estimated to be 2.25% and the base year for the Design Life Analysis was 2016. Table S-2 presents the No-Build condition Design Life Analysis for each intersection within the corridor starting at the base year 2016. The No-Build represents the future year traffic condition operating within the year 2013 intersection geometry.

Table S-2 No-Build Design Life Analysis Years Beyond 2016 in Which the Intersection Continues to Operate At or Below Capacity		
Intersecting Street	AM Peak Hour	PM Peak Hour
Dixie Ranch Road	20 years	20 years
Thompson Road (LA 433)	0 years	14 years
Northshore Boulevard	1 year	0 years
Camp Villere Road	0 years	0 years
Grand 16 Theatre Entrance	20 years	0 years
Westminster Drive	15 years	7 years
Sunset Drive / Carroll Road	0 years	2 years
Maris Stella Street	3 years	3 years
N. Carnation Street	20 years	0 years
S. Carnation Street	20 years	20 years

Source - Neel-Schaffer, Inc.

The Design Life Analysis indicates that by year 2020, only the Dixie Ranch Road intersection, the Westminster Drive intersection and S. Carnation Street intersection continue to operate within capacity within both AM and PM peaks under the No-Build scenario.

### **PROPOSED IMPROVEMENTS**

The overall scope of the project was to develop concepts for roundabout geometry intersections along the corridor and to incorporate pedestrian and bicycle facilities within the corridor in concert with complete street concepts.

Proceeding from west to east through the corridor, a roundabout intersection is proposed for the US 190 intersection with LA 433. As part of that improvement, Dixie Ranch Road will be relocated so that it ties directly into the roundabout.

A two-lane boulevard will be constructed from a point east of the existing bridge crossing of Bayou Liberty to the existing bridge crossing of Bayou Bonfouca; and from east of Bayou Bonfouca to a new roundabout geometry intersection at Carnation Street. The roadway will include two 12' travel lanes, an 8' median and 8' paved shoulders.

The paved shoulders will be stripped as bicycle lanes. Other complete streets improvements include a 5' sidewalk along the south ROW from Nelso Road to a new roundabout intersection

proposed at Northshore Boulevard; and a new 5' sidewalk extending along the north ROW from the Northshore Boulevard roundabout to a new roundabout geometry intersection at Carnation Street. The existing bridge over Bayou Bonfouca will be widened to accommodate a 5' sidewalk and 8' paved shoulders. A 10' multi-use path is constructed from the Tammany Trace intersection with US 190 along US 190 to Williams Road.

Roundabout geometry intersection will also be provided at Camp Villere Road, the Grand Theatre entrance road, at Westminster Drive, at Carol Road / Sunset Drive and at Maris Stella Street. Except for the LA 433 roundabout, the proposed roundabouts include provision for bike / pedestrian movements through the roundabout.

Other geometric improvements in the two-lane boulevard segment include a west bound direction left turn directly into the US Post Office and an east bound direction J-turn at North Harrison Road.

To the east of the Carnation Street roundabout, US 190 functions as a four-lane boulevard section with 15' median. The existing signal at Northside Plaza is maintained.

### **SAFETY ANALYSIS**

A safety analysis was performed for the study intersections.

A conflict point is a point at which a vehicle crosses, merges, or diverges from a road or driveway and conflicts with another vehicle. These points correspond with potential for crashes. Conflict points were determined at the study intersections along US 190 for the no build and the build alternatives. The results are shown below in Table S-3 and Table S-4 respectively.

Table S-3  
 Number of Conflict Points by Type for No Build Condition

Intersecting Street	Crossing	Merging	Diverging	Total
Dixie Ranch/ Thompson Rd (LA 433).	8	8	7	23
Northshore Blvd.	4	4	3	11
Camp Villere Rd.	5	4	3	12
Grand 16 Theater Dwy.	6	3	3	12
Westminster Dr.	6	4	3	13
Carroll Rd/ Sunset Dr.	17	8	7	32
Maris Stella St./ Clinic Dwy.	12	5	8	25
Carnation St./ S. Carnation St.	6	7	7	20
Northside Plaza	16	8	8	32
US 11 (Front St.)	40	9	9	58
Total	120	60	58	238

*Table S-4*  
*Number of Conflict Points by Type for Build Condition*

<i>Intersecting Street</i>	<i>Crossing</i>	<i>Merging</i>	<i>Diverging</i>	<i>Total</i>
<i>Dixie Ranch/ Thompson Rd. (LA 433)</i>	<i>0</i>	<i>7</i>	<i>7</i>	<i>14</i>
<i>Northshore Blvd.</i>	<i>2</i>	<i>5</i>	<i>5</i>	<i>12</i>
<i>Camp Villere Rd.</i>	<i>0</i>	<i>3</i>	<i>3</i>	<i>6</i>
<i>Grand 16 Theater Dwy.</i>	<i>0</i>	<i>4</i>	<i>4</i>	<i>8</i>
<i>Westminster Dr.</i>	<i>0</i>	<i>3</i>	<i>3</i>	<i>6</i>
<i>Carroll Rd/ Sunset Dr.</i>	<i>0</i>	<i>4</i>	<i>4</i>	<i>8</i>
<i>Maris Stella St./ Clinic Dwy.</i>	<i>0</i>	<i>4</i>	<i>4</i>	<i>8</i>
<i>Carnation St./ S. Carnation St.</i>	<i>4</i>	<i>8</i>	<i>9</i>	<i>21</i>
<i>Northside Plaza</i>	<i>24</i>	<i>8</i>	<i>8</i>	<i>40</i>
<i>US 11 (Front St.)</i>	<i>40</i>	<i>9</i>	<i>9</i>	<i>58</i>
<i>Total</i>	<i>70</i>	<i>55</i>	<i>56</i>	<i>181</i>

*In accordance with FHWA guidance, crossing conflicts result in left turn and angle crashes that account for generally more severe crashes than other types. The build alternative will decrease the number of crossing conflicts within the study corridor intersections by 42%.*

*The number of conflict points on US 190 were not determined along segments between the study intersections. However, it should be noted that no build conditions have numerous driveways along the corridor that are full access. Driveways that are lined up with another driveway across the street will have approximately thirty-two (32) conflict points (16 crossing, 8 merging, and 8 diverging). Driveways that are not lined up with another driveway will have approximately nine (9) conflict points (3 crossing, 3 merging, and 3 diverging). The build alternative has a median that will turn all of the full access driveways into right-in, right-out driveways. This will cut down the number of conflict points to approximately two (2) (1 merge and 1 diverge) in two-lane segments, and three (3) (2 merge and 1 diverge) in four-lane segments. The build alternative will cut down the number of conflict points dramatically along the segments of US 190. It can also be expected that the severity of crashes along the segments of US 190 will decline with build conditions since crossing conflict points will be eliminated.*

*In accordance with the FHWA Crash Modification Factors Clearinghouse, “A crash modification factor (CMF) is a multiplicative factor used to compute the expected number of crashes after implementing a given countermeasure at a specific site. For example, an intersection is experiencing 100 angle crashes and 500 rear-end crashes per year. If you apply a countermeasure that has a CMF of 0.80 for angle crashes, then you can expect to see 80 angle crashes per year following the implementation of the countermeasure (100 x 0.80 = 80).” Table S-5 below lists the crash modification factors associated with each intersection improvement in the build condition.*

*Table S-5*  
*Crash Modification Factors for Build Condition*

<i>Intersecting Street</i>	<i>From Existing Intersection Control to Build Improvement</i>	<i>Crash Type</i>	<i>Crash Severity</i>	<i>CMF</i>
<i>Dixie Ranch Rd/ Thompson Rd</i>	<i>Signalized to 2 Lane Roundabout</i>	<i>All</i>	<i>All</i>	<i>0.81</i>
		<i>All</i>	<i>Serious injury, Minor injury</i>	<i>0.29</i>
<i>Northshore Blvd</i>	<i>Signalized to 2 Lane Roundabout</i>	<i>All</i>	<i>All</i>	<i>0.81</i>
		<i>All</i>	<i>Serious injury, Minor injury</i>	<i>0.29</i>
<i>Camp Villere</i>	<i>Unsignalized to One Lane Roundabout</i>	<i>All</i>	<i>All</i>	<i>0.28</i>
		<i>All</i>	<i>Serious injury, Minor injury</i>	<i>0.12</i>
<i>Grand 16 Theater</i>	<i>Signalized to One Lane Roundabout</i>	<i>All</i>	<i>All</i>	<i>0.74</i>
		<i>All</i>	<i>Serious injury, Minor injury</i>	<i>0.45</i>
<i>Westminster Dr</i>	<i>Signalized to One Lane Roundabout</i>	<i>All</i>	<i>All</i>	<i>0.74</i>
		<i>All</i>	<i>Serious injury, Minor injury</i>	<i>0.45</i>
<i>Sunset Dr/ Carroll Rd</i>	<i>Signalized to One Lane Roundabout</i>	<i>All</i>	<i>All</i>	<i>0.74</i>
		<i>All</i>	<i>Serious injury, Minor injury</i>	<i>0.45</i>
<i>Maris Stella/ Clinic Dwy</i>	<i>Signalized to One Lane Roundabout</i>	<i>All</i>	<i>All</i>	<i>0.74</i>
		<i>All</i>	<i>Serious injury, Minor injury</i>	<i>0.45</i>
<i>Carnation St</i>	<i>Unsignalized to 2 Lane Roundabout</i>	<i>All</i>	<i>All</i>	<i>0.751</i>
		<i>All</i>	<i>Fatal, Serious injury, Minor injury</i>	<i>0.65</i>

*Note: The lower the CMF, the more crash reductions can be expected. A CMF score lower than 1 predicts a reduction in the number of crashes with the suggested roadway improvement. A CMF score higher than 1 would predict an increase in crashes. A CMF of 1 would predict no change in the number of crashes.*

*All of the crash modification factors listed in Table S-5 for the roundabout countermeasures are less than one (1). Therefore, it can reasonably be expected that the build alternative will decrease the number of accidents that are currently occurring at these locations. The build alternative for the intersection of US 190 and US 11 (Front Street) is the same layout as the no build alternative. As explained above, crash modification factors are typically used for intersection conversions, therefore US 190 at US 11 (Front Street) was excluded from Table 1-6. The build alternative for the intersection of US 190 and Northside Plaza includes widening US 190 from a two-lane section to a four-lane section. There are no crash modification factors available for this type of roadway improvement, therefore this intersection was also excluded from Table S-5.*

**FINDINGS OF THE TRAFFIC STUDY**

*The typical methodology for development of the traffic analysis supporting a project is to compare the future no-build at 20 years past the base year with the future build at 20 years past the base year.*

However, since the focus of the project is to develop interim improvements, an Interim Design Year (2016) was established as the base year for the analysis. To establish the design life for each improvement, and the design life of the No-Build, the study team undertook a Design Life Analysis of intersections along the project corridor. Table S-6 compares the No-Build condition Design Life Analysis with the build geometry Design Life Analysis for each intersection within the corridor starting at the base year 2016.

Table S-6 No-Build vs Build Design Life Analysis Years Beyond 2016 in Which the Intersection Continues to Operate At or Below Capacity				
Intersecting Street	No Build Design Life		Build Design Life	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Dixie Ranch Road	20 years	20 years	NA*	NA*
Thompson Road (LA 433)	0 years	14 years	7 years	10 years
Northshore Boulevard	1 year	0 years	20 year	16 years
Camp Villere Road	0 years	0 years	20 years	20 years
Grand 16 Theatre Entrance	20 years	0 years	20 years	8 years
Westminster Drive	15 years	7 years	20 years	18 years
Sunset Drive / Carroll Road	0 years	2 years	17 years	10 years
Maris Stella Street	3 years	3 years	14 years	13 years
N. Carnation Street	20 years	0 years	20 years	20 years
S. Carnation Street	20 years	20 years	NA**	NA**

NA\* - Will be part of the Thompson Road Roundabout

Source - Neel-Schaffer, Inc.

NA\*\* - Will be part of the Carnation Street Roundabout

The build alternative extends the design life for all of the intersections.

The intersections of US 190 and US 11 (Front St.) and US 190 and Northside Plaza are signalized intersections for the no build alternative. Build condition improvements for these intersections are associated with widening the roadway and not a change in the type of traffic control. The results of the intersection analyses are summarized in Tables S-7 through S-9. Table S-7 below shows the results of the existing 2013 conditions.

Table S-7  
2013 AM and PM Peak Hour Existing Conditions Intersections  
Delay (sec) / LOS

Intersecting Street	Approach	AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS
US 11 (Front St.)	NB	34	C	40.1	D
	SB	36.5	D	52.7	D
	WB	29.5	C	49.3	D
	EB	30.1	C	30.3	C
	Intersection	32.6	C	42.7	D
Northside Plaza	NB	41.9	D	50.2	D
	SB	45.5	D	62.5	E

**Stage 0 Feasibility Study**  
**US 190 (LA 433 TO US 11) Interim Capacity / Widening Improvements – St. Tammany Parish**

	WB	2.6	A	3.9	A
	EB	5.9	A	3.2	A
	Intersection	5.5	A	7.6	A

2016 year conditions were analyzed for the two (2) signalized intersections in the build alternative. The results of these no build versus build analyses during the AM peak hour are shown below in Table S-8.

Table S-8  
 2016 Year AM Peak Hour – No Build vs. Build  
 Delay (sec) / LOS

Intersecting Street	Approach	2016 No Build		2016 Build	
		Delay	LOS	Delay	LOS
US 11 (Front St.)	NB	35.7	D	27.9	C
	SB	38.9	D	30.8	C
	WB	31.7	C	27.6	C
	EB	32.6	C	25	C
	Intersection	34.8	C	27.7	C
Northside Plaza	NB	41.8	D	32	C
	SB	45.7	D	34.2	C
	WB	2.6	A	1.7	A
	EB	6.5	A	3.9	A
	Intersection	5.8	A	3.7	A

2016 year conditions were analyzed for the two (2) signalized intersections in the build alternative. The results of these no build versus build analyses during the PM peak hour are shown below in Table S-9.

Table S-9  
 2016 Year PM Peak Hour – No Build vs. Build  
 Delay (sec) / LOS

Intersecting Street	Approach	2016 No Build		2016 Build	
		Delay	LOS	Delay	LOS
US 11 (Front St.)	NB	41.5	D	32.7	C
	SB	59.6	E	30.3	C
	WB	69.5	E	35.9	D
	EB	31.1	C	25.6	C
	Intersection	50.2	D	31.2	C
Northside Plaza	NB	50.3	D	31.2	C
	SB	67.2	E	33.3	C
	WB	4.3	A	4.8	A
	EB	4	A	5.1	A
	Intersection	8.3	A	7.0	A

**Stage 0 Feasibility Study**  
**US 190 (LA 433 TO US 11) Interim Capacity / Widening Improvements – St. Tammany Parish**

The immediate geometry at the intersection of US 190 and US 11 (Front Street) does not change from no build to build conditions. However, US 190 between Northside Plaza and US 11 does change from a three-lane section in no build conditions to a four-lane section in build conditions. This allows for better timing between the signalized intersections of Northside Plaza and US 11 (Front Street), which is responsible for the decrease in delays at US 11 (Front Street) during the AM and PM peak hours under build conditions.

A VISSIM model was developed to provide a simulation of corridor operations. The VISSIM simulation was developed for the existing year 2013 condition, and for the base year 2016 for both the no-build and the proposed improvements. In keeping with the concept of providing interim improvements, A VISSIM simulation was also developed for year 2026 for both the no-build and build conditions. A file showing the VISSIM simulation is provide on the CD rnclosed within the rear folder of this report.

**COST SUMMARY AND PROJECT PHASING**  
**Corridor Build-out Concept**

Exhibit S-2 serves as a map index for the conceptual engineering plates and it shows how the project can be developed in constructible links extending from west to east along the project corridor. Table S-10 presents the cost summary for each link. Table S-11 established a construction priority for the corridor within the identified links. The construction prioritization conforms to the design life analysis previously shown in Table S-6 in that the intersections which fail the earliest are phased for improvement roughly in the order of failure.

TABLE S-10 COST SUMMARY					
Stage 0 Report US 190 (LA 433 TO US 11) Interim Capacity / Widening Improvements - ST Tammany Parish	Corridor	Corridor	Corridor	Anticipated Funding Source	
	Link 1	Link 2	Link 3		
	Dixie Ranch/ LA 433	Northshore Roundabout	Camp Villere Roundabout		
Environmental (Document and Mitigation)	\$30,809	\$80,389	\$58,706		
Engineering Design	\$123,235	\$321,555	\$234,822		
Right-of-way (Acquisition and Services)	\$2,606,010	\$1,421,173	\$1,738,770		
Utility Relocations	\$90,000	\$487,500	\$382,500		
Construction	\$1,540,436	\$4,019,437	\$2,935,276		
Construction Engineering & Inspection	<u>\$154,044</u>	<u>\$401,944</u>	<u>\$293,528</u>		
<b>TOTAL COST</b>	<b>\$4,544,533</b>	<b>\$6,731,997</b>	<b>\$5,643,602</b>		
Stage 0 Report US 190 (LA 433 TO US 11) Interim Capacity / Widening Improvements - ST Tammany Parish	Corridor	Corridor	Corridor	Corridor	Anticipated Funding Source
	Link 4	Link 5	Link 5A	Link 6	
	Grand 16 Theatre	Westminster/ Carroll/ Maris Stella	North Harrison to St. Tammany Ave.	St. Tammany Ave. to US 11	
Environmental (Document and Mitigation)	\$43,266	\$117,397	\$46,883	\$70,137	
Engineering Design	\$173,063	\$469,588	\$267,533	\$280,546	
Right-of-way (Acquisition and Services)	\$689,583	\$3,462,382	\$1,476,087	\$1,441,967	
Utility Relocations	\$250,000	\$880,000	\$400,000	\$720,000	
Construction	\$2,163,285	\$5,869,847	\$3,344,168	\$3,506,825	
Construction Engineering & Inspection	<u>\$216,329</u>	<u>\$586,985</u>	<u>\$234,417</u>	<u>\$350,683</u>	
<b>TOTAL COST</b>	<b>\$3,535,525</b>	<b>\$11,386,198</b>	<b>\$5,769,089</b>	<b>\$6,370,157</b>	

Prepared by: Neel-Schaffer, Inc.

Note: Bridge widening construction portion of Link 5-A is estimated to be \$775,000.



**Stage 0 Feasibility Study**  
**US 190 (LA 433 TO US 11) Interim Capacity / Widening Improvements – St. Tammany Parish**

Table S-11  
 Prioritization of Construction Based on Design Life Analysis  
 Years Beyond 2016 in Which the Intersection Continues to Operate At or Below Capacity

Intersecting Street	Link	Link Cost in millions \$	Construction Priority	No Build Design Life		Build Design Life	
				AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Dixie Ranch Road	1	\$4.5	<b>Priority 5</b> (1 phase)	20 years	20 years	NA*	NA*
Thompson Road (LA 433)				0 years	14 years	7 years	10 years
Northshore Boulevard	2	\$6.7	<b>Priority 1</b> (2 phases)	1 year	0 years	20 year	16 years
Camp Villere Road	3	\$5.6	<b>Priority 3</b> (1 phase)	0 years	0 years	20 years	20 years
Grand 16 Theatre Entrance	4	\$3.5	<b>Priority 7</b> (1 phase)	20 years	0 years	20 years	8 years
Westminster Drive	5	\$11.4	<b>Priority 2</b> (3 Phases)	15 years	7 years	20 years	18 years
Sunset Drive / Carroll Road				0 years	2 years	17 years	10 years
Maris Stella Street				3 years	3 years	14 years	13 years
North Harrison Turn Lane to St. Tammany Avenue	5-A	\$4.9	<b>Priority 4</b> (1 phase)	Design Life Analysis was not performed on this link because no intersections within the link were studied. The link was added to balance costs and provide for a u-turn between the Maris Stella roundabout and the Carnation Street roundabout.			
N. Carnation Street	6	\$7.9	<b>Priority 6</b> (2 phases)	20 years	0 years	20 years	20 years
S. Carnation Street				20 years	20 years	NA**	NA**

NA\* - Will be part of the Thompson Road Roundabout

Source - Neel-Schaffer, Inc.

NA\*\* - Will be part of the Carnation Street Roundabout

**Priority 1, Northshore Boulevard Link** – This link includes the improvements extending from the start of construction to the east of Bayou Liberty to the construction of roadway and roundabout geometry intersection improvements extending approximately to the US 190 intersection with the Tammany Trace Trail. Its estimated \$6.7 million cost to completion is slightly higher than the \$6 million maximum suggested by the RPC for annual funding. However, the project could be progressed in two phases with the environmental, design and right-of way acquisition at approximately \$1.8 million as the initial phase, and the remainder (approximately \$5 million) in the construction phase.

**Priority 2, Westminster Drive / Sunset Drive / Maris Stella Link** – This link combines three roundabout intersections that are very closely spaced. The estimated cost to completion is \$11.4 million, which is much greater than the RPC \$6 million suggested maximum for an annual spending obligation. The project could be developed in three phases. The initial phase would consist of design, environmental and right-of way acquisition for the entire link (approximately \$4.1 million). The second phase would consist of the construction of the two higher priority roundabout intersections (Sunset Drive and Maris Stella) with connecting roadway (\$4.1 million). The Westminster roundabout with connecting roadway would be the final construction phase (\$3.2 million).

**Priority 3, Camp Villere Road Link** – This link consist of the Camp Villere Road roundabout intersection and roadway improvements extending to the then already complete Northshore Boulevard link. The \$5.6 million cost to completion is within the \$6 million RPC programming maximum.

**Priority 4, North Harrison Turn Lane to St. Tammany Avenue** - This link consist of a short segment which provides for widening of the bridge over Bayou Bonfouca, as well as additional u-turn capacity between the Maris Stella and Carnation Street roundabouts. The \$5.8 million cost to completion is within the \$6 million RPC programming maximum.

**Priority 5, Dixie Ranch Road / LA433 Link** - This link includes the relocation of Dixie Ranch Road and all proposed intersection improvements west of Bayou Liberty. The \$4.5 million cost to completion is within the \$6 million RPC programming maximum.

**Priority 6, Carnation Link** – This link includes the 2-lane boulevard roadway section extending from just east of the Bayou Bonfouca Bridge to Carnation Street, a new roundabout geometry intersection at Carnation Street, and the new 4-lane boulevard roadway section extending from Carnation Street to US 11. The estimated cost to completion is approximately 8 million, which exceeds the RPC programming maximum. However, the project could be progressed in two phases with the environmental, design and right-of way acquisition at approximately \$2.2 million as the initial phase, and the remainder (approximately \$5.8 million) in the construction phase.

**Priority 7, Grand 16 Theatre Entrance** – This link completes the project phasing as it includes the final roadway improvements and the roundabout geometry intersection at the Grand 16 theatre entrance. The \$3.5 million cost to completion is within the \$6 million RPC programming maximum.

**Environmental Documents** – The above priorities include consideration of environmental documents and survey within the individual priority links. A likely scenario would be that the environmental phase of the project would be completed first for the entire corridor. To tie down existing ROW and costs for utility relocation, the environmental phase should include the development of existing ROW maps and the location of utilities. Table S-12 summarizes the annual phasing of the project. It is anticipated that the environmental documents preparation would be in the range of \$450,000 (including a Conceptual Stage Relocation Plan) and that the survey would be \$250,000. So, the Environmental Phase of the project is budgeted at \$0.7 million (\$700,000).

<b>Table S-12</b>																						
<b>Phasing Plan</b>																						
<b>US 190 (LA 433 TO US 11) Interim Capacity / Widening Improvements</b>																						
	Link (ft)	Link Cost in millions \$	Construction Priority	Phase	Cost in mil \$	Services	Year															
							1	2	3	4	5	6	7	8	9	10	11	12				
Environmental, ROW Survey & Utility Location for Entire			Planning in Advance of	1	0.7	A	✓															
Northshore Boulevard	2 (3,464)	6.7	Priority 1 (2 phases)	1	\$1.8	B,C		✓														
				2	\$4.9	D			✓													
Westminster Drive Sunset Drive / Carroll Road Maris Stella Street	5 (4,450)	\$11.4	Priority 2 (3 Phases)	1	\$4.1	B,C				✓												
				2	\$4.1	D				✓												
				3	\$3.2	D						✓										
Camp Villere Road	3 (2,452)	\$5.6	Priority 3	1	\$5.6	B,C,D								✓								
North Harrison Turn Lane to St. Tammany Avenue	5-A (1,700)	\$5.8	Priority 4	1	\$4.9	B,C,D									✓							
Dixie Ranch Road / Thompson Road (LA 433)	1 (1,710)	\$4.5	Priority 5	1	\$4.5	B,C,D										✓						
St. Tammany St. to US 11	6 (3,200)	\$6.4	Priority 6 (2 phases)	1	\$2.2	B,C														✓		
				2	\$5.7	D																✓
Grand 16 Theatre Entrance	4 (2,244)	\$3.5	Priority 7	1	\$3.5	B,C,D															✓	

<b>Services</b>	<b>A</b>	Environmental, ROW Survey and Utility Location	<b>(ft)</b> Approximate distance of
	<b>B</b>	Right of Way Acquisition	link in feet
	<b>C</b>	Design	
	<b>D</b>	Construction	

Source: Neel-Schaffer, Inc.

**Roundabout Build-out Concept**

*Construction of the full roadway and roundabout intersection improvements in sequencing as suggested above is the desired approach to improving the corridor because it provides the maximum safety benefit in association with the interim capacity benefits and a roadway in conformance with complete streets concepts.*

*An alternative approach would be to build out the roundabout geometry intersections in priority sequence without providing the roadway and complete streets improvements between the intersections. The median roadway improvements and complete streets improvements would not be constructed until after all of the roundabouts were constructed. This approach would provide the interim capacity improvements, and the safety benefits associated with the roundabout intersection operations. It would leave the continuous turn lane in place between the improved intersections, so the safety benefits associated with the median roadway would not occur, and there would not be any complete streets benefits. It is anticipated that all of the individual roundabouts could be designed, ROW acquired and each constructed for less than the RPC \$6 million program maximum. But this approach would be less efficient and more costly as it would extend the time of the overall project corridor development, as individual design and construction packages for the roadway improvements would take place after the construction of the roundabouts.*

**ENVIRONMENTAL SCREENING:**

*Chapter 2 presents the Stage 0 Environmental Checklist associated with the proposed US 190 (LA 433 to US 11) Interim Capacity / Widening Improvements.*

*The primary issue of concern is the right-of-way affects which occur as property is acquired, primarily at roundabout locations. There is also an issue of concern associated with the roadway segment extending from Carnation Street to US 11. There is a single signalized intersection within this segment which provides access to commercial shopping areas both north and south of US 190. The use of the single intersection may create hazards as drivers cross through parking areas to reach the signalized intersection.*

*With respect to potential natural environment affects, no impacts to wetlands are anticipated. One of the species of concern within St. Tammany Parish is the Gulf Sturgeon. The existing bridge over Bayou Bonfouca will be widened as part of the project, and consultation with USF&WS service may be required in association with the bridge widening. This project is located within a developed corridor and no other affects to T&E species are anticipated as a result of the project.*

*The Tammany Trace Trail parallel the US 190 right-of-way for a portion of the project corridor. A new roundabout intersection is proposed at Northshore Boulevard. A very small area of the Tammany Trace ROW is impacted by the construction of the roundabout intersection. The impact does not affect trail facilities or the trail usage. But this may be considered as a 4(f) affect.*

**Stage 0 Feasibility Study**  
**US 190 (LA 433 TO US 11) Interim Capacity / Widening Improvements – St. Tammany Parish**

There are 13 water wells located within 250 feet of the project area, which have a range of users including domestic, industrial, commercial public supply, environmental recovery, and monitoring

With respect to potential environmental hazards, there are three dry cleaners adjacent to the project segment:

- Corporate Cleaners- 106 Gause Blvd W. Located within “The Crossing” Shopping Center near the junction of US 11.
- Sunshine Cleaners- 2165 Gause Blvd W. Located within a strip mall on the southside of US 190 near intersection with Northshore Blvd.
- Laundry Mat- Westminster St @ US 190. Located within a strip shopping center on the southside of US 190 at Westminster St.

According to the latest Louisiana Dept of Environmental Quality maintained list of USTs, there are four USTs adjacent to the project segment.

Facility Name	Address	Master ID Number
Speedy G's #1	1703 Gause Blvd W	70929
Circle K #1689	1706 Hwy 190 W	75145
Check In & Out Deli	1797 Hwy 190 W	75963
Value Zone	1801 Gause Blvd W	91845

A search of the US Environmental Protection maintained Enforcement and Compliance History Online revealed that there are several recently reported environmental incidents within properties abutting the US 190 corridor under study as shown on the following table.

Business Name	Address	Type	Adjacent to corridor
Slidell Seafood West, LLC	1001 Gause Blvd W	Minor Active	Yes
Coco's Auto & Truck Repair	1613 Gause Blvd W	Minor Active	Yes
Jolly Investments, LLC	59388 Gause Blvd W	Minor Active	Yes
Hanna Brother Extreme Motion Picture Catering	435 South St	Minor Active	Yes
Hanna Brother Extreme Motion Picture Catering	435 South St	Minor Active	Yes
Tymeless Flooring, Inc	1345 Gause Blvd W	NC-RNC Violations Only	Yes

Sources checked: June 2013. <http://www.epa-echo.gov/echo/#>

**Attachment 1**  
**Meeting Minutes**  
**May 28, 2014 Project Meeting**

**Minutes**  
**May 28 Meeting regarding Review of Deliverables**  
**US 190**  
**LA 433 to US 11**  
**Interim Capacity/Widening Improvements**  
**Stage 0 Feasibility**  
**RPC Project LA 433**

**Attending:**

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Prior to the meeting, a complete pdf copy of the Stage 0 Report was transmitted to all meeting invitees via a share file link. At the meeting, a Stage 0 Summary, typical sections and engineering plates were distributed to all meeting attendees. Also, a VISSIM simulation presenting the future 2026 operations of the corridor under the build condition was shown, and the simulation will be distributed to attendees.

Issues reviewed at the meeting as follows:

- **Driveway Access at Northshore Boulevard.** Plate 2 will be modified to show the two driveways on the Chevron site (one facing Northshore Boulevard, one facing US 190) as right-in, right-out and the driveway fronting US 190 on the McDonalds site as right-in, right-out.

