Route LA 408 (Hooper Road) Extension

Draft Report
Stage 1 - Environmental Assessment

East Baton Rouge and Livingston Parishes, LA
State Project No. H.005403.2
FAP No. H005403

Prepared for the:

The Louisiana Department of Transportation and Development

and

U.S. Department of Transportation - Federal Highway Administration
(Lead Federal Agency)

January 2015

Route LA 408 (Hooper Road) Extension

Draft Report
Stage 1 - Environmental Assessment

East Baton Rouge and Livingston Parishes, LA
State Project No. H.005403.2
FAP No. H005403

Prepared for the:

The Louisiana Department of Transportation and Development

and

U.S. Department of Transportation - Federal Highway Administration
(Lead Federal Agency)

Prepared by:

NY ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

in association with

Urban Systems Associates, Inc
Coastal Environments, Inc.
Bowlby and Associates, Inc.
O.R. Colan Associates, Inc.

January 2015

Summary of Mitigation, Commitments and Permits

Mitigation, Commitments and Permits for the impacts associated with the implementation of the preferred alternative for the LA 408 project include the following:

- In terms of **relocations** the LADOTD is committed to following the federal rules and regulations in providing relocation assistance for all displaced households. Under these regulations, homeowners and tenants are eligible for the fair market value for any real property purchased, payment of moving expenses, payment of closing costs on any new residence purchased, and possibly a housing differential payment (which would cover the gap between the fair market value of their current home and the cost to purchase a comparable home).

- The proposed project's **wetlands impacts** are projected to consist of 25.64 acres of jurisdictional wetlands that lie within the proposed right-of-way. Onsite mitigation of wetland impacts could include clearing and maintenance of the minimum area of right- of-way. Installing adequate cross-drains underneath the facility will facilitate maintenance of current surface water movement. Mitigation of unavoidable wetland impacts could also be achieved through a monetary contribution, as determined by the regulatory agencies, to the Louisiana Nature Conservancy that maintains several wetland mitigation areas in the Florida Parishes.

- In terms of **mitigation of construction period impacts** (noise, air quality and vibration), several mitigation steps shall be taken and proper procedures followed:
    - To minimize noise impacts, all construction equipment used in the construction phase of the project should be properly muffled and all motor panels should be shut during operation. In order to minimize the potential for impacts of construction noise on the local residents, the contractor should operate, whenever possible, between the hours of 7:00 a.m. and 6:00 p.m.
    - To minimize potential air quality impacts, particularly related to control of particulate matter, the contractor shall comply with all relevant State, Federal and local laws and regulations.
    - To minimize vibration impacts, pile driving operations should be monitored at critical structures, pavements and utilities during all pile driving operations.
    - To minimize impacts to drainage channels and excavated ponds, the following procedures should be followed:
        - Channel work should be minimized and the rerouting of stream segments should be avoided. If channel work is necessary, precautions should be taken to avoid channel degrading from head-cutting. For example, grades at the culverts and bridges should remain at their existing grade.
        - Minimize impacts to the riparian corridor, especially forested areas. For new crossings, prior cleared areas in the floodplain should be used when possible.
        - To reduce the width of impact through the floodplain/riparian area, the entire right-of-way through the riparian area of floodplain should not be cleared. Only clear what is needed for access and construction. Avoid constructing feeder roads across floodplains.
        - Minimize impacts to the creek banks (soil and vegetation). Stabilize and replant disturbed banks as soon as construction at that specific site is finished.

- Best Management Practices (BMPs) should be used to avoid and minimize water quality impacts and to minimize erosion of banks and bare soil and the siltation of streams. BMPs can be non-structural (procedural) or structural. An example of a procedural BMP is to ensure the stabilization and revegetation of bare soil as soon as possible following (or if possible, just prior to completion of) construction. Structural BMPs include use of such items as silt fencing, fiber rolls, sediment traps, check dams, and hay bales during construction
- Wetlands or forested floodplains should not be used for staging or storage area.

The applicant should thoroughly brief contractors on all permit conditions. Copies of the issued permit should be posted at the project site during construction for easy reference to avoid misunderstanding and inadvertent violations.

- A Section 401 Permit (Water Quality Certification) will be required from the Louisiana Department of Environmental Quality

- Because the project affects wetlands, a Section 404 Permit will be required from the U. S. Army Corps of Engineers, New Orleans District

- As per regulations required in 40 CFR 122, a National Pollutant Discharge Elimination System (NPDES) stormwater permit and Stormwater Pollution Prevention Plan (SWPPP)will be required.

TABLE OF CONTENTS

DESCRIPTION **PAGE NO.**

SUMMARY OF MITIGATION, COMMITMENTS AND PERMITS

LIST OF FIGURES ..... *ix*

LIST OF TABLES ..... *x*

ENVIRONMENTAL CHECKLIST ..... *xiii*

CHAPTER I – INTRODUCTION, PURPOSE AND NEED, AND REPORT ORGANIZATION

PURPOSE AND SCOPE OF THIS REPORT I-1
PROJECT HISTORY AND BACKGOUND I-2
FEASIBILITY STUDY (2000) I-2
GREEN LIGHT PROGRAM I-3
CITY OF CENTRAL LAND USE PLAN 2010 ..... I-3
2010 LIVINGSTON PARISH MASTER PLAN I-3
A VISION FOR EAST BATON ROUGE PARISH I-4
CAPITAL REGION PLANNING COMMISSION TRANSPORTATION IMPROVEMENT PLAN I-4
STAGE 0 FEASIBILITY STUDIES I-4
PRELIMINARY TOLL ROAD EVALUATION I-4
PROJECT PURPOSE AND NEED I-5
PURPOSE I-5
NEED I-5
REPORT ORGANIZATION I-6
CHAPTER I – INTRODUCTION, PURPOSE AND NEED, AND REPORT ORGANIZATION I-6
CHAPTER II –ALTERNATIVE DEVELOPMENT, REVIEW & SELECTION, AND DESCRIPTION OF ALTERNATIVES I-6
CHAPTER III– THE AFFECTED ENVIRONMENT I-7
CHAPTER IV – ENVIRONMENTAL IMPACTS OF THE CONSIDERED ALTERNATIVES AND SELECTION OF THE PREFERRED ALTERNATIVE I-7

DESCRIPTION **PAGE NO.**

CHAPTER V – THE PREFERRED ALTERNATIVE: IMPACT SUMMARY, MITIGATION MEASURES AND PERMITS I-7
CHAPTER VI – PUBLIC PARTICIPATION, AGENCY COMMENTS AND COORDINATION I-7
CHAPTER VII – REFERENCES AND APPENDIX I-8

CHAPTER II – ALTERNATIVE DEVELOPMENT, REVIEW & SELECTION AND DESCRIPTION OF ALTERNATIVES

ALTERNATIVE DEVELOPMENT II-1
STAGE 0 AND OTHER PREVIOUS WORK II-1
2000 Feasibility Study Alternatives II-1
Addition of New Alternative II-6
Analysis, Refining and Screening of Stage 0 Extension Study Alternatives II-7
Stage 0 Widening Study Alternatives II-11
REFINEMENT OF BUILD ALTERNTIVES UNDER LINE AND GRADE STUDY II-11
CHANGE IN DESIGN CRITERIA II-12
INTERSECTION DEVELOPMENT AND ANALYSIS II-12
LAYOUT OF WIDENING SEGMENT II-13
REALIGNMENT OF BRIDGE CROSSING II-13
COMBINATION OF ALIGNMENT AND INTERSECTION OPTIONS INTO BUILD ALTERNATIVES II-14
ADDITION OF SOUTHERLY ALTERNATIVE II-14
ALTERNATIVES CONSIDERED II-17
NO BUILD ALTERNATIVE II-17
Transportation Projects II-17
Tier 1 Highway Projects II-17
Tier 2 Highway Projects II-18
Tier 3 Highway Projects II-18
BUILD ALTERNATIVES II-19
Design Criteria II-19
Design Concept II-19
Common Hooper Road Widening Portion II-19
Build Alternative1 – Common Extension Portion (including Bridge) II-22
Build Alternative1-A Terminus II-23
Build Alternative1-B Terminus II-24
Build Alternative1-C Terminus II-24
Build Alternative 2 ..... II-25
Bridges II-26

DESCRIPTION **PAGE NO.**

Hooper Road Widening II-26
Alternative 1 ..... II-26
Alternative 2 ..... II-31
Drainage II-31
Utilities II-32
General II-32
Hooper Road Widening – Phase I II-32
Alternative 1-A Terminus– Phases 2 and 3 ..... II-33
Alternative 1-B Terminus– Phases 2 and 3 ..... II-34
Alternative 1-C Terminus– Phases 2 and 3 ..... II-34
Alternative 2 ..... II-35
CONCEPTUAL CONSTRUCTION COST II-36
General II-36
Main Roadway II-37
Utilities II-37
Right-of-Way Acquisition and Relocation II-37
Contingencies II-37
Summary II-38
PROJECTED OPERATIONS AND MAINTENANCE COSTS II-48
ENGINEERING DRAWINGS II-48

CHAPTER III – THE AFFECTED ENVIRONMENT

PROJECT AREA III-1
AREA OF PRIMARY IMPACT III-1
PROJECT STUDY AREA III-2
EXISTING TRANSPORTATION SYSTEM III-2
ROADWAY NETWORK IN STUDY AREA III-2
RAIL NETWORK IN STUDY AREA III-4
TRANSIT IN STUDY AREA III-4
BICYCLE AND PEDESTRIAN FACILITIES IN STUDY AREA III-4
EXISTING HUMAN ENVIRONMENT III-4
DEMOGRAPHICS III-4
Methodology III-4
Findings III-5
Population III-5
Housing III-6
Business and Economy III-8
LAND USE AND ZONING III-11
Land Use III-11

DESCRIPTION **PAGE NO.**

Zoning III-12
PUBLIC FACILITIES AND SERVICES III-12
Methodology III-12
Findings III-13
Government III-13
Police III-13
Fire Protection III-13
Public School and Arts Centers III-13
Parks and Recreational Facilities III-14
Libraries III-14
Hospitals III-14
Post Offices III-14
Churches III-14
Cemeteries III-15
HAZARDOUS AND SOLID WASTE SITES III-15
Methodology III-15
Results III-16
CULTURAL RESOURCES III-26
Archaeology III-26
Standing Structures III-27
VISUAL AND AESTHETIC CONDITIONS III-29
FLOOD PLAINS / FLOOD ZONES III-29
EXISTING NATURAL ENVIRONMENT III-31
SCENIC RIVERS III-31
WETLANDS RESERVE PROGRAM III-31
WETLANDS III-31
WATER RESOURCES (SOLE SOURCE AQUIFERS) III-33
SOILS / PRIME FARMLANDS III-33
Soils III-33
Prime Farmland III-34
FISH AND WILDLIFE CRITICAL HABITAT / THREATENED AND ENDANGERED SPECIES III-35
COASTAL ZONE STATUS III-35

CHAPTER IV – ENVIRONMENTAL IMPACTS OF THE CONSIDERED ALTERNATIVES AND SELECTION OF THE PREFERRED ALTERNATIVE

IMPACTS ON TRANSPORTATION AND TRAFFIC IV-2
TRAFFIC IMPACTS IV-2

DESCRIPTION **PAGE NO.**

Safety Benefits IV-2
Roadway Segments IV-3
Intersections IV-3
Comparative Analysis of Alternatives IV-4
Roadways Needing Capacity Improvements IV-5
Area-Wide VMT, VHT, VHD IV-6
Existing River Crossings IV-7
POTENTIAL TRUCK TRAFFIC IMPACTS IV-7
No Build Alternative IV-7
Build Alternatives IV-7
POTENTIAL RAIL AND TRANSIT IMPACTS IV-8
No Build Alternative IV-8
Build Alternatives IV-8
POTENTIAL IMPACTS TO BICYCLE AND PEDESTRIAN FACILITIES IV-8
No Build Alternative IV-8
Build Alternatives IV-8
IMPACTS ON THE HUMAN ENVIRONMENT IV-10
DISPLACEMENTS/RELOCATIONS IV-10
Legal Requirements IV-10
No Build Alternative IV-10
Build Alternatives IV-11
Common Section (Sullivan Road to Greenwell Springs Road) IV-11
Alternative 1-A Terminus IV-12
Alternative 1-B Terminus IV-12
Alternative 1-C Terminus IV-13
Alternative 2 ..... IV-14
ENVIRONMENTAL JUSTICE IV-15
Background IV-15
Methodology IV-17
Findings IV-16
NEIGHBORHOOD AND COMMUNITY COHESION IV-20
No Build Alternative IV-21
Alternative 1 ..... IV-21
Alternative 2 ..... IV-21
LAND USE AND ZONING IV-21
No Build Alternative IV-21
Build Alternatives IV-21
ACCESS TO COMMUNITY FACILITIES & SERVICES IV-22
No Build Alternative IV-22
Build Alternatives IV-22
IMPACTS TO PARKS AND RECREATION FACILITIES IV-22

DESCRIPTION **PAGE NO.**

No Build Alternative IV-22
Alternative 1-A IV-23
Alternatives 1-B and 1-C IV-23
Alternative 2 ..... IV-23
HISTORIC / CULTURAL RESOURCES IV-24
No Build Alternative IV-24
Alternative 1-A IV-24
Alternative 1-B IV-24
Alternative 1-C IV-24
Alternative 2 ..... IV-25
VISUAL / AESTHETIC IMPACTS IV-25
No Build Alternative IV-25
Build Alternatives IV-25
Hooper Road Widening Section IV-25
Alternative 1 - Common Section IV-26
Alternative 1 - Termini Segments IV-26
Alternative 2 ..... IV-27
AIR QUALITY IMPACTS IV-28
National Ambient Air Quality Standards (NAAQS) IV-28
Transportation Conformity IV-29
Carbon Monoxide (CO) IV-29
Mobile Source Air Toxics (MSATs) IV-30
TRAFFIC NOISE AND IMPACTS IV-31
Traffic Noise Terminology IV-32
Criteria for Determining Impacts IV-32
Identification of Noise Sensitive Receptors IV-34
Measurement of Existing Sound Levels IV-35
Determination of Existing and Future One-Hour Sound Equivalent Levels IV-37
Existing Year 2012 ..... IV-37
No Build Year 2032 ..... IV-38
Build Year 2032 ..... IV-38
Summary of Noise Impacts IV-40
Noise Abatement Evaluation IV-40
Construction Noise IV-44
Coordination with Local Officials IV-44
CONSTRUCTION PERIOD IMPACTS IV-45
No Build Alternative IV-45
Build Alternatives IV-45
Construction Period Noise and Air Quality IV-45
Construction Period Vibration IV-46
Excavations, Fill Material, Debris and Spoil IV-46

DESCRIPTION **PAGE NO.**

Construction Staging Areas IV-46
HAZARDOUS AND SOLID WASTE SITES IV-46
No Build Alternative IV-46
Alternative 1-A IV-46
Alternative 1-B IV-47
Alternative 1-C IV-47
Alternative 2 ..... IV-47
IMPACTS ON THE NATURAL ENVIRONMENT IV-47
VEGETATION IV-47
No Build Alternative IV-47
Alternative 1-A IV-47
Alternative 1-B IV-48
Alternative 1-C IV-48
Alternative 2 ..... IV-49
WILDLIFE IV-49
No Build Alternative IV-49
Build Alternatives IV-50
WETLANDS IV-50
No Build Alternative IV-50
Alternative 1-A IV-50
Alternative 1-B IV-50
Alternative 1-C IV-50
Alternative 2 ..... IV-51
NATURAL AND SCENIC RIVERS IV-77
No Build Alternative IV-77
Build Alternatives IV-77
THREATENED AND ENDANGERED SPECIES IV-77
No Build Alternative IV-77
Alternative 1-A IV-77
Alternative 1-B IV-77
Alternative 1-C IV-78
Alternative 2 ..... IV-78
HYDROLOGY, FLOODPLAINS AND FLOODING IV-78
No Build Alternative IV-78
Build Alternatives IV-78
WATER RESOURCES (SOLE SOURCE AQUIFERS, ETC.) IV-79
No Build Alternative IV-79
Build Alternatives IV-79
PRIME FARMLAND AND SOILS IV-79
No Build Alternative IV-79
Build Alternatives IV-79

DESCRIPTION **PAGE NO.**

COMPARATIVE ANALYSIS OF THE ALTERNATIVES IV-79
EVALUATION MEASURES IV-79
Evaluation Measure 1: Improved Connectivity between the Watson area of Livingston Parish and the City of Central in East Baton Rouge Parish IV-80
Evaluation Measure 2: Provide roadway network continuity and linkages with existing area highways IV-80
Evaluation Measure 3: Comparative Impacts Relative to Each Alternative IV-80
Relocations IV-81
Neighborhood and Community Cohesion IV-81
Parks and Recreation IV-81
Historic/Cultural Resources IV-81
Visual/Aesthetic Impacts IV-81
Noise Impacts IV-82
Vegetation IV-82
Wetlands IV-82
Hydrology, Floodplains and Flooding IV-82
IDENTIFICATION OF THE PREFERRED ALTERNATIVE IV-82

CHAPTER V – THE PREFERRED ALTERNATIVE: IMPACT SUMMARY, MITIGATION MEASURES, AND PERMITS

DIRECT IMPACTS NOT REQUIRING MITIGATION V-1
DIRECT IMPACTS REQUIRING MITIGATION V-1
INDIRECT (SECONDARY) IMPACTS V-3
CUMULATIVE IMPACTS V-4
METHODOLOGY V-4
Past Actions V-4
Current Projects V-4
Future Projects V-4
CUMULATIVE IMPACTS EVALUATION AND SUMMARY V-5
Transportation / Traffic Circulation V-5
Land Use Development / Redevelopment V-5
Summary V-5
COMMITMENTS V-6
PERMITS REQUIRED V-6

DESCRIPTION **PAGE NO.**

CHAPTER VI - PUBLIC PARTICIPATION, AGENCY COMMENTS AND COORDINATION

PUBLIC PARTICIPATION VI-1
PUBLIC MEETINGS VI-1
1st Series VI-1
Public Comments and Input VI-2
2nd Series VI-3
Public Comments and Input VI-4
PUBLIC HEARINGS VI-5
AGENCY AND ELECTED OFFICIAL MEETINGS VI-5
SOLICITATION OF VIEWS VI-8

CHAPTER VII – REFERENCES AND APPENDIX

REFERENCES VII-1
APPENDIX VII-6

LIST OF FIGURES

FIGURE I-1 **General Location Map** I-1

FIGURE II-1 **2000 Study Alternate #1** II-2

FIGURE II-1 **2000 Study Alternate #2** II-3

FIGURE II-1 **2000 Study Alternate #3** II-4

FIGURE II-1 **2000 Study Alternate #4** II-5

FIGURE II-1 **2000 Study Alternate #5** II-6

FIGURE II-6 **Stage 0 – Alternative Alignments** II-9

FIGURE II-7 **Public Meeting Exhibit** II-15

FIGURE II-8 **Build Alternative 1 Schematics** II-27

DESCRIPTION		PAGE NO.

FIGURE II-9 **Build Alternative 2 Schematics** II-29

FIGURE III-1 **Project Study Area** III-3

FIGURE III-2 **Louisiana Population Change by Parish** III-6

FIGURE III-3 **West Side of LDOTD ESA 1 Property for Alternative 1** III-17

FIGURE III-4 **East Side of LDOTD ESA 1 Property for Alternative 1** III-19

FIGURE III-5 **West Side of LDOTD ESA 1 Property for Alternative 2** III-21

FIGURE III-6 **East Side of LDOTD ESA 1 Property for Alternative 2** III-23

FIGURE III-7 **Location of Direct & Indirect APE** III-28

FIGURES IV-1 through IV-25 **Wetlands** ..... IV-52 to IV-76

LIST OF TABLES

TABLE II-1 **Project Design Criteria** II-20

TABLE II-2 **Conceptual Construction Cost Estimate** II-39

TABLE II-3 **Build Alternatives – Annual Operation and Maintenance Costs** II-48

TABLE III-1 **2010 Census Tracts in the Project Study Area** III-5

TABLE III-2 **2010 Population in the Project Study Area** III-5

TABLE III-3 **Housing in the Project Study Area** III-7

TABLE III-4 **Value of Owner-Occupied Housing Units in the Project Study Area** ... III-7

TABLE III-5 **Income in the Project Study Area** III-8

TABLE III-6 **Occupations in the Project Study Area** III-9

TABLE III-7 **Industries in the Project Study Area** III-10

DESCRIPTION		PAGE NO.

TABLE III-8 **Summary of Potential Wetland Impacts** III-32

TABLE IV-1 **CMFs for Conversion of Traditional Intersections Into A Roundabout** IV-4

TABLE IV-2 **Regional Transportation Model v/c Ratio > 1.0 Indicating the Need for Capacity** IV-6

TABLE IV-3 **Regional Transportation Model Travel Results** IV-7

TABLE IV-4 **Amite River Crossing V/C Ratios** IV-7

TABLE IV-5 **Relocation Summary** IV-15

TABLE IV-6 **Population and Race in Study Area** IV-18

TABLE IV-7 **Educational Attainment in the Project Study Area** IV-19

TABLE IV-8 **Income and Public Assistance Benefits in the Project Study Area** IV-20

TABLE IV-9 **Noise Abatement Criteria in 23 CFR 772** IV-34

TABLE IV-10 **Measured Existing Sound Levels at Measurement Locations** IV-36

TABLE IV-11 **Predicted Sound Level Summary** IV-38

TABLE IV-12 **Summary of Noise Impacts** IV-40

TABLE IV-13 **Results of Noise Barrier Acoustical Feasibility Analysis** IV-43

TABLE IV-14 **Results of Noise Barrier Reasonableness Analysis** IV-43

TABLE IV-15 **Design Year (2032) Predicted One-Hour Equivalent Sound Levels for Undeveloped Areas** IV-44

TABLE IV-16 **Comparative Impacts** IV-83

ENVIRONMENTAL DETERMINATION CHECKLIST

State Project No.: H.005403.2
Name: Route LA 408 (Hooper Road) Extension
Route: LA 408
Parish: East Baton Rouge and Livingston Parishes, LA

1. General Information

Status: (**X**) Conceptual Layout ( ) Plan-in-Hand
( ) Line and Grade ( ) Preliminary Plans
( ) Survey ( ) Final Design

2. Class of Action

( ) Environmental Impact Statement (E.I.S.)
(**X**) Environmental Assessment (E.A.)
( ) Categorical Exclusion (C.E.)
( ) Programmatic C.E. (as defined in letter of agreement dated 03/15/95, does not require FHWA approval)

3. Project Description (use attachment if necessary)

See Document

4. Public Involvement

(**X**) Views were solicited on September 21, 2011.
Responses are attached.
() No adverse comments were received. Comments detailed and addressed in document.
(**X**) Comments are addressed in attachment.
( ) A public hearing (P/H)/Opportunity is not required.
() An opportunity for requesting a P/H will be afforded upon your concurrence.
( ) Opportunity was afforded, with no requests for P/H.
(**X**) A Public Hearing will be scheduled..
(X) A Public Meeting were held on January 16, January 17, August 20, and August 21, 2013.

5. Real Estate (If yes, use attachment)

	NO	YES
a. Will additional right-of-way be required?	( )	(**X**)
b. Will any relocations be required? (Attach conceptual stage relocation plan if yes)	( )	(**X**)
c. Are construction or drainage servitudes required?	(**X**)	( )

6. Cultural and 106 Impacts (If yes, use attachment)

		NO	YES
a.	**Section 4(f) or 6(f) lands**		
	Are any impacted by the project? (If so, list below)……..	( )	(**X**)
	Are any adjacent to the project? (If so, list below)……	( )	(**X**)
b.	**Known Historic sites/structures**		
	Are any impacted by the project? (If so, list below)……..	(**X**)	( )
	Are any adjacent to the project? (If so, list below)……	(**X**)	( )
c.	**Known Archaeological sites**		
	Are any impacted by the project? (If so, list site # below)…….....	(**X**)	( )
	Are any adjacent to the project? (If so, list site # below)……..	(**X**)	( )
d.	**Cemeteries**		
	Are any impacted by the project? (If so, list below)……..	(**X**)	( )
	Are any adjacent to the project? (If so, list below) …….……	( )	(**X**)
e.	**Historic Bridges**…….	(**X**)	( )

7. Wetlands (Attach wetlands finding, if applicable)

		NO	YES
a.	Are wetlands being affected?.....	( )	(**X**)
b.	Are other waters of the U.S. being affected?.....	( )	(**X**)
c.	Can C.O.E. Nationwide Permit be used?.....	(**X**)	( )

8. Natural Environment (use attachment if necessary)

		NO	YES
a.	Endangered/Threatened Species/Habitat……	( )	(**X**)
b.	Within 100 Year Floodplain?.....	( )	(**X**)
	Is project a significant encroachment in Floodplain?.....	( )	(**X**)
c.	In Coastal Zone Management Area?.....	(**X**)	( )
	Is the project consistent with the Coastal Management Program?.....**N/A**..	( )	( )
d.	Coastal Barrier Island (Grand Isle only)……...	(**X**)	( )
e.	Farmlands (use form AD 1006 if necessary)……..	(**X**)	( )
f.	Is project on Sole Source Aquifer?.....……	( )	(**X**)
	Is coordination with EPA necessary?.....	( )	(**X**)
g.	Natural & Scenic Stream Permit required……...	(**X**)	( )
h.	Is project impacting a waterway?.....	( )	(**X**)
	Has navigability determination been made?.....	( )	(**X**)
	…..Will a US Coast Guard permit or amended permit be required?.....	(**X**)	( )

9. Physical Impacts (use attachment if necessary)

		NO	YES
a.	Is a noise analysis warranted (Type I project)…….	( )	(**X**)
	Are there noise impacts based on violation of the (NAC)?.....	( )	(**X**)
	Are there noise impacts based on the 10 dBA increase?.....	(**X**)	( )
	Are noise abatement measures reasonable and feasible?.....	(**X**)	( )
b.	Is an air quality study warranted?.....	( )	(**X**)
	Do project level air quality levels exceed the NAAQS for CO?.....	(**X**)	( )
c.	Is project in a non-attainment area for carbon monoxide (CO), Ozone (O_3), Nitrogen dioxide (NO_2), or Particulates (PM-10)? ……...	( )	(**X**)
d.	Is project in an approved Transportation Plan,Transportation Improvement Program (TIP) and State Transportation Improvement Program (STIP)?.....	( )	(**X**)
e.	Are construction air, noise, & water impacts major?…….	(**X**)	( )
f.	Are there any known waste sites or U.S.T.s?.....	( )	(**X**)
	Will these sites require further investigation prior to purchase? ……...	( )	(**X**)

10. Social Impacts (use attachment if necessary)

		NO	YES
a.	**Land use changes**……....	(**X**)	( )
b.	**Churches and Schools**		
	Are any impacted by the project? (If so, list below)……..(**X**)		( )
	Are any adjacent to the project? (If so, list below)……...( )		(**X**)
c.	**Title VI Considerations**…….(**X**)		( )
d.	**Will any specific groups be adversely affected**		
	(i.e., minorities, low-income, elderly, disabled, etc.)? ……..(**X**)		( )
e.	**Hospitals, medical facilities, fire police**		
	Are any impacted by the project? (If so, list below)……..(**X**)		( )
	Are any adjacent to the project? (If so, list below)……(**X**)		( )
f.	**Transportation pattern changes**……( )		(**X**)
g.	**Community cohesion**……(**X**)		( )
h.	**Are short-term social/economic impacts due to construction**		
	considered major?.....(**X**)		( )
I.	**Do conditions warrant special construction times**		
	(i.e., school in session, congestion, tourist season, harvest)?.....(**X**)		( )
j.	**Were Context Sensitive Solutions considered?** (If so explain below)……..(**X**)		( )
k.	**Will the roadway/bridge be closed? (If yes, answer questions below)**……. .(**X**)		( )
	Will a detour bridge be provided?.....(**X**)		( )
	Will a detour route be signed?.....(**X**)		( )

11. Other (Use this space to explain or expand answers to questions above.)

Section 4(f) or 6(f) lands – The project would affect the property and a portion of the building housing the Watson Community Center, a small facility on Old Highway 16 typically used for birthday parties, baby showers and scouting activities. The owners and operators of the facility, Livingston parish Recreation District 2, already have plans to relocate the Center to a new Gymnasium/Community Center complex at another site, and would use the proceeds of selling the property to help pay for the new facility.

Cemeteries adjacent to project – The Live Oak Cemetery is immediately adjacent to the project, but will not be affected by planned construction.

Churches adjacent to project –Live Oak United Methodist Church (34890 LA Hwy 16).

Schools adjacent to project – Central Middle School (11526 Sullivan Road), Live Oak Elementary School, 35194 Old LA Highway 16.

Preparer: Bruce J. Richards, AICP
Title: Project Consultant
Date: August 2014

Attachments

(**X**) S.O.V. and Responses
(**X**) Wetlands Finding
( ) Project Description Sheet
( ) Conceptual Stage Relocation Plan
(**X**) Noise Analysis
(**X**) Air Analysis
(**X**) Exhibits and/or Maps
( ) 4(f) Evaluation
( ) Form AD 1006 (Farmlands)
( ) 106 Documentation
(**X**) Other Environmental Assessment Document

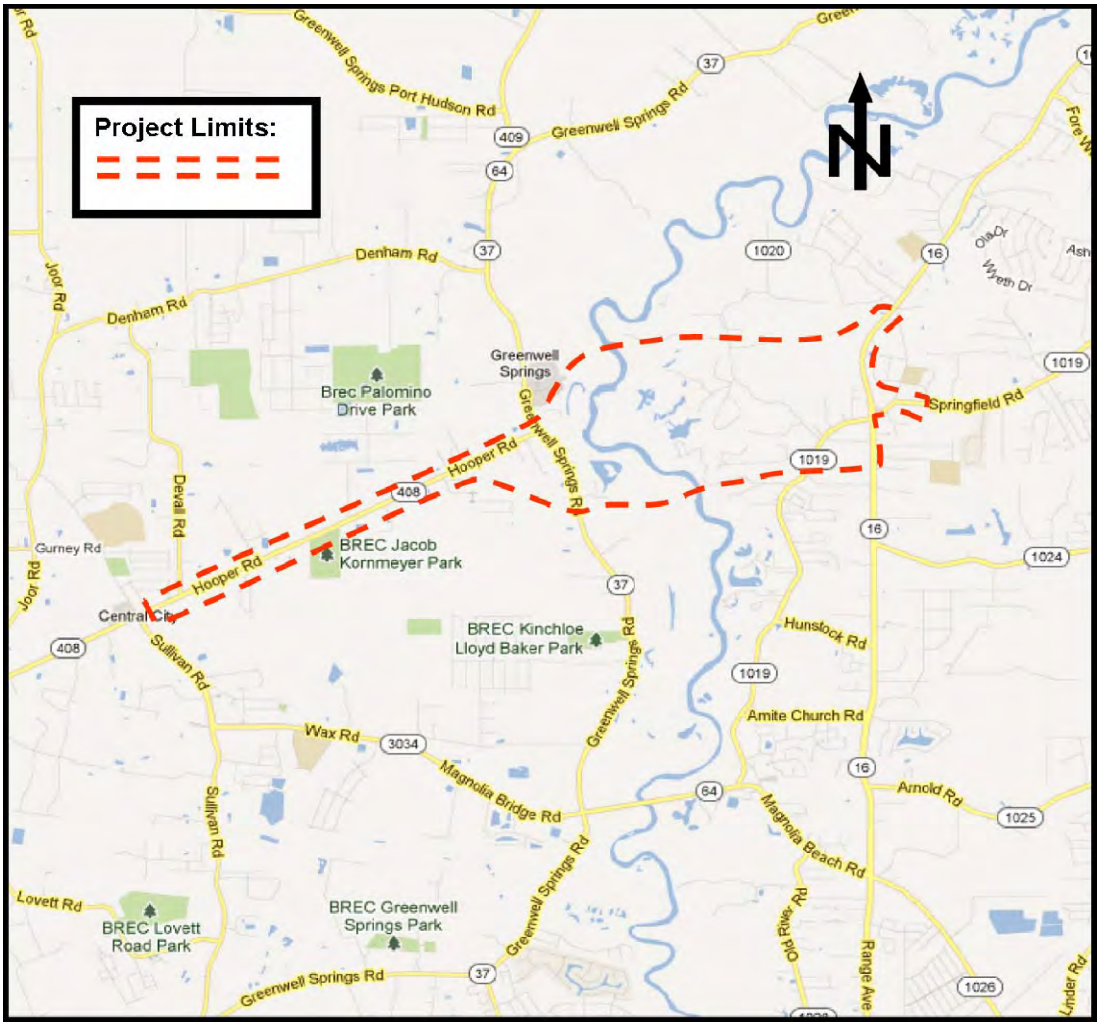
CHAPTER I

INTRODUCTION, PURPOSE AND NEED, AND REPORT ORGANIZATION

PURPOSE AND SCOPE OF THIS REPORT

A comprehensive study for an Environmental Assessment (EA) has been conducted for the widening and extension of LA 408 (Hooper Road) in E. Baton Rouge and Livingston Parishes, LA (see **Figure I-1**, below, for a general location map). The total length of the project is approximately 5½ miles. The Federal Highway Administration (FHWA) is the lead federal agency for this project. This EA was prepared in accordance with the requirements of the National Environmental Policy Act (NEPA) addressing potential social, environmental, and economic impacts.

Figure I-1 General Location Map



The proposed project involves adding capacity to existing LA Hwy 408 from the intersection with LA 3034 (Sullivan Road) to its current eastern terminus at Greenwell Springs Road (LA 37/64) in East Baton Rouge Parish. The roadway would also be extended eastward with a new bridge across the Amite River into Livingston Parish and new roadway extending to LA 16. The new roadway is proposed to be an Urban Arterial (UA-4) design, 4 lanes with a raised median and shoulders.

The purpose of this EA is the identification, collection of data and mapping of major categories of social, economic and environmental conditions, and the assessment of the potential for these conditions to be impacted by either the proposed action or the no build alternative.

The data presented in the report text and maps characterize conditions for the general project area as well as the specific project site. Data was collected by document and records reviews, meetings with the public and local and state officials, and also via field work (site reconnaissance and field investigations).

PROJECT HISTORY AND BACKGROUND

Plans to improve Hooper Road have been under consideration for some time, evolving to the present effort over time. Studies and relevant projects examined in this section include:

- Feasibility Study (2000)
- Green Light Program (2005)
- City of Central Land Use Plan 2010
- 2010 Livingston Parish Master Plan
- A Vision for East Baton Rouge Parish (2011)
- Capital Regional Planning Commission Transportation Improvement Plan (2012)
- Stage 0 Feasibility Studies (2011 & 2012)
- Preliminary Toll Road Evaluation (2012)

FEASIBILITY STUDY (2000)

In 1997, Louisiana House Resolution #75(1) called for a feasibility study of constructing a new bridge crossing the Amite River to extend LA 408 to LA 16. As listed in the resolution, the purposes of the study included rapid growth in the community (now City) of Central, LA, and the heavy traffic volumes that correspond to such growth. The resolution noted the heavy traffic volumes on the Magnolia Bridge over the Amite River, the nearest vehicular crossing to a possible extension of Hooper Road. To that end, the LADOTD completed in 2000 a feasibility study for the Hooper Road Extension. That report was a preliminary evaluation of the several alternatives to aid in determining the feasibility of constructing the extension.

GREEN LIGHT PROGRAM

On October 15, 2005 the citizens of East Baton Rouge Parish voted and passed an extension to the current one-half of one percent (1/2%) sales and use tax for local street and roadway improvements. This comprehensive transportation program, known as The Green Light Plan, is designed to improve roadway infrastructure and citizen safety throughout East Baton Rouge Parish. Seventy percent (70%) of the proceeds will be used for transportation improvements including the construction of new roads, widening of existing roads, intersection improvements and upgrades to traffic signalization and synchronization. The Green Light program dealt directly with the Hooper Road corridor as it calls for several projects, including the widening of Hooper Road to provide two through lanes in each direction and a raised median from approximately 750' east of Joor Road to Sullivan Road, a sewer design study to facilitate the design of the future roadway, and the widening of Sullivan Road from Hooper Road to approximately 635' north of Wax Road. The project was designed to provide an improved east-west corridor connecting I-110, Harding Boulevard, Joor Road and Sullivan Road.

CITY OF CENTRAL LAND USE PLAN 2010

The proposed project is also consistent with master plans completed in the City of Central and Livingston Parish in 2010 and 2011, respectively, indicating the need for capital improvements to the existing transportation system and specifically listing enhancements to the Hooper Road corridor. The *City of Central Land Use Plan 2010* called for the extension of Hooper Road as a future transportation improvement in the form of a collector road[1].

2010 LIVINGSTON PARISH MASTER PLAN

Similarly, the *2010 Livingston Parish Master Plan* emphasizes improvements to (transportation) corridors in neighboring parishes as an opportunity in the strengths, weaknesses, opportunities and threats (SWOT) analysis[2]. During a March 2011 meeting to prioritize road projects for Livingston Parish, elected officials, community leaders and residents listed the Hooper Road Bridge and Extension as the number 2 ranked priority for the parish (after widening of the Interstate 12 overpass/one-mile extension of LA 447 South at Walker).

---

[1] http://www.centralgov.com/CityClerk/MasterPlan/land-use-plan-2010.
[2] *http://www.livingstonparishla.gov/PDF/EDMasterPlan.pdf*

A VISION FOR EAST BATON ROUGE PARISH

Additionally, *A Vision for East Baton Rouge Parish*, a master plan for East Baton Rouge Parish completed in 2011, lists the Hooper Road Extension (LA 408) as a key congestion relief and connectivity project under management of regional congestion.[3]

CAPITAL REGIONAL PLANNING COMMISSION METROPOLITAN TRANSPORTATION PLAN

The proposed extension of Hooper Road is also included in regional transportation projects prioritized for the Baton Rouge area. The Hooper Road Extension is listed as a Stage II project (scheduled for 2018-2027) in the Metropolitan *Transportation Plan* (MTP) for 2037 adopted by the Capital Region Planning Commission (CRPC) in July of 2013. The CRPC represents 11 parish members and 38 municipal members in the capital region of Louisiana from the following parishes: Ascension, East Baton Rouge, East Feliciana, Iberville, Livingston, Pointe Coupee, St. Helena, Tangipahoa, Washington, West Baton Rouge, and West Feliciana.[4]

STAGE 0 FEASIBILITY STUDIES

A Stage 0 Feasibility Study and Environmental Inventory for the Hooper Road Extension was completed in August 2011. Prior to that project moving further, it was noted that if such an extension were to be completed, the Greenwell Springs Road to Sullivan Road segment of Hooper Road would be the only two-lane segment in a four-lane corridor stretching from LA 16 to I-110. As such, local leaders and the LADOTD called for a Stage 0 Feasibility Study to be completed for the widening of that segment of the Hooper Road, with both the widening segment and the Hooper Road extension to then be more fully examined in an Environmental Assessment. The Stage 0 Study of Hooper Road Widening was completed in May 2012.

PRELIMINARY TOLL ROAD EVALUATION

Following the completion of the Stage 0 Hooper Road Extension Feasibility Study in August 2011, LADOTD made the decision to undertake a Preliminary Toll Road Evaluation for the Hooper Road Extension to explore the potential of the project as a toll-supported facility. That Preliminary Toll Road Evaluation began in January of 2012 and was completed in December 2012.

In summary, the study found that over the 30-year financing period the revenue model identified approximately $53.8 million in net revenue available for financing. However, given the preliminary bond assumptions, cost of issuance, coverage ratios, reserve accounts and interest

[3] *http://brgov.com/dept/planning/CPElements.htm*,
[4] *http://crpc-la.org/crpc_new/TransPlan/LRTP.html*

rates, the $53.8 million of net revenue available for financing over the 30-year period only provides $8.9 million of funding available for construction or other initial capital costs.

PROJECT PURPOSE AND NEED

PURPOSE

The purpose of this project is to create a new bridge connection and four-lane artery between Livingston Parish and East Baton Rouge Parish. The project is designed to accomplish two goals (presented in order of importance):

- To provide improved east-west connectivity between the Watson area of Livingston Parish and the City of Central in East Baton Rouge Parish.
- To enhance the overall transportation system by providing roadway network continuity and linkages with existing area highways.

NEED

The Baton Rouge metropolitan statistical area (MSA) has grown significantly over the last decade, surpassing forecasts with an 18 percent increase in population from 705,973 in the year 2000 to just more than 800,000 in 2011. Additionally, a population shift away from coastal areas in southeast Louisiana occurred following the hurricanes that struck the state in 2005[5]. Parishes located north of Lake Pontchartrain including the Baton Rouge MSA benefited from this in-state migration.

The incorporation of the City of Central in 2005 and the consolidation of its school system made the community a more desirable place to live, also contributing to growth in the Baton Rouge MSA over the last decade[6]. Meanwhile, Livingston Parish has experienced significant growth. From a total population of 91,814 in the year 2000, Livingston had a population of 128,026 in 2010, a growth of 39%. Livingston Parish was the fastest growing Parish in the state of Louisiana during this period. While this phenomenal rate may not be repeated, projected population growth is estimated to be about 21% between 2009 and 2032.

Prior to the population spurt, outlying areas in the Baton Rouge MSA were rural in nature with largely low-density residential and agricultural development. The majority of the vehicular systems in the project area were designed accordingly to serve a rural development pattern with two-lane streets and highways. The roadway system was efficient in safely moving the low-volume traffic within Central and Livingston.[7]

---

[5] *http://brgov.com/dept/planning/CPElements.htm,*
[6] *Central, Louisiana: Demographic and Economic Analysis. GCR, 2008.*
[7] *http://centralgov.com/CityClerk/MasterPlan/land-use-plan-2010.*

The rapid growth in population resulted in increases in residential development in the Baton Rouge MSA and heavy traffic volumes. The majority of workers in the Baton Rouge MSA commute into East Baton Rouge Parish, which is a hub for employment.

The proposed Hooper Road extension is viewed by local community officials as a way of enhancing connectivity between Livingston and East Baton Rouge Parishes. Currently the two Parishes are divided by water (the Amite River) and are only crossed by three (3) bridge locations (from south to north): I-12, US 190/Florida Avenue, and Magnolia Bridge Road. The next bridge north of Magnolia Bridge Road connects the two Parishes north of East Baton Rouge and Livingston Parishes (the LA 63 bridge linking East Feliciana Parish and St. Helena Parish). A fourth bridge would provide a new crossing point for the northern reaches of East Baton Rouge and Livingston Parishes, particularly for the City of Central and the community of Watson.

The new bridge should not only provide improved connectivity, but should enhance the overall transportation system by providing roadway network continuity and linkages with existing area highways. The north-south running Amite River currently creates a "disconnect" in east-west travel. East-west travelers in the project area are now required to travel some distances (depending on their origin and destination) either north to the LA 63 crossing or south to the Magnolia Bridge crossing, thence often north or south again to continue traveling east or west. The new Hooper Road Bridge and extension will provide a shorter route and better system linkages for east-west oriented highways such as LA 408 (Hooper Road), LA 64 (Greenwell Springs/Port Hudson Road), LA 1019 (Springfield Road), and LA 1024 (Cane Market Road).

REPORT ORGANIZATION

CHAPTER I – INTRODUCTION, PURPOSE AND NEED, AND REPORT ORGANIZATION

CHAPTER II - ALTERNATIVE DEVELOPMENT, REVIEW & SELECTION, AND DESCRIPTION OF ALTERNATIVES

Chapter II begins with a discussion of build alternative development, evaluation and screening done during the Stage 0 studies and earlier studies for this particular project. The Chapter then provides an in-depth look at the analysis, screening and refinement done under the line and grade study portion of the Environmental Assessment that resulted in the four (4) build alternatives. The considered alternatives are then fully defined, beginning with the No-Build Alternative and followed by the four (4) Build Alternatives. For the build alternatives, roadway design criteria, which were used in the development of the alternatives, are first discussed. The refined design concepts of the build alternatives are then described. Conceptual construction costs are also estimated. Projected operating and maintenance costs are also briefly described. Plan view

layouts, u-turn details, and typical sections for all three build alternatives are presented at the end of this chapter.

CHAPTER III – THE AFFECTED ENVIRONMENT

In this chapter, the project corridor and study area are first delineated and described. The existing transportation system, including highways and roadways, rail, transit and pedestrian facilities are presented. The Chapter concludes with an examination of the affected human and natural environment.

CHAPTER IV – ENVIRONMENTAL IMPACTS OF THE CONSIDERED ALTERNATIVES AND SELECTION OF THE PREFERRED ALTERNATIVE

In this chapter, the impacts of the four alternatives considered (the four Build Alternatives and the No Build Alternative) are assessed relative to the evaluation categories of transportation and traffic, human environment, and the natural environment. The chapter then provides a comparative analysis between the four alternatives based on their ability to meet the project Purpose and Need, and describes the selection of the Preferred Alternative.

CHAPTER V – THE PREFERRED ALTERNATIVE: IMPACT SUMMARY, MITIGATION MEASURES AND PERMITS

The Direct Impacts to the transportation system and the human and natural environments as a result of the implementation of the Preferred Alternative are listed. For unavoidable adverse impacts, this chapter provides a discussion of mitigation measures recommended to reduce those adverse effects. The indirect and cumulative impacts of the Preferred Alternative are also examined in this chapter. Commitments made to further the project are then described. The Chapter concludes with a section listing the permits required to complete the project.

CHAPTER VI – PUBLIC PARTICIPATION, AGENCY COMMENTS AND COORDINATION

This chapter describes the public participation process for the project, including documentation of public meetings and hearings and coordination efforts associated with the development of the project. These efforts included meetings with LADOTD, FHWA, other agencies and elected officials and a Solicitation of Views requesting written comments on the project.

CHAPTER VII – REFERENCES AND APPENDIX

The Environmental Assessment concludes with this chapter. The *References* section lists publications, websites and other sources of information used in the writing of this document. The *Appendix* lists the stand-alone documents and other data which were completed as part of this EA and are considered part of this EA. The *Appendix* also includes copies of the responses to the *Solicitation of Views* and formal agency responses received during the Draft EA review process. Finally, the *Appendix* also includes information from the two public meeting series, including meeting notice and advertisements, sign-in sheets, and written comment forms.

CHAPTER II

ALTERNATIVE DEVELOPMENT, REVIEW & SELECTION AND DESCRIPTION OF ALTERNATIVES

Chapter II begins with a discussion of build alternative development, evaluation and screening done during the Stage 0 studies and earlier studies for this particular project. The Chapter then provides an in-depth look at the analysis, screening and refinement done under the line and grade study portion of the Environmental Assessment that resulted in the four (4) build alternatives. The considered alternatives are then fully defined, beginning with the No-Build Alternative and followed by the four (4) Build Alternatives. For the build alternatives, roadway design criteria, which were used in the development of the alternatives, is first discussed. The refined design concepts of the build alternatives are then described. Conceptual construction costs are also estimated. The conceptual construction cost section includes the sub-cost estimates and assumptions used in determining costs for:

- Main Roadway
- Bridge Structure
- Bump-Outs
- Left Turn Lanes, Cross-Overs, & Turn-Outs
- Driveways
- Drainage
- Utilities
- Mobilization
- Right-of-Way Acquisition
- Contingencies

Projected operating and maintenance costs are also briefly described. Plan view layouts, u-turn details, and typical sections for all build alternatives are presented at the end of this chapter.

ALTERNATIVE DEVELOPMENT

STAGE 0 AND OTHER PREVIOUS WORK

2000 Feasibility Study Alternatives

As mentioned in Chapter I, a previous feasibility study, *LA 408 (Hooper Road) Extension*, was conducted by LADOTD in July 2000 that analyzed five (5) alternatives for the Hooper Road extension. It was noted in that document that when the study began, it was decided that in order to provide optimal use of a Hooper Road extension, it should

tie into LA 16 at or near existing intersections of LA routes which continue eastward. The two routes used in the study were LA 1019 and LA 1024. Below is a description of each of the 2000 report alternates along with a graphic of each route:

Figure II-1 - 2000 Study Alternate # 1:

After crossing the Amite River, Alternate # 1 would turn almost due east, before taking a northwesterly direction after the end of the proposed bridge section of the extension. The extension would tie into LA 16 north of the existing LA 16/LA 1019 intersection. This alternate was developed to attempt to minimize impacts on residential properties. The gravel pits west of Watson near the Amite River would be impacted.

Figure II-2 – 2000 Study Alternate # 2

Alternate # 2 was developed in order to provide a connection with LA 1024. This alternate would turn in a southeasterly direction beyond the Amite River and parallel the river before turning eastward then intersecting LA 1019 and continuing eastward until intersecting LA 16/LA 1024. No widening of LA 16 would be required under this alternate. This alternate would impact the gravel pits and would require the longest bridge structure of the alternates.

Figure II-3 – 2000 Study Alternate # 3

Alternate # 3 was developed to tie into LA 1019 north of the current LA 1019/LA 16 intersection, near where Alternate #1 intersects LA 16. Alternate #3 takes a more northerly approach than Alternate # 1 and avoids the gravel pits. Under this alternate, LA 408 would be extended in a northeast tangent similar to its current alignment, before turning eastward and intersecting LA 16 north of Lakeside Village subdivision and continuing eastward to LA 1019.

Figure II-4 - 2000 Study Alternate # 4

Alternate # 4 was developed to cross LA 1019 south of the existing LA 16/LA 1019 intersection in order to avoid the church/school. This alternate would turn almost due east beyond the Amite River, then tie into LA 16 at a right angle, before bearing northeast and intersecting LA 1019. This alternate would impact the gravel pits, bisect the subdivisions located between the Amite River and LA 16 and impact business along LA 16, including Hancock Bank and Pinewood Mobile Home Park. Some realignment of LA 1019 would be required. This alternate would provide one of the more direct connections from LA 408 to LA 16.

Figure II-5 - 2000 Study Alternate # 5

Alternate # 5 was developed in order to avoid the gravel pits and tie into LA 1019 south of the current LA 16/ LA 1019 intersection avoiding the church and cemetery. Alternate # 5 follows the same alignment as Alternate # 3, before turning southeast and then following the alignment of Alternate # 4. Realignment of LA 1020, LA 1019 and closure of a section of LA 1020 will be required.

Additionally, the consultant team at the beginning of the Stage 0 study was presented with a new alternative alignment, which was very similar to that of Alternate # 3 from the 2000 study.

Addition of New Alternative

At the Stage 0 Project Initiation Meeting held on March 2, 2011, an overview was presented of the five alternates from the 2000 study, as well as the currently discussed

alignment. Following the end of the formal meeting, several attendees gathered around the aerial map and discussed developments in the area and routing options. There was a general concurrence that the currently discussed alternative was superior to the previous five Alternates shown in the 2000 study, in that it limits residential takings and relocations. Another idea that had some support as an option was a more southerly route that would link to LA 1024, using an existing power line servitude easement. It was noted that a new Walmart Super Center was slated to be constructed on the eastern side of the intersection of LA 16 and LA 1024, but the power line is located along the northern edge of the Walmart Super Center footprint. It was also noted that the power line alignment would not link directly to Hooper Road on the west side. The project team agreed to explore this option.

Analysis, Refining, and Screening of Stage 0 Extension Study Alternatives

After performing site reconnaissance and other research, the consultant team came to the following conclusions on the alternatives.

- The first finding was that there had been additional development in the Livingston Parish portion of the study area since the 2000 study. Alignments that once crossed empty fields or forested undeveloped areas now often affected new residential subdivisions on new streets (such as those on Crepe Myrtle Lane and St. Regis Court). This would result in more relocations, particularly on Alternates 1, 4 and 5.

- In September 2008, the LADOTD issued *Engineering Design Standards Manual (EDSM) IV.2.1.4 - Multi-Lane Roadways and Median Openings*, which states the following definitions and criteria for design of median openings on roadways:

    - *A full access median opening is defined as a median opening that allows all directions of movement including lefts, thru, rights, and possibly u-turns when necessary.*
    - *A partial median opening is defined as a median opening that allows for lefts from the mainline and right-in / right-out from the side street. This opening does not allow for left or thru traffic from the side street (driveway).*
    - *Median openings shall be spaced at least ½ mile (2,640 ft) and shall be directional u-turns.*
    - *Full access median opening shall be designed only for public roadways that meet MUTCD Traffic Signal Warrant 1A (100%) and shall be spaced ½ mile (2,640 ft) from another median opening. Full access median openings shall be designed with left turn lanes where the storage lengths have been verified by the District Traffic Operations Engineer (DTOE).*[1]

    All of the year 2000 alternates were developed well before the issuance of this amendment. Most involved more than one crossing of not only minor state

[1] *LADOTD Engineering Design Standards Manual (EDSM) IV.2.1.4, September 2008*

highways (such as LA 1020 and LA 1019) but also multiple crossings of existing local streets, usually bisecting residential neighborhood streets. Access to and from homes remaining in these neighborhoods would be extremely difficult. This made most of the Year 2000 alternates (particularly Alternates 1, 4 and 5) impractical.

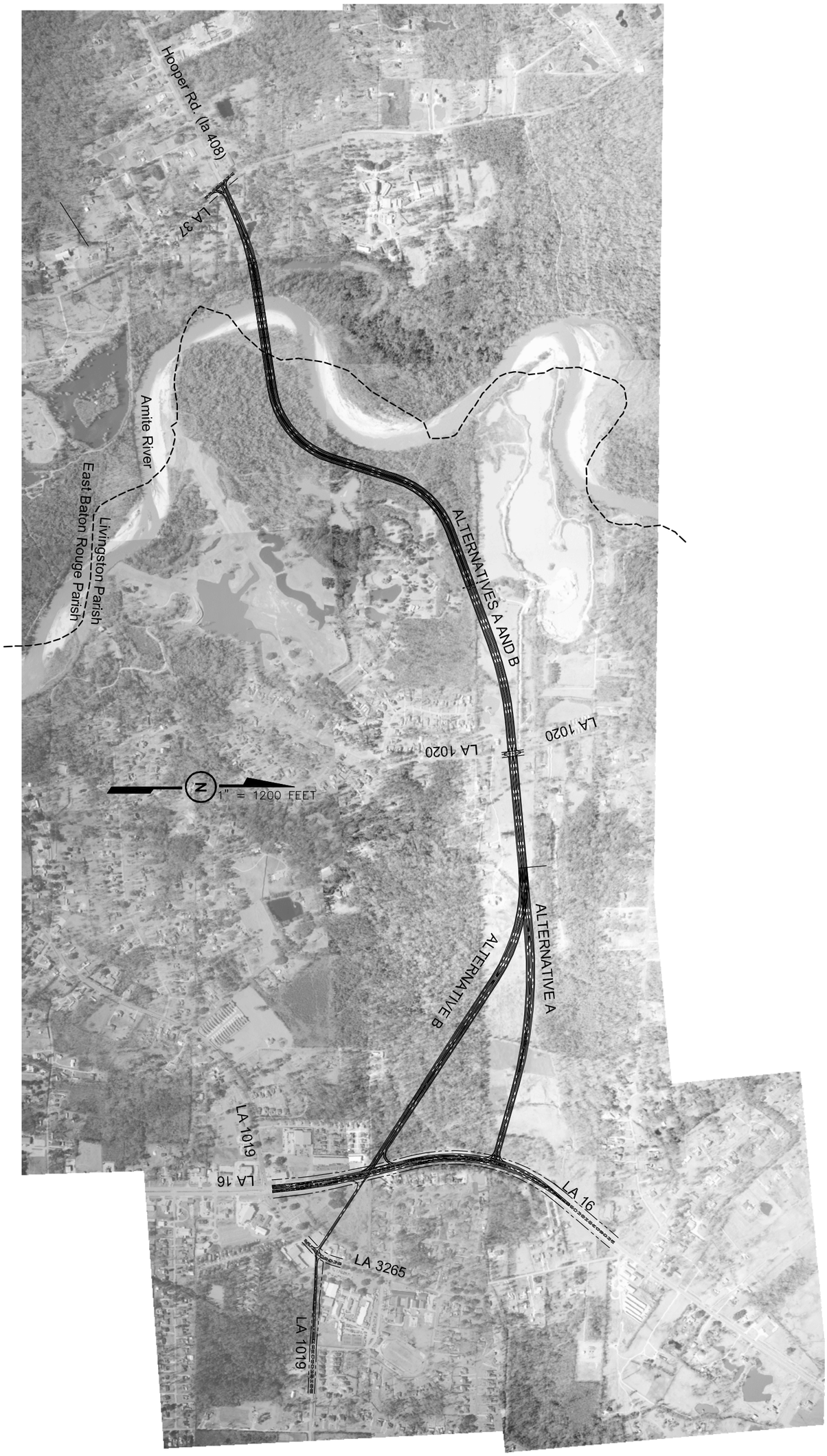
- The pending development of the Walmart Super Center would impede the completion (as shown) of Alternate #2 from the 2000 study.

- The alternate suggested at the Project Initiation Meeting was further explored. Although there is a power line servitude stretching from LA 16 westward across the Amite River into East Baton Rouge Parish, it was found that this servitude contained two rows of parallel towers. Previous LADOTD experience in a similar situation in Lafayette Parish indicated that this alternative would not meet the approval of the LADOTD Geometric section. Additionally, the power line servitude did not link directly to Hooper Road, so a connection on the western side using this route would also be problematic.

The alternative route which appeared to work well was a variation on the northernmost alignment --**Alternate # 3** from the 2000 study, which was also similar to the alternative presented by LADOTD at the start of this Stage 0 process. The consultant team, using the latest Design Criteria from LADOTD and information gathered in site reconnaissance then refined this northernmost alternative with the goals of limiting the number of residential relocations, meeting the Design Criteria geometric standards and meeting the definitions and criteria of the EDSM IV.2.1.4.

The result was an Alignment referred to as **Alternative A**. This alignment met the design criteria and appears to require no design exceptions. However, in order to address the earlier-stated desire to also present an alternative that would connect with an east-west highway, **Alternative B** was also developed. Alternative B, however, would require a design exception as the Hooper Road Extension's intersection with LA 16 would be located ¼ mile from the existing intersection of LA 16 and LA 1019. Additionally, under Alternative B, the existing intersection of LA 1019 and LA 3285, which is located 1/5 of a mile from the intersection of LA 1019 and LA 16, would change from a "T" intersection to full intersection. A plan view drawing of the two alignments from the Stage 0 study is presented on **Figure II-6** on the following page.

These two alternatives differed at their end points on the east. Each alternative was proposed to extend from the existing intersection of Hooper Road at Greenwell Springs Road, cross the Amite River and curve north before turning east. Alternative A was proposed to terminate at LA 16, approximately 0.5 miles north of the intersection of LA 1019 and LA 16, creating a T-intersection and meeting the EDSM requirements. Alternative B was proposed to intersect with LA 16 approximately 0.25 miles north of the intersection of LA 1019 and LA 16, continue southeasterly and tie into the intersection of LA 1019 at LA 3285, creating a four-way intersection.



SCALE IN FEET

1200 0 1200 2400

DOTD LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

NY ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

STATE PROJECT No. H.005403 FEDERAL AID PROJECT No. H005403

STAGE 0 - ALTERNATIVE ALIGNMENTS

FIGURE II-6

Under both Alternatives, LA 16 would be widened to 4 lanes for some distance north of its intersection with LA 1019.

The two conceptual alternatives underwent traffic analyses and it was determined that they had acceptable Levels of Service (LOS) in the design year of 2032. They were confirmed as acceptable to the LADOTD at a progress meeting held in April 2011, and were conceptually engineered under the Stage 0 study.

It should be noted that during the Stage 0 Extension Study, only traditional intersections (signalized and stop conditions) were developed. Costs were developed for each alternative with Alternative A estimated at $73.5 million and Alternative B at $75.01 million.

Stage 0 Widening Study Alternatives

Shortly after the completion of the Stage 0 Extension Study, an Abbreviated Stage 0 Feasibility Study analyzing the proposed widening of Hooper Road (LA 408) from Sullivan Road (LA 3034) to Greenwell Springs Road (LA 37/64) was undertaken. Completed in May of 2012, three (3) alternatives were developed in the Abbreviated Stage 0 Feasibility Study based on the direction of the widening in relation to the existing roadway including alignments to the north, south or along the centerline.

Conceptual construction costs were derived for each of the alternatives based on LADOTD 2011 unit prices. Costs for the widening of Hooper Road by alternative were estimated as follows: Alternative A (widening to the north), $33.87 million; Alternative B (widening to the south), $42.52 million; and Alternative C (widening along the centerline to the north and south), $41.05 million.

REFINEMENT OF BUILD ALTERNATIVES UNDER LINE AND GRADE STUDY

In May of 2012, the Stage 1 Environmental Assessment process was initiated. The two alternatives recommended by the Stage 0 Feasibility Study, and if necessary, a National Environmental Protection Act (NEPA)-derived alternative were to be developed in the EA. It was noted that the Stage 0 Alternatives were preliminary and may change during the NEPA process. The first step in this process was undertaking a comprehensive Line and Grade study, under which the design criteria, roadway and bridge sections from the Stage 0 study were to be verified. Additionally, full horizontal and vertical alignments were to be developed for the Alternatives, and additional traffic analyses were to be performed on the Alternatives. In particular, the geometric and traffic-related feasibility of specific numbers of and types of intersection alternatives were to be examined at specific intersection locations along the route.

CHANGE IN DESIGN CRITERIA

One of the first changes from the Stage 0 study occurred during the early days of the EA project. The alternatives in the Hooper Road Extension Feasibility Study were developed using a design speed of 45 mph. However, as the EA was to include both the extension and the widening of existing Hooper Road, and as the segment of Hooper Road to be widened has a posted 55 mph speed limit, it was determined by LADOTD that the entire project should be designed for a speed limit of 55 mph. This meant that the geometry of the original Alternatives A and B needed to be revised to accommodate the higher speeds.

INTERSECTION DEVELOPMENT AND ANALYSIS

As mentioned above, specific numbers of and types of intersection alternatives were to be examined at specific intersection locations along the route. It was noted early in the process that the Sullivan Road/Hooper Road intersection was not included, as it was being undertaken as a separate project. It was also determined that while the Stage 0 Feasibility Study showed the extension's intersection with LA 1020 (Bend Road) as a stop condition (for LA 1020) at-grade intersection, the EA would only consider a grade-separated overpass with no access between LA 1020 and LA 408. The primary reason for this was concerns over cut-through traffic (including truck traffic) in the rural residential neighborhoods along LA 1020 and LA 1019.

The remaining intersection alternatives studied are listed as follows:

All Alternatives: LA 408 (Hooper Road) at LA 37/64 (Greenwell Springs Road):

1. Traditional signalized intersection
2. Roundabout
3. Grade-separated overpass

Alternative A: LA 408 at LA 16:

1. Traditional signalized intersection
2. Roundabout
3. Grade-separated free-flow half-interchange

Alternative B: LA 408 at LA 16:

1. Traditional signalized intersection
2. Roundabout
3. Grade-separated free-flow half-interchange

Alternative B: LA 408 at LA 1019/3285:

1. Traditional signalized intersection
2. Roundabout

Geometric and traffic analyses were done on these intersection alternatives and underwent LADOTD review. Traffic analyses revealed that at the intersection of LA 408 extension at LA 1019/3285, only a roundabout would meet acceptable levels of service in the design year. All other intersections were determined to be able to meet acceptable Levels of Service. Two (2) iterations of a grade-separated overpass were developed at the intersection of LA 408 and LA 37/64: first a traditional diamond interchange and then a single-point urban intersection (SPUI), but both were determined to take far too much right-of-way and would have negative impacts in terms of required relocations. Therefore, the grade-separated overpass at that location was eliminated from further consideration.

All remaining intersection alternatives were refined, and shown (along with the refined alignments) to the local citizens for their comment and input at two (2) public informational meetings held in January 2013. A plan view drawing of the two alignments and all intersection alternatives as shown to the public at the meetings is presented on **Figure II-7** on the following page.

LAYOUT OF WIDENING SEGMENT

In addition to the line and grade study for the extension, a similar effort for the widening portion of the project was undertaken. The objective in conceptually designing this layout was avoidance and minimization of impacts, particularly residential and commercial relocations. As much as possible considering the design criteria and geometrics, right-of-way was to be acquired from vacant areas. Drainage facilities were also considered, with additional or new cross-drains to be included at key locations.

REALIGNMENT OF BRIDGE CROSSING

During the time of the public meetings, the LADOTD Bridge Design section noted that with the aggressively meandering nature of the Amite River, the crossing location carried forward from the Stage 0 Feasibility Study would likely face problems in the future. The river would likely change course and rather than flowing under the bridge in a perpendicular fashion, would eventually begin to move parallel to the proposed bridge. This would create an extreme skew angle exposing much of the bridge piling to an increase in the amount of debris being caught. After additional analysis, two new conceptual bridge locations were developed; one to the south and one to the north. The southerly location would require much more right-of-way and relocations than the one to the north, and so the northerly alignment was selected.

COMBINATION OF ALIGNMENT AND INTERSECTION OPTIONS INTO BUILD ALTERNATIVES

The LADOTD and consultants then evaluated and determined the combination of alignments (Alternatives A and B) and intersection alternatives which would be carried forward into the impact analysis phase of the project. Based upon comments received from the public and LADOTD preference, signalized intersections were eliminated from consideration. As a result of this decision, there was only one remaining intersection alternative for LA 408 at LA 37/64: a roundabout. The only differences among the alternatives would be the location of their eastern termini and the type of intersections present at those termini.

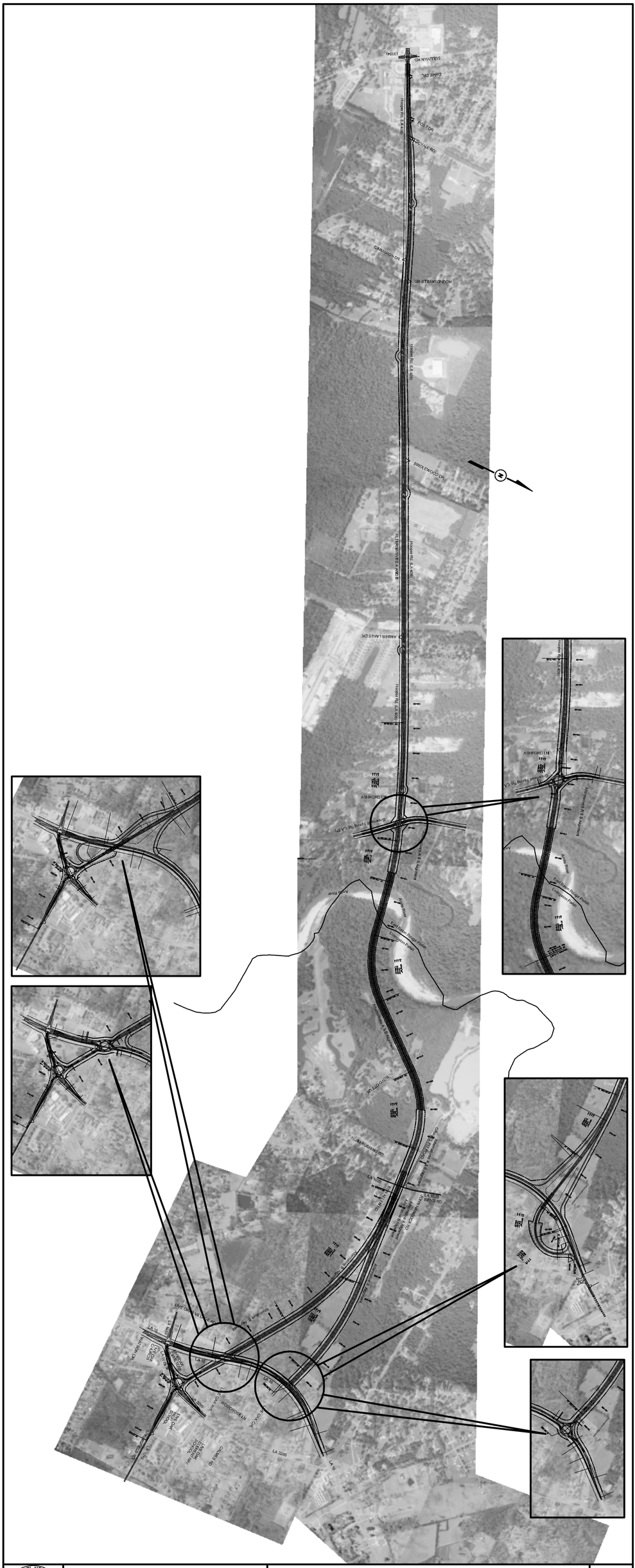
While there was tremendous support for the grade-separated free-flow interchanges from the public, it was determined that the relocation and land acquisition impacts of such an interchange for the Alternative A Alignment were too severe, and it was eliminated from further consideration. It was decided to retain Alternative A with a roundabout terminus for further study. It was also determined to retain both intersection types for Alternative Alignment B for further study, with the roundabout intersection at LA 16 remaining as Alternative B, and the grade-separated intersection at LA 16 being re-designated as Alternative C.

All three alternatives were fully developed with vertical and horizontal geometry which was reviewed by LADOTD.

ADDITION OF SOUTHERLY ALTERNATIVE

In May of 2013, after the previously described alternatives had been developed and had their impacts projected and analyzed, the LADOTD determined that in order to explore all possible alternatives for alignment of a Hooper Road extension, a new southerly alternative with a different bridge location should be explored. As per the LADOTD's directive, the southerly bridge was to be developed as a single bridge crossing with all four lanes on one structure. Using several alignment suggestions provided by LADOTD staff, the project consultants developed preliminary geometric alignments for two southerly alternatives, including one which paralleled the power line easement and linked to LA 1024 east of LA 16 (similar to ones that were examined during the Stage 0 Feasibility Study), and one which crossed the Amite River about 1/3 mile north of the power line and connected to LA 16 at Cecil Street The LADOTD decided to fully develop the latter as an additional alternative for consideration, which would also undergo the same level of impact analysis as the previously developed and analyzed alternatives.

For purposes of reference, the alternative designations were redefined by LADOTD. The project was determined to consist of two (2) alternatives. **Alternative 1** includes the first three defined (northerly) alignments, and includes three alternative termini on the eastern (Livingston Parish) end. These are designated as 1-A, 1-B, and 1-C. **Alternative 2** is the later-developed southerly alignment, and includes only one terminus on the eastern end.



DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT DOTD	N-Y ASSOCIATES, INC. ENGINEERS · ARCHITECTS · PLANNERS PROGRAM & PROJECT MANAGERS	HOOPER ROAD EXTENSION – LA 408 ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1 EAST BATON ROUGE & LIVINGSTON PARISHES STATE PROJECT No. H.005403 FEDERAL AID PROJECT No. H005403 PUBLIC MEETING EXHIBIT	FIGURE II-7

ALTERNATIVES CONSIDERED

Beginning below, the considered alternatives are then fully defined, beginning with the No-Build Alternative and followed by Alternatives 1-A, 1-B, 1-C and Alternative 2.

NO BUILD ALTERNATIVE

The No Build Alternative looks at the project study area without the project but with other planned improvements that would take place regardless of whether the project is constructed.

Transportation Projects

There are several other transportation projects planned for the project study area and outside of the study area which would affect traffic flows in the corridor. The Capital Regional Planning Commission, lists several projects in their *Baton Rouge Metropolitan Transportation Plan 2037* that will impact the project study area and would affect travel and traffic volumes along LA 408 and other roadways in the study area. It should be noted that the widening and extension of LA 408 are also listed in this transportation plan as Tier 2 projects). These projects are briefly described below:

Tier I Highway Projects (Fiscal Year 2013-2017):

Widening LA 408 (Hooper Road) – Two different projects involve widening LA 408 from Blackwater Bayou to Joor Road, and from Joor Road to Sullivan Road, from two (2) to four (4) lanes.

Widening Sullivan Road – This project involves widening Sullivan Road between Hooper Road and Frenchtown Road, from two (2) to four (4) lanes.

Widening N. Sherwood Forest Boulevard Road – This project will widen N. Sherwood Forest between Choctaw Drive and Greenwell Springs Road to five (5) lanes.

Widening Old Hammond Highway – Two different projects involve widening this road from two (2) to four (4) lanes. The first segment is from Boulevard de Province to Millerville Road, the second is from Millerville Road to O'Neal Lane.

Millerville Road Interchange at I-12 – This interchange will be reconfigured to better handle traffic flows.

I-110 Reconstruction - Between North Street and US 61/190, at-grade jointed concrete pavement (JCP) will be reconstructed.

LA 16 Intersection Improvements – Turn lanes will be installed at the Jackson Street intersection

LA 1032 Intersection Improvements - Improvements will be installed at the US 190 intersection.

Tier 2 Highway Projects (Fiscal Year 2018-2027):

Widening LA 408 (Hooper Road) – This project involves widening LA 408 from Plank Road to Mickens Road from four (4) to six (6) lanes.

LA 37 (Greenwell Springs Road) - This project involves widening the roadway from two (2) to five (5) lanes from Sullivan Road to Magnolia Bridge Road.

LA 64 (Magnolia Beach Road) – This project involves widening the roadway to four (4) lanes between the Magnolia Bridge and N. Range Ave.

LA 426 (Old Hammond Highway) – This project involves widening the roadway to four (4) lanes between O'Neal Lane and Florida Boulevard

S. Flannery Road – This project involves widening the roadway to four (4) lanes and realigning with Millerville Road, between Old Hammond Highway and Florida Boulevard

S. Choctaw Road – This project involves widening the roadway to four (4) lanes from Flannery Road to Central Thruway.

US 190 (Florida Boulevard) – There are two projects on US 190: the first involves widening the roadway to eight (8) lanes from Airline Highway to Monterey Boulevard, and the second involves widening the highway to four (4) lanes from Pete's Highway to Burgess Avenue.

Sharp Road – This project involves widening the roadway to four (4) lanes from Florida Boulevard to Old Hammond Highway.

S. Sherwood Forest Boulevard – This project involves widening the roadway to four (4) lanes from Florida Boulevard to Old Hammond Highway.

LA 1068 (Drusilla Lane) – This project involves widening the roadway to four (4) lanes from Jefferson Highway to Old Hammond Highway.

Tier 3 Highway Projects (Fiscal Year 2028-2037):

Mickens Road – This project involves widening the roadway to four (4) lanes from Hooper Road to Joor Road.

BUILD ALTERNATIVES

Design Criteria

The concept design of all roadways, ramps and bridges of Alternative 1 meet LADOTD UA-4 (urban arterial) criteria for roadway design. The concept design of the Hooper Road widening segment of Alternative 2 meets LADOTD UA-4 (urban arterial) criteria for roadway design, while the Hooper Road extension portion of Alternative 2 (roadways, ramps and bridges) meets LADOTD UA-2 criteria for roadway design.

Table II-1, on the following two pages, lists the two sets of design criteria.

The new roadway will meet LADOTD design standards for access and safety. As per LADOTD design criteria, a thirty foot (30') median is required for a four lane UA-4 with a 55 mph design speed, while an eighteen foot (18') median satisfies the 6 foot minimum (and provides for a left turn lane) for a four lane UA-2 with a 45 mph design speed. Access in the widened Hooper Road section will be limited as per the LADOTD's Engineering Design Standards Manual (EDSM) IV.2.1.4, which was put into effect in September 2008. The EDSM provides definitions and criteria for design of median openings on roadways where a median did not exist prior to the current project (i.e., 2-lane to 4-lane divided or 4-lane undivided to 4-lane divided). Most notably, median openings shall be spaced at least ½ mile (2,640 ft) apart and shall be directional u-turns. At locations where median breaks are provided for u-turns, bump-outs are provided if truck u-turn movements will be permitted. Provisions are allowed for left turns at key public facilities.

As most of the route includes a standard median width of either eighteen (18) or thirty (30) feet, the median configuration is not wide enough to provide adequate turning radii for a WB-67 classification truck to make a u-turn. As a result, right-of-way "bump outs" are required at certain u-turn locations which require u-turning WB-67 trucks to cross both lanes of opposing traffic into the "bump out" areas prior to merging into the traffic flow. Two westbound truck-sized bump-outs are located along the Hooper Road widening portion, along with one eastbound truck-sized bump-out. The roundabouts at intersections can also serve as truck-sized u-turn locations. It should be noted that the u-turn and bump-out locations shown on exhibits in this document are conceptual in nature and are subject to change during final design.