**Page Two**  
**Meeting Minutes**  
**May 28, 2014 Project Meeting**

- **Access at Cherry Street, Plate 2** – A note will be added to the Plate 2 indicating that the follow-up environmental document should consider a roundabout intersection at Cherry Street and US 190 or possible J-turn locations for motorists accessing/egressing Cherry Street.
- **N. Harrison Road** – Consensus was to remove the u-turn movement from the turn lane onto N. Harrison Road from US 190.
- **Establishment of an Additional Analysis Link** – Currently the bridge to be widened at Bayou Bonfouca is included in Link 5. The projected Link 5 cost is estimated to be over \$14 million. It was suggested that an additional corridor link be established. The link would extend on the west side of the Bayou approximately from the approach to the left turn at North Harrison Street, across the Bayou and to St. Tammany Avenue. The new link would include the bridge widening to accommodate pedestrian movements, and potential U-turn locations. Notes will be added to Plate 6 showing locations where U-turns will be studied in the follow-up environmental document. The costs of u-turns will be included in the cost estimate for the new link as well as a line item for the cost of the bridge work.
- **Carnation Street to US 11** - There were a number of concerns voiced.
  - LADOTD has an environmental assessment in progress studying US 11 from US 190 to Interstate -12. This study may affect traffic patterns extending along US 190 from Carnation Street to US 11. The future environmental document for US 190 should consider the findings of the US 11 EA.
  - A traffic signal is located just to the east of the Carnation Street roundabout. LADOTD expressed concern that his signal would not meet the requirements for a signal warrant at that location. There was also concern from the City of Slidell with the placement of the sidewalk adjacent to the travel lanes with no separation.
  - Overall, the access to / from shopping centers abutting US 190 was a concern. The follow-up environmental document should study more thoroughly how access can be provided from / to the shopping center parking areas; and how traffic circulation within the shopping center parking areas could be improved to accommodate appropriate access to US 190.
- **Implementation Priorities** – Except for the addition of an analysis link, there was general consensus that the priorities as shown in the report were appropriate. The final determination on how the project would proceed through the environmental process would be subject to consultations between RPC and LADOTD.

ATTACHMENTS    Meeting Sign in  
                         PDF file of Report Summary, Typical Sections and Engineering Plates  
                         Animation File of VISSIM Model to be distributed via a sharefile link

**Sign-in**  
**Meeting with District 62**  
**Interim Capacity/Widening Improvements, LA 433 to US 11, RPC Project LA 433**  
**28-May-14**

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	Gina Campo	St. Tammany	(985) 809-7865	<a href="mailto:gcampo@stpgov.org">gcampo@stpgov.org</a>
	Rebecca Lala	St. Tammany	(985) 898-2843	<a href="mailto:rlala@stpgov.org">rlala@stpgov.org</a>
	<i>Eddie Williams</i>	<i>STP</i>	<i>898-2552</i>	<i>eddie@stpgov.org</i>
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## Stage 0 Feasibility Study

US 190 (LA 433 TO US 11) Interim Capacity / Widening Improvements –  
ST Tammany Parish

Chapter 1, Stage 0 Scope and Budget Checklist

**Stage 0 Feasibility Study**  
**US 190 (LA 433 TO US 11) Interim Capacity / Widening Improvements – St. Tammany Parish**

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**MPO Area:** Regional Planning Commission for Jefferson, Orleans, Plaquemines  
St. Bernard, St. Tammany and Tangipahoa Parishes (RPC)

**A. Project Background**

**PROJECT NAME** US 190 (LA 433 TO US 11) Interim Capacity / Widening Improvements  
**DISTRICT** District 62 **PARISH** St. Tammany  
**CITY/TOWN** Slidell **LOCAL ROAD NAME** Gause Boulevard, West  
**IF PROJECT IS ON A STATE ROUTE: ROUTE:**

**Route:** US 190 **Control Section:** 013-12  
**Begin Log Mile:** 14.63 **End Log Mile:** 21.22

**PROJECT CATEGORY (SAFETY, CAPACITY, ETC.):** Capacity Enhancement  
**DATE STUDY COMPLETED:** May, 2014

**List study team members:**

- Traffic Engineering, Neel-Schaffer, Inc.(NSI) - Nick Ferlito, P.E., P.T.O.E, David Othling, P.T.O.E and Ellen Burke, PE.
- Roadway Design - Daniel Thornhill, P.E (NSI)., Rene' Chopin, P.E. Burk Kleinpeter, Inc.(BKI) and Kevin Derbigny, P.E. C&S Consultants, Inc. (C&S)
- Stage 0 Documents - Barry Brupbacher (NSI), Paul Waidhas (BKI), and Carl Seifert (BKI).

**Who is the sponsor of the study?** RPC

**Has someone on the sponsor's staff attended the LPA Certification class?**

*Jeffrey W. Roesel, AICP as well as most of the RPC technical staff have the LPA certification.*

**Sponsor DUNS#:** \_\_\_\_\_ **Date Study Completed:** May 2014

**Describe the Existing Facility:**

*This project includes a safety and capacity evaluation of the US 190 corridor within St. Tammany Parish extending from LA 433 to US 11. Proceeding from the west terminus of the project at the US 190 intersection with LA 433, US 190 crosses Bayou Liberty as a 2-lane rural route and then transitions to a 3-lane roadway with open ditch drainage. It remains as a 3-lane roadway for approximately 2.5 miles until Bayou Bonfouca at which point it transitions back to a 2-lane roadway as it crosses the Bayou. The roadway returns to a 3-lane section east of Bayou Bonfouca to the eastern project terminus at US 11. The US 190 intersection with US 11 also includes a crossing of the main line of Norfolk Southern Railroad. The corridor under study includes the following signalized intersection as well as the Dixie Ranch Road intersection, the Camp Villere Road intersection and the Carnation Street intersections:*

- *US 190 @ LA 433*
- *US 190 @ Northshore Boulevard*
- *US 190 @ Grand 16 Theatre Entrance*
- *US 190 @ Westminster Drive*
- *US 190 @ Carroll Road / Sunset Drive*
- *US 190 @ Maris Stella Street*
- *US 190 @ Plaza Shopping Center*
- *US 190 @ US 11*

**Stage 0 Feasibility Study**  
**US 190 (LA 433 TO US 11) Interim Capacity / Widening Improvements – St. Tammany Parish**

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Functional classification: UA-2 Number and width of lanes: 3 lanes (2 – 10' travel lanes and a 14' continuous turn lane) Shoulder width and type: 3' Mode: Auto  
 Access control: Continuous ADT: Exhibit 1-1 shows ADT counts. Exhibits 1-2 and 1-3 show peak period turning movement counts for year 2013, and as projected for year 2016 Posted Speed: 45 mph

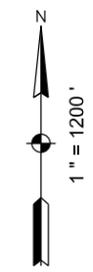
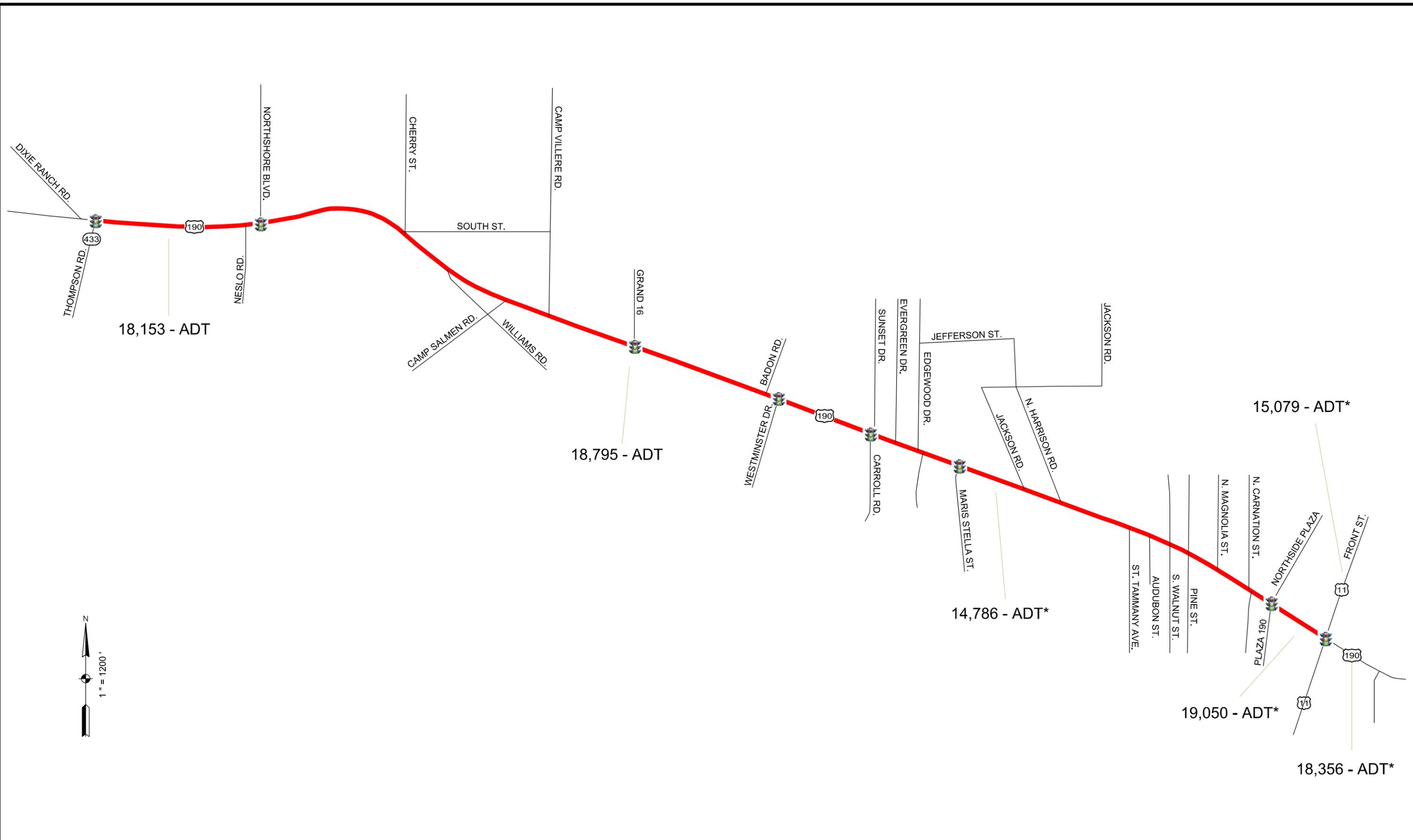
**Describe any existing pedestrian facilities (ADA compliance should be considered for all improvements that include pedestrian facilities):** *The existing 3-lane facility as constructed does not provide for pedestrian or bicycle facilities. However, the developed portion of the Tammany Trace Trail parallels US 190 from LA 433 to Nelso Road approximately 200' to the south of the US 190 ROW. The undeveloped portion of the Trace extends east from Nelso Road to its intersection with US 190. The Tammany Trace intersects the US 190 ROW approximately 150' east of Cherry Street.*

**Describe the adjacent land use:** *Land use along the corridor under study is primarily commercial and light industrial interspersed with a few multi-family residential developments. There are commercial shopping centers at two locations. The Northshore Square Center (a regional mall) and other commercial centers abuts the US 190 corridor to the north in proximity of Northshore Boulevard. There are neighborhood shopping centers north and south of the US 190 corridor between Carnation Street and the Norfolk Southern Railroad. The Grand Theatre complex, which is a major traffic generator, accesses US 190 approximately 1,200' east of Camp Villere Road, and a number of large residential subdivisions use US 190 as their primary access to the Slidell community.*

**Will this project be adding miles to the state highway system (new alignment, new facility)? If yes, has a transfer of ownership been initiated with the appropriate entity?** *No, the project will provide interim capacity improvements within the existing US 190 corridor.*

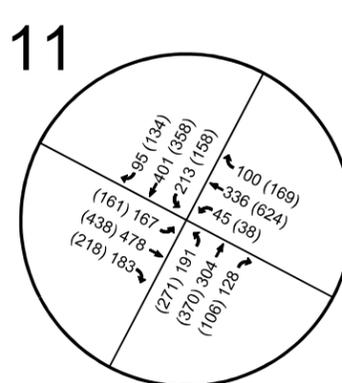
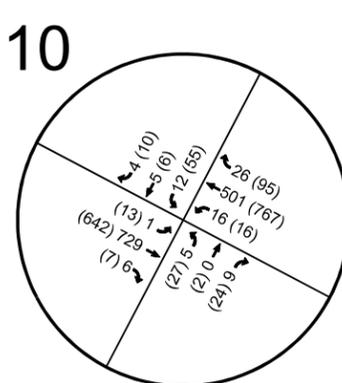
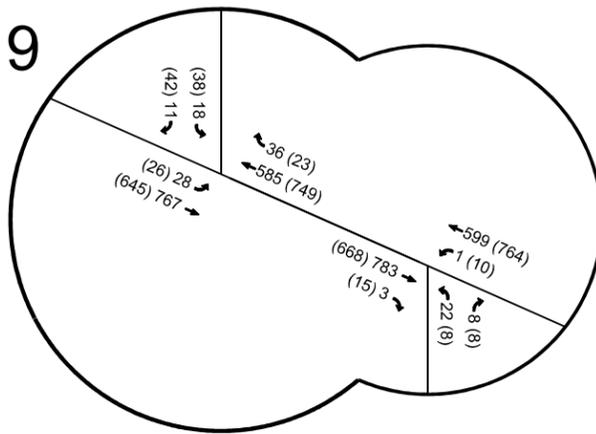
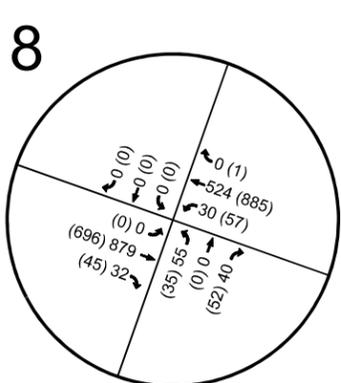
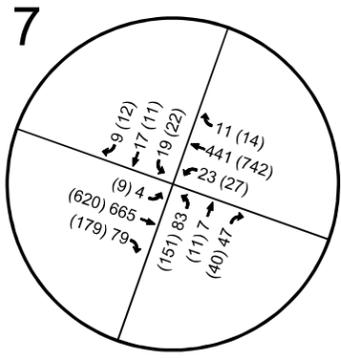
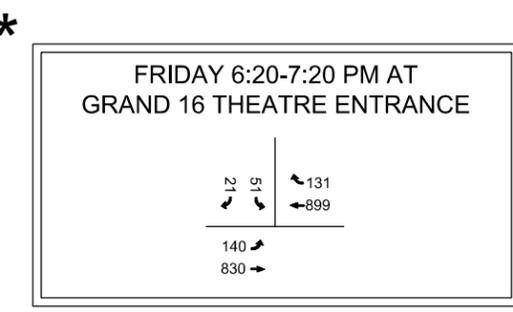
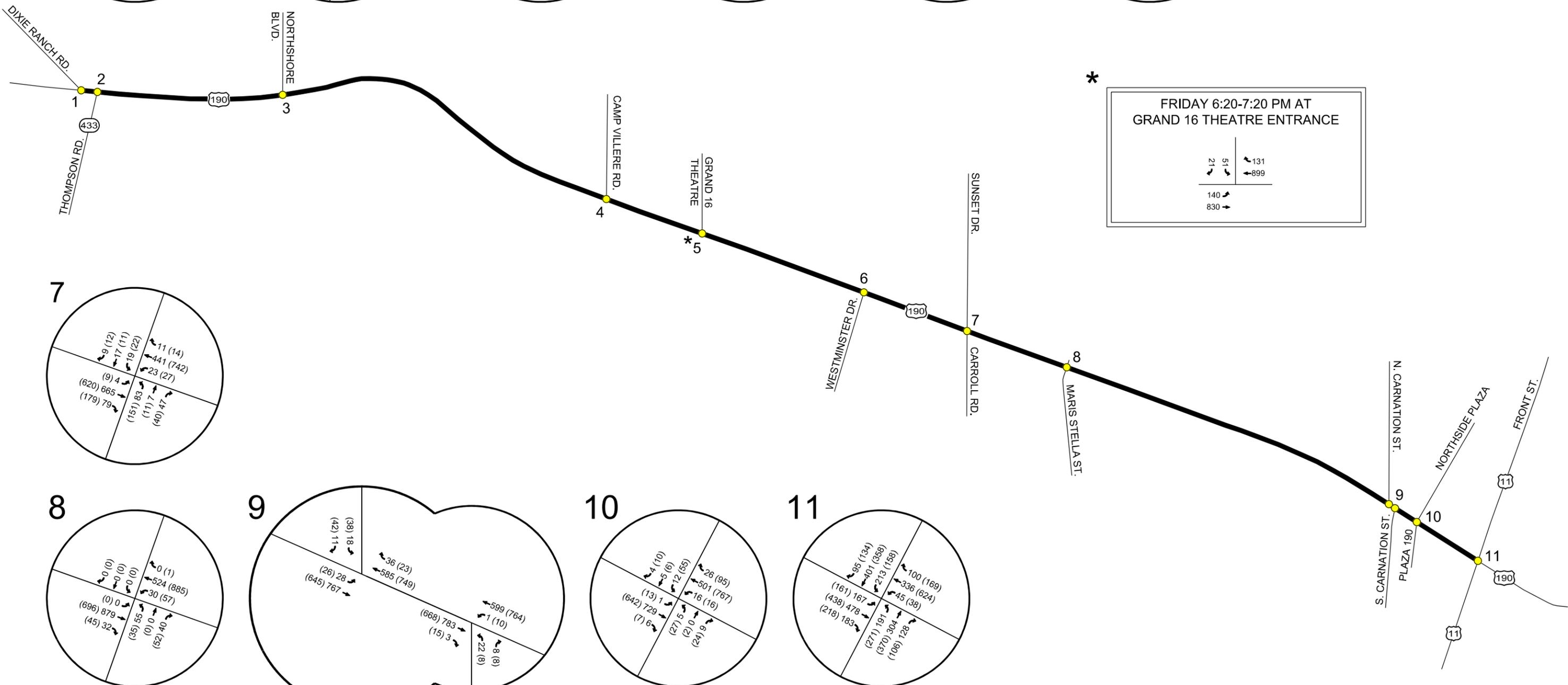
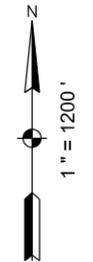
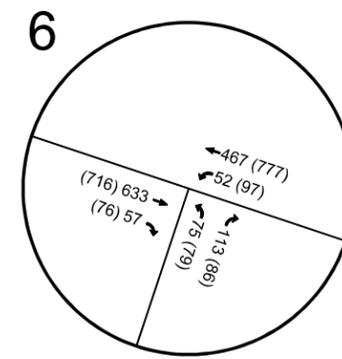
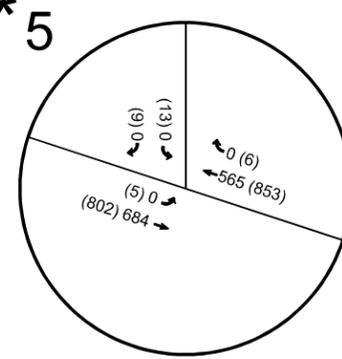
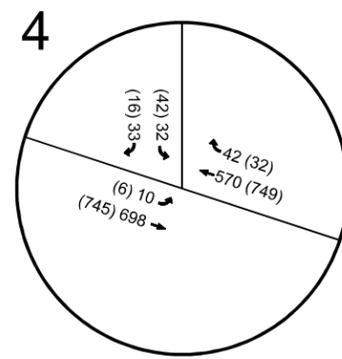
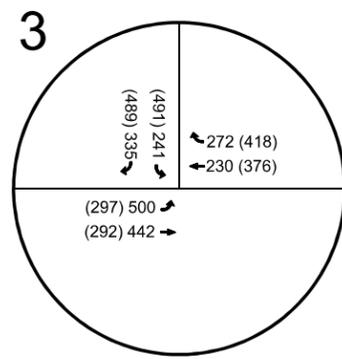
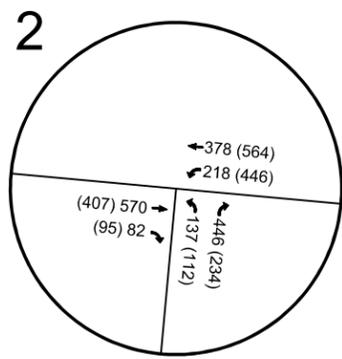
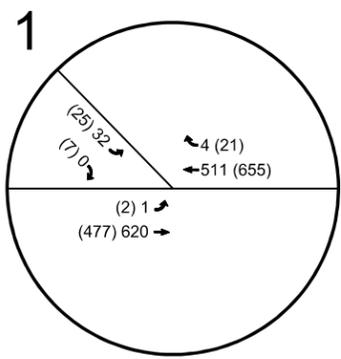
**Are there recent, current or near future planning studies or projects in the vicinity?** *Yes, State Project No. 700-52-0191, Stage 0 Feasibility Study, LA 1089 – US 11, was completed in August 2010. Two alternatives were proposed for the segment between LA 433 and US 11. Alternative 1 provided a four lane roadway with a varied 6 to 22 foot raised median and 8 foot shoulders with curb and gutter. It utilized dual-lane roundabouts at un-signalized intersections and it provided channelized median openings with roundabouts (Magnolia St. to US 11). Additional right-of-way was required throughout the entire route. Attachment 1 includes a sheet showing the proposed geometric improvements for Alternative 1. Table 1-1 presents the cost for Alternative 1 as presented in the 2010 report.*

Table 1-1 2010 Stage 0 Study Estimated Costs LA 433 to US 11 Segment Alternative 1	
Construction	\$ 22,380,000
Relocation & Impact	\$ 2,900,000
Utility Relocations	\$ 895,000
Engineering	\$ 2,238,000
Geotechnical	\$ 448,000
Environmental	\$ 671,000
<b>TOTAL</b>	<b>\$ 29,532,000</b>



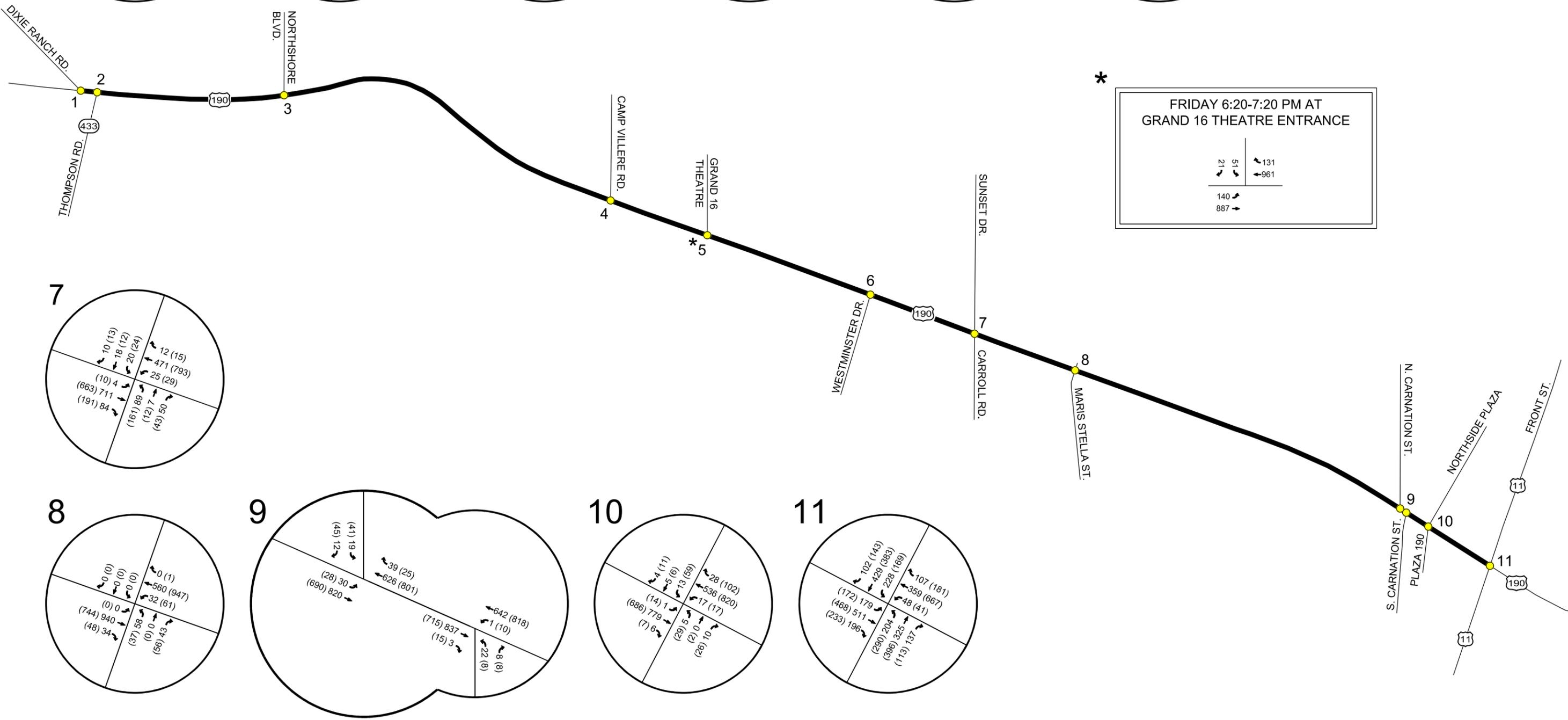
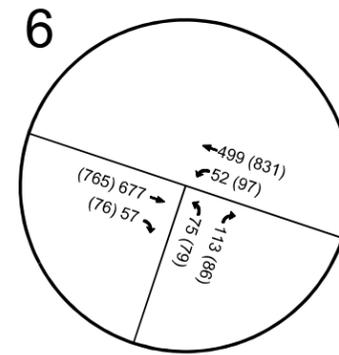
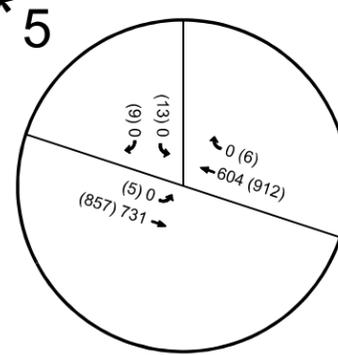
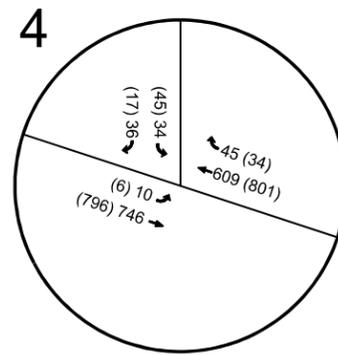
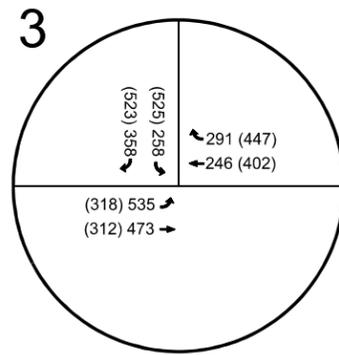
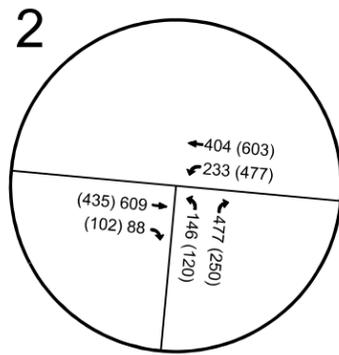
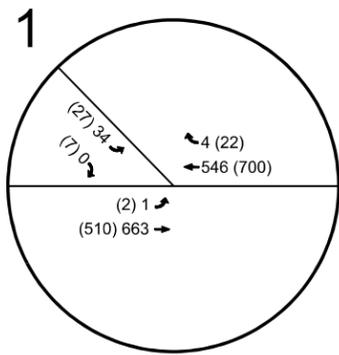
<b>LEGEND</b>	
	PROJECT LIMITS
	SIGNALIZED INTERSECTIONS
(XX - ADT)	OBTAINED FROM 2013 PROJECT COUNTS
(XX - ADT*)	OBTAINED FROM 2012 DOTD COUNT STATIONS

**EXHIBIT 1-1  
US 190 STAGE 0  
AVERAGE DAILY TRAFFIC**



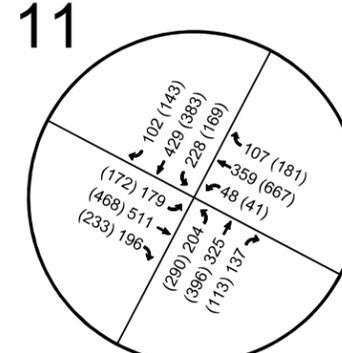
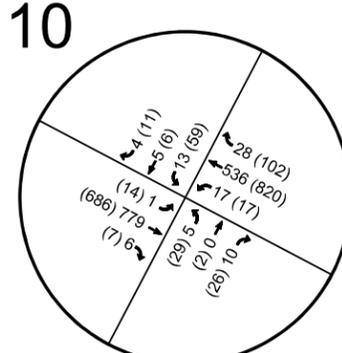
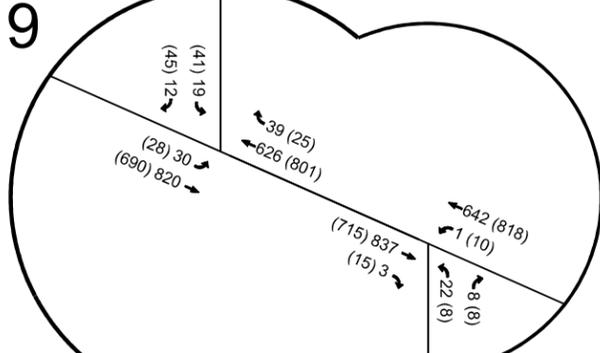
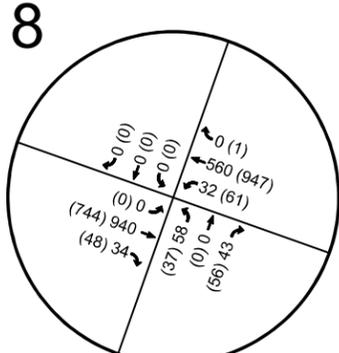
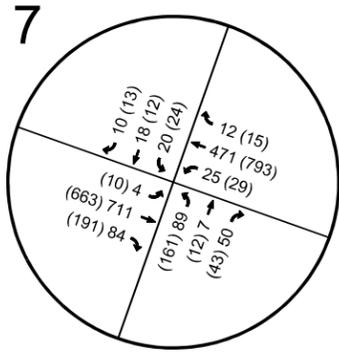
**LEGEND**  
 — STUDY CORRIDOR  
 ● STUDY INTERSECTION  
 32 (6) (25) AM {NOON} (PM) PEAK HOUR VOLUMES

**EXHIBIT 1-2**  
 U.S. 190 STAGE 0  
 YEAR 2013 TURNING MOVEMENT COUNTS



FRIDAY 6:20-7:20 PM AT GRAND 16 THEATRE ENTRANCE

131	51	21
← 961	↔	↔
140	887	



**LEGEND**  
 STUDY CORRIDOR  
 STUDY INTERSECTION  
 32 {6} (25) AM {NOON} (PM) PEAK HOUR VOLUMES

**EXHIBIT 1-3**  
**U.S. 190 STAGE 0**  
**PROJECTED YEAR 2016 TURNING MOVEMENT COUNTS**

Alternative 2 additionally included a rerouting of US 190 to the south in proximity to Northshore Boulevard. Total costs for Alternative 2 were \$31,399,000.