Design Concept

Common Hooper Road Widening Portion

The project includes the widening of Hooper Road (LA 408) for an approximate three mile stretch. Currently, LA 408 in this area has a posted speed limit of 55 mph for most of its length. It is currently an undivided two lane roadway with no paved shoulders.

Table II-1

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
Minimum Design Guidelines for Urban Arterial Roads and Streets

State law requires that the state highway system conform to these guidelines.

Item No.	Item	Urban				
		UA-1	UA-2	UA-3	UA-4	UA-5
1	Design Speed (mph)	40	45	50	55	60
2	Level of Service [1]	C	C	C	C	C
3	Number of Lanes	2 (min) – 4 (typ)	2 (min) – 4 (typ)	2 (min) – 4 (typ)	2 (min) – 4 (typ)	2 (min) – 4 (typ)
4	Width of Travel Lanes (ft)	11	11 – 12	12	12	12
5	Width of Shoulders (minimum) (ft) [2]					
	(a) Inside on multilane facilities	N/A	N/A	4	4	4
	(b) Outside	8	8	8	8	8
6	Shoulder Type	Paved	Paved	Paved	Paved	Paved
7	Parking Lane Width (ft)	10 – 12	10 – 12	N/A	N/A	N/A
8	Width of Median on Multilane Facilities (ft)					
	(a) Depressed	N/A	N/A	30	34 – 42	42
	(b) Raised	6 [3] – 30	6 [3] – 30	30	30	30
	(c) Two way left turn lane	11 – 14 typ. [4]	11 – 14 typ. [4]	N/A	N/A	N/A
9	Width of Sidewalk (minimum) (where used) (ft) [5]					
	(a) When offset from curb	4	4	4	4	4
	(b) When adjacent to curb	6	6	N/A	N/A	N/A
10	Fore slope (vertical – horizontal)	1:3 (min) – 1:4 (des)	1:3 (min) – 1:4 (des)	1:4	1:6	1:6
11	Back slope (vertical – horizontal)	1:3	1:3	1:3	1:4	1:4
12	Pavement Cross-slope (%)	2.5	2.5	2.5	2.5	2.5
13	Min. Stopping Sight Distance (ft)	305	360	425	495	570
14	Maximum Superelevation (%)	4	4	4	6	6
15	Minimum Radius (ft) [6,7]					
	(a) With normal crown (-2.5% cross-slope)	700	1,000	16,700	19,700	22,880
	(b) With 2.5% superelevation	550	750	3,500	5,250	6,280
	(c) With full superelevation	500	700	1,000	1,100	1,400
16	Maximum Grade (%)	7	6	6	5	5
17	Minimum Vertical Clearance (ft) [8]	16	16	16	16	16
18	Minimum Clear Zone (ft)					
	(a) From edge of through travel lane	18 [9]	24 [9]	28 [10]	22	30
	(b) Outside from back of curb (when curb is used)	6 (min) – 16 (des) [11]	6 (min) – 22 (des) [11]	19 [10]	13	21
	(c) Median from back of curb [12] (when curb is used)	4 (min) – 12 (des)	4 (min) – 18 (des)	8 (min) – 17 (des)	8 (min) – 17 (des)	8 (min) – 25 (des)
19	Bridge Design Live Load [13]	AASHTO	AASHTO	AASHTO	AASHTO	AASHTO
20	Width of Bridges (minimum) (face to face of bridge rail at gutter line) (ft)					
	(a) Curbed facilities (without sidewalks)	Traveled [14] way plus 8′	Traveled [14] way plus 8′	Roadway width	Roadway width	Roadway width
	(b) Shoulder facilities	Roadway width	Roadway width	Roadway width	Roadway width	Roadway width
21	Guardrail Required at Bridge Ends	[14]	[14]	Yes	Yes	Yes

Approved _____ Chief Engineer 12-4-09 Date

Minimum Urban Arterial Road and Street Design Guidelines - Sheet 1 of 2

Table II-1 (continued)

LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

Footnotes for Minimum Design Guidelines for Urban Arterial Roads and Streets

1- Level of service D allowable in heavily developed urban areas.
2- Curb may be used in place of shoulders on UA-1 and UA-2 facilities. If used on UA-3, UA-4, or UA-5 facilities, curb should be placed at the edge of shoulder. For design speeds greater than 45 mph, curb will not be placed in front of guardrail.
3- With Chief Engineer's approval, curb offsets may be eliminated and the minimum median width can be reduced to 4 feet. On principal arterials, particularly at intersections, the upper limit should be considered.
4- Cannot be used on multilane roadways (with four or more through lanes) without the Chief Engineer's approval.
5- Sidewalks must be separated from the shoulder and should be placed as near the right of way line as possible. On high speed facilities, they should preferably be placed outside the minimum clear zone shown in item 18.
6- It may be necessary to increase the radius of the curve and/or increase the shoulder width (maximum of 12 feet) to provide adequate stopping sight distance on structure.
7- The following radii apply at divisional islands. The radius selected must match the design speed of the road. These radii also apply to the other guidelines where divisional islands are mentioned.

Design Speed	Radius (rounded)	Degree of Curve
20 mph	1,450′	4°
25 mph	1,650′	3° 30′
30 mph	1,950′	3°
35 mph	2,300′	2° 30′

Design Speed	Radius (rounded)	Degree of curve
40 mph	2,900′	2°
45 mph	3,850′	1° 30′
50 mph	5,750′	1°
55 & 60 mph	11,500′	0° 30′

8- An additional 6 inches should be added for additional future surfacing.
9- Applies to facilities with shoulders. Refer to the Roadside Design Guide when 1:3 fore slopes are used or for slopes flatter than 1:4.
10- The distance may be reduced by 6 feet if 1:6 slopes are used. For outside shoulders wider than 8 feet, further reduction should be proportional to the added shoulder width.
11- If outside shoulders and curb are used, refer to the Roadside Design Guide.
12- Where left turn lanes are provided or where the median is less than 6 feet in width, the minimum clearance will be 1.5 feet from back of curb. For median slopes steeper than 1:6, refer to the Roadside Design Guide for the desirable clear zone.
13- LRFD for bridge design.
14- Refer to EDSM II.3.1.4 when sidewalks will be provided and for guardrail requirements.

General Note:

DOTD pavement preservation minimum design guidelines or 3R minimum design guidelines (separate sheets) shall be applicable to those projects for which the primary purpose is to improve the riding surface.

Minimum Urban Arterial Road and Street Design Guidelines - Sheet 2 of 2

There is roughly 100' of available right-of-way along the roadway. The roadway is intersected at numerous locations by short, residential local streets.

Hooper Road in this area would be widened and improved from two to four lanes. Using LADOTD design criteria, it was determined to build the roadway to UA-4 (Urban Arterial) highway standards, which would maintain the existing 55 MPH speed limit. As the required right-of-way for this type of roadway is 180 feet and the current right-of-way is 100 feet, right-of-way will be required. The design was undertaken with the purpose of avoidance and minimization of impacts, particularly relocations.

The widened roadway will also need to meet LADOTD design standards for access and safety. As per LADOTD design criteria, a thirty foot (30') median is required between the northbound and southbound lanes. Access will be limited as per the LADOTD's Engineering Design Standards Manual (EDSM) IV.2.1.4, which was put into effect in September 2008. The EDSM provides definitions and criteria for design of median openings on roadways where a median did not exist prior to the current project (i.e., 2 lane to 4 lane divided or 4 lane undivided to 4 lane divided). Most notably, median openings shall be spaced at least ½ mile (2,640 ft) and shall be directional u-turns. At locations where median openings are provide for u-turns, some bump-outs were also provided to enable truck u-turn movements.

The widening begins on the west where LADOTD already has plans to acquire right-of-way for the improvement of the Hooper Road/Sullivan road intersection. In this vicinity, right-of-way would be entirely taken from the north side. The existing set of three (3), 6' x 5' box culverts and two (2) 60" pipes east of Devall Road would be replaced with a new set of six (6), 6' x 5' culverts. Near the vicinity of Roundsaville Road, the alignment would shift to the south and right-of-way would be acquired along both sides of Hooper Road. Slightly west of Beaver Bayou, the existing 48" reinforced concrete drainage pipe under the roadway would be replaced with dual 48" pipes, while at Beaver Bayou itself, the existing set of three (3), 9' x 10' box culverts would be replaced with four similar-sized culverts. Just west of Bridlewood drive, the alignment once again shifts to the north, with right-of-way being taken only on the north side.

Build Alternative 1 - Common Extension Portion (including Bridge)

Starting from the intersection of Hooper Road and Amber Lakes Drive, Alternatives 1-A, 1-B and 1-C share a common alignment between Amber Lakes Drive and Bend Road (LA 1020). Under this alignment, the remainder of Hooper Road will be widened as it is west of Amber Lakes Drive, to the current Hooper Road terminus at Greenwell Springs Road. Immediately east of Amber Lakes Drive, the existing 48" reinforced concrete drainage pipe under the roadway would be replaced with dual 48" pipes, and about 1,000 feet east of that, the existing 24" reinforced concrete drainage pipe under the roadway would be replaced with dual 24" pipes. In that same area, the alignment once again shifts to the south and right-of-way would be acquired along both sides of Hooper Road. At Ashford Lane, the existing 48" reinforced concrete drainage pipe under the roadway

would be replaced with dual 48” pipes, and in the area between Ashford and existing Greenwell Springs, nearly all right-of-way will be taken from the south side of Hooper Road. No right-of-way will be required from the strip shopping center containing the post office.

The existing intersection with Greenwell Springs will be reconfigured from a “T’ intersection to a mostly two-lane roundabout. Installation of this roundabout will require improvements to Greenwell Springs Road as it approaches the roundabout from both directions. Right-of-way will be required on the east side of Greenwell Springs north of the intersection, and on the west side of Greenwell Springs south of the intersection.

From the new roundabout at Greenwell Springs Road (LA 37/LA 64), an extension for Hooper Road is planned eastward. The extension would also be a UA-4, 55 mph classification, and include a new bridge across the Amite River. As the land slopes down to the floodplain of the Amite River, the at-grade roadway will transition to two (2), parallel bridge structures. The Hooper Road extension will remain on bridge structure as it heads eastward over the spoil bank floodplains on the east side of the river before transitioning to an at-grade roadway in the area between the residences at the end of Boyd Ott Lane and the gravel pits on the eastern side of the river.

Heading eastward, the divided highway will cross an area of cleared land, avoiding residences before crossing Bend Road (LA 1020) with an overpass between Ben Allen Road and John Hancock Road. The overpass footprint will be limited via the use of retaining walls rather than earthen embankment, and no access to or from the Hooper Road extension is planned at Bend Road. The point where Alternatives 1-A and 1-B diverge is at the eastern end of the Bend Road overpass.

This portion of the extension will be controlled access; there will be no development allowed along the extension.

Build Alternative 1-A Terminus

From the point of divergence from the common Alternative 1 section, the Build Alternative 1-A terminus continues almost due east until the Hooper Road extension’s “T” intersection with LA 16. That intersection will be a 2-lane, free-flow roundabout. Concrete box culverts are planned where the roadway crosses a small unnamed creek between Bend Road and LA 16.

The existing four-lane section of LA 16 south of the LA 1019 intersection will be extended north to the Hooper Road extension. It will transition back to two lanes about 1,000 feet north of the new intersection with Hooper Road. Most of the right-of-way will be taken from the western side of LA 16, though a small amount will be required on the east side in the immediate vicinity of the roundabout.

This portion of the extension will be controlled access; there will be no development allowed along the extension.

Build Alternative 1-B Terminus

From the point of divergence of the common Alternative 1 section, the Build Alternative 1-B terminus begins a curve to the southeast, crossing a cleared area and entering a wooded area. The extension continues southeasterly until the Hooper Road extension's intersection with LA 16. Concrete box culverts are planned where the roadway crosses a small unnamed creek between Bend Road and LA 16.

The intersection with LA 16 occurs at the north end of the strip shopping center on the northwest corner of LA 1019 and LA 16. A portion of the shopping center property would need to be acquired under this alternative, and drain pipes would be installed in the wooded area to the northwest of the shopping center to allow cross-drainage. This intersection will also be a free-flow, two-lane roundabout.
The Hooper Road extension will continue past LA 16 southeastward as a two lane facility, connecting with the existing "T" intersection of Old LA 16/ LA 1019/3285 and Springfield Road/ LA 1019 to form a full four-way intersection. That intersection will be converted to a mixed (one lane/two lane) roundabout. Right-of-way will be required along both sides of LA 1019 and along the western side of LA 3285.

LA 16's existing four-lane section at the intersection south of the LA 1019 intersection will be extended north to the intersection with the Hooper Road extension. It will transition back to two lanes about 1,000 ft north of the new intersection with Hooper Road. All of the right-of-way for this widening is taken from the undeveloped western side of LA 16.

This portion of the extension will be controlled access; i.e. there will be no development allowed along the extension.

Build Alternative 1-C Terminus

From the point of divergence from the Alternative 1 common section, the Build Alternative 1-C terminus begins a curve to the southeast, crossing a cleared area and entering a wooded area. The extension continues southeasterly until the Hooper Road extension's intersection with LA 16.

The intersection with LA 16 occurs just north of the strip shopping center on the northwest corner of LA 1019 and LA 16. This intersection will be a grade-separated, free-flow interchange. A portion of the shopping center property would need to be acquired under this alternative, and drain pipes and drop inlets would be installed in the wooded area to the northwest of the shopping center to allow cross-drainage. Just west of this intersection, the Hooper Road extension will transition from a four lane to a three-

lane facility, with two lanes eastbound lanes proceeding over the overpass and one westbound lane over the overpass. On the east side of the overpass, LA 408 transitions to a two-lane facility, with the outside eastbound lane becoming a cloverleaf exit lane to northbound LA 16.

LA 408 would then come to grade and connect with the existing "T" intersection of Old LA 16/ LA 1019/3285 and Springfield Road/ LA 1019 to form a full intersection. That intersection will be converted to a mixed (one lane/two lane) roundabout.

The grade-separated, free flow interchange at LA 16 will handle three movements (eastbound LA 408 to southbound LA 16 via an exit ramp, southbound LA 16 to westbound LA 408 via an entrance ramp, and eastbound LA 408 to northbound LA 16 via the overpass and a cloverleaf ramp). Northbound LA 16 to westbound LA 408 will be routed through LA 1019 to the new roundabout at LA 408/LA 1019/LA 3285, then westward across the overpass.

The existing four-lane section of LA 16 south of the LA 1019 intersection will be extended north to the Hooper Road extension. It will transition back to two lanes about 1,000 feet north of the new intersection with Hooper Road. All of the right-of-way for this widening would be taken from the undeveloped western side of LA 16.

This portion of the extension will be controlled access; there will be no development allowed along the extension.

Figure II-8, on the following page, schematically shows Alternative 1 with its three termini options. A detailed set of engineered plan view layouts for the alternative and its termini options (overlaid on aerial photography) is presented at the end of this chapter.

Build Alternative 2

From the intersection of Hooper Road at Amber Lakes Drive, Build Alternative 2 provides a more southerly alignment option. Just east of Amber Lakes Drive, a "new" Hooper Road alignment would be constructed, which veers southeastward from the current alignment. However, rather than 55 mph design speed UA-4 roadway, Alternative 2 would be built to UA-2 (Urban Arterial) highway standards with a 45 mph design speed. The new alignment would cross Greenwell Springs Road about 3,000 feet below the current Hooper/Greenwell Springs Road intersection, with a roundabout similar to the one used for Build Alternative options 1-A, 1-B, and 1-C. Just east of the roundabout, the bridge structure would commence.

As opposed to the two (2) parallel bridge structures used for Build Alternative 1, the bridge in Build Alternative 2 will be a single bridge crossing with all four lanes on one structure. The bridge would cross the Amite River and enter Livingston Parish, with the transition to at-grade roadway occurring between Bear Cave Road and Chandler Bluff Road. The at-grade roadway would proceed east between those two streets, and would

cross LA 1019 with an overpass. The overpass footprint will be limited via the use of retaining walls rather than earthen embankment, and no access to or from the Hooper Road extension is planned at LA 1019. The remainder of the route proceeds almost due east, and terminates at LA 16 where LA 16 currently intersects with Cecil Drive. A new roundabout would be installed at that intersection

This portion of the extension will be controlled access; there will be no development allowed along the extension.

Figure II-9, on the second page following, schematically shows Alternative 2. A detailed set of engineered plan view layouts for the alternative (overlaid on aerial photography) is presented at the end of this chapter.

Bridges

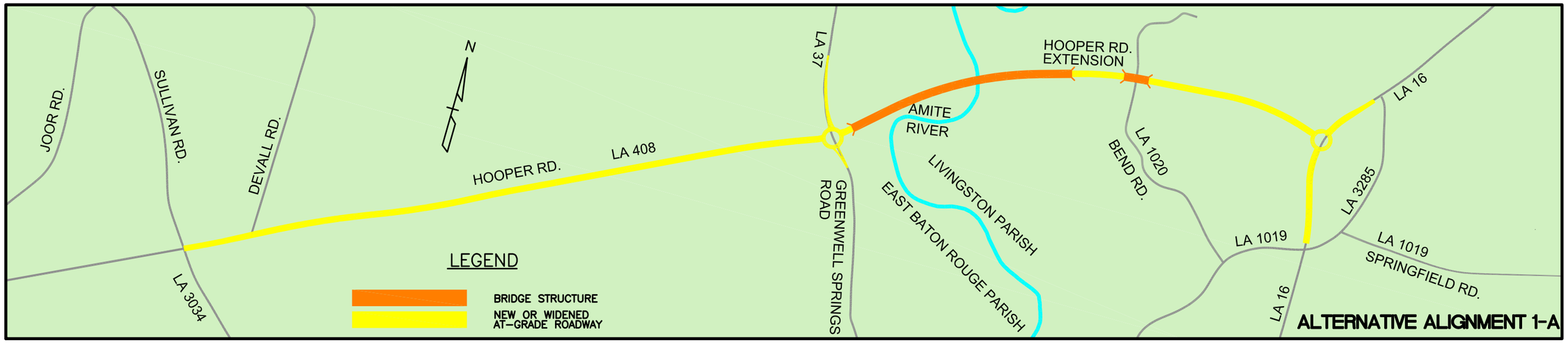
Hooper Road Widening

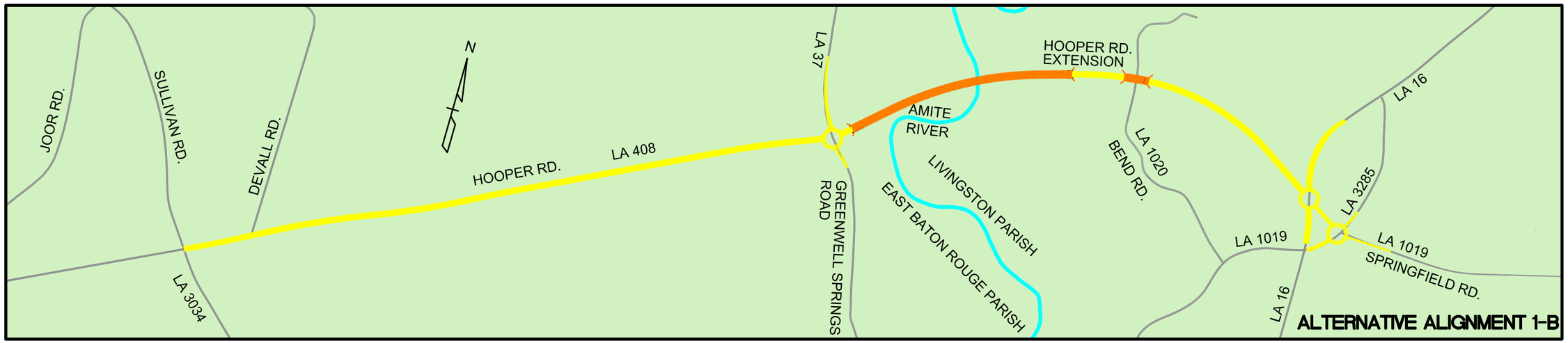
The widening segment of Hooper Road includes only one bridge structure. The existing drainage under Hooper Road at Beaver Bayou is a three (3) barrel, 9' x 10' box culvert and due to its size is classified as a bridge structure (Structure No. 255020796). The structure appears to be in good condition. However, due to the age of the structure and roadway alignment, it is proposed that this structure be replaced rather then extended. In addition, since it was constructed in 1951 and further development on the north side of Hooper Road is anticipated, an additional barrel is proposed.

Alternative 1

The extension of Hooper Road under Alternative 1 includes a bridge crossing of the Amite River and an overpass over Bend Road (LA 1020). In addition, the Alternative 1-C terminus includes a grade separation structure over LA 16.

The Alternative 1 Amite River bridge structure will be two parallel structures, each 5308 feet long, consisting of AASHTO PPC Type IV girders on 30" PPC pile bents. The bridge profile as shown on Sheets P-7 thru P-9 is based on a 50-year Design Water Surface Elevation of 61.0 and the 100-year Water Surface Elevation of 63.0. The bridge typical sections are shown on Sheet TS-5 (actual configuration will be determined during the final design phase). To phase construction, the eastbound bridge structure is proposed to be built first to accommodate two-way traffic with a temporary barrier rail down the centerline and 8 ft. shoulders on the outside for traffic in each direction. The temporary barrier rail would be removed at a later date for one-way traffic. As a result, the eastbound bridge will be wider than the westbound bridge. This bridge is common to Alternatives 1-A, 1-B and 1-C.





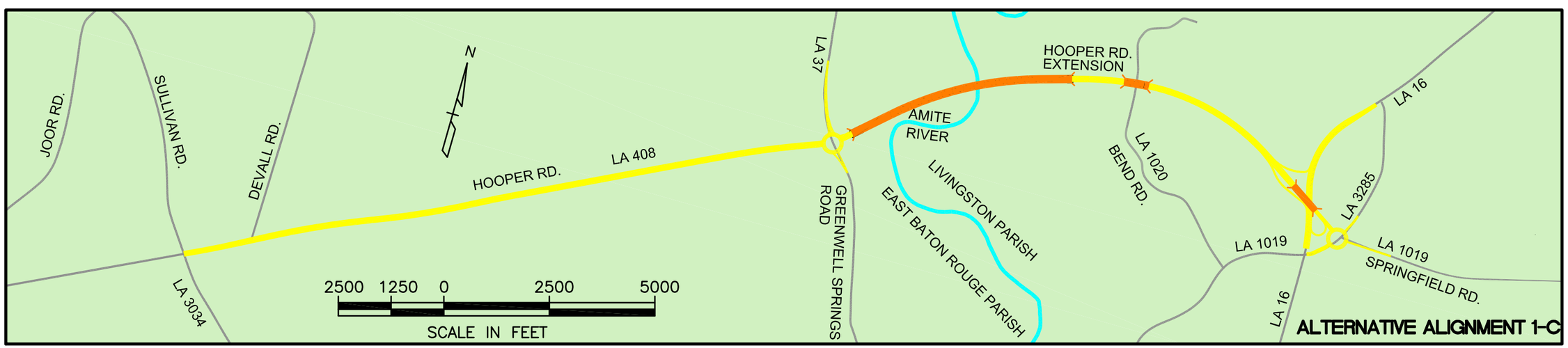


FIGURE II-8

HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

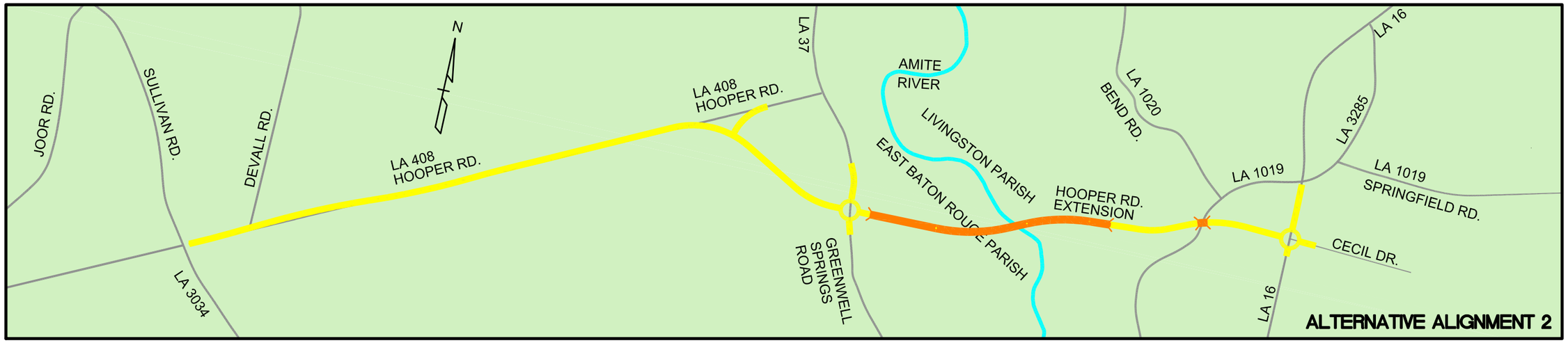
STATE PROJECT No. H.005403

FEDERAL AID PROJECT No. H005403

BUILD ALTERNATIVE 1 SCHEMATICS

ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT



2500 1250 0 2500 5000

SCALE IN FEET

FIGURE II–9

HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

STATE PROJECT No. H.005403

FEDERAL AID PROJECT No. H005403

BUILD ALTERNATIVE 2 SCHEMATICS

ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

The Bend Road (LA 1020) overpass will be two parallel structures, each 559 feet long, consisting of AASHTO PPC Type III girders on column bents. The bridge embankment is proposed to be retained by the use of MSE/GRS walls to reduce the required right-of-way width. The bridge profile as shown on Sheets P-10, P-16 and P-22 for each of the respective Alternative Alignments 1-A, 1-B and 1-C is based on a 16.5 foot minimum vertical clearance over Bend Road. The bridge typical sections are shown on Sheets TS-5 through TS-8. To phase construction, the eastbound bridge structure is proposed to be built first to accommodate two-way traffic with a temporary barrier rail down the centerline and 8 foot shoulders on the outside for traffic in each direction. The temporary barrier rail would be removed at a later date for one-way traffic. As a result, the eastbound bridge will be wider than the westbound bridge. However, the use of MSE/GRS walls will require the entire bridge embankment to be constructed initially. The Bend Road overpass is common to all Alternative 1 options.

The Alternative 1-C terminus LA 16 overpass will be a single 823 foot long structure consisting of AASHTO PPC Type III and Type IV girders on column bents. The bridge embankment is proposed to be partially retained by the use of MSE/GRS walls to reduce the required right-of-way width and ramp locations. The bridge profile (as shown on Sheet P-24) is based on a 16.5 foot minimum vertical clearance over LA 16. The bridge typical section is shown on Sheet TS-8. The bridge structure is proposed to be built with a single westbound lane, two (2) east bound lanes and a barrier rail down the centerline to separate eastbound and westbound traffic. No future widening of this bridge or parallel construction will be required. This bridge structure is for the Alternative 1-C terminus only.

Alternative 2

The Alternative 2 Amite River bridge structure will be one single structure, 5727 feet long, consisting of AASHTO PPC Type IV girders on 30” PPC pile bents. The bridge profile as shown on Sheets P-30 thru P-32 is based on a 50-year Design Water Surface Elevation of 59.7 and the 100-year Water Surface Elevation of 61.0. The bridge typical section is shown on Sheet TS-11.

The LA 1019 overpass will be one structure, 241 feet long, consisting of AASHTO PPC Type III girders on pile bents. Pile bents were selected to minimize existing utility conflicts with column bent footings. The bridge embankment is proposed to be retained by the use of MSE/GRS walls to reduce the required right-of-way width. The bridge profile as shown on sheet P-33, is based on a 16.5 foot minimum vertical clearance over LA 1019. The bridge typical section is shown on Sheet TS-12.

Drainage

The existing drainage under Hooper Road was built with the roadway, and the headwalls all show a construction year of 1951. The only observed changes are the addition of two

(2), 60” CMP added on the west side of a three (3) barrel, 6’ x 5’ box culvert east of Devall Road. The remainder of the drainage under Hooper Road consists of a three (3) barrel, 9’ x 10’ box culvert over Beaver Bayou (Structure No. 255020796), multiple 48” RCP locations, and a 24” RCP location. The majority of the drainage on the north side of Hooper Road, east of Beaver Bayou, flows east to the Amite River. While the drainage pipes on the north side of Hooper Road vary in size, the maximum driveway culverts are 2-48” RCP. At Greenwell Springs Road, the flow is through 2-36” CMP.

For the purposes of this EA, all existing crossings have been increased by one (1) barrel or one (1) additional pipe. The exception to this is the crossing under Greenwell Springs Road where there appears to be considerable scour on the downstream side; two (2) additional pipes are shown here.

The cost of pipes or box culverts have been estimated where ditch crossings were observed in the field and/or noted on quad maps.

During preliminary plan preparation, a drainage study and drainage map will be prepared.

Utilities

General

The utility disposition table in the Appendix lists the public and private utilities identified within the roadway alternative alignments through discussions with the individual utilities. Private utilities requiring relocation include Entergy, AT&T, Cox Communications, DEMCO and DETEL. Public utilities include sewer, water, and gas. The estimated cost to relocate the utilities potentially to be paid by this project listed in the utility disposition table are included in the construction cost estimate. Order of magnitude relocation costs were requested from the individual utilities if they were to be paid for as part of this project. If the utility did not provide these costs, then costs were estimated.

Hooper Road Widening – Phase 1

<u>Public Utilities:</u>

This alternative requires the relocation of various sewer lines owned by the EBROSCO Sewerage System in East Baton Rouge Parish along with various waterlines owned by the Baton Rouge Water Company along LA 408. The EBROSCO sewer lines include a 24” and 4” SFM crossing and an 18” parallel sewer force main. The Baton Rouge Water Company lines include 7 crossings ranging from 4” to 8” diameter and 5 parallel waterlines ranging from 4” to 8” diameter.

Private Utilities:

Along LA 408 in East Baton Rouge Parish, an overhead powerline crossing owned by DEMCO may require pole relocation and other overhead power lines owned by Entergy will require relocation. There are sixty-five (65) small diameter gas lines crossing LA 408 owned by Entergy that will require relocation along with a parallel 4" gas line along this highway. Several small diameter gas lines owned by Entergy along LA 37 will also require relocation along with a parallel 4" gas line.

AT&T utility locations provided by AT&T show a number of underground ducts, manholes and a distribution terminal located on the south side of Hooper Road (LA 408) outside of the roadway right-of-way (ROW). AT&T has not provided an order of magnitude cost for these relocations.

Alternative 1-A Terminus– Phases 2 And 3

Utility relocations required for construction of Phases 2 and 3 are intended to be performed for construction of Phase 2. Accordingly, there will be no utility relocations required for construction of Phase 3.

Public Utilities:

This alternative terminus requires the relocation of a 6" and a 12" water line parallel to LA 16 in Livingston Parish owned by the Ward Two Water District along with a 6" sewer force main parallel to LA 16 owned by Livingston Parish Sewer District 2. Ward Two Water District reported that their water lines along Bend Road (LA 1020) and LA 16 were in their own 10 foot servitude. This alignment also includes the relocation of a 4" gas line parallel to LA 16 in Livingston Parish owned by the Town of Walker.

Private Utilities:

This alternative terminus requires the relocation of overhead electric power owned by DEMCO in private servitude crossing the proposed alignment of LA 408 near Bend Road (LA 1020). These poles also carry Cox Communication lines. The cost for this relocation is included in the project cost. This includes 2 overhead crossings. At the Bend Road (LA 1020) overpass there is an AT&T aerial line that will require relocation.

There are overhead electric power crossings and parallel overhead lines in the LA 16 right-of-way which require relocation by both Entergy and DEMCO for the widening of LA 16. The cost for the DEMCO relocations have been included in the project costs as DEMCO reported that they retained their prior rights with the relocation of LA 16. There are also parallel buried and overhead telephone lines in the LA 16 right-of-way which will require relocation by AT&T.

Alternative 1-B Terminus – Phases 2 And 3

Utility relocations required for construction of Phases 2 and 3 are intended to be performed for construction of Phase 2. Accordingly, there will be no utility relocations required for construction of Phase 3.

Public Utilities:

This alternative terminus requires the relocation of a 12" and a 6" water line parallel to LA 16 in Livingston Parish along with 1,780 linear feet of 6" water line along LA 1019 owned by the Ward Two Water District. This alignment also require relocation of a 6" sewer force main parallel along LA 16 and gravity sewer along LA 1019 and LA 3285 owned by Livingston Parish Sewer District 2. There is also a 2" gas line along LA 1019 and a 4" gas line along LA 16 owned by the Town of Walker which will require relocations.

Private Utilities:

This alternative terminus requires the relocation of overhead electric power owned by DEMCO in a private servitude crossing the proposed alignment of LA 408 near Bend Road (LA 1020). In addition, there is another required relocation of overhead electric power owned by DEMCO in a private servitude crossing the proposed alignment of LA 408 between LA 16 and LA 1019. These poles also carry Cox Communication lines. The cost for this relocation is included in the project cost. This includes 3 crossings. At the Bend Road (LA 1020) overpass there is an AT&T aerial line that will require relocation.

There are overhead electric power crossings and parallel overhead lines in the LA 16 right-of-way which require relocation by both Entergy and DEMCO for the widening of LA 16. The cost for the DEMCO relocations have been included in the project costs as DEMCO reported that they retained their prior rights with the relocation of LA 16. There are also parallel buried and overhead telephone lines in the LA 16 right-of-way which will require relocation by AT&T. AT&T utility locations provided by AT&T show underground ducts, manholes and a distribution terminal located east of LA 16 outside of roadway ROW. AT&T has not provided an order of magnitude cost for these relocations.

DETEL owns 900 linear feet of underground fiber optic line along LA 1019 which is required to be relocated by this alignment and is the internet provider for the area schools.

Alternative 1-C Terminus – Phases 2 And 3

Utility relocations required for construction of Phases 2 and 3 are intended to be performed for construction of Phase 2. Accordingly, there will be no utility relocations required for construction of Phase 3.

Public Utilities:

This alternative terminus requires the relocation of a 12" and a 6" water line along LA 16 in Livingston Parish owned by the Ward 2 Water District along with a 6" water line along LA 1019. Also requiring relocation are gravity sewer lines along LA 1019 and LA 3285 owned by Livingston Parish Sewer District 2 and +/- 100 linear feet of a 6" sewer force main along LA 16 owned by Livingston Parish Sewer District 2. A 4" gas line along LA 16 and a 2" gas line along LA 1019 which are owned by the Town of Walker will require relocation.

Private Utilities:

This alternative terminus requires the relocation of overhead electric power owned by DEMCO in a private servitude crossing the proposed alignment of LA 408 near Bend Road (LA 1020). In addition, there is another required relocation of overhead electric power owned by DEMCO in a private servitude crossing the proposed alignment of LA 408 between LA 16 and LA 1019. These poles also carry Cox Communication lines. The cost for this relocation is included in the project cost. This includes 3 crossings. At the Bend Road (LA 1020) overpass, there is an AT&T aerial line that will require relocation.

There are overhead electric power crossings and parallel overhead lines in the LA 16 right-of-way which require relocation by both Entergy and DEMCO for the widening of LA 16. The cost for the DEMCO relocations have been included in the project costs as DEMCO reported that they retained their prior rights with the relocation of LA 16. There are also parallel buried and overhead telephone lines in the LA 16 right-of-way which will require relocation by AT&T. AT&T utility locations provided by AT&T show underground ducts, manholes and a distribution terminal located east of LA 16 outside of roadway ROW. AT&T has not provided an order of magnitude cost for these relocations.

DETEL owns 900 linear feet of underground fiber optic line along LA 1019 which is required to be relocated by this alignment and is the internet provider for the area schools.

Alternative 2

Some utility relocations are required for construction of Phase 2 (the extension of Hooper Road from Amber Lakes to the LA 16 tie-in).

Public Utilities:

This alternative will not require any public utility relocations on the new alignment to connect to Greenwell Springs Road. At Greenwell Springs Road, the Baton Rouge Water Company 4" PVC water line will require relocation. The only public utility relocation required from Greenwell Springs Road to LA 1019 is a Ward Two Water District 4" PVC line crossing the new alignment approximately 1800' west of LA 1019 in private

servitude, near the east end of the proposed bridge. At LA 1019, pile bents are utilized to minimize the bridge foundation footprint and span the existing 80' roadway right-of-way. As such, no public utilities will have to be relocated. The additional spans serve to bridge over the Ward 2 Water District 12" water line on the east side of LA 1019 in private servitude. No public utility relocations will be required from LA 1019 to LA 16.

At the intersection of LA 16 and Cecil Drive, Ward Two Water District has a 12" PVC water line in private servitude on the west side of LA 16 and a 6" PVC in the state right-of-way crossing LA 16 on the north side of Cecil Dr. The City of Walker has a 4" poly gas line on the west side of LA 16 running south from Cecil Drive, a 1" poly gas line running north of Cecil Drive and a 2" poly gas line crossing LA 16 and running east on the north side of Cecil Drive. Livingston Parish Sewer District #2 has an 8" gravity sewer and a 4" sewer force main, both approximately 4' below natural ground on the west side of LA 16. The water, sewer and gas lines in this intersection will have to be relocated for construction of the roundabout.

Private Utilities:

This alternative will not require any private utility relocations on the proposed alignment to connect to Greenwell Springs Road. At Greenwell Springs Road, relocation of Entergy power poles and raising of their lines will be required for construction of the roundabout. No private utility relocations will be required from Greenwell Springs Road to LA 1019. At LA 1019, the overhead DEMCO power lines and AT&T communication lines on poles will have to be raised above the overpass structure or go underground. No private utility relocations will be required from LA 1019 to LA 16. Along each side of LA 16, relocation of Entergy and DEMCO power poles and raising of their lines will be required for construction of the roundabout. Along Cecil Drive, power and communication line are on poles at the rear of the properties and no relocation of these utilities will be required.

DETEL provides internet service to public schools in Livingston Parish with underground fiber optic cables along LA 16 and Cecil Drive to service Live Oak Middle School. Relocation of their lines will be required for construction of the roundabout at LA 16/ Cecil Drive.

CONCEPTUAL CONSTRUCTION COST

General

Construction quantities for the proposed action were derived from the typical sections and the plan layouts as shown at the end of this chapter. Unit prices are based on Louisiana Department of Transportation and Development (LADOTD) 4th quarter 2012 unit prices. The construction costs are presented with the intent of phased construction for each of the alternatives. The first phase of each alternative is the widening of Hooper

Road to four lanes from Sullivan Road to (1) a new roundabout at Greenwell Springs Road (LA 37) under Alternative 1, or (2) just east of Amber Lakes Road under Alternative 2. This is a common element for both elements. The second phase of Alternative 1 is to construct two lanes from the Greenwell Springs roundabout to one of three eastern termini as defined previously. The second phase of Alternative 2 is completion of the extension from the turn-off from Hooper Road near Amber Lakes to the eastern terminus at LA 16 and Cecil Drive. Only Alternative 1 has a third and final phase, which is to construct two additional lanes for a full 4-lane roadway.

Construction costs were divided into the following basic groups: Roadway, Bridge Structures, Removals, Earthwork, Driveways, Drainage, Utilities, Mobilization, Right-of-Way Acquisition and Contingencies.

Main Roadway

The at-grade roadway cost estimate includes construction of new roadway, curbs and striping. The area of proposed construction is mostly flat. Asphalt pavement was assumed for estimating purposes along the roadway corridor.

Utilities

Utility costs include costs for the relocation of existing utilities that have been identified with the utility companies as being a cost to the project. Private utilities are considered to be relocated at the utility provider's cost unless the utility has stated they have a basis for the project paying for the relocation. During design, the utility will have to provide the basis for the project paying the relocation costs. See the Appendix for those utilities identified with the utility companies along the proposed alignments.

Right-of-Way Acquisition and Relocation

Private property will need to be acquired to construct each Build Alternative. The methodology employed in the determination of estimated costs for private property involved research of property for sale and recent sales in the project area. Right-of-way acquisition costs include land, improvements, damages, appraisal fees, acquisition fees, relocation fees and other costs. A complete breakdown of projected costs is included in the Appendix.

Contingencies

A 25% construction cost contingency was included for this concept-level study.

Summary

Table II-2 beginning on the following page, presents detailed conceptual cost estimates for each Build Alternative. The total cost estimate for constructing the Alternative 1-A is $168,256,007; the cost for Alternative 1-B is $179,319,070; the cost for Alternative 1-C is $188,995,661; and the cost for Alternative 2 is $166,807,710. As of the date of this document, there is no current funding source identified for designing or constructing this project.

TABLE II- 2
CONCEPTUAL CONSTRUCTION COST ESTIMATE

PHASE 1 (ALTERNATIVE ALIGNMENTS 1-A, 1-B & 1-C)

Description of improvements:
Widening of existing Hooper Road (LA 408) to 4-lanes with a 30 ft. median from Sta 10+00 to a new 2-lane roundabout at Greenwell Springs Road (LA 37).

Description	Unit	Unit Cost	Quantity	Total
Removal of Exist. Pavement & Base	LUMP	$520,000	1	$520,000
Removal of Structures & Obstructions	LUMP	$104,000	1	$104,000
Clearing & Grubbing	LUMP	$80,000	1	$80,000
Earthwork	LUMP	$1,250,000	1	$1,250,000
Granular Material	LUMP	$560,000	1	$560,000
Roadway	LUMP	$12,341,000	1	$12,341,000
Side Drain Drainage	LUMP	$965,000	1	$965,000
Cross Drain Drainage	LUMP	$716,000	1	$716,000
Roundabout Legends, Striping & Signage	LUMP	$45,000	1	$45,000
Temporary Signs & Barricades	LUMP	$100,000	1	$100,000
Temporary Detours Roads	LUMP	$168,000	1	$168,000
Temporary Maintenance Aggregate	LUMP	$140,000	1	$140,000
Construction Layout	LUMP	$75,000	1	$75,000
Driveways	LUMP	$497,000	1	$497,000
Bridge Structure No. 255020796 (over Beaver Bayou)	LUMP	$580,000	1	$580,000
Utility Relocations:				
Water	LUMP	$2,530,000	1	$2,530,000
Sewer	LUMP	$300,000	1	$300,000
Gas	LUMP	$0	0	$0
Electric	LUMP	$0	0	$0
Cable TV	LUMP	$0	0	$0
Telephone	LUMP	$2,050,000	1	$2,050,000
Mobilization (5%)	LUMP	$1,151,050	1	$1,151,050
Right-of-Way Acquisition & Relocation	LUMP	$16,935,500	1	$16,935,500
		SUBTOTAL		$41,107,550
		CONTINGENCY	25%	$10,276,888
TOTAL - PHASE 1 (Alt. Align. A, B & C)				**$51,384,438**

Notes:
1. *LADOTD 2012 unit prices used.*
2. *Roadway costs include asphalt, base course, concrete curbs and typical striping.*

TABLE II-2 (Continued)
CONCEPTUAL CONSTRUCTION COST ESTIMATE

PHASE 2 (ALTERNATIVE ALIGNMENT 1- A)

Description of improvements:
Construct 2-lanes from the Phase 1 roundabout at the Hooper Road (LA408)/ Greenwell Springs (LA 37) intersection to LA 16 with a new 2-lane roundabout and widen LA 16 to 4-lanes from the roundabout south to the existing 4-lanes. Amite River bridge structure, 5308' long X 50' gutter to gutter. Bend Road overpass structure, 559' long X 50' gutter to gutter.

Description	Unit	Unit Cost	Quantity	Total
Removal of Exist. Pavement & Base	LUMP	$110,000	1	$110,000
Removal of Structures & Obstructions	LUMP	$22,000	1	$22,000
Clearing & Grubbing	LUMP	$48,000	1	$48,000
Earthwork	LUMP	$1,125,000	1	$1,125,000
Granular Material	LUMP	$200,000	1	$200,000
Roadway	LUMP	$4,532,000	1	$4,532,000
Side Drain Drainage	LUMP	$57,000	1	$57,000
Cross Drain Drainage	LUMP	$664,000	1	$664,000
Roundabout Legends, Striping & Signage	LUMP	$45,000	1	$45,000
Control of Access Fencing	LUMP	$420,000	1	$420,000
Temporary Signs & Barricades	LUMP	$40,000	1	$40,000
Temporary Detours Roads	LUMP	$150,000	1	$150,000
Temporary Maintenance Aggregate	LUMP	$20,000	1	$20,000
Construction Layout	LUMP	$100,000	1	$100,000
Driveways	LUMP	$66,000	1	$66,000
Amite River Bridge Structure	SF	$132	265,400	$35,032,800
Temporary Construction Work Bridge	LUMP	$900,000	1	$900,000
Riprap	LUMP	$600,000	1	$600,000
Clearing for Bridge	LUMP	$75,000	1	$75,000
Bridge Construction Road & Removal	LUMP	$223,000	1	$223,000
Re-planting Trees in Amite Basin	LUMP	$92,000	1	$92,000
Bend Road Overpass Structure	SF	$132	27,950	$3,689,400
MSE/ GRS Wall @ Bend Road (LA 1020)	LUMP	$1,650,000	1	$1,650,000
Utility Relocations:				
Water	LUMP	$499,250	1	$499,250
Sewer	LUMP	$178,000	1	$178,000
Gas	LUMP	$21,500	1	$21,500
Electric	LUMP	$875,000	1	$875,000
Cable TV	LUMP	$0	0	$0
Telephone	LUMP	$0	0	$0
Mobilization (5%)	LUMP	$2,571,748	1	$2,571,748
Right-of-Way Acquisition & Relocation	LUMP	$4,723,500	1	$4,723,500
		SUBTOTAL		$58,730,198
		CONTINGENCY	25%	$14,682,549
		TOTAL - PHASE 2 (Alt. Align. A)		**$73,412,747**

Notes:
1. *LADOTD 2012 unit prices used.*
2. *Roadway costs include asphalt, base course, concrete curbs and typical striping.*

TABLE II-2 (Continued)
CONCEPTUAL CONSTRUCTION COST ESTIMATE

PHASE 3 (ALTERNATIVE ALIGNMENT 1-A)

Description of improvements:
Add 2-lanes with a 30 ft. median from the Phase 1 roundabout at the Hooper Road (LA408)/ Greenwell Springs (LA 37) intersection to the Phase 2 roundabout at LA 16. Amite River bridge structure, 5308' long X 50' gutter to gutter. Bend Road overpass structure, 559' long X 50' gutter to gutter.

Description	Unit	Unit Cost	Quantity	Total
Removal of Exist. Pavement & Base	LUMP	$30,000	1	$30,000
Removal of Structures & Obstructions	LUMP	$10,000	1	$10,000
Clearing or Clearing & Grubbing	LUMP	$0	1	$0
Earthwork	LUMP	$181,500	1	$181,500
Granular Material	LUMP	$191,000	1	$191,000
Roadway	LUMP	$2,700,000	1	$2,700,000
Side Drain Drainage	LUMP	$0	1	$0
Cross Drain Drainage	LUMP	$0	1	$0
Roundabout Legends, Striping & Signage	LUMP	$45,000	1	$45,000
Control of Access Fencing	LUMP	$0	1	$0
Temporary Signs & Barricades	LUMP	$30,000	1	$30,000
Temporary Detours Roads	LUMP	$150,000	1	$150,000
Temporary Maintenance Aggregate	LUMP	$10,000	1	$10,000
Construction Layout	LUMP	$40,000	1	$40,000
Driveways	LUMP	$0	1	$0
Amite River Bridge Structure	SF	$132	191,088	$25,223,616
Temporary Construction Work Bridge	LUMP	$900,000	1	$900,000
Riprap	LUMP	$600,000	1	$600,000
Clearing for Bridge	LUMP	$55,000	1	$55,000
Bridge Construction Road & Removal	LUMP	$223,000	1	$223,000
Re-planting Trees in Amite Basin	LUMP	$66,000	1	$66,000
Bend Road Overpass Structure	SF	$132	20,124	$2,656,368
Mobilization (5%)	LUMP	$1,655,574	1	$1,655,574
		SUBTOTAL		$34,767,058
		CONTINGENCY	25%	$8,691,765
		TIOTAL - PHASE 3 (Alt. Align. A)		**$43,458,823**
		TOTAL - ALTERNATIVE ALIGNMENT A (PHASES 1, 2 & 3)		**$168,256,007**

Notes:
1. *LADOTD 2012 unit prices used.*
2. *Roadway costs include asphalt, base course, concrete curbs and typical striping.*
3. *No additional ROW required for Phase 3.*
4. *No additional utility relocations required for Phase 3.*

TABLE II-2 (Continued)
CONCEPTUAL CONSTRUCTION COST ESTIMATE

PHASE 2 (ALTERNATIVE ALIGNMENT 1-B)

Description of improvements:
Construct 2-lanes from the Phase 1 roundabout at the Hooper Road (LA408)/ Greenwell Springs (LA 37) intersection through a new 2-lane roundabout at LA 16, continue the new roadway to a new 2-lane roundabout at the intersection of LA 1019/LA 3285 and widen LA 16 to 4-lanes south to the existing 4-lanes. Amite River bridge structure, 5308' long X 50' gutter to gutter. Bend Road overpass structure, 559' long X 50' gutter to gutter.

Description	Unit	Unit Cost	Quantity	Total
Removal of Exist. Pavement & Base	LUMP	$160,000	1	$160,000
Removal of Structures & Obstructions	LUMP	$32,000	1	$32,000
Clearing & Grubbing	LUMP	$86,000	1	$86,000
Earthwork	LUMP	$1,150,000	1	$1,150,000
Granular Material	LUMP	$226,000	1	$226,000
Roadway	LUMP	$5,464,000	1	$5,464,000
Side Drain Drainage	LUMP	$74,000	1	$74,000
Cross Drain Drainage	LUMP	$715,000	1	$715,000
Roundabout Legends, Striping & Signage	LUMP	$90,000	1	$90,000
Control of Access Fencing	LUMP	$420,000	1	$420,000
Temporary Signs & Barricades	LUMP	$80,000	1	$80,000
Temporary Detours Roads	LUMP	$280,000	1	$280,000
Temporary Maintenance Aggregate	LUMP	$25,000	1	$25,000
Construction Layout	LUMP	$120,000	1	$120,000
Driveways	LUMP	$85,000	1	$85,000
Amite River Bridge Structure	SF	$132	265,400	$35,032,800
Temporary Construction Work Bridge	LUMP	$900,000	1	$900,000
Riprap	LUMP	$600,000	1	$600,000
Clearing for Bridge	LUMP	$75,000	1	$75,000
Bridge Construction Road & Removal	LUMP	$223,000	1	$223,000
Re-planting Trees in Amite Basin	LUMP	$92,000	1	$92,000
Bend Road Overpass Structure	SF	$132	27,950	$3,689,400
MSE/ GRS Wall @ Bend Road (LA 1020)	LUMP	$1,650,000	1	$1,650,000
Utility Relocations:				
Water	LUMP	$604,450	1	$604,450
Sewer	LUMP	$54,800	1	$54,800
Gas	LUMP	$127,500	1	$127,500
Electric	LUMP	$1,125,000	1	$1,125,000
Cable TV	LUMP	$70,000	1	$70,000
Telephone	LUMP	$0	0	$0
Mobilization (5%)	LUMP	$2,662,548	1	$2,662,548
Right-of-Way Acquisition and Relocation	LUMP	$11,349,000	0	$11,349,000
		SUBTOTAL		$67,262,498
		CONTINGENCY	25%	$16,815,624
		TOTAL - PHASE 2 (Alt. Align. B)		**$84,078,122**

Notes:
1. *LADOTD 2012 unit prices used.*
2. *Roadway costs include asphalt, base course, concrete curbs and typical striping.*

TABLE II-2 (Continued)
CONCEPTUAL CONSTRUCTION COST ESTIMATE

PHASE 3 (ALTERNATIVE ALIGNMENT 1-B)

Description of improvements:
Adding 2-lanes from the Phase 1 roundabout at the Hooper Road (LA408)/ Greenwell Springs (LA 37) intersection to the Phase 2 roundabout at LA 16 with a 30 ft. median. Amite River bridge structure, 5308' long X 50' gutter to gutter. Bend Road overpass structure, 559' long X 50' gutter to gutter.

Description	Unit	Unit Cost	Quantity	Total
Removal of Exist. Pavement & Base	LUMP	$69,000	1	$69,000
Removal of Structures & Obstructions	LUMP	$20,000	1	$20,000
Clearing & Grubbing	LUMP	$0	1	$0
Earthwork	LUMP	$200,500	1	$200,500
Granular Material	LUMP	$206,000	1	$206,000
Roadway	LUMP	$2,920,000	1	$2,920,000
Side Drain Drainage	LUMP	$0	1	$0
Cross Drain Drainage	LUMP	$0	1	$0
Roundabout Legends, Striping & Signage	LUMP	$45,000	1	$45,000
Control of Access Fencing	LUMP	$0	1	$0
Temporary Signs & Barricades	LUMP	$30,000	1	$30,000
Temporary Detours Roads	LUMP	$150,000	1	$150,000
Temporary Maintenance Aggregate	LUMP	$10,000	1	$10,000
Construction Layout	LUMP	$40,000	1	$40,000
Driveways	LUMP	$0	1	$0
Amite River Bridge Structure	SF	$132	191,088	$25,223,616
Temporary Construction Work Bridge	LUMP	$900,000	1	$900,000
Riprap	LUMP	$600,000	1	$600,000
Clearing for Bridge	LUMP	$55,000	1	$55,000
Bridge Construction Road & Removal	LUMP	$223,000	1	$223,000
Re-planting Trees in Amite Basin	LUMP	$66,000	1	$66,000
Bend Road Overpass Structure	SF	$132	20,124	$2,656,368
Mobilization (5%)	LUMP	$1,670,724	1	$1,670,724
		SUBTOTAL		$35,085,208
		CONTINGENCY	25%	$8,771,302
TOTAL - PHASE 3 (Alt. Align. B)				**$43,856,510**
TOTAL - ALTERNATIVE ALIGNMENT B (PHASES 1, 2 & 3)				**$179,319,070**

Notes:
1. *LADOTD 2012 unit prices used.*
2. *Roadway costs include asphalt, base course, concrete curbs and typical striping.*
3. *No additional ROW required for Phase 3.*
4. *No additional utility relocations required for Phase 3.*

TABLE II-2 (Continued)
CONCEPTUAL CONSTRUCTION COST ESTIMATE

PHASE 2 (ALTERNATIVE ALIGNMENT 1-C)

Description of improvements:
Construct 2-lanes from the Phase 1 roundabout at the Hooper Road (LA408)/ Greenwell Springs (LA 37) intersection with a grade-separation structure over LA 16, continuing the roadway construction to a new 2-lane roundabout at the intersection of LA 1019/LA 3285 and widen LA 16 south to the existing 4-lanes. Amite River bridge structure, 5308' long X 50' gutter to gutter. Bend Road overpass structure, 559' long X 50' gutter to gutter. LA 16 overpass structure, 617' long X 65' gutter to gutter.

Description	Unit	Unit Cost	Quantity	Total
Removal of Exist. Pavement & Base	LUMP	$180,000	1	$180,000
Removal of Structures & Obstructions	LUMP	$36,000	1	$36,000
Clearing & Grubbing	LUMP	$106,000	1	$106,000
Earthwork	LUMP	$1,234,000	1	$1,234,000
Granular Material	LUMP	$235,000	1	$235,000
Roadway	LUMP	$7,299,000	1	$7,299,000
Side Drain Drainage	LUMP	$74,000	1	$74,000
Cross Drain Drainage	LUMP	$830,000	1	$830,000
Roundabout Legends, Striping & Signage	LUMP	$45,000	1	$45,000
Control of Access Fencing	LUMP	$420,000	1	$420,000
Temporary Signs & Barricades	LUMP	$80,000	1	$80,000
Temporary Detours Roads	LUMP	$205,000	1	$205,000
Temporary Maintenance Aggregate	LUMP	$25,000	1	$25,000
Construction Layout	LUMP	$120,000	1	$120,000
Driveways	LUMP	$85,000	1	$85,000
Amite River Bridge Structure	SF	$132	265,400	$35,032,800
Temporary Construction Work Bridge	LUMP	$900,000	1	$900,000
Riprap	LUMP	$600,000	1	$600,000
Clearing for Bridge	LUMP	$75,000	1	$75,000
Bridge Construction Road & Removal	LUMP	$223,000	1	$223,000
Re-planting Trees in Amite Basin	LUMP	$92,000	1	$92,000
Bend Road Overpass Structure	SF	$132	27,950	$3,689,400
MSE/ GRS Wall @ Bend Road (LA 1020)	LUMP	$1,650,000	1	$1,650,000
LA 16 Overpass Structure	SF	$132	40,105	$5,293,860
MSE/ GRS Wall @ LA 16	LUMP	$445,000	1	$445,000
Utility Relocations:				
Water	LUMP	$644,350	1	$644,350
Sewer	LUMP	$92,300	1	$92,300
Gas	LUMP	$82,500	1	$82,500
Electric	LUMP	$1,125,000	1	$1,125,000
Cable TV	LUMP	$70,000	1	$70,000
Telephone	LUMP	$0	0	$0
Mobilization (5%)	LUMP	$3,049,461	1	$3,049,461
Right-of-Way Acquisition & Relocation	LUMP	$12,349,000	1	$12,349,000
		SUBTOTAL		$76,387,671
		CONTINGENCY	25%	$19,096,918
		TOTAL - PHASE 2 (Alt. Align. C)		**$95,484,588**

Notes:
1. LADOTD 2012 unit prices used.
2. Roadway costs include asphalt, base course, concrete curbs and typical striping.

TABLE II-2 (Continued)
CONCEPTUAL CONSTRUCTION COST ESTIMATE

PHASE 3 (ALTERNATIVE ALIGNMENT 1-C)

Description of improvements:
Add 2-lanes with a 30 ft. median from the Phase 1 roundabout at the Hooper Road (LA408)/ Greenwell Springs (LA 37) intersection to the grade-separation at LA 16. Amite River bridge structure, 5308' long X 50' gutter to gutter. Bend Road overpass structure, 559' long X 50' gutter to gutter.

Description	Unit	Unit Cost	Quantity	Total
Removal of Exist. Pavement & Base	LUMP	$52,000	1	$52,000
Removal of Structures & Obstructions	LUMP	$15,000	1	$15,000
Clearing & Grubbing	LUMP	$0	1	$0
Earthwork	LUMP	$312,500	1	$312,500
Granular Material	LUMP	$207,000	1	$207,000
Roadway	LUMP	$1,541,000	1	$1,541,000
Side Drain Drainage	LUMP	$0	1	$0
Cross Drain Drainage	LUMP	$0	1	$0
Roundabout Legends, Striping & Signage	LUMP	$15,000	1	$15,000
Control of Access Fencing	LUMP	$0	1	$0
Temporary Signs & Barricades	LUMP	$30,000	1	$30,000
Temporary Detours Roads	LUMP	$150,000	1	$150,000
Temporary Maintenance Aggregate	LUMP	$10,000	1	$10,000
Construction Layout	LUMP	$40,000	1	$40,000
Driveways	LUMP	$0	1	$0
Amite River Bridge Structure	SF	$132	191,088	$25,223,616
Temporary Construction Work Bridge	LUMP	$900,000	1	$900,000
Riprap	LUMP	$600,000	1	$600,000
Clearing for Bridge	LUMP	$55,000	1	$55,000
Bridge Construction Road & Removal	LUMP	$223,000	1	$223,000
Re-planting Trees in Amite Basin	LUMP	$66,000	1	$66,000
Bend Road Overpass Structure	SF	$132	20,124	$2,656,368
Mobilization (5%)	LUMP	$1,604,824	1	$1,604,824
		SUBTOTAL		$33,701,308
		CONTINGENCY	25%	$8,425,327
		TOTAL - PHASE 3 (Alt. Align. C)		**$42,126,635**
		TOTAL - ALTERNATIVE ALIGNMENT C (PHASES 1, 2 & 3)		**$188,995,661**

Notes:
1. *LADOTD 2012 unit prices used.*
2. *Roadway costs include asphalt, base course, concrete curbs and typical striping.*
3. *No additional ROW required for Phase 3.*
4. *No additional utility relocations required for Phase 3.*

TABLE II- 2 (continued)
CONCEPTUAL CONSTRUCTION COST ESTIMATE

PHASE 1 (ALTERNATIVE ALIGNMENT 2)

Description of improvements:
Widening of existing Hooper Road (LA 408) to 4-lanes with a 30 ft. median from Sta 10+00 to new extension just east of Amber Lakes Drive).

Description	Unit	Unit Cost	Quantity	Total
Removal of Exist. Pavement & Base	LUMP	$476,000	1	$476,000
Removal of Structures & Obstructions	LUMP	$100,000	1	$100,000
Clearing & Grubbing	LUMP	$60,000	1	$60,000
Earthwork	LUMP	$1,000,000	1	$1,000,000
Granular Material	LUMP	$401,000	1	$401,000
Roadway	LUMP	$8,300,000	1	$8,300,000
Side Drain Drainage	LUMP	$600,000	1	$600,000
Cross Drain Drainage	LUMP	$181,000	1	$181,000
Temporary Signs & Barricades	LUMP	$100,000	1	$100,000
Temporary Detour Roads	LUMP	$168,000	1	$168,000
Temporary Maintenance Aggregate	LUMP	$120,000	1	$120,000
Construction Layout	LUMP	$75,000	1	$75,000
Driveways	LUMP	$454,000	1	$454,000
Bridge Structure No. 255020796 (over Beaver Bayou)	LUMP	$580,000	1	$580,000
Utility Relocations:				
Water	LUMP	$2,530,000	1	$2,530,000
Sewer	LUMP	$300,000	1	$300,000
Gas	LUMP	$0	0	$0
Electric	LUMP	$0	0	$0
Cable TV	LUMP	$0	0	$0
Telephone	LUMP	$2,050,000	1	$2,050,000
Mobilization (5%)	LUMP	$874,750	1	$874,750
Right-of-Way Acquisition & Relocation	LUMP	$16,935,500	1	$16,935,500
		SUBTOTAL		$35,305,250
		CONTINGENCY	25%	$8,826,313
		TOTAL - PHASE 1 (Alt. Align. 2)		**$44,131,563**

Notes:
1. LADOTD 2012 unit prices used.
2. Roadway costs include asphalt, base course, concrete curbs and typical striping.

TABLE II-2 (Continued)
CONCEPTUAL CONSTRUCTION COST ESTIMATE

PHASE 2 (ALTERNATIVE ALIGNMENT 2)

Description of improvements:
Construct 2-lanes from the beginning of Hooper Road (LA 408) extension to LA 16 with a two new 2-lane roundabouts. Amite River bridge structure, 5727' long X 74' gutter to gutter. LA 1019 overpass structure, 271' long X 74' gutter to gutter.

Description	Unit	Unit Cost	Quantity	Total
Removal of Exist. Pavement & Base	LUMP	$106,000	1	$106,000
Removal of Structures & Obstructions	LUMP	$50,000	1	$50,000
Clearing & Grubbing	LUMP	$76,000	1	$76,000
Earthwork	LUMP	$866,000	1	$866,000
Granular Material	LUMP	$502,000	1	$502,000
Roadway	LUMP	$8,393,000	1	$8,393,000
Side Drain Drainage	LUMP	$73,000	1	$73,000
Cross Drain Drainage	LUMP	$95,000	1	$95,000
Roundabout Legends, Striping & Signage	LUMP	$90,000	1	$90,000
Control of Access Fencing	LUMP	$600,000	1	$600,000
Temporary Signs & Barricades	LUMP	$60,000	1	$60,000
Temporary Detour Roads	LUMP	$155,000	1	$155,000
Temporary Maintenance Aggregate	LUMP	$25,000	1	$25,000
Construction Layout	LUMP	$75,000	1	$75,000
Driveways	LUMP	$55,000	1	$55,000
Amite River Bridge Structure	SF	$132	423,798	$55,941,336
Temporary Construction Work Bridge	LUMP	$900,000	1	$900,000
Riprap	LUMP	$600,000	1	$600,000
Clearing for Bridge	LUMP	$104,000	1	$104,000
Bridge Construction Road & Removal	LUMP	$300,000	1	$300,000
Re-planting Trees in Amite Basin	LUMP	$100,000	1	$100,000
LA 1019 Overpass Structure	SF	$132	20,054	$2,647,128
MSE/ GRS Wall @ LA 1019	LUMP	$1,650,000	1	$1,650,000
Utility Relocations:				
Water	LUMP	$134,100	1	$134,100
Sewer	LUMP	$45,000	1	$45,000
Gas	LUMP	$41,500	1	$41,500
Electric	LUMP	$93,000	1	$93,000
Cable TV	LUMP	$0	0	$0
Telephone	LUMP	$0	0	$0
Mobilization (5%)	LUMP	$3,688,853	1	$3,688,853
Right-of-Way Acquisition & Relocation	LUMP	$21,491,000	1	$21,491,000
		SUBTOTAL		$98,956,917
		CONTINGENCY	25%	$24,739,229
		TOTAL - PHASE 2 (Alt. Align. A)		**$123,696,147**
		TOTAL - ALTERNATIVE ALIGNMENT 2 (PHASES 1 & 2)		**$167,827,710**

Notes:
1. *LADOTD 2012 unit prices used.*
2. *Roadway costs include asphalt, base course, concrete curbs and typical striping.*

PROJECTED OPERATIONS AND MAINTENANCE COSTS

The annual total operation and maintenance costs for the each of the alternatives include the annual cost of maintenance for the roadway and bridges, through re-striping the roadway and bridges every five years, coldmill and overlay the asphalt paving every ten years, bi-annual bridge inspections and clearing of debris hang-ups on the Amite River Bridge after high water events and periodic cleaning of bridge joints. The costs of routine grass cutting on the right-of-way and sweeping the roadway are not kept by LADOTD. They are considered negligible.

Typical maintenance costs were obtained through discussions with LADOTD Operations and Maintenance Department Staff. Access to the Amite River Bridge for inspections under the bridge is limited and will require a snooper along with an operator and a 2-man inspection team for 1-2 days per structure with pre-cast girders. Inspection of an overpass over LA 1020, LA 16 or LA 1019 can be performed with a man lift and a 2-man inspection team in a half day. High water debris removal from the Amite River will require the use of a back-hoe or crane with operator, a 4-man crew of laborers, flagmen and supervisor and a truck with driver for removal and disposal with a duration of 1-2 days per event.

Table II-3 below gives a breakdown of the operations and maintenance costs:

Table II-3
Build Alternatives
Annual Operation and Maintenance Costs

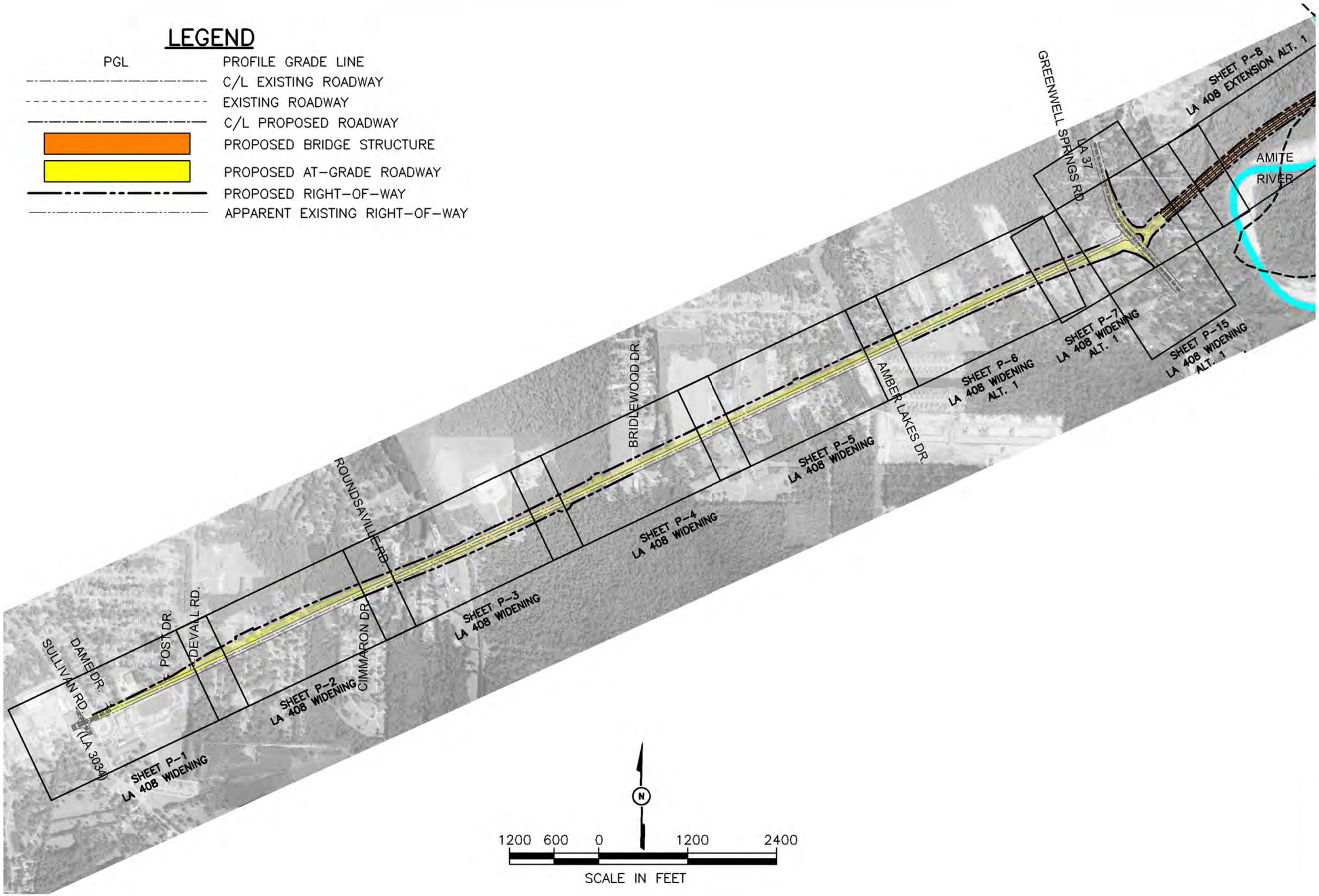
O&M Category	**Alternative 1-A**	**Alternative 1-B**	**Alternative 1-C**	**Alternative 2**
Re-Striping	$28,700	$31,500	$31,500	$27,700
Preventive Maintenance (coldmill & overlay)	$730,000	$820,000	$800,000	$694,000
Bridge Inspections	$12,050	$12,050	$12,850	$12,350
River Debris Removal	$13,000	$13,000	$13,000	$14,000
TOTAL:	$783,750	$876,550	$857,350	$748,050

ENGINEERING DRAWINGS

Plan view layouts, typical sections, and a u-turn detail for the Build Alternatives are presented beginning on the following page.

LEGEND

PGL	PROFILE GRADE LINE
	C/L EXISTING ROADWAY
	EXISTING ROADWAY
	C/L PROPOSED ROADWAY
	PROPOSED BRIDGE STRUCTURE
	PROPOSED AT-GRADE ROADWAY
	PROPOSED RIGHT-OF-WAY
	APPARENT EXISTING RIGHT-OF-WAY



SHEET
INDEX
1 OF 3

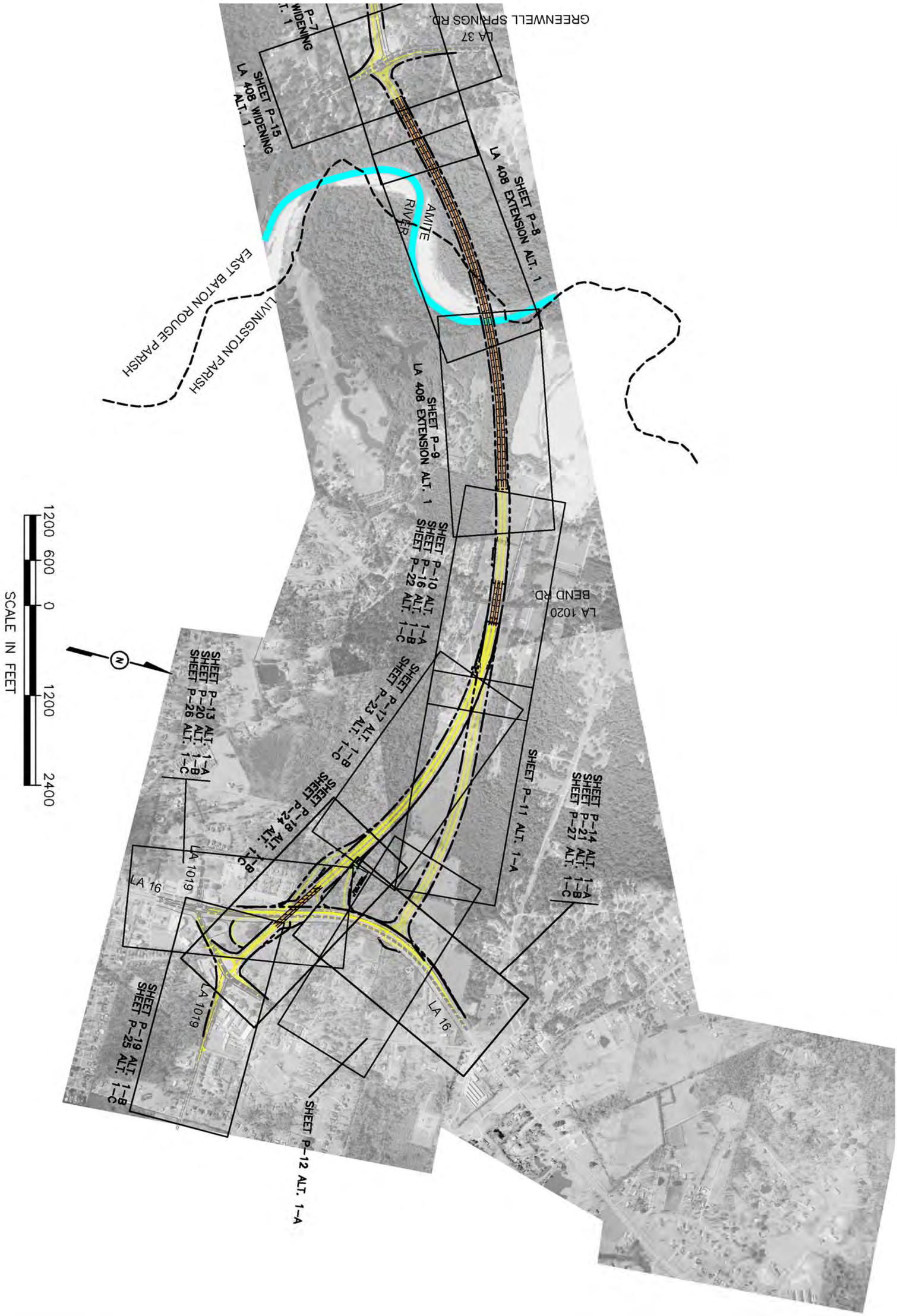
HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

STATE PROJECT No. H.005403
FEDERAL AID PROJECT No. H005403

INDEX SHEET – LA 408 WIDENING

ASSOCIATES, INC.
ENGINEERS · ARCHITECTS · PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT



DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

NY ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

STATE PROJECT No. H.005403 FEDERAL AID PROJECT No. H005403

INDEX SHEET – LA 408 EXTENSION ALT. 1

SHEET
INDEX
2 OF 3

AERIAL PHOTOGRAPHY FLOWN: 1/25/2010

SHEET
INDEX
3 OF 3

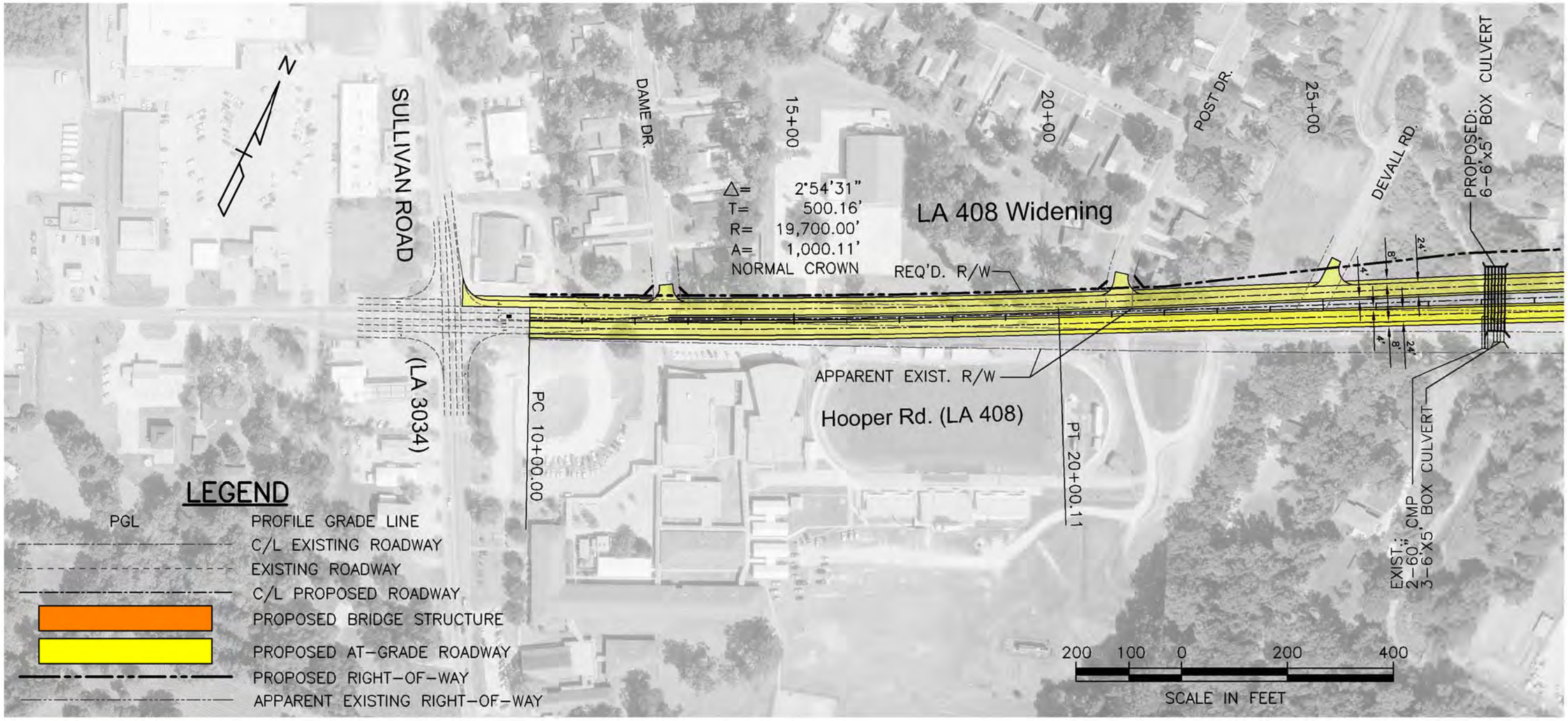
HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

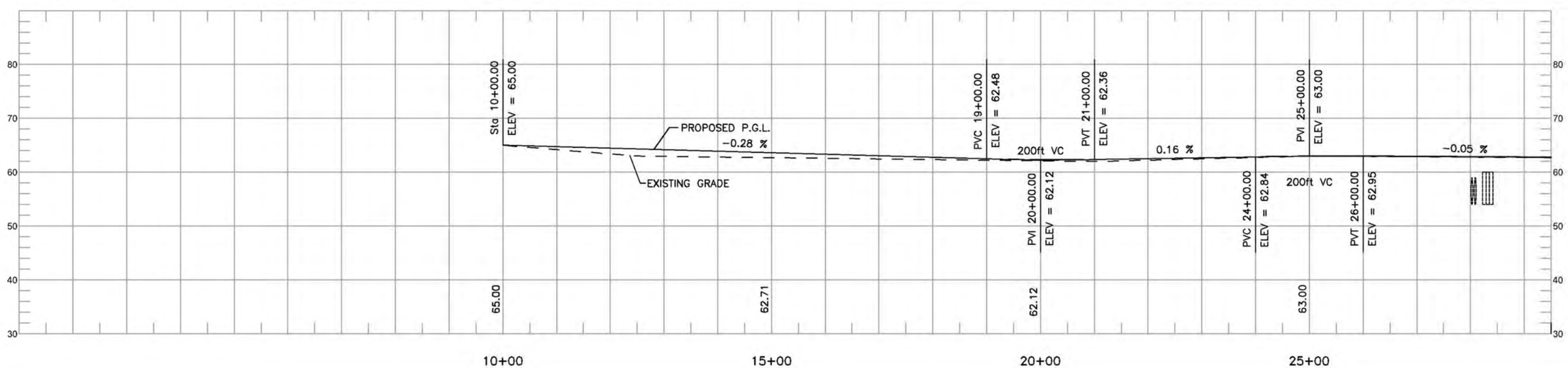
STATE PROJECT No. H.005403
FEDERAL AID PROJECT No. H005403

INDEX SHEET – LA 408 EXTENSION – ALT. 2

ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT





SHEET P-1

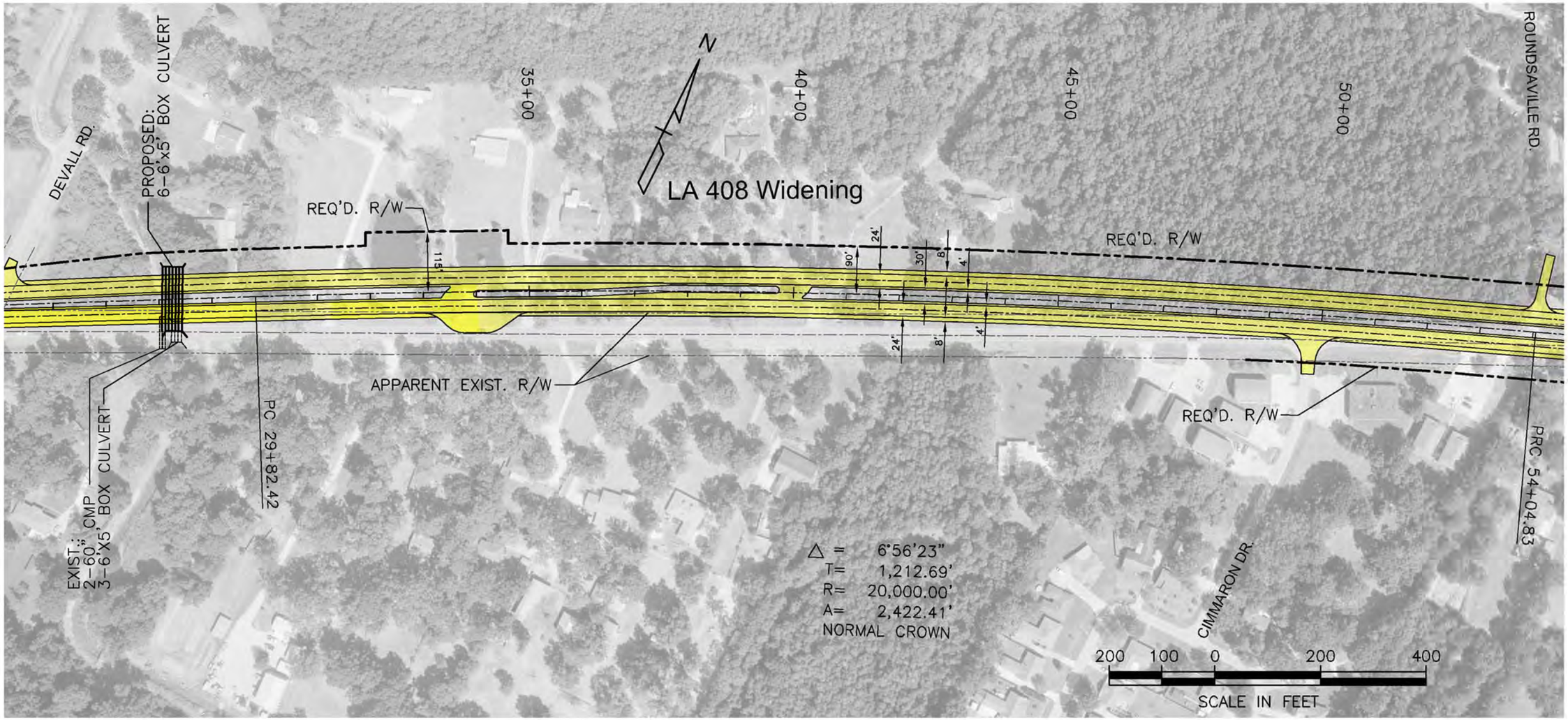
HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

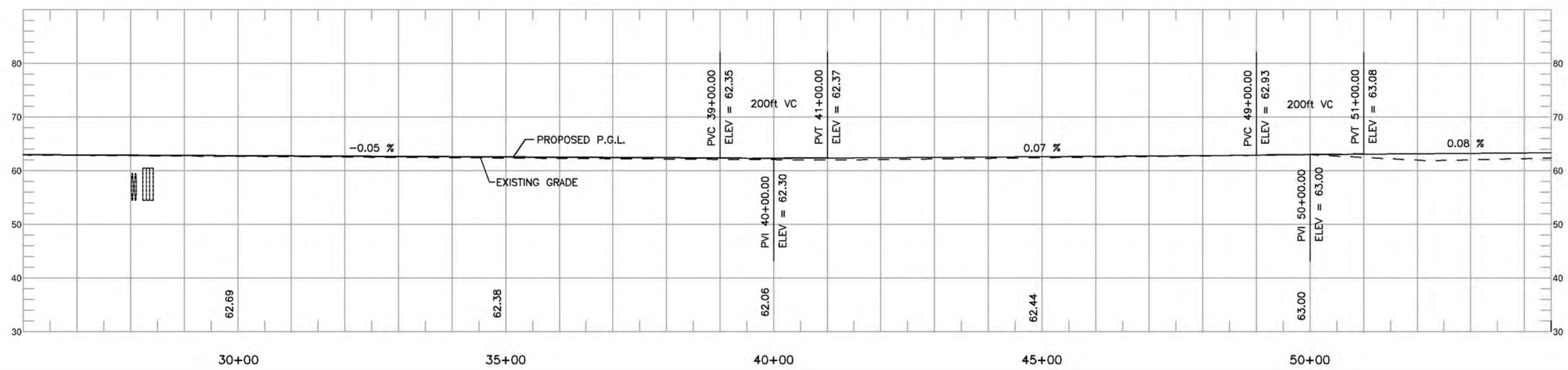
STATE PROJECT No. H.005403 FEDERAL AID PROJECT No. H005403

PLAN LAYOUT – WIDENING EXISTING LA 408

ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT





SHEET P-2

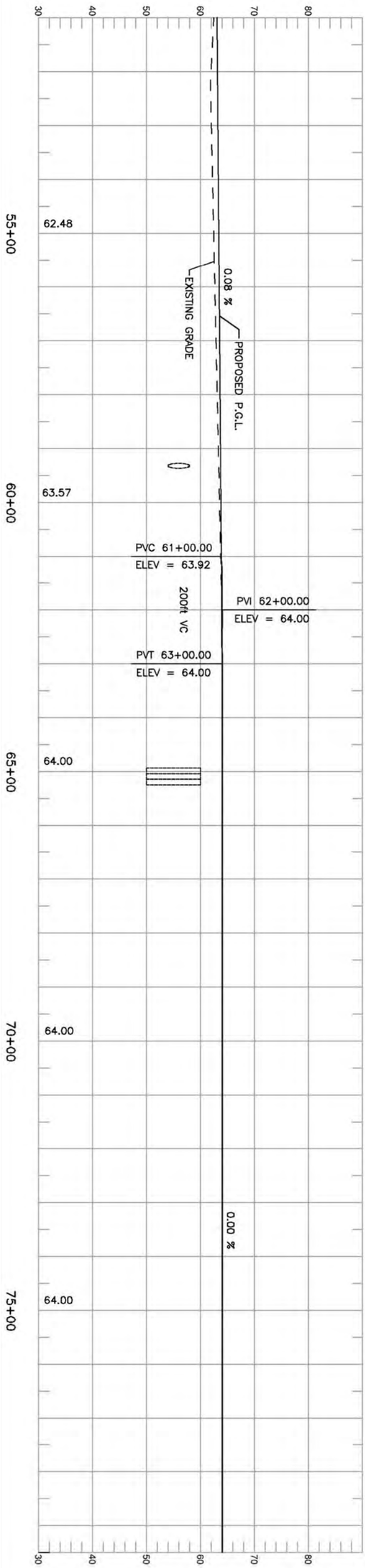
HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

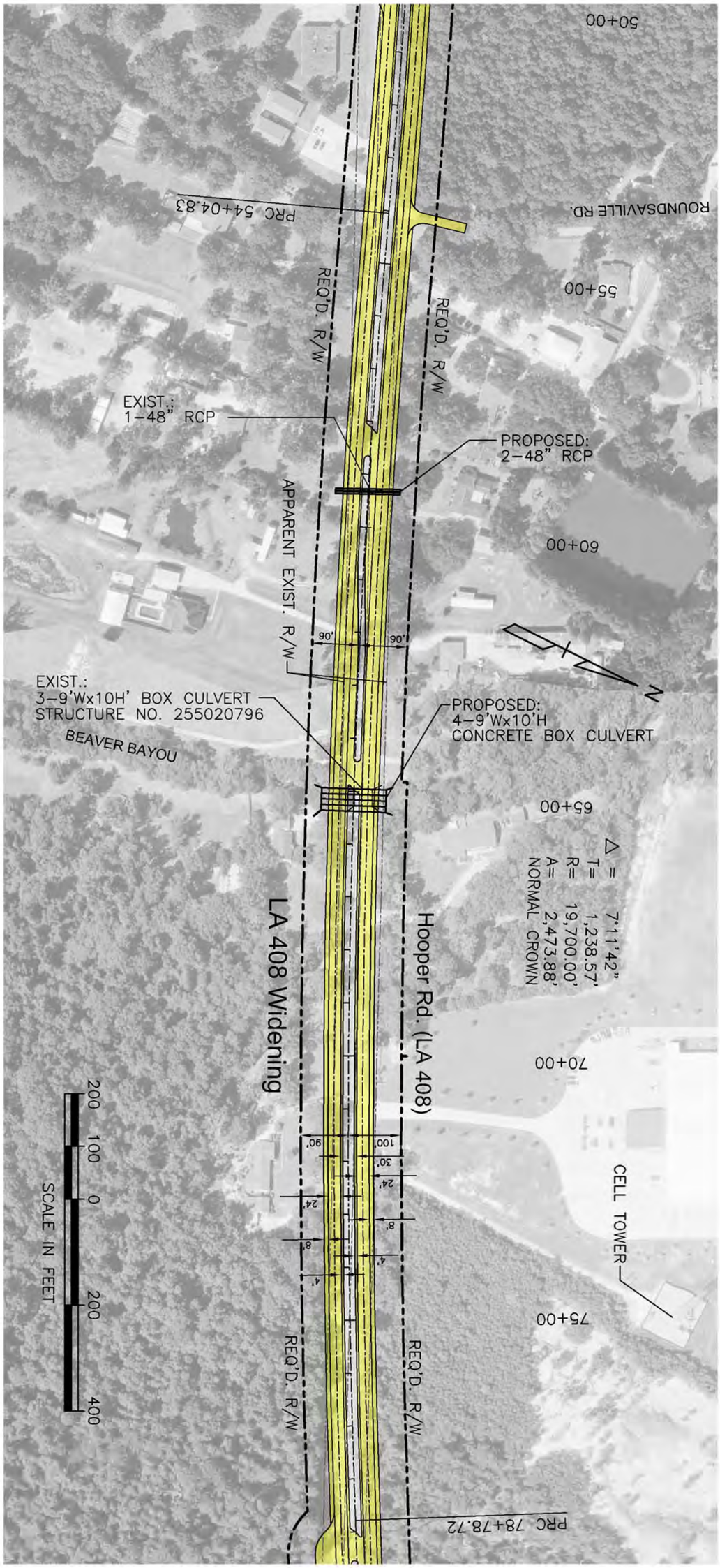
STATE PROJECT No. H.005403 FEDERAL AID PROJECT No. H005403

PLAN LAYOUT – WIDENING EXISTING LA 408

ASSOCIATES, INC.
ENGINEERS · ARCHITECTS · PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT





DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

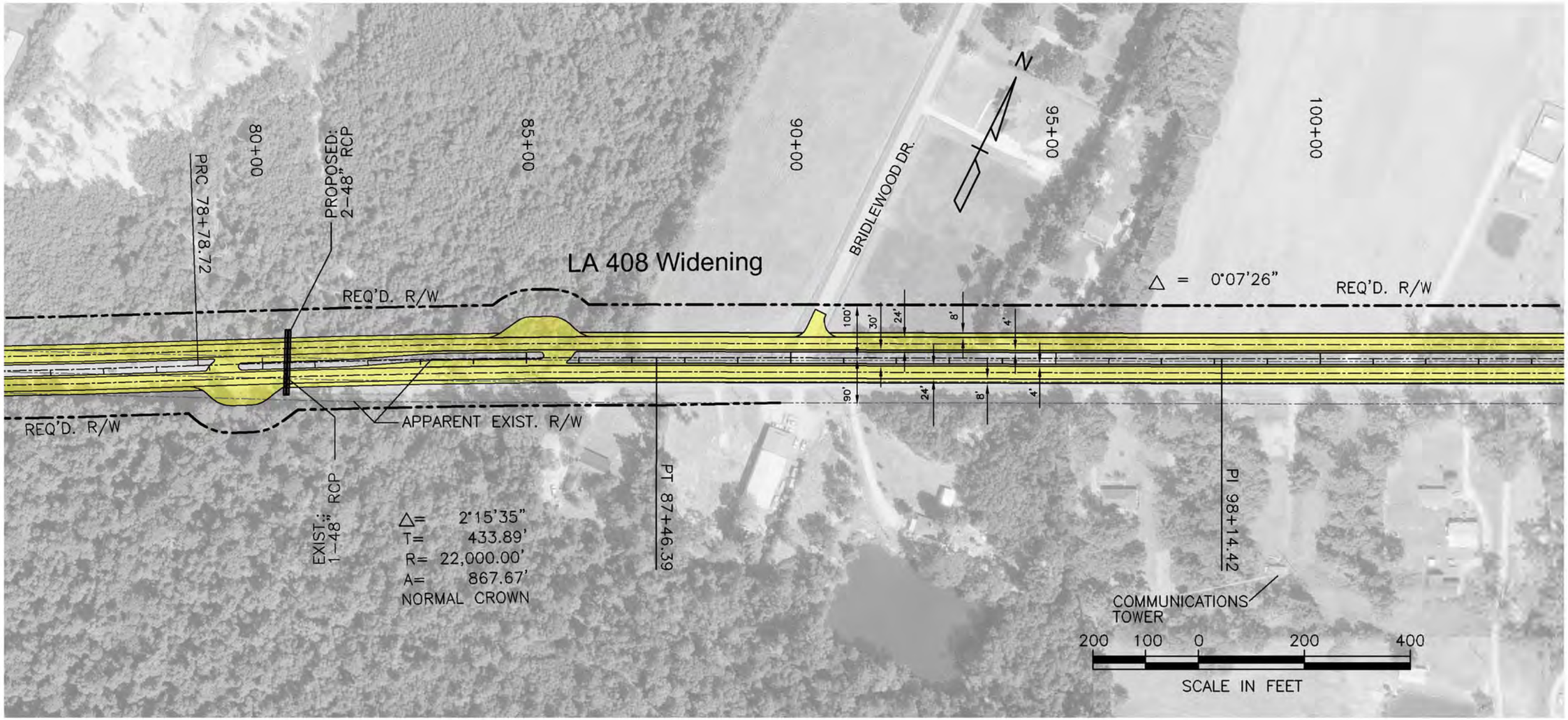
NY ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

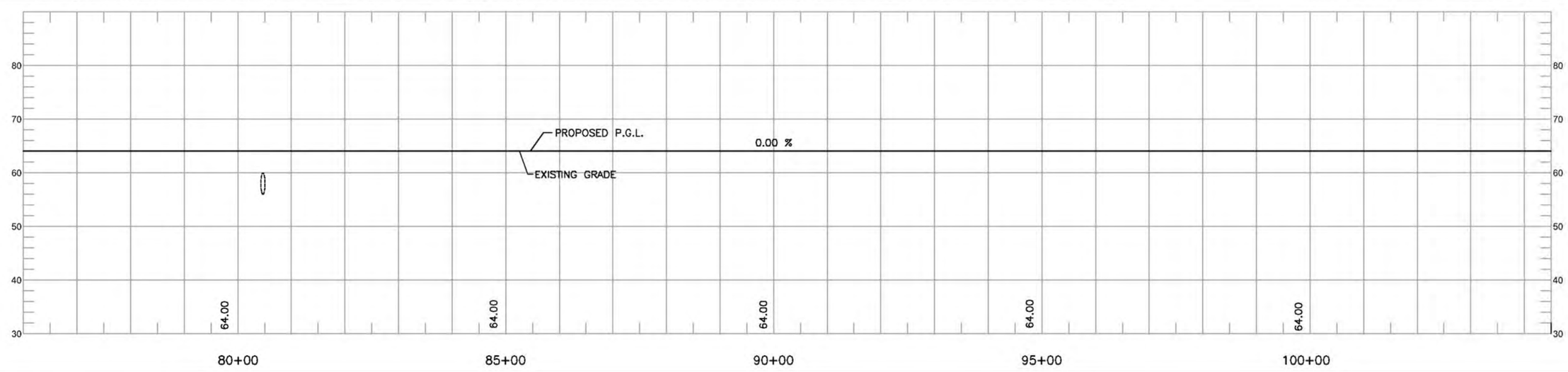
HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

STATE PROJECT No. H.005403 FEDERAL AID PROJECT No. H005403

PLAN LAYOUT – WIDENING EXISTING LA 408

SHEET
P-3





SHEET P-4

HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

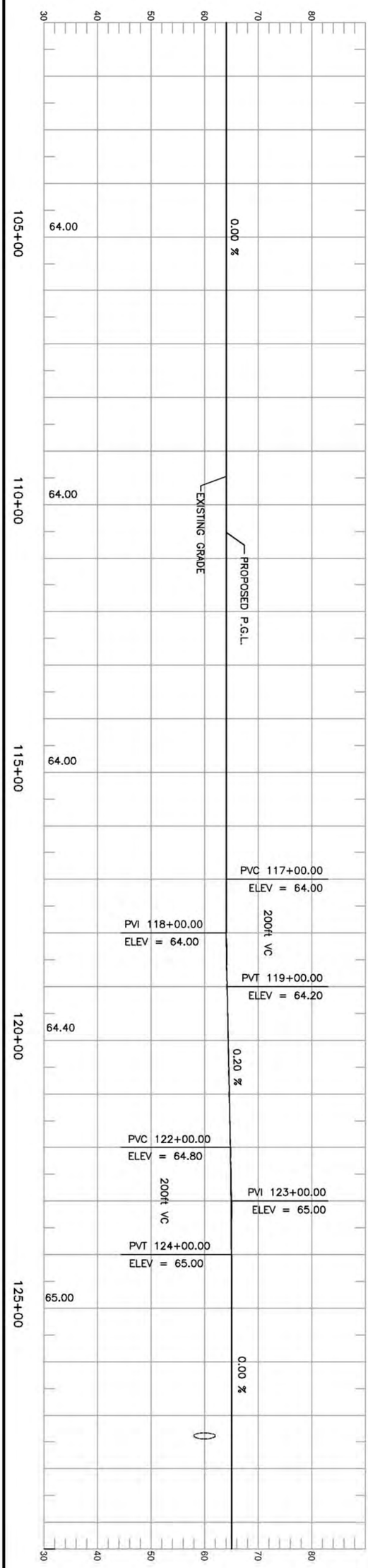
STATE PROJECT No. H.005403

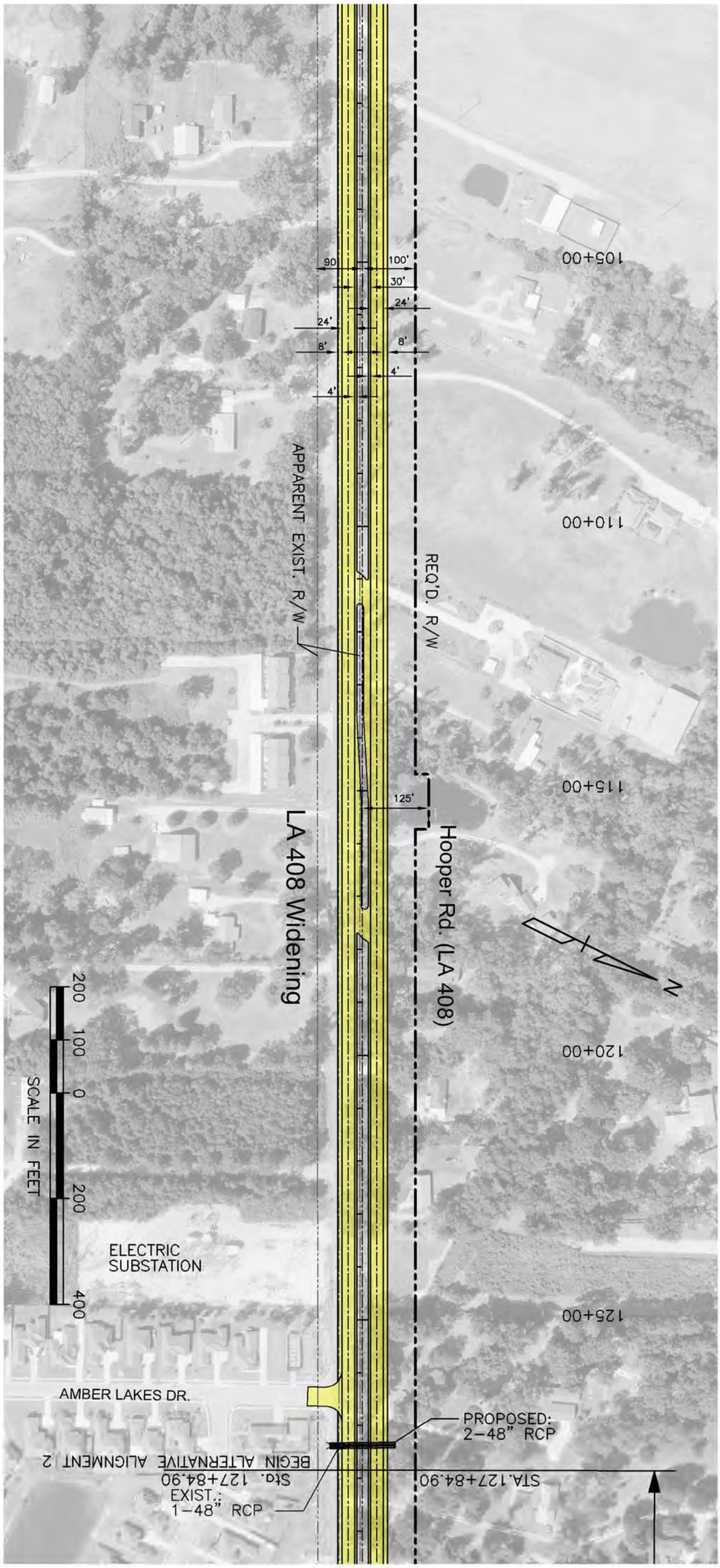
FEDERAL AID PROJECT No. H005403

PLAN LAYOUT – WIDENING EXISTING LA 408

ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT





DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

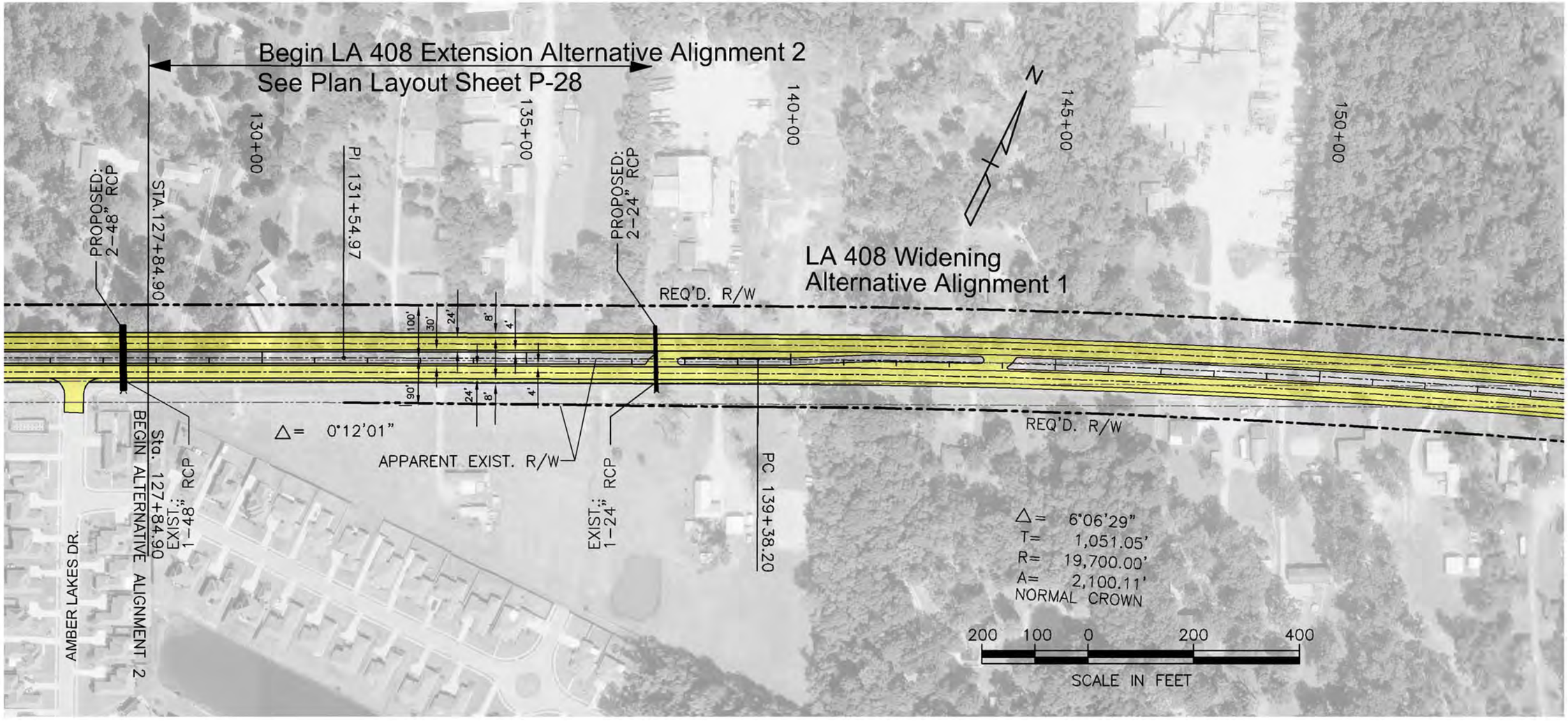
NY ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

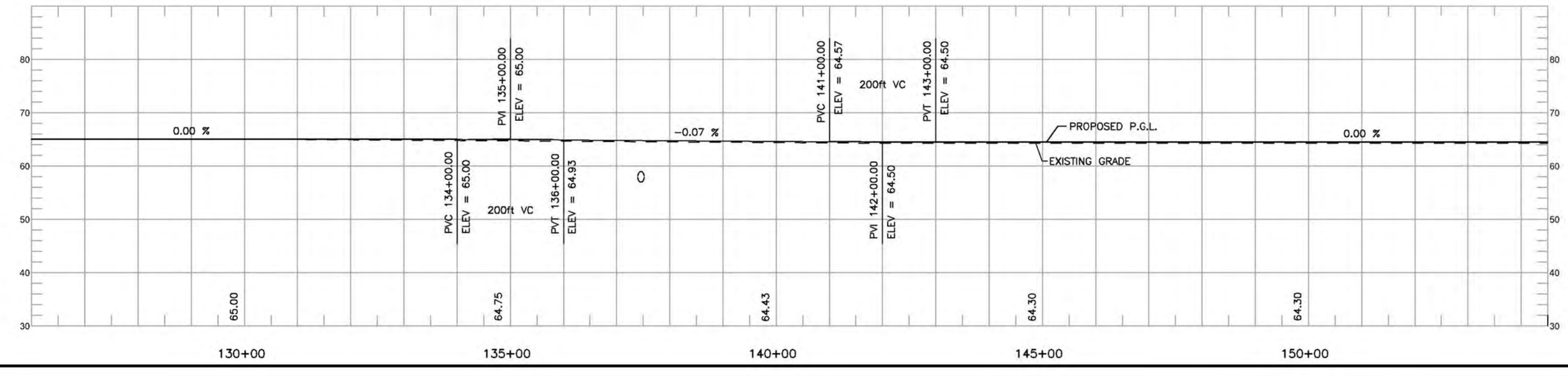
HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

STATE PROJECT No. H.005403 FEDERAL AID PROJECT No. H005403

PLAN LAYOUT – WIDENING EXISTING LA 408

SHEET
P-5





SHEET P-6

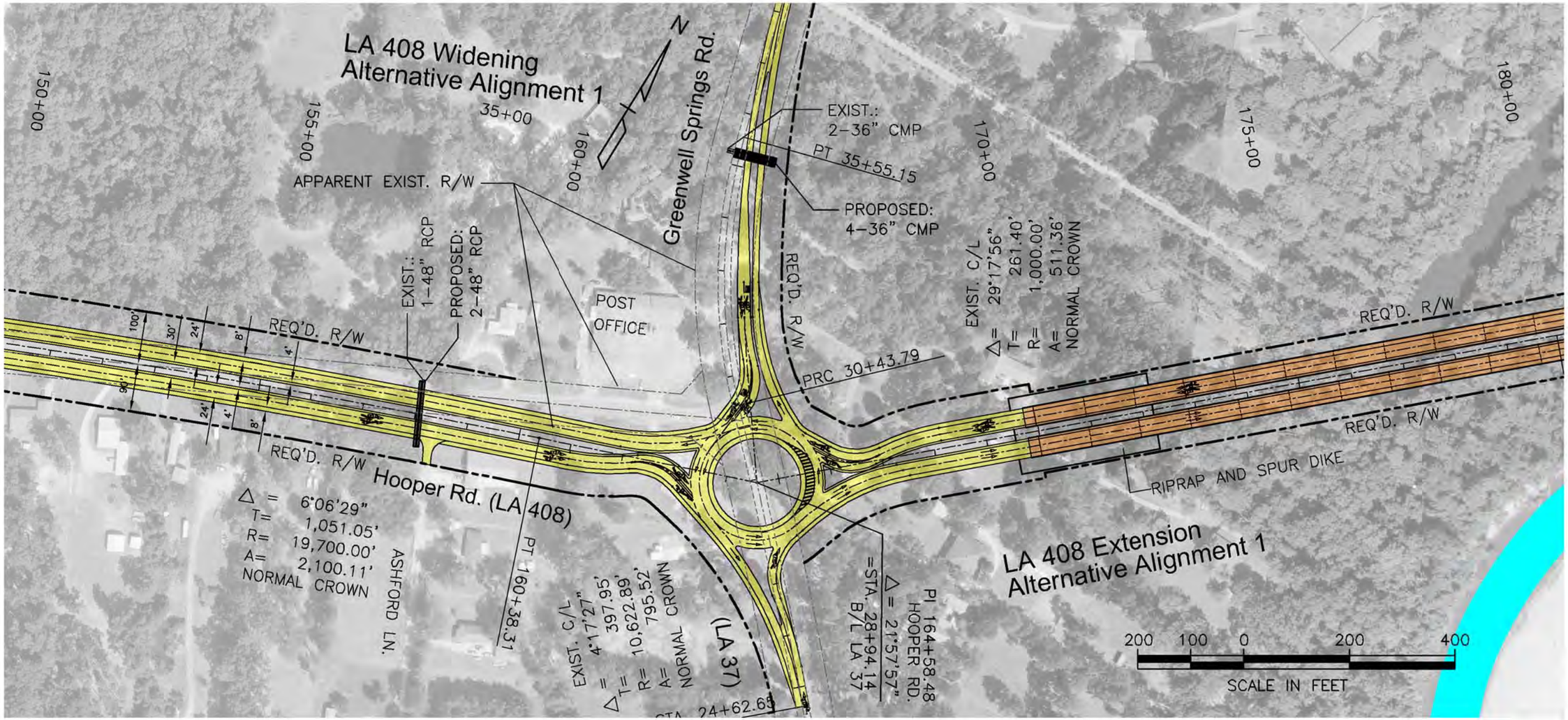
HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

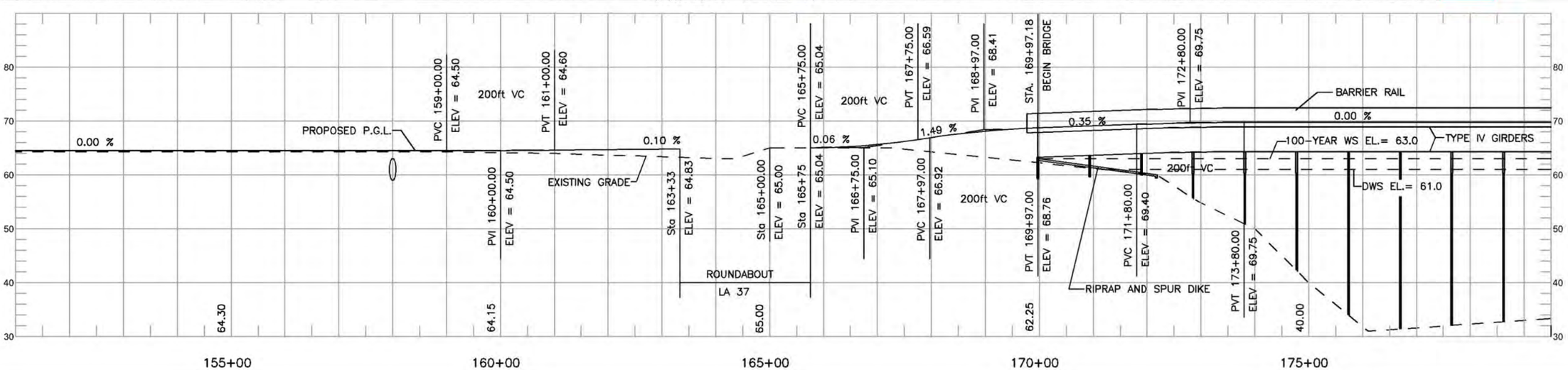
STATE PROJECT No. H.005403 FEDERAL AID PROJECT No. H005403

PLAN LAYOUT – WIDENING EXISTING LA 408

ASSOCIATES, INC.
ENGINEERS · ARCHITECTS · PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT





SHEET P-7

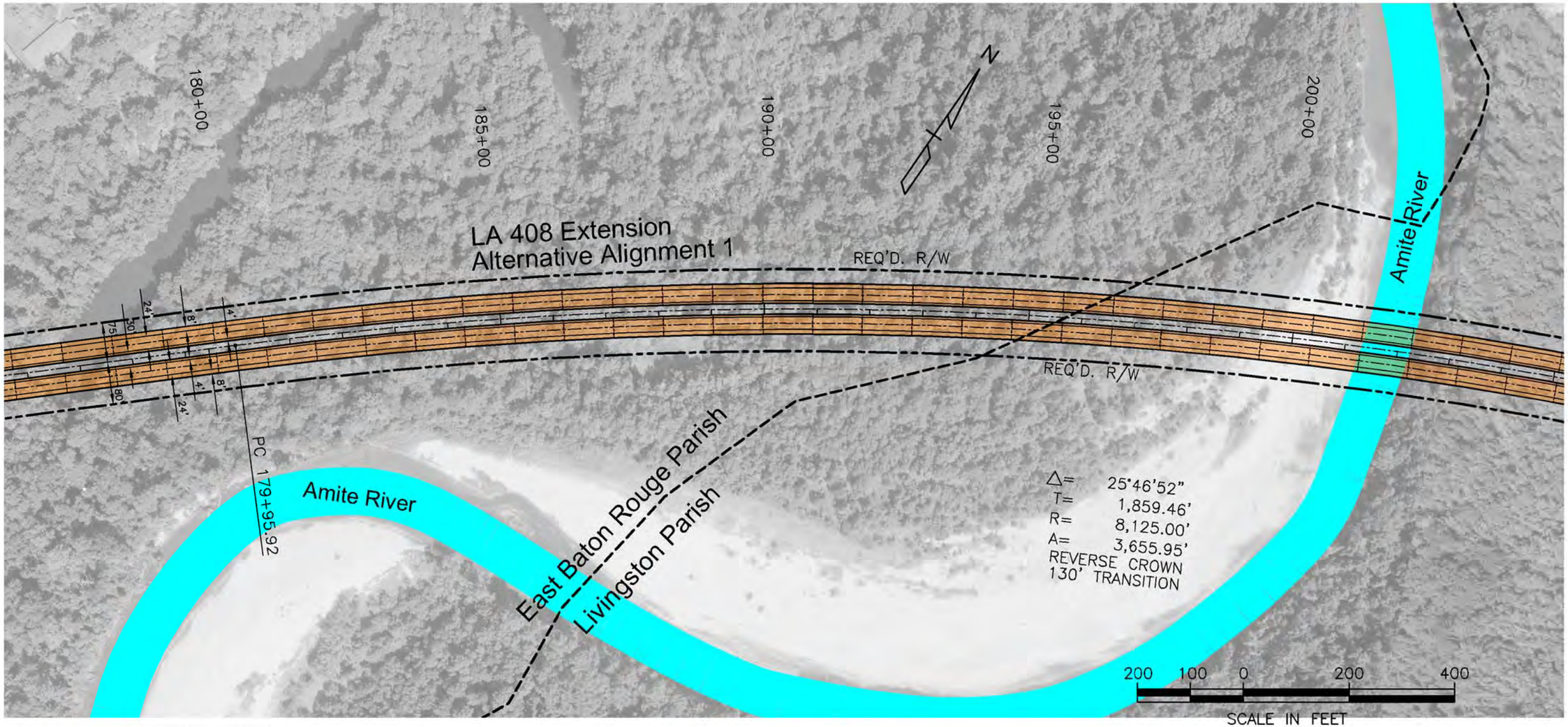
HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

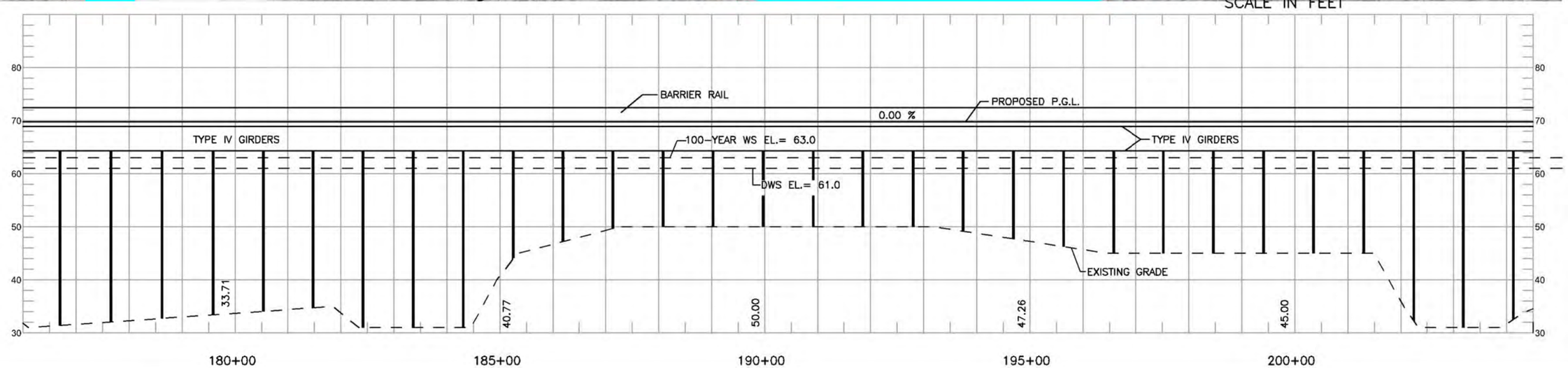
STATE PROJECT No. H.005403 FEDERAL AID PROJECT No. H005403

PLAN LAYOUT – WIDENING AND EXTENSION OF LA 408

ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT





SHEET P-8

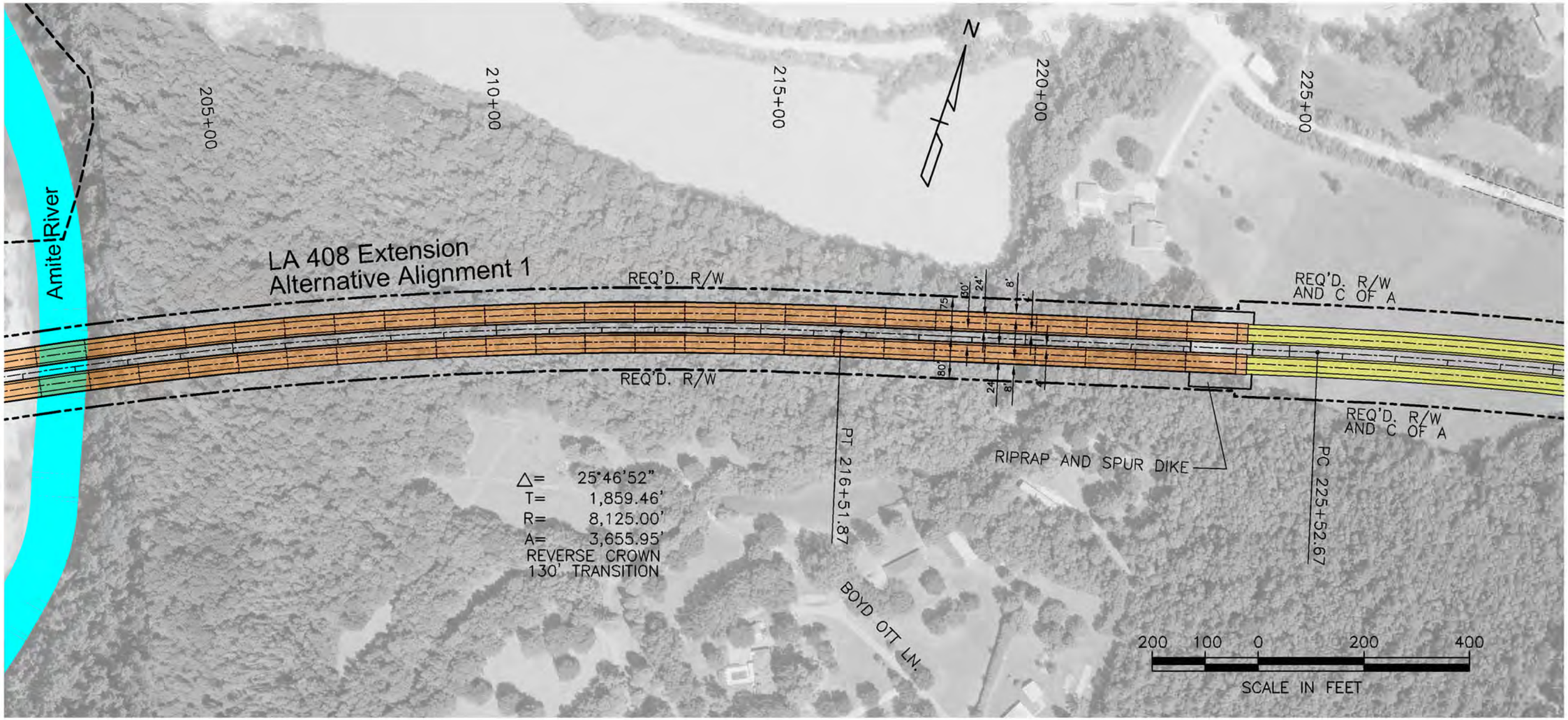
HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

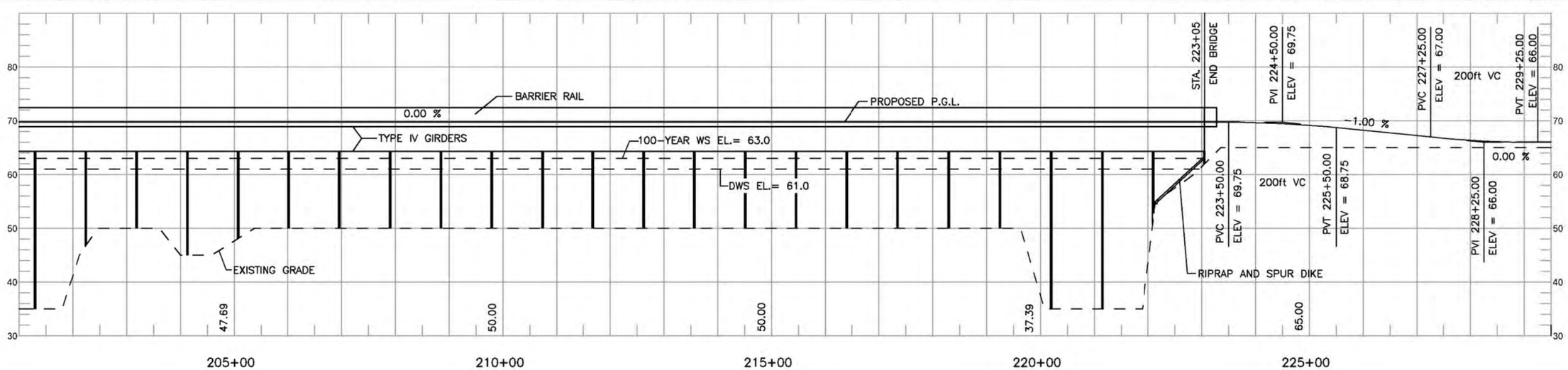
STATE PROJECT No. H.005403 FEDERAL AID PROJECT No. H005403

PLAN LAYOUT – LA 408 EXTENSION ALT. 1

NY ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT





SHEET P-9

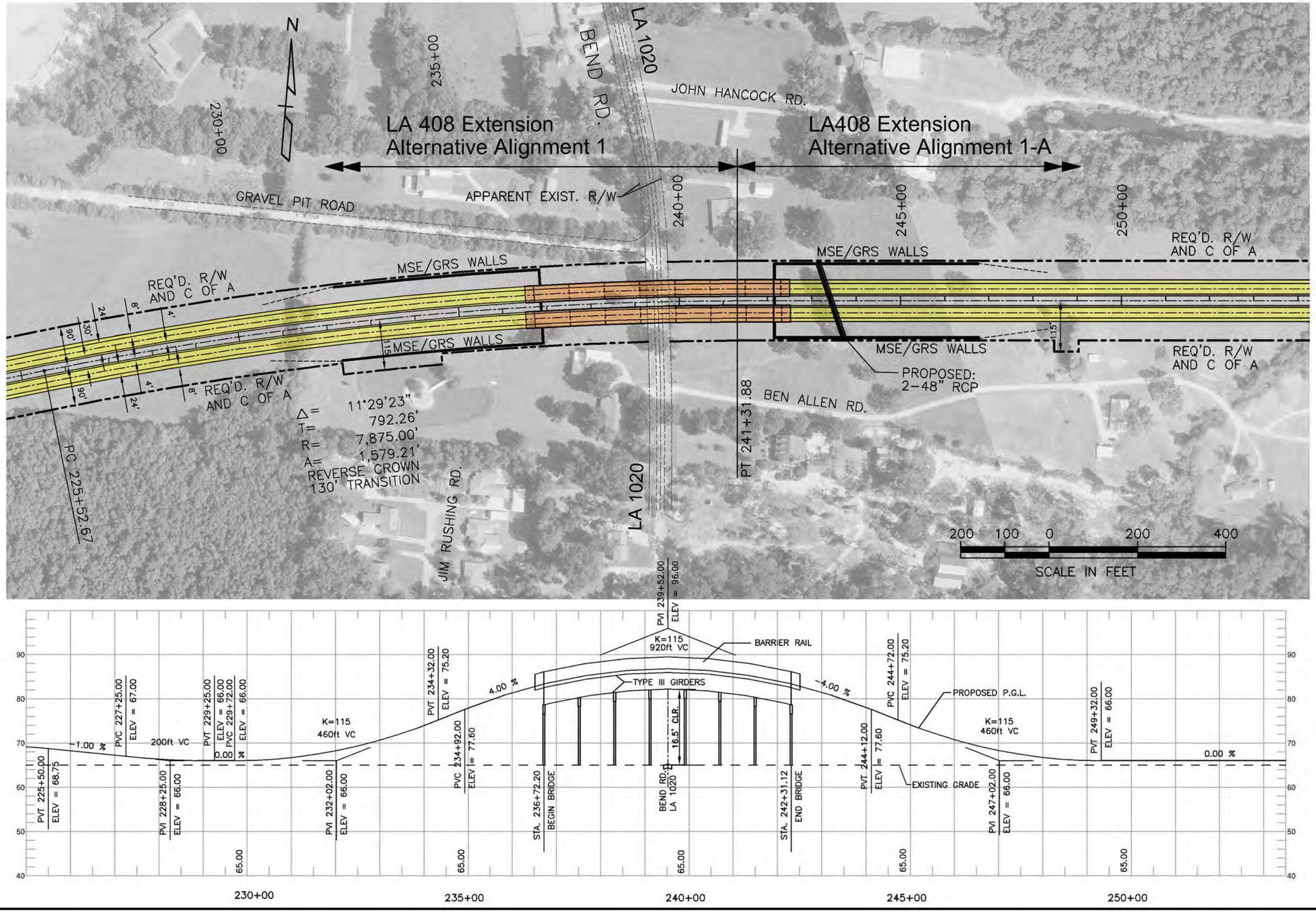
HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

STATE PROJECT No. H.005403 FEDERAL AID PROJECT No. H005403

PLAN LAYOUT – LA 408 EXTENSION ALT. 1

ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT



SHEET P-10

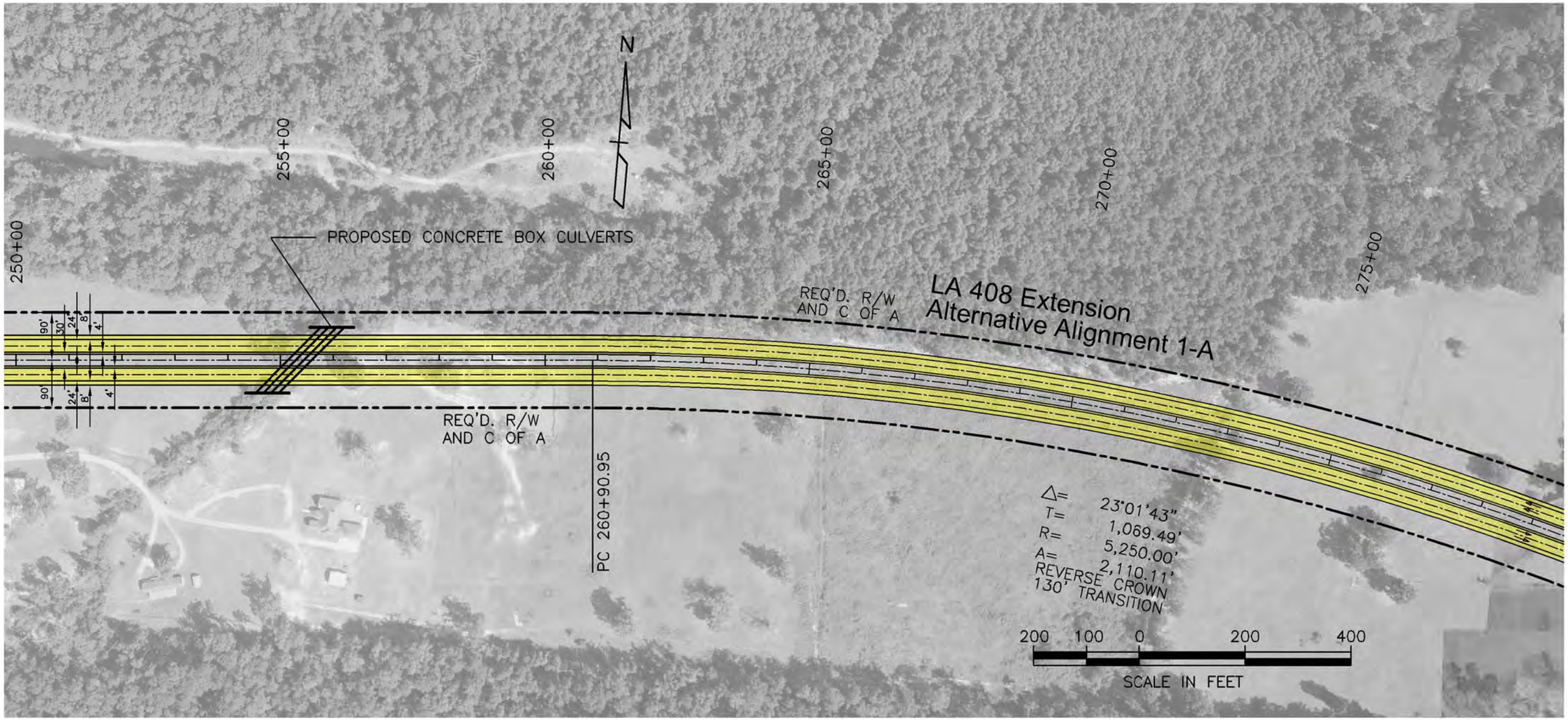
HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

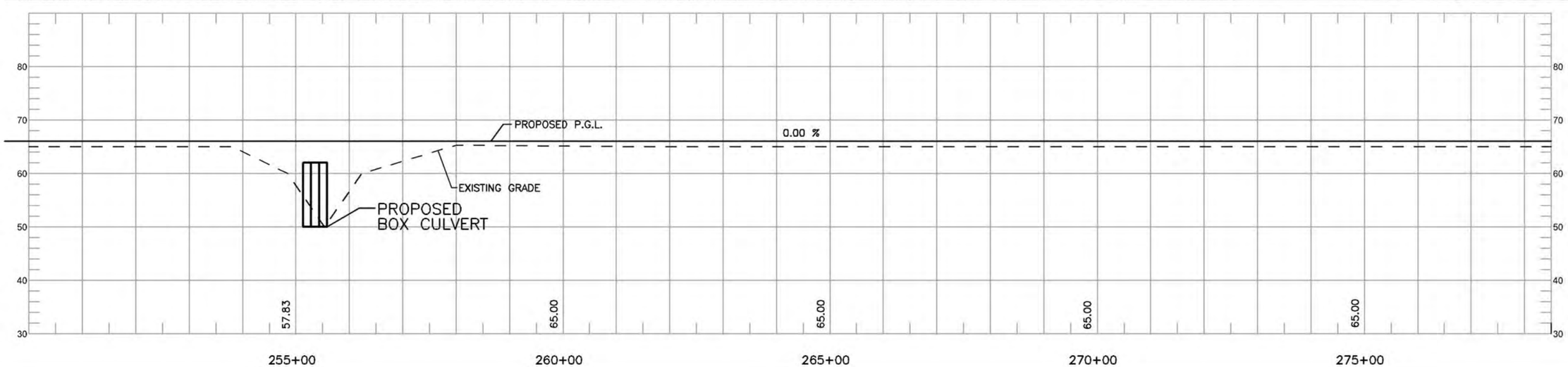
STATE PROJECT No. H.005403 FEDERAL AID PROJECT No. H005403

PLAN LAYOUT – LA 408 EXTENSION ALT. 1-A

ASSOCIATES, INC.
ENGINEERS · ARCHITECTS · PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT





SHEET
P-11

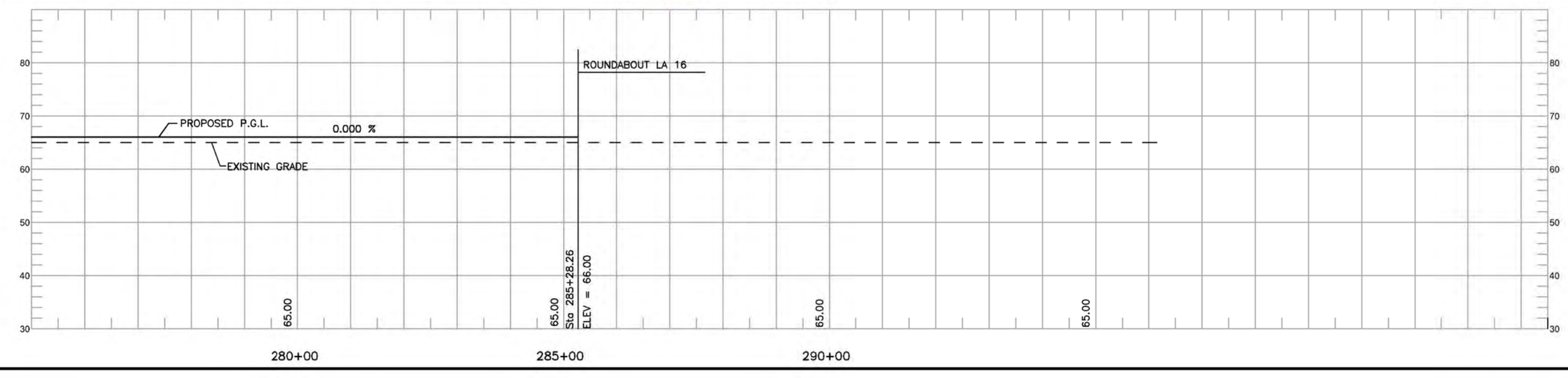
HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

STATE PROJECT No. H.005403
FEDERAL AID PROJECT No. H005403

PLAN LAYOUT – LA 408 EXTENSION ALT. 1-A

ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT



SHEET
P-12

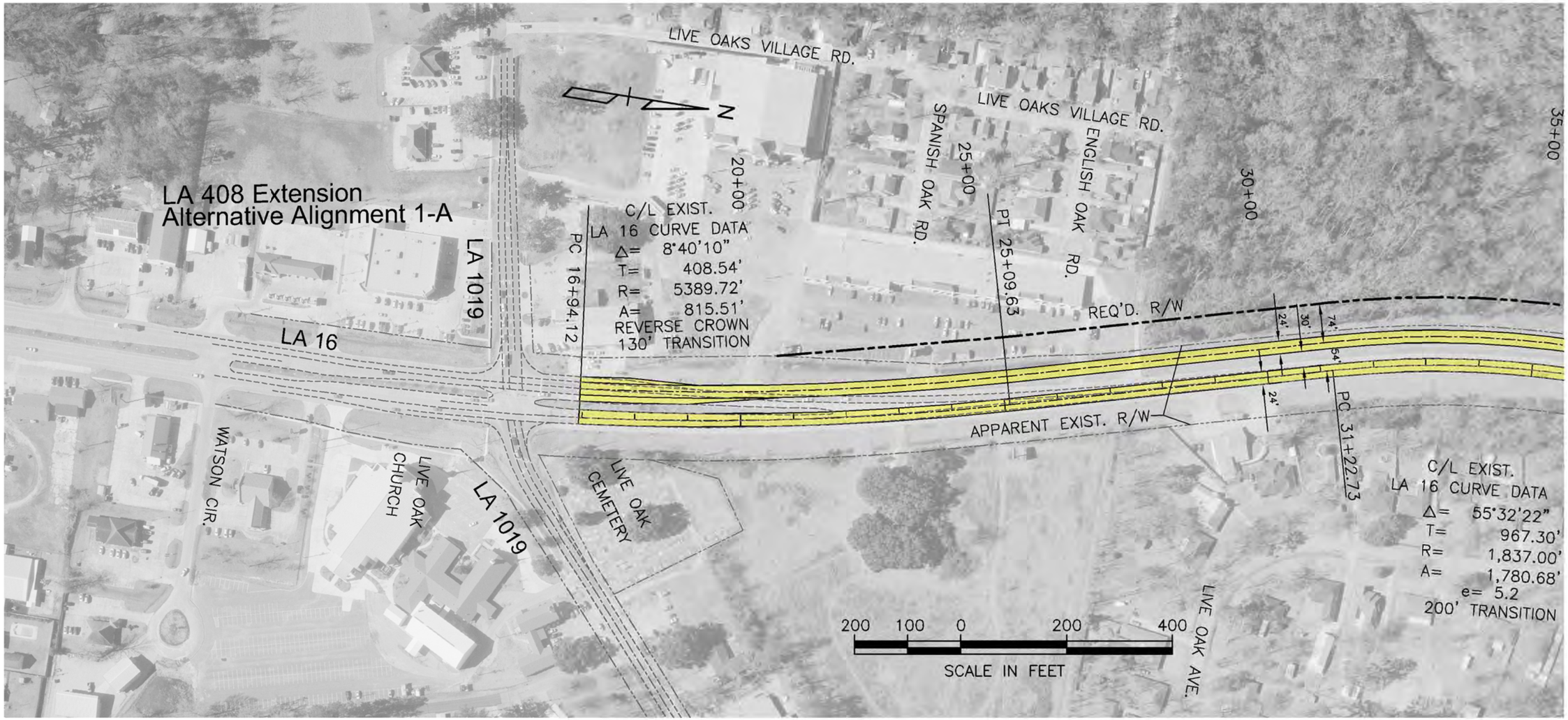
HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

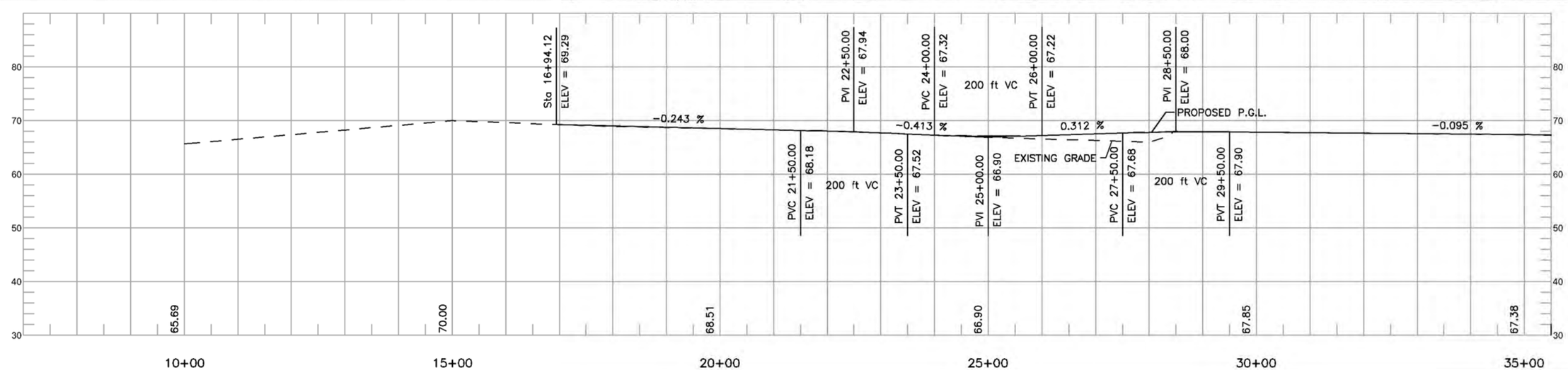
STATE PROJECT No. H.005403
FEDERAL AID PROJECT No. H005403

PLAN LAYOUT – LA 408 EXTENSION ALT. 1-A

ASSOCIATES, INC.
ENGINEERS · ARCHITECTS · PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT





SHEET P-13

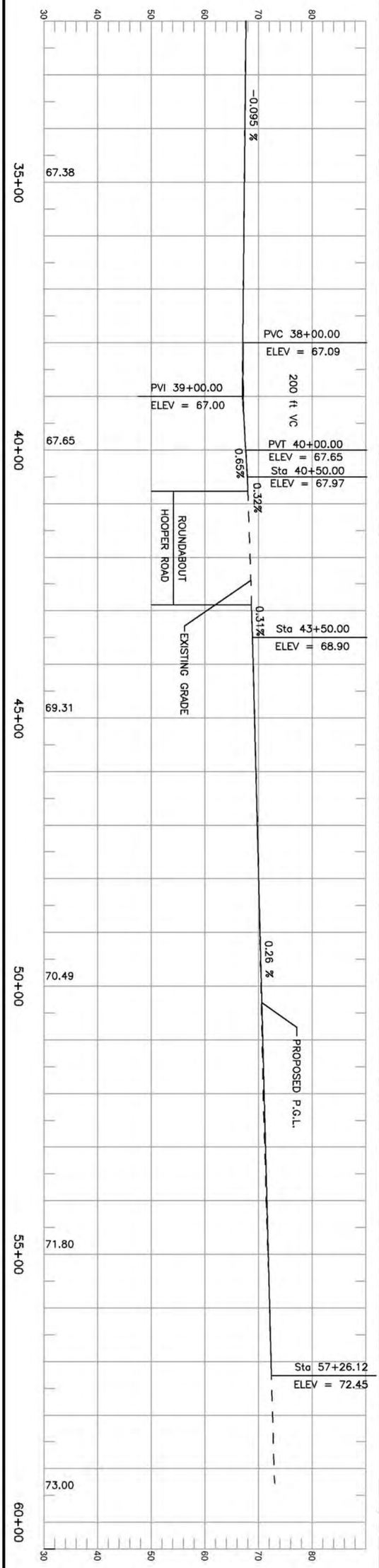
HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

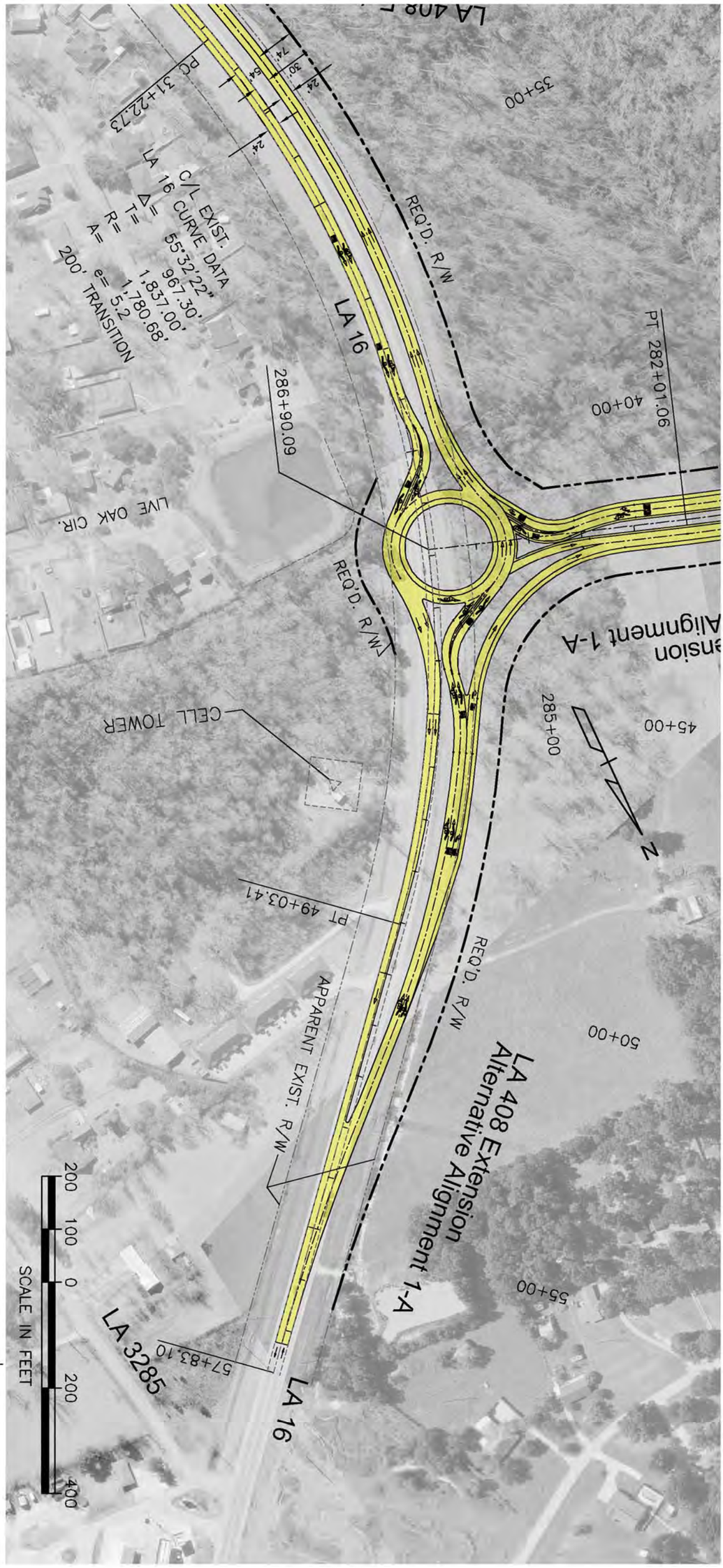
STATE PROJECT No. H.005403 FEDERAL AID PROJECT No. H005403

PLAN LAYOUT – LA 408 EXTENSION ALT. 1-A

NY ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT





DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

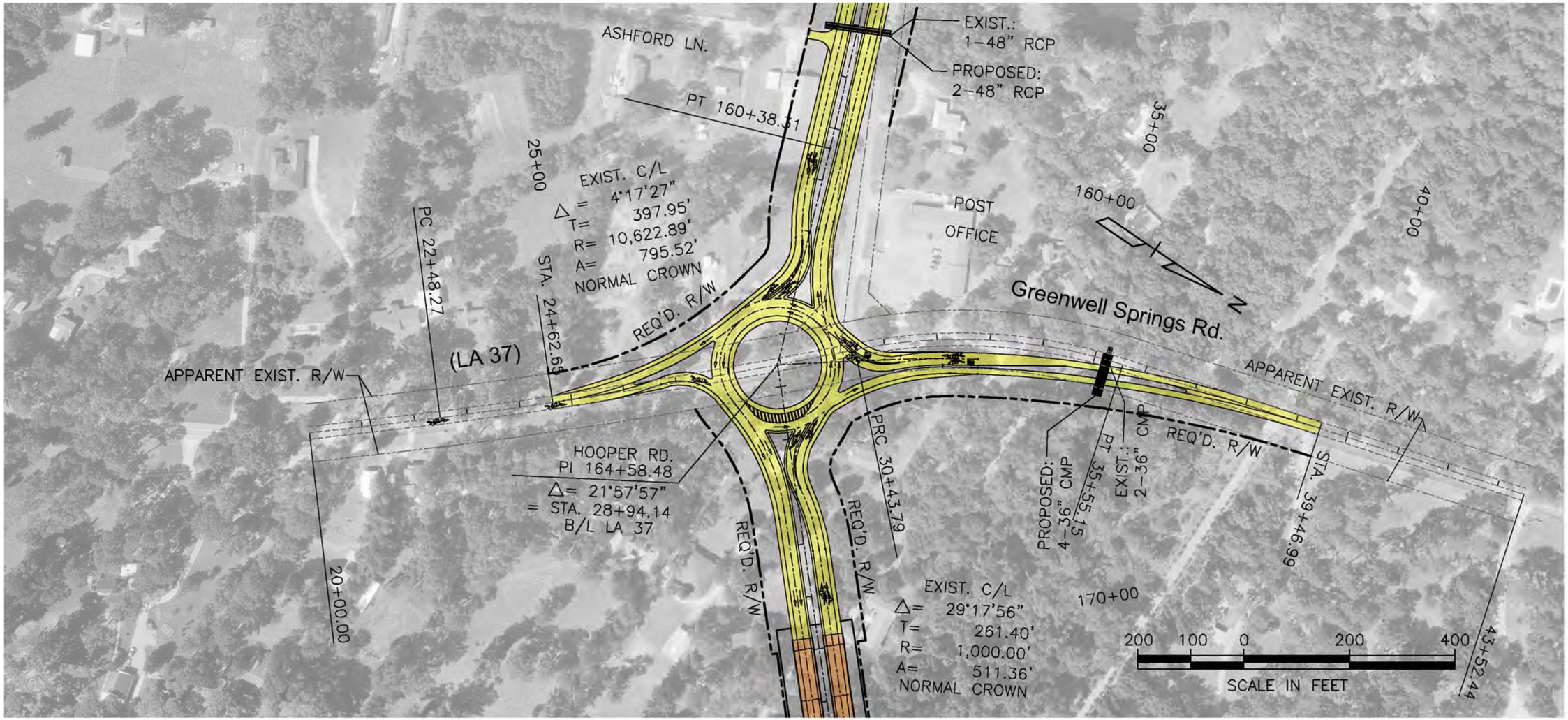
NY ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