The Regional Planning Commission (RPC) was concerned about both the cost of the proposed improvements, including right of way, and complexity of implementing the project from a NEPA perspective as it was documented in the 2010 Stage 0 Report. This Interim Capacity / Widening Study was proposed by the RPC to address the need for short term improvements to the corridor, which could be funded in a phased implementation program with projects in the range of \$3 million to \$6 million.

### **Other related Projects**

State Project No. H.000688.2; F.A.P. No. H000688; US 11 Norfolk Southern Rail Road; Route: US Highway 11; St. Tammany Parish - The scope of services for this project consists of the preparation an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA), as amended, and the Federal Highway Administration's (FHWA) regulations and guidelines. LADOTD is proposing to replace the US 11 Bridge over the Norfolk Southern Railroad in St. Tammany Parish. The proposed project includes the widening of US 11 from two lanes to four lanes from US 190 north to I-12. Because the environmental document will provide recommendations for the US 11 intersection with US 190, this Interim Capacity Project will not address the improvements within the US 190 intersection with US 11.

St. Tammany Parish has a project in progress to provide the design for capacity improvements to the existing signalized intersect at Northshore Boulevard. LDOTD District 62 was concerned that the signalized intersection upgrade project may not be consistent with the planning for roundabout intersections undertaken as part of this study. After consultation with all parties, LDOTD determined that the preferable strategy was for the Parish to proceed with the design for a roundabout geometry intersection at Northshore Square.

The City of Slidell and St. Tammany Parish have agreed to a plan for extending the Tammany Trace Trail from its current terminus at Nelso Road into Old Town Slidell. This plan improves the multi-use trail within the existing right-of-way to its intersection with US 190. The trail would be extended paralleling US 190 to Williams Road. It would then be extended along Williams Road to Camp Salmen Road and on into Old Town Slidell. This Interim Capacity project will provide for the Trace improvements extending from the Trace intersection with US 190 to Williams Road.

### **B. Purpose and Need**

**State the Purpose** (reason for proposing the project) and Need (problem or issue)/Corridor Vision and a brief scope of the project. Also, identify any additional goals and objectives for the project.

*The Purpose of the Study is to develop an Interim Capacity Improvement Program which can be funded incrementally with projects in the range \$3 million to \$6 million. The program would address capacity issues throughout the corridor and support complete streets improvements.*

*Table 1-2 shows the year 2013 Level of Service analysis for intersections within the corridor under study for AM and PM peak hours for all movements through the intersection. Also presented is the Delay (in seconds). The PM Analyses for the Grand Theatre access was undertaken at the peak operating time of the theaters, not the PM peak hour of the corridor.*

**Stage 0 Feasibility Study**

**US 190 (LA 433 TO US 11) Interim Capacity / Widening Improvements – St. Tammany Parish**

*Most of the intersections experience deficient level of service (E or F) through at least one intersection movement.*

Table 1-2 Intersection Level of Service, Year 2013					
Intersecting Street	Movement	AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS
Dixie Ranch Road	NB	---	---	---	---
	SB	186.4	F	115.1	F
	WB	0	N/A	0	N/A
	EB	0	N/A	0	N/A
	Intersection	N/A	N/A	N/A	N/A
Thompson Road (LA 433)	NB	56.1	E	26.1	C
	SB	---	---	---	---
	WB	15.5	B	16.9	B
	EB	31.9	C	24.9	C
	Intersection	34.3	C	20.8	C
Northshore Boulevard	NB	---	---	---	---
	SB	25.1	C	102.6	F
	WB	21.2	C	20.4	C
	EB	21.8	C	16	B
	Intersection	22.6	C	53.4	D
Camp Villere Road	NB	---	---	---	---
	SB	130.7	F	202.1	F
	WB	0	N/A	0	N/A
	EB	0	N/A	0	N/A
	Intersection	N/A	N/A	N/A	N/A
Grand 16 Theatre Entrance	NB	---	---	---	---
	SB	22.7	C	46.6	D
	WB	14	B	41.3	D
	EB	5.6	A	10.1	B
	Intersection	9.5	A	26.9	C
Westminster Drive	NB	25.1	C	29.4	C
	SB	---	---	---	---
	WB	6.9	A	9.4	A
	EB	14.5	B	14.9	B
	Intersection	13.1	B	13.6	B
Sunset Drive / Carroll Road	NB	83.4	F	104.6	F
	SB	110.8	F	108.5	F
	WB	24.2	C	69.4	E
	EB	32.2	D	27.9	C
	Intersection	37.2	D	46.5	D
Maris Stella Street	NB	34.4	C	26.3	C
	SB	39.7	D	39.7	D
	WB	11.3	B	20.6	C
	EB	25.5	C	13.3	B
	Intersection	21	C	17.9	B
N. Carnation Street	NB	---	---	---	---
	SB	133.3	F	278.8	F
	WB	0	N/A	0	N/A
	EB	0	N/A	0	N/A
	Intersection	N/A	N/A	N/A	N/A
S. Carnation Street	NB	167	F	99.8	F
	SB	---	---	---	---
	WB	0	N/A	0	N/A
	EB	0	N/A	0	N/A
	Intersection	N/A	N/A	N/A	N/A

LOS E or worse

Source: Neel-Schaffer, Inc.

To further document the Need for improvements within the corridor, the study team undertook a Design Life Analysis of intersections along the project corridor. The Design Life Analysis objective is to predict the last year before any of the subject intersection movements exceed a volume-to-capacity ratio (V/C) of 1.0 (i.e., capacity). Annual traffic growth within the corridor is estimated to be 2.25% and the base year for the Design Life Analysis was 2016. Table 1-3 presents the No-Build condition Design Life Analysis for each intersection within the corridor starting at the base year 2016. The No-Build represents the future year traffic condition operating within the year 2013 intersection geometry.

Table 1-3 No-Build Design Life Analysis Years Beyond 2016 in Which the Intersection Continues to Operate At or Below Capacity		
Intersecting Street	AM Peak Hour	PM Peak Hour
Dixie Ranch Road	20 years	20 years
Thompson Road (LA 433)	0 years	14 years
Northshore Boulevard	1 year	0 years
Camp Villere Road	0 years	0 years
Grand 16 Theatre Entrance	20 years	0 years
Westminster Drive	15 years	7 years
Sunset Drive / Carroll Road	0 years	2 years
Maris Stella Street	3 years	3 years
N. Carnation Street	20 years	0 years
S. Carnation Street	20 years	20 years

Source - Neel-Schaffer, Inc.

The Design Life Analysis indicates that by year 2020, only the Dixie Ranch Road intersection, the Westminster Drive intersection and S. Carnation Street intersection continue to operate within capacity within both AM and PM peaks under the No-Build scenario.

**C. Agency Coordination**

**Provide a brief synopsis of coordination with federal, tribal, state and local environmental, regulatory and resource agencies.** To date, there has not been coordination with federal, tribal, state and local environmental, regulatory and resource agencies.

**What transportation agencies were included in the agency coordination effort?**

The Regional Planning Commission for Jefferson, Orleans, Plaquemines, St. Bernard, St. Tammany and Tangipahoa Parishes is the study sponsor.

**Describe the level of participation of other agencies and how the coordination effort was implemented.**

The project has included meetings with LDOTD District 62 staff, City of Slidell staff, St. Tammany Parish staff and elected officials representing the study area. See Attachment 1 to the Summary for final coordination.

**What steps will need to be taken with each agency during NEPA scoping?**

*The LDOTD Environmental Section in consultation with Federal Highway Administration (FHWA) will determine the appropriate NEPA course of action for advancing the recommended project improvements to construction.*

**D. Public Coordination**

**Provide a synopsis of the coordination effort with the public and stakeholders; include specific timelines, meeting details, agendas, sign-in sheets, etc. (if applicable).**

*To date, there has not been coordination efforts undertaken with the public or stakeholders other than those previously noted.*

**E. Range of Alternatives – Evaluation and Screening**

**Provide a project scope and give a description of the project concept for each alternative studied.**

*The overall scope of the project was to develop concepts for roundabout geometry intersections along the corridor and to incorporate pedestrian and bicycle facilities within the corridor in concert with complete street concepts.*

*Proceeding from west to east through the corridor, a roundabout intersection is proposed for the US 190 intersection with LA 433. As part of that improvement, Dixie Ranch Road will be relocated so that it ties directly into the roundabout.*

*A two-lane boulevard will be constructed from a point east of the existing bridge crossing of Bayou Liberty to the existing bridge crossing of Bayou Bonfouca; and from east of Bayou Bonfouca to a new roundabout geometry intersection at Carnation Street. The roadway will include two 12' travel lanes, an 8' median and 8' paved shoulders.*

*The paved shoulders will be stripped as bicycle lanes. Other complete streets improvements include a 5' sidewalk along the south ROW from Nelso Road to a new roundabout intersection proposed at Northshore Boulevard; and a new 5' sidewalk extending along the north ROW from the Northshore Boulevard roundabout to a new roundabout geometry intersection at Carnation Street. The existing bridge over Bayou Bonfouca will be widened to accommodate a 5' sidewalk and 8' paved shoulders. A 10' multi-use path is constructed from the Tammany Trace intersection with US 190 along US 190 to Williams Road.*

*Roundabout geometry intersection will also be provided at Camp Villere Road, the Grand Theatre entrance road, at Westminster Drive, at Carol Road / Sunset Drive and at Maris Stella Street. Except for the LA 433 roundabout, the proposed roundabouts include provision for bike / pedestrian movements through the roundabout.*

*Other geometric improvements in the two-lane boulevard segment include a west bound direction left turn directly into the US Post Office and an east bound direction J-turn at North Harrison Road.*

*To the east of the Carnation Street roundabout, US 190 functions as a four-lane boulevard section with 15' median. The existing signal at Northside Plaza is maintained.*

**What are the major design features of the proposed facility? Attach a vicinity map showing project limits. If applicable also attach an aerial photo with concept layout.**

*Attachment 2 to Chapter 1 provides typical sections and 1"=200' plan view drawings of the proposed roadway improvements. To the west of Carnation Street, the typical sections provide for a 2-lane Urban Arterial (UA-2) roadway with 8' median and 5' sidewalk. Additional ROW is required at the roundabouts and preliminarily at other locations along the corridor as shown on the concept drawings. A four-lane UA-2 boulevard section with 15' median and 6' sidewalks is extended east from the Carnation Street roundabout to US 11.*

Will design exceptions be required? *No*

Follow this link to view LADOTD Minimum Design Guidelines:

[http://www.dotd.louisiana.gov/highways/project\\_devel/design/road\\_design/Memoranda/English\\_Design\\_Guidelines.pdf](http://www.dotd.louisiana.gov/highways/project_devel/design/road_design/Memoranda/English_Design_Guidelines.pdf)

**What impact would this project have on freight movements?**

*US 190 parallels I-12 through St. Tammany Parish, so most of the freight movements would use the interstate.*

*Regarding specific truck movements within the corridor, during the AM peak hour, the heavy vehicles usage within the corridor seems to be slightly higher than average for a similar road. It ranges from 2% (the average and default assumptions for any roadway) to 8.7% which is above average. Most of the truck volumes in the AM peak range between 5% and 6%. During the PM peak hour, the truck percentages average 2%. The imbalance in truck usage between the AM and PM peaks may be attributable to local businesses receiving morning deliveries.*

*The primary benefit of the project relating to freight movements would be to provide an alternate route to an incident on I-12.*

**Does this project cross or is it near a railroad crossing?**

*Yes, US 190 crosses the Norfolk Southern main line as it intersects US 11. The US 190 geometry is modified slightly at the intersection as the approach to US 11 is four lanes, instead of the existing three lane configuration.*

**Was the DOTD’s “Complete Streets” policy taken into consideration?** DOTD’s “Complete Streets” policy should be taken into consideration. Per the policy, any exception for not accommodating bicyclists, pedestrians and transit users will require the approval of the DOTD chief engineer. For exceptions on Federal-aid highway projects, concurrence from FHWA must also be obtained. In addition any exception in an urbanized area, concurrence from the MPO must also be obtained. Follow this link to view the policy:

[http://www.dotd.la.gov/programs\\_grants/completestreets/documents/cs-la-dotdpolicy.pdf](http://www.dotd.la.gov/programs_grants/completestreets/documents/cs-la-dotdpolicy.pdf)

Describe how the project will implement the policy or include a brief explanation of why implementing the policy would not be feasible.

*The project is in conformance with Complete Streets guidance.*

**How are Context Sensitive Solutions (CSS) being incorporated into the project?** For more information on CSS follow this link:

[http://www.dotd.la.gov/administration/policies/DOTD\\_CSS\\_Policy\\_20060526.pdf](http://www.dotd.la.gov/administration/policies/DOTD_CSS_Policy_20060526.pdf)

*Context Sensitive Solutions (CSS) were not incorporated into the project at this time.*

**Was the DOTD’s “Access Management” policy taken into consideration?** If so, describe how. *The roundabout geometry intersections will provide for control of access within the roundabout in conformance with LDOTD EDSM guidance. Also the median section roadway will limit access and conflict points at driveways to abutting properties as most driveways will be right-in-right-out.*

**Were any safety analyses performed?** If so describe results and attach documentation. For safety analysis guidance follow this link

[http://www.dotd.la.gov/planning/highway\\_safety/home.aspx?key=3](http://www.dotd.la.gov/planning/highway_safety/home.aspx?key=3)

*A safety analysis was performed for the study intersections.*

*A conflict point is a point at which a vehicle crosses, merges, or diverges from a road or driveway and conflicts with another vehicle. These points correspond with potential for crashes. Conflict points were determined at the study intersections along US 190 for the no build and the build alternatives. The results are shown below in Table 1-4 and Table 1-5 respectively.*

Table 1-4  
 Number of Conflict Points by Type for No Build Condition

<i>Intersecting Street</i>	<i>Crossing</i>	<i>Merging</i>	<i>Diverging</i>	<i>Total</i>
<i>Dixie Ranch/ Thompson Rd (LA 433).</i>	8	8	7	23
<i>Northshore Blvd.</i>	4	4	3	11
<i>Camp Villere Rd.</i>	5	4	3	12
<i>Grand 16 Theater Dwy.</i>	6	3	3	12
<i>Westminster Dr.</i>	6	4	3	13
<i>Carroll Rd/ Sunset Dr.</i>	17	8	7	32
<i>Maris Stella St./ Clinic Dwy.</i>	12	5	8	25
<i>Carnation St./ S. Carnation St.</i>	6	7	7	20

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<i>Northside Plaza</i>	16	8	8	32
<i>US 11 (Front St.)</i>	40	9	9	58
<i>Total</i>	120	60	58	238

Table 1-5  
*Number of Conflict Points by Type for Build Condition*

<i>Intersecting Street</i>	<i>Crossing</i>	<i>Merging</i>	<i>Diverging</i>	<i>Total</i>
<i>Dixie Ranch/ Thompson Rd. (LA 433)</i>	0	7	7	14
<i>Northshore Blvd.</i>	2	5	5	12
<i>Camp Villere Rd.</i>	0	3	3	6
<i>Grand 16 Theater Dwy.</i>	0	4	4	8
<i>Westminster Dr.</i>	0	3	3	6
<i>Carroll Rd/ Sunset Dr.</i>	0	4	4	8
<i>Maris Stella St./ Clinic Dwy.</i>	0	4	4	8
<i>Carnation St./ S. Carnation St.</i>	4	8	9	21
<i>Northside Plaza</i>	24	8	8	40
<i>US 11 (Front St.)</i>	40	9	9	58
<i>Total</i>	70	55	56	181

*In accordance with FHWA guidance, crossing conflicts result in left turn and angle crashes that account for generally more severe crashes than other types. The build alternative will decrease the number of crossing conflicts within the study corridor intersections by 42%.*

*The number of conflict points on US 190 were not determined along segments between the study intersections. However, it should be noted that no build conditions have numerous driveways along the corridor that are full access. Driveways that are lined up with another driveway across the street will have approximately thirty-two (32) conflict points (16 crossing, 8 merging, and 8 diverging). Driveways that are not lined up with another driveway will have approximately nine (9) conflict points (3 crossing, 3 merging, and 3 diverging). The build alternative has a median that will turn all of the full access driveways into right-in, right-out driveways. This will cut down the number of conflict points to approximately two (2) (1 merge and 1 diverge) in two-lane segments, and three (3) (2 merge and 1 diverge) in four-lane segments. The build alternative will cut down the number of conflict points dramatically along the segments of US 190. It can also be expected that the severity of crashes along the segments of US 190 will decline with build conditions since crossing conflict points will be eliminated.*

*In accordance with the FHWA Crash Modification Factors Clearinghouse, “A crash modification factor (CMF) is a multiplicative factor used to compute the expected number of crashes after implementing a given countermeasure at a specific site. For example, an intersection is experiencing 100 angle crashes and 500 rear-end crashes per year. If you apply a countermeasure that has a CMF of 0.80 for angle crashes, then you can expect to see 80 angle crashes per year following the implementation of the countermeasure (100 x 0.80 = 80).” Table*

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1-6 below lists the crash modification factors associated with each intersection improvement in the build condition.

Table 1-6  
 Crash Modification Factors for Build Condition

Intersecting Street	From Existing Intersection Control to Build Improvement	Crash Type	Crash Severity	CMF
Dixie Ranch Rd/ Thompson Rd	Signalized to 2 Lane Roundabout	All	All	0.81
		All	Serious injury, Minor injury	0.29
Northshore Blvd	Signalized to 2 Lane Roundabout	All	All	0.81
		All	Serious injury, Minor injury	0.29
Camp Villere	Unsignalized to One Lane Roundabout	All	All	0.28
		All	Serious injury, Minor injury	0.12
Grand 16 Theater	Signalized to One Lane Roundabout	All	All	0.74
		All	Serious injury, Minor injury	0.45
Westminster Dr	Signalized to One Lane Roundabout	All	All	0.74
		All	Serious injury, Minor injury	0.45
Sunset Dr/ Carroll Rd	Signalized to One Lane Roundabout	All	All	0.74
		All	Serious injury, Minor injury	0.45
Maris Stella/ Clinic Dwy	Signalized to One Lane Roundabout	All	All	0.74
		All	Serious injury, Minor injury	0.45
Carnation St	Unsignalized to 2 Lane Roundabout	All	All	0.751
		All	Fatal, Serious injury, Minor injury	0.65

Note: The lower the CMF, the more crash reductions can be expected. A CMF score lower than 1 predicts a reduction in the number of crashes with the suggested roadway improvement. A CMF score higher than 1 would predict an increase in crashes. A CMF of 1 would predict no change in the number of crashes.

All of the crash modification factors listed in Table 1-6 for the roundabout countermeasures are less than one (1). Therefore, it can reasonably be expected that the build alternative will decrease the number of accidents that are currently occurring at these locations. The build alternative for the intersection of US 190 and US 11 (Front Street) is the same layout as the no build alternative. As explained above, crash modification factors are typically used for intersection conversions, therefore US 190 at US 11 (Front Street) was excluded from Table 1-6. The build alternative for the intersection of US 190 and Northside Plaza includes widening US 190 from a two-lane section to a four-lane section. There are no crash modification factors available for this type of roadway improvement, therefore this intersection was also excluded from Table 1-6.

**Are there any abnormal crash locations or overrepresented crashes within the project limits?** The study did not include an analysis of the route to determine abnormal crash locations, or overrepresented crashes.

**What future traffic analyses are anticipated?** *None*

**Will fiber optics be required? If so, are there existing lines to tie into?** *Not Applicable*

**Are there any future ITS/traffic considerations?** *Not Applicable*

**What is the required Transportation Management Plan (TMP) level as defined by EDSM No. VI.1.1.8?**

*A Level 2 TMP will be required for these projects once in construction based on the following.*

- *Interstate or Full Control of Access – No*
- *Principal Arterial – Yes (based on DOTD’s Functional Classification Map)*
- *LOS F? During peak periods at certain intersections.*
- *Are there any peak period lane closures? No lane closures are recommended during peak periods.*

**Describe screening criteria used to compare alternatives and from what agency the criteria were defined.**

*The screening process compared the no-build intersection performance to the roundabout geometry intersection performance utilizing Design Life Analysis.*

**Give an explanation for any alternative that was eliminated based on the screening criteria.**

*At the Northshore Boulevard intersection, LDOTD compared the proposed roundabout geometry intersection with the signal control intersect concept developed by St. Tammany Parish, and the roundabout geometry intersection was preferred by the Department.*

**Which alternatives should be brought forward into NEPA and why?** *The interim geometric improvements as shown in Attachment 2 should be carried forward into NEPA.*

*Most of the affects from the project are at the roundabout intersections. Slight shifts in the placement of the roundabouts may reduce affects to abutting properties. Topographic surveys at each roundabout may be required in order to provide sufficient detail to develop additional geometric alternatives at selective intersections during the NEPA process.*

**Did the public, stakeholders and agencies have an opportunity to comment during the alternative screening process?**

*The public has not had the opportunity to comment on the proposed concepts. Representatives of St. Tammany Parish and the City of Slidell have participated in the project development.*

**Describe any unresolved issues with the public, stakeholders and/or agencies.**

*The primary unresolved issues are the affects to abutting properties at selected roundabouts.*

## **F. Planning Assumptions and Analytical Methods**

**What is the forecast year used in the study?**

Attachment 3 to Chapter 1 provides the traffic and safety analysis supporting the project development. The typical methodology for development of the traffic analysis supporting a project is to compare the future no-build at 20 years past the base year with the future build at 20 years past the base year.

However, since the focus of the project is to develop interim improvements, an Interim Design Year (2016) was established as the base year for the analysis. To establish the design life for each improvement, and the design life of the No-Build, the study team undertook a Design Life Analysis of intersections along the project corridor. Table 1-7 compares the No-Build condition Design Life Analysis with the build geometry Design Life Analysis for each intersection within the corridor starting at the base year 2016.

Table 1-7 No-Build vs Build Design Life Analysis Years Beyond 2016 in Which the Intersection Continues to Operate At or Below Capacity				
Intersecting Street	No Build Design Life		Build Design Life	
	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Dixie Ranch Road	20 years	20 years	NA*	NA*
Thompson Road (LA 433)	0 years	14 years	7 years	10 years
Northshore Boulevard	1 year	0 years	20 year	16 years
Camp Villere Road	0 years	0 years	20 years	20 years
Grand 16 Theatre Entrance	20 years	0 years	20 years	8 years
Westminster Drive	15 years	7 years	20 years	18 years
Sunset Drive / Carroll Road	0 years	2 years	17 years	10 years
Maris Stella Street	3 years	3 years	14 years	13 years
N. Carnation Street	20 years	0 years	20 years	20 years
S. Carnation Street	20 years	20 years	NA**	NA**

NA\* - Will be part of the Thompson Road Roundabout

Source - Neel-Schaffer, Inc.

NA\*\* - Will be part of the Carnation Street Roundabout

The build alternative extends the design life for all of the intersections.

The intersections of US 190 and US 11 (Front St.) and US 190 and Northside Plaza are signalized intersections for the no build alternative. Build condition improvements for these intersections are associated with widening the roadway and not a change in the type of traffic control. The results of the intersection analyses are summarized in Tables 1-8 through 1-10. Table 1-8 below shows the results of the existing 2013 conditions.

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*Table 1-8*  
 2013 AM and PM Peak Hour Existing Conditions Intersections  
 Delay (sec) / LOS

Intersecting Street	Approach	AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS
US 11 (Front St.)	NB	34	C	40.1	D
	SB	36.5	D	52.7	D
	WB	29.5	C	49.3	D
	EB	30.1	C	30.3	C
	Intersection	32.6	C	42.7	D
Northside Plaza	NB	41.9	D	50.2	D
	SB	45.5	D	62.5	E
	WB	2.6	A	3.9	A
	EB	5.9	A	3.2	A
	Intersection	5.5	A	7.6	A

2016 year conditions were analyzed for the two (2) signalized intersections in the build alternative. The results of these no build versus build analyses during the AM peak hour are shown below in Table 1- 9.

*Table 1-9*  
 2016 Year AM Peak Hour – No Build vs. Build  
 Delay (sec) / LOS

Intersecting Street	Approach	2016 No Build		2016 Build	
		Delay	LOS	Delay	LOS
US 11 (Front St.)	NB	35.7	D	27.9	C
	SB	38.9	D	30.8	C
	WB	31.7	C	27.6	C
	EB	32.6	C	25	C
	Intersection	34.8	C	27.7	C
Northside Plaza	NB	41.8	D	32	C
	SB	45.7	D	34.2	C
	WB	2.6	A	1.7	A
	EB	6.5	A	3.9	A
	Intersection	5.8	A	3.7	A

2016 year conditions were analyzed for the two (2) signalized intersections in the build alternative. The results of these no build versus build analyses during the PM peak hour are shown below in Table 1-10.

Table 1-10  
 2016 Year PM Peak Hour – No Build vs. Build  
 Delay (sec) / LOS

Intersecting Street	Approach	2016 No Build		2016 Build	
		Delay	LOS	Delay	LOS
US 11 (Front St.)	NB	41.5	D	32.7	C
	SB	59.6	E	30.3	C
	WB	69.5	E	35.9	D
	EB	31.1	C	25.6	C
	Intersection	50.2	D	31.2	C
Northside Plaza	NB	50.3	D	31.2	C
	SB	67.2	E	33.3	C
	WB	4.3	A	4.8	A
	EB	4	A	5.1	A
	Intersection	8.3	A	7.0	A

The immediate geometry at the intersection of US 190 and US 11 (Front Street) does not change from no build to build conditions. However, US 190 between Northside Plaza and US 11 does change from a three-lane section in no build conditions to a four-lane section in build conditions. This allows for better timing between the signalized intersections of Northside Plaza and US 11 (Front Street), which is responsible for the decrease in delays at US 11 (Front Street) during the AM and PM peak hours under build conditions.

A VISSIM model was developed to provide a simulation of corridor operations. The VISSIM simulation was developed for the existing year 2013 condition, and for the base year 2016 for both the no-build and the proposed improvements. In keeping with the concept of providing interim improvements, A VISSIM simulation was also developed for year 2026 for both the no-build and build conditions.

**What method was used for forecasting traffic volumes?**

The existing peak hour counts for 2013 were grown at a 2.25% growth rate compounded annually to obtain the peak hour counts for 2016. The 2.25% was chosen for the growth rate per the New Orleans Regional Planning Commission (NORPC) Travel Demand Model.

**Are the planning assumptions and the corridor vision/purpose and need statement consistent with the long range transportation plan?    Yes**

**What future year policy and/or data assumptions were used in the transportation planning process as they are related to land use, economic development, transportation costs and network expansion?**

The RPC provided the growth rate factor used to forecast traffic growth within the corridor. The 2.25% growth factor is consistent with the MPO modeled growth in the study area.

**Stage 0 Feasibility Study**  
**US 190 (LA 433 TO US 11) Interim Capacity / Widening Improvements – St. Tammany Parish**

**G. Potential Environmental Impacts**

See the attached Stage 0 Environmental Checklist

**H. Cost Estimate and Project Phasing**

**Corridor Build-out Concept**

Exhibit 1-4 serves as a map index for the conceptual engineering plates and it shows how the project can be developed in constructible links extending from west to east along the project corridor. Table 1-11 presents the cost summary for each link. Table 1-12 established a construction priority for the corridor within the identified links. The construction prioritization conforms to the design life analysis previously shown in Table 1-7 in that the intersections which fail the earliest are phased for improvement roughly in the order of failure.

TABLE 1-11 COST SUMMARY					
Stage 0 Report US 190 (LA 433 TO US 11) Interim Capacity / Widening Improvements - ST Tammany Parish	Corridor Link 1	Corridor Link 2	Corridor Link 3	Anticipated Funding Source	
	Dixie Ranch/ LA 433	Northshore Roundabout	Camp Villere Roundabout		
Environmental (Document and Mitigation)	\$30,809	\$80,389	\$58,706		
Engineering Design	\$123,235	\$321,555	\$234,822		
Right-of-way (Acquisition and Services)	\$2,606,010	\$1,421,173	\$1,738,770		
Utility Relocations	\$90,000	\$487,500	\$382,500		
Construction	\$1,540,436	\$4,019,437	\$2,935,276		
Construction Engineering & Inspection	<u>\$154,044</u>	<u>\$401,944</u>	<u>\$293,528</u>		
<b>TOTAL COST</b>	<b>\$4,544,533</b>	<b>\$6,731,997</b>	<b>\$5,643,602</b>		
Stage 0 Report US 190 (LA 433 TO US 11) Interim Capacity / Widening Improvements - ST Tammany Parish	Corridor Link 4	Corridor Link 5	Corridor Link 5A	Corridor Link 6	Anticipated Funding Source
	Grand 16 Theatre	Westminster/ Carroll/ Maris Stella	North Harrison to St. Tammany Ave.	St. Tammany Ave. to US 11	
Environmental (Document and Mitigation)	\$43,266	\$117,397	\$46,883	\$70,137	
Engineering Design	\$173,063	\$469,588	\$267,533	\$280,546	
Right-of-way (Acquisition and Services)	\$689,583	\$3,462,382	\$1,476,087	\$1,441,967	
Utility Relocations	\$250,000	\$880,000	\$400,000	\$720,000	
Construction	\$2,163,285	\$5,869,847	\$3,344,168	\$3,506,825	
Construction Engineering & Inspection	<u>\$216,329</u>	<u>\$586,985</u>	<u>\$234,417</u>	<u>\$350,683</u>	
<b>TOTAL COST</b>	<b>\$3,535,525</b>	<b>\$11,386,198</b>	<b>\$5,769,089</b>	<b>\$6,370,157</b>	

Source: Neel-Schaffer, Inc.