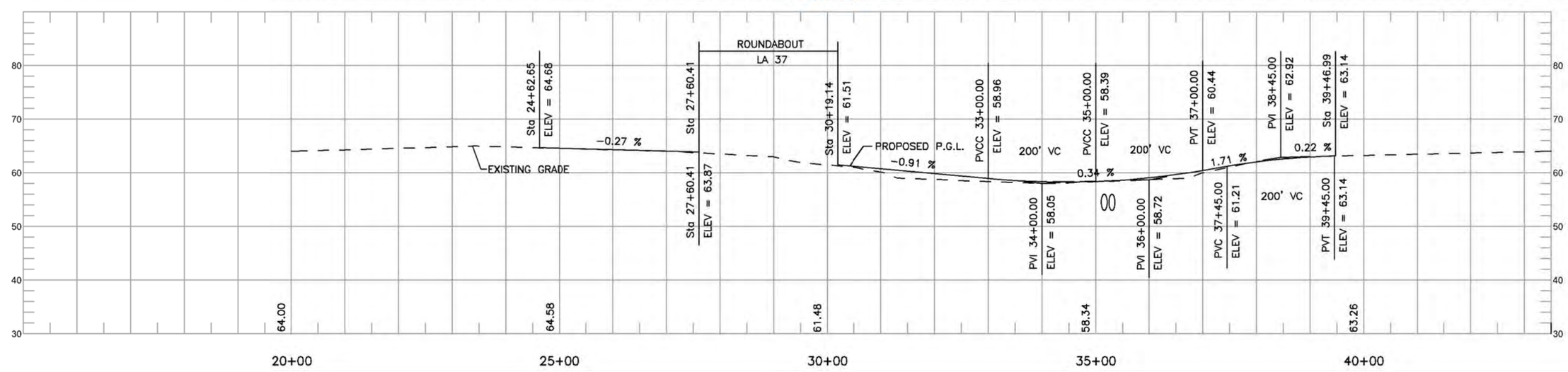
HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

STATE PROJECT No. H.005403 FEDERAL AID PROJECT No. H005403

PLAN LAYOUT – LA 408 EXTENSION ALT. 1-A

SHEET
P-14





SHEET
P-15

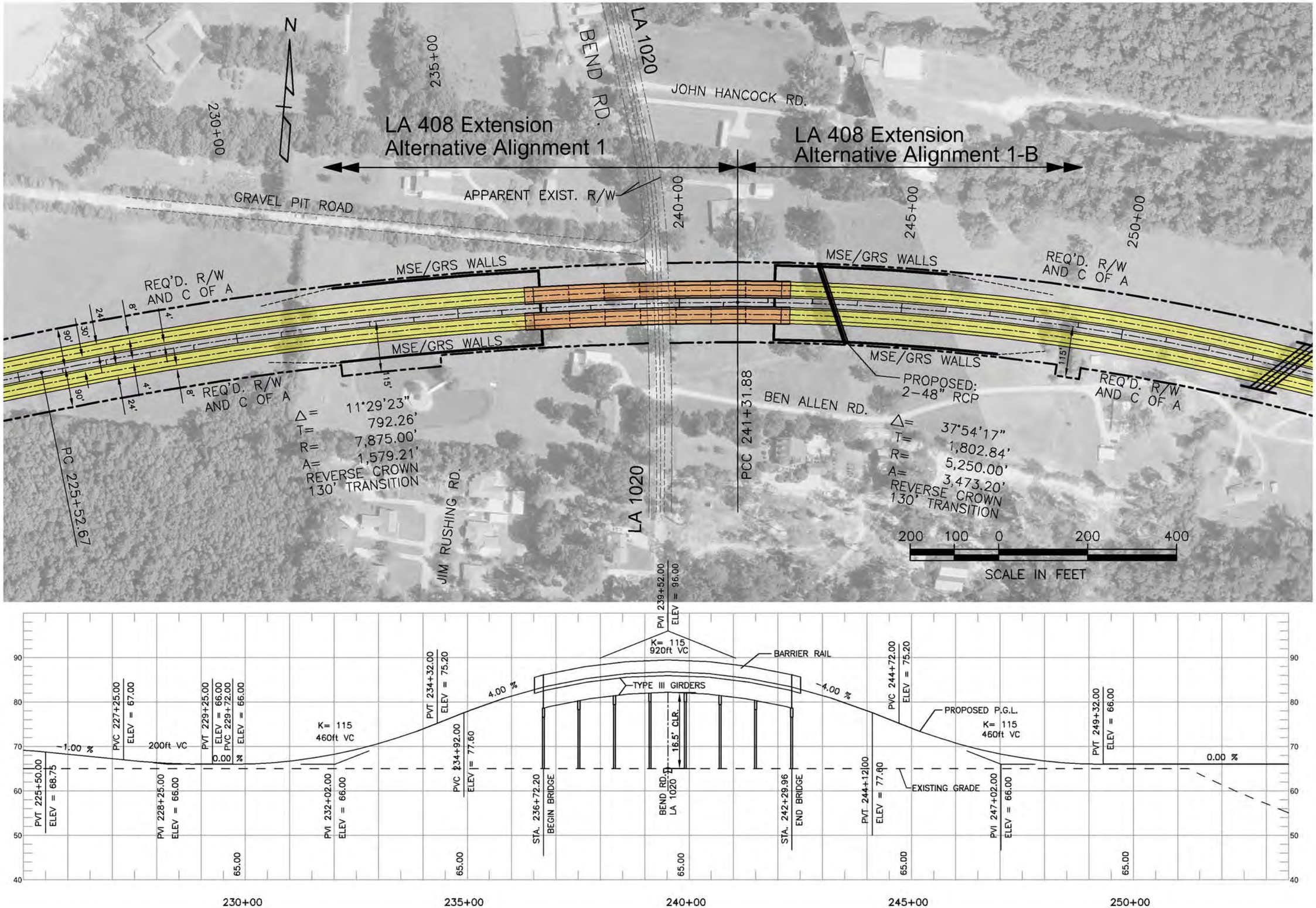
HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

STATE PROJECT No. H.005403
FEDERAL AID PROJECT No. H005403

PLAN LAYOUT - GREENWELL SPRING RD. (LA 37)

ASSOCIATES, INC.
ENGINEERS · ARCHITECTS · PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT



SHEET P-16

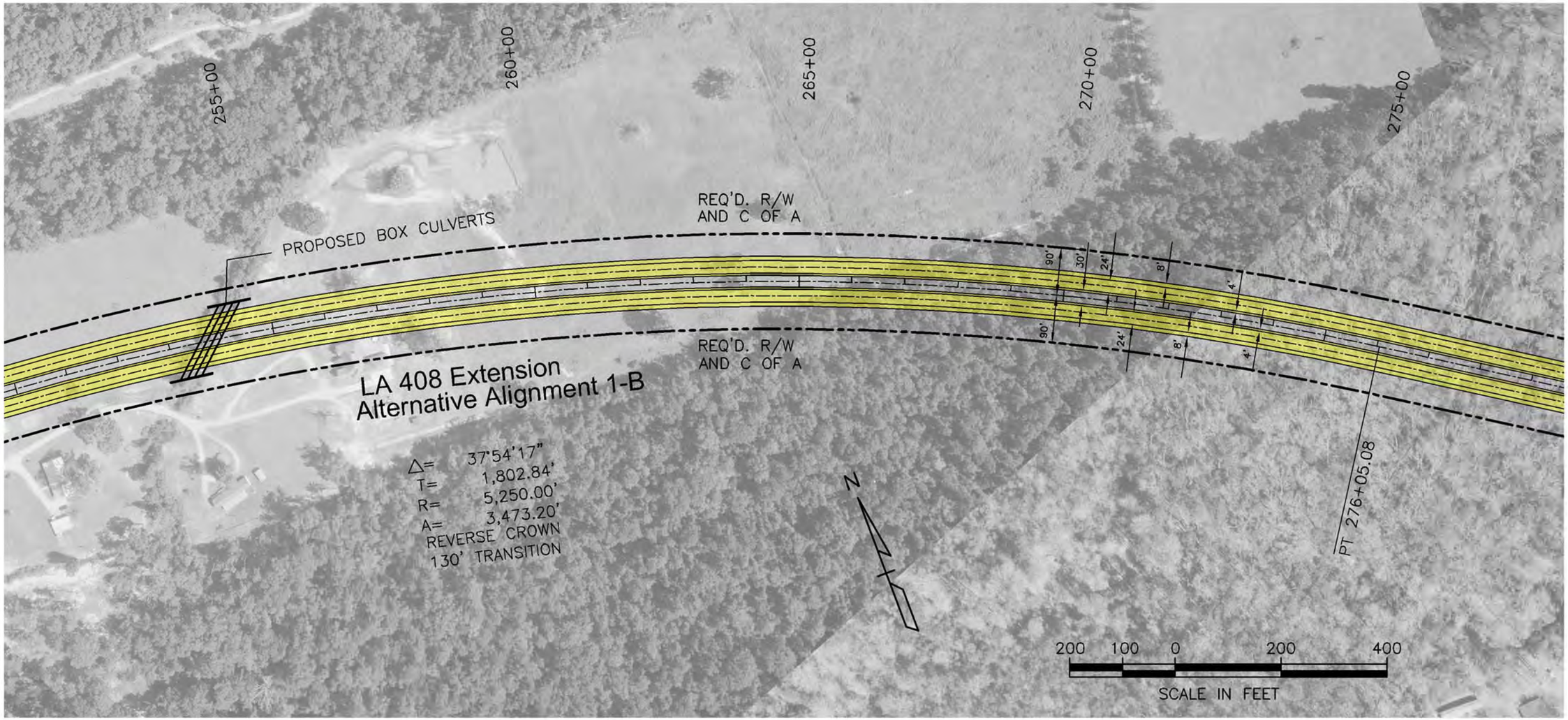
HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

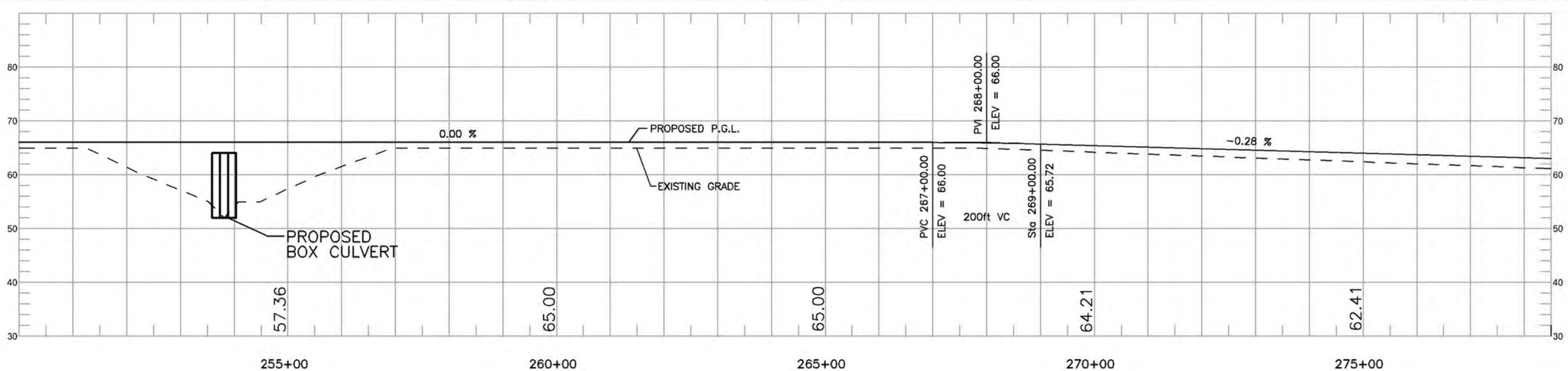
STATE PROJECT No. H.005403 FEDERAL AID PROJECT No. H005403

PLAN LAYOUT – LA 408 EXTENSION ALT. 1-B

ASSOCIATES, INC.
ENGINEERS · ARCHITECTS · PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT





SHEET
P-17

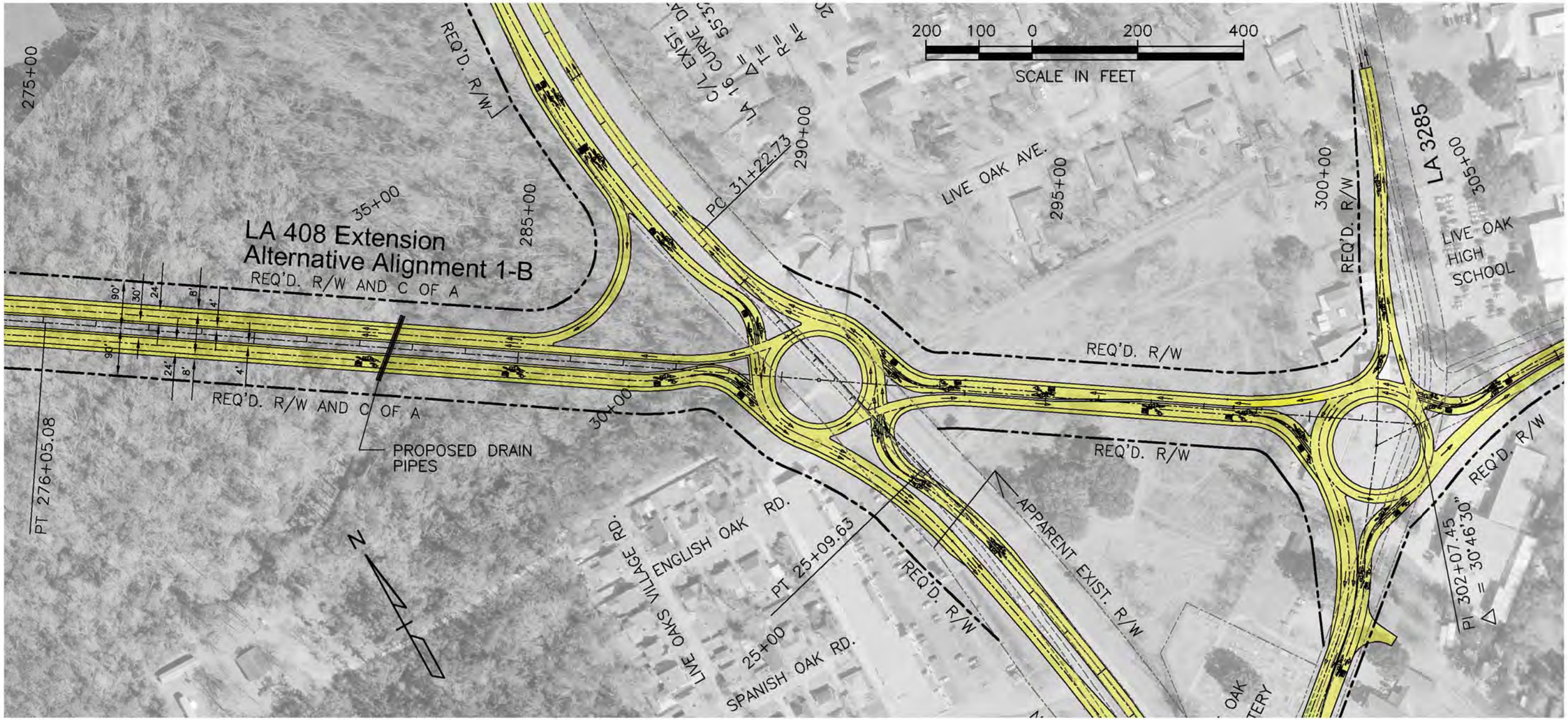
HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

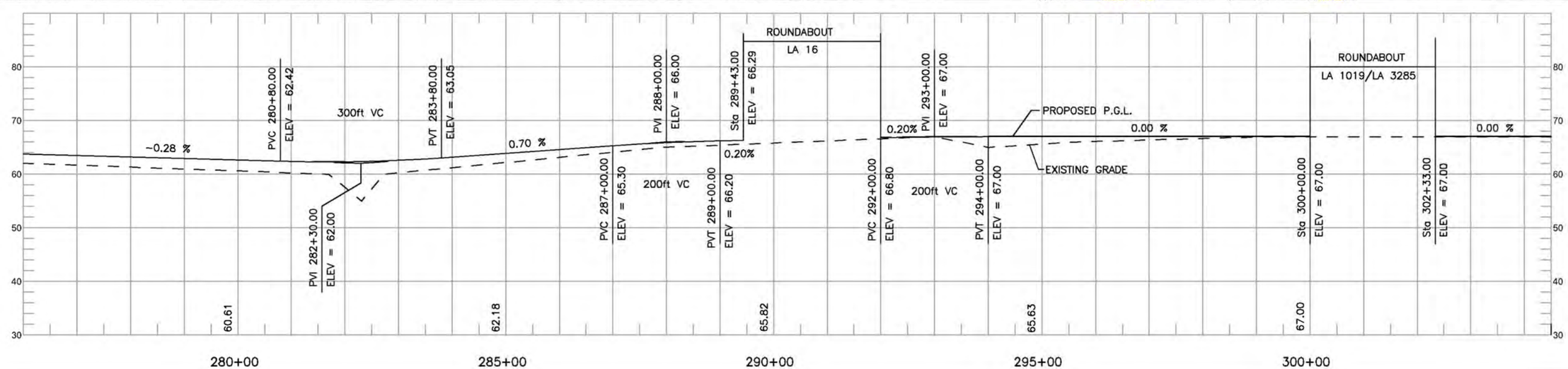
STATE PROJECT No. H.005403
FEDERAL AID PROJECT No. H005403

PLAN LAYOUT – LA 408 EXTENSION ALT. 1-B

NY ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT





SHEET P-18

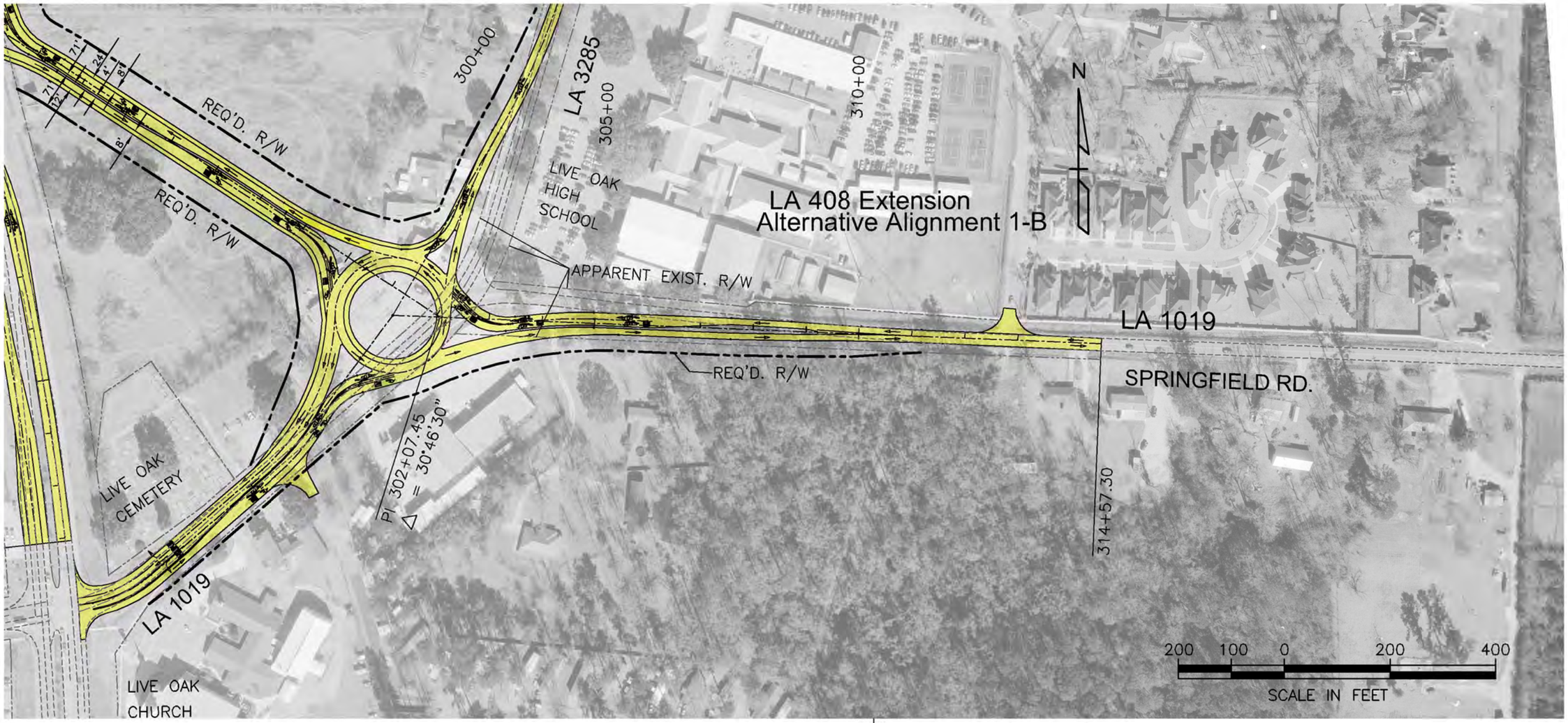
HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

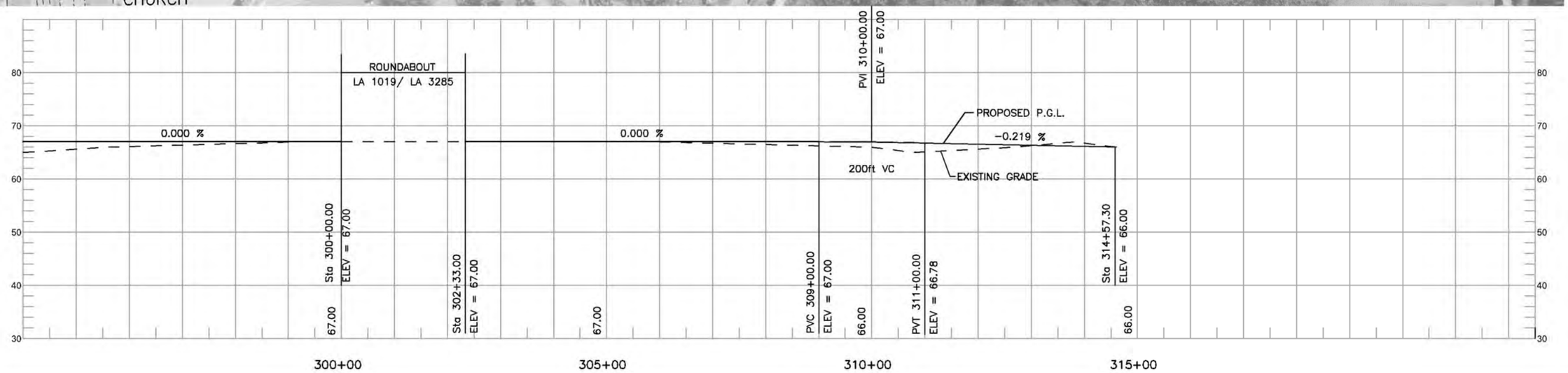
STATE PROJECT No. H.005403 FEDERAL AID PROJECT No. H005403

PLAN LAYOUT – LA 408 EXTENSION ALT. 1-B

ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT





SHEET
P-19

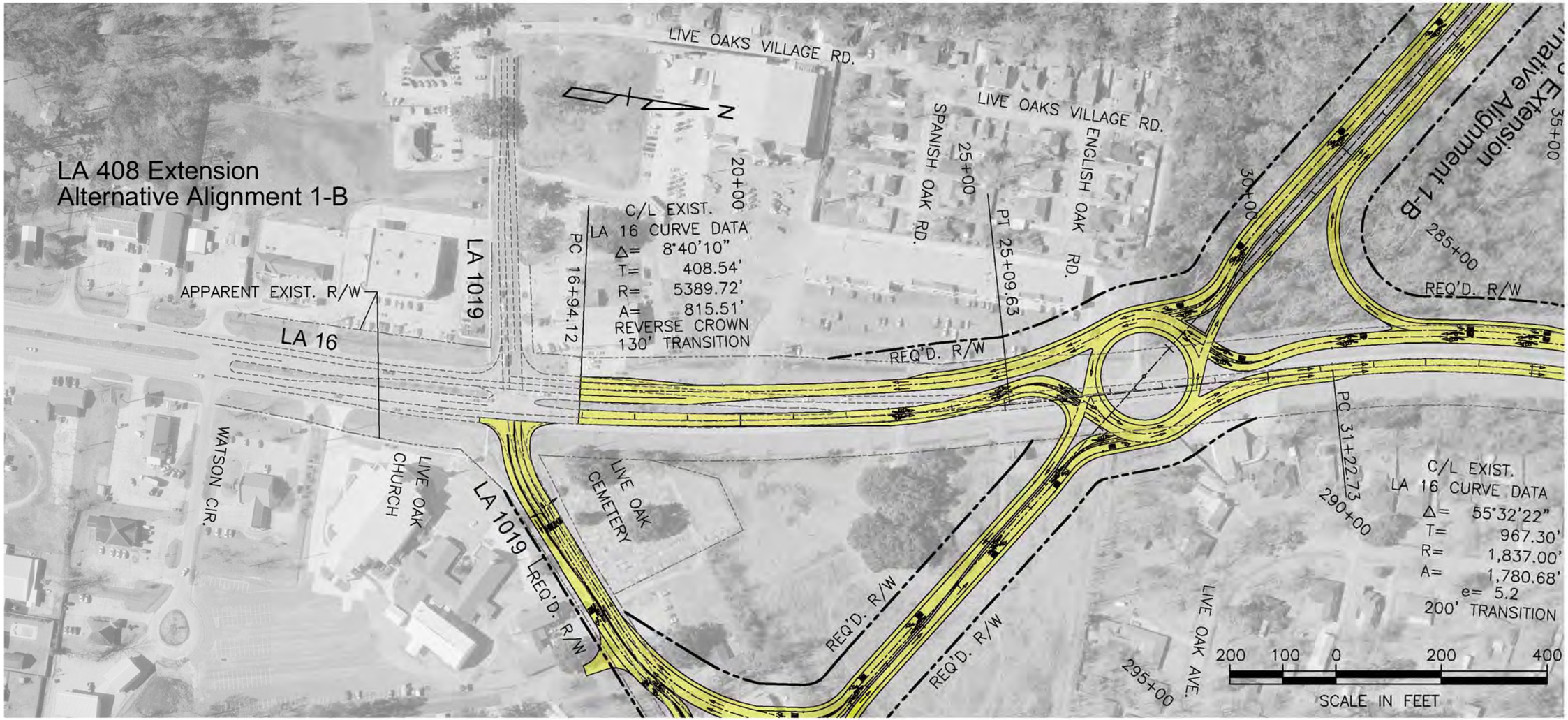
HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

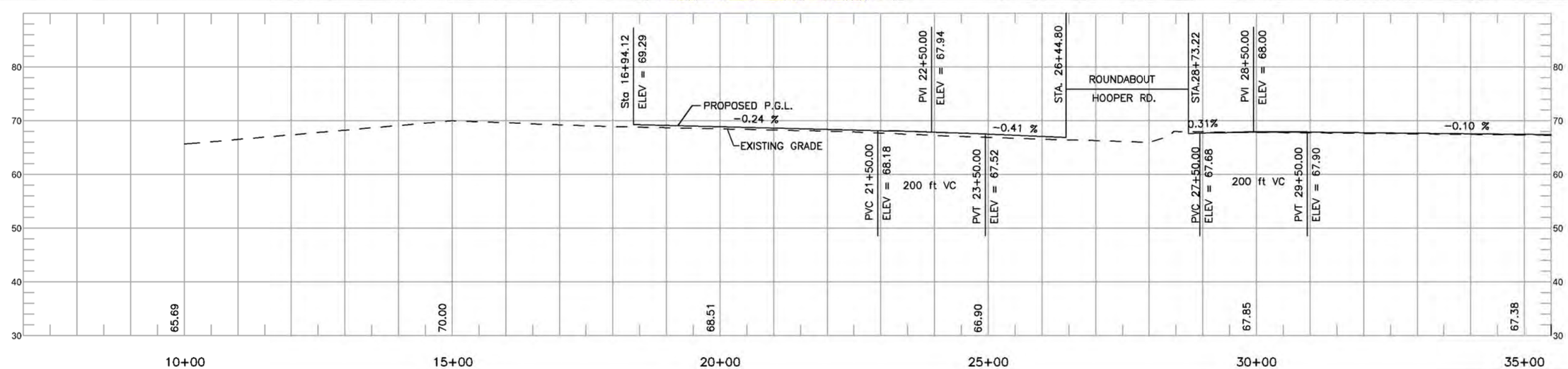
STATE PROJECT No. H.005403
FEDERAL AID PROJECT No. H005403

PLAN LAYOUT – LA 408 EXTENSION ALT. 1-B

ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT





SHEET P-20

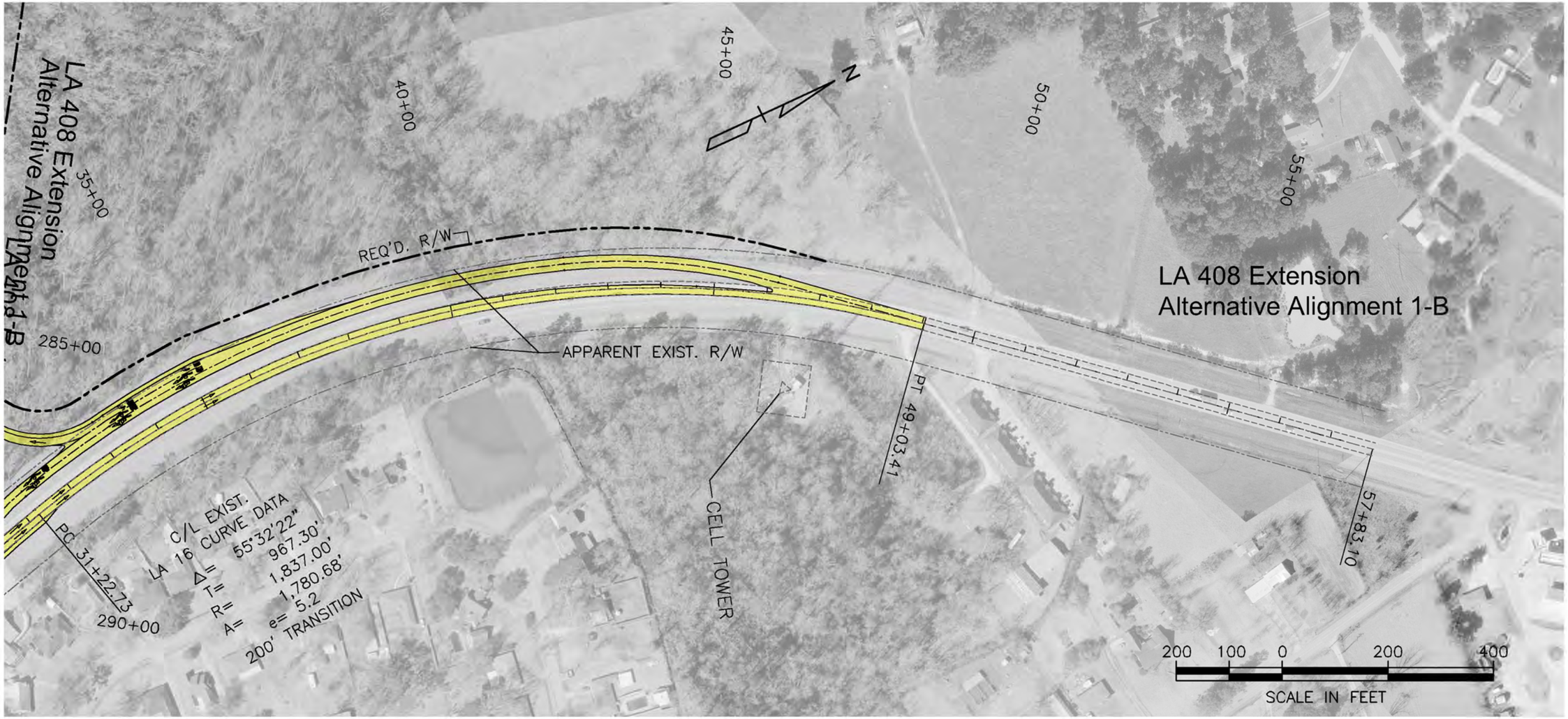
HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

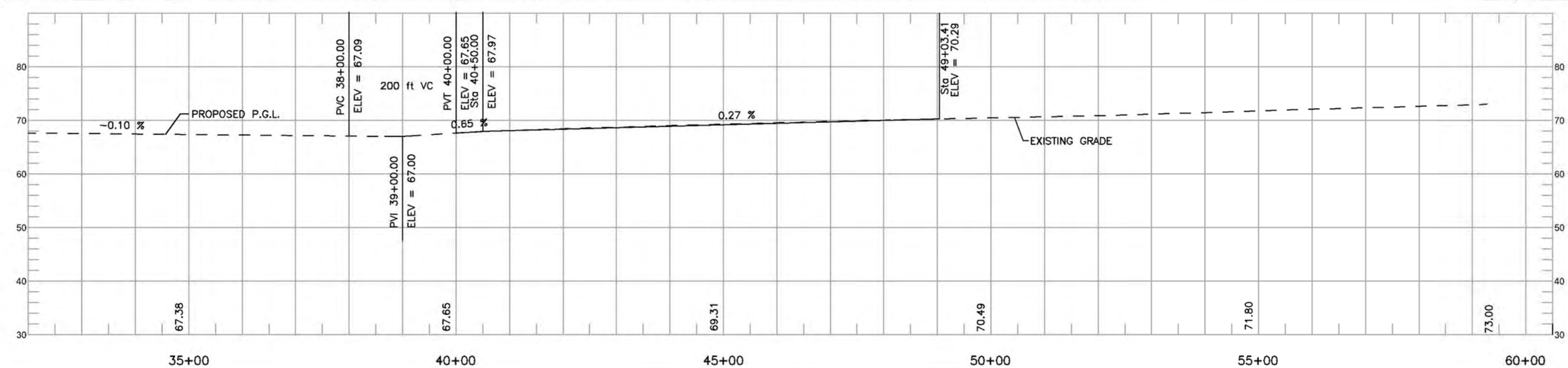
STATE PROJECT No. H.005403 FEDERAL AID PROJECT No. H005403

PLAN LAYOUT – LA 408 EXTENSION ALT. 1-B

NY ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT





SHEET
P-21

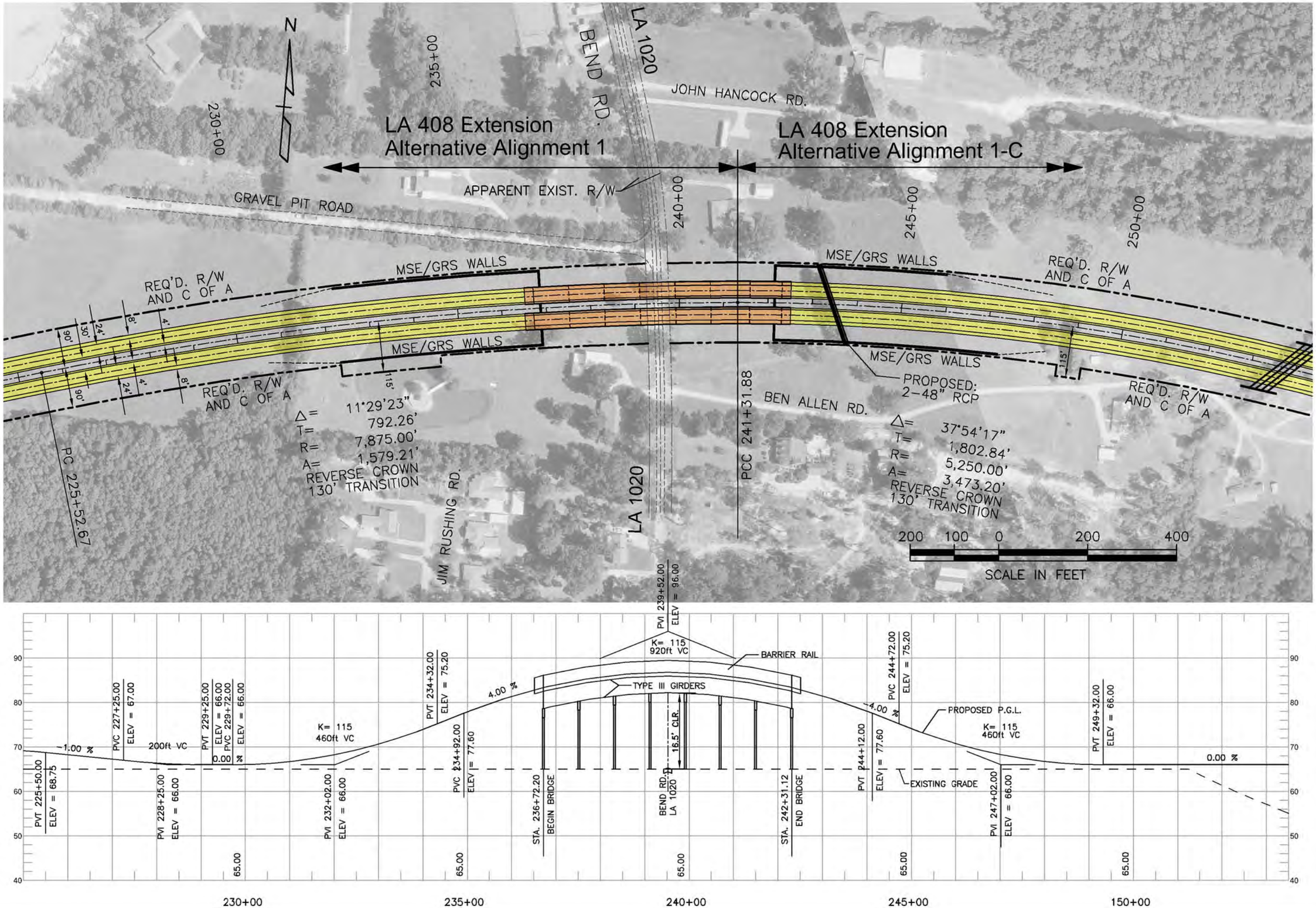
HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

STATE PROJECT No. H.005403 FEDERAL AID PROJECT No. H005403

PLAN LAYOUT – LA 408 EXTENSION ALT. 1-B

ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT



SHEET P-22

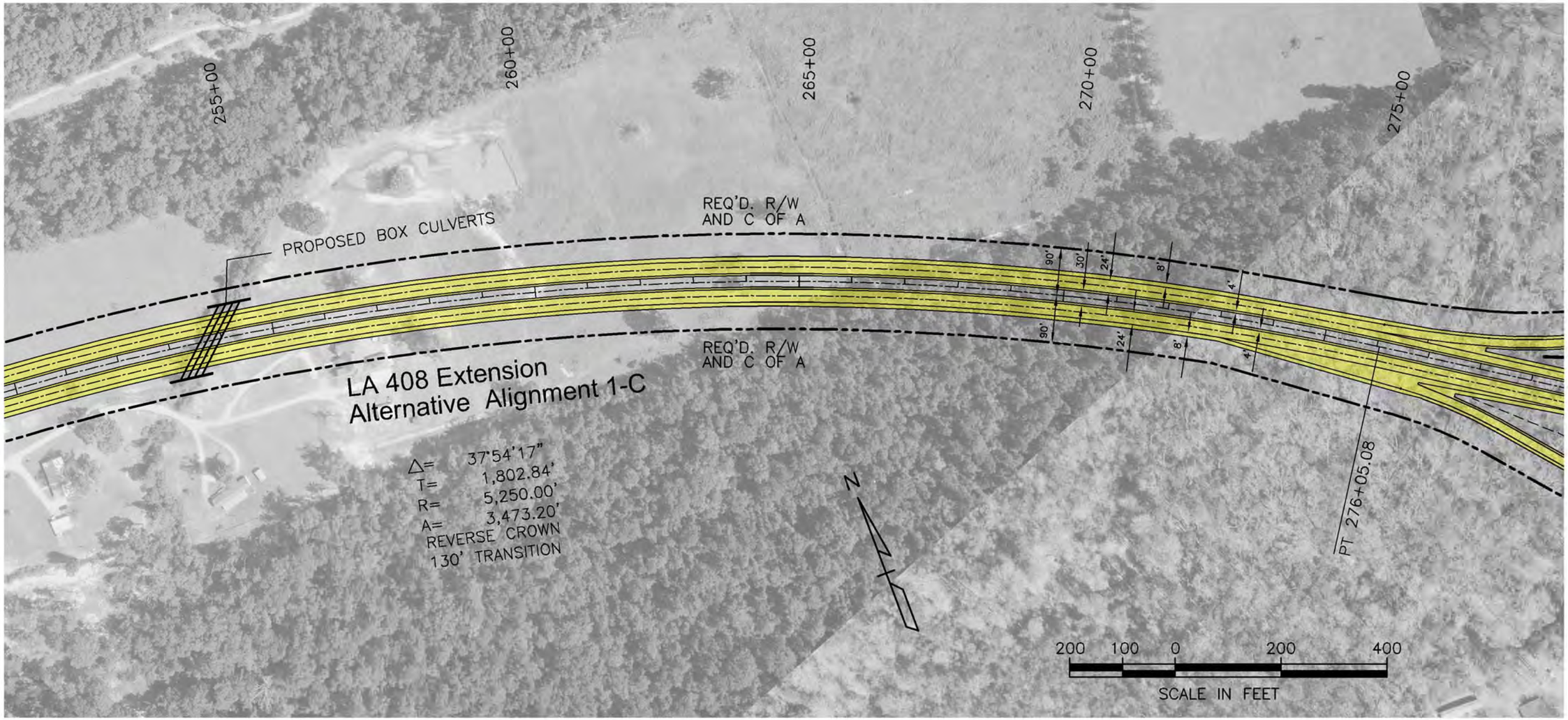
HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

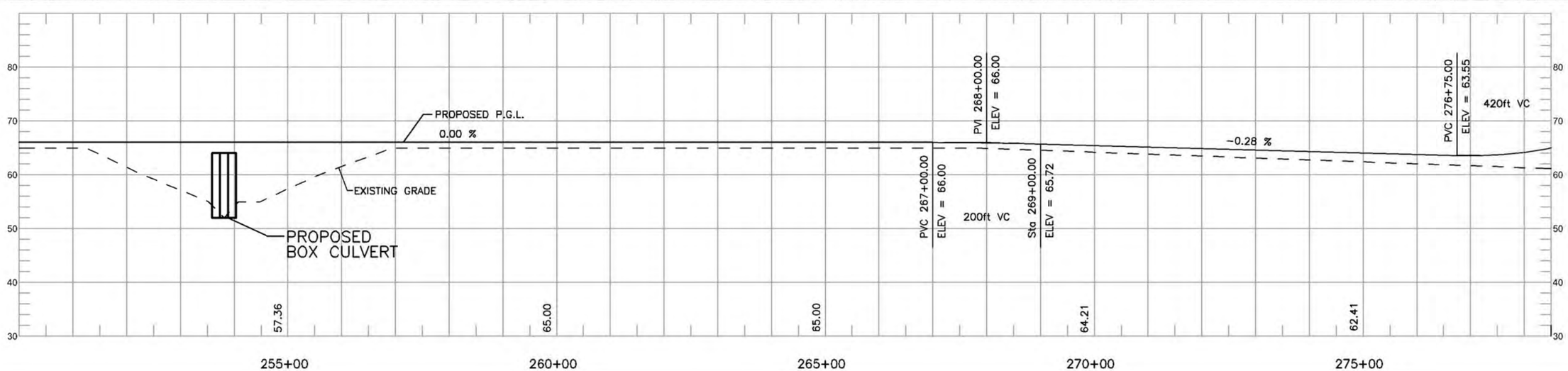
STATE PROJECT No. H.005403 FEDERAL AID PROJECT No. H005403

PLAN LAYOUT – LA 408 EXTENSION ALT. 1-C

ASSOCIATES, INC.
ENGINEERS · ARCHITECTS · PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT





SHEET
P-23

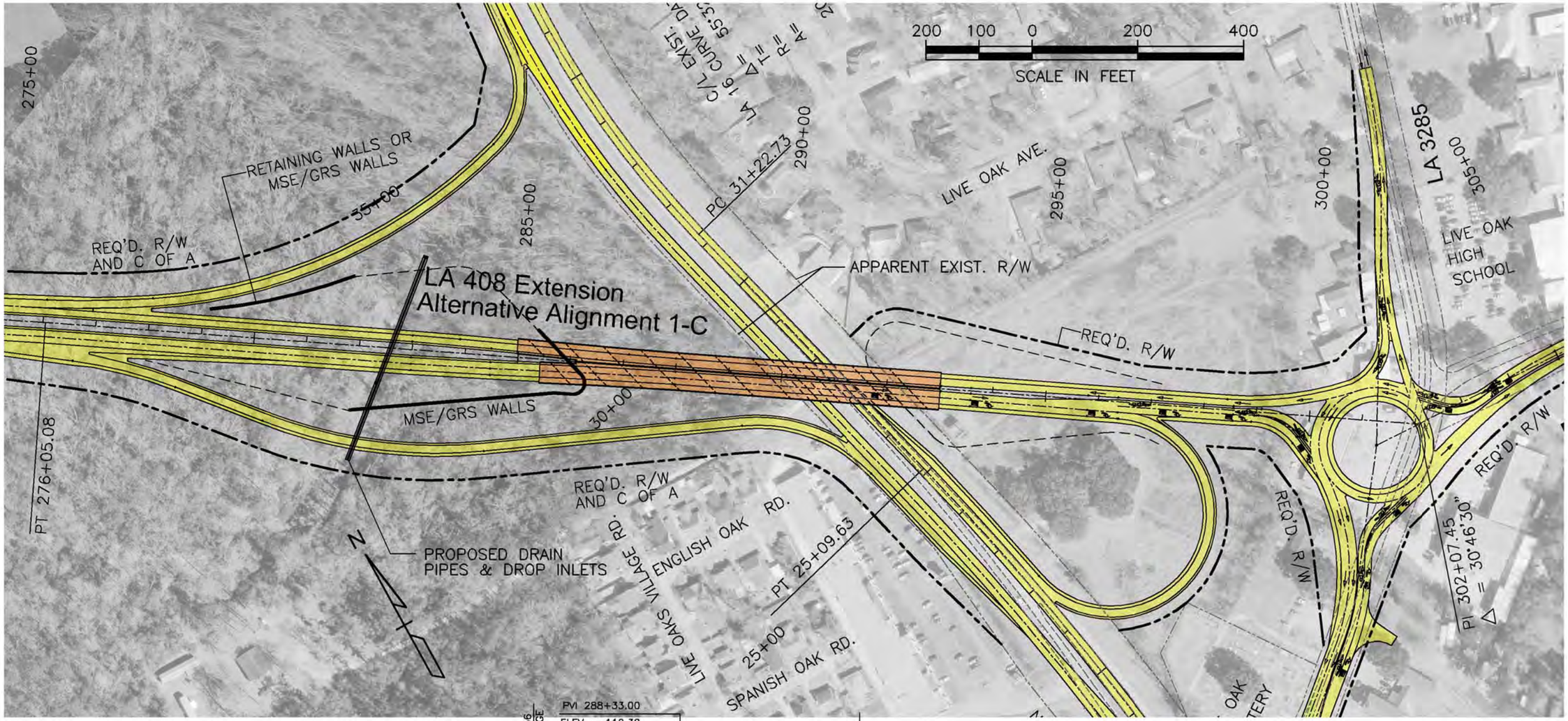
HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

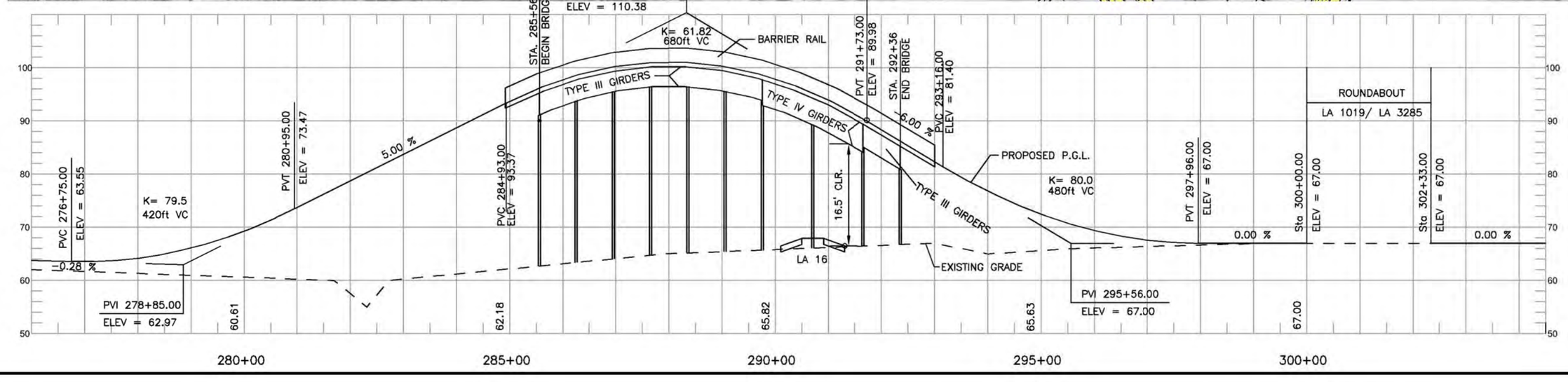
STATE PROJECT No. H.005403
FEDERAL AID PROJECT No. H005403

PLAN LAYOUT - LA 408 EXTENSION ALT. 1-C

ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT





SHEET P-24

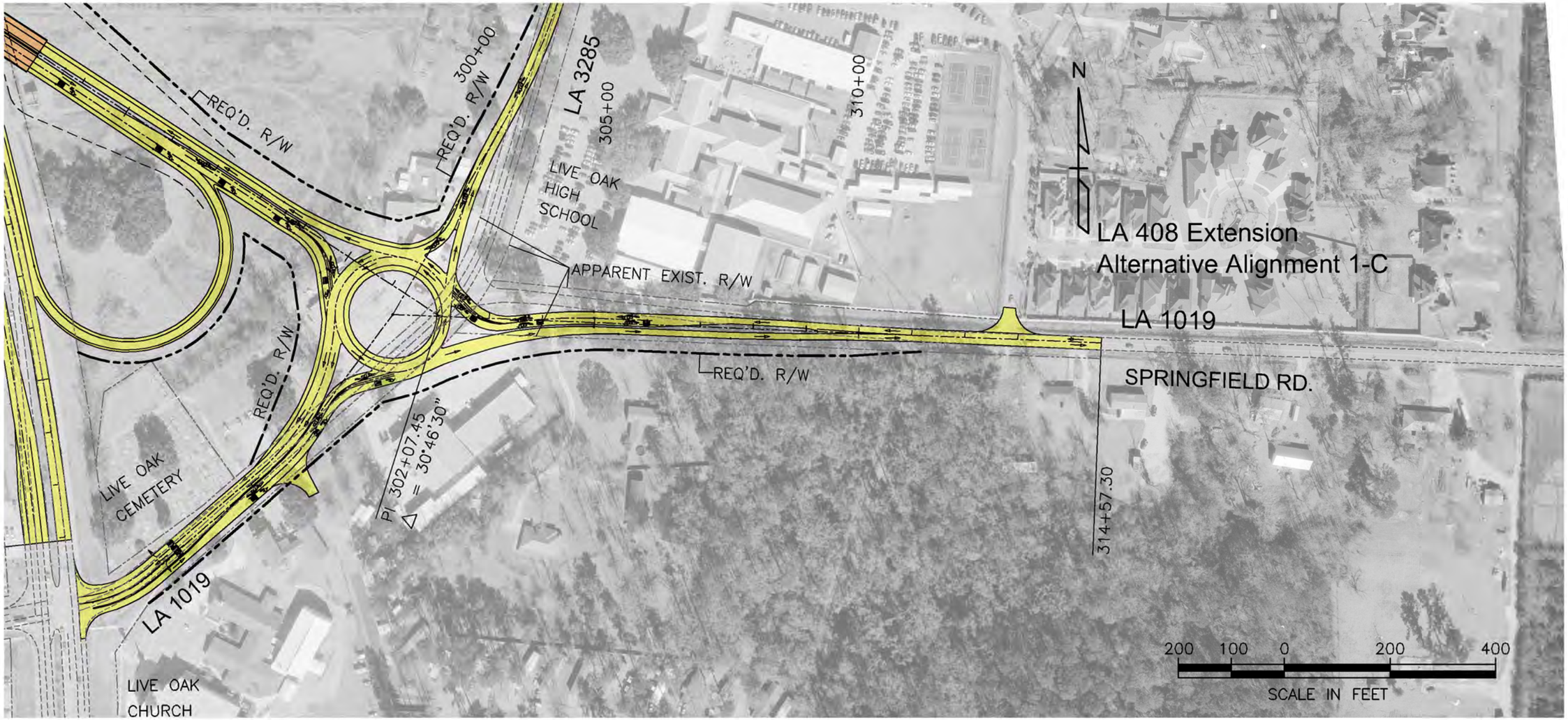
HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

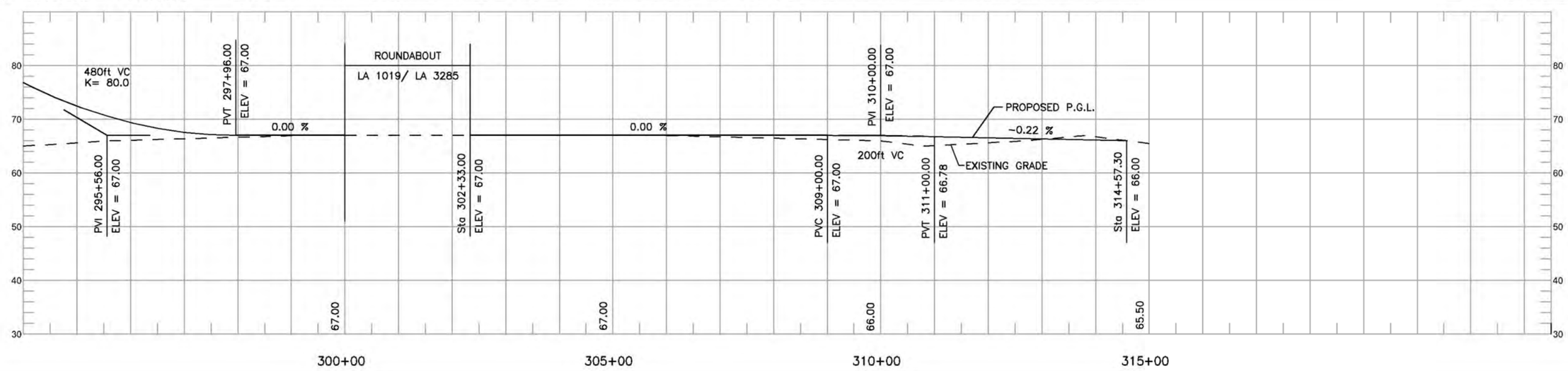
STATE PROJECT No. H.005403 FEDERAL AID PROJECT No. H005403

PLAN LAYOUT – LA 408 EXTENSION ALT. 1-C

ASSOCIATES, INC.
ENGINEERS · ARCHITECTS · PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT





SHEET
P-25

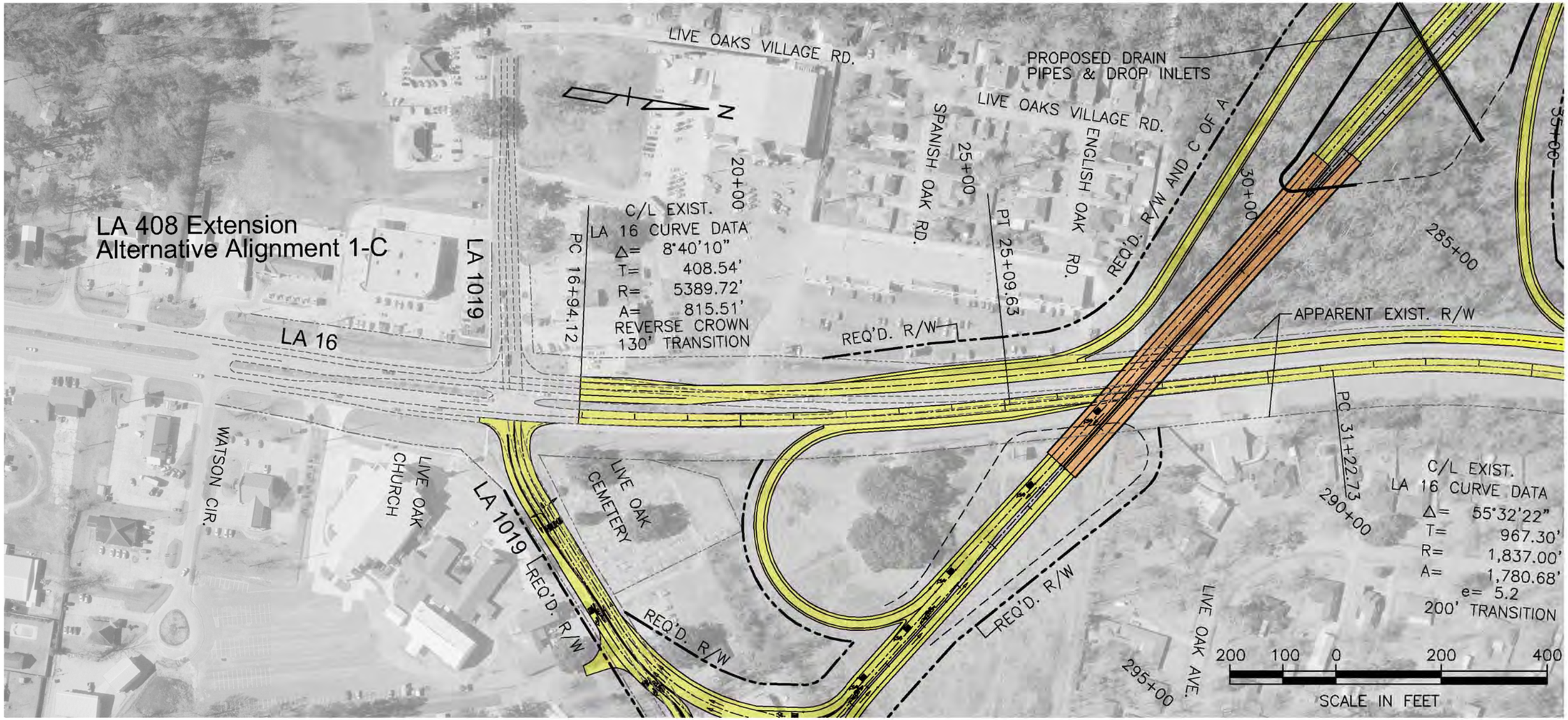
HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

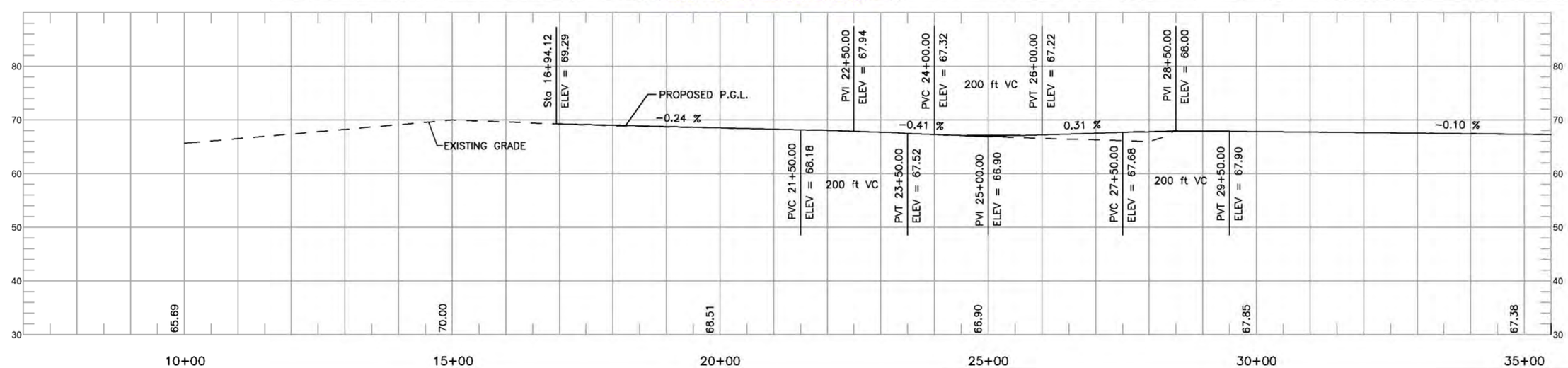
STATE PROJECT No. H.005403
FEDERAL AID PROJECT No. H005403

PLAN LAYOUT – LA 408 EXTENSION ALT. 1-C

ASSOCIATES, INC.
ENGINEERS · ARCHITECTS · PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT





SHEET P-26

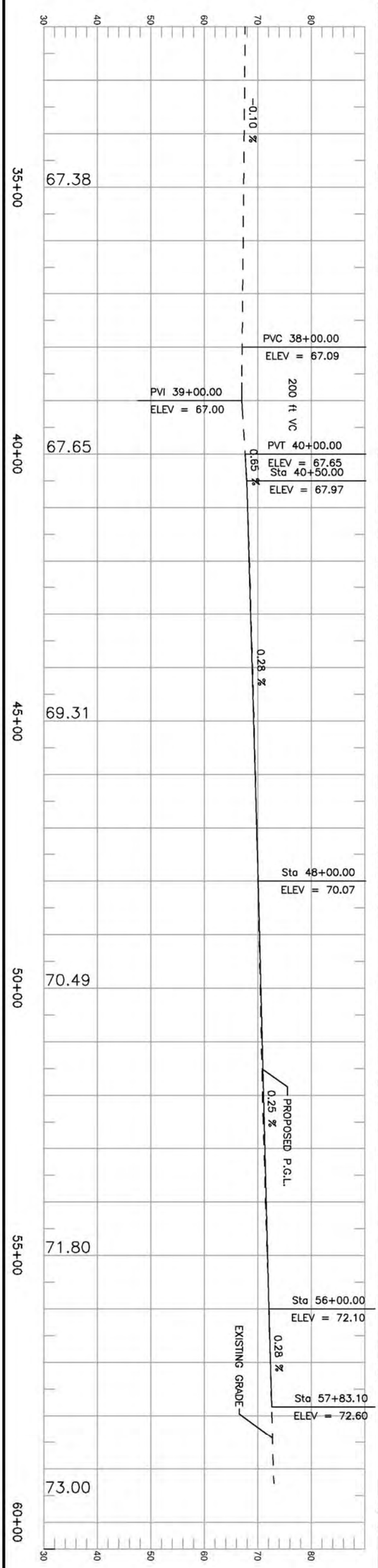
HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

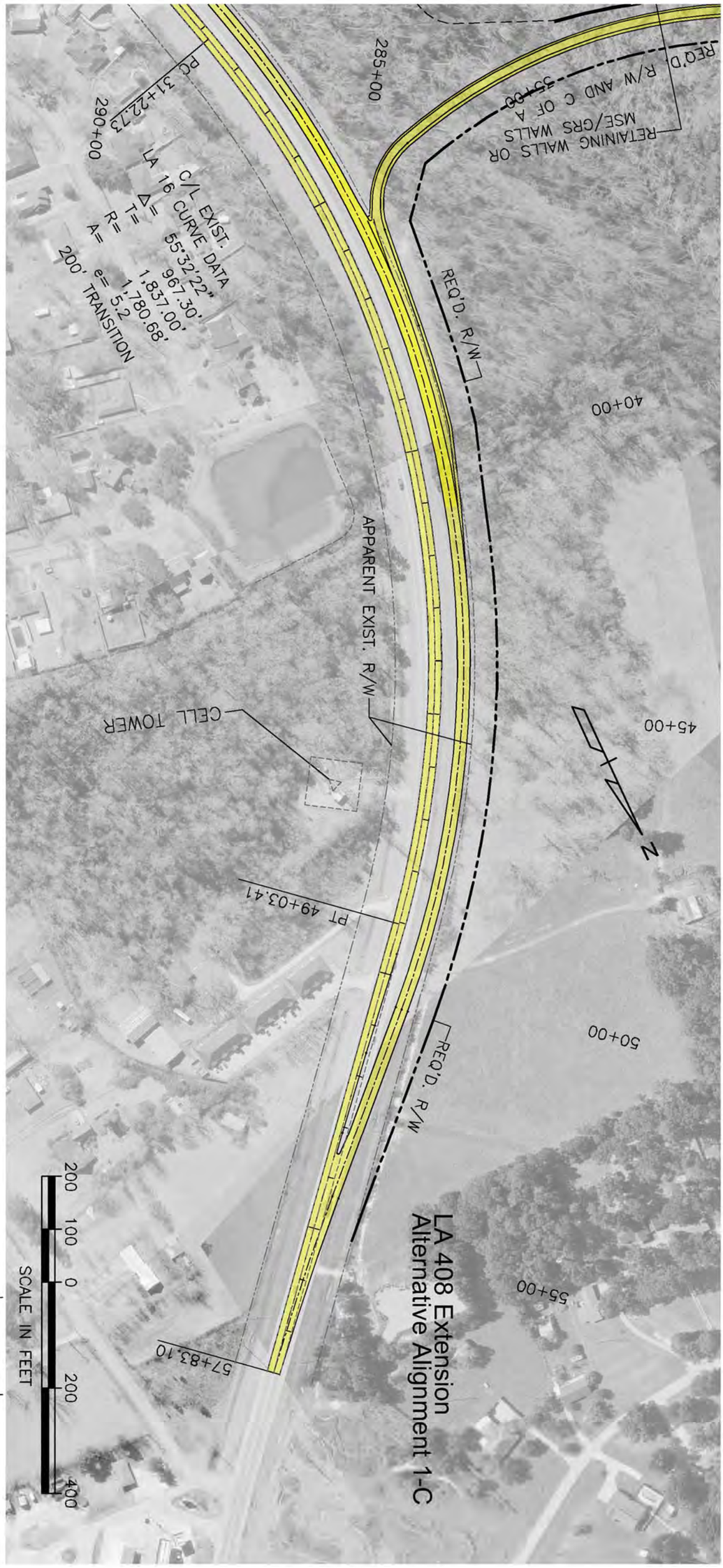
STATE PROJECT No. H.005403 FEDERAL AID PROJECT No. H005403

PLAN LAYOUT – LA 408 EXTENSION ALT. 1-C

ASSOCIATES, INC.
ENGINEERS · ARCHITECTS · PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT





DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

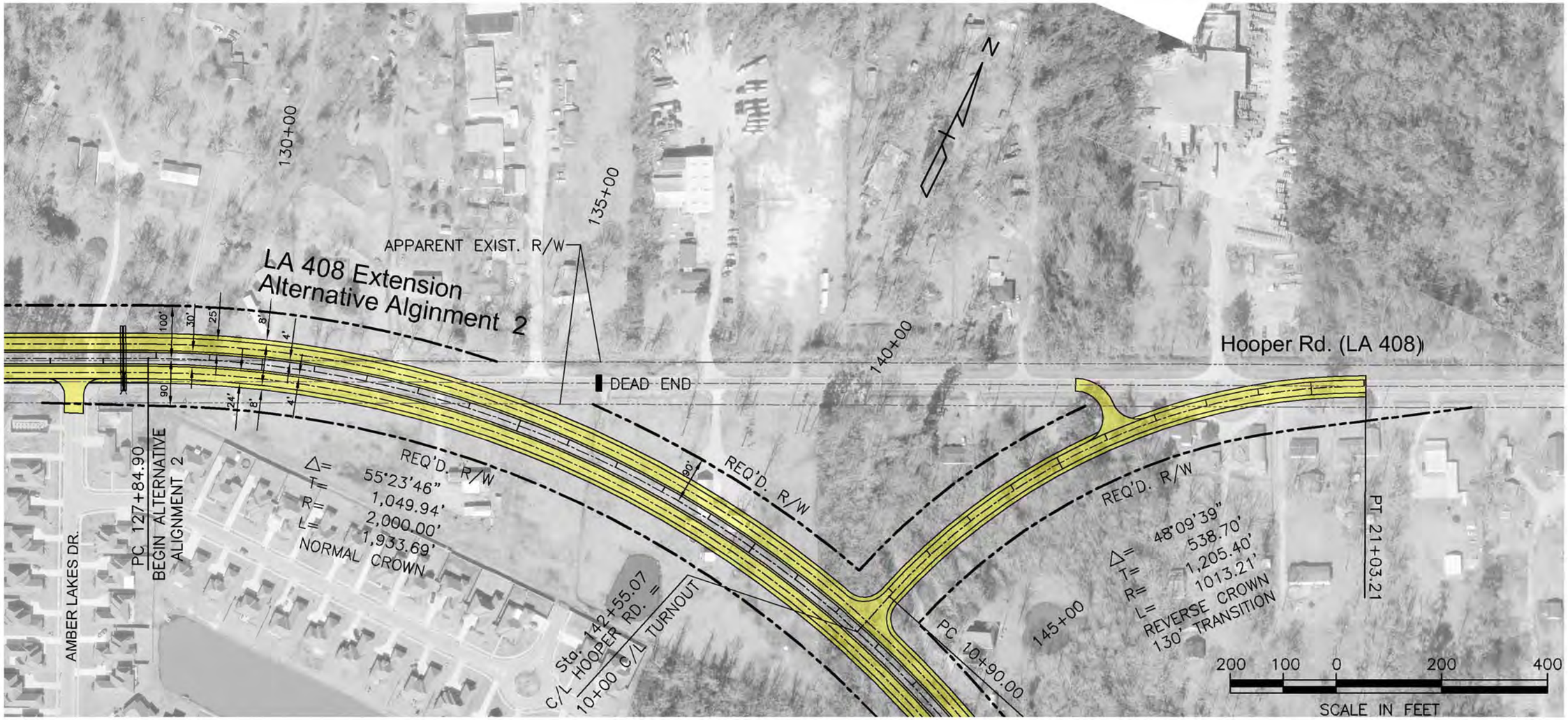
NY ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

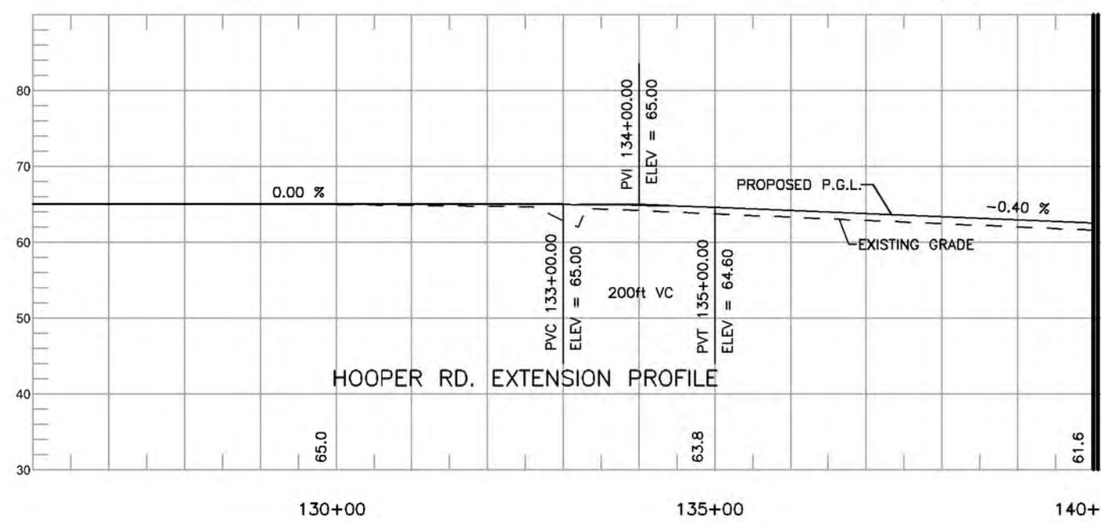
HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

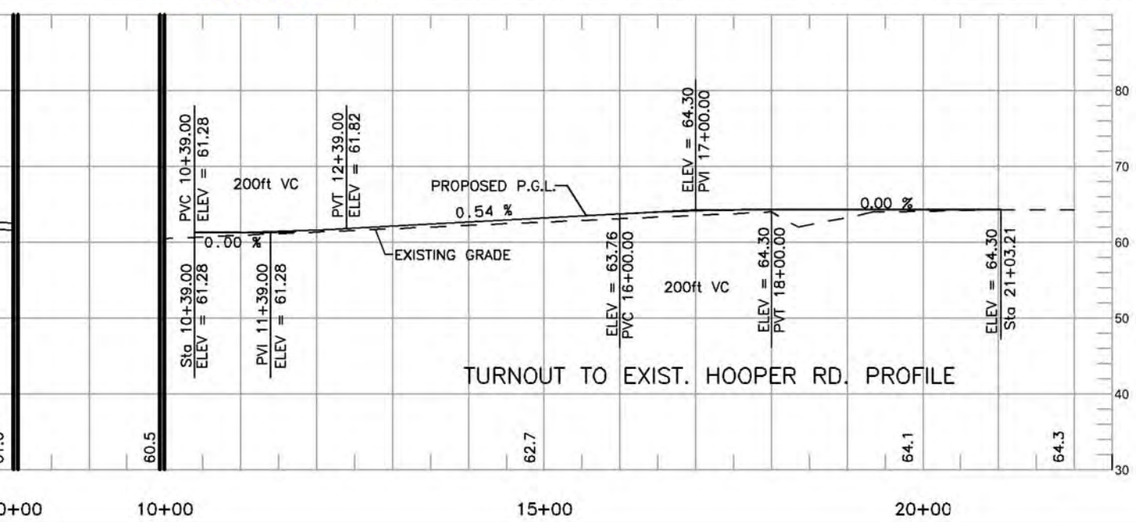
STATE PROJECT No. H.005403 FEDERAL AID PROJECT No. H005403

PLAN LAYOUT – LA 408 EXTENSION ALT. 1-C

SHEET
P-27







SHEET P-28

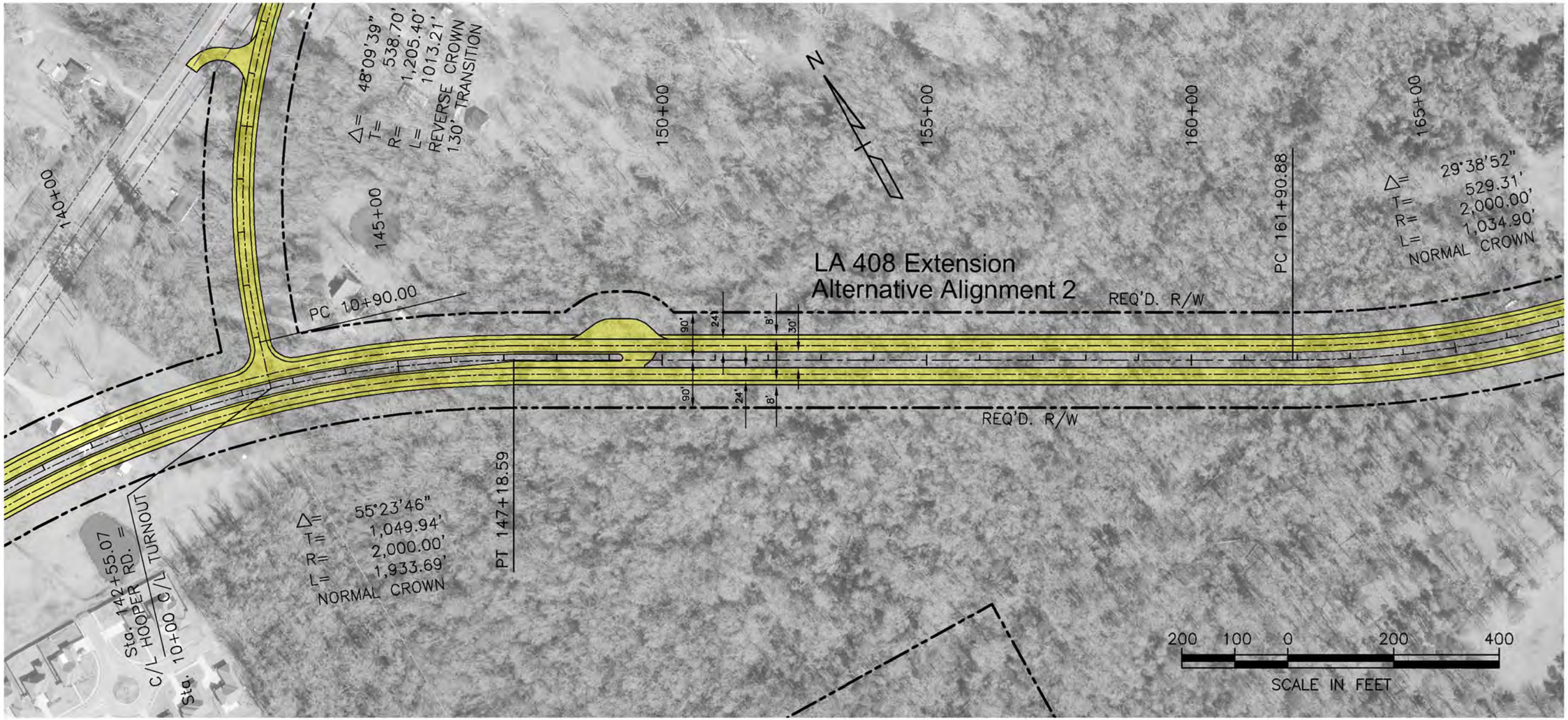
HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