Prepared By: Daniel Thornhill, P.E.  
 Neel-Schaffer, Inc.

Date 30-Jun-14

Note: Bridge widening construction portion of Link 5-A is estimated to be \$775,000.



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Table S-11  
 Prioritization of Intersection Construction Based on Design Life Analysis  
 Years Beyond 2016 in Which the Intersection Continues to Operate At or Below Capacity

Intersecting Street	Link	Link Cost in millions \$	Construction Priority	No Build Design Life		Build Design Life	
				AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
Dixie Ranch Road	1	\$4.5	<b>Priority 5</b> (1 phase)	20 years	20 years	NA*	NA*
Thompson Road (LA 433)				0 years	14 years	7 years	10 years
Northshore Boulevard	2	\$6.7	<b>Priority 1</b> (2 phases)	1 year	0 years	20 year	16 years
Camp Villere Road	3	\$5.6	<b>Priority 3</b> (1 phase)	0 years	0 years	20 years	20 years
Grand 16 Theatre Entrance	4	\$3.5	<b>Priority 7</b> (1 phase)	20 years	0 years	20 years	8 years
Westminster Drive				15 years	7 years	20 years	18 years
Sunset Drive / Carroll Road				0 years	2 years	17 years	10 years
Maris Stella Street	5	\$11.4	<b>Priority 2</b> (3 Phases)	3 years	3 years	14 years	13 years
North Harrison Turn Lane to St. Tammany Avenue				Design Life Analysis was not performed on this link because no intersections within the link were studied. The link was added to balance costs and provide for a u-turn between the Maris Stella roundabout and the Carnation Street roundabout.			
N. Carnation Street	6	\$7.9	<b>Priority 6</b> (2 phases)	20 years	0 years	20 years	20 years
S. Carnation Street				20 years	20 years	NA**	NA**

NA\* - Will be part of the Thompson Road Roundabout

Source - Neel-Schaffer, Inc.

NA\*\* - Will be part of the Carnation Street Roundabout

**Priority 1, Northshore Boulevard Link** – This link includes the improvements extending from the start of construction to the east of Bayou Liberty to the construction of roadway and roundabout geometry intersection improvements extending approximately to the US 190 intersection with the Tammany Trace Trail. Its estimated \$6.7 million cost to completion is slightly higher than the \$6 million maximum suggested by the RPC for annual funding. However, the project could be progressed in two phases with the environmental, design and right-of way acquisition at approximately \$1.8 million as the initial phase, and the remainder (approximately \$5 million) in the construction phase.

**Priority 2, Westminster Drive / Sunset Drive / Maris Stella Link** – This link combines three roundabout intersections that are very closely spaced. The estimated cost to completion is \$11.4 million, which is much greater than the RPC \$6 million suggested maximum for an annual spending obligation. The project could be developed in three phases. The initial phase would consist of design, environmental and right-of way acquisition for the entire link (approximately \$4.1 million). The second phase would consist of the construction of the two higher priority roundabout intersections (Sunset Drive and Maris Stella) with connecting roadway (\$4.1 million). The Westminster roundabout with connecting roadway would be the final construction phase (\$3.2 million).

**Priority 3, Camp Villere Road Link** – This link consist of the Camp Villere Road roundabout intersection and roadway improvements extending to the then already complete Northshore Boulevard link. The \$5.6 million cost to completion is within the \$6 million RPC programming maximum.

**Priority 4, North Harrison Turn Lane to St. Tammany Avenue** - This link consist of a short segment which provides for widening of the bridge over Bayou Bonfouca, as well as additional u-turn capacity between the Maris Stella and Carnation Street roundabouts. The \$5.8 million cost to completion is within the \$6 million RPC programming maximum.

**Priority 5, Dixie Ranch Road / LA433 Link** - This link includes the relocation of Dixie Ranch Road and all proposed intersection improvements west of Bayou Liberty. The \$4.5 million cost to completion is within the \$6 million RPC programming maximum.

**Priority 6, Carnation Link** – This link includes the 2-lane boulevard roadway section extending from just east of the Bayou Bonfouca Bridge to Carnation Street, a new roundabout geometry intersection at Carnation Street, and the new 4-lane boulevard roadway section extending from Carnation Street to US 11. The estimated cost to completion is approximately 8 million, which exceeds the RPC programming maximum. However, the project could be progressed in two phases with the environmental, design and right-of way acquisition at approximately \$2.2 million as the initial phase, and the remainder (approximately \$5.8 million) in the construction phase.

**Priority 7, Grand 16 Theatre Entrance** – This link completes the project phasing as it includes the final roadway improvements and the roundabout geometry intersection at the Grand 16 theatre entrance. The \$3.5 million cost to completion is within the \$6 million RPC programming maximum.

**Environmental Documents** – The above priorities include consideration of environmental documents and survey within the individual priority links. A likely scenario would be that the environmental phase of the project would be completed first for the entire corridor. To tie down existing ROW and costs for utility relocation, the environmental phase should include the development of existing ROW maps and the location of utilities. Table 1-13 summarizes the annual phasing of the project. It is anticipated that the environmental documents preparation would be in the range of \$450,000 (including a Conceptual Stage Relocation Plan) and that the survey would be \$250,000. So, the Environmental Phase of the project is budgeted at \$0.7 million (\$700,000).

**Stage 0 Feasibility Study**  
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<b>Table S-12</b>																				
<b>Phasing Plan</b>																				
<b>US 190 (LA 433 TO US 11) Interim Capacity / Widening Improvements</b>																				
	Link (ft)	Link Cost in millions \$	Construction Priority	Phase	Cost in mil \$	Services	Year													
							1	2	3	4	5	6	7	8	9	10	11	12		
Environmental, ROW Survey & Utility Location for Entire			Planning in Advance of	1	0.7	A	✓													
Northshore Boulevard	2 (3,464)	6.7	Priority 1 (2 phases)	1	\$1.8	B,C		✓												
				2	\$4.9	D			✓											
Westminster Drive Sunset Drive / Carroll Road Maris Stella Street	5 (4,450)	\$11.4	Priority 2 (3 Phases)	1	\$4.1	B,C				✓										
				2	\$4.1	D				✓										
				3	\$3.2	D						✓								
Camp Villere Road	3 (2,452)	\$5.6	Priority 3	1	\$5.6	B,C,D							✓							
North Harrison Turn Lane to St. Tammany Avenue	5-A (1,700)	\$5.8	Priority 4	1	\$4.9	B,C,D								✓						
Dixie Ranch Road / Thompson Road (LA 433)	1 (1,710)	\$4.5	Priority 5	1	\$4.5	B,C,D									✓					
St. Tammany St. to US 11	6 (3,200)	\$6.4	Priority 6 (2 phases)	1	\$2.2	B,C											✓			
				2	\$5.7	D														✓
Grand 16 Theatre Entrance	4 (2,244)	\$3.5	Priority 7	1	\$3.5	B,C,D														✓

<b>Services</b>	<b>A</b>	Environmental, ROW Survey and Utility Location	(ft) Approximate distance of
	<b>B</b>	Right of Way Acquisition	link in feet
	<b>C</b>	Design	
	<b>D</b>	Construction	

Source: Neel-Schaffer, Inc.

**Roundabout Build-out Concept**

Construction of the full roadway and roundabout intersection improvements in sequencing as suggested above is the desired approach to improving the corridor because it provides the maximum safety benefit in association with the interim capacity benefits and a roadway in conformance with complete streets concepts.

An alternative approach would be to build out the roundabout geometry intersections in priority sequence without providing the roadway and complete streets improvements between the intersections. The median roadway improvements and complete streets improvements would not be constructed until after all of the roundabouts were constructed. This approach would provide the interim capacity improvements, and the safety benefits associated with the roundabout intersection operations. It would leave the continuous turn lane in place between the improved intersections, so the safety benefits associated with the median roadway would not occur, and there would not be any complete streets benefits. It is anticipated that all of the individual roundabouts could be designed, ROW acquired and each constructed for less than the RPC \$6 million program maximum. But this approach would be less efficient and more costly as it would extend the time of the overall project corridor development, as individual design and construction packages for the roadway improvements would take place after the construction of the roundabouts.

**Attachment 1**  
**2010 Stage 0 Study, US 190**  
**Concept Geometry**  
**LA 433 to US 11**

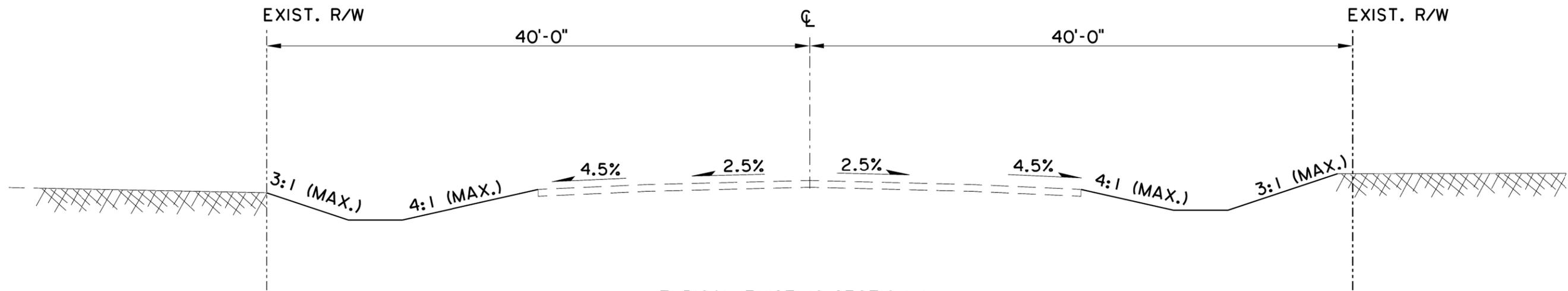


# Attachment 2

## Typical Sections and Concept Geometry Plates

# Attachment 2-A

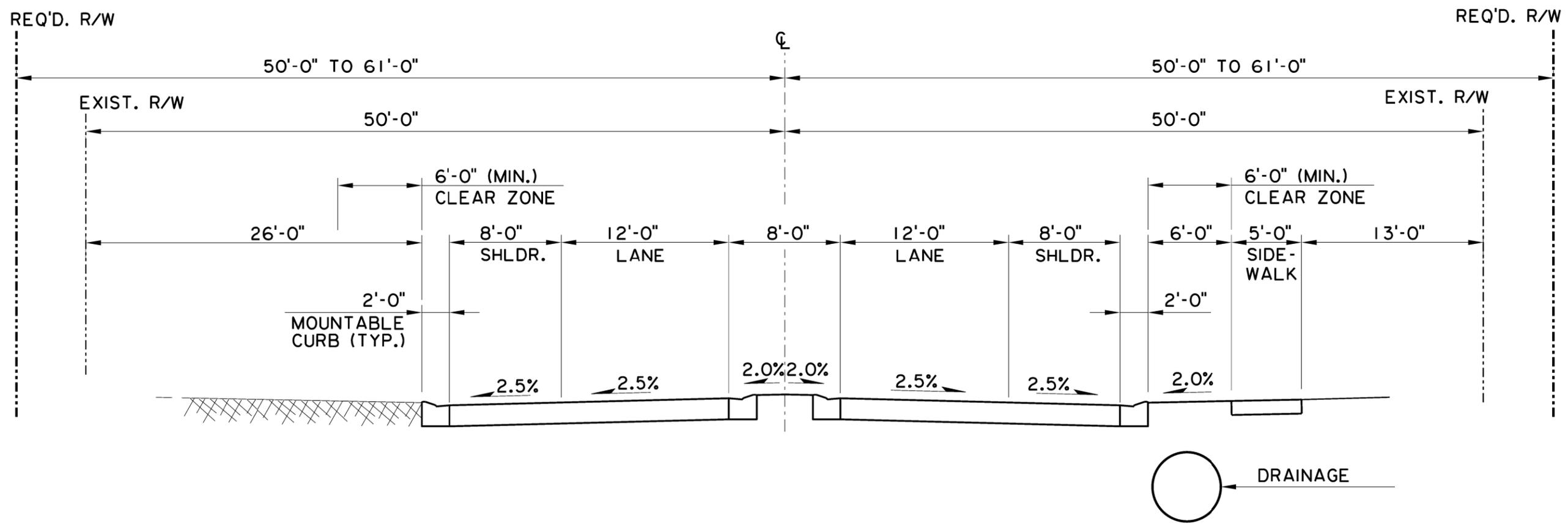
## Typical Sections



TYPICAL EXISTING SECTION 1  
 US190 (LA 433 TO NESLO RD.)  
 STA. 111+39.57 TO STA. 123+27.57

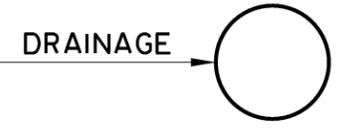
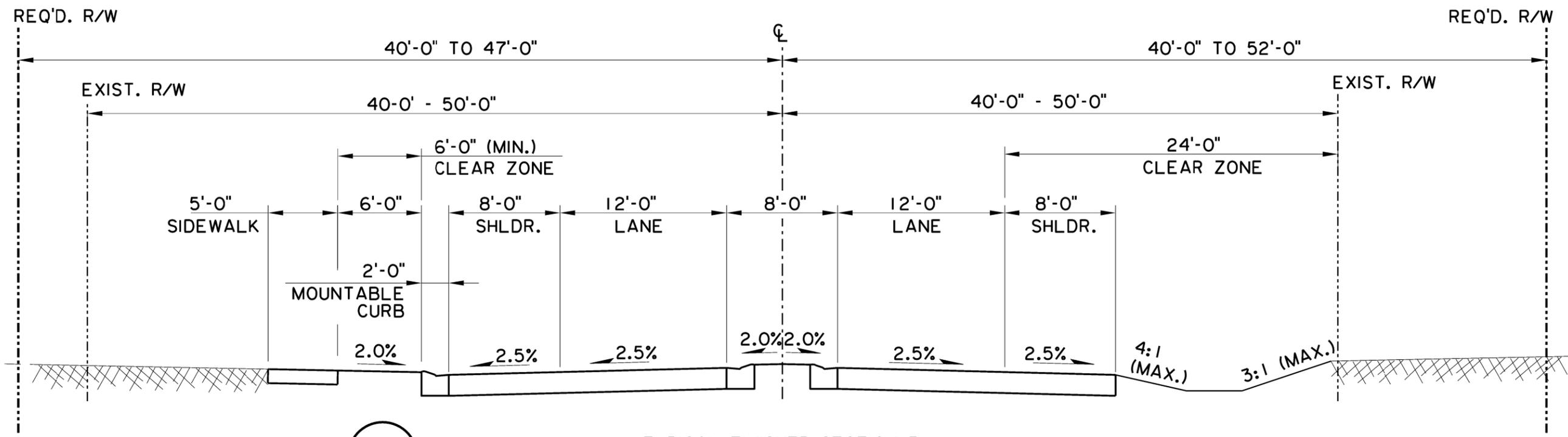
NOTE:  
 US190 (LA433 TO NESLO RD.) INCLUDES 24' CLEAR  
 ROADWAY BRIDGE WITH NO SHOULDERS.

STAGE 0

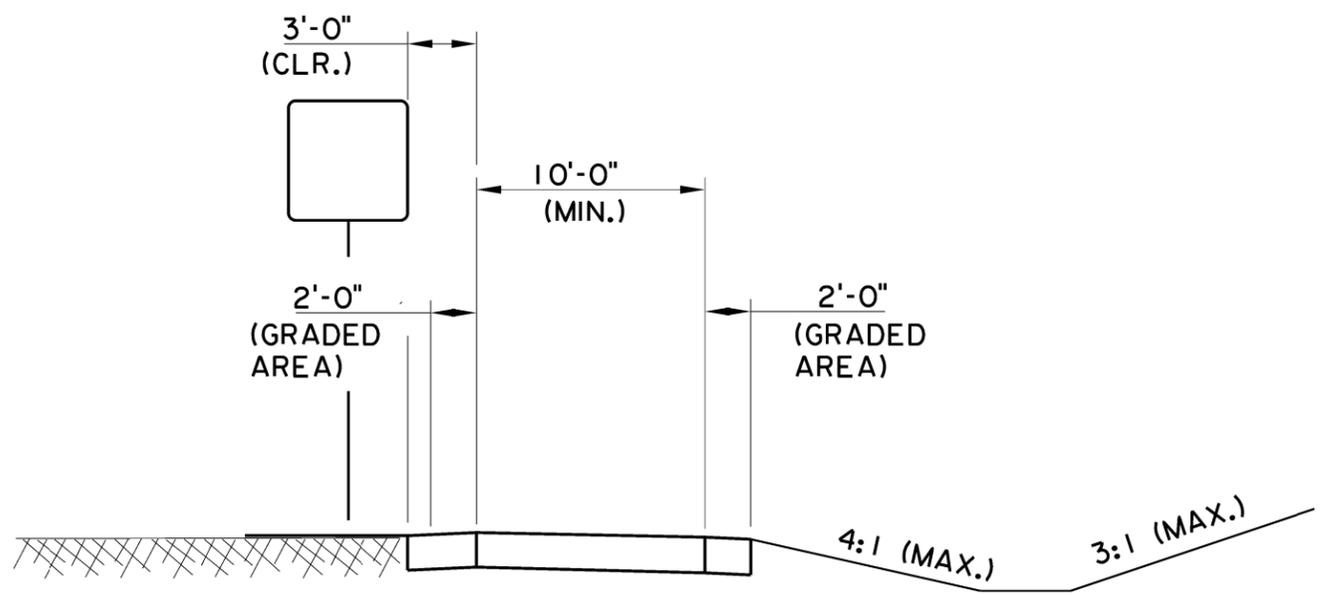


TYPICAL FINISHED SECTION 2  
 US190 (NESLO RD. TO NORTHSORE BLVD.)  
 STA. 123+27.57 TO STA. 135+30.44  
 (UA-2)

SHEET NUMBER	TS-1
DESIGNED	KH
CHECKED	RC
DATE	4/20/14
REVISION DESCRIPTION	
NO.	NO.
DATE	DATE
BY	BY
ST. TAMMANY	
PARISH	
FEDERAL PROJECT	
STATE PROJECT	
SHEET	1 OF 4
US190 (LA433 TO US11)	
INTERIM CAPACITY/WIDENING	
IMPROVEMENTS STAGE 0	
FEASIBILITY STUDY	
TYPICAL SECTIONS	
DOTD	
BKI	



**TYPICAL FINISHED SECTION 3**  
 US190 (NORTHSHORE BLVD. TO INTERSECTION  
 W/TAMMANY TRACE)  
 STA. 135+30.44 TO STA. 154+40.60  
 US 190 (CAMP VILLERE TO CARNATION)  
 STA. 176+94.47 TO STA. 273+56.91  
 (UA-2)



**TYPICAL FINISHED SECTION 4**  
 TWO LANE BIKE PATH  
 TAMMANY TRACE (US 190 TO WILLIAM RD.)  
 (UA-2)

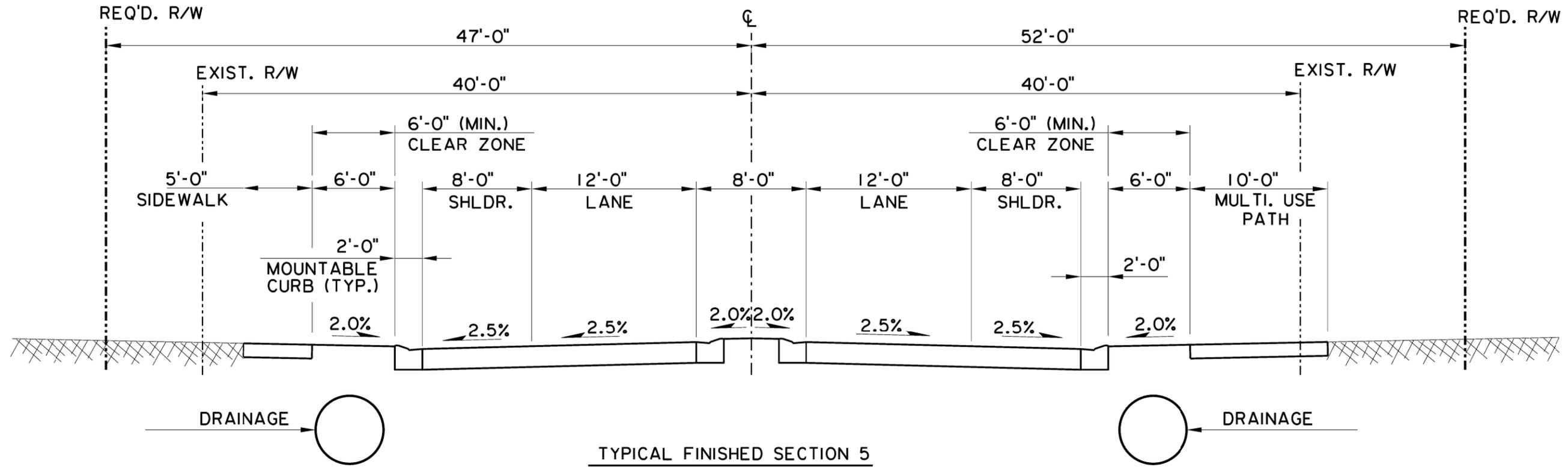
STAGE 0



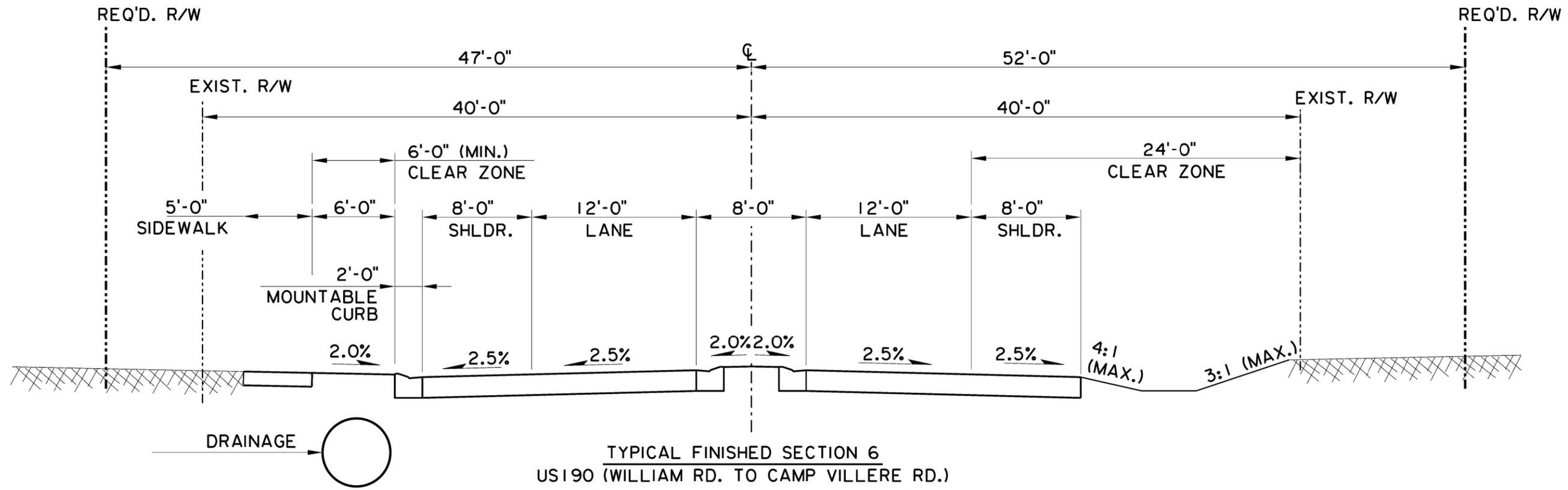
US190 (LA433 TO US11)  
 INTERIM CAPACITY/WIDENING  
 IMPROVEMENTS STAGE 0  
 FEASIBILITY STUDY  
 TYPICAL SECTIONS



STAGE 0

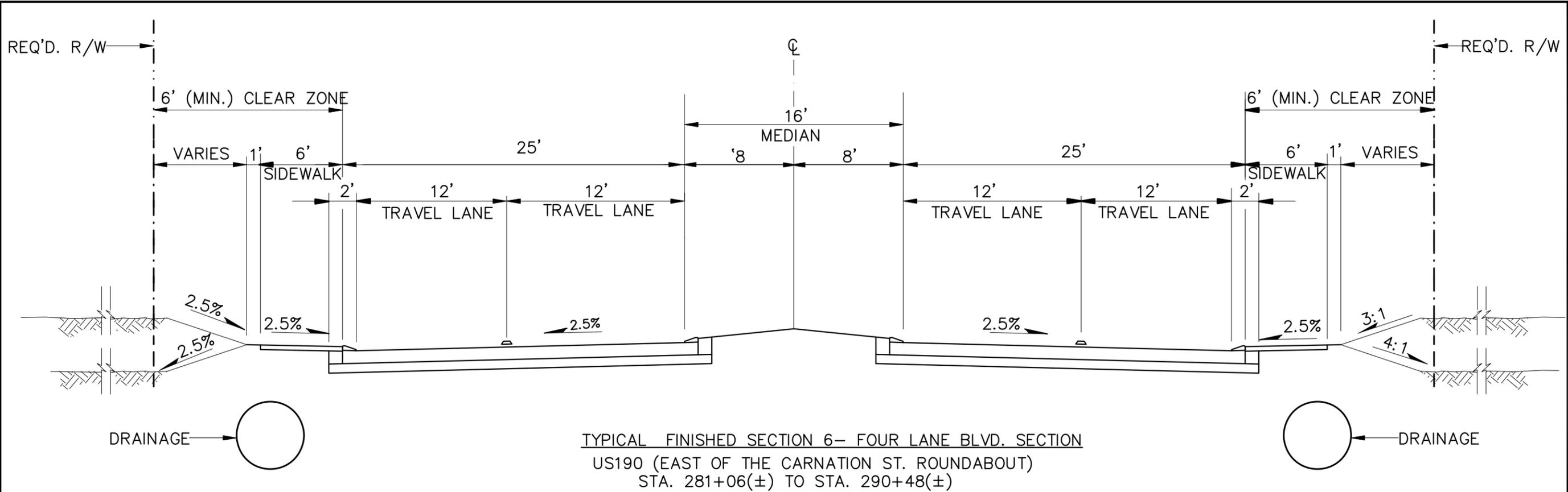


TYPICAL FINISHED SECTION 5  
 US190 (INTERSECTION W/TAMMANY TRACE  
 TO WILLIAM RD.)  
 STA. 154+40.60 TO STA. 160+00.00  
 (UA-2)



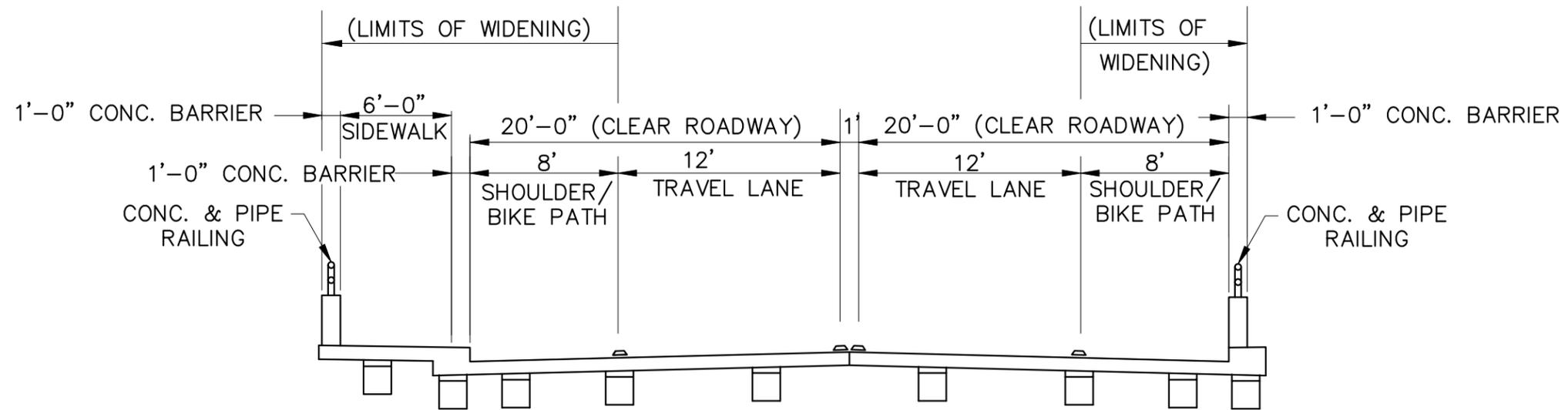
TYPICAL FINISHED SECTION 6  
 US190 (WILLIAM RD. TO CAMP VILLERE RD.)  
 STA. 160+00.00 TO STA. 176+94.47  
 (UA-2)

SHEET NUMBER	TS-3
DESIGNED	KH
CHECKED	RC
DATE	4/20/14
REVISION DESCRIPTION	
NO.	
DATE	
BY	
PARISH	ST. TAMMANY
FEDERAL PROJECT	
STATE PROJECT	
DATE	4/20/14
SHEET	3 OF 4
US190 (LA433 TO US11) INTERIM CAPACITY/WIDENING IMPROVEMENTS STAGE 0 FEASIBILITY STUDY TYPICAL SECTIONS	



TYPICAL FINISHED SECTION 6- FOUR LANE BLVD. SECTION  
 US190 (EAST OF THE CARNATION ST. ROUNDABOUT)  
 STA. 281+06(±) TO STA. 290+48(±)

NOTE:  
 BRIDGE ASSUMED TO BE 30' SPANS RESTING ON TEE BEAMS. BEAMS SHOWN  
 ARE FOR INFORMATIONAL PURPOSES ONLY. NUMBER AND SPACING OF BEAMS  
 TO BE DETERMINED IN FUTURE DESIGN PHASES OF PROJECT.