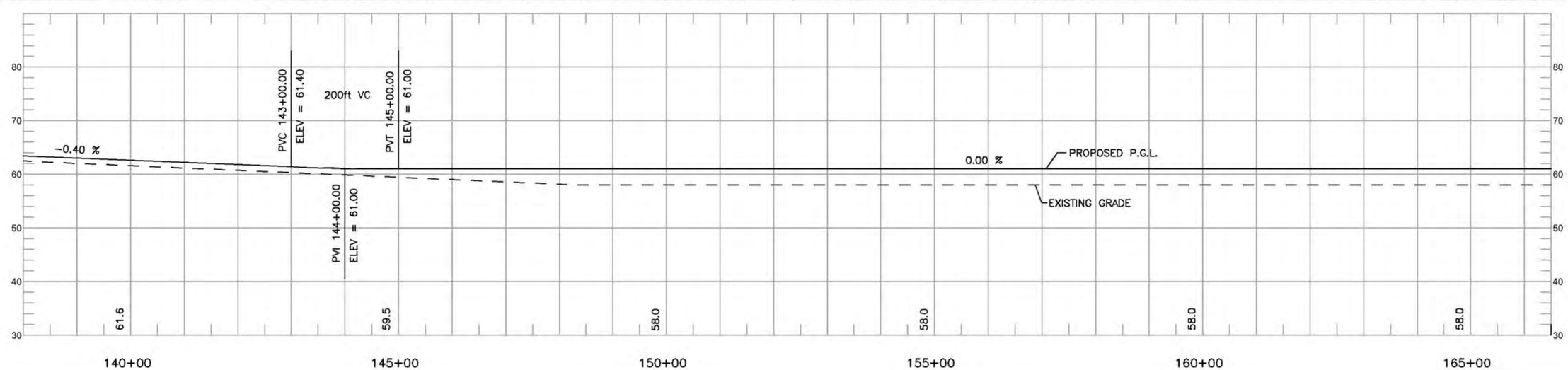
STATE PROJECT No. H.005403 FEDERAL AID PROJECT No. H005403

PLAN LAYOUT – LA 408 EXTENSION ALT. 2

ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT





SHEET P-29

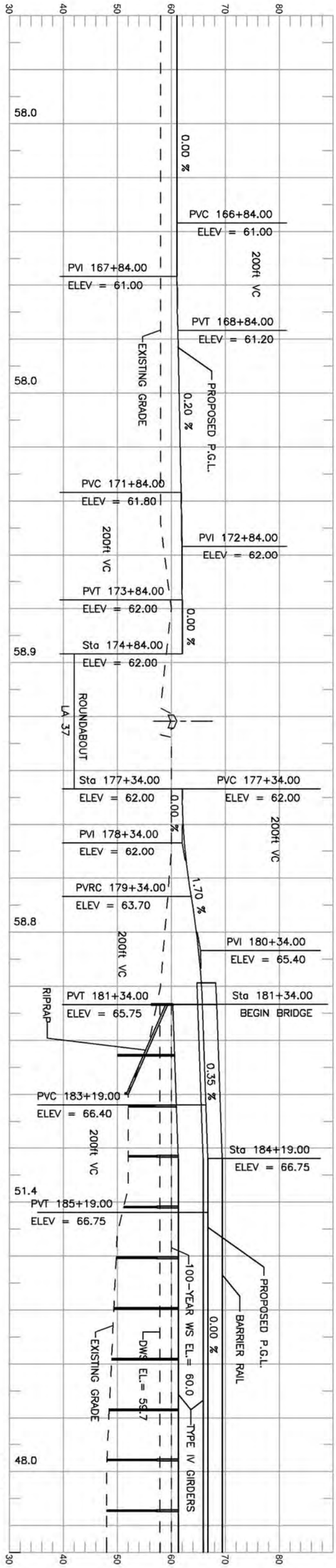
HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

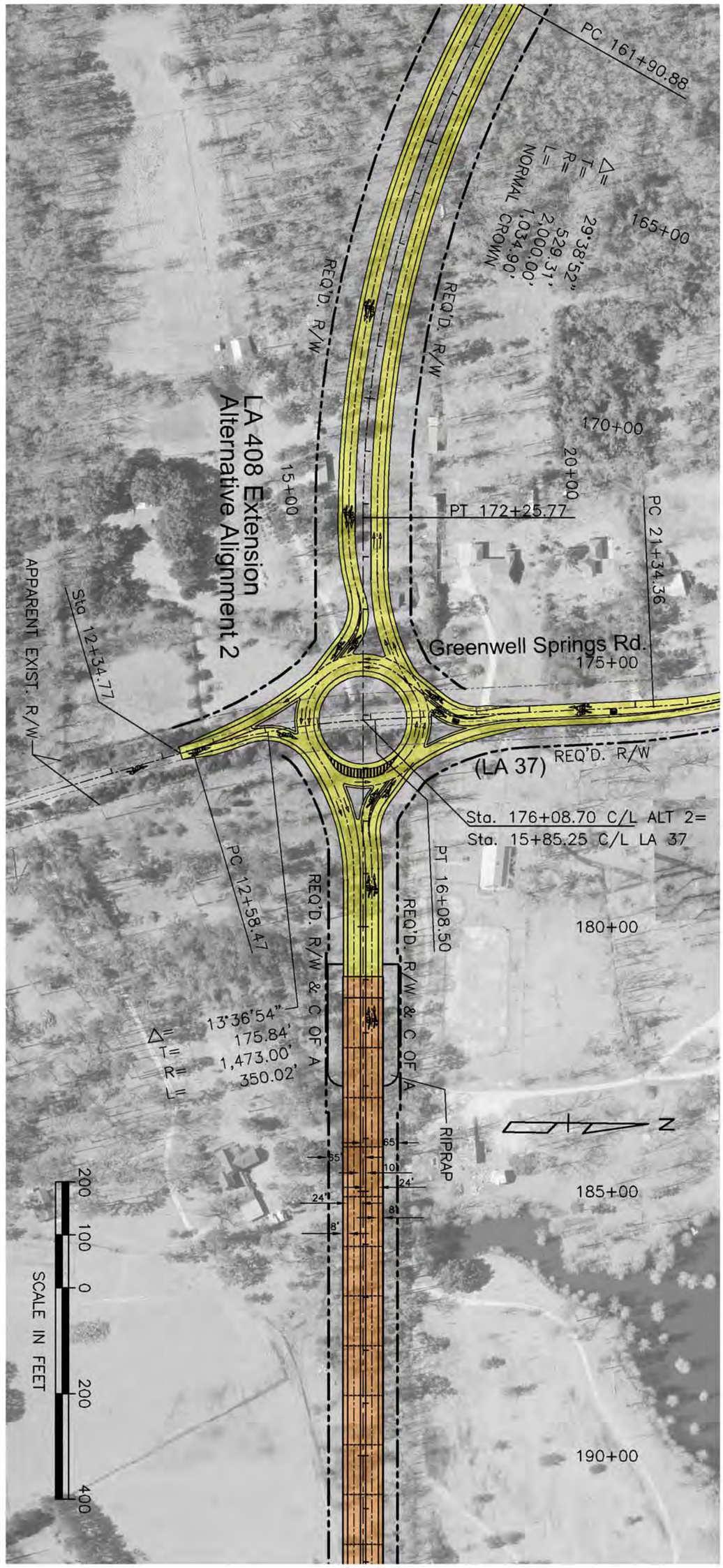
STATE PROJECT No. H.005403 FEDERAL AID PROJECT No. H005403

PLAN LAYOUT – LA 408 EXTENSION ALT. 2

ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT





DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

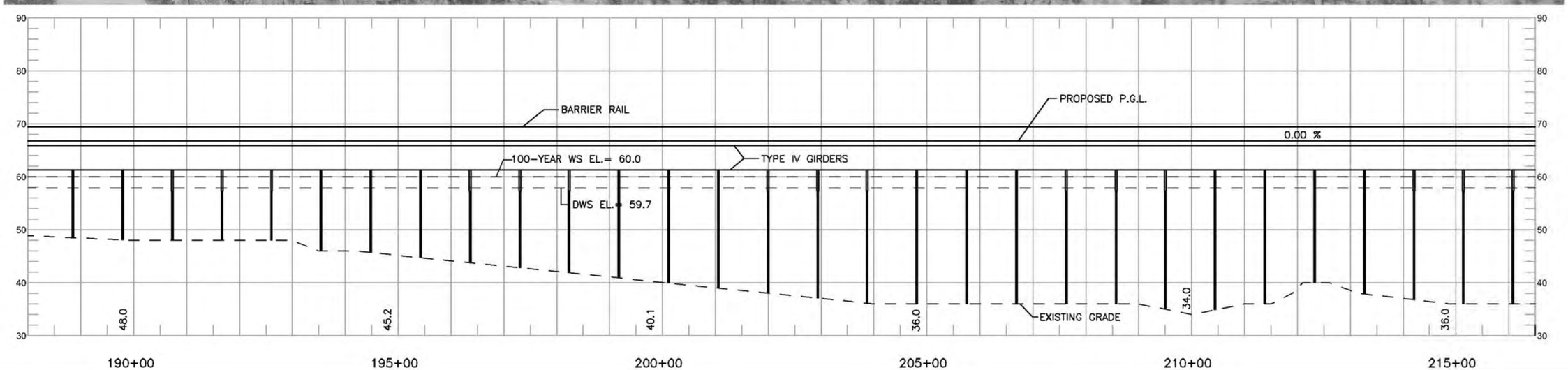
N-Y ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

STATE PROJECT No. H.005403 FEDERAL AID PROJECT No. H005403

PLAN LAYOUT – LA 408 EXTENSION ALT. 2

SHEET
P-30



SHEET P-31

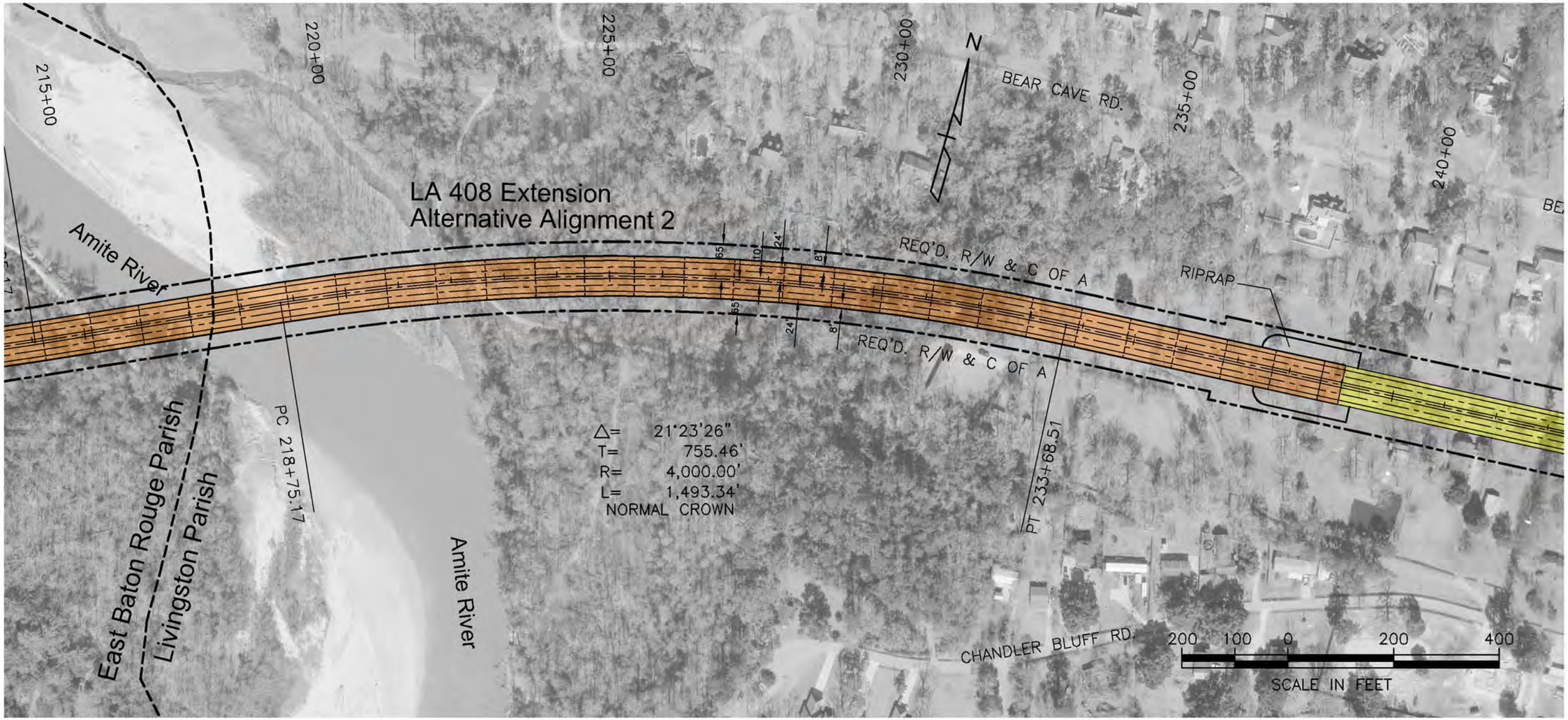
HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

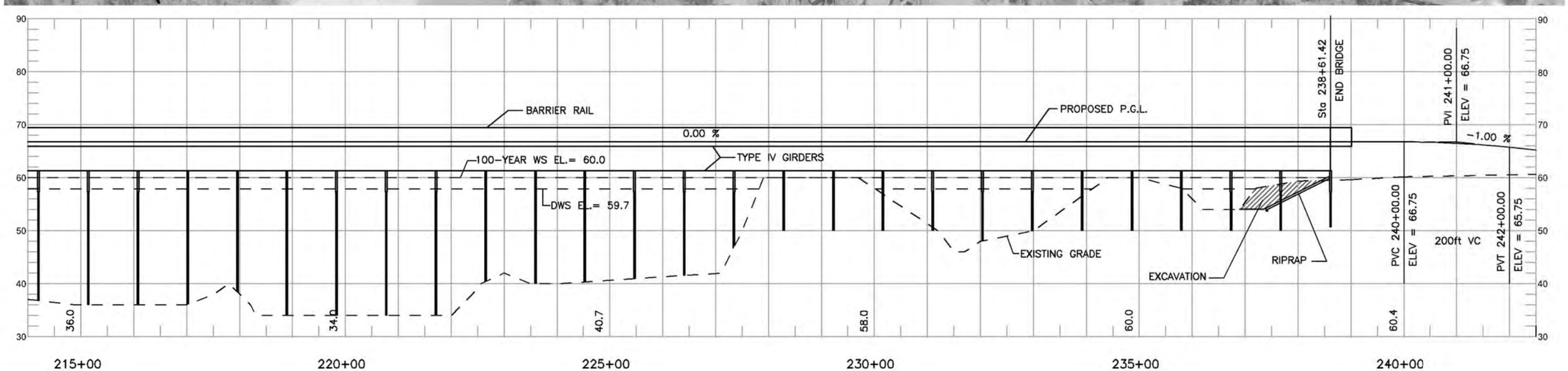
STATE PROJECT No. H.005403 FEDERAL AID PROJECT No. H005403

PLAN LAYOUT – LA 408 EXTENSION ALT. 2

NY ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT





SHEET
P-32

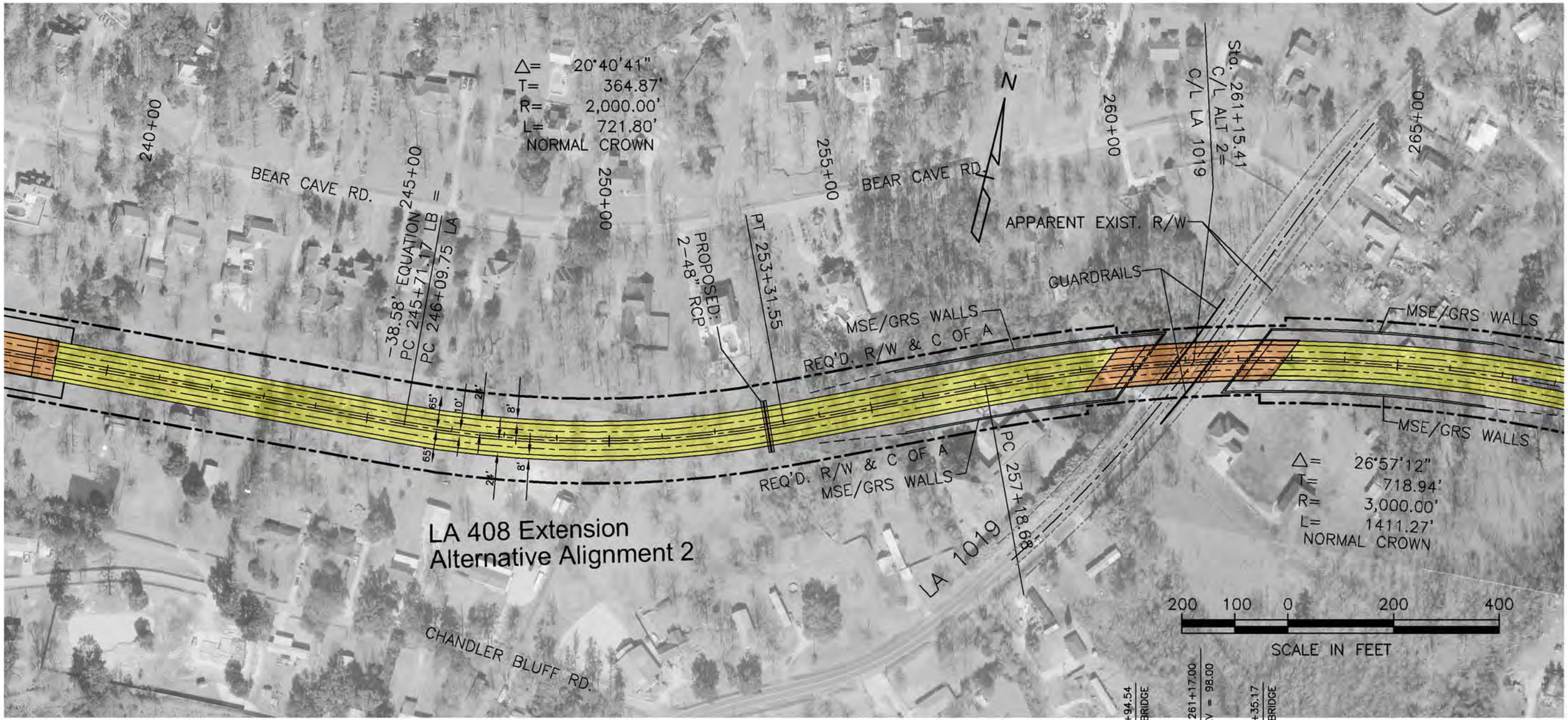
HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

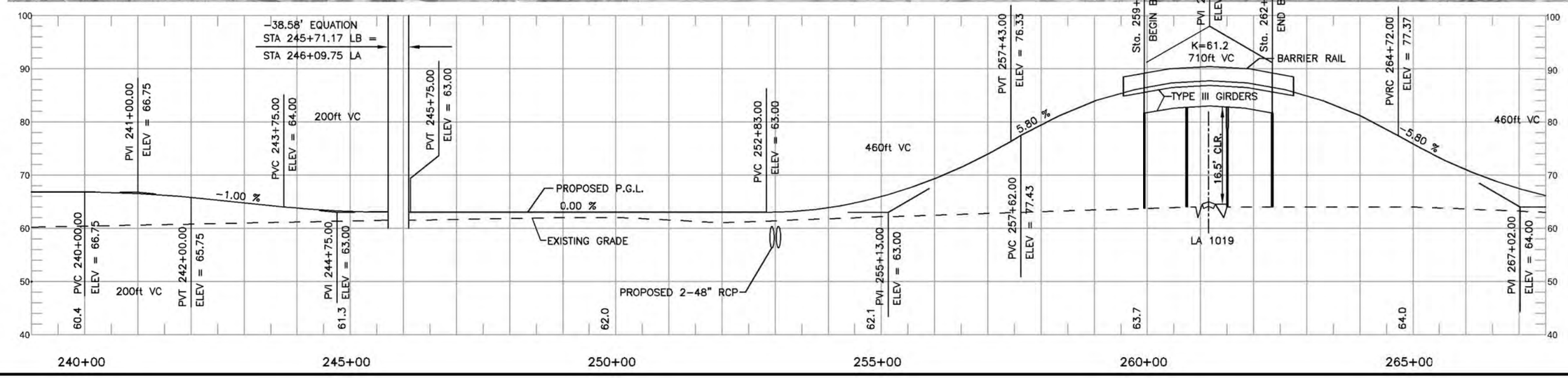
STATE PROJECT No. H.005403
FEDERAL AID PROJECT No. H005403

PLAN LAYOUT – LA 408 EXTENSION ALT. 2

ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT





SHEET P-33

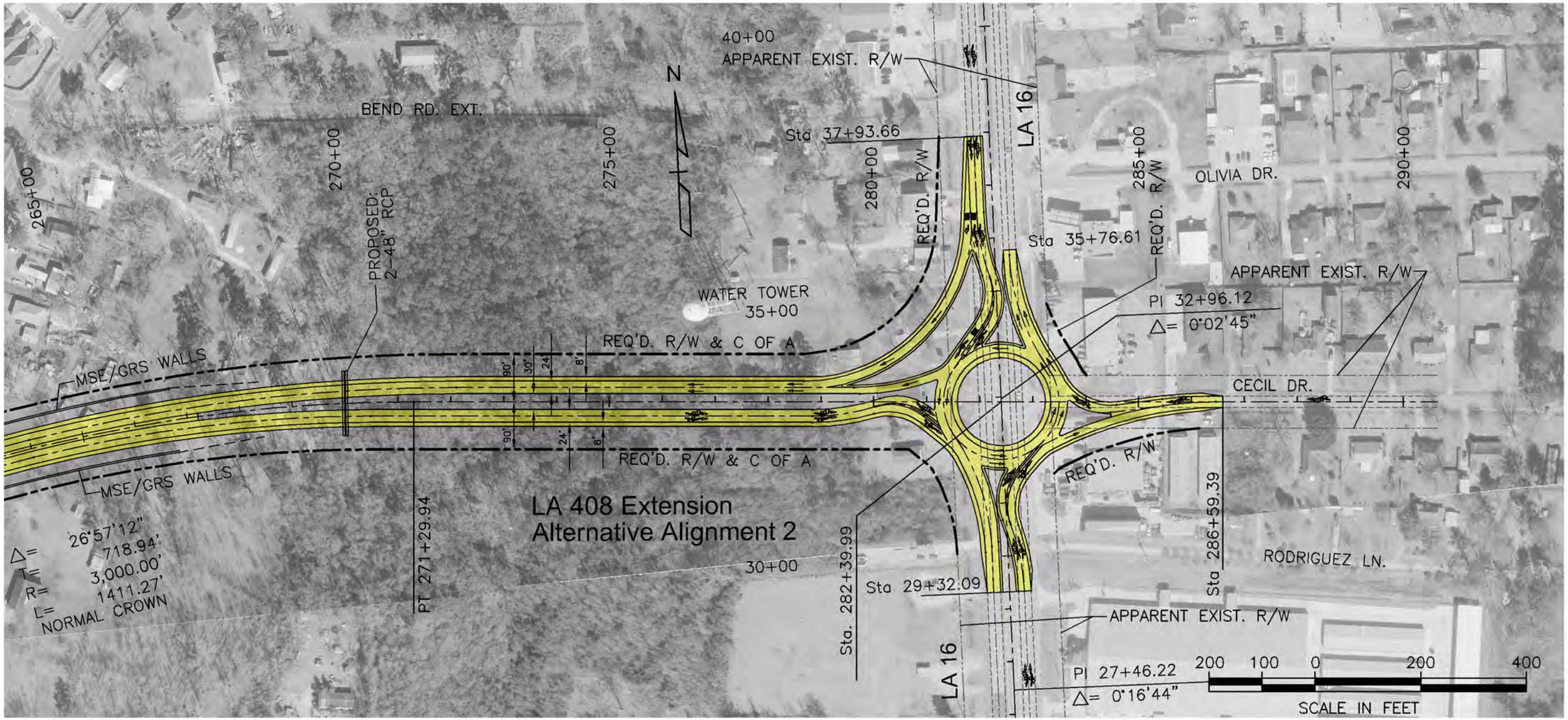
HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

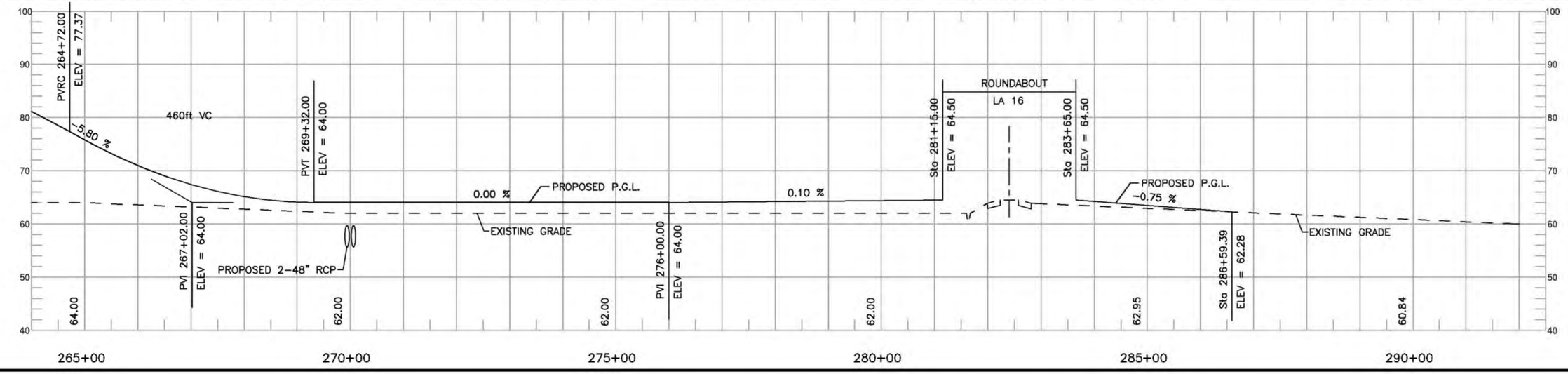
STATE PROJECT No. H.005403 FEDERAL AID PROJECT No. H005403

PLAN LAYOUT – LA 408 EXTENSION ALT. 2

ASSOCIATES, INC.
ENGINEERS · ARCHITECTS · PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT





SHEET P-34

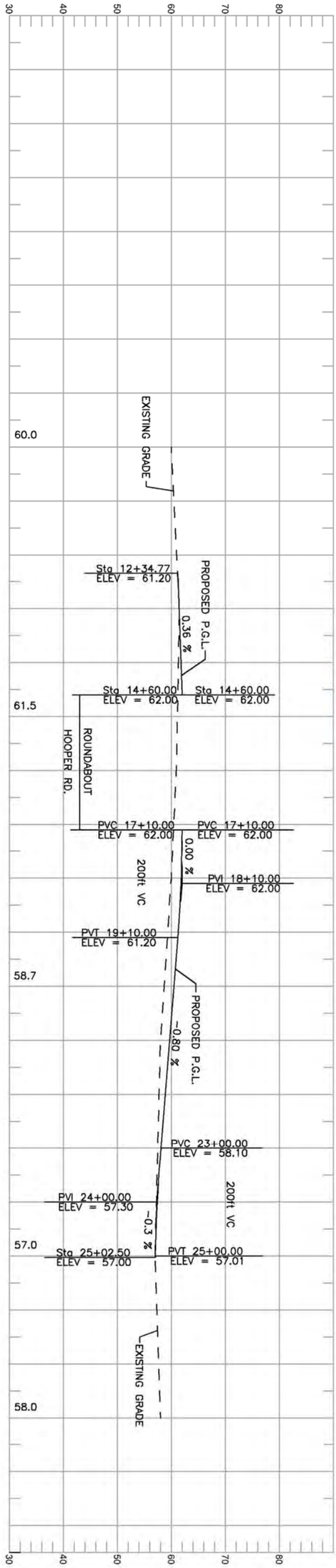
HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

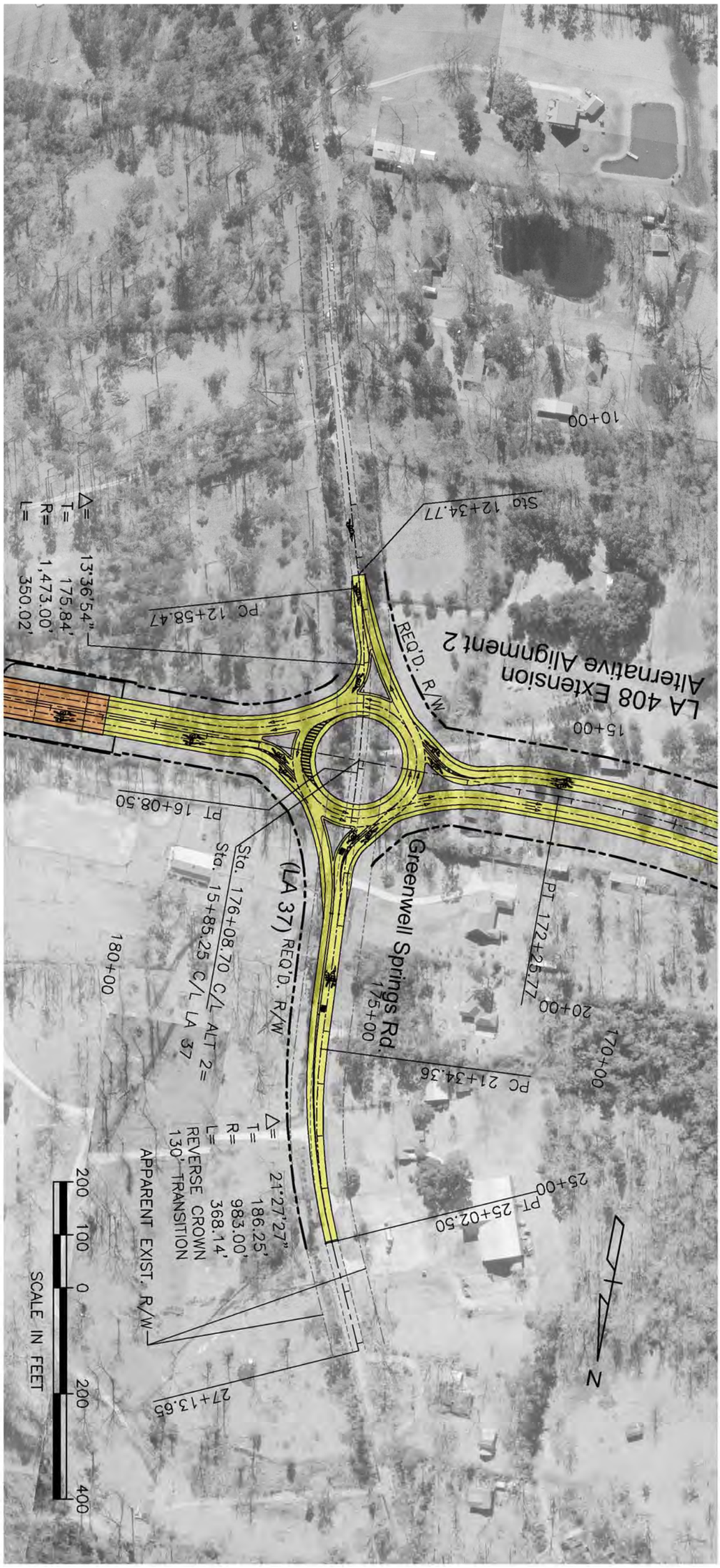
STATE PROJECT No. H.005403 FEDERAL AID PROJECT No. H005403

PLAN LAYOUT – LA 408 EXTENSION ALT. 2

ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT





DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

N-Y ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

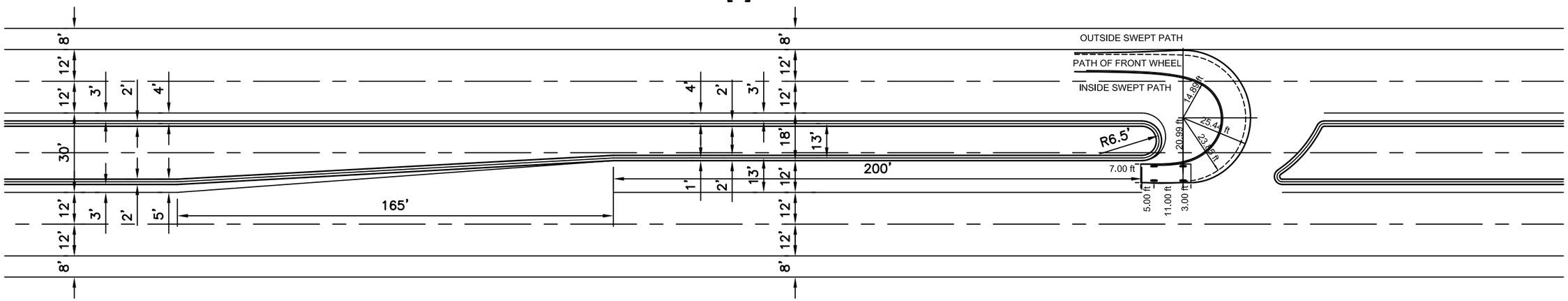
HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

STATE PROJECT No. H.005403 FEDERAL AID PROJECT No. H005403

PLAN LAYOUT - GREENWELL SPRINGS ROAD - ALT. 2

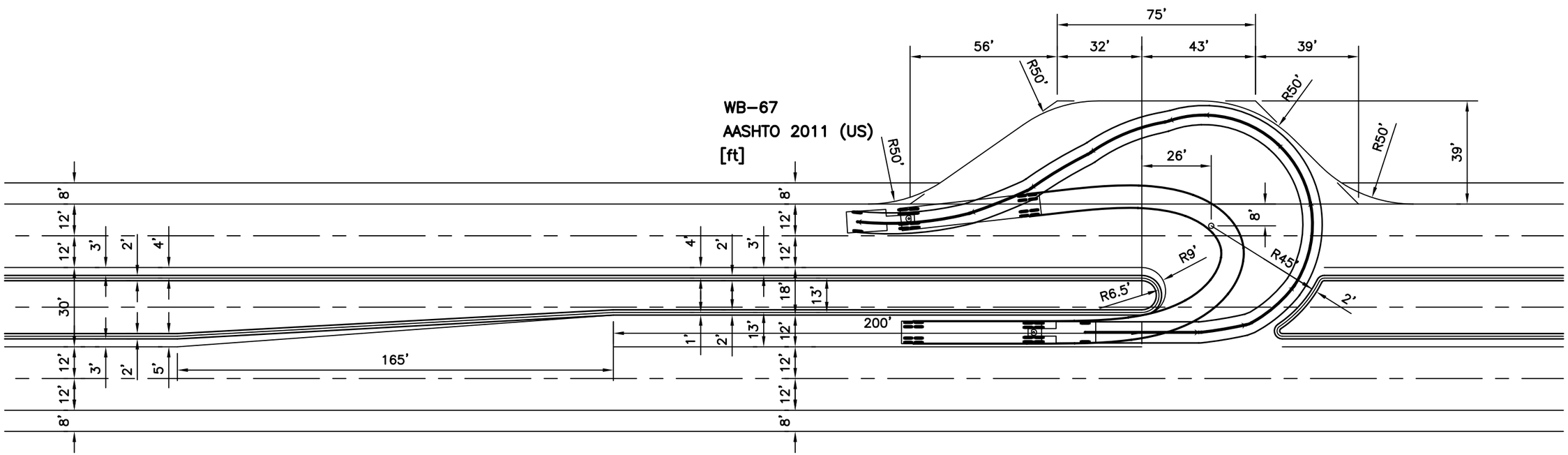
SHEET
P-35

P
AASHTO 2011 (US)
[ft]



NO PAVED BUMP-OUT REQUIRED
FOR A "P" VEHICLE MAKING A U-TURN
WITH A 30' MEDIAN, TRAVEL LANE TO TRAVEL LANE.

WB-67
AASHTO 2011 (US)
[ft]



MIN. PAVED BUMP-OUT REQUIRED
FOR A "WB-67" TRUCK MAKING A U-TURN
WITH A 30' MEDIAN, TRAVEL LANE TO TRAVEL LANE.

40 30 20 10 0 40 80
SCALE IN FEET

SHEET
DT-01

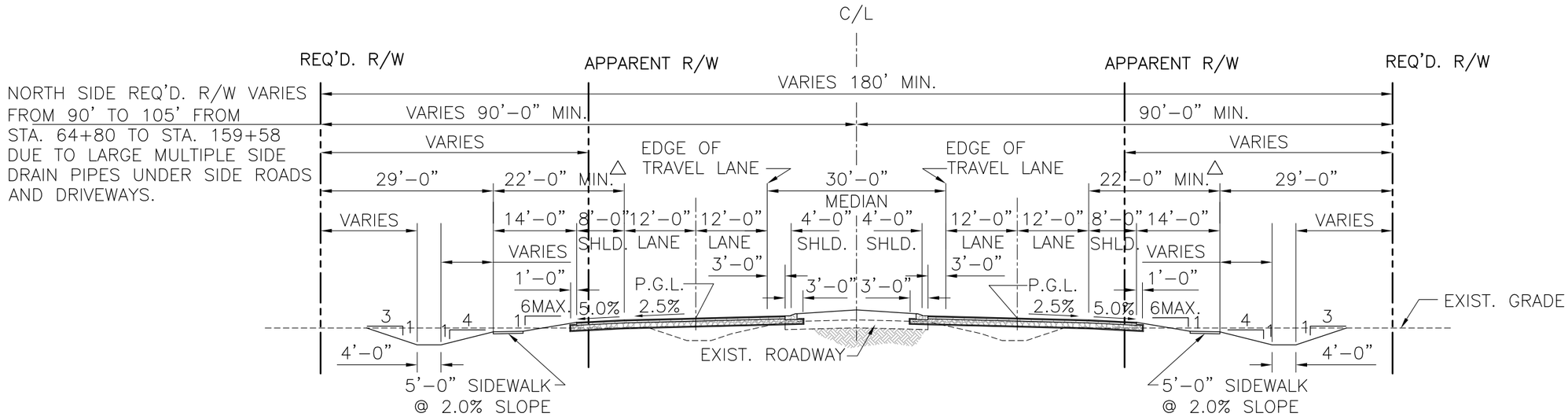
HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

STATE PROJECT No. H.005403
FEDERAL AID PROJECT No. H005403

PAVEMENT BUMP-OUT DETAIL FOR WB-67 TRUCKS

ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT



TYPICAL SECTION – LA 408 WIDENING TO THE SOUTH AND NORTH (UA–4) (55mph)

STA. 50+90 TO STA. 87+46
STA. 139+00 TO STA. 159+60
PHASE I

LEGEND

1. 2" SUPERPAVE ASPHALTIC CONCRETE (WEARING COURSE).
2. 6" SUPERPAVE ASPHALTIC CONCRETE (BINDER COURSE).
3. 10" CLASS II BASE COURSE (CRUSHED STONE OR RECYCLED PCCP).
4. EMBANKMENT MATERIAL.
5. GEOTEXTILE FABRIC
6. CONCRETE CURB AND GUTTER (MOUNTABLE TYPE)
7. EXCAVATION

P.G.L. = PROFILE GRADE LINE

△ TO BE CONSTRUCTED FREE OF OBSTRUCTIONS

20 0 20 40
SCALE IN FEET

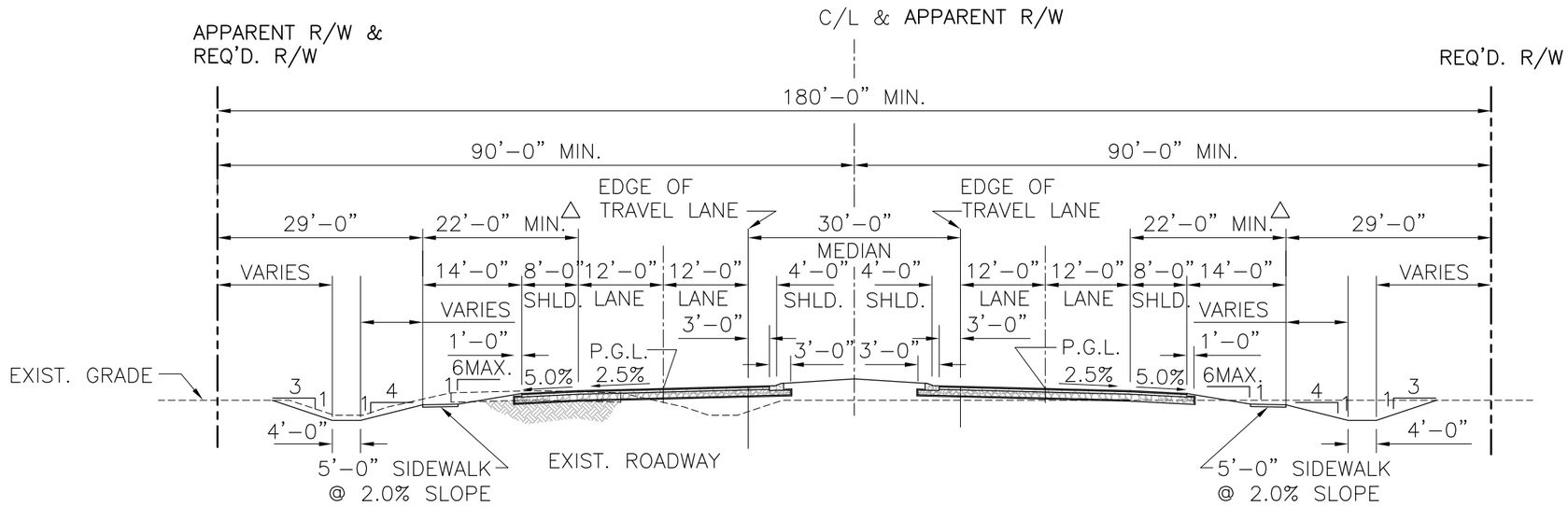
SHEET TS-1

HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES
STATE PROJECT No. H.005403
FEDERAL AID PROJECT No. H005403

TYPICAL SECTIONS - ROADWAY AT-GRADE

ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

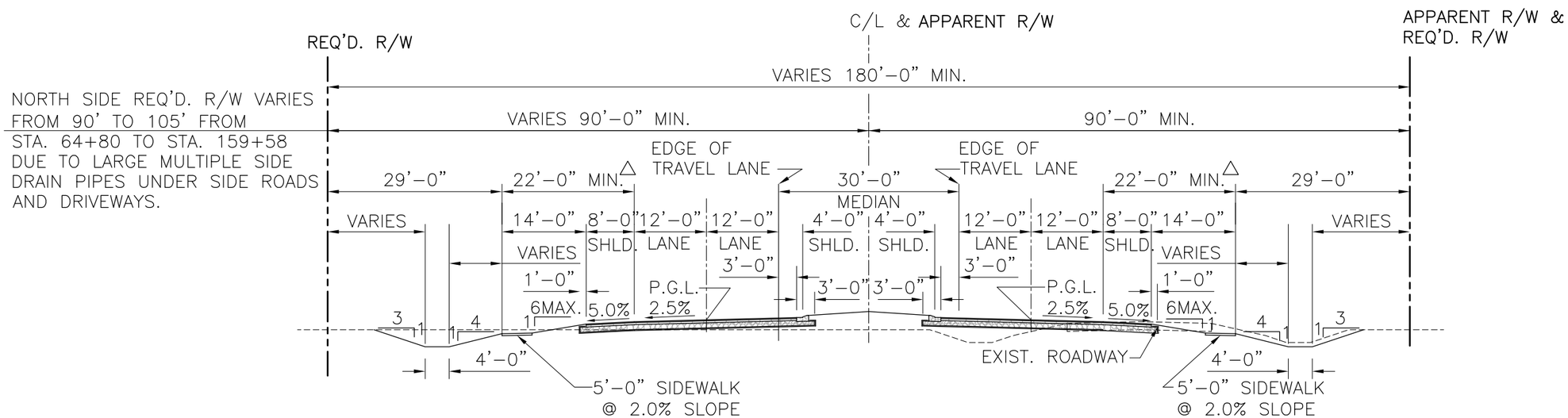
DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT



TYPICAL SECTION – LA 408 WIDENING TO THE SOUTH (UA-4) (55mph)

STA. 159+60 TO STA. 165+00

PHASE I



TYPICAL SECTION – LA 408 WIDENING TO THE NORTH (UA-4) (55mph)

STA. 10+00 TO STA. 50+90

STA. 87+46 TO STA. 139+00

PHASE I

SEE SHEET TS-1 FOR LEGEND

20 0 20 40

SCALE IN FEET

SHEET TS-2

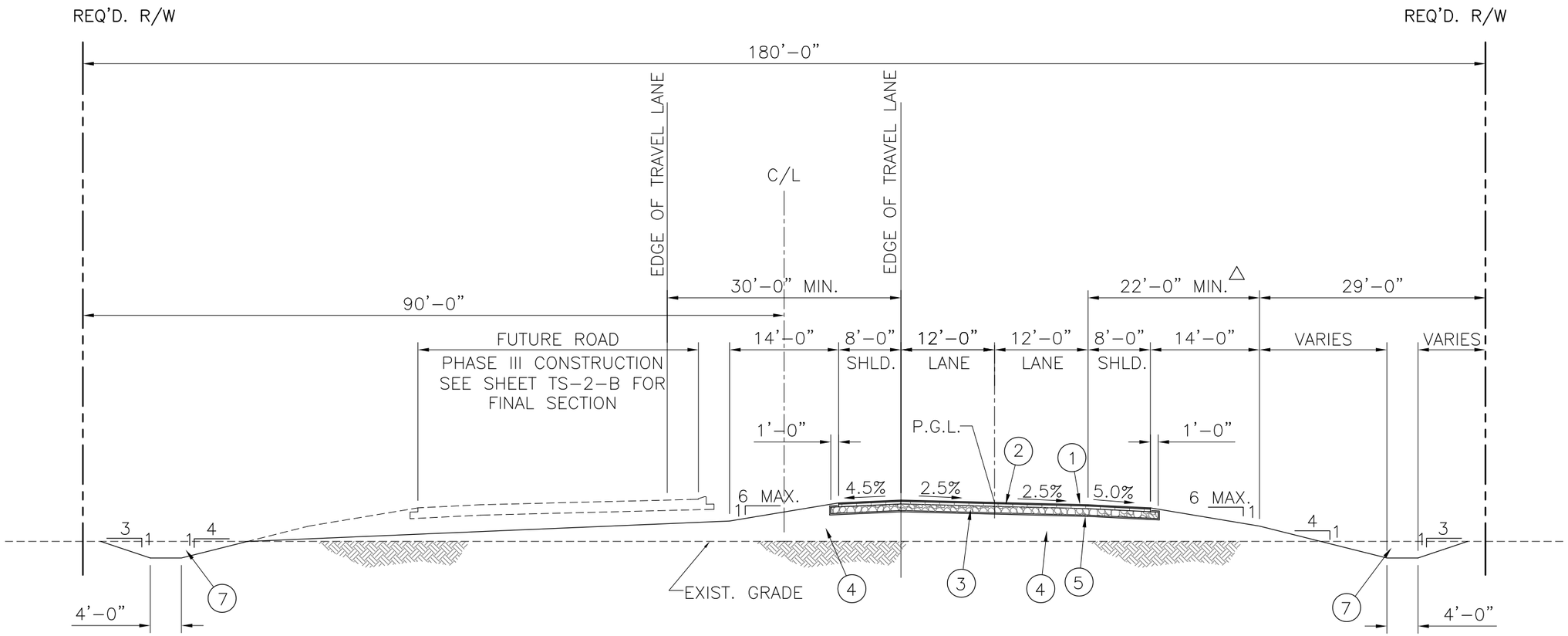
HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

STATE PROJECT No. H.005403 FEDERAL AID PROJECT No. H005403

TYPICAL SECTIONS - ROADWAY AT-GRADE

ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT



LEGEND

1. 2" SUPERPAVE ASPHALTIC CONCRETE (WEARING COURSE).
2. 6" SUPERPAVE ASPHALTIC CONCRETE (BINDER COURSE).
3. 10" CLASS II BASE COURSE (CRUSHED STONE OR RECYCLED PCCP).
4. EMBANKMENT MATERIAL.
5. GEOTEXTILE FABRIC
6. CONCRETE CURB AND GUTTER (MOUNTABLE TYPE)
7. EXCAVATION

P.G.L. = PROFILE GRADE LINE

△ TO BE CONSTRUCTED FREE OF OBSTRUCTIONS

TYPICAL SECTION – LA 408 EXTENSION (UA-4) (55mph)
AT-GRADE ROADWAY PHASE II
ALTERNATIVE ALIGNMENTS 1-A, 1-B & 1-C

15 0 15 30

SCALE IN FEET

SHEET TS-3

HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

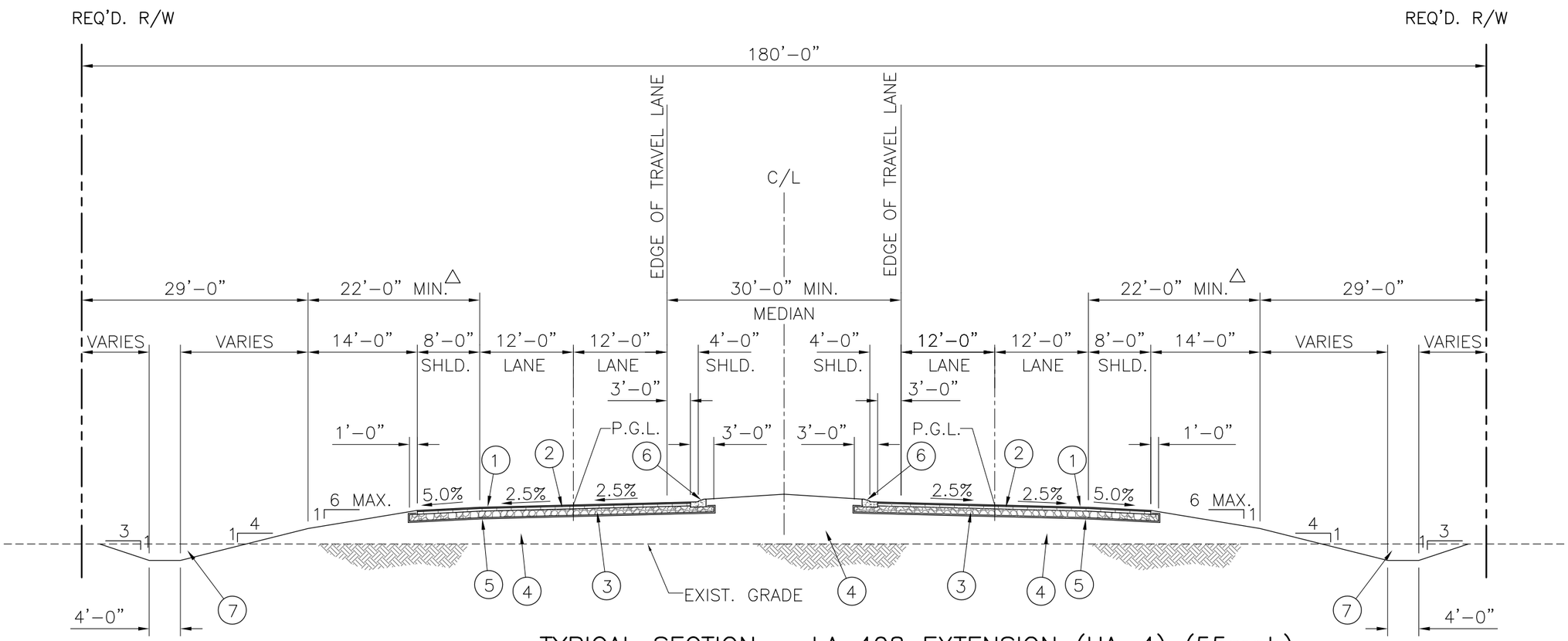
STATE PROJECT No. H.005403

FEDERAL AID PROJECT No. H005403

TYPICAL SECTIONS - ROADWAY AT-GRADE

ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT



TYPICAL SECTION – LA 408 EXTENSION (UA–4) (55mph)
AT–GRADE ROADWAY – FINAL SECTION
ALTERNATIVE ALIGNMENTS 1–A, 1–B & 1–C

LEGEND

1. 2" SUPERPAVE ASPHALTIC CONCRETE (WEARING COURSE).
2. 6" SUPERPAVE ASPHALTIC CONCRETE (BINDER COURSE).
3. 10" CLASS II BASE COURSE (CRUSHED STONE OR RECYCLED PCCP).
4. EMBANKMENT MATERIAL.
5. GEOTEXTILE FABRIC
6. CONCRETE CURB AND GUTTER (MOUNTABLE TYPE)
7. EXCAVATION

P.G.L. = PROFILE GRADE LINE

△ TO BE CONSTRUCTED FREE OF OBSTRUCTIONS

15 0 15 30
SCALE IN FEET

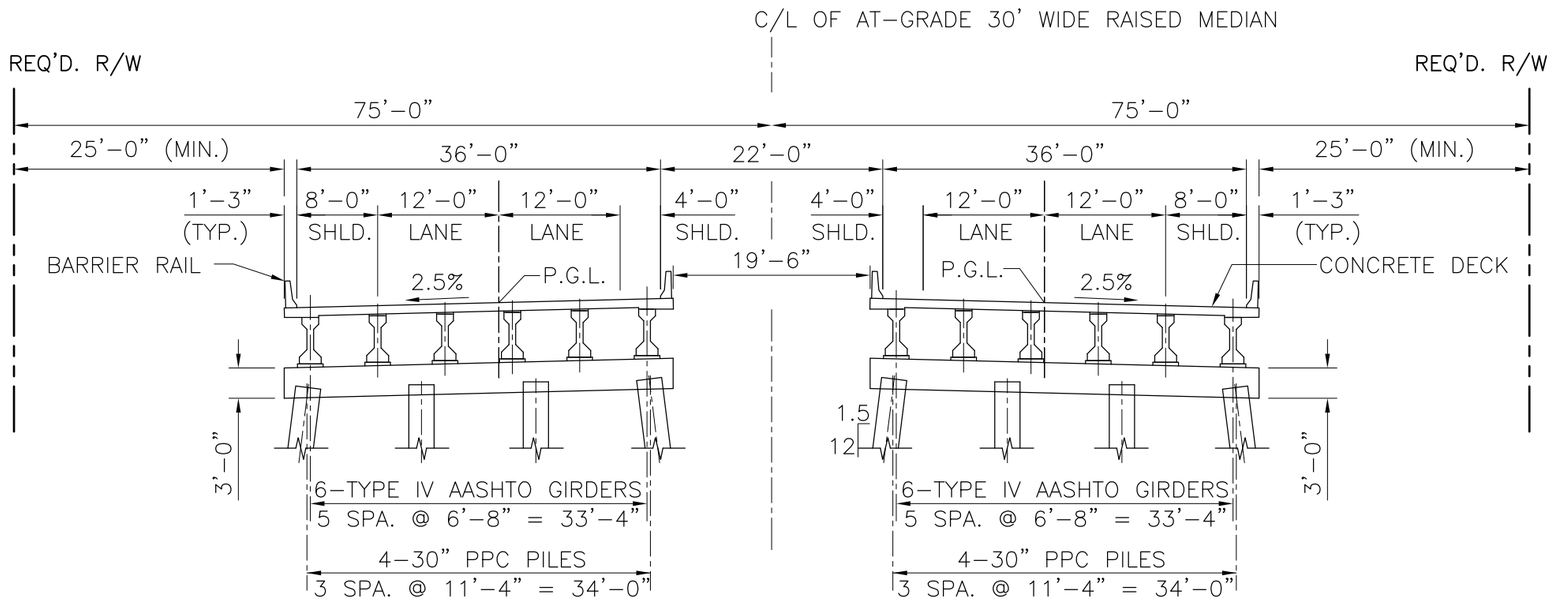
SHEET TS-4

HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES
FEDERAL AID PROJECT No. H005403
STATE PROJECT No. H.005403

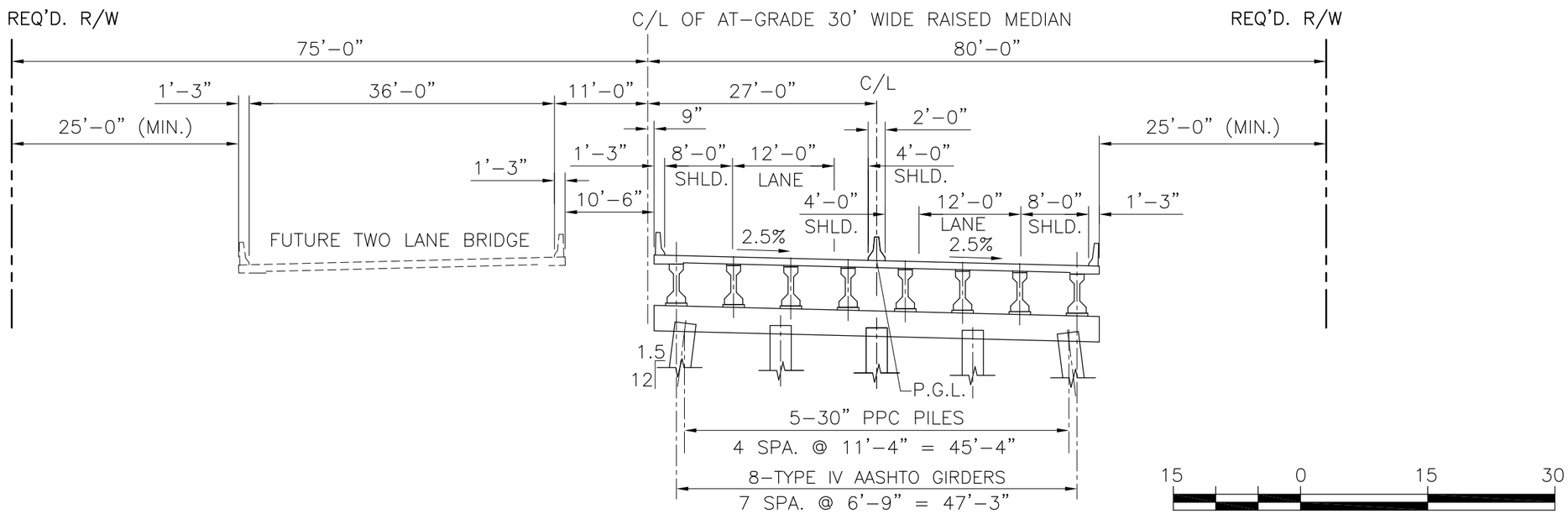
TYPICAL SECTIONS - ROADWAY AT-GRADE

NY ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT



TYPICAL SECTION – LA 408 AMITE RIVER BRIDGE (UA-4) (55mph)
FOUR LANES (TWO BRIDGES) – FINAL SECTION– ALTERNATIVE ALIGNMENTS 1-A, 1-B & 1-C



TYPICAL SECTION – LA 408 AMITE RIVER BRIDGE (UA-4) (55mph)
TWO LANES (ONE BRIDGE ONLY) – PHASE II – ALTERNATIVE ALIGNMENTS 1-A, 1-B & 1-C

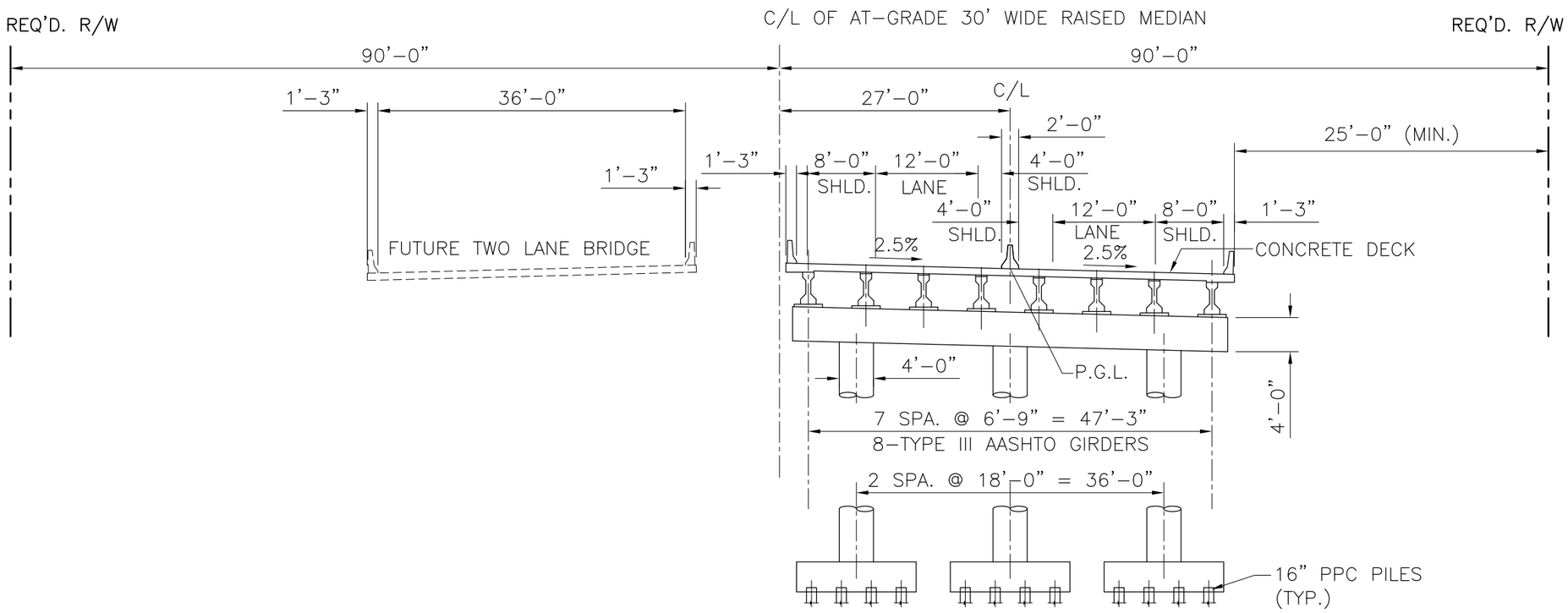
SHEET TS-5

HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES
FEDERAL AID PROJECT No. H005403
STATE PROJECT No. H.005403

TYPICAL SECTIONS - BRIDGE OVER AMITE RIVER

ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT



TYPICAL SECTION – LA 408 BRIDGE OVER LA 1020 (UA-4) (55mph)
TYPE III AASHTO GIRDER SPAN – ASSUME 80' SPANS
TWO LANES (ONE BRIDGE ONLY) – PHASE II
ALTERNATIVE ALIGNMENTS 1-A, 1-B & 1-C

15 0 15 30
SCALE IN FEET

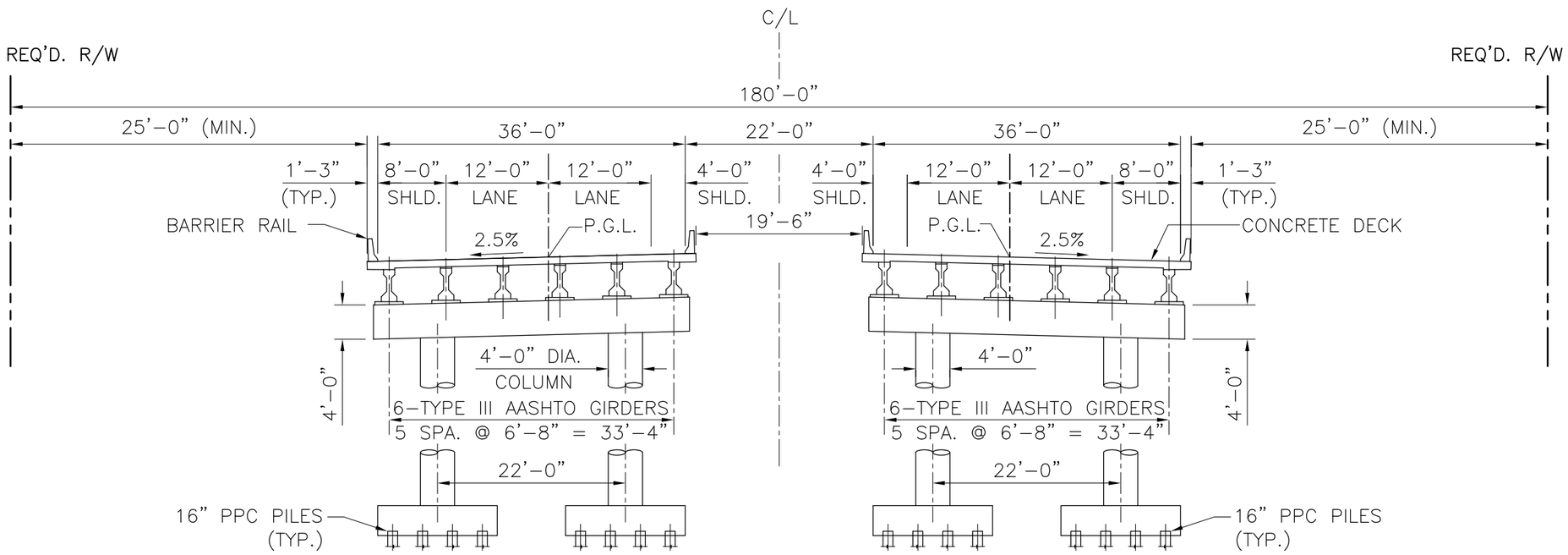
SHEET TS-6

HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES
STATE PROJECT No. H.005403
FEDERAL AID PROJECT No. H005403

TYPICAL SECTIONS - BRIDGE STRUCTURE

ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT



TYPICAL SECTION – LA 408 BRIDGE OVER LA 1020 (UA-4) (55mph)
TYPE III AASHTO GIRDER SPAN – ASSUME 80' SPANS
FOUR LANES – (TWO BRIDGES) – FINAL SECTION
ALTERNATIVE ALIGNMENTS 1-A, 1-B & 1-C

SHEET TS-7

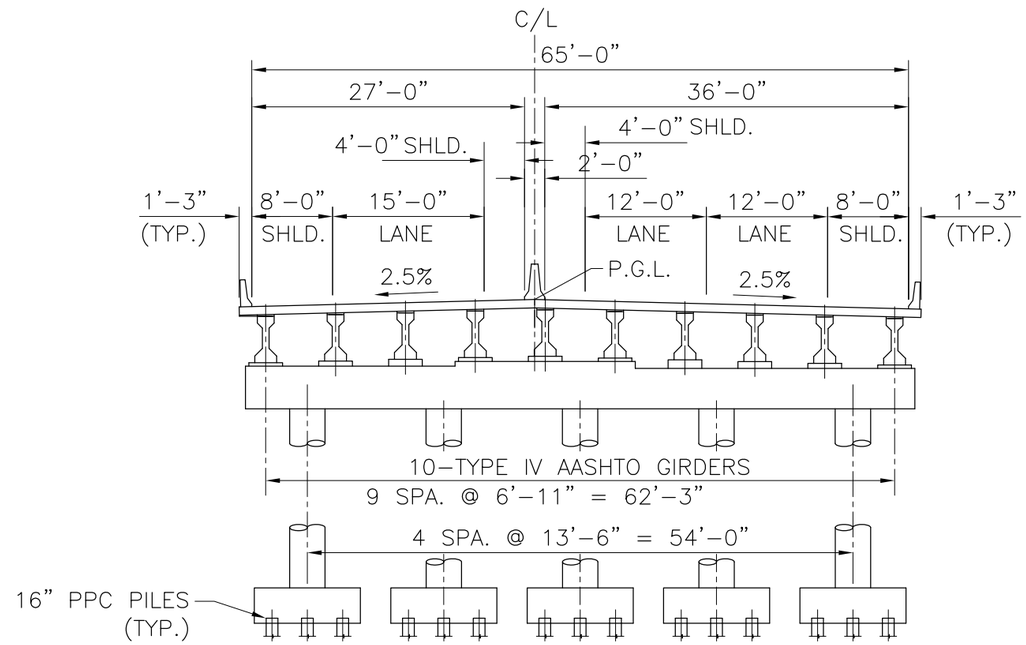
HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

STATE PROJECT No. H.005403
FEDERAL AID PROJECT No. H005403

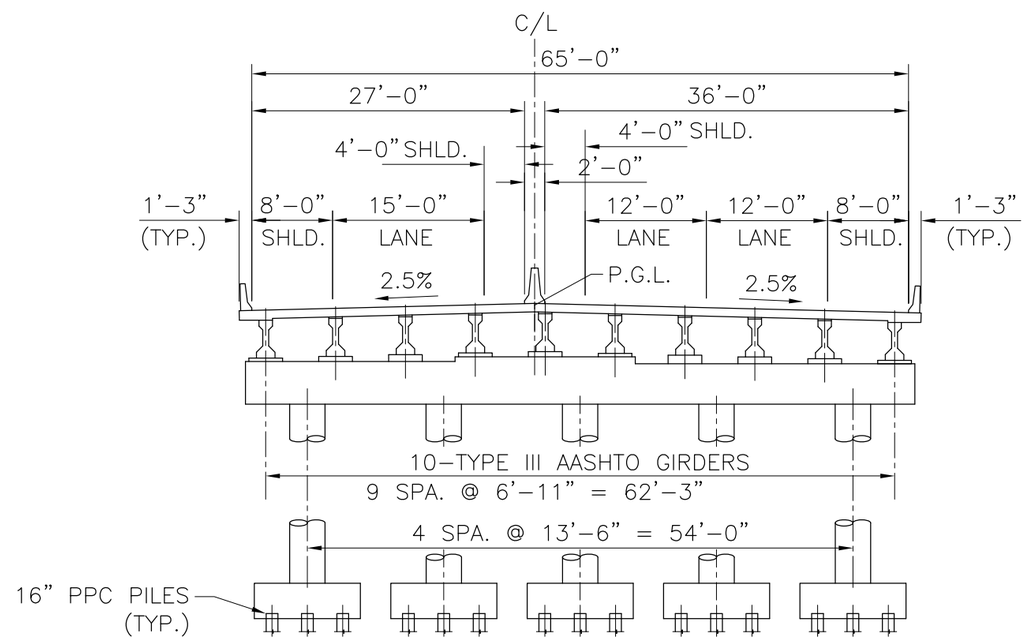
TYPICAL SECTIONS - BRIDGE STRUCTURE

ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT



TYPICAL SECTION – LA 408 BRIDGE OVER LA 16 ALTERNATIVE ALIGNMENT 1-C (UA-2) (45mph)
TYPE IV AASHTO GIRDER SPAN – ASSUME 95' SPANS – PHASE II



TYPICAL SECTION – LA 408 BRIDGE OVER LA 16 ALTERNATIVE ALIGNMENT 1-C (UA-2) (45mph)
TYPE III AASHTO GIRDER SPAN – ASSUME 70' SPANS – PHASE II

SHEET TS-8

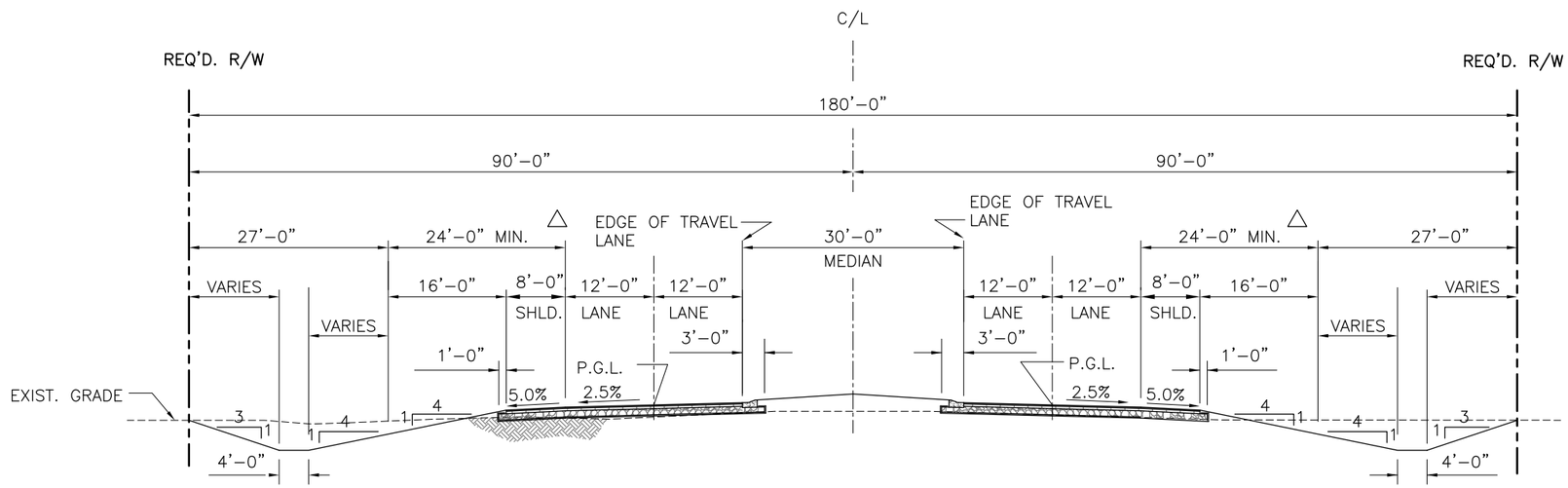
HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

STATE PROJECT No. H.005403 FEDERAL AID PROJECT No. H005403

TYPICAL SECTIONS - BRIDGE STRUCTURE

ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT



TYPICAL SECTION – LA 408 (UA–2) (45mph)
ALTERNATIVE ALIGNMENT 2

SEE SHEET TS–1 FOR LEGEND

20 0 20 40
SCALE IN FEET

SHEET TS-9

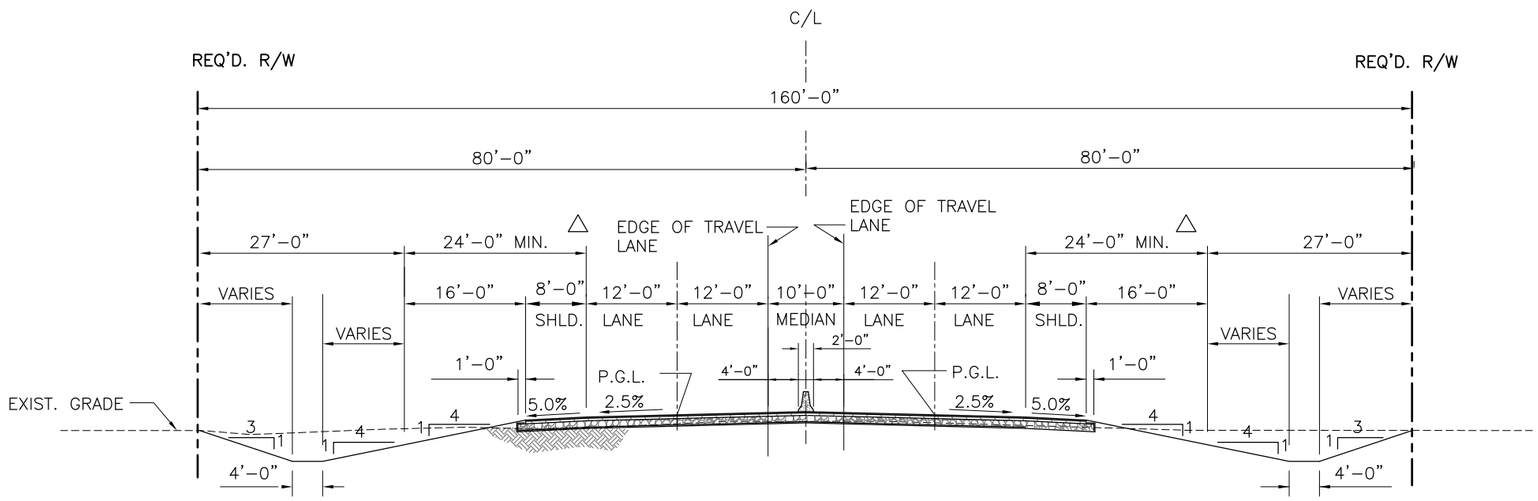
HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES

STATE PROJECT No. H.005403
FEDERAL AID PROJECT No. H005403

TYPICAL SECTIONS - ROADWAY AT-GRADE

ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT



TYPICAL SECTION – LA 408 (UA–2) (45mph)
ALTERNATIVE ALIGNMENT 2

SEE SHEET TS–1 FOR LEGEND

20 0 20 40
SCALE IN FEET

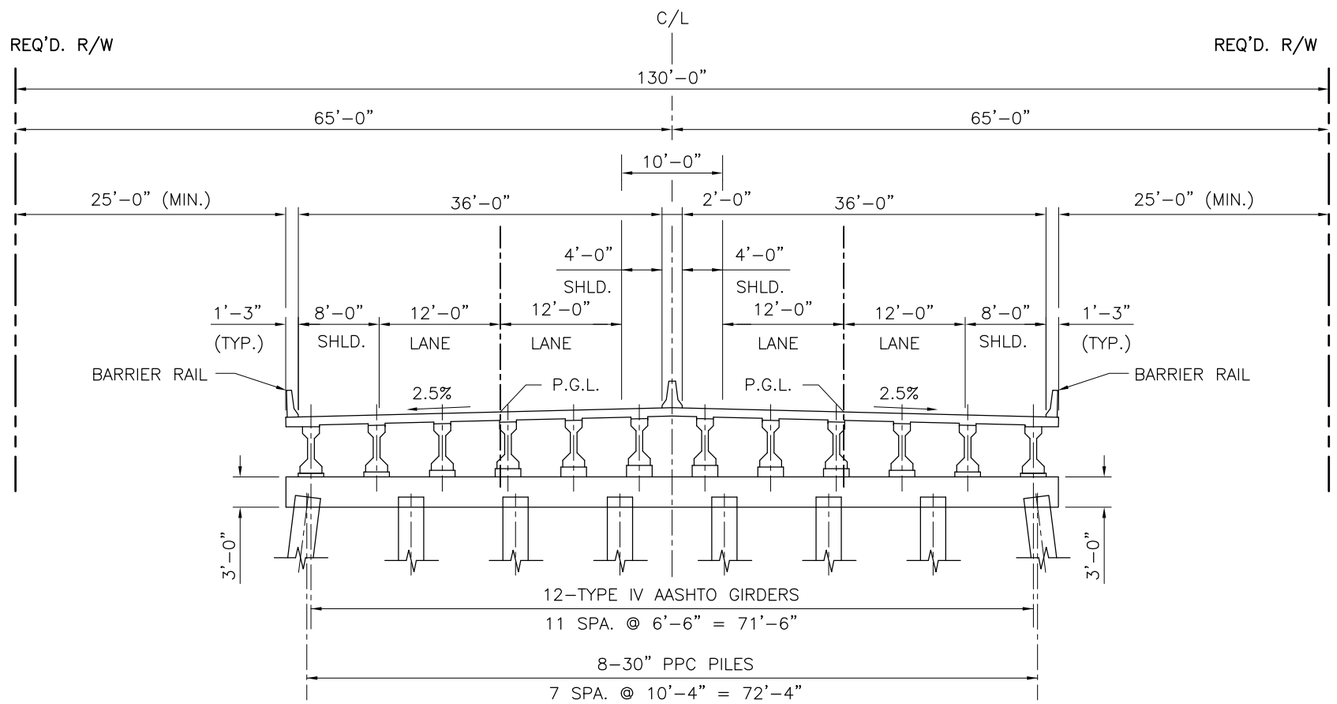
SHEET TS-10

HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES
STATE PROJECT No. H.005403
FEDERAL AID PROJECT No. H005403

TYPICAL SECTIONS - ROADWAY AT-GRADE

ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT



TYPICAL SECTION – LA 408 AMITE RIVER BRIDGE (UA-2) (45mph)
TYPE IV AASHTO GIRDER SPAN – ASSUME 95' SPANS MAX.
FOUR LANES (ONE BRIDGE)
ALTERNATIVE ALIGNMENT 2

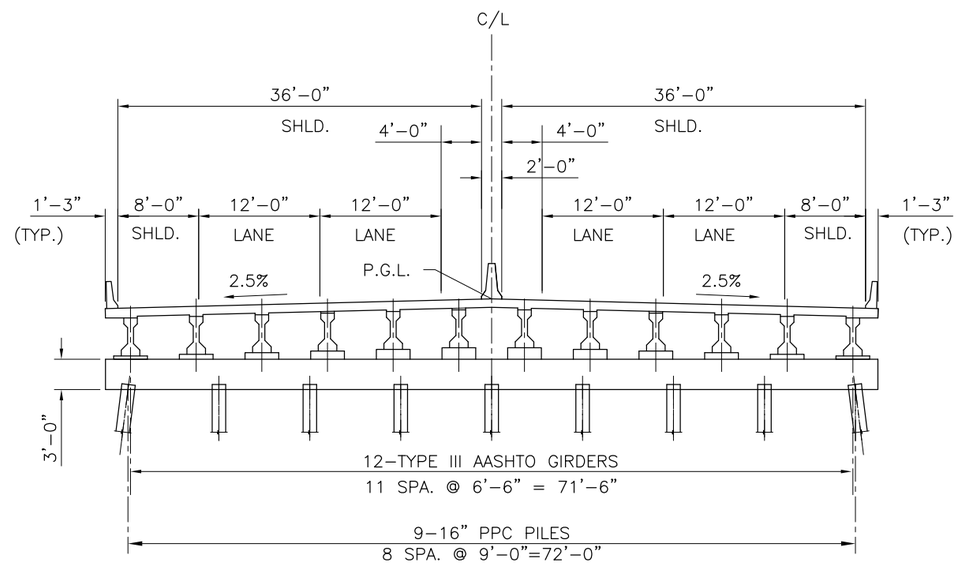
SHEET
TS-11

HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES
STATE PROJECT No. H.005403
FEDERAL AID PROJECT No. H005403

TYPICAL SECTIONS - BRIDGE OVER AMITE RIVER

ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT



TYPICAL SECTION – LA 408 BRIDGE OVER LA 1019 (UA-2) (45mph)
TYPE III AASHTO GIRDER SPAN – ASSUME 80' SPANS
ALTERNATIVE ALIGNMENT 2

SHEET
TS-12

HOOPER ROAD EXTENSION – LA 408
ENVIRONMENTAL ASSESSMENT (EA) – STAGE 1
EAST BATON ROUGE & LIVINGSTON PARISHES
STATE PROJECT No. H.005403
FEDERAL AID PROJECT No. H005403

TYPICAL SECTIONS - BRIDGE STRUCTURE

ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

CHAPTER III

THE AFFECTED ENVIRONMENT

In this chapter, the project corridor and study area is first delineated and described. The existing transportation system, including highways and roadways, rail, transit and pedestrian facilities are presented. The Chapter concludes with an examination of the affected human and natural environment for the project. For purposes of analysis, the affected environment is divided into the following categories and sub-categories:

EXISTING TRANSPORTATION SYSTEM
- Roadway Network
- Rail Network
- Transit
- Pedestrian and Bicyclist Conditions

EXISTING HUMAN ENVIRONMENT
- Demographics
- Land Use
- Public Facilities and Services
- Hazardous and Solid Waste Sites
- Cultural Resources
- Visual/Aesthetic Conditions
- Flood Zones / Floodplains

EXISTING NATURAL ENVIRONMENT
- Scenic Rivers
- Existing Wetlands
- Water Resources (Sole Source Aquifers)
- Soils / Prime Farmland
- Fish and Wildlife Critical Habitat / Threatened and Endangered Species
- Coastal Zone Status

PROJECT AREA

AREA OF PRIMARY IMPACT

The area of primary impact deals with the "footprint" of the project which includes a narrow corridor along existing Hooper Road (LA 408) between Sullivan Road and Amber Lakes Drive, as well as a wider area covering the proposed alternative extensions into Livingston Parish.