TYPICAL BRIDGE FINISHED SECTION 7 AT BAYOU BONFOUCA  
 US 190 (LA 433 TO US 11)  
 TEE BEAM BRIDGE SPANS - 30' SPANS  
 STA. 252+67(±) TO STA. 253+06(±)

STAGE 0

SHEET NUMBER	TS-4
ST. TAMMANY	
PARISH PROJECT	
STATE PROJECT	
DESIGNED	
CHECKED	
REVIEWED	
CHECKED	
DATE	
SHEET	
BY	
REVISION DESCRIPTION	
NO.	
DATE	
	
US190 (LA433 TO US11) INTERIM CAPACITY/WIDENING IMPROVEMENTS STAGE 0 FEASIBILITY STUDY	
	
C&S CONSULTANTS INC.	

# Attachment 2-B

## Concept Geometry Plates

## Source (Citation) for 2010 six inch pixel imagery Geotiffs

This imagery was provided by the Louisiana Governor's Office of Homeland Security and Emergency Preparedness (GOHSEP) as the sole source owner, and is shared with Louisiana state government agencies in the interest of good government practices.

Reproduction and distribution of the data is prohibited. Please refer any requests for data to the Deputy Director for Management, Finance and Interoperability of GOHSEP. This imagery was distributed by the Regional Planning Commission for Jefferson, Orleans, Plaquemines, St. Bernard and St. Tammany Parishes (RPC) with permission from GOHSEP.

GOHSEP and the RPC are not responsible for any errors arising from any use of alterations made to the data. Under no circumstances is resale or distribution of the data permitted.

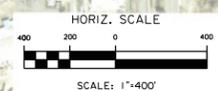
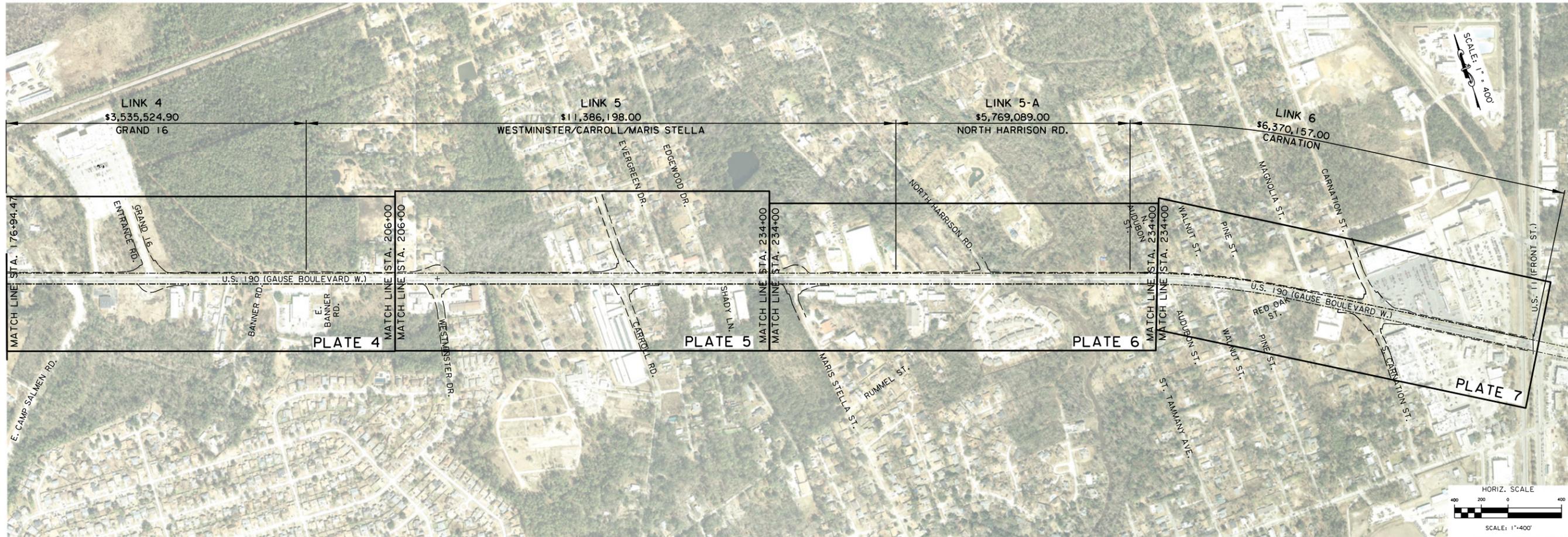
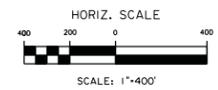
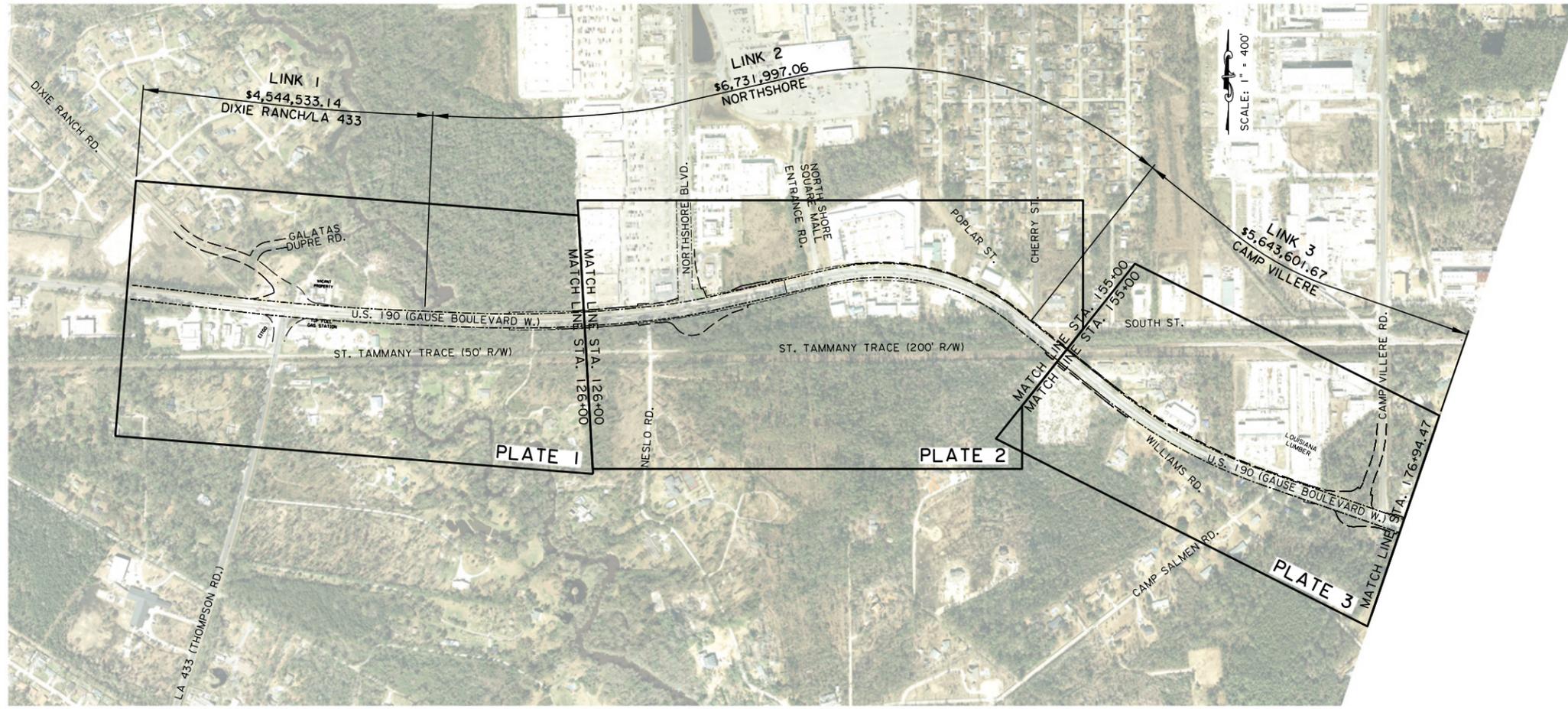
Imagery Information: The red, green, blue (true color) and near infrared four-band aerial imagery was captured between February 10th and April 1<sup>st</sup> of 2010 (re-flights for any corrections flown until April 28<sup>th</sup>, 2010) by Sanborn Map Company, Inc.

The imagery is projected to UTM 15 NAD 83; unit of measure is meters.

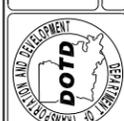
The spatial resolution is approximately a six inch pixel.

Any use of the data must be accompanied with this citation and accompanying seals and logos embedded within.

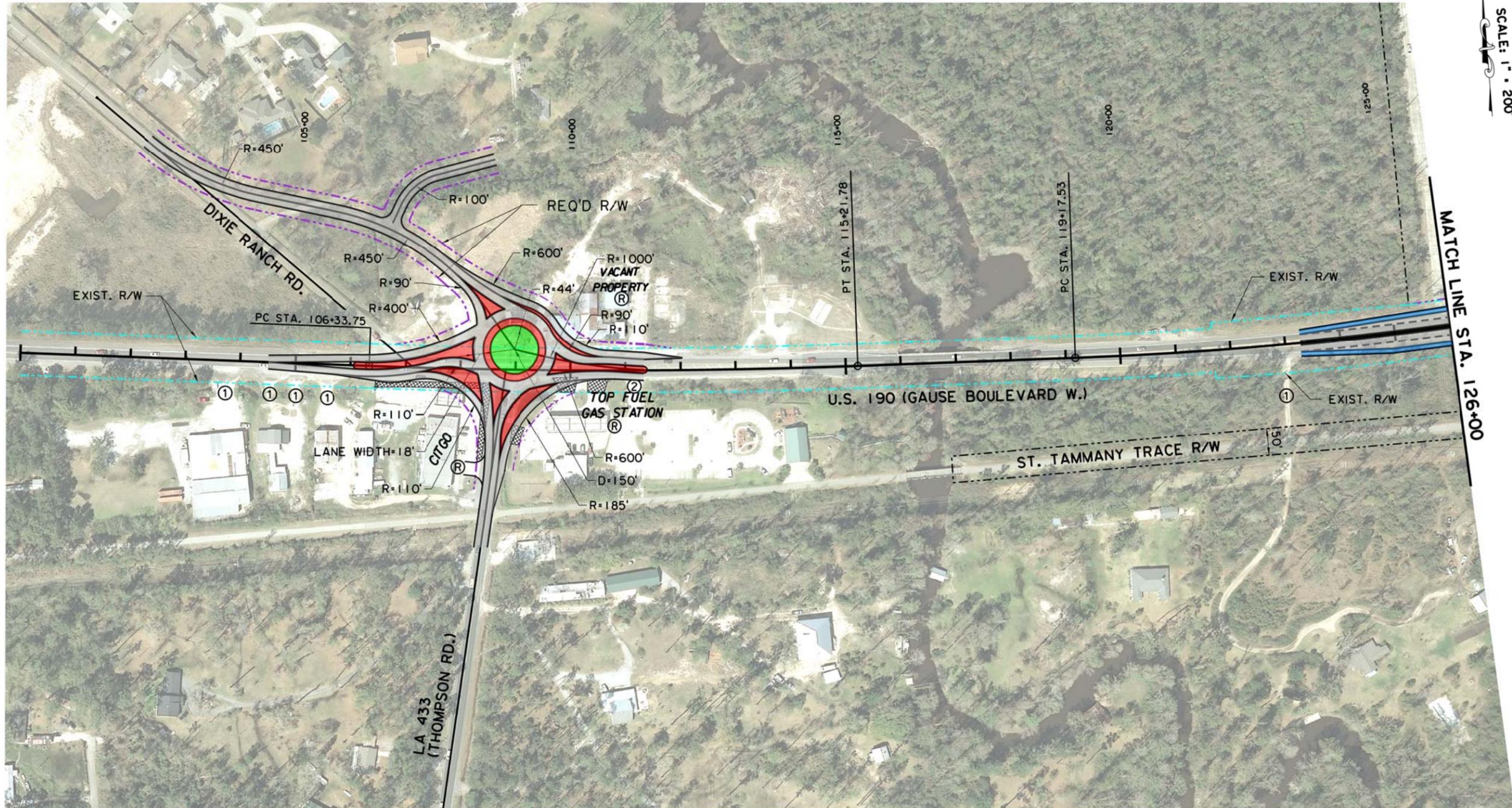




SHEET NUMBER		IND-1	
DESIGNED DTT		ST. TAMMANY	
CHECKED N/F	FEDERAL PROJECT	PARISH	STATE PROJECT
RETAILED D/F	CHECKED DTT	DATE	APRIL 29, 2014
NO.	DATE	BY	
REVISION DESCRIPTION			
US 190 (LA 433 TO US 11) INTERIM CAPACITY/WIDENING IMPROVEMENTS STAGE 0 FEASIBILITY STUDY			
EXHIBIT 1-4			



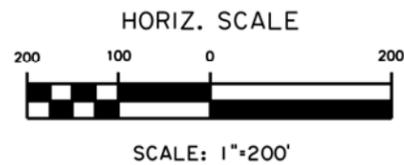
STAGE 0



SCALE: 1" = 200'

**NOTES:**

1. ① DRIVEWAY WILL REMAIN OPEN AS A FULL ACCESS DRIVEWAY
2. ② DRIVEWAY WILL REMAIN OPEN AS ONLY A RIGHT-IN AND RIGHT-OUT DRIVEWAY
3. XXX DRIVEWAY WILL BE CLOSED
4. Ⓜ POTENTIAL RELOCATION



**LEGEND**

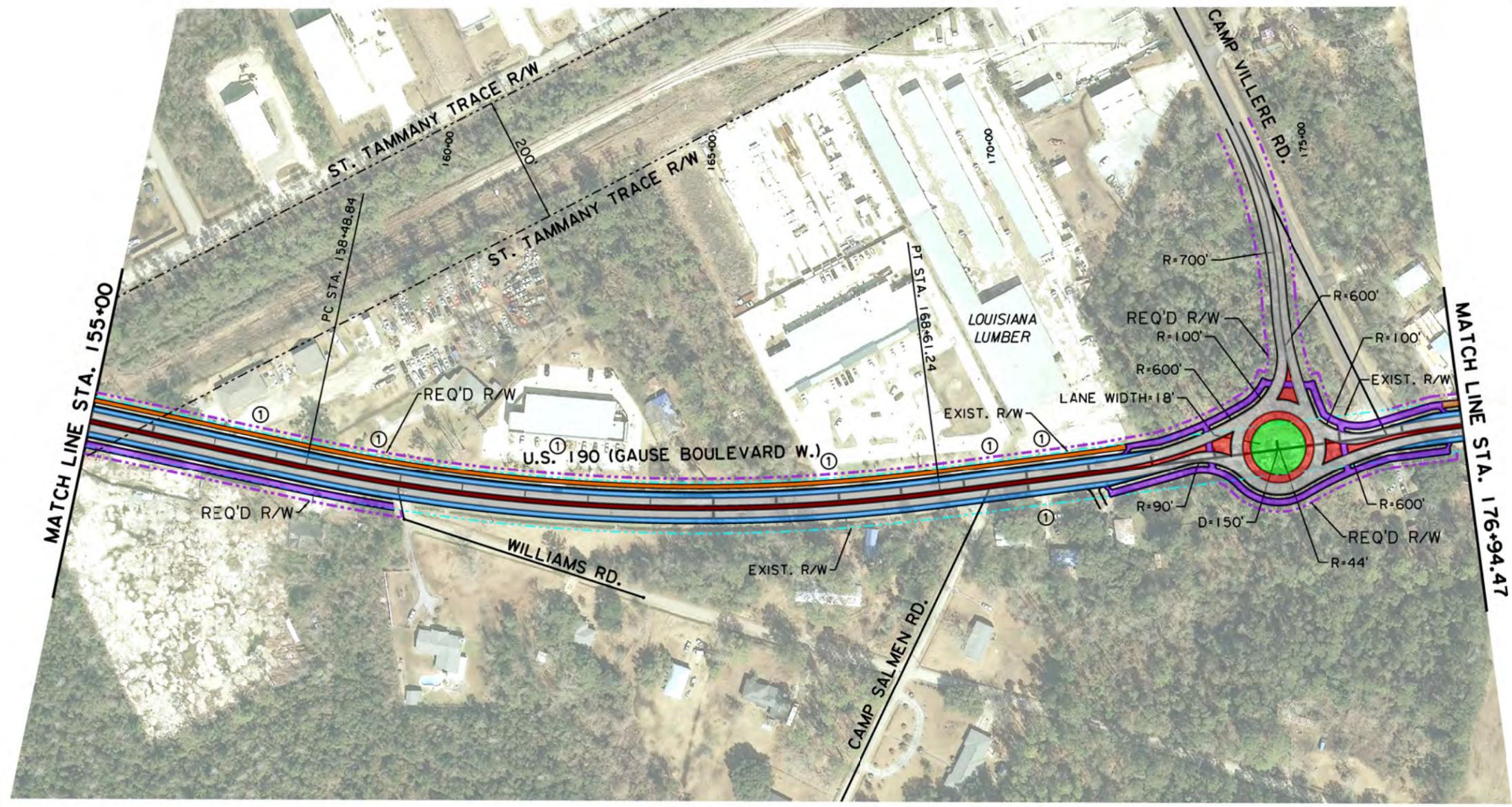
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- SIDEWALKS
- MULTI-USE PATH
- ROUNDABOUT CENTER
- SHOULDER/BIKE LANE
- TRUCK APRON/MEDIAN
- EXISTING R/W
- REQ. R/W
- TO BE REMOVED

SHEET NUMBER	PL-1	DESIGNED KH	CHECKED RC	DATE	BY
PARISH	ST. TAMMANY	DESIGNED KH	CHECKED RC	4/20/14	1 OF 7
FEDERAL PROJECT		DESIGNED KH	CHECKED RC		
STATE PROJECT		DESIGNED KH	CHECKED RC		
REVISION DESCRIPTION					
NO. DATE					
US190 (LA433 TO US11) INTERIM CAPACITY/WIDENING IMPROVEMENTS STAGE 0 FEASIBILITY STUDY CONCEPTUAL PLAN					





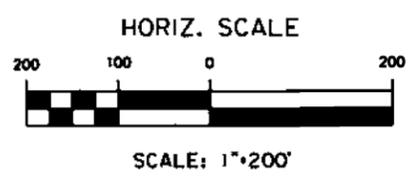
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STAGE 0

NOTES:

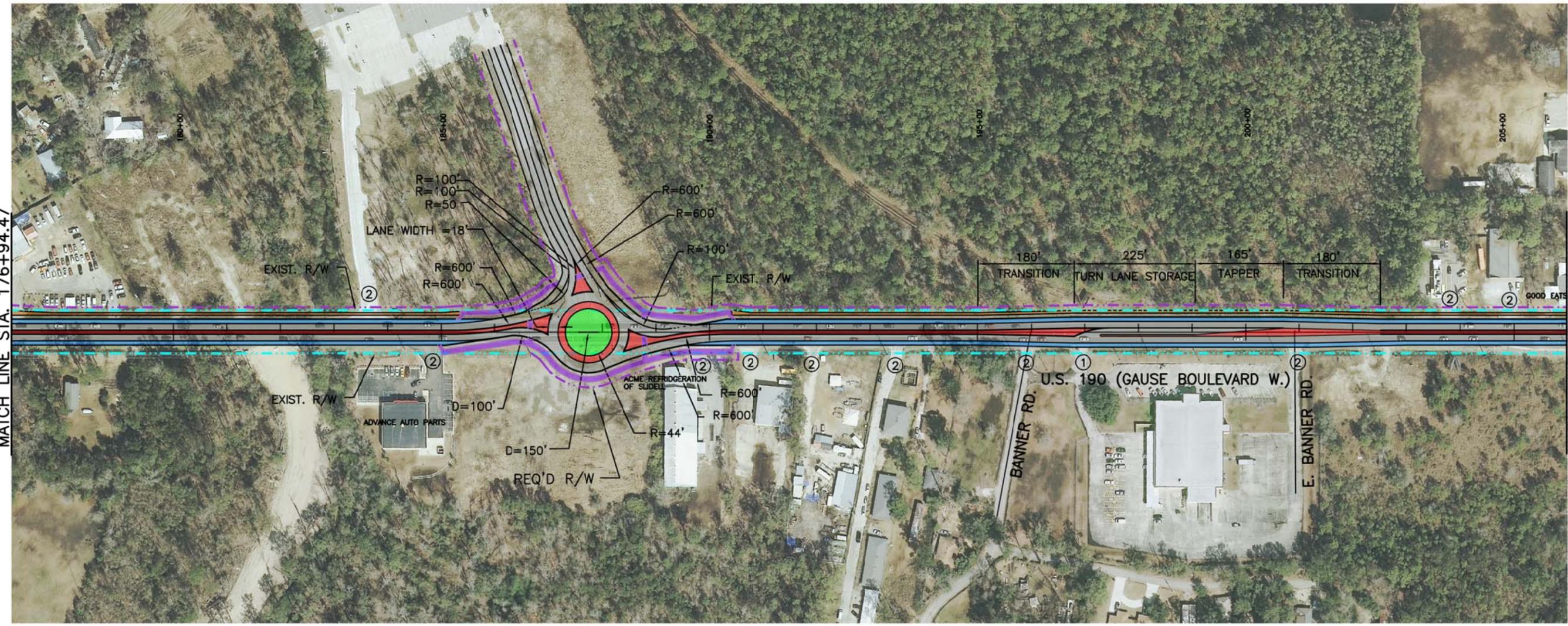
1. ① DRIVEWAY WILL REMAIN OPEN AS A FULL ACCESS DRIVEWAY
2. ② DRIVEWAY WILL REMAIN OPEN AS ONLY A RIGHT-IN AND RIGHT-OUT DRIVEWAY
3. XXX DRIVEWAY WILL BE CLOSED
4. ④ POTENTIAL RELOCATION



LEGEND

- NEW PAVEMENT
- SIDEWALKS
- MULTI-USE PATH
- ROUNDABOUT CENTER
- SHOULDER/BIKE LANE
- TRUCK APRON/MEDIAN
- EXISTING R/W
- REQ. R/W
- TO BE REMOVED

SCALE: 1" = 200'



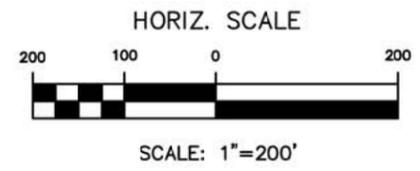
STAGE 0

MATCH LINE STA. 176+94.47

MATCH LINE STA. 206+00

NOTES:

1. ① DRIVEWAY WILL REMAIN OPEN AS A FULL ACCESS DRIVEWAY.
2. ② DRIVEWAY WILL REMAIN OPEN AS ONLY A RIGHT-IN RIGHT-OUT DRIVEWAY.
3. XXX DRIVEWAY WILL BE CLOSED.
4. ④ POTENTIAL RELOCATION



LEGEND

- NEW PAVEMENT
- SIDEWALKS
- MULTI-USE PATH
- ROUNDABOUT CENTER
- SHOULDER/BIKE LANE
- TRUCK APRON/MEDIAN
- EXISTING R/W
- REQ. R/W
- TO BE REMOVED



US190 (LA433 TO US11)  
INTERIM CAPACITY/WIDENING  
IMPROVEMENTS STAGE 0  
FEASIBILITY STUDY

CONCEPTUAL PLAN



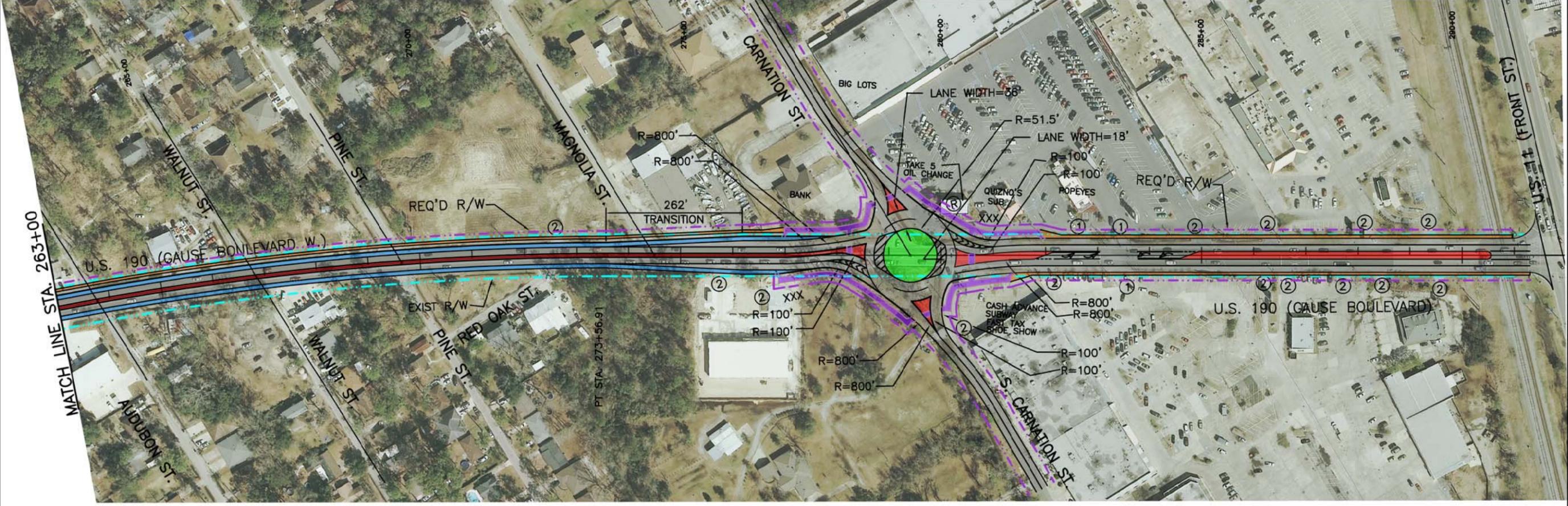
C&S CONSULTANTS INC.







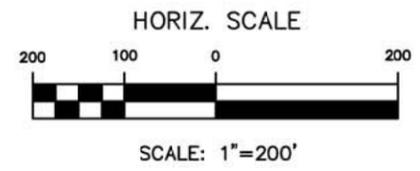
SCALE: 1" = 200'



STAGE 0

NOTES:

1. ① DRIVEWAY WILL REMAIN OPEN AS A FULL ACCESS DRIVEWAY.
2. ② DRIVEWAY WILL REMAIN OPEN AS ONLY A RIGHT-IN RIGHT-OUT DRIVEWAY.
3. XXX DRIVEWAY WILL BE CLOSED.
4. ④ POTENTIAL RELOCATION



LEGEND

- NEW PAVEMENT
- SIDEWALKS
- MULTI-USE PATH
- ROUNDABOUT CENTER
- SHOULDER/BIKE LANE
- TRUCK APRON/MEDIAN
- EXISTING R/W
- REQ. R/W
- TO BE REMOVED

# Attachment 3

## Traffic and Safety Analysis

**TRAFFIC ANALYSIS  
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<i>Traffic Analysis (US 190: LA 433 to US 11)</i>	5
<i>SIDRA Intersection Analyses</i>	6
<i>SYNCHRO Intersection Analyses</i>	14
<i>Safety Analysis</i>	16

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**LIST OF EXHIBITS**

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1-2	<i>Year 2013 Turning Movement Counts</i>	3
1-3	<i>Projected Year 2016 Turning Movement Counts</i>	4

**Traffic Analysis:**

*The traffic analysis supporting this study is presented below: The traffic study limits extend along the US 190 (Gause Boulevard) corridor from Thompson Road (LA 433) to US 11 (Front Street). The study limits and average daily traffic volumes are shown in Exhibit 1-1 on the following page.*

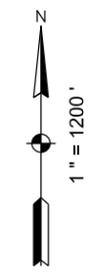
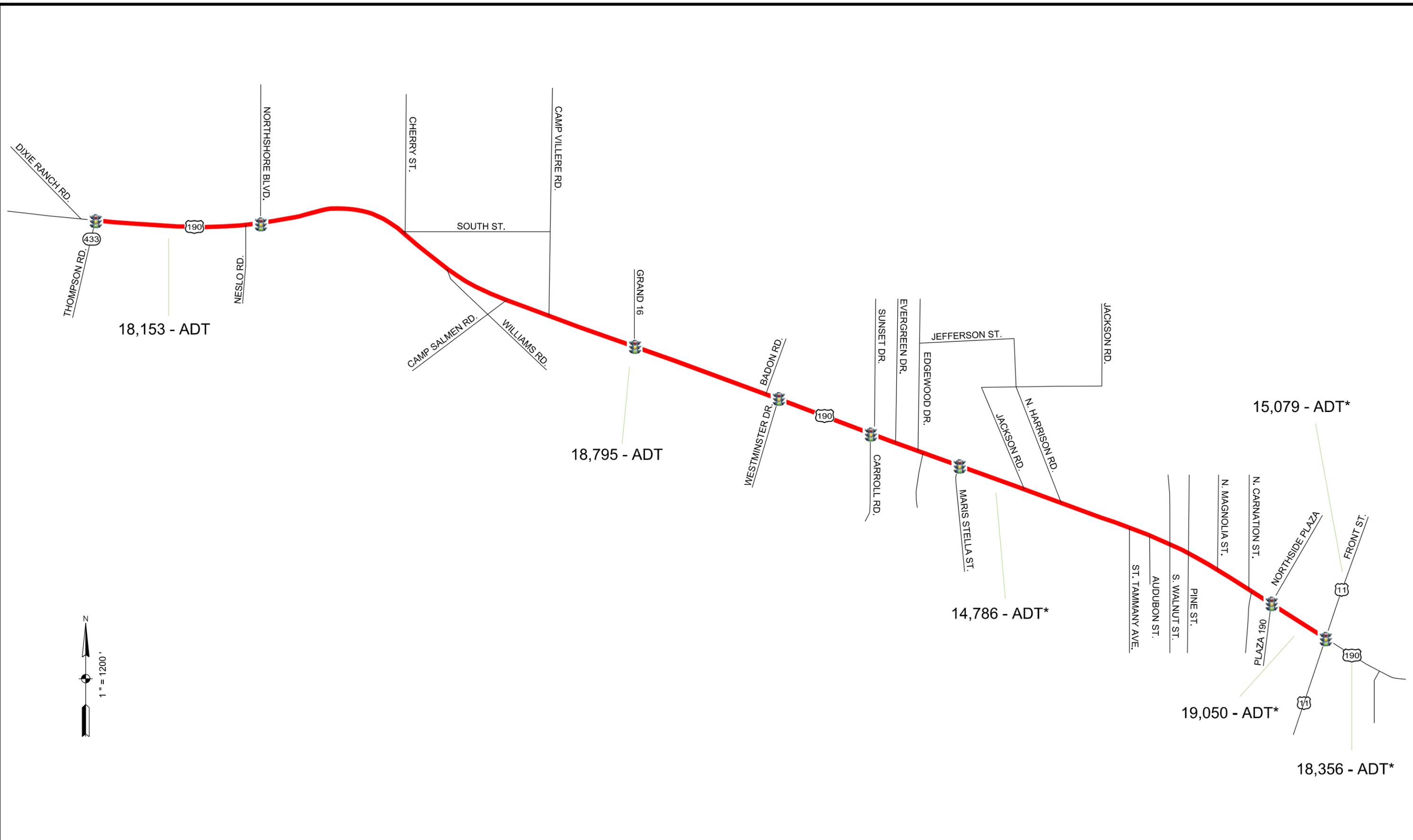
*Existing and Forecast Traffic Volumes*

*Existing seven (7) day, twenty-four (24) hour volume and classification counts were collected February 21 through February 27, 2013 for the following locations:*

- *US 190 East and West of US 11*
- *US 11 North and South of US 190*
- *US 190 East and West of Plaza 190*
- *US 190 East and West of Carroll Road*
- *Carroll Road South of US 190*
- *Sunset Drive North of US 190*
- *US 190 East and West of Westminster Drive*
- *Westminster Drive South of US 190*
- *US 190 East and West of Grand 16 Driveway*
- *Grand 16 Driveway North of US 190*
- *US 190 East and West of Northshore Boulevard*
- *US 190 East and West of Thompson Road*
- *Thompson Road (LA 433) South of US 190*

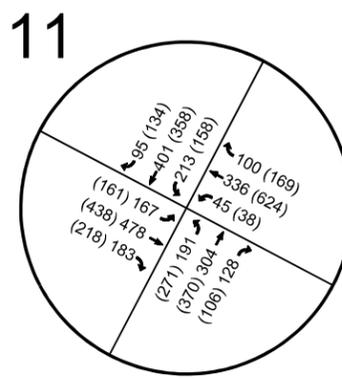
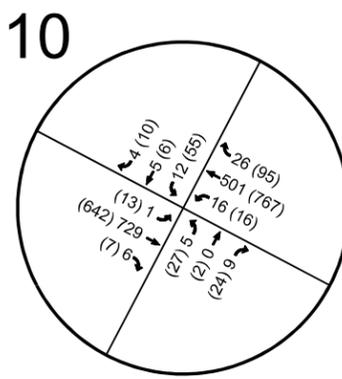
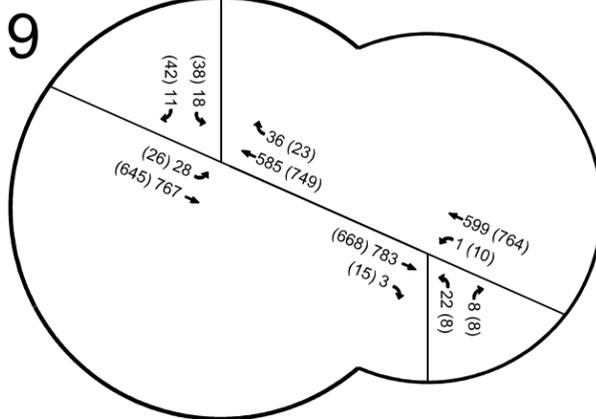
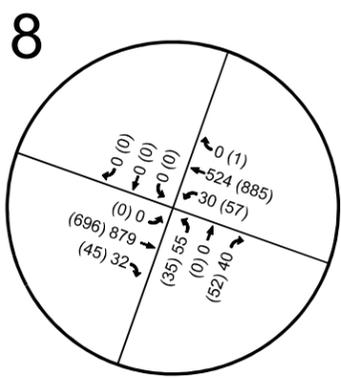
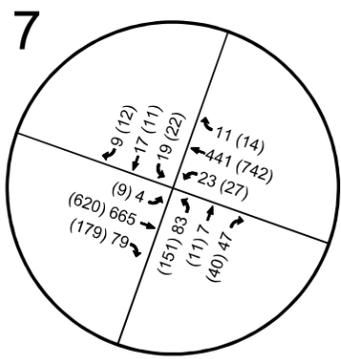
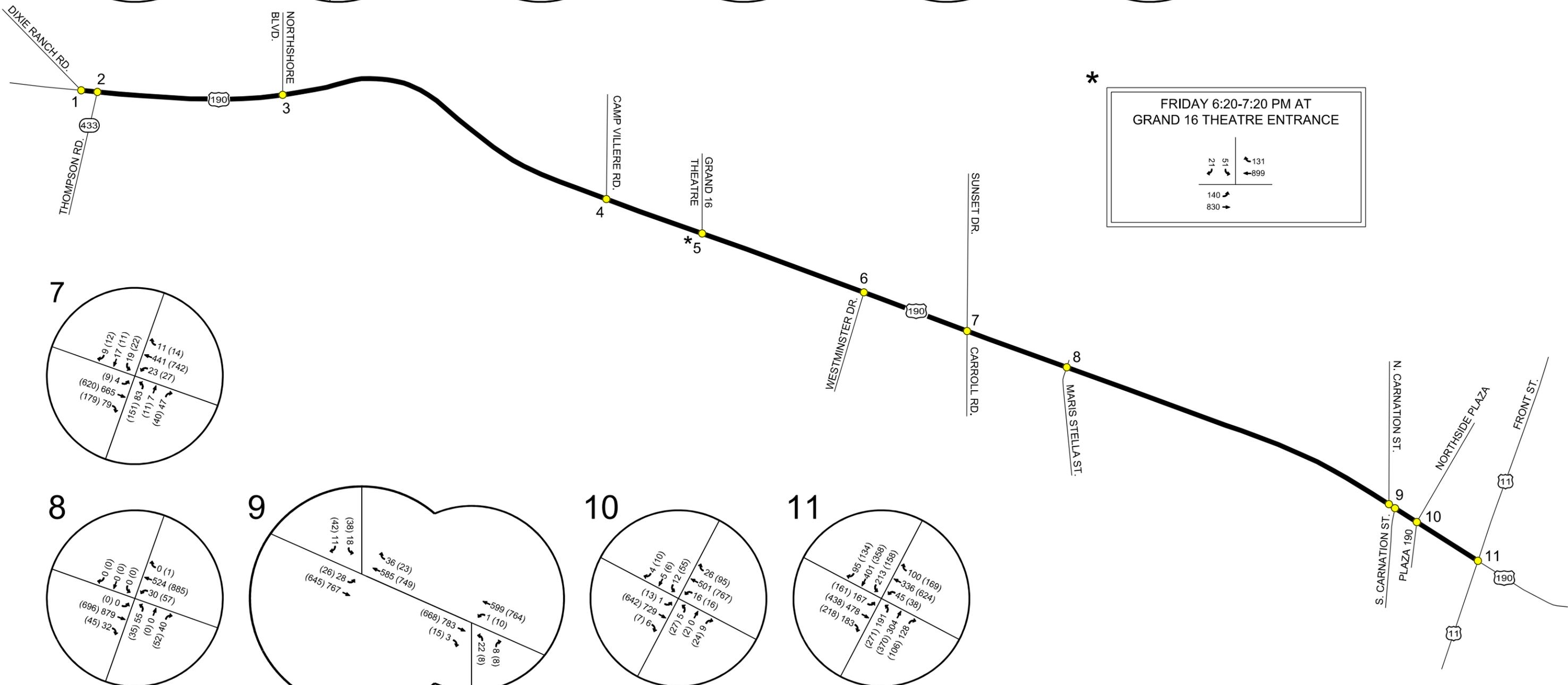
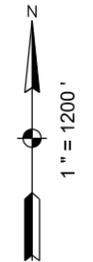
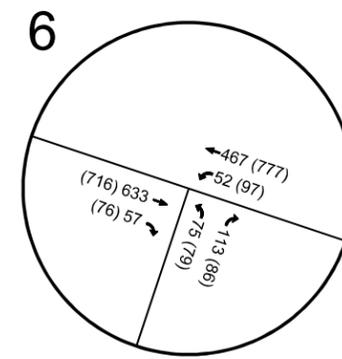
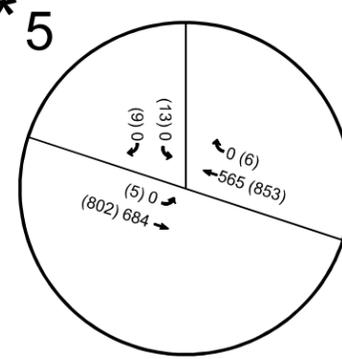
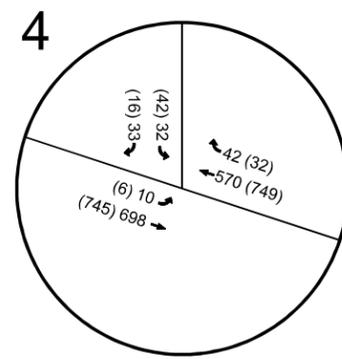
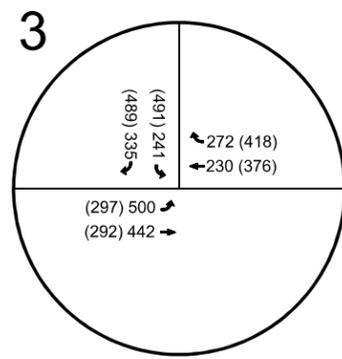
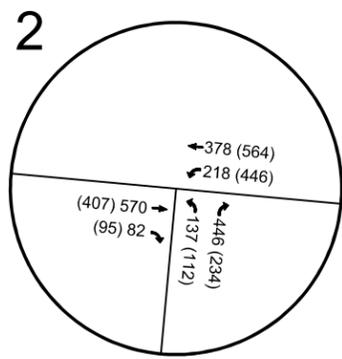
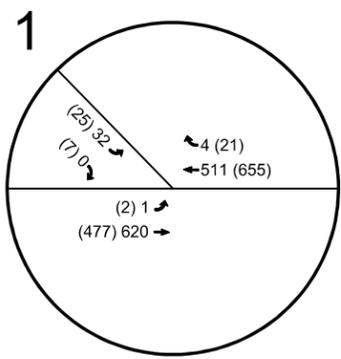
*Based on analyses of the existing seven (7) day, twenty-four (24) hour volume and classification counts, the AM peak hour of the corridor was determined to be 7:30 – 8:30 a.m. and the PM peak hour of the corridor was determined to be 4:00 – 5:00 p.m. Peak hour turning movement counts were collected by Quality Counts, LLC. and Neel-Schaffer, Inc. (NSI) at the study locations shown in Exhibit 1-2 on February 21, 2013 and June 12, 2013. Note that US 190 at the intersections of Camp Villere Road and Carnation Street were counted on June 12, 2013 when schools were not in session. US 190 at the intersection of Dixie Ranch/Thompson Road (LA 433) was originally counted on February 21, 2013 when schools were in session and then again on June 12, 2013. This allowed US 190 at the intersection of Dixie Ranch/Thompson Road (LA 433) to be used as a control intersection to estimate the effect of the schools on traffic volumes within the study area. It was determined that the AM peak hour volumes were increased by 39% when schools were in session. The effects of school traffic were assumed to be negligible during the PM peak hour since the PM peak hour was outside the time frame for school dismissals. Note also that on the days that the turning movement counts were being collected, Maris Stella Street was closed for construction. Therefore, the turning movement counts collected were adjusted based on the counts at Carroll Road and Carnation Street. The existing 2013 AM and PM peak hour volumes are illustrated in Exhibit 1-2.*

*The existing peak hour counts for 2013 were grown at a 2.25% growth rate compounded annually to obtain the peak hour counts for 2016. 2.25% was chosen for the growth rate per instructions from the New Orleans Regional Planning Commission (NORPC). These future AM and PM peak hour volumes are illustrated in Exhibit 1-3.*



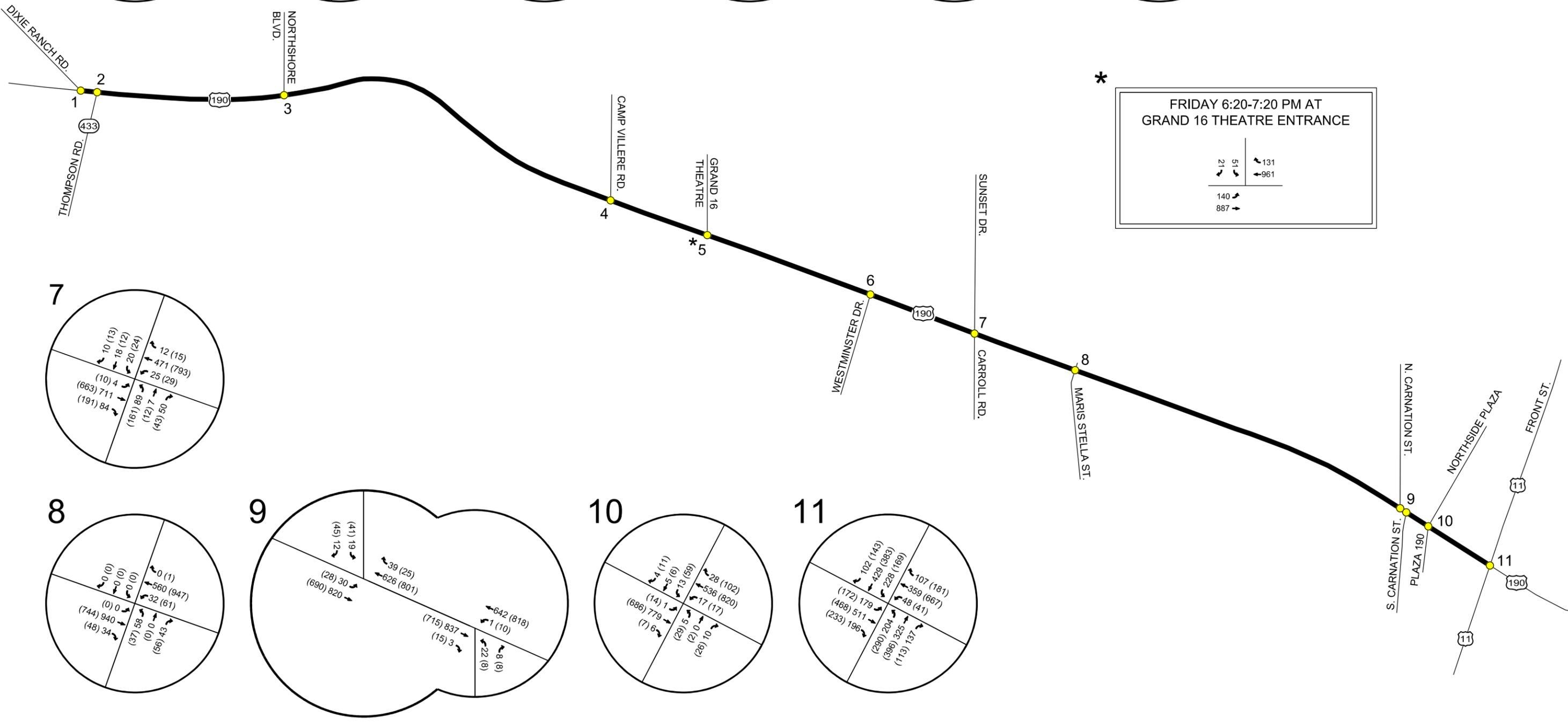
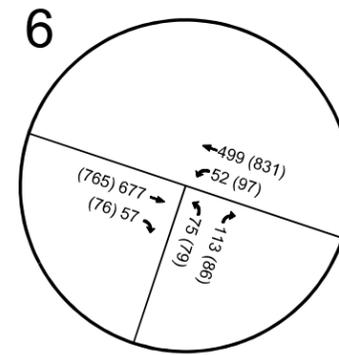
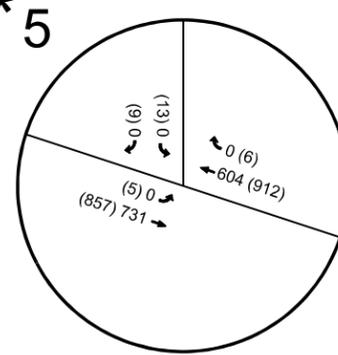
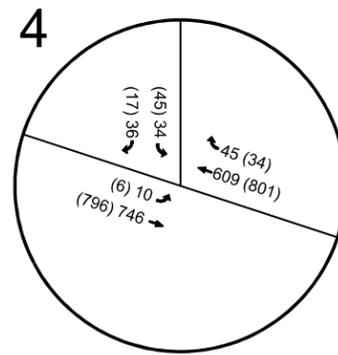
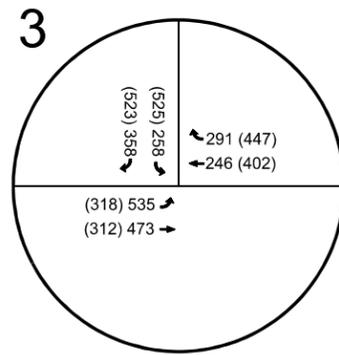
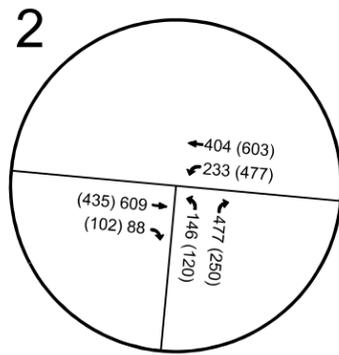
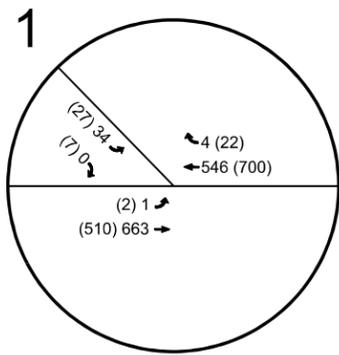
<b>LEGEND</b>	
	PROJECT LIMITS
	SIGNALIZED INTERSECTIONS
(XX - ADT)	OBTAINED FROM 2013 PROJECT COUNTS
(XX - ADT*)	OBTAINED FROM 2012 DOTD COUNT STATIONS

**EXHIBIT 1-1  
US 190 STAGE 0  
AVERAGE DAILY TRAFFIC**



**LEGEND**  
 STUDY CORRIDOR  
 STUDY INTERSECTION  
 32 (6) (25) AM {NOON} (PM) PEAK HOUR VOLUMES

**EXHIBIT 1-2**  
**U.S. 190 STAGE 0**  
**YEAR 2013 TURNING MOVEMENT COUNTS**



FRIDAY 6:20-7:20 PM AT GRAND 16 THEATRE ENTRANCE

131	51	21
← 961	↔	↔
140	887	

**LEGEND**  
 — STUDY CORRIDOR  
 ● STUDY INTERSECTION  
 32 {6} (25) AM {NOON} (PM) PEAK HOUR VOLUMES

**EXHIBIT 1-3**  
**U.S. 190 STAGE 0**  
**PROJECTED YEAR 2016 TURNING MOVEMENT COUNTS**

Traffic Analysis (US 190; LA 433 to US 11)

Traffic analyses performed as part of this study include the following:

- *Sidra 5.1 (Version 13.2093) Intersection Analyses for Existing Signalized and Unsignalized Intersections with Roundabout Alternatives*
- *Synchro 8 (Version 805.881) Intersection Analyses for Existing Signalized Intersections with Signalized Alternatives*
- *Safety Analyses*

The traffic analyses performed as part of this study were performed for the following conditions for Sidra 5.1 Intersection Analyses:

- *2013 Existing*
- *2016 No Build*
- *2016 Build*
- *Design Life No Build*
- *Design Life Build*

The traffic analyses performed as part of this study were performed for the following conditions for Synchro 8 Intersection Analyses:

- *2013 Existing*
- *2016 No Build*
- *2016 Build*

SIDRA Intersection Analyses

*Models for both AM and PM peak hours were created for the intersection analyses of locations within the study area with a roundabout alternative using SIDRA Intersection Version 5.1 software. The AM peak hour results are for the hour of 7:30 – 8:30 a.m. The PM peak hour results are for the hour of 4:00 – 5:00 p.m. except for the intersection of US 190 and the Grand 16 Theater Driveway. During the 4:00 – 5:00 p.m. hour, the turning movement volumes at the intersection of US 190 and the Grand 16 Theater Driveway were lower than during the hour of 6:20 – 7:20 p.m. which corresponded with the peak operating time of the theater. Therefore the PM peak hour results for this intersection reflect the operating time of the theater instead of the PM peak hour of the corridor. The theater’s operating times and volumes were obtained from, “US 190 Widening (From LA 1089 to US 11 Stage 0 Feasibility Study” by Urban Systems, Inc. The results of the SIDRA intersection analyses are summarized in Tables 1 through 7.*

*Within the study area, four (4) study locations are two-way stop controlled intersections. US 190 at each of these intersections was the major uncontrolled street, while the cross streets were stop-controlled. The results of the 2013 analyses are shown on the following page in Table 1.*

**Stage 0 Feasibility Study**  
**US 190 (LA 433 TO US 11) Interim Capacity / Widening Improvements – St. Tammany Parish**

*Table 1*  
 2013 AM and PM Peak Hour Existing Conditions for TWSC Intersections  
 Delay (sec) / LOS

Intersecting Street	Approach	AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS
Dixie Ranch Rd.	NB	---	---	---	---
	SB	186.4	F	115.1	F
	WB	0	N/A	0	N/A
	EB	0	N/A	0	N/A
	Intersection	N/A	N/A	N/A	N/A
Camp Villere Rd.	NB	---	---	---	---
	SB	130.7	F	202.1	F
	WB	0	N/A	0	N/A
	EB	0	N/A	0	N/A
	Intersection	N/A	N/A	N/A	N/A
N. Carnation St.	NB	---	---	---	---
	SB	133.3	F	278.8	F
	WB	0	N/A	0	N/A
	EB	0	N/A	0	N/A
	Intersection	N/A	N/A	N/A	N/A
S. Carnation St.	NB	167	F	99.8	F
	SB	---	---	---	---
	WB	0	N/A	0	N/A
	EB	0	N/A	0	N/A
	Intersection	N/A	N/A	N/A	N/A

According to the 2010 HCM in reference to TWSC, "LOS is not defined for the intersection as a whole or for major-street approaches... major-street through vehicles are assumed to experience zero delay".

**Stage 0 Feasibility Study**  
**US 190 (LA 433 TO US 11) Interim Capacity / Widening Improvements – St. Tammany Parish**

Six (6) intersections within the study area are signalized intersections. The results of the 2013 analyses are shown below in Table 2.

*Table 2*  
**2013 AM and PM Peak Hour Existing Conditions for Signalized Intersections**  
**Delay (sec) / LOS**

Intersecting Street	Approach	AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS
Thompson Rd. (LA 433)	NB	56.1	E	26.1	C
	SB	---	---	---	---
	WB	15.5	B	16.9	B
	EB	31.9	C	24.9	C
	Intersection	34.3	C	20.8	C
Northshore Blvd.	NB	---	---	---	---
	SB	25.1	C	102.6	F
	WB	21.2	C	20.4	C
	EB	21.8	C	16	B
	Intersection	22.6	C	53.4	D
*Grand 16 Theater Dwy.	NB	---	---	---	---
	SB	22.7	C	46.6	D
	WB	14	B	41.3	D
	EB	5.6	A	10.1	B
	Intersection	9.5	A	26.9	C
Westminster Dr.	NB	25.1	C	29.4	C
	SB	---	---	---	---
	WB	6.9	A	9.4	A
	EB	14.5	B	14.9	B
	Intersection	13.1	B	13.6	B
Sunset Dr./ Carroll Rd.	NB	83.4	F	104.6	F
	SB	110.8	F	106.5	F
	WB	24.2	C	69.4	E
	EB	32.2	C	27.9	C
	Intersection	37.2	D	46.5	D
Maris Stella St.	NB	34.4	C	26.3	C
	SB	39.7	D	39.7	D
	WB	11.3	B	20.6	C
	EB	25.5	C	13.3	B
	Intersection	21	C	17.9	B

\*PM peak hour results for Grand 16 Theater Dwy. are for the peak operating time of the theater

**Stage 0 Feasibility Study**  
**US 190 (LA 433 TO US 11) Interim Capacity / Widening Improvements – St. Tammany Parish**

2016 year conditions were analyzed for the four (4) two-way stop control intersections. The results of the no build versus build analyses during the AM peak hour are shown below in Table 3. The build alternative for these intersections are roundabout intersections. Detailed analysis results can be found in the Appendix.

*Table 3*  
 2016 Design Year AM Peak Hour – No Build (TWSC) vs. Build (Roundabout)  
 Delay (sec) / LOS

Intersecting Street	Approach	No Build - 2016 AM TWSC		Build - 2016 AM Roundabout	
		Delay	LOS	Delay	LOS
Dixie Ranch Rd.	NB	---	---	18.9	B
	SB	265	F	21.6	C
	WB	0	N/A	11.4	B
	EB	0	N/A	10.3	B
	Intersection	N/A	N/A	13.6	B
Camp Villere Rd.	NB	---	---	---	---
	SB	248.8	F	12.2	B
	WB	0	N/A	6.2	A
	EB	0	N/A	6.6	A
	Intersection	N/A	N/A	6.7	A
N. Carnation St.	NB	---	---	12.7	B
	SB	221.7	F	11	B
	WB	0	N/A	6	A
	EB	0	N/A	6	A
	Intersection	N/A	N/A	6.2	A
S. Carnation St.	NB	272.3	F	12.7	B
	SB	---	---	11	B
	WB	0	N/A	6	A
	EB	0	N/A	6	A
	Intersection	N/A	N/A	6.2	A

According to the 2010 HCM in reference to TWSC, "LOS is not defined for the intersection as a whole or for major-street approaches... major-street through vehicles are assumed to experience zero delay".

**Stage 0 Feasibility Study**  
**US 190 (LA 433 TO US 11) Interim Capacity / Widening Improvements – St. Tammany Parish**

2016 year conditions were analyzed for the four (4) two-way stop control intersections using. The results of the no build versus build analyses during the PM peak hour are shown below in Table 4. The build alternative for these intersections are roundabout intersections. Detailed analysis results can be found in the Appendix.

*Table 4*  
 2016 Year PM Peak Hour – No Build (TWSC) vs. Build (Roundabout)  
 Delay (sec) / LOS

Intersecting Street	Approach	No Build - 2016 PM TWSC		Build - 2016 PM Roundabout	
		Delay	LOS	Delay	LOS
Dixie Ranch Rd.	NB	---	---	13.3	B
	SB	192.5	F	31.7	C
	WB	0	N/A	12.4	B
	EB	0	N/A	12.4	B
	Intersection	N/A	N/A	12.9	B
Camp Villere Rd.	NB	---	---	---	---
	SB	213	F	16.7	B
	WB	0	N/A	6.2	A
	EB	0	N/A	6.7	A
	Intersection	N/A	N/A	6.8	A
N. Carnation St.	NB	---	---	9.1	A
	SB	306.1	F	11	B
	WB	0	N/A	6	A
	EB	0	N/A	6.2	A
	Intersection	N/A	N/A	6.4	A
S. Carnation St.	NB	146.7	F	9.1	A
	SB	---	---	11	B
	WB	0	N/A	6	A
	EB	0	N/A	6.2	A
	Intersection	N/A	N/A	6.4	A

According to the 2010 HCM in reference to TWSC, "LOS is not defined for the intersection as a whole or for major-street approaches... major-street through vehicles are assumed to experience zero delay".

**Stage 0 Feasibility Study**  
**US 190 (LA 433 TO US 11) Interim Capacity / Widening Improvements – St. Tammany Parish**

2016 year conditions were analyzed for the six (6) signalized intersections. The results of the no build versus build analyses during the AM peak hour are shown below in Table 5. The build alternative for these intersections are roundabout intersections. Detailed analysis results can be found in the Appendix.

*Table 5*  
 2016 Design Year AM Peak Hour – No Build (Signal) vs. Build (Roundabout)  
 Delay (sec) / LOS

Intersecting Street	Approach	No Build - 2016 AM Signal		Build - 2016 AM Roundabout	
		Delay	LOS	Delay	LOS
Thompson Rd. (LA 433)	NB	95.5	F	18.9	B
	SB	---	---	21.6	C
	WB	18.1	B	11.4	B
	EB	33.3	C	10.3	B
	Intersection	48.1	D	13.6	B
Northshore Blvd.	NB	---	---	---	---
	SB	26.1	C	11.7	B
	WB	22.9	C	10.1	B
	EB	28.9	C	11.9	B
	Intersection	26.6	C	11.4	B
Grand 16 Theater Dwy.	NB	---	---	---	---
	SB	23.3	C	10.8	B
	WB	14.3	B	6.3	A
	EB	5.8	A	6.3	A
	Intersection	9.7	A	6.3	A
Westminster Dr.	NB	26.3	C	13.7	B
	SB	---	---	---	---
	WB	7.3	A	8.7	A
	EB	15.7	B	6.9	A
	Intersection	13.9	B	8.4	A
Sunset Dr./ Carroll Rd.	NB	83.6	F	21.5	C
	SB	110.8	F	16.4	B
	WB	24.8	C	8.9	A
	EB	41.5	D	9.1	A
	Intersection	42.4	D	10.5	B
Maris Stella St.	NB	39	D	16.8	B
	SB	46.1	D	7.2	A
	WB	11.3	B	7	A
	EB	26.2	C	6.8	A
	Intersection	21.8	C	7.4	A

**Stage 0 Feasibility Study**  
**US 190 (LA 433 TO US 11) Interim Capacity / Widening Improvements – St. Tammany Parish**

2016 year conditions were analyzed for the six (6) signalized intersections. The results of the no build versus build analyses during the PM peak hour are shown below in Table 6. The build alternative for these intersections are roundabout intersections. Detailed analysis results can be found in the Appendix.