Figure III-1, on the following page, provides a visual display of the area of primary impact.

Within the primary area of impact, direct impacts associated with the project "footprint" will be assessed and explored. These include such impact factors as noise, hazardous and solid waste sites, parks and recreational facilities, visual/aesthetic impacts, construction-period impacts, and most natural environment impacts.

PROJECT STUDY AREA

The project study area is a larger area surrounding the primary area of impact. This area will be examined in order to assess larger impacts that are less directly affected by project construction and more influenced by project implementation, inclusive of traffic impacts and community, social, and economic impacts. Exploration of the project study area also provides an accurate depiction of surrounding neighborhoods for use in examining impacts to the human environment.

The project study area essentially mirrors the boundaries of the United States (US) census tracts and block groups used in the demographic analysis. The western and southwestern boundary is the Comite River, while the southern boundary is composed of Greenwell Springs Road, Magnolia Bridge Road/Magnolia Beach Road, Beaver Creek, and Arnold Road (LA 1025). The eastern boundary consists of Clinton Allen Road, LA 1024, Moler Bayou, Springfield Road, and Colyell Creek. The northern boundary includes the St. Helena Parish line, the Amite River, Sandy Creek, and Greenwell Springs-Port Hudson Road.

See **Figure III-1** for a visual display of the overall project study area.

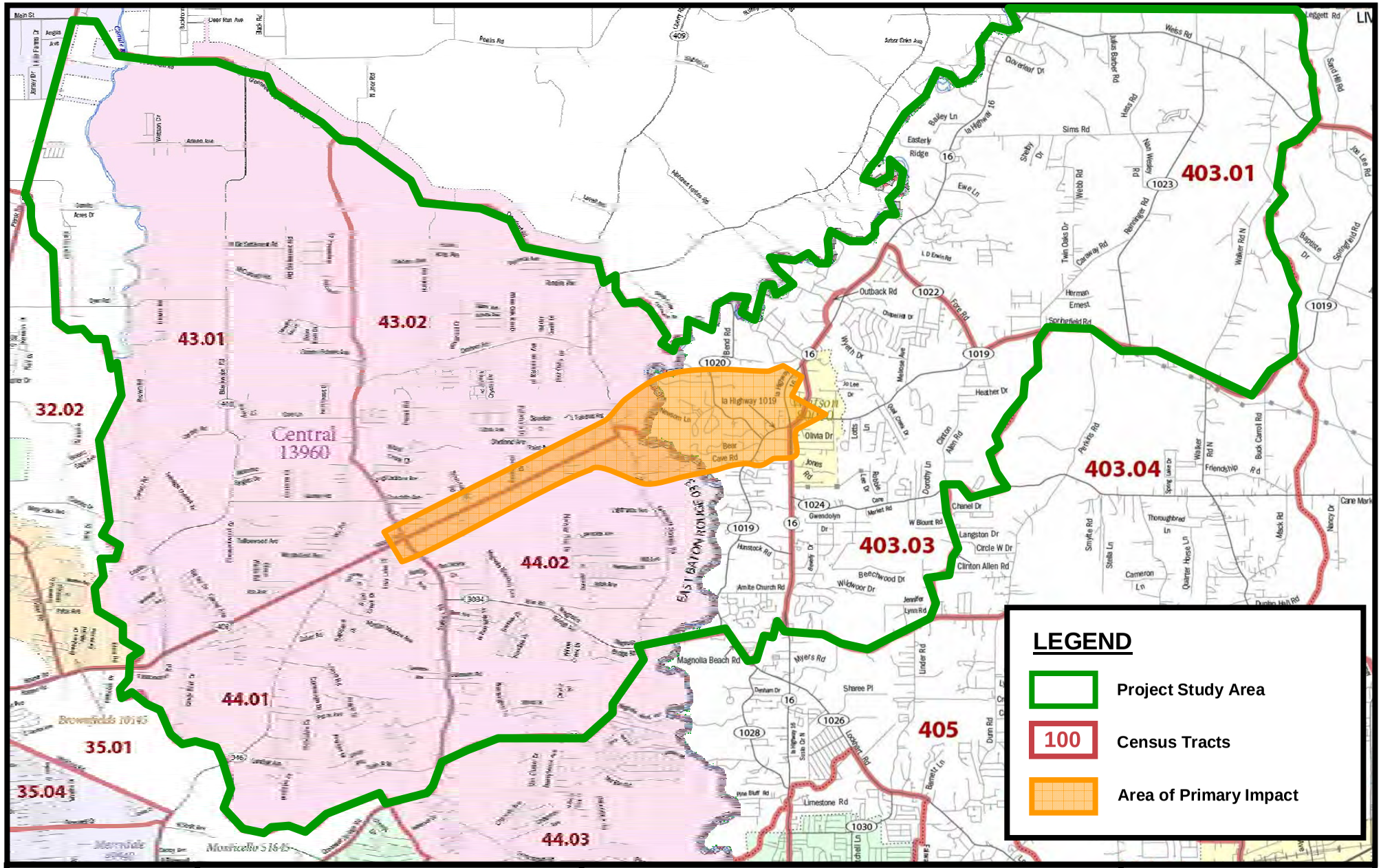
EXISTING TRANSPORTATION SYSTEM

ROADWAY NETWORK IN STUDY AREA

The proposed improvements to Hooper Road are located in the outlying areas of greater Baton Rouge, with a roadway network originally constructed to service low-density residential and agricultural development. The majority of the vehicular systems in the project area were designed to serve the rural development pattern with 2-lane streets and highways.

The Hooper Road project corridor extends from Sullivan Road (LA 3034) on the west and ends on the east at LA 16 near its intersection with LA 1019. Major transportation arteries are located to west of the project corridor where LA 408 intersects Interstate 110 and Airline Highway (US 61) and Plank Road (LA 67). Florida Avenue (US 190) parallels the project study corridor to the south along with Interstates 10 and 12.

State highways intersecting the project corridor include Greenville Springs Road (LA 37/64) just west of the Amite River, and Bend Road (LA 1020), which intersects the corridor about midway



DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

Route LA 408 (Hooper Road) Extension
Stage 1 - Environmental Assessment

NY ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

in association with:
Urban Systems Associates, Inc.
Coastal Environments, Inc.
Bowlby and Associates, Inc.
O.R. Colan Associates

FIGURE III-1
Project Area

source: U.S. Census Bureau

between the Amite River and LA 16 in Livingston Parish. LA 1019 intersects with Alternatives 1-B, 1-C and 2. LA 3285, also known as old LA 16, intersects the alternative termini of 1-B and 1-C.

RAIL NETWORK IN STUDY AREA

No rail lines are located within the project area. However, the Kansas City Railroad line is located west of the project study area and parallel to Airline Highway (US 61).

TRANSIT IN STUDY AREA

The Hooper Road project corridor is not presently serviced by public transit lines. The Capital Region Planning Commission (CRPC) does, however, sponsor transit lines west and south of the project study corridor. Transit lines in the vicinity of the project corridor service Plank Road (LA67) and continue on that portion of LA 408 (Harding Boulevard) west of Plank Road. CRPC transit lines also serve an area south of the project corridor along Airline Highway (US 61/190) and the surrounding neighborhoods.

BICYCLE AND PEDESTRIAN FACILITIES IN STUDY AREA

The project corridor does not presently contain any bicycle or pedestrian facilities. Bike routes designated by the CRPC are situated in downtown Baton Rouge, Garden District, Mid City South and Broadmoor/Sherwood.

The planned widening of Hooper Road south of Sullivan Road does include a 5 foot wide sidewalk on both sides of the widened roadway, but does not include a paved shoulder or dedicated bicycle lane.

EXISTING HUMAN ENVIRONMENT

DEMOGRAPHICS

Methodology

This section of the *Environmental Assessment* analyzes existing conditions of the human environment in the study area. The methodology employed involved research of demographic data that define the human environment for the study area and presents demographics, socioeconomic and housing from 2010 U. S. Census records[1].

[1] *American FactFinder, U.S. Census Bureau, 2006-2010 American Community Survey.*

The demographic analysis examines indices and trends in the census tract for the following data in the study area:

- Population
- Housing
- Business and Economy

The demographic study area is located in East Baton Rouge and Livingston Parishes, Louisiana and consists of six (6) census tracts. **Table III-1** lists the six census tracts contained in the project study area by parish. The boundaries of these and surrounding census tracts are shown on **Figure III-1** on page III-3.

Table III-1: 2010 Census Tracts in the Project Study Area

Parish:	Census Tract:
East Baton Rouge Parish	43.01
	43.02
	44.01
	44.02
Livingston Parish	403.01
	403.03

Findings

Population

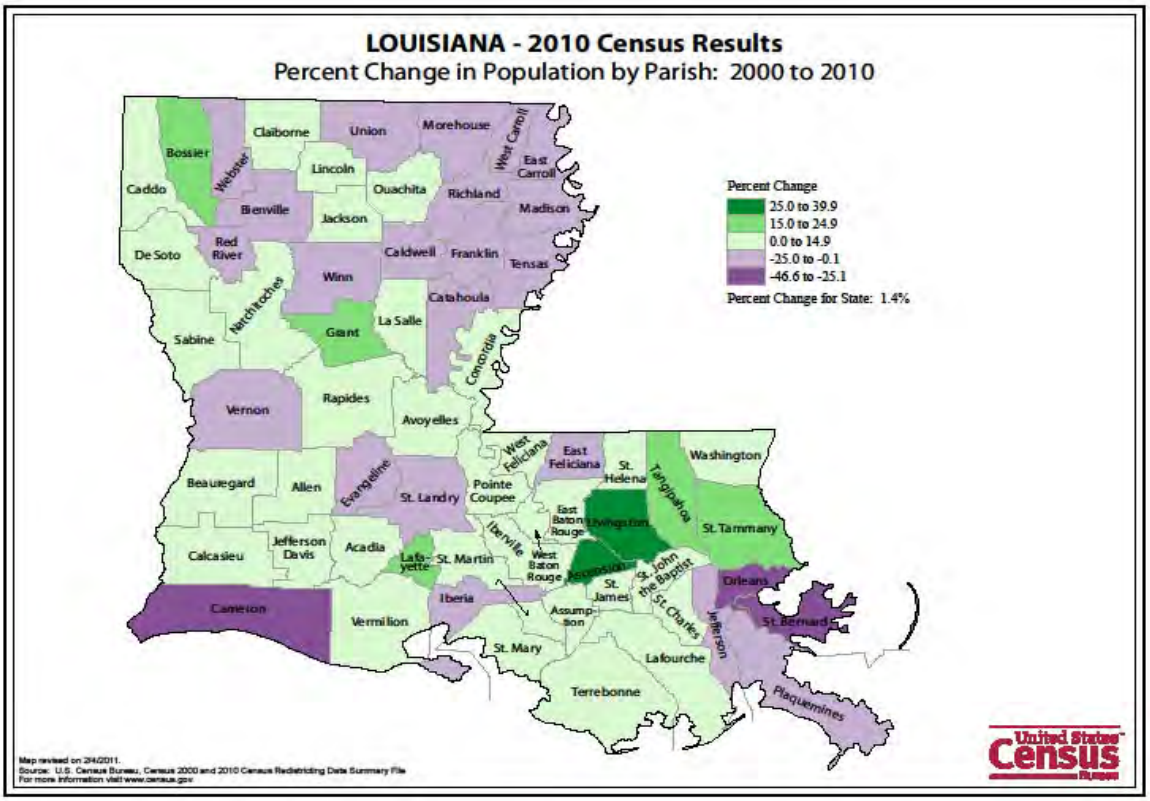
Table III-2 depicts a total population for the project study area of **41,298**, with **22,551** from East Baton Rouge Parish and **18,747** from Livingston Parish.

Table III-2: 2010 Population in the Project Study Area

Area	Census Tract	Population
East Baton Rouge Parish	43.01	6,562
	43.02	5,557
	44.01	4,757
	44.02	5,675
	Total, East Baton Rouge Parish Study Area	**22,551**
Livingston Parish	403.01	8,856
	403.03	9,891
	Total, Livingston Parish Study Area	**18,747**
Total Study Area		**41,298**

The figure below illustrates the changes in population from the year 2000 to 2010 for all parishes in Louisiana.

Figure III-2: 2010 Louisiana Population Percent Change by Parish



Both parishes included in the project study area, East Baton Rouge and Livingston, experienced growth from 2000 to 2010. Livingston Parish had a total population of 91,814 in the year 2000. By 2010, Livingston had a population of 128,026, a growth of 39%. East Baton Rouge Parish grew in a smaller increment. East Baton Rouge had a population of 412,852 in the year 2000. In 2010, East Baton Rouge had a population of 440,171, for a growth of 7%.

Housing

Housing data in the study area shows a mixture of owners and renters with a strong occupancy rate. **Table III-3** shows 553 housing units in the study area, of which 13.4% are vacant. The occupied units are divided into 89.1% owners and 10.9% renters.

Table III-3: Housing in the Project Study Area

	Census Tract 43.01	Census Tract 43.02	Census Tract 44.01	Census Tract 44.02	Census Tract 403.01	Census Tract 403.03	Project Study Area	% of the Project Study Area
HOUSING OCCUPANCY								
Total housing units	2,664	2,165	1,882	2,240	3,233	3,447	15,631	
Occupied housing units	2,557	2,110	1,796	2,121	3,038	3,315	14,937	96%
Vacant housing units	107	55	86	119	195	132	694	4%
HOUSING TENURE								
Occupied housing units	2,557	2,110	1,796	2,121	3,038	3,315	14,937	
Owner-occupied housing units	2,202	1,862	1,509	1,581	2,614	2,976	12,744	85%
Average household size of owner-occupied units	2.6	2.62	2.66	2.68	2.91	3.02	16	2.75
Renter-occupied housing units	355	248	287	540	424	339	2,193	15%
Average household size of renter-occupied units	2.32	2.73	2.53	2.64	2.94	2.65	16	2.64

Table III-4 analyzes the value of owner-occupied housing units in the project study area, which ranges from less than $50,000 to $1 million or more.

Table III-4: Value of Owner-Occupied Housing Units in the Project Study Area

	Census Tract 43.01	Census Tract 43.02	Census Tract 44.01	Census Tract 44.02	Census Tract 403.01	Census Tract 403.03
Owner-occupied units	2,113	1,848	1,630	1,463	2,489	2,981
Less than $50,000	131	99	63	85	264	139
$50,000 to $99,999	307	212	99	136	360	309
$100,000 to $149,999	611	579	397	490	687	781
$150,000 to $199,999	606	531	298	400	346	946
$200,000 to $299,999	334	223	420	239	600	566
$300,000 to $499,999	63	165	327	102	223	186
$500,000 to $999,999	61	39	26	11	9	33
$1,000,000 or more	0	0	0	0	0	21

Business and Economy

This section examines income, employment and taxes for the project study area.

Income

Table III-5 depicts the range of income and benefits by household for the study area, which are significantly higher than average Louisiana state household income levels. The (average) median household income among the six census tracts in the project study area amounts to **$62,961,** $19,516 more than the $43,445 Louisiana median household income in 2010. The (average) mean household income for the project study area is **$73,894,** $13,891 higher than the $60,003 Louisiana mean household income in 2010.

Table III-5: Income (in 2010 Inflation-Adjusted Dollars) in the Project Study Area

	Census Tract 43.01	Census Tract 43.02	Census Tract 44.01	Census Tract 44.02	Census Tract 403.01	Census Tract 403.03	Project Study Area
Total households	2,389	2,133	1,819	2,021	2,950	3,258	14,570
Less than $10,000	94	116	17	141	76	82	526
$10,000 to $14,999	175	78	49	101	90	92	585
$15,000 to $24,999	144	91	81	118	217	167	818
$25,000 to $34,999	236	189	156	220	222	344	1367
$35,000 to $49,999	450	379	253	336	427	452	2297
$50,000 to $74,999	358	433	377	465	615	675	2923
$75,000 to $99,999	472	265	333	305	501	625	2501
$100,000 to $149,999	274	415	273	237	631	591	2421
$150,000 to $199,999	137	79	207	81	132	184	820
$200,000 or more	49	88	73	17	39	46	312
Median household income (dollars)	$53,802	$64,123	$73,220	$51,790	$65,500	$69,329	**$62,961**
Mean household income (dollars)	$68,178	$78,570	$86,780	$61,962	$73,091	$74,784	**$73,894**

Employment

Table III-6 examines employment by occupation for the work force in the project study area in 2010. Primary occupations are in management, business, science and art which accounted for 31% of the work force, with 29% in sales and office occupations. Other occupations in the study area were spread across various fields such as service, construction and transportation.

Table III-6: Occupations in the Project Study Area

Occupation	Census Tract 43.01	Census Tract 43.02	Census Tract 44.01	Census Tract 44.02	Census Tract 403.01	Census Tract 403.03	Project Study Area	% of Study Area
Civilian employed population 16 years and over	3,196	3,039	2,676	2,798	3,991	5,213	20913	100%
Management, business, science, and arts occupations	928	931	918	829	1,007	1,794	6407	31%
Service occupations	478	326	417	438	695	735	3089	15%
Sales and office occupations	987	856	734	891	1,130	1,459	6057	29%
Natural resources, construction, and maintenance occupations	329	517	258	219	659	575	2557	12%
Production, transportation, and material moving occupations	474	409	349	421	500	650	2803	13%

Table III-7, presented on the following page, looks at the industries employing the work force in the project study area by census tract. Educational services, health care and social assistance represent 20% of the industries in the area, with 14% retail trade, and 13% manufacturing. Other industries in the study area include construction and finance/insurance.

Table III-7: Industries in the Project Study Area

Industry	Census Tract 43.01	Census Tract 43.02	Census Tract 44.01	Census Tract 44.02	Census Tract 403.01	Census Tract 403.03	Project Study Area	% of the Project Study Area
Civilian employed population 16 years and over	3,196	3,039	2,676	2,798	3,991	5,213	20913	100%
Agriculture, forestry, fishing and hunting, and mining	68	0	10	19	95	109	301	1%
Construction	167	255	184	198	461	540	1805	9%
Manufacturing	486	447	352	277	484	735	2781	13%
Wholesale trade	151	44	166	150	154	129	794	4%
Retail trade	404	462	277	474	672	540	2829	14%
Transportation and warehousing, and utilities	177	144	155	150	41	190	857	4%
Information	19	43	29	49	26	86	252	1%
Finance and insurance, and real estate and rental and leasing	200	230	110	222	401	362	1525	7%
Professional, scientific, and management, and administrative and waste management services	188	345	290	193	159	383	1558	7%
Educational services, and health care and social assistance	583	608	605	422	854	1,043	4115	20%
Arts, entertainment, and recreation, and accommodation and food services	123	65	204	348	220	340	1300	6%
Other services, except public administration	171	141	58	180	148	400	1098	5%
Public administration	459	255	236	116	276	356	1698	8%

Taxes

Audits completed in June 2011 for the City of Central and Livingston Parish were used to provide a snapshot of tax revenues and a financial outlook for the project study area.

City of Central government funds reported a fund balance of approximately $10.4 million, an increase of approximately $1.9 million in comparison to the prior year. Approximately 27% ($2.8 million) of the fund balance is restricted for capital projects and approximately 34% ($3.5 million) is assigned to specific future expenditures. Expenditures increased by 6% in the City of Central in 2011. This increase was directly related to street rehabilitation through the East Baton Rouge Parish Green Light Program. Franchise tax collections have increased by 5%. Central additionally receives sales tax of approximately $6.3 million.[2]

Livingston Parish government funds reported a fund balance $24.4 million. Of this amount, 39.8% ($9.7 million) is reserved for debt service, 31.7% ($7.7 million) is available for spending at the Council's discretion, 15% ($3.6 million) is reserved for construction, 12.3% ($3 million) is designated for (additional) debt service, .9% ($214,876) is reserved for inventory, and .3% ($73,301) is reserved for subsequent expenditures.[3]

LAND USE AND ZONING

Land Use

Analysis of the existing land uses in the project study area was derived from the City of Central Land Use Plan (adopted in 2010) augmented by windshield surveys, particularly in Livingston Parish.

As depicted on the land use maps, the existing land use category at the western boundary of the project study area at Hooper and Sullivan Roads is "School Zones" on both sides of Hooper Road (on the east side of Sullivan Road) with "Public/Quasi Public" located north of the "School Zones". To the north of the "Public/Quasi Public" is "Low Density Residential". To the south of Hooper Road beyond the "School Zones" are "General Commercial" and "Large Lot Residential". "General Commercial" uses are present on the east side of Sullivan Road north of Hooper Road with "Large Lot Residential" on the south side.

Continuing east along Hooper Road is "Large Lot Residential" within a "Rural/Agriculture" setting. Some "Low Density Residential" is also present. This development pattern extends on Hooper Road to its intersection with Greenwell Springs Road, with some "Industrial" sites situated on the north side of Hooper Road prior to reaching the intersection.

[2] *http://centralgov.com/CityClerk/Budget/2011/2011_Financial_Sta.*
[3] *http//www.livingstonparishla.gov/Documents/2010%20LPC%201.*

Following Hooper Road past Greenwell Springs Road is "Large Lot Residential" with a large "Public/Quasi Public" use (the now-vacant state hospital) located north. To the east of the hospital site is a section designated "Parks" at the Amite River and the East Baton Rouge/Livingston parish line. This area is a floodplain and remains undeveloped.

As Alternative 2 branches south off of Hooper Road and winds east, it avoids single family residential development on River Birch, Lynwood, Benton Ferry and Bradford Avenues in the City of Central. The proposed extension proceeds south through undeveloped property, where it crosses Greenwell Springs Road at grade and proceeds east above grade to the Amite River.

Crossing the river into Livingston Parish, the area is a mixture of undeveloped woodlands, and rural residential, though there is one industrial use—a gravel pit alongside the river—just north of the area of primary impact. Along the eastern edge of the corridor, along LA 16, LA 1019 and LA 3285, the project study area is well-developed with commercial and single-family residential uses. Public and community uses serving the community of Watson are also present, including churches, cemeteries and schools.

Zoning

Existing zoning for that portion of the study area located in Central was taken from on line zoning maps available on the city's website. Livingston Parish is not zoned.

Starting at the western boundary of the project study area at Hooper and Sullivan Roads, most of Hooper Road is zoned "Rural". Some "Single Family Residential" is present north of Hooper Road on the east side of Sullivan Road. The south side of Hooper Road west of Sullivan Road contains some "Light Commercial".

Hooper Road at Devall contains a small amount of "Light Commercial". Just west of Roundsaville Street, there is small amount of "Neighborhood Office" with "Single Family Residential" located south. "Rural" continues east on Hooper Road, with a small amount of "Light Commercial" located on the west side Greenwell Springs Road. "Rural" continues to the East Baton Rouge/Livingston Parish line.

PUBLIC FACILITIES & SERVICES

Methodology

Locations for and lists of addresses for public facilities were obtained from Google maps[4], Google Earth, TransWestern Publishing Yellow Pages and field reconnaissance. For the purposes of this section, public facilities and services pointed out are located within one mile or

[4] *http://maps.google.com*

less north and south of the Hooper Road project study corridor from Sullivan Road to Greenwell Springs Road and continuing east along the proposed extension across the Amite River connecting to LA 16. Public school information was also verified through the Livingston Parish Public Schools website[5].

Findings

The project study area has a number of public facilities offering a wide range of public services. Analysis of the project study corridor indicates the following public facilities: five (5) government buildings, one (1) police station, one (1) fire station, six (6) public schools and arts centers, eight (8) park and recreational facilities, two (2) libraries, two (2) hospitals, three (3) post offices, twenty-six (26) churches, and two (2) cemeteries. Following are lists of public facilities and services located in the project study area.

Government

- Central Chamber of Commerce, 13013 Hooper Road
- Central Community School District, 13421 Hooper Road
- Central Municipal Center, 22801 Greenwell Springs Road
- Justice of the Peace Ward One, 34674 LA 16
- Ward 2 Water District Maintenance, 8645 Springfield Road

Police

- East Baton Rouge Sheriff's Office, 13016 Gurney Road

Fire Protection

- Central Fire Department, 11646 Sullivan Road

Public Schools and Arts Centers

,

- Central Middle School, 11526 Sullivan Road
- Center of Performing Arts, 13521 Hooper Road
- Central High School, 10200 East Brookside Drive
- Live Oak Elementary School, 35194 Old LA Highway 16
- South Live Oak Elementary School, 8400 Cecil Drive
- Live Oak Middle School, 8444 Cecil Drive
- Live Oak High School, 36079 LA Hwy 16

[5] *http://www.lpsb.org/District/schools.htm.*

Parks and Recreational Facilities

- Jackson Park, 12250 Sullivan Road
- BREC Palomino Drive Park, 14100 Palomino Drive
- BREC Jacob Kornmeyer Park, Hooper Road at Beaver Bayou
- BREC Railey Roshto Park, 11601 Norway Pine Drive
- BREC Lovett Road Recreation Center & Park, 13600 Lovett Road
- BREC Greenwell Springs Park, 7550 Shady Park Drive
- Live Oak Ball Park, 36965 LA Highway 16
- Watson Community Center, 35079 Old LA Hwy 16

Libraries

- Central Branch Library, 11260 Joor Road
- Watson Branch Library, 36561 Outback Road

Hospitals

- Ochsner Health Center, 11424 Sullivan Road
- Greenwell Springs State Hospital (vacant/non-operational), 23260 Greenwell Springs Road

Post Offices

- U. S. Post Office, 13515 Hooper Road
- U. S. Post Office, 22801 Greenwell Springs Road
- U. S. Post Office, 8040 Watson Circle

Churches

- Indian Mound Baptist Church, 16755 Liberty Road
- Community Christian Center, 14759 Denham Road
- Grace Family Church, 13268 Denham Road
- Blackwater United Methodist Church, 10000 Blackwater Road
- Cornerstone Fellowship, 9611 Blackwater Road
- Immanuel Baptist Church, 10870 Lovett Road
- Grace Presbyterian Church, 9526 Joor Road
- Life Central Church, 10523 Lovett Road
- Life Tabernacle, 9323 Hooper Road
- St. Augustine's Episcopal Church, 12954 Joor Road
- Grace UPC, 13845 Hooper Road
- Zoar Baptist Church, 11848 Hooper Road

- Comite Church of Christ, 12228 Hooper Road
- First Baptist Church Central, 9676 Sullivan Road
- Greenwell Springs Baptist Church, 19421 Greenwell Springs Road
- Covenant Community Church, 22325 Greenwell Springs Road
- Journey Church, 17407 Greenwell Springs Road
- Amite Baptist Church, 7100 Amite Church Road
- Cane Market Road Baptist Church, 35652 Cane Market Road
- Live Oak United Methodist Church, 34890 LA Hwy 16
- Live Oak Baptist Church, 35603 Coxe Ave
- Faith Family Church, 34401 LA Hwy 16
- Redeemed Fellowship Pentecostal , 34483 LA Hwy 1019
- New Bethlehem Baptist Church, 37818 Reinninger Road
- Watson Andrews Chapel, 41600 LA Hwy 16
- Great Saint Peter Church, 2, LA

Cemeteries

- Newsom Cemetery, Newsom Lane
- Live Oak United Methodist Cemetery, corner of LA 16 & LA 1019

HAZARDOUS AND SOLID WASTE SITES

Methodology

Coastal Environments, Inc. (CEI) conducted a two-part Environmental Site Assessment, Phase 1 (ESA 1) on the corridor containing the project footprint for the designated Hooper Road Extension (LA 408), East Baton Rouge and Livingston Parishes, Louisiana over a five-week period from March 27 through May 1, 2013, and a 4-week period between August 23 and September 18, 2013. The ESA 1 investigation was conducted in compliance with the standards of the American Society for Testing and Materials (ASTM) for Environmental Site Assessment for Commercial Real Estate, 5th edition, ASTM Designation: E 1527-05, Standard Practice for Environmental Site Assessments: Phase 1 Environmental Assessment Process (2005). The ESA 1 investigation included, but was not limited to: (1) the review of federal and state agency databases, (2) the review of historic and current maps and aerial photographs, (3) conducting personal interviews, (4) conducting site inspections, and (5) the post-inspection completion of the ASTM questionnaire. This investigation was preceded by two Stage 0 studies in 2011 and 2012, respectively, which identified potential hazardous waste sites and underground storage tanks (UST).

Three alternatives, comprised of Alternatives 1-A, 1-B and I-C, were initially identified in the Environmental Assessment (EA) process for review and evaluation. The project corridor rights-

of-way (ROW) of the project footprint of the initial three alternatives were combined to be investigated as a collective footprint.

The LADOTD determined the need to add a fourth alternative, designated as Alternative 2, located south of, and independent from, the Alternatives 1-A, 1-B and 1-C which share much of the same project footprint., hereinafter referred to as "the LADOTD ESA 1 property." The rights-of-way (ROW) for the four alternatives were combined on one map and are referred to collectively and hereafter as the "LADOTD ESA 1 property".

The LADOTD ESA 1 property includes a portion of the incorporated City of Central in East Baton Rouge Parish and unincorporated Livingston Parish including the community of Watson. An irregularly shaped tract, the LADOTD ESA 1 property is located between the intersection of Hooper and Sullivan Roads and either LA 16 (Alternatives 1-A and 2) or the intersection of Old LA 16/LA 1019, Springfield Highway (LA 1019) and LA 1025 (Alternatives 1-B and 1-C).

The ESA 1 investigation consisted of the identification of potentially contaminated sites that could affect the sale of the property. The investigation was conducted with the objective of identifying: (1) potential, abandoned hazardous and solid waste sites, (2) active hazardous waste generators, (3) facilities that treat, store, and/or dispose of hazardous wastes, and (4) underground and above-ground storage tanks.

Results

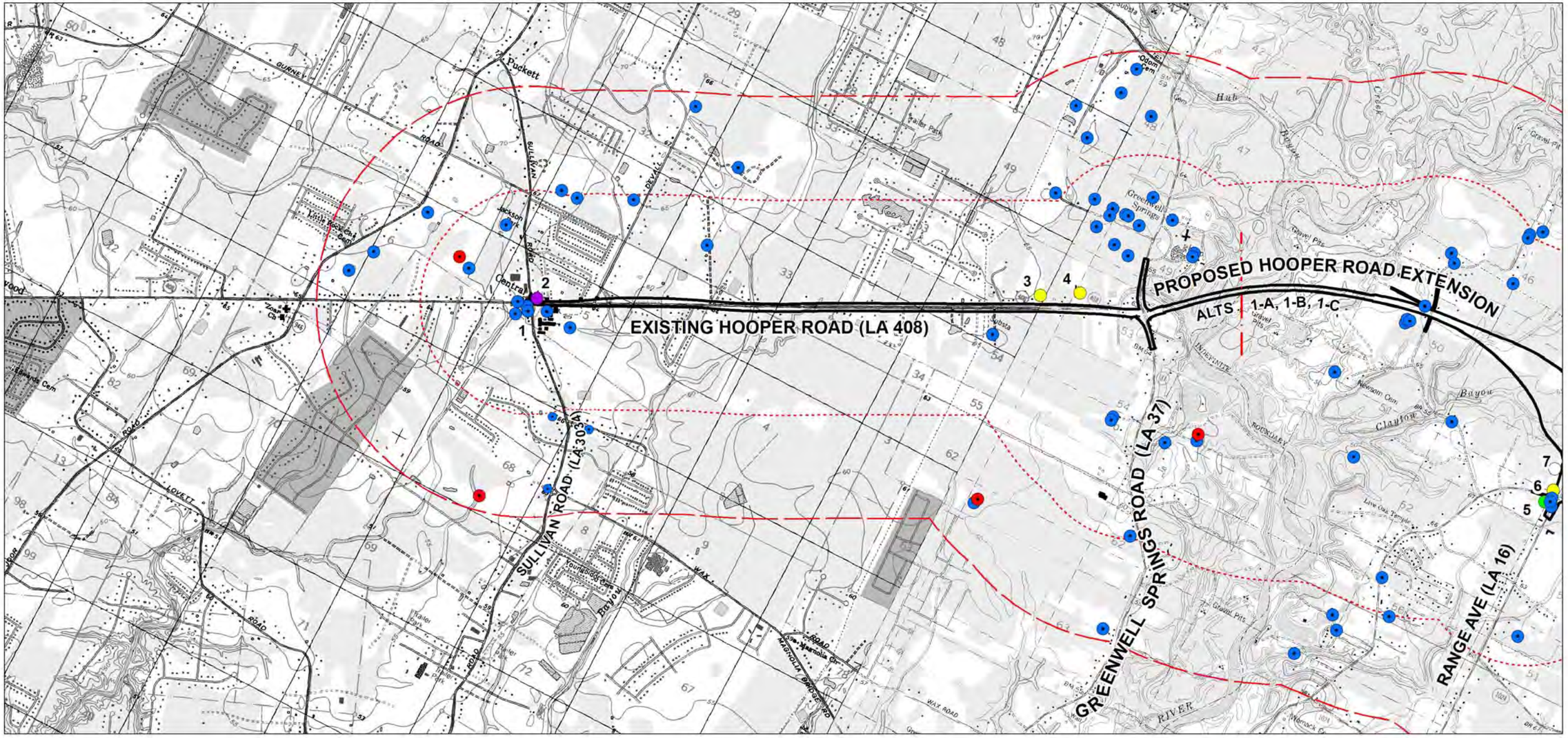
CEI's *Environmental Site Assessment, Phase 1* investigation resulted in the identification of eight sites within or adjoining the LADOTD ESA 1 property (see **Figures III-3, III-4, III-5 and III-6**). Six of the sites were identified as being in databases maintained by the U. S. Environmental Protection Agency (EPA), Region VI and/or the Louisiana Department of Environmental Quality (LDEQ).

- Review of the EPA Region VI Resource Conservation Recovery Information List (RCRIS) databases indicates the following facilities, which adjoin the LADOTD ESA 1 property as follows:

  Site 1 LAD981607583; Central Exxon Service Center (Central Automotive & Tire is current occupant), 11575 Sullivan Road, Baton Rouge, LA 70818; Conditionally exempt generator of hazardous waste (CEG).

  Site 3 LAD981157548; T & T Transport Services, Inc., 17405 Hooper Road, Greenwell Springs, LA 70739; Transporter of hazardous wastes.

  Site 3 LAD981157548; Roy's Equipment, Inc., 17405 Hooper Road, Greenwell Springs, LA 70739; CEG.



SOURCES:
1:24k Topographic Base Map:
National ParkService, 2009
Comite & Watson, La.
CEI Field Survey: April 17 & 23,
& September 4, 2013.

0 0.25 0.5 0.75 1
Miles

LEGEND:

- OIL/GAS WELL
- WATER WELL
- RCRIS
- RCRIS / UST
- LUST
- UST / PRE-RCRIS
- NON-RCRIS DRYCLEANER
- MATCH LINE
- HALF MILE BUFFER
- FULL MILE BUFFER
- ROW

DOTD LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

DEPARTMENT OF TRANSPORTATION UNITED STATES GOVERNMENT

N-Y ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

COASTAL ENVIRONMENTS, INC.
BATON ROUGE, LA., 70802 225-383-7455

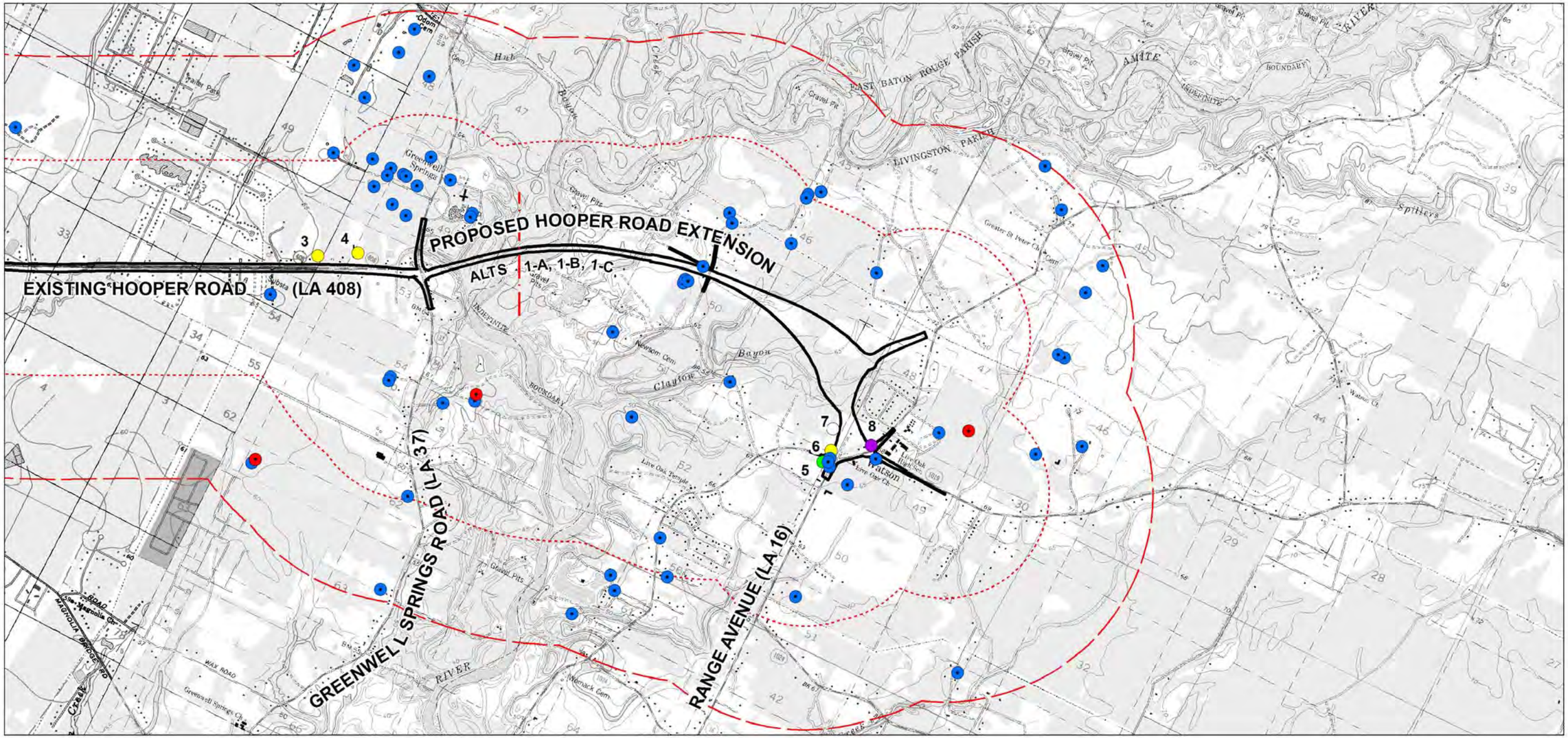
STAGE 1 ENVIRONMENTAL ASSESSMENT
LA HWY 408 - HOOPER ROAD EXTENSION AND WIDENING (LA 16 - SULLIVAN ROAD)

EAST BATON ROUGE AND LIVINGSTON PARISHES
S.P.N. H.005403.2 F.A.P.N. H005403

HAZARDOUS WASTE, STORAGE TANKS, WATER WELLS AND OIL/GAS WELLS

Figure III-3. West Side of LADOTD ESA 1 property for Alternative 1

Date: 9/17/2013 Path: K:\Projects\La\212066_LA_408_Hooper_Rd_Ext_EA\212066_Hazards_MileBuffer_Alt1_FinalTemplate.mxd



SOURCES:
1:24k Topographic Base Map:
National ParkService, 2009
Comite & Watson, La.
CEI Field Survey: April 17 & 23,
& September 4, 2013.

0 0.25 0.5 0.75 1
Miles

LEGEND:

- OIL/GAS WELL
- WATER WELL
- RCRIS
- RCRIS / UST
- LUST
- UST / PRE-RCRIS
- NON-RCRIS DRYCLEANER
- MATCH LINE
- HALF MILE BUFFER
- FULL MILE BUFFER
- ROW

STAGE 1 ENVIRONMENTAL ASSESSMENT
LA HWY 408 - HOOPER ROAD EXTENSION AND WIDENING (LA 16 - SULLIVAN ROAD)

EAST BATON ROUGE AND LIVINGSTON PARISHES
S.P.N. H.005403.2 F.A.P.N. H005403

HAZARDOUS WASTE, STORAGE TANKS, WATER WELLS AND OIL/GAS WELLS

Figure III-4. East Side of LADOTD ESA 1 property for Alternative 1

DOTD LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

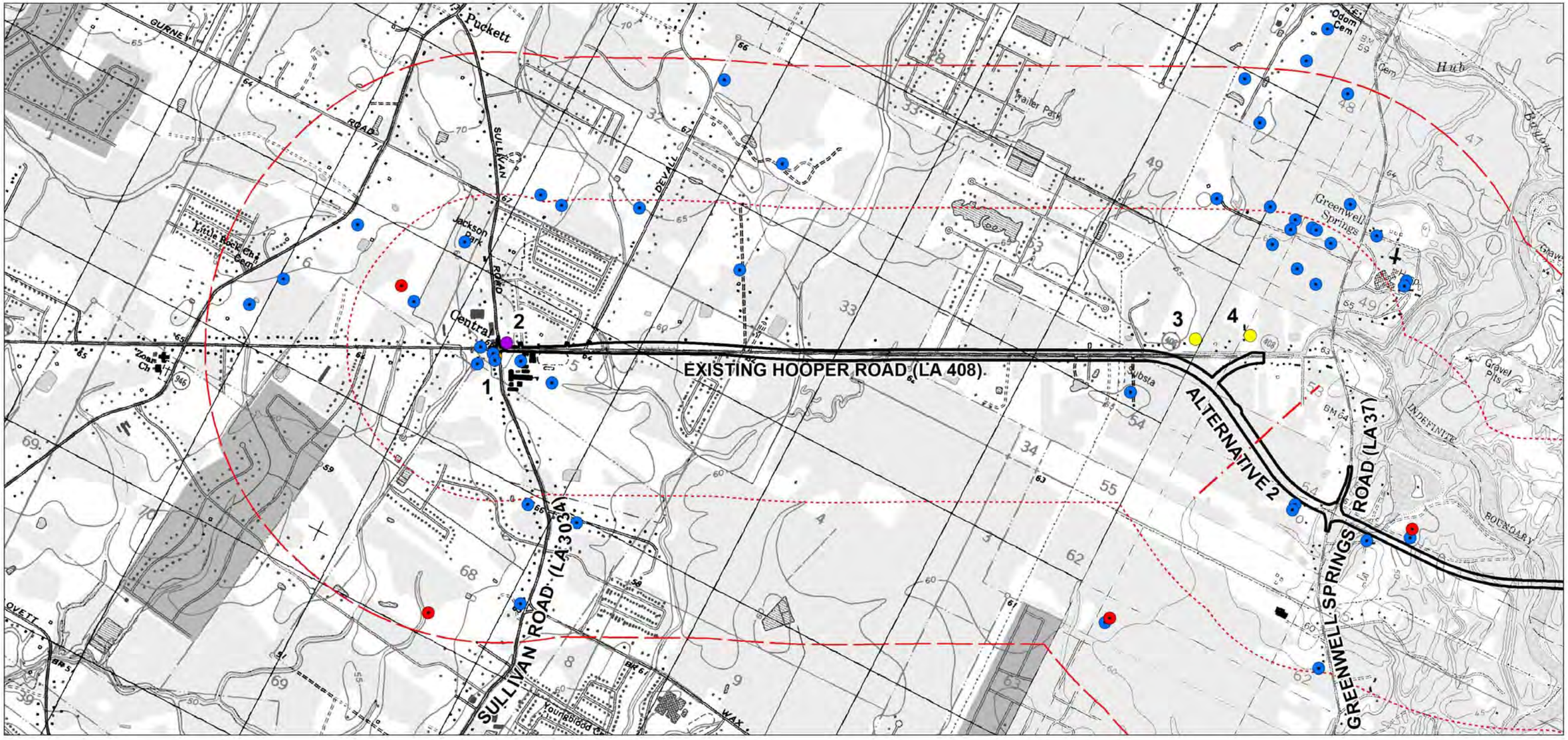
DEPARTMENT OF TRANSPORTATION UNITED STATES GOVERNMENT

NY ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

COASTAL ENVIRONMENTS, INC.
BATON ROUGE, LA., 70802 225-383-7455

Path: K:\Projects\La\212066_LA_408_Hooper_Rd_Ext_EA\212066_Hazards_MileBuffer_Alt1_FinalTemplate.mxd

Date: 9/17/2013



SOURCES:
1:24k Topographic Base Map:
National ParkService, 2009
Comite & Watson, La.
CEI Field Survey: April 17 & 23, & September 4, 2013.

0 0.2 0.4 0.6 0.8
Miles

LEGEND:

- OIL/GAS WELL
- WATER WELL
- RCRIS
- RCRIS / UST
- LUST
- UST / PRE-RCRIS
- NON-RCRIS DRYCLEANER
- MATCH LINE
- HALF MILE BUFFER
- FULL MILE BUFFER
- ROW

DOTD LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

DEPARTMENT OF TRANSPORTATION UNITED STATES GOVERNMENT

NY ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

COASTAL ENVIRONMENTS, INC.
BATON ROUGE, LA., 70802 225-383-7455

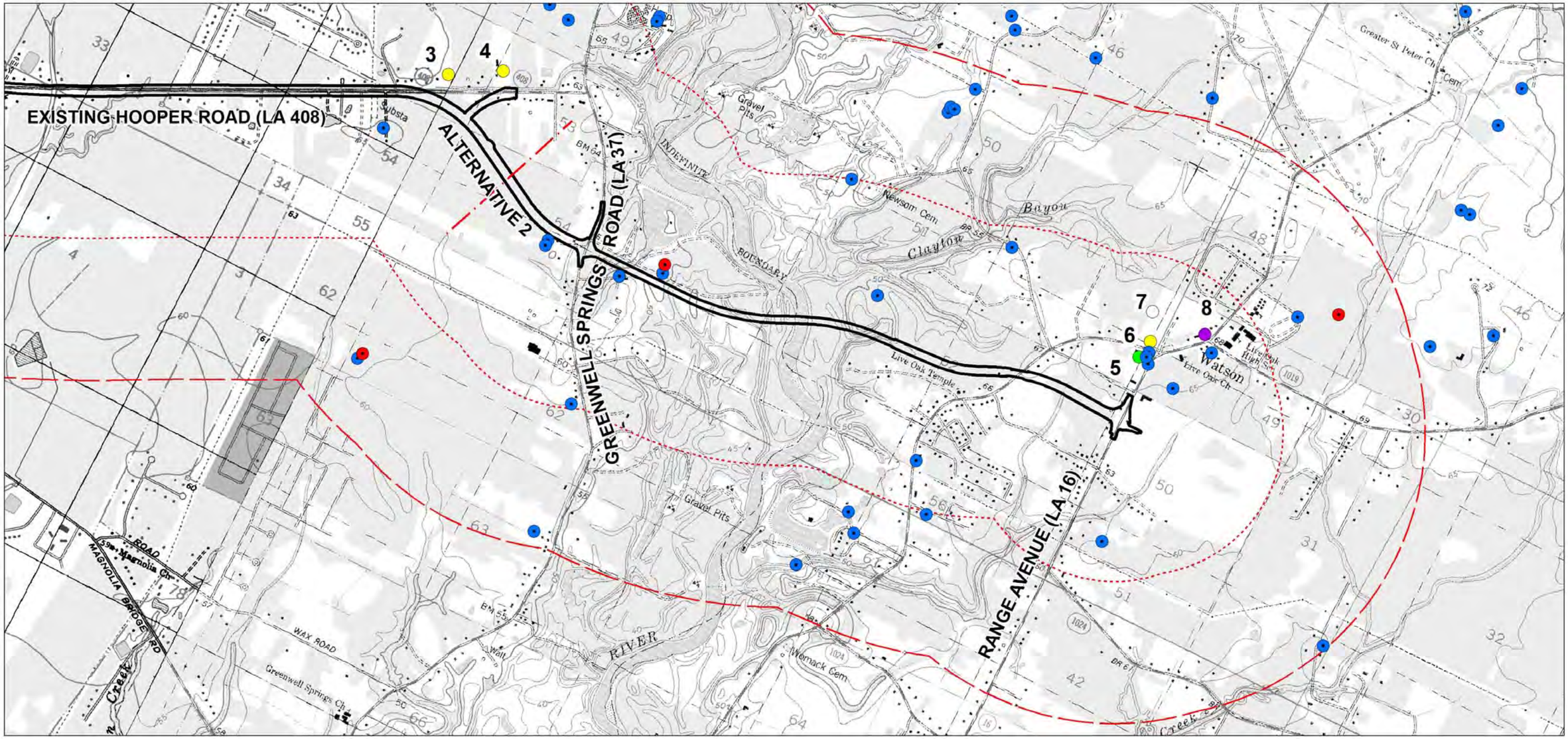
STAGE 1 ENVIRONMENTAL ASSESSMENT
LA HWY 408 - HOOPER ROAD EXTENSION AND WIDENING (LA 16 - SULLIVAN ROAD)

EAST BATON ROUGE AND LIVINGSTON PARISHES
S.P.N. H.005403.2 F.A.P.N. H005403

HAZARDOUS WASTE, STORAGE TANKS, WATER WELLS AND OIL/GAS WELLS

Figure III-5. West side of LADOTD ESA 1 property for Alternative 2

Date: 9/17/2013 Path: K:\Projects\La\212066_LA_408_Hooper_Rd_Ext_EA\212066_Hazards_MileBuffer_Alt2_FinalTemplate.mxd



SOURCES:
1:24k Topographic Base Map:
National ParkService, 2009
Comite & Watson, La.
CEI Field Survey: April 17 & 23,
& September 4, 2013.

0 0.2 0.4 0.6 0.8
Miles

LEGEND:

- OIL/GAS WELL
- WATER WELL
- RCRIS
- RCRIS / UST
- LUST
- UST / PRE-RCRIS
- NON-RCRIS DRYCLEANER
- MATCH LINE
- HALF MILE BUFFER
- FULL MILE BUFFER
- ROW

STAGE 1 ENVIRONMENTAL ASSESSMENT
LA HWY 408 - HOOPER ROAD EXTENSION AND WIDENING (LA 16 - SULLIVAN ROAD)

EAST BATON ROUGE AND LIVINGSTON PARISHES
S.P.N. H.005403.2 F.A.P.N. H005403

HAZARDOUS WASTE, STORAGE TANKS, WATER WELLS AND OIL/GAS WELLS

Figure III-6. East side of LADOTD ESA 1 property for Alternative 2

DOTD LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

DEPARTMENT OF TRANSPORTATION UNITED STATES GOVERNMENT

NY ASSOCIATES, INC.
ENGINEERS • ARCHITECTS • PLANNERS
PROGRAM & PROJECT MANAGERS

COASTAL ENVIRONMENTS, INC.
BATON ROUGE, LA., 70802 225-383-7455

Date: 9/17/2013 Path: K:\Projects\La\212066_LA_408_Hooper_Rd_Ext_EA\212066_Hazards_MileBuffer_Alt2_FinalTemplate.mxd

Site 4 LAD03751758; Louisiana Cement Products, LLC (New Easy Crete and Capitol Companies is current occupant), 17543 Hooper Road, Greenwell Springs, LA 70739; CEG.

Site 6 LAD9815960398; Live Oak Tire & Automotive, 34905 LA HWY 1019; Denham Springs, LA 70706; CEG.

- Review of the LDEQ Leaking Underground Storage Tank (LUST) report indicates one LUST facility is within the ASTM-recommended ½-mile search radius of the LDOTD ESA 1 property. The summary of the status of the facility is as follows:

  Site 5 AI No. 71733; Broadway's Mobile (Walgreens Pharmacy is current occupant), 34914 HWY 16, Watson, LA 70786. During the Underground Storage Tank (UST) closure of the former Broadway Mobile facility in September of 2005, soil samples indicated a hydrocarbon release and soil contamination. Approximately 150 tons of contaminated soil was removed and followed by the construction of Walgreens Pharmacy. Three monitoring wells, installed between the pharmacy and the intersection of LA HWYs 16 and 1019, remain in place for continued monitoring of attenuation at the site.

- Review of the LDEQ UST description report indicates three underground storage tank facilities have been recorded on the LADOTD ESA 1 property or adjoining properties as follows:

  Site 1 AI No. 6889; Central Automotive & Tire, 11575 Sullivan Road, Baton Rouge, LA 70818. Four active and one removed UST; Adjoins LADOTD ESA 1 property.

  Site 5 AI No. 71733; Broadway's Mobile; 34914 LA 16, Watson, LA 70786. The site is the current location of Walgreens Pharmacy. Four removed UST; Adjoins LADOTD ESA 1 property.

  Site 8 AI No. 25747; Watson Diesel; 35039 Old HWY 16, Watson, LA 70786. The site is the current location of Watson Truck Repair. Five removed UST; Located on the LADOTD ESA 1 property.

- The two remaining sites identified during the field investigations are as follows:

  Site 2 Former location of gasoline station/auto repair, Robinson KF (Kaiser-Frazer) Motors (new automobile dealership), gasoline station/auto repair, hardware store located in the northeast quadrant of the intersection of Hooper and Sullivan Roads.

Site 7 Quick-N-Handy Dry Cleaners, 35055 LA 16, Suite 1D, Watson, LA 70786. Not included on EPA RCRIS List; Located on tract that adjoins LADOTD ESA 1 property.

The ESA 1 investigation did not identify any recognized environmental conditions within the LADOTD ESA 1 property; however, Site 5 was identified and is located in the southwest corner of the intersection of LA 16 and LA 1019 adjacent to the ROW. A leaking underground storage tank (LUST) was discovered during the UST closure of Site 5 (Broadway's Mobile) in 2005. Approximately 150 tons of contaminated soil were hauled off site prior to construction of the Walgreens Pharmacy. Ongoing remediation and attenuation of contaminated groundwater continues at the site. Due to the extent of contamination, successful attenuation to date and its proximity to the project footprints of Alternatives 1-A, 1- B, 1-C and 2, Site 5 would not adversely affect the project.

While Sites 2 and 8 are not documented as being contaminated, both sites should be investigated further.

Conflicting opinions obtained during personal interviews indicate the UST associated with Site 2 may still be located at the site, but it is also possible that the UST were removed during the widening of Hooper Road in the past. The question of the existence of the UST can likely be answered by reviewing past Hooper Road improvement files and/or conducting a magnetometer survey. Past pre-RCRIS activities at this site would have likely occurred some distance from the intersection and footprint of the current project and would not adversely affect the project.

There are five USTs associated with Site 8, the former location of a gasoline station that operated from the 1960s through the 1980s. The LDEQ approved the owner's request to fill the UST with sand as opposed to removing them. The locations of these UST in relation to the project footprint and construction methodology/parameters/limitations should be investigated further. Pre-RCRIS activities including the storage and handling of hydrocarbon-based products, would have occurred at Site 8.

CULTURAL RESOURCES

Archaeology

A records search was conducted at the Division of Archaeology (DOA), Department of Culture, Recreation and Tourism. The DOA maintains archaeological site information for the State of Louisiana, assigning a trinomial number (e.g., 16EBR5 [State Number + Parish Abbreviation + Site Number]) to each site. The DOA also maintains United States Geological Survey (USGS) 7.5-minute quadrangle maps depicting the locations of all recorded archaeological sites, site forms and corresponding reports.

Research of landforms and settlement patterns of the area indicated that only the portion of the project area located along the Amite River and Greenwell Springs Road would be considered to have high archaeological potential. The remainder of the project area is considered to have a low archaeological potential.

Background research was conducted in East Baton Rouge and Livingston parishes to determine land ownership within the project area. Property owners were then contacted by telephone, email and in person. An archaeological survey was then conducted in April 2013 of Alternatives 1-A, 1-B, and 1-C. Property owners within the Alternative 2 project area were contacted by telephone, email, in person. Certified letters were then sent to those property owners that refused right of entry. An archaeological survey was then conducted in August and September 2013 of Alternative 2.

Examination of these records indicates that there are no previously recorded archaeological sites within any of the alternatives of the proposed project area. No archaeological remains were encountered and no archaeological sites were recorded.

Standing Structures

A records search was also conducted at the Division of Historic Preservation (DHP), Department of Culture, Recreation and Tourism. Standing structure and National Register of Historic Places (NRHP) files for the State of Louisiana are maintained by the DHP. Each recorded standing structure over fifty years of age is assigned a binomial number (e.g., 32-00112 [Parish Number + Structure Number]) by the DHP.

The DHP also maintains USGS 7.5-minute and 15-minute quadrangle maps, and LADOTD city maps depicting the location of each recorded structure, Louisiana Historic Resource Inventory forms, and corresponding reports. Only a small area of East Baton Rouge Parish has been previously surveyed and is on file at DHP. Three of those previously recorded standing structures are located within the indirect Area of Potential Effect (APE) for the Hooper Road Extension and Widening project. In addition, only ten structures have been previously recorded in Livingston Parish. None of these is located within the indirect APE for the Hooper Road Extension and Widening project.

In addition to the records search, a standing structure survey was conducted within the indirect APE for the proposed project. The indirect APE, which encompasses the project area, extends outward from the edge of the proposed ROW approximately 250 ft (76.2 m) (see **Figure III-7** on the following page).

A total of 89 structures constructed before 1968 were examined with the Hooper Road Extension and Widening project indirect APE. Thirty-two of these are common to all alternatives. Thirty-one are only common to Alternatives 1-A, 1-B and 1-C. Three of these structures were previously recorded in East Baton Rouge parish. Fourteen are only associated with Alternatives

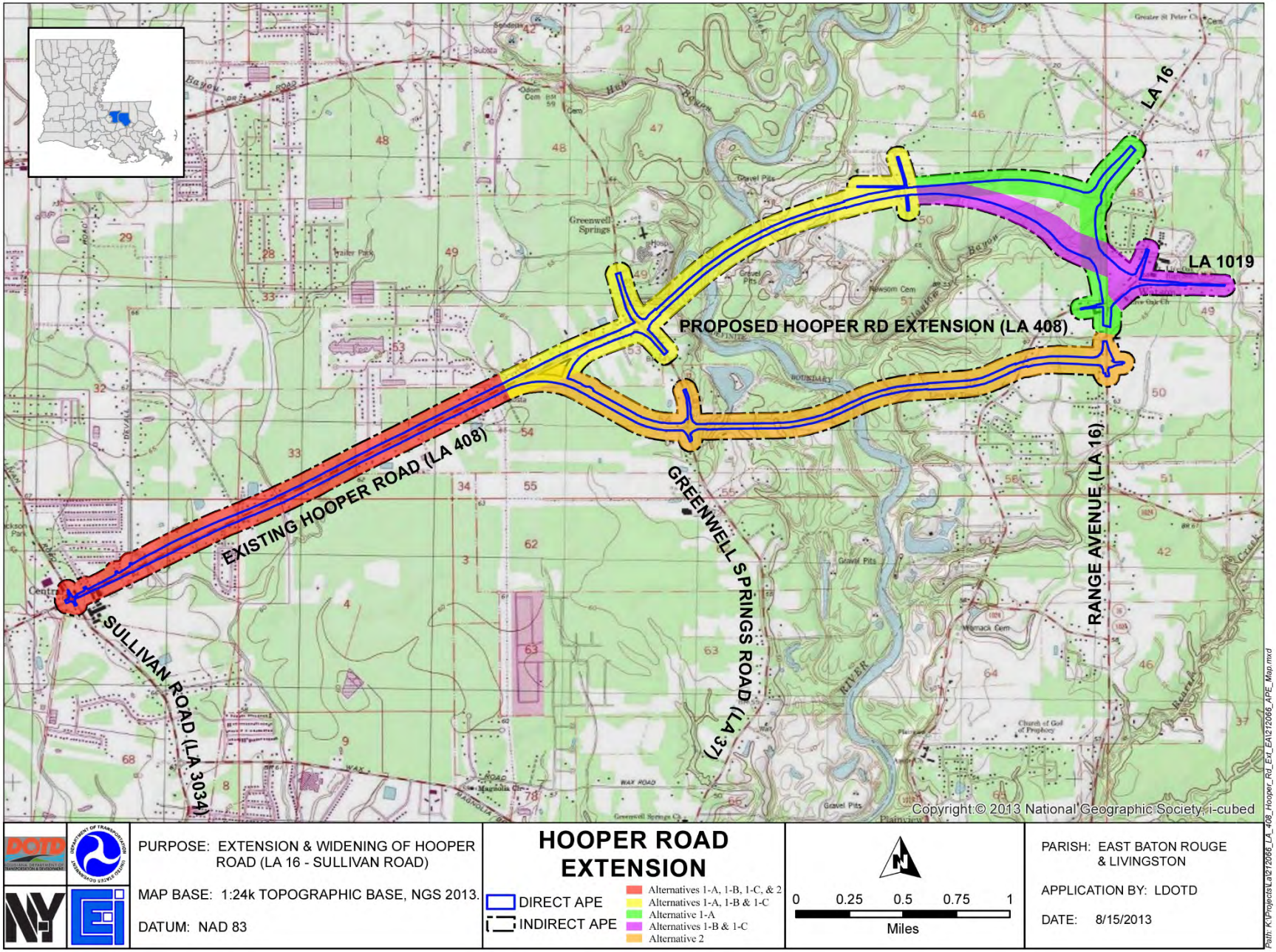


Figure III-7 - Location of direct and indirect APE and Alternatives 1-A, 1-B, 1-C and 2.

1-B and 1-C, one is only associated with Alternative 1-A, and eleven are only associated with Alternative 2. One of the structures, the Nunnally House (17-01656), is recommended as eligible for listing on the NRHP under Criterion C as fine example of an A. Hays Town design. It is also recommended as eligible under Criterion A as one of the few remaining structures in the area dating to the West Florida Republic era.

VISUAL /AESTHETIC CONDITIONS

The study area corridor presents an interesting visual spectrum with developed commercial areas on each end, to more dispersed residential uses moving towards the center, and containing a mostly undeveloped wooded floodplain and a river in the center.

The west side of the corridor begins at the Sullivan Road intersection, and features low-scale commercial development and a school. One of the most prominent features in this area is the Central High School football stadium along the south side of Hooper Road. As the project corridor heads northeast, it consists of almost entirely flat land with medium- to low-density residential and some commercial/light industrial development. The entire western side of the corridor is also very arboreal, with trees and wooded areas often extending right up to the LA 408 right-of-way.

The Amite River, which divides the two areas, has a substantially wooded floodplain along its banks, and currently can only be seen in the project corridor from private property-- it is not seen from any existing roadway in the project area due to the wooded nature of the area and its distance from the closest roadway (Greenwell Springs Road). The river itself is a rather picturesque waterway, whose appearance changes with the seasons and with rainfall. During high water, it is brown and muddy and extends into the tree line; in low water situations it flows clear and presents sandy white banks.

On the eastern side of the river, the land, while generally flat, is slightly more rolling. In the vicinity of the proposed Alternative 1 roadway, the land has been cleared and much more open in view, while along Alternative 2 is more residentially developed with single family homes.

Approaching LA 16, there is generally denser residential development and very visible commercial development, particularly near the confluence of LA 16, LA 1019, and LA 3285. Structures in this area include low height (1-3 stories tall) commercial structures and public facilities, churches, schools, and denser residential subdivision single-family homes of one or two stories.

FLOOD PLAINS / FLOOD ZONES

The National Flood Insurance Program (NFIP) was adopted by Congress in 1968 to provide flood insurance to homeowners, renters and business owners. Communities that participate in the NFIP agree to adopt and enforce ordinances meeting or exceeding standards established by

the Federal Emergency Management Agency (FEMA) to reduce the risk of flooding. The NFIP regulates development within floodplains for substantial improvements to ensure projects do not present new obstructions to water flows or alter drainage.[6]

Both parishes (East Baton Rouge and Livingston) included in the project study area participate in the NFIP. Flood Insurance Rate Maps (FIRMs) are official maps on which FEMA has delineated both special flood hazard areas and (flood) risk zones applicable to a community. FIRMs were examined and respective floodplain managers for East Baton Rouge and Livingston Parishes were consulted in this examination of flood risk in the project study area.

Findings indicate the project study area is primarily composed of high risk flood areas including "Flood Zone AE" and "Flood Zone A" with some areas of minimal flood hazards such as "Flood Zone X (Unshaded)" and "Flood Zone X (Shaded)" along Sullivan Road and "Flood Zone A" around Greenwell Springs Road. Additionally, the project study area east of Greenwell Springs Road contains a "Floodway" along the Amite River.[7]

East of the Amite River in Livingston Parish, the project corridor is about evenly divided between high risk areas ("Flood Zone AE" and "Flood Zone A") and minimal risk areas ("Flood Zone X (Unshaded)"). Most of the high risk areas are on the western side of the route near the Amite River floodplain and designated floodway, but the corridor also crosses two (2), Zone "A" areas associated with Clayton Bayou.

Definitions of the FEMA flood zone designations[8] found in the project study area are as follows:

> "Flood Zones AE" and "A" are high risk areas in which mandatory flood insurance is required with a 1% annual chance of flooding (100-year or "base" flood) and a 26% chance of flooding over the life of a 30-year mortgage.
>
> "Flood Zone X (Shaded)" is a moderate flood hazard area in the 500-year floodplain, and areas of lesser hazards such as areas protected by levees from a 100-year flood, shallow flooding areas with average depths of less than one foot, or drainage areas less than 1 square mile.
>
> "Flood Zone X (Unshaded)" is an area of minimal flood hazard, usually depicted as above the 500-year flood level (0.2% chance of flooding in any given year).
>
> "Floodway Zone" constitutes the channel of a river (in this case, the Amite River) or other watercourse and the adjacent land areas that must be reserved in order to discharge the "base flood" without cumulatively increasing the water elevation more than a designated height.[9]

---

[6] *http://www.floods.org/index.asp?menuID+651&firstlevelmenuID=187&siteID=1.*
[7] *Daniel Leone, Engineering Manager for Central, July 2012.*
[8] *https://msc.fema.gov/webapp/wcs/stores/servlet/info?storeId=10001&catalogId=1001&la...*
[9] *http://www.nh.gov/oep/programs/floodplainmangement/docu.*

Federal, state and local permits may be required if it is determined that *Hooper Road Extension and Widening* should proceed since the proposed project involves construction in a floodway and other designated flood hazard areas.

EXISTING NATURAL ENVIRONMENT

SCENIC RIVERS

The Louisiana Natural and Scenic Streams System of the Louisiana Department of Wildlife and Fisheries (LDWF) does not list any wild and scenic rivers within the project area. Additionally, the United States Geological Survey Maps do not denote any wild or scenic rivers.

WETLANDS RESERVE PROGRAM

There are no properties enrolled in the Wetland Reserve (WRP) program in the project area (Willis per. com. 2013).

WETLANDS

Following the criteria (wetland plants, hydric soils and wetland hydrology) and methodology outlined in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manuel: Atlantic and Gulf Coastal Plain Region* (Ver. 2.0) (Environmental Laboratory 2010) wetlands were identified and mapped in the project footprint for the northern alignment Alternatives 1-A, 1-B and 1-C. A biologist with Coastal Environments, Inc. (CEI) conducted the field survey on April 9, 12, 15 and 18, 2013, using a geographical positioning system (GPS) to record sample plot locations and other wetland boundary information. Other sources of information reviewed as part of the wetland determination included parish soil survey data (US Department of Agriculture, Natural Resources Conservation Service [USDA, NRCS] 2012), US Fish and Wildlife Service [USFWS] wetland inventory maps, USGS maps (*Comite, LA and Watson,* LA), true color aerial imagery mosaic of East Baton Rouge and Livingston Parishes (USDA 2010) and black and white aerial photo mosaic of the project area (LADOTD 2010). With the addition of a southern alignment Alternative 2, a second field survey was conducted on August 26-27 and September 4-6, 2013 to map wetlands and the data for both surveys were incorporated into a wetland findings report (Varnado et al. 2013).

Along the northern Alternative 1 alignment, the project segment between Greenwell Springs Road in East Baton Rouge Parish and Bend Road in Livingston Parish is largely undeveloped bottomland forest. Dominant vegetation includes baldcypress (*Taxodium distichum*), American elm (*Ulmus americana*), water oak (*Quercus nigra*), spruce pine (*Pinus glabra*), sweetgum (*Liquidambar styraciflua),* Chinese privet (*Ligustrum sinense*), yaupon (*Ilex vomitoria*), dwarf palmetto (*Sabal minor*) and greenbrier (*Smilax spp.*).

Open pasturelands on the eastern portion of the proposed project area are dominated by broomsedge bluestem (*Andropogon virginicus*), bahiagrass (*Paspalum notatum*), Johnson grass (*Sorghum halpense*), Vasey's grass (*Paspalum urvillei*), Brazilian vervain (*Verbena brasiliensis*), and Canada goldenrod (*Solidago altissima*).

The forested area at the eastern end of the project area is mostly a bottomland hardwood forest, with a vegetation community dominated by water oak, spruce pine, sweetgum, American elm, dwarf palmetto, and greenbriars.

The southern alignment for Alternative 2 shares the same corridor as the northern alignment until it curves south from Hooper Road about 3000 feet west of Greenwell Springs Road and then continues east to cross Greenwell Springs Road and intersect with LA 16. Habitats in Alternative 2 are largely composed of bottomland forest, cypress-tupelo swamp and residential development. Vegetation species in these bottomland forest areas are comparable to their counterparts in the northern alignments.

There was some swamp associated with the Amite River flood plain along the southern alignment. Dominant tree species included baldcypress, water tupelo (*Nyssa aquatica*) and Drummond red maple (*Acer rubrum var. drummondii*). Understory and midstory vegetation was sparse where present and included young overstory species in addition to planertree (*Planera aquatica*), sensitive fern (*Onoclea sensibilis*) and trumpet creeper (*Campsis radicans*).

Residential developments were located throughout the southern alignment, generally near roads. These areas were vegetated with a mixture of native and ornamental trees, shrubs and sod-forming grasses including water oak, Chinese chestnut (*Castanea mollissima*), loblolly pine (*Pinus taeda*), spruce pine, sweetgum, sugarberry (*Celtis laevigata*), yaupon, azalea (*Rhododendron spp.*), crape myrtle (*Lagerstroemia indica*), St Augustine grass (*Stenotaphrum secundatum*), bahiagrass, Bermudagrass (*Cynodon dactylon*), dallisgrass (*Paspalum dilatatum*) and thin paspalum (*Paspalum setaceum*).

A total of six separate wetland areas were identified within the proposed project footprint for the northern alignment. A total of seven separate wetland areas were identified within the proposed project footprint for Alternative 2. The total area of wetlands and waterbodies delineated for each Alternative is shown below in **Table III-8**. All of the wetlands are classified as palustrine forested (PFO) wetlands.

Table III-8 - Summary of Potential Impacts by Wetland and Waterbody Type

Route	Wetland Impacts	Waterbody Impacts	
Alternatives	Wetlands (ac)	Streams and Natural Waterbodies (ac)	Ponds (man-made)(ac)
Alternative 1-A	17.563	3.862	1.634
Alternative 1-B	25.639	3.848	1.135
Alternative 1-C	32.234	3.892	1.135
Alternative 2	25.375	4.232	0.752

WATER RESOURCES (SOLE SOURCE AQUIFERS)

According to the U. S. Environmental Protection Agency (EPA), the project area is located on the Southern Hills Aquifer system, which is a sole source aquifer by that agency (Bechdol 2011 and 2013).

SOILS / PRIME FARMLANDS

Soils

Soil surveys conducted for East Baton Rouge[10] and Livingston[11] Parishes respectively by the Unites States Department of Agriculture (USDA) Soil Conservation Service in cooperation with the Louisiana Agricultural Experiment Station were analyzed to derive the types of farmland and soil. The description of soils begins on the western portion of the Hooper Road project study area in East Baton Rouge and extends to the eastern terminus in Livingston Parish.

Prime farmland is recognized by the USDA in soil surveys to acknowledge land suitability for cultivation, pasture, and woodland but not for urban and built-up land or water areas. Conversion of farmlands to urban and industrial uses in some portions of the project study area has put pressure on the development of marginal lands for agricultural purposes, which are generally more erodible, droughty, less productive and not easily cultivated. The suitability of prime farmlands is also described for the project study area.

Soils in the project study area contain 7 soil types:

- Deerford-Verdun
- Olivier-Calhoun-Loring
- Cascilla-Ochlockonee
- Calhoun-Zachary-Frost
- Freeland-Loring-Olivier
- Ouachita-Ochlockonee-Guyton
- Gilbert-Satsuma

Deerford-Verdun are level or nearly level, somewhat poorly drained, loamy soils in pasture and woodland. Most of the soils have fairly low available water capacity and are very slowly permeable. These soils are high in content of sodium and low in nitrogen, phosphorous and potassium. The high sodium restricts the growth of roots and causes the subsoil to remain dry even in wet periods. These soils are better suited to pasture and hay than to most cultivated crops.

[10] *http://soildata.mart.nrcs.usda.gov/manuscripts/LA033/0/EBR.pdf*
[11] *http://soilsdatamart.nrcs.usda/manuscripts/LA063/0/livingston.pdf*

Olivier-Calhoun-Loring are dominantly level, poorly drained loamy soils on broad flats and in slight depressions well suited for pasture and hay crops. The majority of this soil type is situated in forest with hardwoods and pines, most wooded areas are pastured.

Cascilla-Ochlockonee are level or nearly level, well-drained loamy soils on flood plains of the Amite River and its tributaries subject to overflow. The soil is low in nitrogen, phosphorus and potassium. It is moderately permeable and strongly acid. Most of these soils are in mixed hardwoods and pines. Some small fields are planted to cultivated crops and winter pasture containing ryegrass and oats. These crops are likely to be damaged by floods. Summer pasture, woodland, wildlife and recreation are suitable uses.

Calhoun-Zachary-Frost are level or nearly level, poorly drained, silt loamy surface soils on broad flats and slight depressions with a silty clay loamy subsoil. The water table is seasonably high and runoff is very slow. These soils are well suited to pasture and hay crops but are not well suited to cultivated crops. Areas along drainage ways are flooded frequently and not suited for cultivation but are suitable for woodland and volunteer grass pasture.

Freeland-Loring-Olivier are level to sloping, moderately well drained loamy soils on natural levees above the floodplains of the Amite River. The soils are smooth slopes are subject to severe erosion and those on escarpments are subject to severe erosion. These soils are used for the production of timber and beef cattle and are suitable for cultivated crops and pasture plants if erosion is controlled.

Ouachita-Ochlockonee-Guyton are gently sloping and level, well drained and poorly drained soils that have a loamy surface layer and subsoil and loamy and sandy underlying material on the floodplain of the Amite River and its major tributaries. The soils are not suited for urban or intensive recreational uses due to wetness, low fertility and the hazard of flooding. The soils are moderately well suited for woodland and well suited for wildlife habitat.

Gilbert-Satsuma are level and gently sloping, poorly drained and somewhat poorly drained loamy soils. These soils are poorly suited for urban and intense recreational uses due to wetness, slow or very slow permeability, moderate shrink-swell potential, low strength on sites for roads, erosion and hazard of flooding. These soils are moderately well suited for woodland and pasture.

Prime Farmland

The construction areas in the project study corridor have been designated as within urban areas by the National Resources Conservation Service, and are therefore exempt from the rules and regulations of the Farmland Protection Policy Act (Paul 2011).

FISH AND WILDLIFE CRITICAL HABITAT/ THREATENED AND ENDANGERED SPECIES

Two (2) federally listed threatened species were identified as possibly being affected by the proposed project in East Baton Rouge and/or Livingston Parishes: 1) Alabama (= inflated) Heelsplitter Mussel (*Potamilus inflatus*) and 2) Red-Cockaded Woodpecker (*Picoides borealis*) (Rieck 2011, Bass 2011). During the wetland delineation field investigations, it was determined that the area did not contain suitable habitat for Red-Cockaded Woodpeckers nor were they observed.

Through coordination with U.S. Fish and Wildlife Service (USFWS) and Louisiana Department of Wildlife and Fisheries, Natural Heritage Program (LDWF-NHP) prior to field surveys of the proposed bridge crossing of the Amite River for the northern and southern alignments, a survey protocol for the Alabama (= inflated) Heelsplitter was developed. Details of this protocol, survey methodology and results are included in a Biological Assessment prepared for review by the USFWS (Walker et al. 2013). The field survey of the Amite River, in the vicinity of the proposed bridge for Alternative Alignments 1-A, 1-B and 1-C, located one individual of four species of mussels: 1) Southern Pocketbook (*Lampsilis ornata*), 2) Mississippi Pigtoe (*Pleurobema beadleanum*), 3) Purple Pimpleback (*Quadrula refulgens*) and 4) Pistolgrip (*Tritogonia verrucosa*), but no Alabama (=inflated) Heelsplitter (*Potamilus inflatus*).

The field survey for the southern alignment Alternative 2 located 17 mussels representing at least seven species, but possibly eight species: 1) Bleufer (*Potamilus purpureus*), 2) Mississippi Pigtoe (*Pleurobema beadleanum*), 3) Pistolgrip (*Tritogonia verrucosa*), 4) Purple Pimpleback (*Quadrula refulgens*), 5) Southern Pocketbook (*Lampsilis ornata*), 6) Texas Liliput (*Toxolasma texasensis*), 7) Yellow Sandshell (*Lampsilis teres*) and 8) Unknown (*Lampsilis sp*.).

Two species of state concern were identified by the LDWF, NHP (Bass 2011) as possibly occurring in the project area: 1) Southern Rainbow (*Villosa vibex*) and 2) Southern Pocketbook (*Lampsilis ornata*). The field survey for the Amite River at the northern alignment bridge crossing located one Southern Pocketbook downstream of the proposed bridge crossing and outside of the proposed ROW. The field survey for the southern alignment also located one Southern Pocketbook downstream of the proposed bridge crossing and outside of the proposed ROW.

COASTAL ZONE STATUS

The Louisiana Department of Natural Resources (DNR) is charged with the development of local coastal zone management programs in the 20 existing coastal parishes. While East Baton Rouge Parish is not considered a coastal parish and therefore does not have a coastal management program, Livingston Parish is considered a Coastal Parish. The project corridor is not within the Parish's Coastal Zone boundary, however.

CHAPTER IV

ENVIRONMENTAL IMPACTS OF THE CONSIDERED ALTERNATIVES AND SELECTION OF PREFERRED ALTERNATIVE

In this chapter, the impacts of the considered alternatives (No Build Alternative and the Build Alternatives) are assessed relative to the evaluation categories of transportation and traffic, human environment, and the natural environment. Impact assessment categories include:

IMPACTS ON TRANSPORTATION AND TRAFFIC

IMPACTS ON THE HUMAN ENVIRONMENT

- Displacements/Relocations
- Environmental Justice
- Neighborhood / Community Cohesion
- Land Use and Zoning
- Access to Community Facilities and Services
- Impacts to Parks and Recreation Facilities
- Historic/Cultural Resources
- Visual/Aesthetic Impacts
- Air Quality Impacts
- Traffic Noise and Impacts
- Construction Period Impacts
- Hazardous and Solid Waste Sites

IMPACTS ON THE NATURAL ENVIRONMENT

- Vegetation
- Wetlands
- Natural and Scenic Rivers
- Threatened and Endangered Species
- Hydrology, Floodplains & Flooding
- Water Quality
- Prime Farmland and Soils

The chapter then provides a comparative analysis between the four alternatives based on their ability to meet the project Purpose and Need as well as the impacts of each, and describes the selection of the Preferred Alternative.

IMPACTS ON TRANSPORTATION AND TRAFFIC

TRAFFIC IMPACTS

Traffic analysis on the project began with the *Hooper Road Extension Stage 0 Feasibility Study*, wherein the base Alignments A and B were determined to be feasible. In the Environmental Assessment process, the detailed assessment included further traffic analysis of Alternative 2, as well as a cursory safety evaluation and comparison of all alternatives, including the No Build Alternative.

All Build Alternatives included modifications to the traffic signal at Hooper Road and LA 3034 (Sullivan Road). **Alternative 1** includes conversion of Hooper Road at LA 64 (Greenwell Springs Road) to a multi-lane roundabout, while **Alternative 2** is proposed to curve to the southeast just east of Amber Lakes Drive intersecting Greenwell Springs Road with a new roundabout approximately 0.50 miles south of the existing intersection of Hooper Road at Greenwell Springs Road. **Alternative terminus 1-A** included the Hooper Road Alignment A with a multi-lane roundabout at the T-intersection of Hooper Road Extension and LA 16. **Alternative terminus 1-B** included the Hooper Road Alignment B with multi-lane roundabouts at the intersections of Hooper Road Extension at LA 16 and LA 1019/LA3285. **Alternative terminus 1-C** included the Hooper Road Alignment B with a grade separated interchange at the intersection of Hooper Road Extension at LA 16 and a multi-lane roundabout at the intersection of LA 1019/LA3285. **Alternative 2** includes a new alignment south of the A and B alignments that ties into LA 16 at Cecil Drive with a roundabout.

No Build Alternative analysis from the *Stage 0 Feasibility Report* dated August 2011 indicated that improvements to the intersection of LA 1019 at LA 3285 will be required regardless of whether or not this project moves forward. However, **Alternative terminus 1-A** does not connect to this intersection. Therefore, if **Alternative 1-A** is selected for construction a separate project would be required for improvements to this intersection.

Improvements were also not recommended at the intersection of LA 16 at LA 1019 as a separate feasibility study was being performed for this intersection by others.

The alternatives were evaluated in terms of safety benefits, and a comparative analysis of all alternatives was completed, which examined each alterntive's impact on area roadways needing capacity improvements, area-wide vehicle miles traveled (VMT), vehicle hours traveled (VHT) and vehicle hours of delay (VHD), and impacts to existing river crossings.

Safety Benefits

The potential safety benefits for each alternative were evaluated based solely on the proposed geometry and intersection control. Actual crash data was not analyzed as part of

this study. Where applicable crash modification factors (CMF) were identified. According to the American Association of State Highway and Transportation Officials (AASHTO) *Highway Safety Manual*, 1st Edition (HSM) a CMF is a numerical value that estimates how effective a given safety countermeasure or set of countermeasures will be in reducing crashes at a specific location.

Roadway Segments

The Highway Safety Manual (HSM) does not provide data on the conversion from a two lane undivided section to a four lane divided section. However, it does indicate that providing a raised median has been shown to reduce all types of crashes on two lane and rural four lane roadways. It is expected that rear end crashes involving motorists turning from Hooper Road would be reduced as vehicles will now be able to use the opposite lane for passing vehicles that are slowing down to turn. Right angle crashes involving motorists turning on to Hooper Road would be reduced as the majority of the side streets and driveways will now be right-in/right-out and larger gaps in traffic are expected. Potential head on collisions would also be expected to decrease as there will be a median separating the travel lanes. Therefore, the widening of a roadway from a two lane undivided section to a four lane divided section is expected to significantly reduce the frequency and severity of crashes; however, increased speeds are expected as vehicles will be able to pass slower moving traffic.

Intersections

Roundabouts have been shown to significantly decrease the number and severity of collisions when compared to traditional intersections. Roundabouts are designed for low speed operation and virtually eliminate the possibility of right angle (t-bone) crashes. According to the HSM roundabouts:

> *"reduce traffic speeds as a result of their small diameters, deflection angle on entry, and circular configuration. Roundabouts also change conflict points from crossing conflicts to merging conflicts. Their circular configuration requires vehicles to circulate in a counterclockwise direction. The reduced speeds and conflict points contribute to the crash reductions compared signalized intersection."*

Table IV-1, on the following page, presents the CMFs for conversion of signalized and unsignalized intersections to roundabouts as identified in the HSM.

Table IV-1.
CMFs for Conversion of Traditional Intersections Into a Roundabout

Setting (Intersection Type)	Crash Type (Severity)	CMF	Standard Error
Converting Signalized Intersection into a Roundabout			
One or Two Lanes	All Types (All Severities)	0.52	0.06
	All Types (Injury)	0.22	0.07
Converting Unsignalized Intersection into a Roundabout			
One or Two Lanes	All Types (All Severities)	0.56	0.05
	All Types (Injury)	0.18	0.04

Based on **Table IV-1**, when converting to a roundabout, the total number of predicted crashes is expected to be 52% of the base condition crashes for a traditional signalized intersection and 56% for a traditional two-way stop control intersection. Also, the number of predicted crashes involving injury is expected to be 22% of the base condition injury crashes for a traditional signalized intersection and 18% for a traditional two-way stop controlled intersection.

The grade separated intersection of Hooper Extension at LA 16 is also expected to reduce the number of crashes when compared to a traditional intersection as it eliminates crossing movements. It does result in multiple merge and diverge areas at the Hooper Extension entrance and exit ramps; however, the majority of crashes at these locations would be expected to be side swipes. Side swipe crashes are typically less severe than right angle or rear end crashes.

The HSM does not provide a CMF for providing additional through lanes at a signalized intersection as is being proposed at Hooper Road and Sullivan Road.

Comparative Analysis of Alternatives

The transportation project needs with and without the proposed Hooper Extension were compared in the surrounding area. Volume to Capacity Ratio output (Daily_Flow_SCE) from the Regional Transportation Model were provided by LADOTD for each alternative and are included in the Appendix of the stand-alone *Traffic Study Report*. The volume to capacity ratios for each Build Alternative were compared to the No Build results. The No Build is defined as without the Hooper Extension, but with the improvement projects included in the Baton Rouge Transportation Plan (TIP). These projects are separated into two tiers, Tier I planned for Fiscal Years 2013-2017 and Tier II planned for Fiscal Years

2018-2027. The improvement projects within the designated area included in the TIP are as follows.

Tier I

- Widening LA 408 (Hooper Road) between Blackwater Bayou and Sullivan Road from two (2) to four (4) lanes.
- Widening Sullivan Road between Hooper Road and Frenchtown Road from two (2) to four (4) lanes.

Tier II

- Widening LA 37 (Greenwell Springs Road) between Sullivan Road and Magnolia Bridge Road from four (4) to five (5) lanes.

2032 Regional Transportation Model Build data for the following three Hooper extension alignments were also provided:

- Northern Alignment 1 (Terminates at LA 16)
- Northern Alignment 2 (Terminates at LA 3285/LA 1019)
- Southern Alignment

Requiring additional capacity was defined as having a v/c ratio greater than 1.00. The data was compared to determine which roadway segments would need additional capacity by the year 2032 based on the model v/c data for each alternative.

Roadways Needing Capacity Improvements

Table IV-2 on the following page presents a list of potential capacity projects not included in the TIP that would be required (indicated by an "X") for each alternative based a v/c ratio greater than 1.0 in model data. For each segment, the existing lane configuration, lane configuration included in the 2032 Regional Transportation Model and the length of the roadway segment (as estimated using Google Earth ©) is listed. The potential length of roadway needing capacity for each alternative was estimated.

Table IV-2
Regional Transportation Model v/c Ratio >1.0 indicating the need for Capacity

Roadway Segment	Existing Number of Lanes	Approx. Length (Miles)	No Build	Northern Alignment 1	Northern Alignment 2	Southern Alignment
LA 37 (Greenwell Springs Rd) *btw. Flannery Rd. and Frenchtown Rd.*	4	1.19	X	X	X	X
LA 946 (Joor Rd) *btw. Sullivan Rd. and Denham Rd.*	2	0.95	X	X	X	X
LA 3034 (Wax Rd.) *btw. Sullivan Rd. and Brookside Dr.*	2	1.3	X			
LA 37/64 (Greenwell Springs Rd.) *btw. Hooper Rd. and Denham Rd*	2	1.2	X	X		
LA 37/64 (Greenwell Springs Rd.) *btw. Hooper Rd. and JL Fairchild Rd.*	2	0.35			X	
LA 37/64 (Greenwell Springs Rd.) *btw. Denham Rd. and LA 409*	2	2.08		X		
LA 1019 *btw. LA 16 and Allen Rd.*	2	1.24	X	X		X
LA 1019 *btw. Magnolia Bridge Rd. and LA 16*	2	3.05	X			
LA 1019 *btw. LA 16 and Melrose Ave*	2	1.6			X	
LA 16 *btw. Hooper Ext. and LA 3285*	2	0.85		X		
Potential Capacity Needs (miles of roadway)*			8.93	6.66	4.09	3.3

**Roadway segment length. Not reflective of number of lanes needed*

Table IV-2 indicates that, based on the results of the Regional Transportation Model, each of the Build Alternatives are expected to have less length of roadway requiring additional capacity than the No Build conditions.

Area-Wide VMT, VHT, and VHD

The 2037 Regional Transportation Model was also evaluated to determine the area-wide vehicle miles traveled (VMT), vehicle hours traveled (VHT) and vehicle hours of delay (VHD). This data was provided by CRPC and is presented in **Table IV-3**:

Table IV-3
Regional Transportation Model Travel Results

Parameter	No Build	Northern Alignment 1	Northern Alignment 2	Southern Alignment
VMT	27,177,585	27,186,695	27,198,603	27,181,042
VHT	851,601	849,996	849,998	849,685
VHD	213,088	211,511	211,296	211,267

Table IV-3 indicates that, based on the results of the Regional Transportation Model, an insignificant change in VMT, VHT and VHD is expected between the No Build alternative and the Build alternatives.

Existing River Crossings

The v/c ratios indicated that the v/c on the existing Magnolia Bridge, US 190 and I-12 Amite River crossings will vary based on the Hooper Extension alignments. **Table IV-4** indicates the V/C ratios reported by the Regional Transportation Model.

Table IV-4
Amite River Crossing V/C Ratios

River Crossing:	No Build	Northern Alignment 1	Northern Alignment 2	Southern Alignment
US 190	>1.00	0.80 to 1.00	>1.00	>1.00
Interstate 12	>1.00	>1.00	0.80 to 1.00	0.80 to 1.00
Magnolia Bridge	0.80 to 1.00	0.60 to 0.80	0.60 to 0.80	0.60 to 0.80

Table IV-4 indicates that, based on the results of the Regional Transportation Model, in comparison to the No Build Alterntive, the V/C ratio on the US 190 crossing is projected to be reduced under Northern Alignment 1, the V/C ratio on the Interstate 12 crossing is projected to be reduced under Northern Alignment 2 and the Southern Alignment, and the V/C ratio on the Magnolia Bridge crossing is projected to be reduced under all three build scenarios.

POTENTIAL TRUCK TRAFFIC IMPACTS

No Build Alternative

The No Build Alternative will maintain the status quo relative to truck traffic.

Build Alternatives

The Build Alternatives are likely to reduce truck traffic on several other state highways as it will provide a new route across the Amite River linking East Baton Rouge and Livingston Parishes. As was noted in the *Preliminary Toll Road Study*, truck traffic is

approximately 10% of the traffic on Magnolia Bridge. Not only is truck traffic expected to decrease proportionately along with other traffic at this crossing, it is expected that truck traffic taking the new Hooper Road route will lessen truck traffic on other linking routes. Most importantly, it should take truck traffic off of residential, less developed two lane highways, such as LA 1019 (between Magnolia Beach Road and LA 16), Greenwell Springs Road (between Hooper Road and Magnolia Bridge Road), and Wax Road/Magnolia Bridge Road (between Greenwell Springs Road and Sullivan Road).

POTENTIAL RAIL AND TRANSIT IMPACTS

No Build Alternative

No adverse impacts in the Hooper Road project corridor are anticipated in the No Build Alternative.

Build Alternatives

No rail or transit lines are present in the Hooper Road project corridor. Consequently, none of the build alternatives will have a detrimental impact on these services. The project improvements may increase opportunities for transit service in the area by providing a wider Hooper Road and a connection to Livingston Parish.

POTENTIAL IMPACTS TO BICYCLE AND PEDESTRIAN FACILITIES

No Build Alternative

The Hooper Road project area currently does not contain bicycle and pedestrian access. No adverse impacts are anticipated with the No Build Alternative.

Build Alternatives

The build alternatives for the Hooper Road project corridor will have no adverse impacts on bicycle and pedestrian access.

In July of 2010, the Louisiana Department of Transportation and Development enacted a *Complete Streets Policy*. In short, the Complete Streets Policy addresses the needs of pedestrians and bicyclists, and calls for the LADOTD to consider and include (where appropriate) sidewalks and bicycle accommodations along new and reconstruction roadway projects.

The Complete Streets Policy was first addressed and considered during the *Stage 0 Feasibility Study*, and later during *this Stage 1 Environmental Assessment* process during the development of the Build Alternatives. At this stage of project development, no

specific facilities are shown or are included in cost estimates. The following items provide the reasoning behind this decision:

- As written in the policy, LADOTD will provide bicycle accommodations appropriate to the context of the roadway. As the roadway portion of this project features a divided highway (and bridge) with 8 foot paved outside shoulders running through a predominantly rural area, it is anticipated that this would suffice for bicycle accommodations.
- The extension is designed to be a limited access facility between Greenwell Springs Road and LA 16. As such, it may not be appropriate to add specific pedestrian or bicycle facilities to the extension portion.
- Hooper Road in the widening segment will match the current plans for the widening of Hooper Road south of Sullivan Road (being completed under the Green Light Program) and will have 5 foot wide sidewalks on both sides of the roadway. However, while the Green Light widening segments of Hooper Road feature curbs, the LADOTD segment between Sullivan and Greenwell Springs will have 8 foot paved outside shoulders, which as noted in the first bullet above is suitable for bicycle accommodations.
- The policy notes that it is generally inappropriate to provide bicycle and pedestrian facilities where it would be excessively disproportionate to the need or probable use, with excessively disproportionate being defined as exceeding twenty percent (20%) of the cost of the project.
- The phased implementation plan for Alternative 1 may affect the provision of a dedicated bicycle/pedestrian facilities on the bridge portion of the project. Recent bridges built in areas such as the Mississippi Gulf Coast have featured a shared bicycle/pedestrian lane separated from vehicular traffic and shoulders by a concrete barrier. These lanes are typically 12 feet in width – the same width as one lane of traffic. If such a lane were to be built as part of a four-lane parallel bridge, the cost would not exceed the 20% threshold, but if built as part of the initial phase of implementation—as part of a two-lane bridge-- it would likely exceed the 20% threshold of the bridge portion of the project.

IMPACTS ON THE HUMAN ENVIRONMENT

DISPLACEMENTS/RELOCATIONS

Legal Requirements

Various federal statutes have been enacted to establish a uniform policy for the fair and equitable treatment of persons displaced, and from whom land is acquired as a result of programs designed and funded for the benefit of the public as a whole. Some of the applicable laws that guide government actions for acquisitions, displacements and relocations are:

- 49 CFR Part 24, Department of Transportation implementing regulations for: "The Uniform Relocation Assistance and Real Property Acquisitions Policies Act of 1970," as amended.
- National Environmental Policy Act of 1969 (NEPA)

These laws provide for a process that is fair and require practical and financial assistance in helping individuals and businesses transition into a comparable situation. Any private property acquisition required for this project would be in compliance with the identified laws and statutes.

For housing units, these laws require that replacement housing must be "decent, safe and sanitary" and must be functionally equivalent to the number of rooms, living space, location, and general improvements of the displaced units. Replacement dwellings must also meet all of the minimum housing requirements established by federal regulations and conform to occupancy codes.

Relocation benefits may also be available for businesses, farms, and non-profit organizations. Payment may be made for:

- Moving costs
- Tangible personal property loss as a result of relocation or discontinuance of an operation
- Re-establishment expenses
- Costs incurred in identifying a replacement site

Businesses, farms or non-profit organizations may be eligible for fixed payments in lieu of moving and reestablishment costs.

No Build Alternative

Under the No Build alternative, existing conditions would be maintained. The No Build Alternative would not require any displacements or relocations and, thus, would not

result in any direct or indirect impact(s) to the study area. In addition, no property acquisitions would be required with the No Build Alternative.

Build Alternatives

As the Build Alternatives share a common section, and as the project for cost purposes has been divided into phases, for ease in presentation the projected displacements and relocations are divided into five parts: (1) Common Section (Sullivan Road to Greenwell Springs Road including the roundabout); (2) Alternative 1-A, (3) Alternative 1-B; (4) Alternative 1-C, and (5) Alternative 2.

Common Section (Sullivan Road to Greenwell Springs Road, including roundabout)

This section of the proposed project will displace an estimated nine (9) families with an average number of four (4) members each. Indications are that all displaced families are of low-medium to medium income range and it does not appear that any of those to be displaced are of a minority race. It is believed that all of the families anticipated to be displaced are owner-occupants except for one. Estimated values of the residences range from $78,000 to $295,000 with an average being $171,000. One of the families occupies a mobile home. The remainder of the residences are of either frame or brick construction.

This section of the proposed project will be along the existing alignment of Route LA 408 and there should be no divisive or disruptive effect on the community.

There is limited replacement housing immediately adjacent to the project area; however there is more than adequate housing available within an approximate 15 minutes driving distance. A recent survey of the area within about 15 minutes of the project revealed more than 20 homes available in the $75,000 to $230,000 range. Of these, three are in the $75,000 to $100,000 range, seven are in the $100,000 to $150,000 range, nine are in the $150,000 to $200,000 range and the remainder are above $200,000.

No special or unusual conditions have been identified. No discussions have been held with local officials or community groups regarding potential displacements. It is anticipated that there is adequate housing available for the potential displaced occupants and in some cases there may be adequate remainders on which they may choose to relocate.

No unusual problems in providing replacement housing are anticipated under normal procedures with the possible exception of some Housing of Last Resort Payments. In addition, there are no facilities that qualify for functional replacement.

Alternative 1-A Terminus

This section of the proposed project is an extension of the existing Hooper Road (LA 408) from its intersection with Greenwell Springs Road to a proposed roundabout at LA 16.

This section of the proposed project will displace an estimated sixteen (16) businesses from a strip shopping center. Included in the 16 businesses are six restaurants, a dry cleaner, several nail salons, a martial arts center, two sporting goods stores, a fitness center, a physical therapy operation and two offices. It is anticipated that many of the businesses will desire to relocate in close proximity to their current location. Their current location is at the beginning of a heavy commercial stretch of LA 16 and in reviewing the area there are several sites available for rent and sites where potential replacements could be constructed. Several of the businesses could be in the process of shutting down as during an exterior inspection of the property, they were not open in the middle of a week day.

No special or unusual conditions have been identified and it appears the businesses should be able to relocate without undue hardship.

Alternative 1-B Terminus

This section of the proposed project is an extension of the existing Hooper Road (LA 408) from its intersection with Greenwell Springs Road past LA 16 (with a roundabout intersection) to a proposed roundabout at the intersection of LA 1019 and LA 3285.

This section of the proposed project will displace an estimated five (5) families with an average number of four (4) members each. Indications are that all displaced families are of low-medium to medium income range and it does not appear that any of those to be displaced are of a minority race. It is believed that all of the families anticipated to be displaced are owner-occupants. Estimated values of the residences range from $83,000 to $170,000 with the average being $136,000. The residences are of either frame or brick construction.

There is replacement housing immediately adjacent to the project area. A recent survey of the area near the project revealed more than 20 homes available in the $80,000 to $170,000 range.

No special or unusual conditions have been identified. No discussions have been held with local officials or community groups regarding potential displacements. It is anticipated that there is adequate housing available for the potential displaced occupants and in some cases there may be adequate remainders on which they may choose to relocate.

In addition, it is estimated that there are 23 businesses to be relocated. Included in the 23 businesses are six restaurants, a dry cleaner, several nail salons, a martial arts center, two sporting goods stores, a fitness center, a physical therapy operation, two offices, a snow cone stand, an auto parts store, a community center, an electric shop, a hairdresser, a trucking company, and a home décor shop. It is anticipated that many of the businesses will desire to relocate in close proximity to their current location. Their current location is at or adjacent to the beginning of a heavy commercial stretch of LA 16 and in reviewing the area there are several sites available for rent and sites where potential replacements could be constructed. Several of the businesses could be in the process of shutting down or no longer in business, as during an exterior inspection of the property, they were not open in the middle of a week day.

No unusual problems in providing in relocating the businesses or providing replacement housing under normal procedures is anticipated, with the possible exception of some Housing of Last Resort Payments. In addition, there are no facilities that qualify for functional replacement.

Alternative 1-C Terminus

This section of the proposed project is an extension of the existing Hooper Road (LA 408) from its intersection with Greenwell Springs Road past LA 16 (via an overpass interchange) to a proposed roundabout at the intersection of LA 1019 and LA 3285.

This section of the proposed project will displace an estimated two (2) families with an average number of four (4) members each. Indications are that both displaced families are of low-medium to medium income range and it does not appear that any of those to be displaced are of a minority race. It is believed that all of the families anticipated to be displaced are owner-occupants. Estimated values of the residences range from $83,000 to $150,000, with an estimated average being $116,500. The residences are of either frame or brick construction.

There is replacement housing immediately adjacent to the project area. A recent survey of the area near the project revealed more than 20 homes available in the $80,000 to $170,000 range.

No special or unusual conditions have been identified. No discussions have been held with local officials or community groups regarding potential displacements. It is anticipated that there is adequate housing available for the potential displaced occupants.

In addition, it is estimated that there are 23 businesses to be relocated. Included in the 23 businesses are six restaurants, a dry cleaner, several nail salons, a martial arts center, two sporting goods stores, a fitness center, a physical therapy operation, two offices, a snow cone stand, an auto parts store, a community center, an electric shop, a hairdresser, a trucking company and a home décor shop. It is anticipated that many of the businesses will desire to relocate in close proximity to their current location. Their current location

is at or adjacent to the beginning of a heavy commercial stretch of LA 16 and in reviewing the area there are several sites available for rent and sites where potential replacements could be constructed. Several of the businesses could be in the process of shutting down as during an exterior inspection of the property, they were not open in the middle of a week day.

No unusual problems in providing in relocating the businesses or providing replacement housing under normal procedures is anticipated, with the possible exception of some Housing of Last Resort Payments. In addition, there are no facilities that qualify for functional replacement.

Alternative 2

This section involves a new alignment from Amber Lakes Drive to a proposed roundabout on LA 16 at Cecil Drive. This section will include a roundabout on LA 37/ Greenwell Springs Road, as well as at the intersection of Cecil Drive and LA 16.

This section of the proposed project will displace an estimated eleven (11) businesses and one non-profit house of worship. Included in the 11 businesses are one pizza shop restaurant, a donut shop, a hair salon, a martial arts school, a computer servicing company, a commercial/industrial HVAC refurbishing company, a retail children's clothing and novelty store, driving school, a justice court, a lawn mower sales and service operation, and a storage unit facility. It is anticipated that many of the businesses will desire to relocate in close proximity to their current location. Their current location is a heavy commercial stretch of LA 16 and in reviewing the area there are several sites available for rent and sites where potential replacements could be constructed. There is also one (1) off-site Landlord Re-establishment Relocation eligibility, that being the Apartment Complex Owner at 8064 Cecil Drive.

In addition, it is estimated that there are (22) families displaced with an average number of four (4) members each. Indications are that the displaced families are low-medium to medium income range and it does not appear that any of those displaced are of a minority race. There is a mixture of owner (approximately 13) and tenant (approximately 9) occupied dwellings.

There are two (2) farm residential owners, one (1) mobile home owner, ten (10) single family residence owners. There are two (2) four (4) unit apartment buildings, and one (1) additional apartment found within one of the of the gentlemen farms. Estimated values of residences range from $80,000 to $250,000. The residences are of either wood frame or brick veneer construction.

There are also an estimated forty (40) personal property displacements, all being tenants to the storage unit facility.

No special or unusual conditions have been identified and it appears the businesses and residences should be able to relocate without undue hardship.

Table IV-5, below, provides a summary of the number and cost of relocations by the common section and each alternative terminus.

Table IV-5
Relocation Summary

	Common Section	Alternative 1-A Terminus	Alternative 1-B Terminus	Alternative 1-C Terminus	Alternative 2 Terminus
Number of Residential Relocations	9	0	5	2	22
Number of Business Relocations	0	16	23	23	52 (*including one (1) church and 40 personal property displacements at a storage unit facility)*
Cost of Relocations*	$234,500	$481,500	$874,000	$684,000	$816,000
		Alternative 1-A	Alternative 1-B	Alternative 1-C	Alternative 2
Total Relocation Cost by Alternative:	N/A	**$716,000**	**$1,108,500**	**$918,500**	**$1,050,500**

*(relocation costs only; does not include ROW acquisition costs)

ENVIRONMENTAL JUSTICE

Background[1]

Environmental justice was originally established in 1994 by Executive Order 12898, which required federal agencies to achieve environmental justice to the greatest extent practicable by identifying and addressing disproportionately high and adverse human health or environmental effects of their programs, policies and activities on minority and low income populations in the United States.

In 2012, the United States Department of Transportation (DOT) and the Federal Highway Administration (FHWA) adopted order numbers 5610.2(a) and 6640.23A, respectively, updating and clarifying environmental justice procedures. Environmental justice is required to be incorporated early in the development of the programs, policies or activities to identify the risk of discrimination and disproportionately high and adverse effects on minority and low income populations so that positive corrective action can be taken. Under these orders, analysis of environmental justice issues will consider:

- Examination of environmental, public health and interrelated social and economic effects of programs, policies and activities.

[1] *http://www.fhwa.dot.gov/enviornment/environmental_justice/ej_at_dot/order_56102a/inde...*

- Mitigation and enhancement measures and potential offsetting benefits to the affected minority and low income populations will be taken into account in determining whether a particular program, policy or activity will have disproportionately high and adverse effects.

- Solicitation of public involvement opportunities including affected minority and low income populations in considering alternatives.

- Consideration of alternatives to proposed programs, policies and activities that would avoid, minimize and/or mitigate disproportionately high and adverse environmental or public health effects and interrelated social and economic effects.

- Programs, policies and activities that are determined to have disproportionately high and adverse effects on minority and low income populations will only be carried out if:

    1. A substantial need for the program, policy or activity exists based on the overall public interest.

    2. Further mitigation measures or alternatives that would avoid or reduce the disproportionately high and adverse effects are not practicable. In determining whether a mitigation measure or alternative is practicable, the social, economic (including costs) and environmental effects of avoiding or mitigating the adverse effects will be taken into account.

    3. Alternatives that would have less adverse effects on these populations have severe adverse social, economic, environmental or human health impacts.

    4. Alternatives that would have less adverse effects on these populations involve increased costs of an extraordinary magnitude.

Methodology

The methodology employed in this section conforms to DOT and FHWA environmental justice policies in analyzing the Hooper Road project in relation to potential disproportionate adverse impact to the minority and low-income population in the study area.

As noted previously in the section on Socio-Economic Data, the Hooper Road project study area contains 6 census tracts in East Baton Rouge and Livingston Parishes. The key demographic elements measured in relation to environmental justice are race and poverty status.

The racial breakdown[2] is analyzed for the project study area from the following counts:

- White
- African American or Black
- Asian
- American Indian and Alaskan Native
- Native Hawaiian and Other Pacific Islanders
- Hispanic or Latino

A number of variables were analyzed in the project study area for poverty status[3] including:

- Educational attainment
- Median household income
- Households with cash public assistance
- Households with food stamp / Supplemental Nutrition Assistance Program (SNAP) benefits over the past 12 months

Findings

Table IV-6, on the following page, shows the population of the Hooper Road project study area by race. The study area is comprised of 91% White, 6% African American or Black and 1.5% Asian. Hispanics or Latinos (of any race) account for 2% of the total population of the project study area.

The table looks at percentages of the primary racial groups by census tract, which are White, African American or Black and Hispanic or Latino to determine if there are any concentrations of minority groups in the project study area. The analysis indicates no concentrations of minority groups in individual census tracts or the project study area as a whole. Percentages of African American or Black and Hispanic or Latino are lower than state levels.

[2] *http:// factfinder2census.gov. DP-1 Profile of General Population and Housing Characteristics 2010 Demographic Profile Data.*
[3] *http:// factfinder2census.gov. 2006-2010 American Survey.*

Table IV-6. Population and Race in the Project Study Area

Race	CT 43.01	CT 43.02	CT 44.01	CT 44.02	CT 403.01	CT 403.03	Project Study Area	Louisiana
White	5,505 (83.9%)	5,293 (95.2%)	4,034 (84.8%)	4,854 (85.5%)	8,441 (95.3%)	9,513 (96.2%)	**37,640 (91.1%)**	2,836,192 (62.60%)
Black or African American	940 (14.30%)	131 (2.4%)	600 (12.6%)	628 (11.1%)	187 (2.1%)	155 (1.6%)	**2641 (6.40%)**	1,452,396 (32%)
Asian	34	20	36	47	31	65	**233 (0.60%)**	70,132 (1.50%)
American Indian and Alaska Native	27	27	8	27	36	39	**164 (0.40%)**	30,579 (0.70%)
Native Hawaiian and Other Pacific Islander	1	3	0	1	2	1	**8 (0.00%)**	1,963 (0.00%)
Some Other Race	14	22	24	41	43	48	**192 (0.50%)**	69,227 (1.50%)
Two or More Races	41	61	55	77	116	70	**420 (1.0%)**	72,883 (1.60%)
Total population	6,562	5,557	4,757	5,675	8,856	9,891	**41,298**	4,533,372
Hispanic or Latino (of any race)	71 (1.1%)	111 (2.0%)	79 (1.7%)	130 (2.3%)	158 (1.8%)	244 (2.5%)	**793 (1.9%)**	192,560 (4.20%)

Table IV-7 on the following page documents the educational attainment in the project study area by census tract for the population 25 years and older. The project study area is well-educated with 91% high school graduates or higher, which is higher than the state level of 81% across all census tracts in the project study area. However, the level of the population with a bachelor's degree or higher is less than the state level of 21% in 4 of the 6 census tracts in the project area.

Table IV-7. Educational Attainment in the Project Study Area

Subject	CT 43.01	CT 43.02	CT 44.01	CT 44.02	CT 403.01	CT 403.03	Louisiana
Population 25 years and over	4,255	3,898	3,630	3,258	5,288	6,193	2,856,356
Less than 9th grade	1.20%	3.60%	2.60%	2.60%	0.90%	3.10%	6.90%
9th to 12th grade, no diploma	7.90%	6.90%	2.00%	7.50%	9.00%	7.60%	12.20%
High school graduate (includes equivalency)	47.50%	43.60%	33.70%	40.90%	42.20%	34.70%	34.80%
Some college, no degree	23.90%	26.00%	30.30%	29.10%	28.70%	27.60%	20.50%
Associate's degree	4.30%	3.60%	3.50%	4.30%	3.20%	4.20%	4.80%
Bachelor's degree	12.00%	11.50%	19.30%	13.00%	12.60%	17.40%	14.00%
Graduate or professional degree	3.20%	4.80%	8.70%	2.50%	3.50%	5.30%	6.90%
Percent high school graduate or higher	91.00%	89.50%	95.50%	89.90%	90.10%	89.30%	81.00%
Percent bachelor's degree or higher	15.20%	16.30%	28.10%	15.60%	16.10%	22.70%	20.90%

Table IV-8, on the following page, analyzes the median household income as well as the number of households receiving cash public assistance and food stamp / SNAP benefits by census tract. The population in the project study area has significantly higher median income than the state average. The average median income for the project study area is **$62,961,** $19,516 more than the $43,445 state average. The total number of households with cash public assistance constitutes 1% of the total number of households in the study area. In comparison, the state level for households with cash public assistance is 2%. The total number of households in the project study area with food stamps / SNAP benefits is 7%, with the state level at 17%.

Table IV-8. Income and Public Assistance Benefits in the Project Study Area

Income and Benefits (in 2010 Inflation-Adjusted Dollars)	CT 43.01	CT 43.02	CT 44.01	CT 44.02	CT 403.01	CT 403.03	Project Study Area	Louisiana
Total households	2,389	2,133	1,819	2,021	2,950	3,258	**14,570**	1,641,165
Median household income (dollars)	$53,802	$64,123	$73,220	$51,790	$65,500	$69,329	**$62,961 (average)**	$43,445
Households with cash public assistance income	38	12	33	7	16	44	**150 (1%)**	**26,492 (2%)**
Households with Food Stamp/SNAP benefits	177	56	72	289	375	256	**969 (7%)**	274,078 (17%)

In conclusion, the environmental justice analysis for race, income and public assistance levels does not indicate large areas of disproportionate impact of the proposed Hooper Road project on minority and low-income populations. In summary, the environmental justice analysis indicates the following:

- The project study area and individual census tracts therein contain smaller percentages of minority and ethnic populations than the Louisiana average.
- Households in the project study area and within individual census tracts earn a higher median household income than the Louisiana average.
- Households in the project study area and within individual census tracts with cash public assistance income and food stamp / SNAP benefits rank below the Louisiana average.

NEIGHBORHOOD AND COMMUNITY COHESION

The study area consists largely of medium-density to low-density residential development and some commercial development, along with assorted public uses. Neighborhood and community cohesion in these areas is more in terms of area-wide cohesion or sense of city or regional community, rather than on a “neighborhood” basis. However, within the

corridor, there are some distinct subdivisions and housing developments, each of which has a sense of neighborhood identity and cohesion.

No Build Alternative

Neighborhood and community cohesion in the project study area will not be adversely impacted by the no build alternative.

Alternative 1

Neighborhood and community cohesion in the project study area is defined by its rural character with Hooper Road serving the area as a state highway. Project build alternatives are not anticipated to adversely affect this neighborhood and community cohesion in the study area. On the west side of the river, while the addition of two (2) lanes to existing Hooper Road does create a wider distance between the two residential sides of the highway, the overwhelming majority in the Hooper Road vicinity is in subdivisions or housing developments on one side of the highway, and widening should not affect cohesion within those subdivisions. In Livingston Parish, Alternative 1 affects no subdivisions and progresses through a sparsely developed area, so cohesion on the east side of the Amite River should also not be an issue.

Alternative 2

Neighborhood and community cohesion in the project study area is defined by its rural character with Hooper Road serving the area as a state highway. Project build alternatives are not anticipated to adversely affect this neighborhood and community cohesion in the study area. On the west side of the river, while the addition of two (2) lanes to existing Hooper Road does create a wider distance between the two residential sides of the highway, the overwhelming majority in the Hooper Road vicinity is in subdivisions or housing developments on one side of the highway, and widening should not affect cohesion within those subdivisions. In Livingston Parish side, while Alternative 2 does not divide any subdivisions, the newly created roadway would run behind two established residential streets (Bear Cave Road and Chandler Bluff Road). This will in effect permanently divide “back fence” neighbors, so neighborhood cohesion on the east side of the Amite River would be impacted.

LAND USE AND ZONING

No Build Alternative

The No Build Alternative will not impact the land use and zoning in the Hooper Road study area.

Build Alternatives

The Build Alternatives are not anticipated to adversely impact the land use and zoning in the study area, as Hooper Road is already present in the City of Central, Louisiana. It should be noted that the widening and extension of Hooper Road is called for in the City of Central Master Plan, which guides land use and zoning. Livingston Parish has no zoning in place, but as all of the planned roadway alternatives from LA 16 to the Amite River are intended to be no access roadways, land use along that stretch of roadway should not be changed by development.

ACCESS TO COMMUNITY FACILITIES & SERVICES

Community facilities and services define a community and further characterize its cohesion and sense of place. A vital factor in the utilization of these facilities and distribution of services is their access.

No Build Alternative

While the No Build alternative is not anticipated to adversely impact access to community facilities and services, conversely it will not contribute to enhancing service levels of the road network or improving through traffic to community facilities and services outside of the study area. The No Build Alternative will not improve access to public facilities and services.

Build Alternatives

The development of any of the Build Alternatives is expected to have a positive impact on access to community facilities and services. By improving local and regional access, residents and businesses will be better able to reach necessary facilities and services. Additionally, emergency vehicle access, including fire and police response and emergency medical service to trauma medical facilities at area hospitals, will be enhanced.

The Proposed Action would also provide quicker and safer access to area amenities, such as parks, playgrounds, other recreation facilities and services, and community centers. Those amenities are vital to the quality of life a community needs to sustain itself.

IMPACTS TO PARKS AND RECREATION FACILITIES

No Build Alternative

The No Build Alternative is not anticipated to adversely impact parks and recreation facilities in the Hooper Road project corridor.

Alternative 1-A

Alternative 1-A is not anticipated to adversely impact parks and recreation facilities in the Hooper Road project corridor. The project improvements will likely enhance access to parks and recreation facilities in the area.

Alternatives 1-B and 1-C

Alternatives 1-B and 1-C would affect the property and a portion of the building housing the Watson Community Center, a small facility on Old Highway 16 typically used for birthday parties, baby showers and scouting activities. Due to this projected impact, discussions were held with Livingston Parish Recreation District 2, the owners and operators of the facility, at their regular monthly meeting in August 2013. At that meeting, the district board was asked about their future plans for the Center, and their thoughts on preferences among the alternatives, or possible options for remaining on-site, such as the existing structure being physically relocated further back towards the rear of the site, or a new structure constructed on the site. At that meeting, district members explained that their future plans are to build a new combination gymnasium and community center on a portion of the new ballpark site located a short distance north on LA 16. At the present time, there is no funding source for that project. At the district's September meeting, the Board passed a resolution stating that if Alternative 1-B or 1-C were to be developed, they would prefer to sell the existing property as a total take and use those funds as seed money for construction of a new gym/community center.

In consultation with the Federal Highway Administration during the preliminary drafting of this document, it was determined that the Watson Community Center is not considered a 4(f) property as the building is not part of a larger recreational area or park and the building is not open to the general public outside the times reserved by specific groups for the types of activities described above. As it is indeed a stand-alone building, it would not be considered "significant" in the sense of the preservation purpose of the statute, nor is it open to the general public except by special arrangement for certain groups.

Other than affecting the Watson Community Center, Alternatives 1-B and 1-C are not anticipated to adversely impact other parks and recreation facilities in the Hooper Road project corridor. It will likely enhance access to parks and recreation facilities in the area.

Alternative 2

Alternative 2 is not anticipated to adversely impact parks and recreation facilities in the Hooper Road project corridor. Up until recently, a portion of the Alternative 2 route was owned by BREC as the Nunnally Farm Historic Site, a special use site that was planned to be developed as a location where the public could actively learn about East Baton

Rouge Parish's agricultural past. However, the Nunnally family, who had originally donated the land to BREC, purchased the land back from BREC and it is now under private ownership.

HISTORIC / CULTURAL RESOURCES

No Build Alternative

The No Build Alternative would have no impact on the historic/cultural resources of the project area.

Alternative 1-A

An archaeological survey was conducted of the proposed Alternative 1-A ROW in 2013. No archaeological sites were recorded. Therefore, the proposed action would have no impact on archaeological sites located within the proposed project ROW for Alternative 1-A.

A standing structure survey of the project indirect APE examined 64 structures constructed before 1968. None of these properties is considered eligible for listing on the NRHP. Therefore, the proposed action would have no impact on structures examined within the project indirect APE.

Alternative 1-B

An archaeological survey was conducted of the proposed Alternative 1-B ROW in 2013. No archaeological sites were recorded. Therefore, the proposed action would have no impact on archaeological sites located within the proposed project ROW for Alternative 1-B.

A standing structure survey of the project indirect APE examined 77 structures constructed before 1968. None of these properties is considered eligible for listing on the NRHP. Therefore, the proposed action would have no impact on structures examined within the project indirect APE.

Alternative 1-C

An archaeological survey was conducted of the proposed Alternative 1-C ROW in 2013. No archaeological sites were recorded. Therefore, the proposed action would have no impact on archaeological sites located within the proposed project ROW for Alternative 1-C.

A standing structure survey of the project indirect APE examined 77 structures constructed before 1968. None of these properties is considered eligible for listing on the NRHP. Therefore, the proposed action would have no impact on structures examined within the project indirect APE.

Alternative 2

An archaeological survey was conducted of the proposed Alternative 2 ROW in 2013. No archaeological sites were recorded. Therefore, the proposed action would have no impact on archaeological sites located within the proposed project ROW for Alternative 2.

A standing structure survey of the project indirect APE examined 43 structures constructed before 1968. One property, the Nunnally House (17-01656) is recommended eligible for listing on the NRHP under Criteria A and C. Although the structure will not be directly affected, any indirect effects (e.g., audible, visual) will be assessed if it is determined eligible for listing on the NRHP. The remaining 42 properties are not considered eligible for listing on the NRHP, and the proposed action would have no impact on these structures.

VISUAL / AESTHETIC IMPACTS

No Build Alternative

Under the No Build Alternative, there will be little if any visual and aesthetic impacts related to the completion of some planned projects and projects under construction, as most of these are not in the vistas or sightlines of the area of primary impact.

Build Alternatives

The construction of any of the Build Alternatives would have a limited visual / aesthetic impact on the project area.

Hooper Road Widening Section

The East Baton Rouge side of the corridor involves mostly widening of an existing two-lane highway for all build alternatives, so visual/aesthetic impacts would be minimal. Some of the low-scale commercial development at the corner of Sullivan Road may be removed along with several residential buildings along the highway. The appearance of the corridor will be a bit wider and expansive, as those areas with trees and wooded areas extending right up to the LA 408 right-of-way will be cut back to accommodate the widened highway right-of-way.

Alternative 1 – Common Section (Hooper Road to Bend Road)

One of the most noticeable changes under Build Alternative 1 will be just east of the intersection of Hooper Road and Greenwell Springs Road. Currently, the view to the east at this intersection is of residential homes well-screened by vegetation, with no view of the river floodplain. Under Alternative 1, a new cleared area approximately 200 feet wide will be visible from the intersection, containing a four-lane highway heading towards the northeast. The distance to the river and bridge crossing, however, will likely still prevent views of the river from this intersection.

For travelers along the Amite River (boaters), the view will be very different from the current one. A new parallel bridge structure will be passing over the river where this is currently none. On the heavily wooded east side of the river floodplain, there is not much in the way of development or access, and thus few active vistas or viewpoints for average citizens. Those that may be in the wooded areas would notice a different appearance, with a new elevated bridge passing through a 150 foot-wide cleared corridor. It should be noted that the route will pass far enough to the northwest of homes along Boyd Ott Lane that it should be screened from view (from those homes) by the wooded areas.

East of the floodplain, where the extension leaves the bridge structure and transitions to roadway, there should be minimal impacts, as the area the route passes through has for the most part been cleared, is generally flat to slightly rolling, and is much more open in view. The biggest visual impact along the route in this area will be the overpass constructed at Bend Road. At its highest point (the bridge guardrail) at the midpoint of the overpass, this new structure would be about 25 feet above surrounding grade. It footprint and thus visual impact would be limited by the use of MSE/GRS retaining walls.

Alternative 1 Termini Segments

<u>Alternative 1-A</u>

From the Bend Road overpass to LA 16, there should be limited visual impact for Alternative 1-A, as this area has been almost entirely cleared, flat to slightly rolling, and open in view. The construction of the roundabout intersection for Alternative 1-A will require the removal of some trees along the sides of LA 16, but this should not be a major visual impact.

<u>Alternative 1-B</u>

From the Bend Road overpass to LA 16, there should be limited visual impact for Alternative 1-B, as this area has been almost entirely cleared, flat to slightly rolling, and open in view. It proceeds through this area until just before reaching LA 16, where it curves southeastward and enters a wooded area on the west side of LA 16. A new

cleared area approximately 200 feet wide will be visible from LA 16, containing a four-lane highway heading towards the northwest. As Alternative 1-B crosses LA 16 via a roundabout intersection and proceeds on to the intersection of LA 3285/LA 1019, it (and associated improvements along those two highways) may also require the removal of a few scattered trees.

Alternative 1-B will also have a noted impact in and around the intersection of LA 3285/LA 1019. The change from a stop sign intersection to a roundabout, as well as associated roadway widening, will entail removal of several buildings and structures on the west side of LA 1019 and LA 3285. The roundabout itself will also be a much more visually expansive and open intersection than the smaller stop sign intersection.

Alternative 1-C

From the Bend Road overpass to LA 16, there should be limited visual impact for Alternative 1-C, as this area has been almost entirely cleared, flat to slightly rolling, and open in view. It proceeds through his area until just before reaching LA 16, where it curves southeastward and enters a wooded area on the west side of LA 16. As Alternative 1-C includes an overpass with ramps, a large amount of the wooded area would be cleared. The area is a rough triangle, with about 800 feet of wooded frontage going down to about a 200 foot corridor about 1200' west of LA 16. Another visual impact will be the overpass itself. At its highest point (the bridge guardrail) of the overpass, this new structure would be about 40 feet above surrounding grade. As Alternative 1-C crosses LA 16 via the overpass and proceeds on to the intersection of LA 3285/LA 1019, it (and associated improvements along those two highways) may also require the removal of a few scattered trees.

Alternative 1-C will also have a noted impact in and around the intersection of LA 3285/LA 1019. The change from a stop sign intersection to a roundabout, as well as associated roadway widening, will entail removal of several buildings and structures on the west side of LA 1019 and LA 3285. The roundabout itself will also be a much more visually expansive and open intersection than the smaller stop sign intersection.

Alternative 2

Alternative 2 will create a much different vista as it branches off to the south from the current Hooper Road alignment. After passing through a small open field just east of Amber Lakes Drive, it will enter a heavily wooded area as it proceeds southeastward towards Greenwell Springs Road. A new 160 foot wide corridor through these woods will be visible from the relatively open area of the Amber Lakes/Hooper intersection. This opening up will continue at the new roundabout intersection of the Hooper Road extension and Greenwell Springs Road. The tree cover is very close to the roadway in this area, and will be "opened up" considerably by the new roadway and the roundabout intersection itself. Currently, the view to the east is well screened by vegetation, with no

view of the river floodplain. Under Alternative 2, a new cleared area approximately 150 feet wide will be visible from the intersection, containing a four-lane highway heading towards the southeast. The distance to the river and bridge crossing, however, will likely still prevent views of the river from this intersection.

For travelers along the Amite River (boaters), the view will be very different from the current one. A new single bridge structure will be passing over the river where this is currently none. The riverside houses along the east side of the river floodplain will also notice a different appearance, with a new elevated bridge passing through a 150 foot-wide cleared corridor.

East of the floodplain, where Alternative 2 leaves the bridge structure and transitions to roadway, there would be considerable impacts, as the route runs behind houses along two separate but parallel residential streets. Residents along both streets will see an active four-lane roadway beyond their back yards, rather than wooded areas or the back yards of their neighbors to the rear.

Another visual impact along the route in this area will be the overpass constructed at LA 1019. At its highest point (the bridge guardrail) at the midpoint of the overpass, this new structure would be about 25 feet above surrounding grade. Its footprint and thus visual impact would be limited by the use of MSE/GRS retaining walls, however.

From the overpass to LA 16, there should be limited visual impact for Alternative 2, as this area is mostly undeveloped and wooded. It proceeds through his area until reaching LA 16. A new cleared area approximately 160 feet wide will be visible from LA 16 at Cecil Street, containing a four-lane highway heading towards the west. Alternative 2 intersects LA 16 via a roundabout intersection and the roundabout itself will also be a much more visually expansive and open intersection than the signalized intersection currently in place.

AIR QUALITY IMPACTS

This section summarizes the results of an analysis of the potential air quality effects of the project. The purpose of this analysis is, first, to address the potential for the project to affect air quality standards including transportation conformity requirements; and second, to address the potential Mobile Source Air Toxics (MSATs) effects of the project.

National Ambient Air Quality Standards (NAAQS)

The United States Environmental Protection Agency (EPA) has established allowable concentrations and exposure limits called the National Ambient Air Quality Standards (NAAQS) for various “criteria” pollutants. These pollutants include carbon monoxide (CO), nitrogen oxides (NO_x), ozone (O_3), particulate matter (PM_{10} and $PM_{2.5}$), sulfur oxides (SO_x), and lead (Pb).

In accordance with the Clean Air Act Amendments of 1990 (CAAA of 1990), EPA identified those areas that did not meet the NAAQS for the criteria pollutants and designated them as "nonattainment" areas. Once a nonattainment area meets the NAAQS, it is redesignated as a "maintenance" area.

East Baton Rouge and Livingston Parishes are currently located in the Baton Rouge 8-hour Ozone nonattainment area.

Transportation Conformity

Transportation conformity is a process required of Metropolitan Planning Organizations (MPOs) pursuant to the CAAA of 1990. CAAA require that transportation plans, programs, and projects in nonattainment or maintenance areas that are funded or approved by the Federal Highway Administration (FHWA) be in conformity with the State Implementation Plan (SIP), which represents the State's plan to either achieve or maintain the NAAQS for a particular pollutant.

The project is located in the Baton Rouge 8-hour Ozone nonattainment area. The Hooper Road Extension is listed as a Stage II project (scheduled for 2018-2027) in the Metropolitan Transportation Plan (MTP) for 2037 adopted by the Capital Region Planning Commission (CRPC) in July of 2013. This project description is consistent with the proposed project and the project limits are contained within the termini in the Long Range Transportation Plan (LRTP). Therefore, the project is in conformity with the SIP.

Carbon Monoxide (CO)

Transportation projects have the potential to affect air quality by changing the number of vehicles at specific locations. Tailpipe emissions from vehicles could result in increases in ambient concentrations of carbon monoxide (CO) near the project.

CO is a colorless, odorless gas that interferes with the delivery of oxygen to a person's organs and tissues. The health effects of CO exposure depend on the duration and intensity of exposure as well as a person's health. CO concentrations are usually higher during the winter months because vehicles emit higher CO emissions in cold weather due to the characteristics of internal combustion engines.

The state of Louisiana is in attainment statewide for CO. EPA and FHWA guidance state that a CO hot spot analysis is suggested only for *signalized* intersections operating below Level of Service (LOS) C. There are no planned signalized intersections for this project that will operate below LOS C and it is anticipated that Hooper Road will operate at or above LOS C. CO concentrations are not anticipated to cause or contribute to an exceedance of the CO NAAQS.

Mobile Source Air Toxics (MSATs)

On February 3, 2006, FHWA released "*Interim Guidance on Air Toxic Analysis in NEPA Documents.*"[6] The purpose of this guidance is to advise on when and how to analyze Mobile Source Air Toxics (MSATs) in the NEPA process for highways. This guidance is interim because MSAT science is still evolving. As the science progresses, FHWA will update the guidance.

A basic analysis of the potential MSAT emissions impacts of this project was completed in accordance with this Interim Guidance. Additional background information regarding MSATs is provided in Appendix D.

Technical shortcomings of emissions and dispersion models and uncertain science with respect to health effects prevent meaningful or reliable estimates of MSAT emissions of this project. However, even though reliable methods do not exist to accurately estimate the health impacts of MSATs at the project level, it is possible to qualitatively assess the levels of future MSAT emissions. The qualitative assessment presented below has been prepared in accordance with FHWA's Interim Guidance derived in part from a study conducted by the FHWA entitled *"A Methodology for Evaluating Mobile Source Air Toxic Emissions among Transportation Project Alternatives."* [7]

FHWA's Interim Guidance groups projects into the following categories:

- Exempt Projects or Projects with no Meaningful Potential MSAT Effects;
- Projects with Low Potential MSAT Effects; and,
- Projects with Higher Potential MSAT Effects.

Examples of projects with low potential MSAT emissions include minor widening projects and new interchanges, such as those that replace a signalized intersection on a surface street, or where design year traffic projections are less than 140,000 to 150,000 annual average daily traffic (AADT).

The projected traffic volumes for this project are well below that threshold and therefore a qualitative analysis is appropriate.

For the No-Build and Build Alternatives, the amount of MSATs emitted would be proportional to the vehicle miles traveled, or VMT, assuming that other variables such as fleet mix are the same for each alternative. On a roadway network, system-wide basis the expected VMT for the Build Alternatives will be higher than the VMT for the No-Build Alternative because of the increased vehicle traffic; however, the project will create shorter trip lengths and shorter trip times. Therefore, it is expected that there would be no appreciable difference in overall MSAT emissions between the No-Build and Build Alternatives.

Additionally, travel speeds for the Build Alternative will be higher than for the No-Build Alternative. According to EPA's 2010MOVESb emissions model, emissions of all of the priority MSATs except for diesel particulate matter decrease as speed increases. The

extent to which these speed-related emissions decreases will offset VMT-related emissions increases cannot be reliably projected due to the inherent deficiencies of technical models.

Also, regardless of the alternative chosen, emissions will likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce MSAT emissions by 57 to 87 percent from 2000 to 2020. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases.

The additional travel lanes contemplated for the Build Alternative will have the effect of moving some traffic closer to nearby homes and churches; therefore, under the Build Alternative there may be localized areas where ambient concentrations of MSATs could be higher than under the No-Build Alternative. However, as discussed above, the magnitude and the duration of these potential increases compared to the No-Build Alternative cannot be accurately quantified due to the inherent deficiencies of current models.

In sum, when a highway is widened and, as a result, moves closer to receptors, the localized level of MSAT emissions for the Build Alternative could be higher relative to the No-Build Alternative, but this could be offset due to increases in speeds and reductions in congestion (which are associated with lower MSAT emissions). However, on a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than today.

Substantial construction-related MSAT emissions are not anticipated for this project as construction is not planned to occur over an extended building period. However, construction activity may generate temporary increases in MSAT emissions in the project area.

TRAFFIC NOISE AND IMPACTS

A study was prepared in accordance with the FHWA noise standards, *Procedures for Abatement of Highway Traffic and Construction Noise, 23 CFR 772* [1], and the Louisiana Department of Transportation and Development (DOTD) *Highway Traffic Noise Policy*, revised in 2011 [2]. The noise analysis included the following tasks:

1. Identification of noise-sensitive areas (NSA) and associated receptors (discrete or representative locations in an NSA for the land uses listed in 23 CFR 772) within 500 feet of the project;
2. Determination of existing sound levels at selected receptors to characterize the existing noise environment in the project area;

3. Prediction of future sound levels with and without the project at the receptors;
4. Determination of impacted receptors;
5. Evaluation of noise abatement for impacted areas;
6. Discussion of construction noise; and
7. Coordination with local officials.

Each of these analysis steps is discussed below, following a discussion of basic terminology and LADOTD's criteria for determining noise impacts.

Traffic Noise Terminology

Traffic noise levels are expressed in terms of the hourly, A-weighted equivalent sound level in decibels (dBA). A sound level represents the level of the rapid air pressure fluctuations caused by sources such as traffic that are heard as noise. A decibel is a unit that relates the sound pressure of a noise to the faintest sound the young human ear can hear. The A-weighting refers to the amplification or attenuation of the different frequencies of the sound (subjectively, the pitch) to correspond to the way the human ear "hears" these frequencies.

Generally, when the sound level exceeds the mid-60 dBA range, outdoor conversation in normal tones at a distance of three feet becomes difficult. A 9-10 dBA increase in sound level is typically judged by the listener to be twice as loud as the original sound while a 9-10 dBA reduction is judged to be half as loud. Doubling the number of sources (i.e., vehicles) will increase the hourly equivalent sound level by approximately 3 dBA, which is usually the smallest change in hourly equivalent A-weighted traffic noise levels that people can detect without specifically listening for the change.

Because most environmental noise fluctuates from moment to moment, it is standard practice to condense data into a single level called the equivalent sound level (L_{eq}). The L_{eq} is a steady sound level that would contain the same amount of sound energy as the actual time-varying sound evaluated over the same time period. The L_{eq} averages the louder and quieter moments, but gives much more weight to the louder moments in the averaging. For traffic noise assessment purposes, L_{eq} is typically evaluated over the worst one-hour period and is written as $L_{eq}(h)$.

The term insertion loss (IL) is generally used to describe the reduction in $L_{eq}(h)$ at a location after a noise barrier is constructed. For example, if the $L_{eq}(h)$ at a residence before a barrier is constructed is 75 dB(A) and the $L_{eq}(h)$ after a barrier constructed is 65 dB(A), then the insertion loss would be 10 dB(A).

Criteria for Determining Impacts

Noise impacts are determined by comparing future "design year" project worst-hour $L_{eq}(h)$ values at areas of frequent human use to: (1) a set of Noise Abatement Criteria (NAC) for different land use categories, and (2) existing $L_{eq}(h)$ values. The FHWA noise

standards (23 CFR 772) and DOTD's noise policy state that when traffic noise impacts have been identified, then noise abatement should be considered.

Table IV-9, on the following page, shows the land uses that are classified as Activity Categories A - G and the corresponding NAC.

Specifically, a receptor is impacted in either of two ways:

1. The predicted, worst hour, design year $L_{eq}(h)$ approaches or exceeds the NAC, even if there is not a substantial increase over the existing levels. "Approach" is defined by DOTD as 1 dBA less than the appropriate NAC. As an example, the NAC for Activity Category B and C land uses is 67 dBA. An impact would occur if the design year $L_{eq}(h)$ is predicted to be 66 dBA or higher at a point of frequent exterior human use for a land use in either category.

2. The predicted, worst hour, design year $L_{eq}(h)$ exceeds the existing $L_{eq}(h)$ by 10 dBA or more, even if the NAC is not approached or exceeded.

Table IV-9. Noise Abatement Criteria in 23 CFR 772

Activity Category	*Activity $L_{eq}(h)$*	*Evaluation Location*	*Activity Description*
A	57	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B[1]	67	Exterior	Residential
C [1]	67	Exterior	Active sport areas, amphitheatres, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E [1]	72	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F.
F	–––	–––	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	–––	–––	Undeveloped lands that are not permitted.

[1] *Includes undeveloped lands that are permitted for this activity category.*

Identification of Noise Sensitive Receptors

A review of available electronic mapping as well as field reconnaissance identified residences on both sides of the existing Hooper Road and the proposed extension between the project's start at Sullivan Road and the project's end at LA 16. Over 330 single family homes, mobile home trailers or RVs, and apartments were found within 500 feet of the proposed edge of roadway. The NAC for Activity Category B will apply to these noise-sensitive land uses. Noise impacts will be identified and noise abatement will

be evaluated if future sound levels are 66 dBA or higher, or if an increase of 10 dBA or more is predicted over existing sound levels.

Other noise-sensitive land uses within 500 feet of the project that might be affected by traffic noise are the football stadium, the Grace United Pentecostal Church, the Live Oak United Methodist Church, the Live Oak Cemetery, the Watson Community Center, and the Covenant Community Church. Each of these land uses are in Activity Category C. Noise impacts will be identified if future, exterior sound levels are 66 dBA or higher, or if an increase of 10 dBA or more is predicted over existing sound levels.

Several potential Activity Category E land uses were initially identified but no exterior uses were observed during the field reconnaissance. Those land uses included the commercial strip center at the corner of Sullivan Road and Hooper Road, the commercial strip center at the corner of Greenwell Springs Road and Hooper Road, the Oak Point Shopping Center on LA16, the commercial businesses at the intersection of LA1019 and LA 3285, the Idea Station on LA16 and individual service and repair shops along Hooper Road and along LA 1019 at the east end of the project. Since none of these land uses had exterior uses they did not meet the requirements for Activity Category E and were not included as part of this study.

There are several tracts of undeveloped Activity Category G lands along the project. These undeveloped lands are not noise-sensitive and have not been included in the noise analysis. However, noise impacts could occur in the future if noise-sensitive land uses are constructed near LA 408. A discussion of future sound levels and the need for noise-compatible land use planning is provided later in this report.

Under most situations, a single building structure is considered a single receptor. Structures that contain multiple residential units are considered to have one receptor per residential unit.

Measurement of Existing Sound Levels

Noise measurements were conducted at several DOTD approved noise-sensitive land uses in the project area on April 22-23 and August 28-29, 2013. **Table IV-10**, on the following page, summarizes the measured equivalent sound levels at each of the measurement locations.

Short-term noise measurements at these locations were conducted by making a series of consecutive measurements in one-minute intervals for at least 15 minutes at each site during both a peak and an off-peak traffic period. Background noises (i.e., local traffic, dog barking, sirens, etc.) during these measurements were noted, and the corresponding one-minute measurement intervals were eliminated from the calculation of the measured sound level for the overall measurement period.

As indicated in **Table IV-10**, the existing sound levels at the exterior measurement locations were between 43 dBA and 66 dBA. The lower sound levels were recorded at measurement locations that were farthest away from traffic noise sources. The sound levels in 59-66 dBA range were recorded at the first row residences closest to Hooper Road.

Table IV-10. Measured Existing Equivalent Sound Levels at Measurement Locations

Address/Location	*Main Noise Sources*	*Distance to Nearest Noise Source (ft)*	*Period*	*Measured L_{eq}(dBA)*
13985 Post Drive	Hooper Road	110	Off-Peak 13:00-13:20	59
			Peak 8:20-8:40	60
12149 Cimmaron Drive	Hooper Road	55	Off-Peak 12:25-12:45	65
			Peak 7:15-7:30	66
16807 River Birch Avenue	Hooper Road	120	Off-Peak 11:55-12:15	58
			Peak 7:50-8:05	59
7155 Jim Rushing Road	Birds, Residential Noise, Bend Road	--	Off-Peak 18:19-18:34	43
			Peak 16:00-16:25	46
35125 Live Oak Village Road	LA16, Residential Noise, Birds	450	Off-Peak 13:43-14:03	52
			Peak 16:50-17:10	51
35183 Live Oak Circle	LA16	150	Off-Peak 14:35-14:55	59
			Peak 17:20-17:35	61
Watson Community Center	LA3285, LA1019	60	Off-Peak 15:25-15:45	59
			Peak 17:45-18:00	55
17227 Benton Ferry Road	LA408, Greenwell Springs Road, Birds	1800	Off-Peak: 13:12-13:32	40
			Peak: 7:15-7:30	48
Covenant Community Church	Greenwell Springs Road	120	Off-Peak: 14:00-14:20	60
			Peak: 8:00-8:15	63
6970 Bear Cave Road	Birds, Insects	--	Off-Peak:11:17-11:37	43
			Peak: 18:05-18:20	46
7285 Chandler Bluff Road	Birds, Insects, LA1019	750	Off-Peak: 9:45-10:05	44
			Peak: 16:50-17:05	44
34600 LA109	LA1019	100	Off-Peak: 10:25-10:45	61
			Peak: 17:30-17:45	62

LADOTD policy requires validation of the FHWA Traffic Noise Model (TNM 2.5) computer program that is used to calculate worst-hour equivalent sound levels. Validation involves making noise measurements at a few representative locations near the existing roadway while making simultaneous vehicle classification counts of the traffic and estimating travel speed. Then, the traffic counts are factored up to be hourly volumes, and along with the speeds, are entered into a TNM 2.5 model that has been created for the existing situation. The modeled levels are compared to the measured levels, and if they are within 3 dB(A) of the measured levels, the model is said to be validated.

The TNM model predictions for the noise measurements were within the 3 dB criteria for validation and the model is considered validated for this project.

Determination of Existing and Future One-Hour Equivalent Sound Levels

The FHWA TNM 2.5 computer program was used to calculate worst-hour equivalent sound levels for the receptors for the existing case and the future alternatives.
Traffic data was provided by a traffic consultant on the project for use in the noise modeling. Morning and afternoon design hour traffic projections, including truck percentages, were provided for Hooper Road, Greenwell Springs Road, LA 16, LA 1019 and LA 3285 for the existing case, No Build case, and the Build alternatives.

Each direction of travel was modeled as a separate TNM "roadway," with the traffic divided evenly across all lanes in the same direction. The posted speeds of 35-55 mph were used for the existing lengths of Hooper Road, Greenwell Springs Road, Bend Road, LA 16, LA 1019 and LA 3285. The proposed speed limits of 45-55 mph were used for the proposed extension of Hooper Road.

Receptors were modeled by TNM "receiver" points at areas of frequent human use of a property. For single-family residences, that area could be the front or back yard. For apartments and condominiums, that area could be a patio or balcony or a common use area. For the churches, cemetery, recreation areas and schools, receptors were modeled at the common use areas. A TNM receiver could represent more than one receptor, such as several adjacent single-family residences or condominium balconies, or the common use area for an apartment building.