**Table 6**  
**2016 Design Year PM Peak Hour – No Build (Signal) vs. Build (Roundabout)**  
**Delay (sec) / LOS**

Intersecting Street	Approach	No Build 2016 PM Signal		Build 2016 PM Roundabout	
		Delay	LOS	Delay	LOS
Thompson Rd. (LA 433)	NB	27.2	C	13.3	B
	SB	---	---	31.7	C
	WB	16.6	B	12.4	B
	EB	25.6	C	12.4	B
	Intersection	21	C	12.9	B
Northshore Blvd.	NB	---	---	---	---
	SB	131	F	14.8	B
	WB	20.8	C	8.7	A
	EB	17.1	B	13.4	B
	Intersection	65.6	E	12.4	B
*Grand 16 Theater Dwy.	NB	---	---	---	---
	SB	47	D	18.8	B
	WB	62.3	E	11.3	B
	EB	10.1	B	7.8	A
	Intersection	37.3	D	9.9	A
Westminster Dr.	NB	31.6	C	15.6	B
	SB	---	---	---	---
	WB	9.4	A	9	A
	EB	14.9	B	7.5	A
	Intersection	13.7	B	8.9	A
Sunset Dr./ Carroll Rd.	NB	138.2	F	21.4	C
	SB	183.6	F	22.2	C
	WB	63.0	E	12.9	B
	EB	31.0	C	9.2	A
	Intersection	50.4	D	12.4	B
Maris Stella St.	NB	28.2	C	11.8	B
	SB	42.9	D	14.5	B
	WB	27.4	C	7.1	A
	EB	13.9	B	7.1	A
	Intersection	21.9	C	7.4	A

\*PM peak hour results for Grand 16 Theater Dwy. are for the peak operating time of the theater

**Stage 0 Feasibility Study**  
**US 190 (LA 433 TO US 11) Interim Capacity / Widening Improvements – St. Tammany Parish**

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A SIDRA Design Life analysis was conducted for all study intersections with roundabout alternatives. The Design Life analysis objective is to predict the last year before any of the subject intersection movements exceed a volume-to-capacity ratio (V/C) of 1.0 (i.e., capacity).

Table 7 shows the results of the SIDRA Design Life analysis. It shows the number of years after 2016 that each alternative will operate before exceeding capacity. The analyses was run with a limit of 20 years.

**Table 7**  
**Design Life AM and PM Peak Hours – No Build vs. Build (Roundabout)**  
**Number of Years after 2016 until Exceeds Capacity**

Intersecting Street	AM Peak Hour		PM Peak Hour	
	No Build	Build	No Build	Build
Dixie Ranch Rd.*	20*	7*	20*	10*
Thompson Rd. (LA 433)*	0*		14*	
Northshore Blvd.	1	20	0	16
Camp Villere Rd.	0	20	0	20
Grand 16 Theater Dwy.~	20	20	0~	8~
Westminster Dr.	15	20	7	18
Sunset Dr./ Carroll Rd.	0	17	2	10
Maris Stella St.	3	14	3	13
N. Carnation St.*	20*	20*	0*	20*
S. Carnation St.*	20*		20*	

\*In No Build conditions, Dixie Ranch Rd. and Thompson Rd. are separate T intersections that are closely spaced. The Build condition combines the two T intersections into one roundabout. That is also the case for N. Carnation St. and S. Carnation St.

~PM peak hour results for Grand 16 Theater Dwy. are for the peak operating time of the theater

SYNCHRO Intersection Analyses

The intersections of US 190 and US 11 (Front St.) and US 190 and Northside Plaza are signalized intersections for the no build alternative. Build condition improvements for these intersections are associated with widening the roadway and not a change in the type of traffic control. Therefore, these two signalized intersections were analyzed using Synchro Version 8 software. The results of the intersection analyses are summarized in Tables 8 through 10. Table 8 below shows the results of the existing 2013 conditions.

**Table 8**  
**2013 AM and PM Peak Hour Existing Conditions Intersections**  
**Delay (sec) / LOS**

Intersecting Street	Approach	AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS
US 11 (Front St.)	NB	34	C	40.1	D
	SB	36.5	D	52.7	D
	WB	29.5	C	49.3	D
	EB	30.1	C	30.3	C
	Intersection	32.6	C	42.7	D
Northside Plaza	NB	41.9	D	50.2	D
	SB	45.5	D	62.5	E
	WB	2.6	A	3.9	A
	EB	5.9	A	3.2	A
	Intersection	5.5	A	7.6	A

2016 year conditions were analyzed for the two (2) signalized intersections in the build alternative. The results of these no build versus build analyses during the AM peak hour are shown below in Table 9.

**Table 9**  
**2016 Year AM Peak Hour – No Build vs. Build**  
**Delay (sec) / LOS**

Intersecting Street	Approach	2016 No Build		2016 Build	
		Delay	LOS	Delay	LOS
US 11 (Front St.)	NB	35.7	D	27.9	C
	SB	38.9	D	30.8	C
	WB	31.7	C	27.6	C
	EB	32.6	C	25	C
	Intersection	34.8	C	27.7	C
Northside Plaza	NB	41.8	D	32	C
	SB	45.7	D	34.2	C
	WB	2.6	A	1.7	A
	EB	6.5	A	3.9	A
	Intersection	5.8	A	3.7	A

**Stage 0 Feasibility Study**  
**US 190 (LA 433 TO US 11) Interim Capacity / Widening Improvements – St. Tammany Parish**

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2016 year conditions were analyzed for the two (2) signalized intersections in the build alternative. The results of these no build versus build analyses during the PM peak hour are shown below in Table 10.

*Table 10*  
 2016 Year PM Peak Hour – No Build vs. Build  
 Delay (sec) / LOS

Intersecting Street	Approach	2016 No Build		2016 Build	
		Delay	LOS	Delay	LOS
US 11 (Front St.)	NB	41.5	D	32.7	C
	SB	59.6	E	30.3	C
	WB	69.5	E	35.9	D
	EB	31.1	C	25.6	C
	Intersection	50.2	D	31.2	C
Northside Plaza	NB	50.3	D	31.2	C
	SB	67.2	E	33.3	C
	WB	4.3	A	4.8	A
	EB	4	A	5.1	A
	Intersection	8.3	A	7.0	A

The immediate geometry at the intersection of US 190 and US 11 (Front Street) does not change from no build to build conditions. However, US 190 between Northside Plaza and US 11 does change from a three-lane section in no build conditions to a four-lane section in build conditions. This allows for better timing between the signalized intersections of Northside Plaza and US 11 (Front Street), which is responsible for the decrease in delays at US 11 (Front Street) during the AM and PM peak hours under build conditions.

**Stage 0 Feasibility Study**  
**US 190 (LA 433 TO US 11) Interim Capacity / Widening Improvements – St. Tammany Parish**

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Safety Analysis

In addition to the traffic analyses, safety analyses were performed for the study intersections.

A conflict point is a point at which a vehicle crosses, merges, or diverges from a road or driveway and conflicts with another vehicle. These points correspond with potential for crashes. Conflict points were determined at the study intersections along US 190 for the no build and the build alternatives. The results are shown below in Table 11 and Table 12 respectively.

Table 11  
 Number of Conflict Points by Type for No Build Condition

Intersecting Street	Crossing	Merging	Diverging	Total
Dixie Ranch/ Thompson Rd. (LA 433)	8	8	7	23
Northshore Blvd.	4	4	3	11
Camp Villere Rd.	5	4	3	12
Grand 16 Theater Dwy.	6	3	3	12
Westminster Dr.	6	4	3	13
Carroll Rd/ Sunset Dr.	17	8	7	32
Maris Stella St./ Clinic Dwy.	12	5	8	25
Carnation St./ S. Carnation St.	6	7	7	20
Northside Plaza	16	8	8	32
US 11 (Front St.)	40	9	9	58
Total	120	60	58	238

Table 12  
 Number of Conflict Points by Type for Build Condition

Intersecting Street	Crossing	Merging	Diverging	Total
Dixie Ranch/ Thompson Rd. (LA 433)	0	7	7	14
Northshore Blvd.	2	5	5	12
Camp Villere Rd.	0	3	3	6
Grand 16 Theater Dwy.	0	4	4	8
Westminster Dr.	0	3	3	6
Carroll Rd/ Sunset Dr.	0	4	4	8
Maris Stella St./ Clinic Dwy.	0	4	4	8
Carnation St./ S. Carnation St.	4	8	9	21
Northside Plaza	24	8	8	40
US 11 (Front St.)	40	8	8	58
Total	70	55	56	181

In accordance with FHWA guidance, crossing conflicts result in left turn and angle crashes that account for generally more severe crashes than other types. Tables 11 and 12 show that the build alternative will decrease the number of crossing conflicts along the study intersections by 42%.

*The number of conflict points on US 190 were not determined along segments between the study intersections. However, it should be noted that no build conditions have numerous driveways along the corridor that are full access. Driveways that are lined up with another driveway across the street will have approximately thirty-two (32) conflict points (16 crossing, 8 merging, and 8 diverging). Driveways that are not lined up with another driveway will have approximately nine (9) conflict points (3 crossing, 3 merging, and 3 diverging). The build alternative has a median that will turn all of the full access driveways into right-in, right-out driveways. This will cut down the number of conflict points to approximately two (2) (1 merge and 1 diverge) in two-lane segments, and three (3) (2 merge and 1 diverge) in four-lane segments. The build alternative will cut down the number of conflict points dramatically along the segments of US 190. It can also be expected that the severity of crashes along the segments of US 190 will decline with build conditions since crossing conflict points will be eliminated.*

*In accordance with the FHWA Crash Modification Factors Clearinghouse, “A crash modification factor (CMF) is a multiplicative factor used to compute the expected number of crashes after implementing a given countermeasure at a specific site. For example, an intersection is experiencing 100 angle crashes and 500 rear-end crashes per year. If you apply a countermeasure that has a CMF of 0.80 for angle crashes, then you can expect to see 80 angle crashes per year following the implementation of the countermeasure (100 x 0.80 = 80).” Table 13 on the following page lists the crash modification factors associated with each intersection improvement in the build condition.*

*Table 13*  
*Crash Modification Factors for Build Condition*

<i>Intersecting Street</i>	<i>From Existing Intersection Control to Build Improvement</i>	<i>Crash Type</i>	<i>Crash Severity</i>	<i>CMF</i>
<i>Dixie Ranch Rd/ Thompson Rd (LA 433)</i>	<i>Signalized to 2 Lane Roundabout</i>	<i>All</i>	<i>All</i>	<i>0.81</i>
		<i>All</i>	<i>Serious injury, Minor injury</i>	<i>0.29</i>
<i>Northshore Blvd</i>	<i>Signalized to 2 Lane Roundabout</i>	<i>All</i>	<i>All</i>	<i>0.81</i>
		<i>All</i>	<i>Serious injury, Minor injury</i>	<i>0.29</i>
<i>Camp Villere</i>	<i>Unsignalized to One Lane Roundabout</i>	<i>All</i>	<i>All</i>	<i>0.28</i>
		<i>All</i>	<i>Serious injury, Minor injury</i>	<i>0.12</i>
<i>Grand 16 Theater</i>	<i>Signalized to One Lane Roundabout</i>	<i>All</i>	<i>All</i>	<i>0.74</i>
		<i>All</i>	<i>Serious injury, Minor injury</i>	<i>0.45</i>
<i>Westminster Dr</i>	<i>Signalized to One Lane Roundabout</i>	<i>All</i>	<i>All</i>	<i>0.74</i>
		<i>All</i>	<i>Serious injury, Minor injury</i>	<i>0.45</i>
<i>Sunset Dr/ Carroll Rd</i>	<i>Signalized to One Lane Roundabout</i>	<i>All</i>	<i>All</i>	<i>0.74</i>
		<i>All</i>	<i>Serious injury, Minor injury</i>	<i>0.45</i>
<i>Maris Stella/ Clinic Dwy</i>	<i>Signalized to One Lane Roundabout</i>	<i>All</i>	<i>All</i>	<i>0.74</i>
		<i>All</i>	<i>Serious injury, Minor injury</i>	<i>0.45</i>
<i>Carnation St</i>	<i>Unsignalized to 2 Lane Roundabout</i>	<i>All</i>	<i>All</i>	<i>0.75</i>
		<i>All</i>	<i>Fatal, Serious injury, Minor injury</i>	<i>0.65</i>

*Note: The lower the CMF, the more crash reductions can be expected. A CMF score lower than 1 predicts a reduction in the number of crashes with the suggested roadway improvement. A CMF score higher than 1 would predict an increase in crashes. A CMF of 1 would predict no change in the number of crashes.*

*All of the crash modification factors listed in Table 13 for the roundabout countermeasures are less than one (1). Therefore, it can reasonably be expected that the build alternative will decrease the number of crashes that are currently occurring at these locations. The build alternative for the intersection of US 190 and US 11 (Front Street) is the same layout as the no build alternative. As explained above, crash modification factors are typically used for intersection conversions, therefore US 190 at US 11 (Front Street) was excluded from Table 13. The build alternative for the intersection of US 190 and Northside Plaza includes widening US 190 from a two-lane section to a four-lane section. There are no crash modification factors available for this type of roadway improvement, therefore this intersection was also excluded from Table 13.*

# **Appendix 1 to Stage 0 Report Documentation of Traffic Analysis (On CD in Rear Folder of Report)**



## Stage 0 Feasibility Study

US 190 (LA 433 TO US 11) Interim Capacity / Widening Improvements –  
ST Tammany Parish

Chapter 2, Environmental Checklist

**Stage 0 Feasibility Study**  
**US 190 (LA 433 TO US 11) Interim Capacity / Widening Improvements – St. Tammany Parish**

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Route US 190 / Gause Boulevard West Parish: St Tammany

C.S. 013-12 Begin Log mile 14.63 End Log mile 21.22

**ADJACENT LAND USE:** Commercial, residential, industrial, and public

Exhibit 2-1 shows the area of Study for the Environmental Analysis. The map also shows proximity census tracts. In addition to the desktop screening utilizing published data sources, Burk-Kleinpeter, Inc. staff conducted a limited filed screening of the corridor at which time potential affects to resources were noted.

**Any property owned by a Native American Tribe? (Y or N or Unknown) If so, which Tribe?**

**NO.** *There are no Native American Tribal properties located within the project area boundaries or adjacent to the roadway.*

Sources checked: May 2013- St Tammany Parish GIS, Windshield Survey

**Any property enrolled into the Wetland Reserve Program? (Y or N or Unknown) If so, give the location.** *No. LADOTD previously conducted a Stage 0 Study (2010) considering the requirements for widening US 190 in St. Tammany Parish from LA 1089 to US 11. Documentation within that study confirmed that there were no Wetlands Reserve Properties located within St. Tammany Parish.*

Sources checked: Stage 0 Study, Widen US 190 from LA 1089 to US 1, St. Tammany Parish, Louisiana (2010) State Project No. 700-52-0191

June 2013; <http://www.fws.gov/wetlands/Wetlands-Mapper.html>

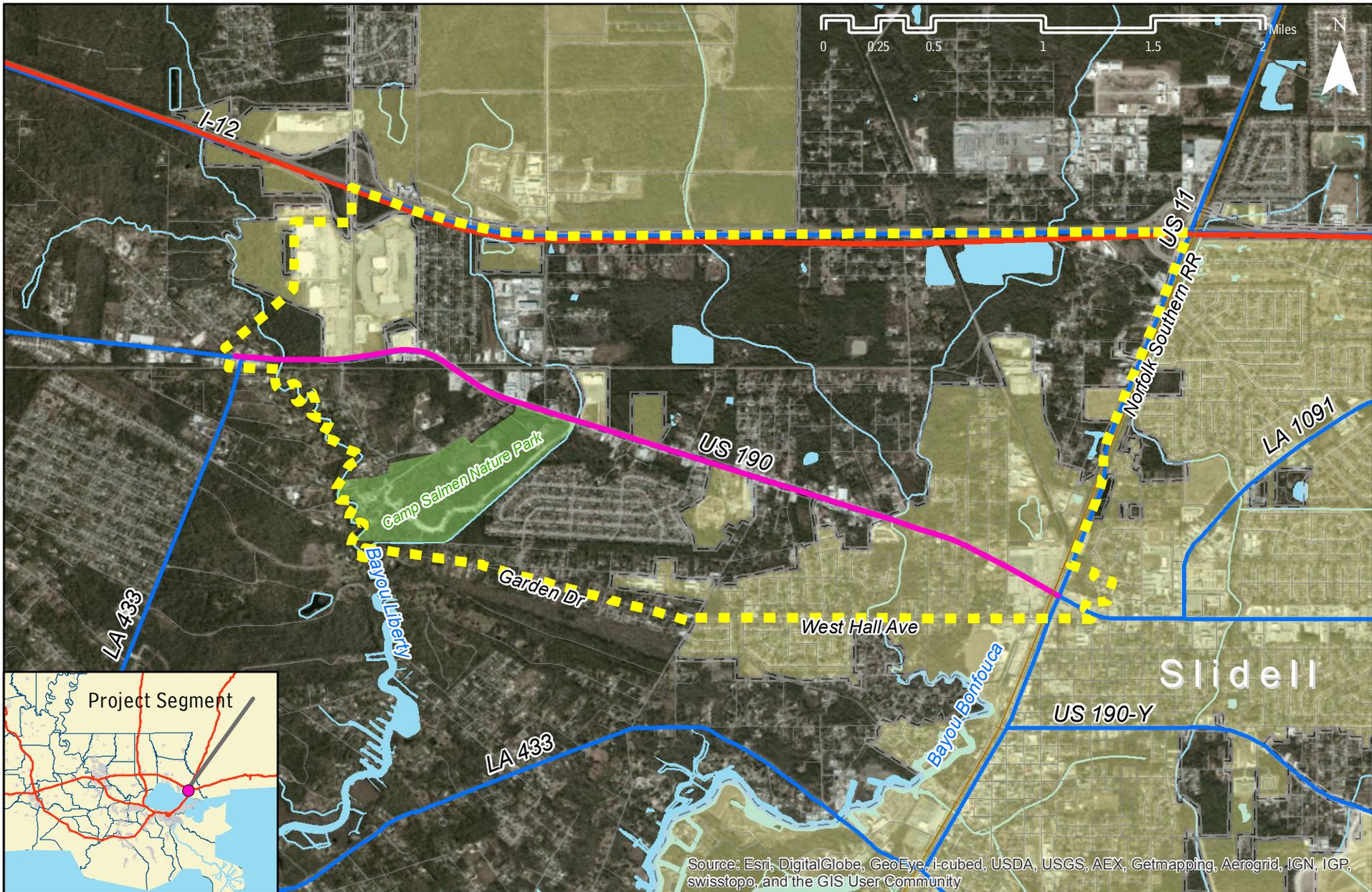
**Are there any other known wetlands in the area? (Y or N) If so, give the location.**

**YES.** *A review of the USF&WS National Wetlands Inventory (NWI) Wetlands Mapper revealed a variety of wetland types in the project area, totaling 141.1 acres. The table below summarizes these findings by wetlands type. Spatial analysis of the Wetlands Mapper tool revealed only two wetland areas within 200 feet of the project roadway - a Freshwater Emergent Wetland of 2.6 acres located 150 feet south of US 190 near the intersection with Maris Stella St and Bayou Liberty's 1.2 acres of Riverine Wetland near the western edge of the project area. Neither of these sites will be affected by the project. NWI wetlands are shown on Exhibit 2-2.*

Table 2-1  
NWI Wetlands

Wetland Type	Acres
Freshwater Emergent Wetland	2.63
Freshwater Forested/ Shrub Wetland	43.9
Freshwater Pond	34.7
Lake	45.4
Riverine	14.5
Total	141.1

Sources checked: June 2013; <http://www.fws.gov/wetlands/Wetlands-Mapper.html>



**Legend**

- Study Area
- Slidell City Limits
- Project Segment

**US 190 (LA 433 to US 11)**  
**Interim Capacity/ Widening Improvements**  
**Stage 0 Feasibility Study**

  
 RPC Project LA 433 - SPN H.004876

*Exhibit 2-1*



**Legend**

- Study Area
- Project Segment

**Wetland Types**

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine

**US 190 (LA 433 to US 11)  
Interim Capacity/ Widening Improvements  
Stage 0 Feasibility Study**

**Exhibit 2-2  
Environmental Checklist  
NWI Wetlands Map**

**Stage 0 Feasibility Study**  
**US 190 (LA 433 TO US 11) Interim Capacity / Widening Improvements – St. Tammany Parish**

**COMMUNITY ELEMENTS:** Is the project impacting or adjacent to any (if the answer is yes, list names and locations): *Exhibit 2-3 provides a map of community elements.*

**1. (Y or N) Cemeteries – YES**

Facility Name	Address	Adjacent to corridor	Potential Impacts	Within project area
Forest Lawn Cemetery	1751 Gause Blvd West	Yes	None	Yes
Parker Cemetery	25234 Camp Salmen Rd	No	None	Yes

Sources checked: May 2013- St Tammany Parish GIS, Windshield survey, and USGS GNIS Database; <http://geonames.usgs.gov/pls/gnispublic/f?p=132:1:1363344133482430>

**2. (Y or N) Churches – YES**

Facility Name	Address	Adjacent to corridor	Potential Impacts	Within project area
Peace Evangeline Church	1320 Gause Blvd West	Yes	None	Yes
New Life Ministries	US 190 @ Edgewood Dr	Yes	None	Yes
Lighthouse Baptist Church	60010 Badon Rd	No	None	Yes
Community Baptist Church	60059 Hwy 11	No	None	Yes
Pentecostal Baptist Church	36138 Shady Lane	No	None	Yes
Macedonia Baptist Church	60183 Bryan Rd	No	None	Yes
Good Shepard Lutheran Church	35386 Home Estate Dr	No	None	Yes

Sources checked: May 2013- St Tammany Parish GIS, Windshield survey, and USGS GNIS Database; <http://geonames.usgs.gov/pls/gnispublic/f?p=132:1:1363344133482430>

**3. (Y or N) Schools – NO.**

Facility Name	Type	Address	Adjacent to corridor	Within project area
Honeycomb School Day Care	private preschool	700 Maris Stella St	No	Yes
Children's College	private preschool	967 Carnation St	No	Yes
Noah's Ark Child Care	private preschool	1541 Saint Ann Pl	No	Yes
Just Kids Day Care	private preschool	1413 Saint Ann Pl	No	Yes
Bayou Woods	public elementary school	35614 Liberty Dr	No	Yes
Carolyn Park Middle School	public middle school	35708 Liberty Dr	No	Yes

Sources checked: May 2013- St Tammany Parish GIS, Windshield survey, and USGS GNIS Database; <http://geonames.usgs.gov/pls/gnispublic/f?p=132:1:1363344133482430>



US 190 (LA 433 to US 11)  
 Interim Capacity/ Widening Improvements  
 Stage 0 Feasibility Study

Exhibit 2-3  
 Environmental Checklist  
 Community Facilities

**4. (Y or N) Public Facilities (i.e., fire station, library, etc.) – YES.**

Facility Name	Address	Adjacent to corridor	Potential Impacts	Within project area
US Post Office, West Slidell Branch	1897 Gause Blvd W	Yes	None	Yes
St Tammany Parish Fire District 1, Station 2	15665 W Hall Ave	No	None	Yes
Slidell Chamber of Commerce	118 W Hall Ave	No	None	Yes

Sources checked: May 2013- St Tammany Parish GIS, Windshield survey, and USGS GNIS Database; <http://geonames.usgs.gov/pls/gnispublic/f?p=132:1:1363344133482430>

**5. (Y or N) Community water well/supply – YES.**

There are 13 water wells located within 250 feet of the project area, which have a range of users including domestic, industrial, commercial public supply, environmental recovery, and monitoring.

**Water Wells within 250 feet of Project Segment**

Water Well #	Owners Name	Well Depth	Use Description	Well Status	Longitude	Latitude
103-15676Z	MONTES BLDGS	310	commercial public supply	Active	-89.83139	30.30194
103-5012Z	BROOM, JOHN C	1932	domestic	Active	-89.80333	30.29583
103-9359Z	STAR ENTERPRISE	12	environmental recovery	Active	-89.78139	30.28667
103-9	AMERICAN CREOSO	885	industrial	Active	-89.78083	30.28639
103-6464Z	CHEVRON	17	monitor	Active	-89.78028	30.28639
103-6129Z	THOMPSON RD GRO	16	monitor	Active	-89.83333	30.30167
103-9357Z	STAR ENTERPRISE	14	monitor	Active	-89.78139	30.28667
103-9358Z	STAR ENTERPRISE	17	monitor	Active	-89.78139	30.28667
103-6130Z	THOMPSON RD GRO	16	monitor	Active	-89.83333	30.30167
103-6462Z	CHEVRON	17	monitor	Active	-89.78028	30.28639
103-6128Z	THOMPSON RD GRO	16	monitor	Active	-89.83333	30.30167
103-9352Z	STAR ENTERPRISE	15	monitor	Active	-89.78139	30.28667

Water wells obtained through Louisiana Dept of Natural Resources, SONRIS Interactive Maps Online (<http://sonris-www.dnr.state.la.us>).

The well sites have also been incorporated into the project GIS database.

**SECTION 4(F) ISSUE: Is the project impacting or adjacent to any (if the answer is yes, list names and locations):**

**1. (Y or N) Public recreation areas – YES.**

Slidell/ Carollo Trailhead of the Tammany Trace- 2289 Hwy. 190. This public facility provides restrooms, a small playground and other amenities to bicyclists using the Tammany Trace, meanwhile it serves as a formal carpool Park and Ride lot for St Tammany Parish. This facility is adjacent to the Tammany Trace and 180 feet east of the intersection of US 190 and LA 433. Alternatives under consideration do not affect the property, but it is adjacent to the project corridor.

Tammany Trace- Camp Salmen Extension- parallel to southern edge of US 190 into Slidell, LA. The Tammany Trace recreation facility current runs from Covington, LA eastward and ends at Bayou Liberty near Neslo Rd. St Tammany Parish in conjunction with the City of Slidell are currently designing an extension of this facility which will be located in close proximity to this US 190 Improvement project. The Tammany Trace extension right-of-way is 200 feet wide and near the US 190/ Northshore Blvd intersection improvements. A very small area of the Tammany Trace ROW is impacted by the construction of the roundabout intersection. The impact does not affect trail facilities or the trail usage.

Camp Salmen Nature Park- 35122 Parish Parkway Slidell, LA 70460. This former Boy Scout camp along Bayou Liberty, since 2001 been utilized by St Tammany Parish as a recreation, education, and historic site. Access to Camp Salmen is obtained from US 190, but the public buildings are located approximately ¾ miles southwest with various trails and greenspace between yet to be developed. Alternatives under consideration do not affect this recreational area.

Sources checked: May 2013- St Tammany Parish GIS, Windshield survey, and USGS GNIS Database; <http://geonames.usgs.gov/pls/gnispublic/f?p=132:1:1363344133482430;> [http://www.campsalmennaturepark.org/;](http://www.campsalmennaturepark.org/) <http://www.tammanytrace.org/index.shtml>  
St Tammany Parish Engineering Department

2. **(Y or N) Public parks – NO.** There are no public parks in the project area besides those public recreation areas listed in the above.
3. **(Y or N) Wildlife Refuges – NO.** According to the Louisiana Department of Wildlife and Fisheries, there are no wildlife refuges within the project area or adjacent to the project corridor.

Sources checked: May 2013- LWF <http://www.wlf.louisiana.gov/wma?tid=263;> <http://www.wlf.louisiana.gov/refuges;> <http://www.wlf.louisiana.gov/refuge/st-tammany-wildlife-refuge;> <http://www.fws.gov/refuges/refugeLocatorMaps/Louisiana.html>.

4. **(Y or N) Historic Sites – YES.** One historic site, the Camp Salmen House, is located within the project area, but it is not adjacent to the project alternatives nor will it be affected by any of the alternatives. The Camp Salmen House, 35122 Camp Salmen Rd, is listed on the National Register of Historic Properties. It has a local level of significance as a creole cottage.

Sources checked: June 2013- National Register of Historic Places - <http://www.nationalregisterofhistoricplaces.com/la/St.+Tammany/state.html>;  
Louisiana Office of Cultural Development, Division of Historic Preservation <http://www.crt.state.la.us/parks/iparkmap.aspx>.

**Is the project impacting, or adjacent to, a property listed on the National Register of Historic Places? (Y or N) Is the project within a historic district or a national landmark district? (Y or N) If the answer is yes to either question, list names and locations below:**

**NO.** As mentioned above, the Camp Salmen House is the only historic property and it is not impacted by or adjacent to the project. Additionally, the project is not adjacent to or impacting any historic districts or national landmark districts.

**Do you know of any threatened or endangered species in the area? (Y or N) If so, list species and location.**

**YES.** According to the US Fish and Wildlife Service, there are 11 animal species which are either endangered, threatened, in recovery, or candidates for endangerment in St Tammany Parish. A listing of Threatened and Endangered Species know to inhabit St. Tammany St Tammany Parish Endangered Species is shown on the following table. Additional ROW acquired within this project is located within a developed corridor and no

impacts to T&E species are anticipated as a result of the project. The single exception may be the Gulf Sturgeon. The existing bridge over Bayou Bonfouca will be widened as part of the project, and consultation with USF&WS service may be required in association with the bridge widening.

**Table 2-2**

**St Tammany Parish - Threatened and Endangered Species  
 US Fish and Wildlife Service**

<b>Group</b>	<b>Name</b>	<b>Status</b>
Birds	Brown pelican ( <i>Pelecanus occidentalis</i> )	Recovery
Birds	Red-cockaded woodpecker ( <i>Picoides borealis</i> )	Endangered
Birds	Sprague's pipit ( <i>Anthus spragueii</i> )	Candidate
Clams	Alabama (=inflated) heelsplitter ( <i>Potamilus inflatus</i> )	Threatened
Ferns and Allies	Louisiana quillwort ( <i>Isoetes louisianensis</i> )	Endangered
Fishes	Gulf sturgeon ( <i>Acipenser oxyrinchus desotoi</i> )	Threatened
Mammals	West Indian Manatee ( <i>Trichechus manatus</i> )	Endangered
Mammals	West Indian Manatee ( <i>Trichechus manatus</i> )	Endangered
Mammals	Louisiana black bear ( <i>Ursus americanus luteolus</i> )	Threatened
Reptiles	Ringed map turtle ( <i>Graptemys oculifera</i> )	Threatened
Reptiles	Gopher tortoise ( <i>Gopherus polyphemus</i> )	Threatened

Sources checked: US Fish and Wildlife Service:  
[http://ecos.fws.gov/tess\\_public/countySearch!speciesByCountyReport.action?fips=22103](http://ecos.fws.gov/tess_public/countySearch!speciesByCountyReport.action?fips=22103)

**Does the project impact or adjacent to a stream protected by the Louisiana Scenic Rivers Act? (Y or N) If yes, name the stream.**

**YES.** The road segment of US 190 from LA 433 to US 11 crosses over Bayou Liberty, an identified natural stream under the Louisiana Scenic River Act. However, no construction is proposed in close proximity to the scenic stream.

Sources checked: Louisiana law: <http://www.legis.state.la.us/lss/lss.asp?doc=104995> and LA Dept of Wildlife and Fisheries <http://www.wlf.louisiana.gov/louisiana-natural-and-scenic-rivers-descriptions-and-map>

**Are there any Significant Trees as defined by EDSM I.1.1.21 within proposed ROW? (Y or N) If so, where?**

For the purposes of this policy, a significant tree is a Live Oak, Red Oak, White Oak, Magnolia or Cypress that is considered aesthetically important, 18" or greater in diameter at breast height (4' to 6') above the ground), and having a form that separates it from the surrounding vegetation or is considered historic. A historic tree that stands at a place where an event of historic significance occurred that had a local, regional, or national importance. A tree may also be considered historic if it has taken on a legendary stature to the community; mentioned in literature or documents of historic value; considered unusual due to size, age; or has landmark status. Significant trees must be in good health and not in a declining condition.

On the site of the Camp Salmen Nature Park there are several significant trees. Additionally, the areas around Bayou Liberty and Bayou Bonfouca have several significant trees. However, there do not appear to be any significant trees adjacent to the project segment.

Sources checked: DOTD Standards  
 Neel-Schaffer, Inc. / Burk Kleinpeter, Inc.  
 Stage 0 Environmental Checklist

[http://webmail.dotd.louisiana.gov/ppmemos.nsf/0/152FAD712D9C560D86256F1D004EF436/\\$file/EDSM.htm](http://webmail.dotd.louisiana.gov/ppmemos.nsf/0/152FAD712D9C560D86256F1D004EF436/$file/EDSM.htm)

LA Forestry Association:

<http://www.laforestry.com/site/ForestFacts/ChampionTreesinLouisiana.aspx>

LA Purchase Cypress Legacy Inventory:

[http://www.lapurchasecypresslegacy.net/pdf/inventory\\_lpcl.pdf](http://www.lapurchasecypresslegacy.net/pdf/inventory_lpcl.pdf)

**What year was the existing bridge built?**

*The US 190 bridge crossing over Bayou Liberty was constructed in 1933. According to the National Bridge Inventory Database, this 150 ft long, 2-lane, concrete bridge is not eligible for listing in the National Register of Historic Places. The US 190 bridge crossing over Bayou Bonfouca was also constructed in 1933. According to the National Bridge Inventory Database, this 180 ft long, 2-lane, concrete bridge is also not eligible for listing in the National Register of Historic Places.*

Sources checked: National Bridge Inventory Database: <http://nationalbridges.com/>

**Are any waterways impacted by the project considered navigable? (Y or N) If unknown, state so, list the waterways:**

**NO.** *There are no known navigable waterways potentially impacted by the proposed project.*

**HAZARDOUS MATERIALS:** Have you checked the following DEQ and EPA databases for potential problems? (If the answer is yes, list names and locations.)

**1. (Y or N) Leaking Underground Storage Tanks –**

**NO.** *A search of the Louisiana Dept of Environmental Quality maintained list of UST facilities that are prohibited from receiving deliveries of regulated substances revealed that there are no identified Leaking Underground Storage Tanks (LUSTs) located within the project area.*

Sources checked: May 2013. <http://www.epa-echo.gov/echo/#>

**2. (Y or N) CERCLIS –**

**NO.** *A search of the US Environmental Protection Agency maintained database of Superfund site locations and details of mitigation status revealed that there are no currently identified Superfund sites located within the project area.*

Sources checked: May 2013. <http://www.epa.gov/superfund/sites/cursites/>

**3. (Y or N) ERNS –**

ERNS is a database no longer maintained by EPA.

Sources checked: June 2013.

**4. (Y or N) Enforcement and Compliance History –**

**YES.** *A search of the US Environmental Protection maintained Enforcement and Compliance History Online revealed that there are several recently reported environmental incidents within the project area. The table below provides locations and general information, while the full ECHO report is provided in Attachment 1. Please note that the tables only include active violators.*

**Stage 0 Feasibility Study**  
**US 190 (LA 433 TO US 11) Interim Capacity / Widening Improvements – St. Tammany Parish**

<i>Business Name</i>	<i>Address</i>	<i>Type</i>	<i>Adjacent to corridor</i>	<i>Within project area</i>
<i>Slidell Seafood West, LLC</i>	<i>1001 Gause Blvd W</i>	<i>Minor Active</i>	<i>Yes</i>	<i>Yes</i>
<i>Western Slidell LLC</i>	<i>250 Strawberry Rd</i>	<i>Minor Active</i>	<i>No</i>	<i>Yes</i>
<i>Coco's Auto &amp; Truck Repair</i>	<i>1613 Gause Blvd W</i>	<i>Minor Active</i>	<i>Yes</i>	<i>Yes</i>
<i>Jolly Investments, LLC</i>	<i>59388 Gause Blvd W</i>	<i>Minor Active</i>	<i>Yes</i>	<i>Yes</i>
<i>Piney Ridge Trailer Park</i>	<i>510 Sunset Dr</i>	<i>Minor Active</i>	<i>No</i>	<i>Yes</i>
<i>Hanna Brother Extreme Motion Picture Catering</i>	<i>435 South St</i>	<i>Minor Active</i>	<i>Yes</i>	<i>Yes</i>
<i>Hanna Brother Extreme Motion Picture Catering</i>	<i>435 South St</i>	<i>Minor Active</i>	<i>Yes</i>	<i>Yes</i>
<i>Sparrows Offshore LLC</i>	<i>60143 Camp Villere Rd</i>	<i>Minor Active</i>	<i>No</i>	<i>Yes</i>
<i>Sunbelt Innovative Plastics</i>	<i>60054 Camp Villere Rd</i>	<i>Minor Active</i>	<i>No</i>	<i>Yes</i>
<i>Diversified Oil Field Services Inc.</i>	<i>60185 Camp Villere Rd</i>	<i>Minor Active</i>	<i>No</i>	<i>Yes</i>
<i>Jubilee Express Store #4815</i>	<i>60328 Powell Dr</i>	<i>Minor Active</i>	<i>No</i>	<i>Yes</i>
<i>Tymeless Flooring, Inc</i>	<i>1345 Gause Blvd W</i>	<i>NC-RNC Violations Only</i>	<i>Yes</i>	<i>Yes</i>
<i>Thompson Packers Inc.</i>	<i>550 Carnation</i>	<i>Non-Major, Violations</i>	<i>No</i>	<i>Yes</i>

Sources checked: June 2013. <http://www.epa-echo.gov/echo/#>

**Underground Storage Tanks (UST): Are there any Gasoline Stations or other facilities that may have UST on or adjacent to the project? (Y or N) If so, give the name and location:**

*According to the latest Louisiana Dept of Environmental Quality maintained list of USTs (last updated on Sept 20, 2010), there are four USTs adjacent to the project segment.*

<i>Facility Name</i>	<i>Address</i>	<i>Master ID Number</i>
<i>Speedy G's #1</i>	<i>1703 Gause Blvd W</i>	<i>70929</i>
<i>Circle K #1689</i>	<i>1706 Hwy 190 W</i>	<i>75145</i>
<i>Check In &amp; Out Deli</i>	<i>1797 Hwy 190 W</i>	<i>75963</i>
<i>Value Zone</i>	<i>1801 Gause Blvd W</i>	<i>91845</i>

Sources checked: June 2013. LDEQ List of Active USTs  
<http://www.deq.louisiana.gov/portal/Portals/0/UndergroundStorageTank/Active%20UST%20Facilities%209%202%202010.pdf>

**Any chemical plants, refineries or landfills adjacent to the project? (Y or N)**

**NO.** *There are no active chemical plants, refineries, or landfills adjacent to the project. However, on the southside of US 190 near the intersection of Cherry St, a commercial property is currently up for sale, which was formerly used as a dump/ landfill. Searches of LDEQ and EPA databases have not recovered any history of environmental accidents or spills.*

Sources checked: May 2013. Review of aerial photography; Windshield survey;  
<http://www.deq.louisiana.gov/portal/tabid/2604/Default.aspx>

**Any large manufacturing facilities adjacent to the project? (Y or N)**

**NO.** *There are no large manufacturing facilities adjacent to the project area. However, several manufacturing facilities have been identified within the project area boundaries. As facilities generate industrial wastes and have unique freight transportation requirements, these facilities have been noted in the report. They are generally located along Camp Villere Rd, Carnation St, and Ben Thomas Rd.*

*Sources checked: May 2013. Review of aerial photography; Windshield survey;  
<http://www.deq.louisiana.gov/portal/tabid/2604/Default.aspx>*

**Dry Cleaners? (Y or N) If yes to any, give names and locations:**

*There are three dry cleaners adjacent to the project segment:*

*Corporate Cleaners- 106 Gause Blvd W. Located within “The Crossing” Shopping Center near the junction of US 11.*

*Sunshine Cleaners- 2165 Gause Blvd W. Located within a strip mall on the southside of US 190 near intersection with Northshore Blvd.*

*Laundry Mat- Westminster St @ US 190. Located within a strip shopping center on the southside of US 190 at Westminster St.*

*Sources checked: May 2013. Review of aerial photography; Windshield survey;  
<http://www.deq.louisiana.gov/portal/tabid/2604/Default.aspx>*

**Oil/Gas wells: Have you checked DNR database for registered oil and gas wells? (Y or N) List the type and location of wells being impacted by the project.**

**NO.** *The Louisiana Department of Natural Resources SONRIS database was reviewed and there were no oil/gas wells within the project area boundaries.*

*Sources checked: June 2013. <http://sonris-www.dnr.state.la.us>*

**Are there any possible residential or commercial relocations/displacements? (Y or N) How many?**

- *Linear Real Estate Impacts- Intersection improvements include a new 7' wide sidewalk on the northside of US 190 extending from Neslo Rd westward until US 11 in Slidell. Meanwhile, the Tammany Trace Extension will occupy a portion of the southside of the US 190 ROW. This new 10' wide multi-use path will extend approximately 1/2 mile from the current terminus near Neslo Rd until Williams Rd. These two linear pedestrian and bicycle improvements will require frontage from residential, commercial, and undeveloped properties.*
- *Site Specific Real Estate Impacts- See following table for impacts associated with proposed improved at intersections.*

**Stage 0 Feasibility Study**  
**US 190 (LA 433 TO US 11) Interim Capacity / Widening Improvements – St. Tammany Parish**

**Table 2-3**

<b>Site Specific Real Estate Impacts</b>					
<b>Layout Sheet #</b>	<b>Intersection</b>	<b>Approximate Address</b>	<b>Description</b>	<b>Possible Building Relocation?</b>	<b>Real Estate Type</b>
1	LA 433	Top Fuel Gas Station @ Southeast quadrant	Loss of Driveway access on US 190; Driveway relocation on LA 433	Y	Commercial
		Citgo Gas Station @ Southwest quadrant	Driveway relocation on LA 433 and US190	Y	Commercial
		Unoccupied structure @ Northeast quadrant	Building relocation	Y	Commercial
		Eastside of Dixie Ranch Rd near US 190	Dixie Ranch Rd to be rerouted through this vacant property		Undeveloped
2	Northshore Blvd	Chevron @ Northwest quadrant	Driveway relocation		Commercial
		McDonalds @ Northeast quadrant	Driveway relocation		Commercial
3	Camp Villere Rd	Northwestern quadrant	Camp Villere to be rerouted through this property		Undeveloped Land
		Southwestern quadrant	New roundabout extends onto this property adjacent to existing roadway		Undeveloped Land
4	Grand Theatre Access	Southern road edge	New roundabout extends onto this property adjacent to existing roadway		Undeveloped Land
		Southside of US 190 just east of intersection	Driveway relocation		Commercial
5	Westminster Dr	Northern road edge	New roundabout extends onto this property adjacent to existing roadway		Undeveloped Land
		Westminster Drive	Neighborhood entrance sign relocation	Y	Residential
		Southern edge	Various driveway relocations		Commercial
	Sunset Dr	Northeastern quadrant	Property relocation	Y	Residential
			Vacant property relocation	Y	Commercial
		Southeastern quadrant	TV Repair Shop property relocation	Y	Commercial
		Premier Motorsport property relocation	Y	Commercial	
		Southwestern quadrant	Driveway relocation	Y	Commercial
6	Maris Stella St	Southeastern quadrant	Commercial property loses access		Commercial
		Maris Stella St	Neighborhood entrance sign relocation	Y	Residential
		Northern road edge	Doctor office relocation	Y	Commercial
			Law office relocation	Y	Commercial
		Northwestern quadrant	Driveway relocation		Commercial
7	Carnation St	Take 5 Oil Change @Northeastern quadrant	Property relocation	Y	Commercial
7	Carnation St. to US 11	Adjacent Shopping Centers	There is a single signalized intersection providing access to commercial areas both north and south of US 190. The use of the single intersection may create hazards as drivers cross through parking areas within the shopping centers to reach the signalized intersection.	N	Commercial

Source: BKL / NSI

**Do you know of any sensitive community or cultural issues related to the project? (Y or N) If so, explain**

- There are no sensitive community or cultural issues related to this project.

**Is the project area population minority or low income? (Y or N)**

*As the table below summarizes, analysis of the 2011 5-year American Community Survey reveals that the project area's minority population does not represent a large portion of the overall population. Meanwhile, low-income populations are certainly living in the project area, but it is not possible to identify the precise location of these households as the smallest reported geographic unit, the Census Tract, is too large to pinpoint the location of this at-risk population.*

*US Census Project Area Demographics*

Total Population	% minority	% low income
6,936	41.52%	25.99%

Sources checked: June 2013. <http://www.census.gov>

**What type of detour/closures could be used on the job?**

- Interstate 12 could be used as a detour around improvements along the entire length of the corridor. Depending on the implementation/ construction sequencing for intersection or roadway improvements, a variety of detours/ closures could be used. These include LA 433, Carroll Road, and West Hall Ave.
- Construction sequencing, traffic maintenance criteria, and plans would be developed as part of the final design to coordinate construction activities and ensure continued access between all affected roadways. Needs for special considerations would be identified and addressed during final design.

**Did you notice anything of environmental concern during your site/windshield survey of the area? If so, explain below.**

*Site surveys identified a current commercial property which was formerly a dump / landfill on the south side of US 190 near the intersection of Cherry St. This was identified above and was not reported in any environmental reporting database.*

Photo Documentation of the project corridor is presented in Attachment 2.

**POINT OF CONTACT**

*Roadway Design Engineer  
Daniel Thornhill, P.E.  
Neel-Schaffer Inc.  
(225) 925-0235*

*Traffic Engineering  
Nick Ferlito, P.E., P.T.O.E.  
Neel-Schaffer Inc.  
(225) 925-0235*

*Stage 0 Documents  
Barry Brupbacher  
Neel-Schaffer Inc.  
(985) 674-9820*

# **Attachment 1**

## **Enforcement and Compliance History Online Report**

OBJECTID	Name	Address	EventType	LastInspection
1	ROMAR WAREHOUSE	59013 CARROLL RD, SLIDELL, LA 70469	MINOR INACTIVE	No Inspection
2	ALFRED A. SINGER WAREHOUSE	59125 CARROLL RD, SLIDELL, LA 70460	MINOR INACTIVE	No Inspection
3	GUARDIAN ANGELS LEARNING CENTER	35647 LIBERTY DR., SLIDELL, LA 70460	MINOR INACTIVE	No Inspection
4	SUPERIOR CAR CARE	360 HWY 190 W, SLIDELL, LA 70460	OTHERS, NO VIOLATIONS	No Inspection
5	PENTECOST MISSIONARY BAPTIST CHURCH OF SLIDELL	36138 SHADY LANE, SLIDELL, LA 70469	MINOR INACTIVE	No Inspection
6	PENTECOST MISSIONARY BAPTIST CHURCH OF SLIDELL	36138 SHADY LANE, SLIDELL, LA 70469	MINOR INACTIVE	No Inspection
7	FACTORY DIRECT FURNITURE	1590 GAUSE BLVD W, SLIDELL, LA 70460	MINOR INACTIVE	No Inspection
8	GEM AUTO CLINIC	600 HWY 190 W, SLIDELL, LA 70460	OTHERS, NO VIOLATIONS	No Inspection
9	CUTRITE INC	1003 HWY 190 W, SLIDELL, LA 70460	OTHERS, NO VIOLATIONS	No Inspection
10	ALLIANCE LASER	220 STRAWBERRY ST, SLIDELL, LA 70460	OTHERS, NO VIOLATIONS	557 days since last insp
11	FOURPLEX PROPERTY	59244 PREARCHERS OAK LN, SLIDELL, LA 70460	MINOR INACTIVE	No Inspection
12	SLIDELL SEAFOOD WEST, LLC	1001 GAUSE BLVD W, SLIDELL, LA 70460		No Inspection
13	SLIDELL SEAFOOD WEST, LLC	1001 GAUSE BLVD W, SLIDELL, LA 70460	MINOR ACTIVE	170 days since last insp
14	WESTERN SLIDELL LLC	250 STRAWBERRY RD, SLIDELL, LA 70459	MINOR ACTIVE	1247 days since last insp
15	WESTERN SLIDELL LLC	250 STRAWBERRY RD, SLIDELL, LA 70459		No Inspection
16	CUT-RITE'NORTHSHORE DRIVELINE	1003 GAUSE BLVD WEST, SLIDELL, LA 70459	MINOR INACTIVE	No Inspection
17	CUT-RITE'NORTHSHORE DRIVELINE	1003 GAUSE BLVD WEST, SLIDELL, LA 70459		No Inspection
18	JANICE & LEONARD BROWN COMMERCIAL PROPERTY	1015 GAUSE BLVD WEST, SLIDELL, LA 70460	MINOR INACTIVE	No Inspection
19	HIGHWAY 190 WEST	1385 HWY 190 WEST, SLIDELL, LA 70460	MINOR INACTIVE	1156 days since last insp
20	TYMELESS FLOORING, INC	1345 W. GAUSE BLVD., SLIDELL, LA 70460	NC-RNC VIOLATIONS ONLY	3354 days since last insp
21	PEACE EVANGELICAL LUTHERAN CHURCH	SLIDELL, LA 70460	MINOR INACTIVE	1123 days since last insp
22	OFFICE WAREHOUSE	1340 GAUSE BLVD W, SLIDELL, LA 70460	MINOR INACTIVE	No Inspection
23	RANDALL A EVANS DDS LLC	1350 GAUSE BLVD WEST, SLIDELL, LA 70460	MINOR INACTIVE	No Inspection
24	RANDALL A EVANS DDS LLC	1350 GAUSE BLVD WEST, SLIDELL, LA 70460		1123 days since last insp
25	DONS SLIDELL AUTO CENTER	1410 HWY 190 W, SLIDELL, LA 70460	OTHERS, NO VIOLATIONS	No Inspection
26	COCO'S AUTO & TRUCK REPAIR	1613 W. GAUSE BLVD., SLIDELL, LA 70469	MINOR ACTIVE	No Inspection
27	SPEEDY G'S #1	1703 GAUSE BLVD, WEST, SLIDELL, LA 70460		No Inspection
28	SPEEDY G'S #1	1703 GAUSE BLVD, WEST, SLIDELL, LA 70460		No Inspection
29	KIK (LOUISIANA) INC	646 CARNATION RD, SLIDELL, LA 70460	NON-MAJOR, NO VIOLATIONS RECORDED	5121 days since last insp
30	KIK (LOUISIANA) INC	646 CARNATION RD, SLIDELL, LA 70460		No Inspection
31	KIK (LOUISIANA) INC	646 CARNATION RD, SLIDELL, LA 70460	OTHERS, NO VIOLATIONS	4716 days since last insp
32	LOUISIANA LUMBER INC	2014 OLD COVINGTON HWY, SLIDELL, LA 70460	MINOR INACTIVE	No Inspection
33	SOUTH SEAS CHINESE RESTAURANT	1714 HWY 190 WEST, SLIDELL, LA 70460	MINOR INACTIVE, NC-RNC VIOLATIONS ONLY	2944 days since last insp
34	SOUTH SEAS CHINESE RESTAURANT	1714 HWY 190 WEST, SLIDELL, LA 70460		2944 days since last insp
35	FOREST LAWN CEMETARY	1751 GAUSE BLVD WEST, SLIDELL, LA 70469	MINOR INACTIVE	No Inspection
36	THOMPSON PACKERS INC.(22-103-6E001)	550 CARNATION, SLIDELL, LA 70460	NON-MAJOR, VIOLATIONS	1697 days since last insp
37	JOLLY INVESTMENTS, LLC	59388 HWY 190 WEST, SLIDELL, LA 70460	MINOR ACTIVE	1169 days since last insp
38	PINEY RIDGE TRAILER PARK	510 SUNSET DR, SLIDELL, LA 70460	MINOR ACTIVE	4399 days since last insp
39	GBR PROPERTIES, INC.	ADVANCE AUTO, SLIDELL, LA 70459	MINOR INACTIVE	No Inspection
40	SHOPPING CENTER FOR	FAYE WAGNER, SLIDELL, LA 70460	MINOR INACTIVE	No Inspection
41	BEAU'S AIR CONDITIONING & HEATING LLC	SLIDELL, LA 70460	MINOR INACTIVE	3174 days since last insp
42	ABC ELECTRIC	2090 GAUSE BLVD WEST, SLIDELL, LA 70460	MINOR INACTIVE	No Inspection
43	CALWES PROPERTIES, LLC	SLIDELL, LA 70460	MINOR INACTIVE	No Inspection
44	SOUTHERN PIPE	59489 CAMP VILLERE RD., SLIDELL, LA 70460	MINOR INACTIVE	No Inspection
45	SOUTHERN PIPE	59489 CAMP VILLERE RD., SLIDELL, LA 70460		No Inspection
46	HANNA BROTHER EXTREME	435 SOUTH ST., SLIDELL, LA 70460	MINOR ACTIVE	No Inspection
47	AIRGAS USA LLC	417 SOUTH STREET, SLIDELL, LA 70461	MINOR INACTIVE	No Inspection
48	M&R FILE SERVICES LLC	411 SOUTH STREET, SLIDELL, LA 70460	MINOR INACTIVE	No Inspection
49	HALL INVESTMENT LLC	PIT STOP PETROLEUM #3, SLIDELL, LA 70460	MINOR INACTIVE	3003 days since last insp
50	THE ANTEBELLUM HOUSE	430 SOUTH ST., SLIDELL, LA 70460	MINOR INACTIVE	No Inspection
51	THE ANTEBELLUM HOUSE	430 SOUTH ST., SLIDELL, LA 70460		No Inspection
52	SOUTHERN PLASTICS OF LA CORP	CAMP VILLERE RD & SOUTH ST, SLIDELL, LA 70460	OTHERS, NO VIOLATIONS	No Inspection
53	PLATFORM CRANE SERVICE, INC.	255 STONE RD, SLIDELL, LA 70459	MINOR INACTIVE, NC-RNC VIOLATIONS ONLY	No Inspection
54	PLATFORM CRANE SERVICE, INC.	255 STONE RD, SLIDELL, LA 70459		No Inspection
55	PLATFORM CRANE SERVICE, INC.	255 STONE RD, SLIDELL, LA 70459	OTHERS, NO VIOLATIONS	3950 days since last insp
56	NUFAB REBAR	250 STONE RD, SLIDELL, LA 70000	MINOR INACTIVE	No Inspection
57	EAGLE CARWASH	2167 GAUSE WEST, SLIDELL, LA 70000	MINOR INACTIVE	No Inspection
58	HANNA BROTHER EXTREME MOTION PICTURE CATERINC		MINOR ACTIVE	No Inspection
59	HYDRALIFT CABIRAN INC	60042 CABIRAN RD, SLIDELL, LA 70460	NON-MAJOR, NO VIOLATIONS RECORDED	No Inspection
60	HYDRALIFT CABIRAN INC	60042 CABIRAN RD, SLIDELL, LA 70460	LOG, NO VIOLATIONS	No Inspection
61	FERNANDEZ-ZIMMERLE, LLC	60042 CABIRAN RD, SLIDELL, LA 70460	MINOR INACTIVE	No Inspection
62	UNITED MEDICAL CARE_WALK IN	2104 GAUSE BLVD, SLIDELL, LA 70460	MINOR INACTIVE	No Inspection
63	JOHNS AUTOMOTIVE MACHINE SHOP INC	37397 BEN THOMAS RD, SLIDELL, LA 70460	MINOR INACTIVE, RESOLVED PENDING	4253 days since last insp
64	JOHNS AUTOMOTIVE MACHINE SHOP INC	37397 BEN THOMAS RD, SLIDELL, LA 70460	OTHERS, NO VIOLATIONS	No Inspection
65	SIGNLITE	37262 BEN THOMAS, SLIDELL, LA 70460	OTHERS, NO VIOLATIONS	No Inspection
66	CHARTER COMMUNICATIONS LLC	37356 BEN THOMAS RD, SLIDELL, LA 70460	MINOR INACTIVE, NC-RNC VIOLATIONS ONLY	2950 days since last insp
67	CHARTER COMMUNICATIONS LLC	37356 BEN THOMAS RD, SLIDELL, LA 70460		2950 days since last insp
68	JGILS	37159 BEN THOMAS RD, SLIDELL, LA 70000	MINOR INACTIVE	No Inspection
69	PMC SLIDELL PLANT	37210 BEN THOMAS RD, SLIDELL, LA 70000	MINOR INACTIVE	2933 days since last insp
70	PMC SLIDELL PLANT	37210 BEN THOMAS RD, SLIDELL, LA 70000	MINOR INACTIVE	No Inspection
71	SLIDELL SUPPORT FACILITY	100 STONE RD, SLIDELL, LA 70458	OTHERS, NO VIOLATIONS	No Inspection
72	AWD CORP	37210 BEN THOMAS RD, SLIDELL, LA 70460	OTHERS, NO VIOLATIONS	No Inspection
73	CLECO SLIDELL SVC CENTER	60095 CAMP VILLERE RD., SLIDELL, LA 70460	MINOR INACTIVE	No Inspection
74	SPARROWS OFFSHORE LLC	60143 CAMP VILLERE RD, SLIDELL, LA 70460	MINOR ACTIVE	114 days since last insp
75	SUNBELT INNOVATIVE PLASTICS	60054 CAMP VILLERE ROAD, SLIDELL, LA 70469	MINOR ACTIVE	1284 days since last insp
76	BAKER SALES WAREHOUSE	60207 CAMP VILLERE RD, SLIDELL, LA 70460	MINOR INACTIVE	1157 days since last insp
77	BAKER SALES WAREHOUSE	60207 CAMP VILLERE RD, SLIDELL, LA 70460	OTHERS, NO VIOLATIONS	No Inspection
78	DIVERSIFIED OIL FIELD SERVICES INC.	60185 CAMP VILLERE RD, SLIDELL, LA 70460		No Inspection
79	DIVERSIFIED OIL FIELD SERVICES INC.	60185 CAMP VILLERE RD, SLIDELL, LA 70460	MINOR ACTIVE	198 days since last insp
80	JUBILEE EXPRESS STORE #4815	60328 POWELL DRIVE, SLIDELL, LA 70458	MINOR INACTIVE	716 days since last insp
81	JUBILEE EXPRESS STORE #4815	60328 POWELL DRIVE, SLIDELL, LA 70458	MINOR ACTIVE	No Inspection
82	WALMART SUPERCENTER #2665	167 NORTHSHORE BLVD, SLIDELL, LA 70460	OTHERS, NO VIOLATIONS	No Inspection
83	JOHNSON APARTMENTS	60281 GRACE AVE, SLIDELL, LA 70458	MINOR INACTIVE	2905 days since last insp
84	SAMS CLUB #6220	181 NORTHSHORE BLVD, SLIDELL, LA 70458	OTHERS, NO VIOLATIONS	No Inspection
85	TERMINIX NORTHSHORE SVCS	35297 HOME ESTATE DR., SLIDELL, LA 70469	MINOR INACTIVE	1157 days since last insp
86	RDG PROPERTIES, LLC	SLIDELL, LA 70460	MINOR INACTIVE	No Inspection

# **Attachment 2**

## **Photo Documentation of the Project Corridor**

Potential Hazards

Sheet 1



Citgo Gas Station



Top Fuel Gas Station

Sheet 2



Chevron Gas Station

Sheet 5



Value Zone Gas Station at Westminster



Unused Gas Station at Westminster



Texaco at Sunset Dr.



Circle K at Sunset Dr.

Potential Impacts or Relocations

Sheet 1



Vacant Commercial Buildings



Citgo Gas Station



Top Fuel Gas Station

Sheet 4



Acme Refrigeration

Sheet 5



Neighborhood Sign



Residence on Sunset Dr

Sheet 5 (cont.)



The TV Shop at Sunset Dr



Premiere Motorsports at Sunset Dr



Vacant Commercial at Sunset Dr.

Sheet 6



Doctor's Office



Law Office



Former Car Wash at Maris Stella St



Neighborhood Sign at Maris Stella St

Sheet 8



Take 5 Oil Change

### Other Properties of Interest



Tammany Trace Trailhead



USPS West Slidell Post Office



Forest Lawn Cemetery

### Typical Drainage



### Typical Drainage



Drainage infrastructure at site of Carnation Roundabout

# Attachment 3

## Traffic and Safety Analysis