Large buildings were modeled as noise barriers to properly account for the shielding of the traffic noise that they provide to the receptor. Single-family houses were modeled as either individual noise barriers or as rows of buildings to account for the shielding that they would provide. Significant terrain features were also modeled. The default ground surface of lawn grass was used, with any large areas of paved ground specifically modeled as pavement.

Existing Year 2012

The TNM model that was developed for the validation testing were used to predict worst noise hour equivalent sound levels for the existing year conditions at the noise-sensitive land uses along the project where existing roadways are the dominant noise source. The posted speeds of 35 mph and 55 mph on Hooper Road, Greenwell Springs Road, LA 16, Bend Road, and LA 1019 were modeled.

For areas along new alignment of the proposed Hooper Road extension where roadway noise does not currently dominate the sound environment, measured levels were used as the existing sound levels.

As shown in **Table IV-11**, worst noise hour L_{eq} (h) for the existing case ranged from 46 dBA for receivers located several hundred feet from any roadway noise sources up to 68 dBA at the closest receivers to the existing roadways.

A summary of impacts is shown in **Table IV-12 at the end of this section**. A total of seven residences and the Live Oak Cemetery are impacted in the Existing case.

Table IV-11 Predicted Sound Level Summary

Area	Existing $L_{eq}(h)$ (dBA)[1]	No Build Leq(h) (dBA)[1]	Build $L_{eq}(h)$ (dBA)[1]	Build Increase Over Existing (dBA)
Alternatives 1-A, 1-B, and 1-C – West of Amite River	49-66	50-68	58-74	0-15
Alternative 1-A - East of Amite River	46-68	46-70	50-71	1-20
Alternative 1-B - East of Amite River	46-68	46-70	53-76	0-30
Alternative 1-C - East of Amite River	46-68	46-70	53-76	0-30
Alternative 2	44-66	44-67	52-73	0-23

No Build Year 2032

The TNM model that was used for the Existing case was modified to predict worst noise hour equivalent sound levels for the No Build conditions at the noise-sensitive land uses in the project area. The posted speeds of 35 - 55 mph were modeled on Hooper Road, Greenwell Springs Road, LA 16, Bend Road, LA 3285, and LA 1019.

As shown in **Table IV-11** above, predicted worst noise hour L_{eq} (h) for the No Build Year 2032 case ranged from 44 dBA for receivers located several hundred feet from any roadway noise sources up to 70 dBA at the closest land uses to the roadways. Generally, predicted sound levels for the No Build case increased 1-2 dB over the existing case.

A total of 17 residences plus the Live Oak Cemetery are impacted in the No Build year 2032 case. All of these impacts are caused by an exceedance of the 66 dBA NAC.

Build Year 2032

The Build Alternatives noise levels were determined by modeling the proposed Hooper Road, Hooper Road interchange, and/or roundabout geometry and traffic within TNM for each alternative and then calculating the $L_{eq}(h)$ for each TNM receiver. Future speeds of 45-55 mph on the proposed Hooper Road extension were modeled for both directions.

<u>Alternative 1-A</u>

Predicted $L_{eq}(h)$ for the Build year 2032 Alternative 1-A case ranged from 50 dBA up to 74 dBA. The highest noise levels are predicted for the receptors closest to the project along the existing Hooper Road. Increases over existing noise levels range from 0 to 20 dB. The highest increases are predicted for the receptors in the vicinity of Bend Road

that are closest to the proposed Hooper Road extension where current noise levels are relatively low.

A total of 130 residences are impacted by traffic noise for the Build Alternative 1-A case. Additionally the football stadium, Grace United Pentecostal Church, and the Live Oak Cemetery are predicted to be impacted by traffic noise.

Alternative 1-B

Predicted $L_{eq}(h)$ for the Build Alternative 1-B case ranged from 53 dBA up to 76 dBA at the receptors closest to the project along Hooper Road. Increases over existing noise levels range from 0 to 30 dBA. The highest increases are predicted for the receptors in the vicinity of Bend Road that are closest to the proposed Hooper Road extension where current noise levels are relatively low.

A total of 132 residences are impacted by traffic noise for the Build Alternative 1-B case. Additionally, the football stadium, Grace United Pentecostal Church, the Live Oak Cemetery, and the Watson Community Center are predicted to be impacted by traffic noise.

Alternative 1-C

Predicted $L_{eq}(h)$ for the Build Year 2032 Alternative 1-C case ranged from 53 dBA up to 76 dBA at the receptors closest to the project along Hooper Road. Increases over existing noise levels range from 0 to 30 dBA. The highest increases are predicted for the receptors in the vicinity of Bend Road that are closest to the proposed Hooper Road extension where current noise levels are relatively low.

A total of 124 residences are impacted by traffic noise for the Build Alternative 1-C case. Additionally, the football stadium, Grace United Pentecostal Church, the Live Oak Cemetery, and the Watson Community Center are predicted to be impacted by traffic noise.

Alternative 2

Predicted $L_{eq}(h)$ for the Build Year 2032 Alternative 2 case ranged from 52 dBA up to 73 dBA at the receptors closest to the proposed Hooper Road. Increases over existing noise levels range from 0 to 23 dBA. The highest increases are predicted for the areas closest to the proposed project where current noise levels are low.

A total of 149 residences are impacted by traffic noise for the Build Alternative 2 case. Additionally, the football stadium is predicted to be impacted by traffic noise.

Summary of Noise Impacts

An impact assessment was completed for the Existing, Build and No-Build scenarios. As noted previously, a receptor is impacted in two ways:

1. The predicted, worst hour, design year $L_{eq}(h)$ approaches or exceeds the NAC. DOTD defines "approach" as 1 dB(A) less than the NAC. These levels apply at areas of frequent human use.

2. The predicted, worst hour, design year $L_{eq}(h)$ exceeds the existing $L_{eq}(h)$ by 10 dBA or more.

Table IV-12. Summary of Noise Impacts

Case	Total Impacts
Existing Year 2012	7 Residences Live Oak Cemetery
No-Build Year 2032	17 residences Live Oak Cemetery
Build Year 2032 Alternative 1-A	130 Residences Football Stadium Grace United Pentecostal Church Live Oak Cemetery
Build Year 2032 Alternative 1-B	132 Residences Football Stadium Grace United Pentecostal Church Live Oak Cemetery Watson Community Center
Build Year 2032 Alternative 1-C	124 Residences Football Stadium Grace United Pentecostal Church Live Oak Cemetery Watson Community Center
Build Year 2032 Alternative 2	149 Residences Football Stadium

Noise Abatement Evaluation

In accordance with criteria in the DOTD noise policy, noise abatement needs to be studied first for "feasibility" and, if feasible, for "reasonableness." Noise barriers must be both feasible and reasonable for them to be deemed likely for construction.

Feasibility includes acoustical and engineering considerations. Acoustical feasibility means that a noise barrier will provide at least a 5 dBA reduction in the one-hour equivalent sound level for at least 75% of the first-row, impacted receptors. If a barrier cannot meet this criterion, abatement is considered to not be acoustically feasible. Additionally, the noise barrier should be feasible from an engineering perspective. Engineering feasibility takes into account topography, drainage, safety, barrier height, utilities, and access and maintenance needs (which may include right-of-way considerations). If a barrier poses engineering problems, it may be judged as not feasible even if it meets the acoustical feasibility criterion, and it will not be recommended for construction.

If feasible, then the barriers are assessed for reasonableness in accordance with the criteria in LADOTD's noise policy. All proposed noise abatement must meet the following three criteria to be considered reasonable by LADOTD. If any of the criteria are not met, noise abatement measures will not be constructed.

1. *Noise Reduction Design Goal:* At a minimum, at least one receptor must receive an 8 dBA reduction for the noise abatement system to be reasonable.

2. *Cost-Effectiveness:* If the estimated cost of constructing a noise barrier (including installation and additional necessary construction such as foundations or guardrails) divided by the number of benefited receptors (those who would receive a reduction of at least 5 dBA) is $35,000 or less per benefited receptor, a barrier is considered to be cost-effective.

3. *Consideration and Obtaining Views of Residents and Property Owners*: The viewpoints of the affected property owners and residents are important. For those barriers found to be reasonable by the Cost-Effectiveness and Design Goal criteria above, viewpoints of the benefited receptors and affected property owners will be sought.

According to the FHWA noise standards and LADOTD policy, abatement needs to be evaluated when impacts are predicted to occur. Noise barriers must be shown to be both feasible and reasonable, as described earlier, for them to be deemed likely for construction.

In general, noise abatement measures may include noise barriers, alteration of horizontal and vertical alignment, and traffic management measures (such as reducing speed limits or prohibition of heavy trucks). The latter two forms of abatement have already been considered during the planning phases for this project. Hooper Road is the only significant roadway through the project corridor so restricting truck traffic is not ideal. The posted speed limits along the project are 35-55 mph. Reducing speeds for Hooper Road by 10 mph would generally only reduce the predicted noise levels by an estimated 1 dBA.

Noise barriers were determined to be the only available potential abatement measure to reduce noise levels for impacted receptors for this project. As stated earlier, barriers must pass acoustical feasibility and reasonableness tests. Acoustical feasibility means that any noise barrier will provide at least a 5 dBA reduction in traffic noise levels for 75% of the first-row impacted receptors.

Generally noise barriers are not effective at reducing noise levels at residences when driveway access needs create gaps in the noise barrier. Similarly noise barriers are not cost effective on a per benefited residence basis for isolated residences or low density groupings of residences.

Six noise barriers were analyzed as a means of reducing the design year noise levels. The six analyzed barriers were:

- Barrier 1: Alternatives 1-A/1-B/1-C protecting residences along River Birch Avenue.
- Barrier 2: Alternative 1-A protecting residences along the south side of the proposed Hooper Road extension on the east and west sides of Bend Road.
- Barrier 3: Alternative 1-A protecting residences along the north side of the proposed Hooper Road extension on the east and west sides of Bend Road.
- Barrier 4: Alternative 2 protecting residences along River Birch Avenue
- Barrier 5: Alternative 2 protecting residences along Chandler Bluff Road
- Barrier 6: Alternative 2 protecting residences along Bear Cave Road

The FHWA TNM 2.5 program was used to predict one-hour equivalent sound levels with barriers present and to evaluate alternative noise barrier designs for each area.

Table IV-13, on the following page, summarizes the acoustical feasibility analysis and **Table IV-14** (also on the following page) summarizes the reasonableness analysis, both of which are discussed below the tables for each barrier system.

Barriers were considered for other impacted residences along the existing Hooper Road, LA 16 and LA 1019, but since the impacts were at isolated or low density residential areas or along areas where driveway access is needed, a noise barrier would not be cost effective and thus those areas are not included in **Tables IV-13 and IV-14**.

Table IV-13: Results of Noise Barrier Acoustical Feasibility Analysis

Barrier #	*Barrier Length (ft)*	*Average Height (ft)*	*Number of First-Row Impacted Receptors*	*Number and Percentage of First-Row Impacted Receptors with at least a 5 dB(A) Noise Reduction*	*Acoustically Feasible?* [1]
1	1,122	20.0	9	5 - 56%	No
2	4,384	10.2	9	8 – 89%	Yes
3	3,111	9.9	4	4 – 100%	Yes
4	1,882	13.5	9	9 - 100%	Yes
5	3,261	12.0	14	13 – 93%	Yes
6	3,911	12.0	18	17 – 94%	Yes

[1] *A noise abatement measure is acoustically feasible if 75% of impacted first-row receptors receives at least a 5 dB(A) noise reduction*

Table IV-14: Results of Noise Barrier Reasonableness Analysis

Barrier #	*Number of Benefited Receptors*	*Number of Benefited First-Row Receptors*	*Number of Impacted Receptors with at least a 8 dB(A) Noise Reduction*	*Reasonable by Noise Reduction Design Goal?* [1]	*Cost* [2]	*Cost per Benefited Receptor*	*Reasonable by Cost Effectiveness*[3]*?*
1	***Barrier not Acoustically Feasible***						
2	10	8	1	Yes	$713,504	$71,350	No
3	6	4	1	Yes	$585,656	$97,609	No
4	20	9	2	Yes	$1,190,474	$59,524	No
5	16	13	12	Yes	$1,408,752	$88,047	No
6	30	17	16	Yes	$1,595,688	$53,190	No

[1] *At least 1 is needed to meet criterion.*
[2] *Based on 2011 LADOTD Noise Barrier Cost Matrix*
[3] *Less than $35,000 per benefited receptor is needed to meet criterion*

As shown, none of the noise barrier options that were investigated passed both the tests of acoustic feasibility and reasonableness.

Construction Noise

The construction of the project would result in temporary noise increases for the residences and noise-sensitive land uses along Hooper Road. Any other noise-sensitive land uses that are located farther from the project area would likely experience little, if any, increase in noise levels because of the background noise of the Hooper Road traffic, traffic on other roads, and other community noise sources. The construction noise would be generated primarily from heavy equipment used in hauling materials and accomplishing the widening of the roadway.

The construction contractor has the responsibility for protection of the general public in all aspects of construction throughout the life of the project. All construction equipment will be required to comply with OSHA Regulations as they apply to the employees' safety, and in accordance with the LADOTD Standard Specifications. All construction equipment used in the construction phase of the project should be properly muffled and all motor panels should be shut during operation. In order to minimize the potential for impacts of construction noise on the local residents, the contractor should only operate, whenever possible, between the hours of 7:00 AM and 5:00 PM.

Coordination with Local Officials

LADOTD encourages local communities and developers to practice noise compatibility planning in order to avoid future noise impacts. Two guidance documents on noise compatible land use planning are available from FHWA. [3, 4]

Table IV-15 presents future predicted equivalent sound levels based on an assumed at-grade situation for areas along Hooper Road where vacant and possibly developable lands exist. Noise predictions were made at distances of 50, 100, 150 and 200 feet from centerline of closest travel lane of Hooper Road for the design year 2032 AM peak hour. The results showed exterior residential activities would be considered to be impacted in terms of a level of 66 or more dBA out to a distance of roughly 170 feet from centerline of the nearest travel lane of Hooper Road. These values do not represent predicted levels at every location at a particular distance back from the roadway. Sound levels will vary with changes in terrain and other site conditions. This information is being included to make local officials and planners aware of anticipated highway noise levels so that future development will be compatible with these levels.

Table IV-15: Design Year (2032) Predicted One-Hour Equivalent Sound Levels for Undeveloped Areas

*Distance**	L_{eq} *(1h), dBA*
50 feet	72
100 feet	69
150 feet	67
200 feet	64

* *Perpendicular distance to the centerline of the nearest travel lane of LA408.*

CONSTRUCTION PERIOD IMPACTS

During construction of the proposed LA 408 widening and extension, constructing new roadways, roadway lane, intersections and structures would result in various construction-related effects. The population that would be most affected includes local residents whose neighborhoods are located adjacent to the proposed improvements. Vehicular traffic along the existing route and intersecting streets would inevitable experience some delays and minor inconveniences as a result of construction.

No Build Alternative

The No Build Alternative includes two proposed intersection improvements at either end of the study area. The first is the Sullivan road intersection with LA 408, which is to be improved to tie in with the widening of LA 408 west of Sullivan Road. The other is the intersection of LA 16 and LA 1019, which is being studied for possible conversion from a signalized intersection to a roundabout intersection. These projects may produce construction impacts within the study area.

Build Alternatives

All of the Build Alternatives include construction of a widened, four-lane divided roadway, including construction of new at-grade roadways, medians, and subsurface drainage. This construction will produce disturbances such as noise, vibration, excavation, debris and will require construction staging areas. Short-term construction traffic impacts will also be present under this alternative.

All alternatives also include construction of a new bridge across the Amite River.

The construction impacts for the Proposed Action are described for each type of impact below:

Construction Period Noise and Air Quality

As mentioned in the previous section, the construction of the Build Alternatives would result in temporary noise level increases within the study area. The noise would be generated primarily from heavy equipment used in hauling materials and building the roadway, bridges and overpasses. Sensitive areas located close to the construction alignments may temporarily experience increased noise levels; however, there are currently no areas within the study area where quiet is of extraordinary significance, and therefore no such areas should be significantly impacted by construction noise.

The construction of the Build Alternatives could result in short-term air quality impacts, particularly related to particulate matter (dust) during project construction. To minimize potential air quality impacts, particularly related to control of particulate matter, the contractor shall comply with all applicable state, federal and local laws and regulations.

Construction Period Vibration

The proposed bridge structures (bridges and overpasses) will require pile driving. Pile driving will cause vibrations that may affect nearby structures, pavements and underground utilities. Peak particle velocities due to pile driving operations should be monitored with a seismograph at critical structures, pavements and utilities. The record of peak particle velocities will provide information in assessing potential damage and the need for changes in the pile driving operations.

Peak particle velocities of 0.25 in./sec, as measured by a seismograph, are generally regarded as the minimum vibration level uncomfortable to humans. In addition, sustained peak particle velocities of 0.25 in./sec may densify cohesionless fill materials. This densification may result in settlement and damage to structures, pavements or utilities founded in or over these types of materials. Peak particle velocities in excess of 0.5 in./sec, as measured at a structure, may induce damage to the structure.

Excavations, Fill Material, Debris and Spoil

Excavated material for roadway and foundation is not anticipated to require specialized disposal. A Phase I ESA was conducted for this study and a summary of this report is included as a part of this document. Fill material for the project is readily available locally. Construction debris from the project will require disposal. No anticipated construction debris is anticipated to require specialized disposal.

Construction Staging Areas

Construction staging areas will be needed for construction. Substantial amounts of vacant, privately-held land exist along the project route and will likely need to be leased as staging areas.

HAZARDOUS AND SOLID WASTE SITES

No Build Alternative

The No Build Alternative would have no impact on facilities/sites with recognized environmental conditions.

Alternative 1-A

The proposed action would have no impact on the only site (Site No. 5) that was identified as having recognized environmental conditions. Site No. 2 requires further investigation in order to verify the existence of the UST and possible recognized

environmental condition. The possible existence of recognized environmental conditions at Site No. 2 should not preclude the selection and implementation of Alternative 1-A.

Alternative 1-B

The proposed action would have no impact on the only site (Site No. 5) that was identified as having recognized environmental conditions. Two other sites (Site Nos. 2 and 8) require further investigation in order to verify the existence of recognized environmental conditions. The possible existence of recognized environmental conditions at one or both sites should not preclude the selection and implementation of Alternative 1-B.

Alternative 1-C

The proposed action would have no impact on the only site (Site No. 5) that was identified as having recognized environmental conditions. Two other sites (Site Nos. 2 and 8) require further investigation in order to ascertain the existence of recognized environmental conditions. The possible existence of recognized environmental conditions at one or both sites should not preclude the selection and implementation of Alternative 1-C.

Alternative 2

The proposed action would have no impact on any of the sites that were identified as having recognized environmental conditions. Site No. 2 requires further investigation in order to verify the existence of the UST and possible recognized environmental condition. The possible existence of recognized environmental conditions at Site No. 2 should not preclude the selection and implementation of Alternative 2.

IMPACTS ON THE NATURAL ENVIRONMENT

VEGETATION

No Build Alternative

No impacts to vegetation in the project area are foreseen under the No Build Alternative.

Alternative 1-A

This alternative will have an impact on existing vegetation, but less than the other build alternatives. The widening portion of this project passes through an area that is mostly

cleared for development along either side of Hooper Road. For the extension portion, the roadway and bridge will cross the heavily wooded floodplain along the Amite River, and will require clearing of all trees within the project footprint, a right-of-way corridor roughly 200 feet wide. As the alternative leaves the floodplain, it will enter a mostly cleared area of grass and very scattered trees. The 1-A terminus proceeds through this area until it reaches LA 16, where construction of the roundabout intersection will require the removal of some trees along the eastern side of LA 16.

Along Hooper Road, there is one (1) live oak tree registered with the Live Oak Society of the Louisiana Garden Club Federation. This tree will not be affected by the widening of Hooper Road, as its entire canopy is located outside of required right-of-way.

Alternative 1-B

This alternative will have a moderate impact on existing vegetation, more than Alternative 1-A, but less than Alternatives 1-C and Alternative 2. The widening portion of this project passes through an area that is mostly cleared for development along either side of Hooper Road. For the extension portion, the roadway and bridge will cross the heavily wooded floodplain along the Amite River, and will require clearing of all trees within the project footprint, a right-of-way corridor roughly 200 feet wide. As the alternative leaves the floodplain, it will enter a mostly cleared area of grass and very scattered trees. The 1-B terminus proceeds through this area until just before reaching LA 16, where it curves southeastward and enters a wooded area on the west side of LA 16. Alternative 1-B will require clearing of all trees within the project footprint here, a right-of-way corridor roughly 200 feet wide. As Alternative 1-B crosses LA 16 via a roundabout intersection and proceeds on to the intersection of LA 3285/LA 1019, it (and associated improvements along those two highways) may also require the removal of a few scattered trees.

Along Hooper Road, there is one (1) live oak tree registered with the Live Oak Society of the Louisiana Garden Club Federation. This tree will not be affected by the widening of Hooper Road, as its entire canopy is located outside of required right-of-way.

Alternative 1-C

This alternative will have a moderate-high impact on existing vegetation, more than Alternative 1-A, more than Alternative 1-B, and nearly equal to that of Alternative 2. The widening portion of this project passes through an area that is mostly cleared for development along either side of Hooper Road. For the extension portion, the roadway and bridge will cross the heavily wooded floodplain along the Amite River, and will require clearing of all trees within the project footprint, a right-of-way corridor roughly 200 feet wide. As the alternative leaves the floodplain, it will enter a mostly cleared area of grass and very scattered trees. It proceeds through his area until just before reaching LA 16, where it curves southeastward and enters a wooded area on the west side of LA

16. Alternative 1-C will require clearing of all trees within the project footprint here, which includes not only the primary right-of-way corridor of roughly 200 feet width but also the footprint of the on-and off-ramps for LA 16. As Alternative 1-C crosses LA 16 via an overpass and ¼ cloverleaf intersection, and proceeds on to the intersection of LA 3285/LA 1019, it (and associated improvements along those two highways) may also require the removal of a few scattered trees.

Along Hooper Road, there is one (1) live oak tree registered with the Live Oak Society of the Louisiana Garden Club Federation. This tree will not be affected by the widening of Hooper Road, as its entire canopy is located outside of required right-of-way.

Alternative 2

This alternative will have a moderate-high impact on existing vegetation, more than Alternative 1-A, more than Alternative 1-B, and nearly equal to that of Alternative 1-C. The widening portion of this project passes through an area that is mostly cleared for development along either side of Hooper Road. As the new extension branches off from existing Hooper Road just east of Amber Lakes Drive, it will clear a corridor through a heavily wooded area as it proceeds southeastward towards Greenwell Springs Road. Beyond Greenwell Springs Road, the roadway and bridge will cross the heavily wooded floodplain along the Amite River, and will require clearing of all trees within the project footprint, a right-of-way corridor roughly 150 feet wide.

As the alternative leaves the floodplain, it will enter a mostly cleared area of grass and very scattered trees behind the houses along Bear Cave Road and Chandler Bluff Road. It proceeds through his area until just before reaching LA 1019. Between LA 1019 and LA 16, the roadway passes through an undeveloped, heavily forested area and will require clearing of all trees within the project footprint. The vegetation thins out near developed LA 16, but the Alternative and its associated roundabout at this location may require the removal of a few scattered trees.

Along Hooper Road, there is one (1) live oak tree registered with the Live Oak Society of the Louisiana Garden Club Federation. This tree will not be affected by the widening of Hooper Road, as its entire canopy is located outside of required right-of-way.

WILDLIFE

No Build Alternative

Construction of the No Build Alternative should not adversely affect the native wildlife types as they are abundant in number and are adaptable on an individual basis.

Build Alternatives

Construction of the proposed action should not adversely affect the native wildlife types as it occurs in rather developed area. The native wildlife types are abundant in number and are adaptable on an individual basis. Any wildlife present should be able to re-establish itself in new locations rather easily.

WETLANDS

Wetland data, including field data points, wetland and water body areas in acres and polygon identification labels, are presented on aerial photo base maps in **Figures IV-1 through IV-25**, beginning after the following impact description by alternative.

No Build Alternative

The No Build Alternative would not impact the area's wetlands because there would be no acquisition of additional ROW and clearing for construction of road infrastructure and maintenance of the ROW. The existing growth rates in East Baton Rouge and Livingston Parishes are expected to continue to diminish existing wetlands as a result of the development.

Alternative 1-A

Construction of Alternative 1-A would directly impact 17.563 acres of palustrine forested (PFO) wetlands through the initial cutting of trees and grading of existing vegetated landscapes. The ROW adjacent to on-ground infrastructure would be mowed and maintained in the future after construction. The ROW adjacent to the above-ground infrastructure would probably be allowed to revegetate with species comparable to what existed prior to clearing for the highway and bridge construction over the Amite River.

Alternative 1-B

Construction of Alternative 1-B would directly impact 25.639 acres of PFO wetlands through the initial cutting of trees and grading of existing vegetated landscapes. The ROW adjacent to on-ground infrastructure would be mowed and maintained in the future after construction. The ROW adjacent to above-ground infrastructure would probably be allowed to revegetate with species comparable to what existed prior to clearing for the highway and bridge construction over the Amite River.

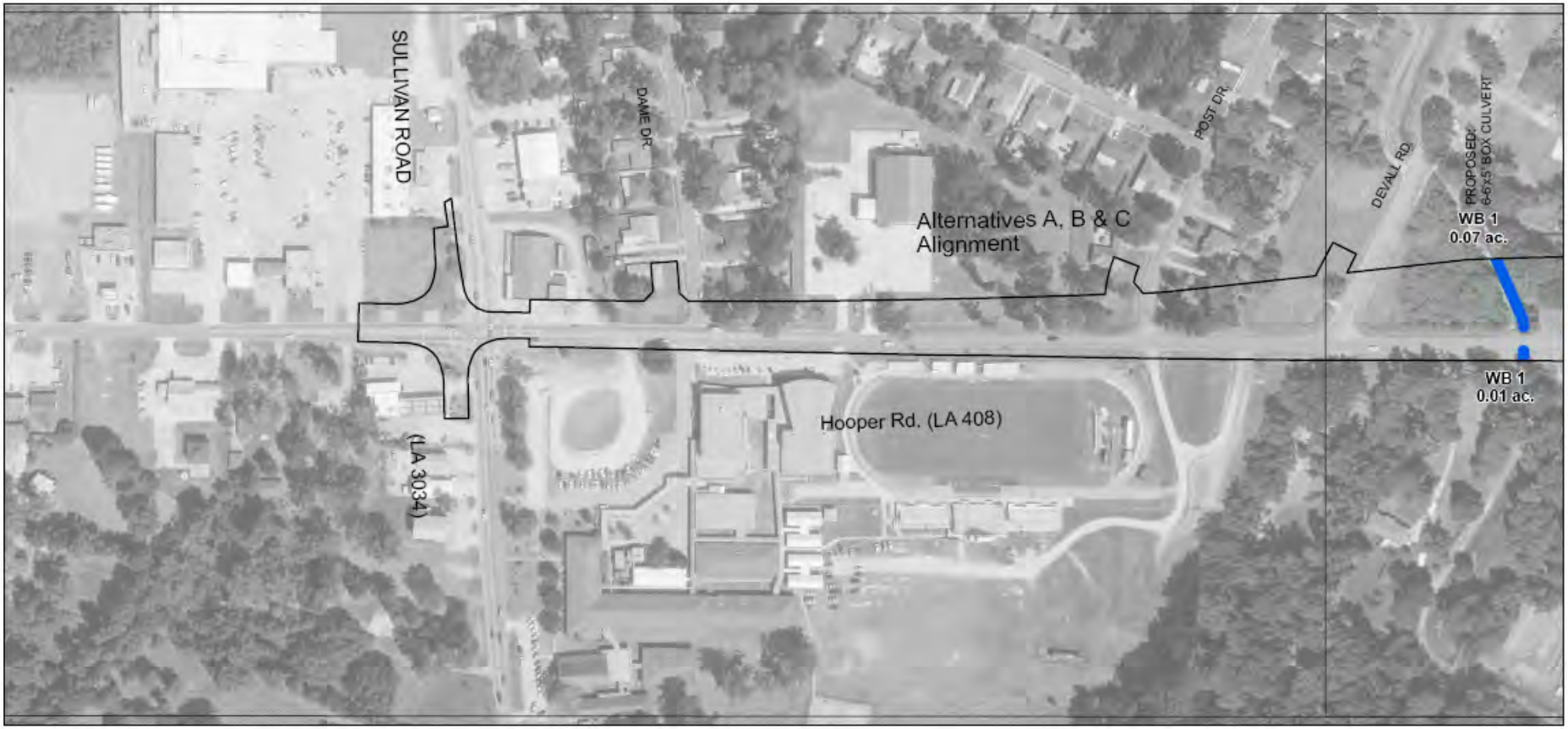
Alternative 1-C

Construction of Alternative 1-C would directly impact 32.234 acres of PFO wetlands through the initial cutting of trees and grading of existing vegetated landscapes. The

ROW adjacent to on-ground infrastructure would be mowed and maintained in the future after construction. The ROW adjacent to above-ground infrastructure would probably be allowed to re-vegetate with species comparable to what existed prior to clearing for the highway and bridge construction over the Amite River.

Alternative 2

Construction of Alternative 2 would directly impact 25.375 acres of PFO wetlands through the initial cutting of trees and grading of existing vegetated landscapes. The ROW adjacent to on-ground infrastructure would be mowed and maintained in the future after construction. The ROW adjacent to above-ground infrastructure would probably be allowed to re-vegetate with species comparable to what existed prior to clearing for the highway and bridge construction over the Amite River.



PURPOSE: EXTENSION & WIDENING OF HOOPER ROAD
(LA 16 - SULLIVAN ROAD)
SOURCE: CEI FIELD SURVEY, APRIL 9, 12, 15, 17, 19, 23, & 30, 2013
MAP BASE: NY ASSOCIATES PROVIDED IMAGERY, 2013
DATUM: NAD83

0 125 250 375 500
Feet

WETLANDS

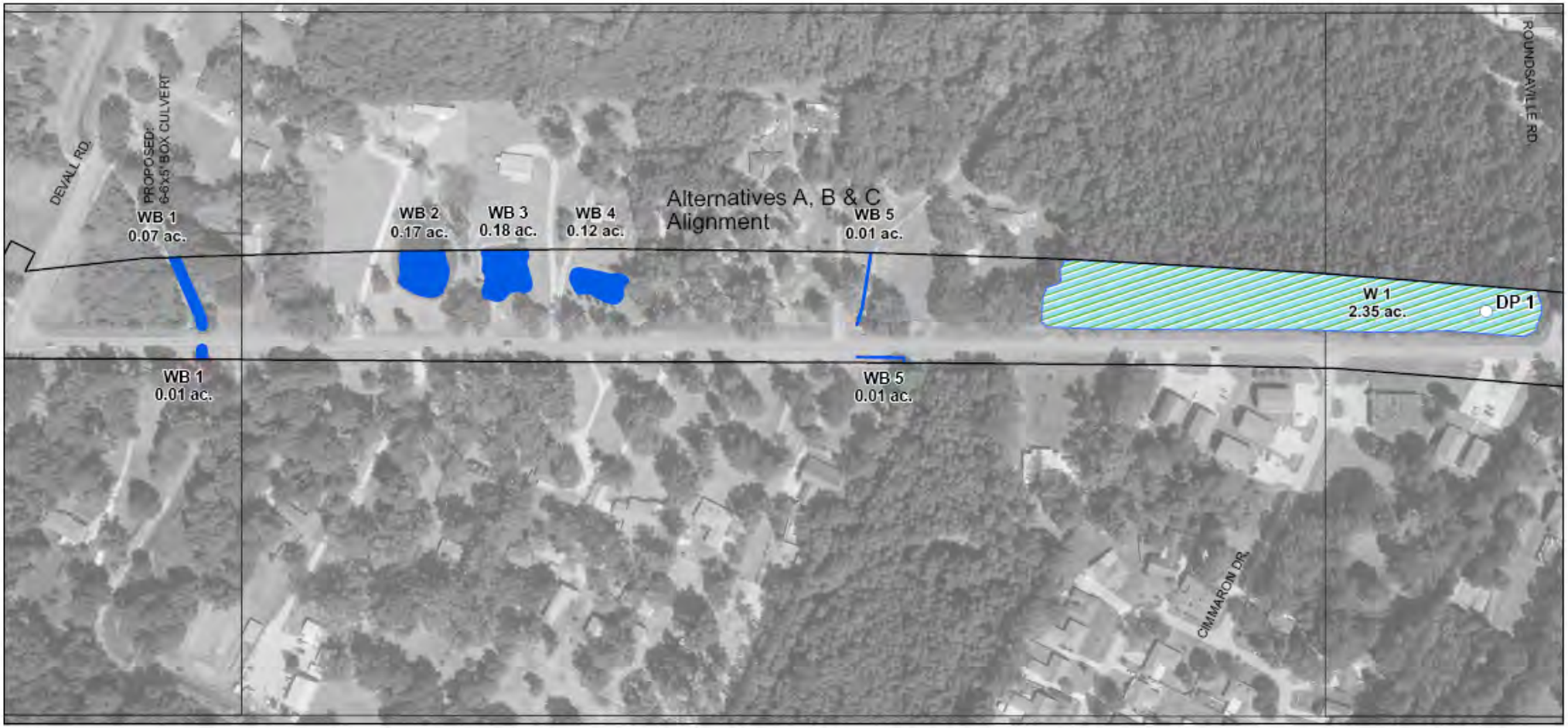
- DATA POINT
- PFO WETLAND
- WATERBODY
- ALTERNATIVE 1-A, 1-B, & 1-C ROW

STAGE 1 ENVIRONMENTAL ASSESSMENT
LA HWY 408 - HOOPER ROAD EXTENSION AND WIDENING (LA 16 - SULLIVAN ROAD)

LOCATION: T5S R2E S33, 49-51, 53-54
T5S R3E S47-49
T6S R2E S4-5
PARISH: EAST BATON ROUGE & LIVINGSTON
APPLICATION BY: LDOTD
DATE: 9/18/2013

N-Y ASSOCIATES - SHEET 101

FIGURE IV-1



PURPOSE: EXTENSION & WIDENING OF HOOPER ROAD
(LA 16 - SULLIVAN ROAD)
SOURCE: CEI FIELD SURVEY, APRIL 9, 12, 15, 17, 19, 23, & 30, 2013
MAP BASE: NY ASSOCIATES PROVIDED IMAGERY, 2013
DATUM: NAD83

0 125 250 375 500
Feet

WETLANDS

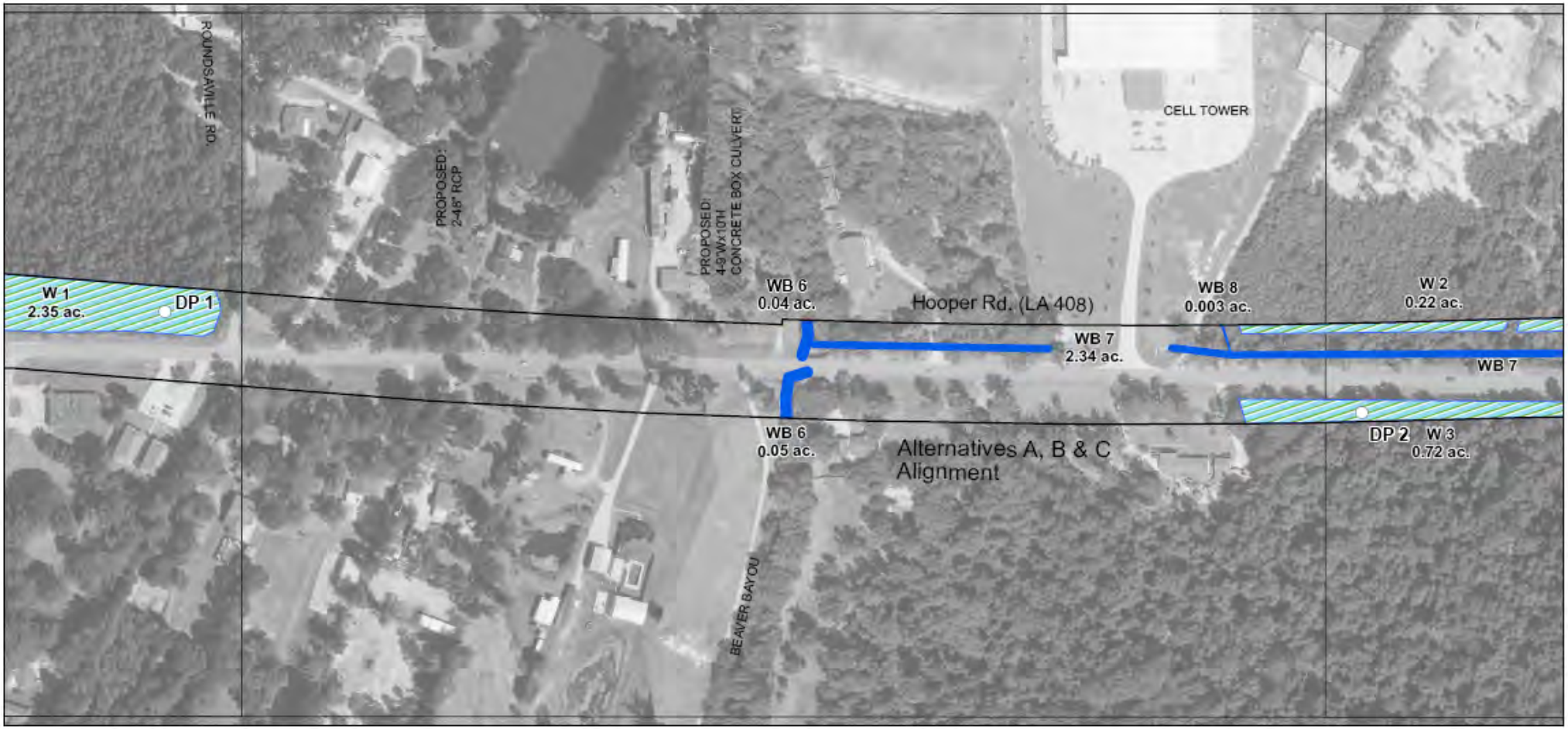
- DATA POINT
- PFO WETLAND
- WATERBODY
- ALTERNATIVE 1-A, 1-B, & 1-C ROW

STAGE 1 ENVIRONMENTAL ASSESSMENT
LA HWY 408 - HOOPER ROAD EXTENSION AND WIDENING (LA 16 - SULLIVAN ROAD)

LOCATION: T5S R2E S33, 49-51, 53-54
T5S R3E S47-49
T6S R2E S4-5
PARISH: EAST BATON ROUGE & LIVINGSTON
APPLICATION BY: LDOTD
DATE: 9/18/2013

N-Y ASSOCIATES - SHEET 102

FIGURE IV-2



PURPOSE: EXTENSION & WIDENING OF HOOPER ROAD
(LA 16 - SULLIVAN ROAD)
SOURCE: CEI FIELD SURVEY, APRIL 9, 12, 15, 17, 19, 23, & 30, 2013
MAP BASE: NY ASSOCIATES PROVIDED IMAGERY, 2013
DATUM: NAD83

0 125 250 375 500
Feet

WETLANDS

- DATA POINT
- PFO WETLAND
- WATERBODY
- ALTERNATIVE 1-A, 1-B, & 1-C ROW

STAGE 1 ENVIRONMENTAL ASSESSMENT
LA HWY 408 - HOOPER ROAD EXTENSION AND WIDENING (LA 16 - SULLIVAN ROAD)

LOCATION: T5S R2E S33, 49-51, 53-54
T5S R3E S47-49
T6S R2E S4-5
PARISH: EAST BATON ROUGE & LIVINGSTON
APPLICATION BY: LDOTD
DATE: 9/18/2013

N-Y ASSOCIATES - SHEET 103

FIGURE IV-3

PURPOSE: EXTENSION & WIDENING OF HOOPER ROAD
(LA 16 - SULLIVAN ROAD)
SOURCE: CEI FIELD SURVEY, APRIL 9, 12, 15, 17, 19, 23, & 30, 2013
MAP BASE: NY ASSOCIATES PROVIDED IMAGERY, 2013
DATUM: NAD83

0 125 250 375 500
Feet

WETLANDS

- DATA POINT
- PFO WETLAND
- WATERBODY
- ALTERNATIVE 1-A, 1-B, & 1-C ROW

STAGE 1 ENVIRONMENTAL ASSESSMENT
LA HWY 408 - HOOPER ROAD EXTENSION AND WIDENING (LA 16 - SULLIVAN ROAD)

LOCATION: T5S R2E S33, 49-51, 53-54
T5S R3E S47-49
T6S R2E S4-5
PARISH: EAST BATON ROUGE & LIVINGSTON
APPLICATION BY: LDOTD
DATE: 9/18/2013

N-Y ASSOCIATES - SHEET 104

FIGURE IV- 4

PURPOSE: EXTENSION & WIDENING OF HOOPER ROAD
(LA 16 - SULLIVAN ROAD)
SOURCE: CEI FIELD SURVEY, APRIL 9, 12, 15, 17, 19, 23, & 30, 2013
MAP BASE: NY ASSOCIATES PROVIDED IMAGERY, 2013
DATUM: NAD83

0 125 250 375 500
Feet

WETLANDS

- DATA POINT
- PFO WETLAND
- WATERBODY
- ALTERNATIVE 1-A, 1-B, & 1-C ROW

STAGE 1 ENVIRONMENTAL ASSESSMENT
LA HWY 408 - HOOPER ROAD EXTENSION AND WIDENING (LA 16 - SULLIVAN ROAD)

LOCATION: T5S R2E S33, 49-51, 53-54
T5S R3E S47-49
T6S R2E S4-5
PARISH: EAST BATON ROUGE & LIVINGSTON
APPLICATION BY: LDOTD
DATE: 9/18/2013

N-Y ASSOCIATES - SHEET 105

FIGURE IV-5

PURPOSE: EXTENSION & WIDENING OF HOOPER ROAD
(LA 16 - SULLIVAN ROAD)
SOURCE: CEI FIELD SURVEY, APRIL 9, 12, 15, 17, 19, 23, & 30, 2013
MAP BASE: NY ASSOCIATES PROVIDED IMAGERY, 2013
DATUM: NAD83

0 125 250 375 500
Feet

WETLANDS

- DATA POINT
- PFO WETLAND
- WATERBODY
- ALTERNATIVE 1-A, 1-B, & 1-C ROW

STAGE 1 ENVIRONMENTAL ASSESSMENT
LA HWY 408 - HOOPER ROAD EXTENSION AND WIDENING (LA 16 - SULLIVAN ROAD)

LOCATION: T5S R2E S33, 49-51, 53-54
T5S R3E S47-49
T6S R2E S4-5
PARISH: EAST BATON ROUGE & LIVINGSTON
APPLICATION BY: LDOTD
DATE: 9/18/2013

N-Y ASSOCIATES - SHEET 106

FIGURE IV-6

PURPOSE: EXTENSION & WIDENING OF HOOPER ROAD
(LA 16 - SULLIVAN ROAD)
SOURCE: CEI FIELD SURVEY, APRIL 9, 12, 15, 17, 19, 23, & 30, 2013
MAP BASE: NY ASSOCIATES PROVIDED IMAGERY, 2013
DATUM: NAD83

0 125 250 375 500
Feet

WETLANDS

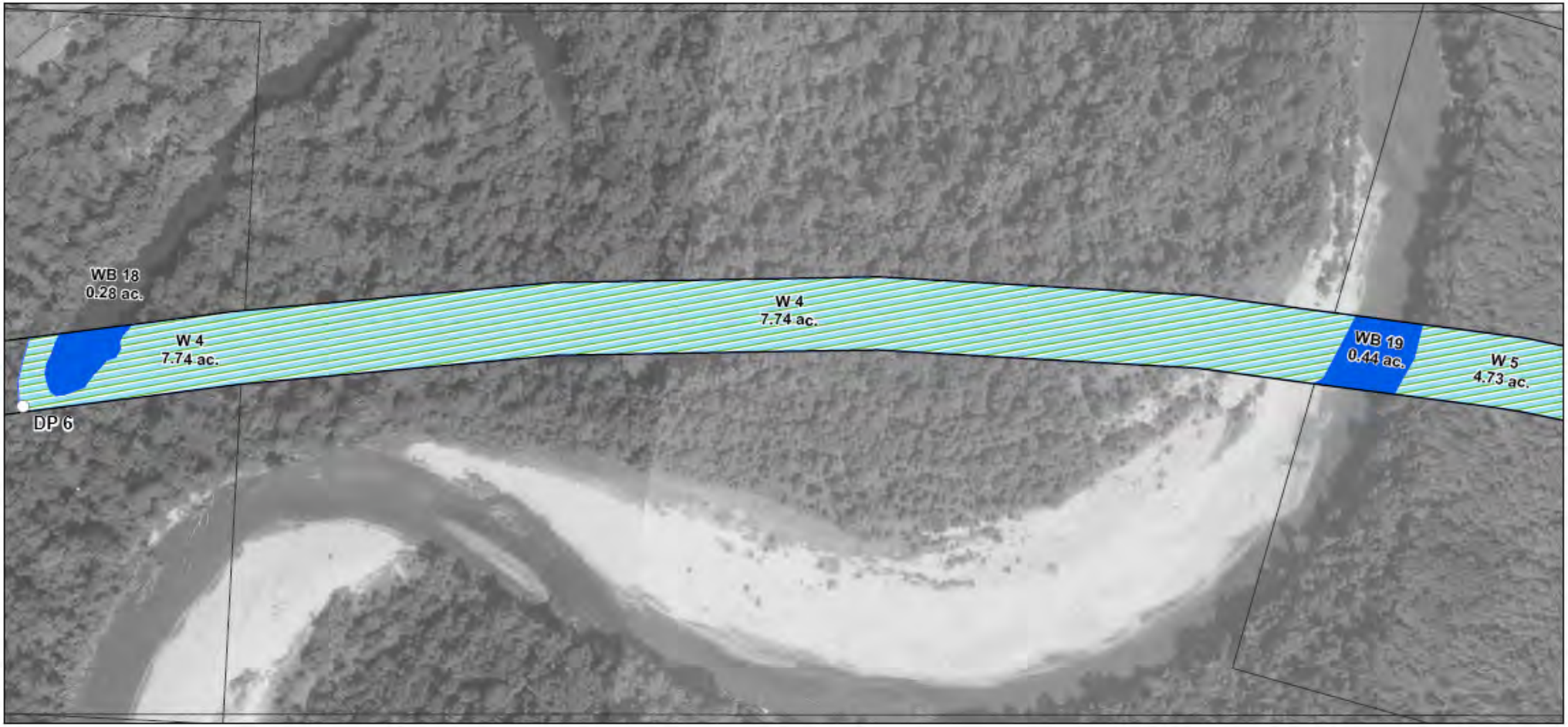
- DATA POINT
- PFO WETLAND
- WATERBODY
- ALTERNATIVE 1-A, 1-B, & 1-C ROW

STAGE 1 ENVIRONMENTAL ASSESSMENT
LA HWY 408 - HOOPER ROAD EXTENSION AND WIDENING (LA 16 - SULLIVAN ROAD)

LOCATION: T5S R2E S33, 49-51, 53-54
T5S R3E S47-49
T6S R2E S4-5
PARISH: EAST BATON ROUGE & LIVINGSTON
APPLICATION BY: LDOTD
DATE: 9/18/2013

N-Y ASSOCIATES - SHEET 107

FIGURE IV - 7



PURPOSE: EXTENSION & WIDENING OF HOOPER ROAD
(LA 16 - SULLIVAN ROAD)
SOURCE: CEI FIELD SURVEY, APRIL 9, 12, 15, 17, 19, 23, & 30, 2013
MAP BASE: NY ASSOCIATES PROVIDED IMAGERY, 2013
DATUM: NAD83

0 125 250 375 500
Feet

WETLANDS

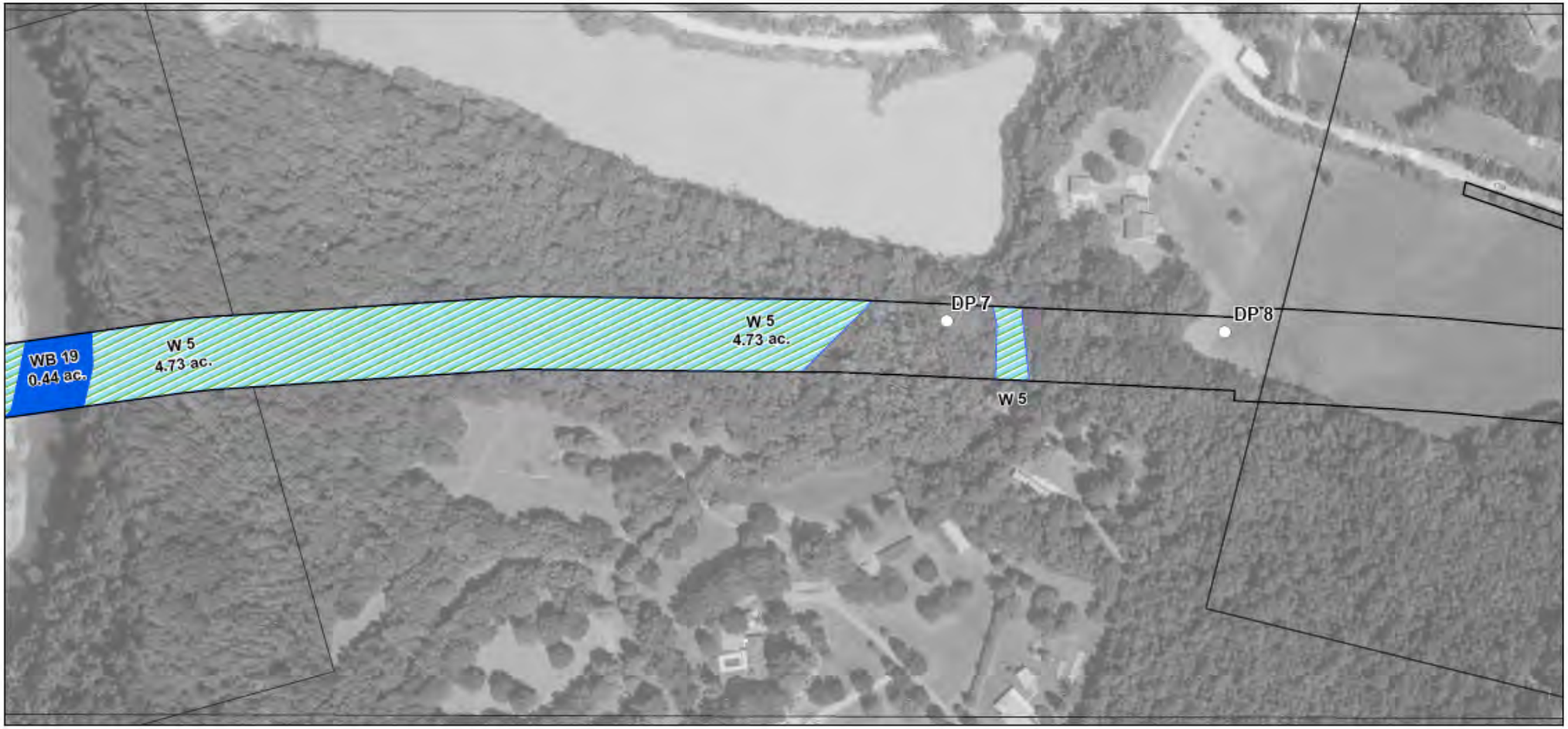
- DATA POINT
- PFO WETLAND
- WATERBODY
- ALTERNATIVE 1-A, 1-B, & 1-C ROW

STAGE 1 ENVIRONMENTAL ASSESSMENT
LA HWY 408 - HOOPER ROAD EXTENSION AND WIDENING (LA 16 - SULLIVAN ROAD)

LOCATION: T5S R2E S33, 49-51, 53-54
T5S R3E S47-49
T6S R2E S4-5
PARISH: EAST BATON ROUGE & LIVINGSTON
APPLICATION BY: LDOTD
DATE: 9/18/2013

N-Y ASSOCIATES - SHEET 108

FIGURE IV- 8



PURPOSE: EXTENSION & WIDENING OF HOOPER ROAD
(LA 16 - SULLIVAN ROAD)
SOURCE: CEI FIELD SURVEY, APRIL 9, 12, 15, 17, 19, 23, & 30, 2013
MAP BASE: NY ASSOCIATES PROVIDED IMAGERY, 2013
DATUM: NAD83

0 125 250 375 500
Feet

WETLANDS

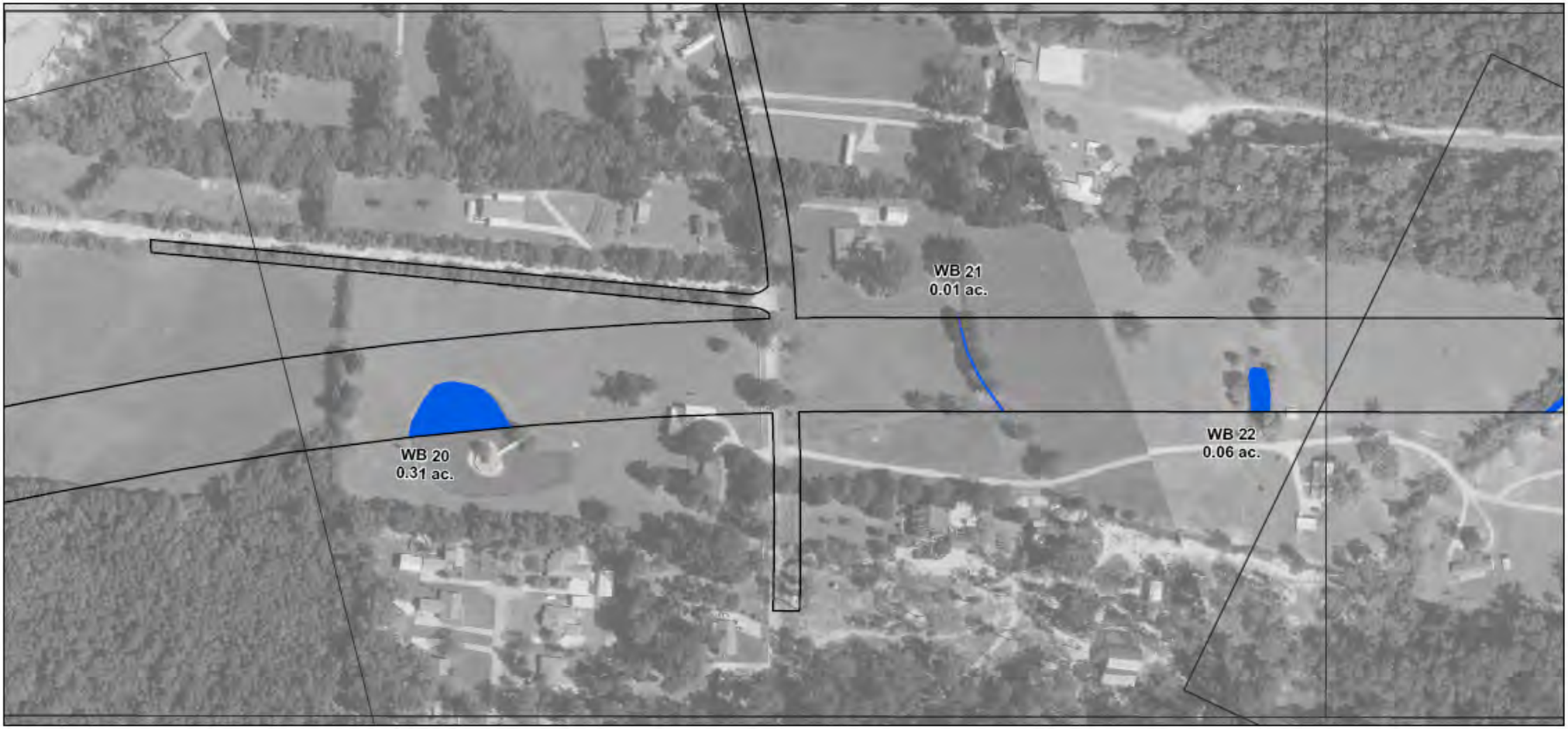
- DATA POINT
- PFO WETLAND
- WATERBODY
- ALTERNATIVE 1-A, 1-B, & 1-C ROW

STAGE 1 ENVIRONMENTAL ASSESSMENT
LA HWY 408 - HOOPER ROAD EXTENSION AND WIDENING (LA 16 - SULLIVAN ROAD)

LOCATION: T5S R2E S33, 49-51, 53-54
T5S R3E S47-49
T6S R2E S4-5
PARISH: EAST BATON ROUGE & LIVINGSTON
APPLICATION BY: LDOTD
DATE: 9/18/2013

N-Y ASSOCIATES - SHEET 109

FIGURE IV- 9



PURPOSE: EXTENSION & WIDENING OF HOOPER ROAD
(LA 16 - SULLIVAN ROAD)
SOURCE: CEI FIELD SURVEY, APRIL 9, 12, 15, 17, 19, 23, & 30, 2013
MAP BASE: NY ASSOCIATES PROVIDED IMAGERY, 2013
DATUM: NAD83

0 125 250 375 500
Feet

WETLANDS

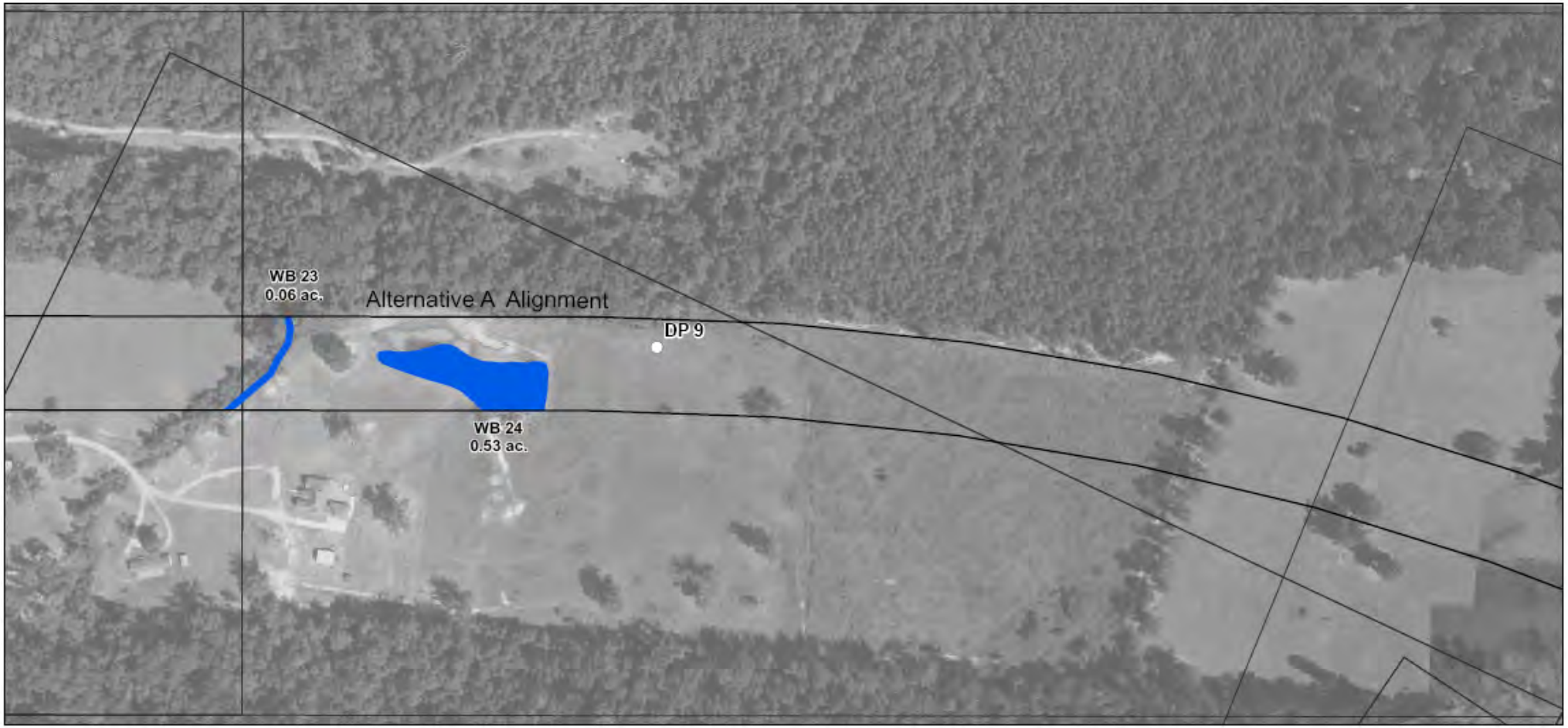
- DATA POINT
- PFO WETLAND
- WATERBODY
- ALTERNATIVE 1-A ROW

STAGE 1 ENVIRONMENTAL ASSESSMENT
LA HWY 408 - HOOPER ROAD EXTENSION AND WIDENING (LA 16 - SULLIVAN ROAD)

LOCATION: T5S R2E S33, 49-51, 53-54
T5S R3E S47-49
T6S R2E S4-5
PARISH: EAST BATON ROUGE & LIVINGSTON
APPLICATION BY: LDOTD
DATE: 9/18/2013

N-Y ASSOCIATES - SHEET 110

FIGURE IV - 10



PURPOSE: EXTENSION & WIDENING OF HOOPER ROAD
(LA 16 - SULLIVAN ROAD)
SOURCE: CEI FIELD SURVEY, APRIL 9, 12, 15, 17, 19, 23, & 30, 2013
MAP BASE: NY ASSOCIATES PROVIDED IMAGERY, 2013
DATUM: NAD83

0 125 250 375 500
Feet

WETLANDS

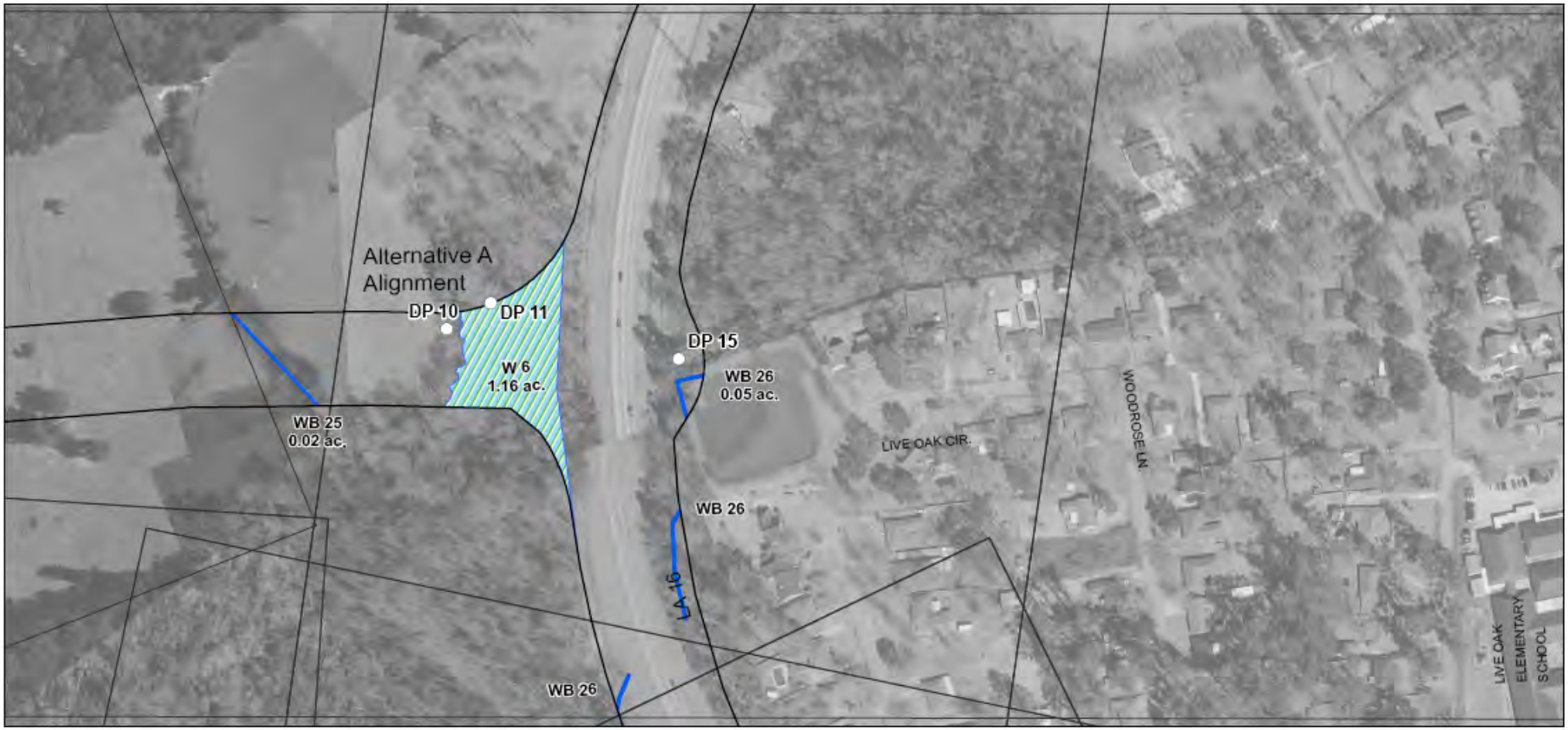
- DATA POINT
- PFO WETLAND
- WATERBODY
- ALTERNATIVE 1-A ROW

STAGE 1 ENVIRONMENTAL ASSESSMENT
LA HWY 408 - HOOPER ROAD EXTENSION AND WIDENING (LA 16 - SULLIVAN ROAD)

LOCATION: T5S R2E S33, 49-51, 53-54
T5S R3E S47-49
T6S R2E S4-5
PARISH: EAST BATON ROUGE & LIVINGSTON
APPLICATION BY: LDOTD
DATE: 9/18/2013

N-Y ASSOCIATES - SHEET 111

FIGURE IV - 11



PURPOSE: EXTENSION & WIDENING OF HOOPER ROAD
(LA 16 - SULLIVAN ROAD)
SOURCE: CEI FIELD SURVEY, APRIL 9, 12, 15, 17, 19, 23, & 30, 2013
MAP BASE: NY ASSOCIATES PROVIDED IMAGERY, 2013
DATUM: NAD83

0 125 250 375 500
Feet

WETLANDS

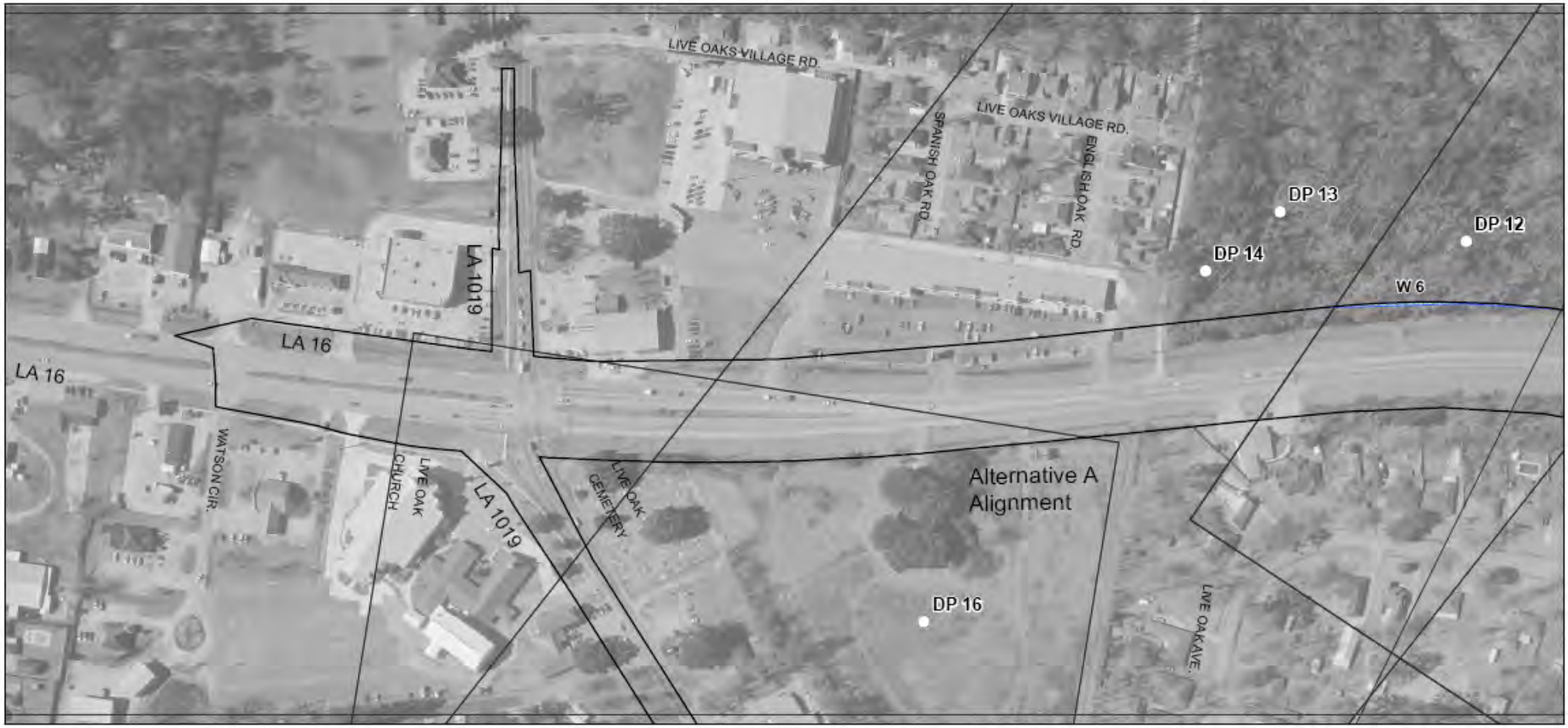
- DATA POINT
- PFO WETLAND
- WATERBODY
- ALTERNATIVE 1-A ROW

STAGE 1 ENVIRONMENTAL ASSESSMENT
LA HWY 408 - HOOPER ROAD EXTENSION AND WIDENING (LA 16 - SULLIVAN ROAD)

LOCATION: T5S R2E S33, 49-51, 53-54
T5S R3E S47-49
T6S R2E S4-5
PARISH: EAST BATON ROUGE & LIVINGSTON
APPLICATION BY: LDOTD
DATE: 9/18/2013

N-Y ASSOCIATES - SHEET 112

FIGURE IV - 12



PURPOSE: EXTENSION & WIDENING OF HOOPER ROAD (LA 16 - SULLIVAN ROAD)
SOURCE: CEI FIELD SURVEY, APRIL 9, 12, 15, 17, 19, 23, & 30, 2013
MAP BASE: NY ASSOCIATES PROVIDED IMAGERY, 2013
DATUM: NAD83

0 125 250 375 500
Feet

WETLANDS

- DATA POINT
- PFO WETLAND
- WATERBODY
- ALTERNATIVE 1-A ROW

STAGE 1 ENVIRONMENTAL ASSESSMENT
LA HWY 408 - HOOPER ROAD EXTENSION AND WIDENING (LA 16 - SULLIVAN ROAD)

LOCATION: T5S R2E S33, 49-51, 53-54
T5S R3E S47-49
T6S R2E S4-5
PARISH: EAST BATON ROUGE & LIVINGSTON
APPLICATION BY: LDOTD
DATE: 9/18/2013

N-Y ASSOCIATES - SHEET 113

FIGURE IV - 13

PURPOSE: EXTENSION & WIDENING OF HOOPER ROAD
(LA 16 - SULLIVAN ROAD)
SOURCE: CEI FIELD SURVEY, APRIL 9, 12, 15, 17, 19, 23, & 30, 2013
MAP BASE: NY ASSOCIATES PROVIDED IMAGERY, 2013
DATUM: NAD83

0 125 250 375 500
Feet

WETLANDS

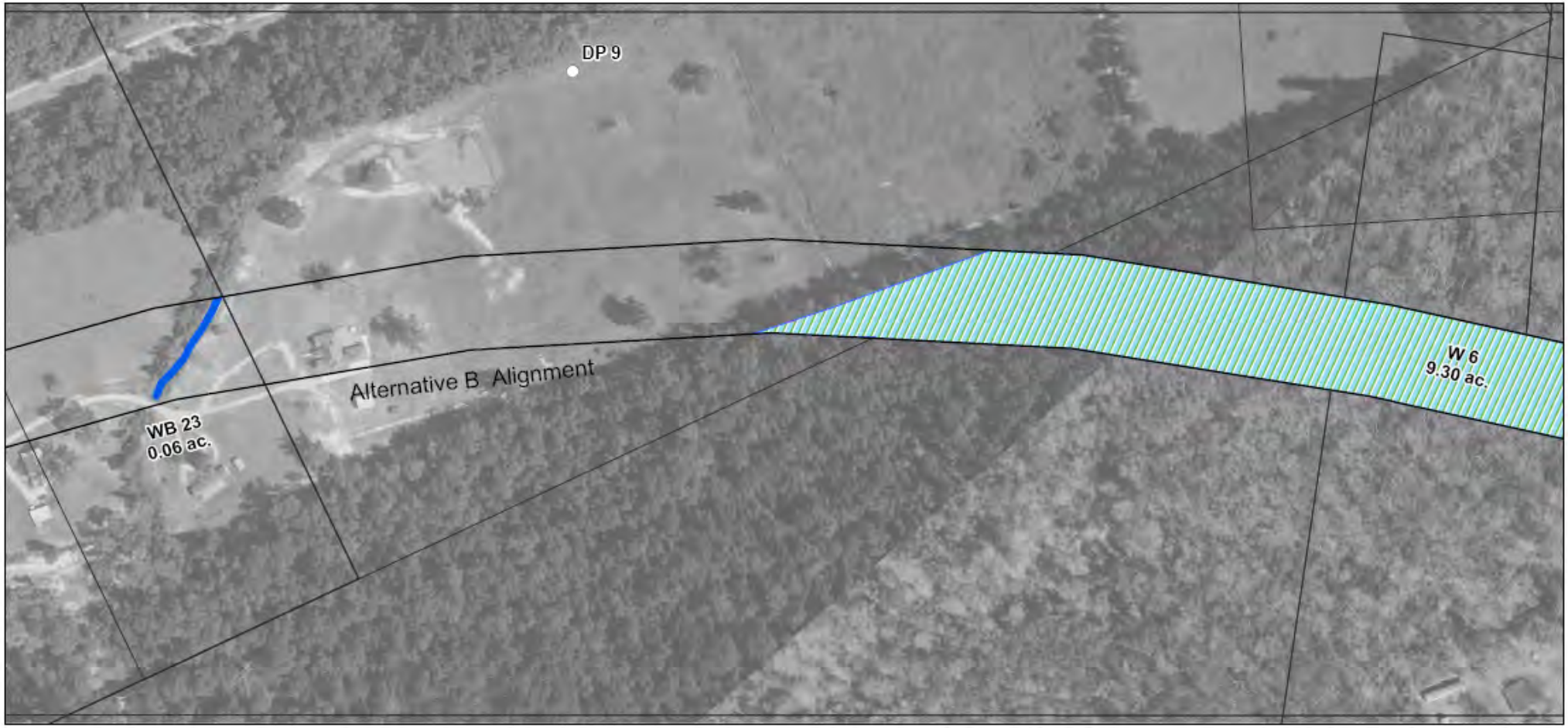
- DATA POINT
- PFO WETLAND
- WATERBODY
- ALTERNATIVE 1-B ROW

STAGE 1 ENVIRONMENTAL ASSESSMENT
LA HWY 408 - HOOPER ROAD EXTENSION AND WIDENING (LA 16 - SULLIVAN ROAD)

LOCATION: T5S R2E S33, 49-51, 53-54
T5S R3E S47-49
T6S R2E S4-5
PARISH: EAST BATON ROUGE & LIVINGSTON
APPLICATION BY: LDOTD
DATE: 9/18/2013

N-Y ASSOCIATES - SHEET 116

FIGURE IV - 14



PURPOSE: EXTENSION & WIDENING OF HOOPER ROAD
(LA 16 - SULLIVAN ROAD)
SOURCE: CEI FIELD SURVEY, APRIL 9, 12, 15, 17, 19, 23, & 30, 2013
MAP BASE: NY ASSOCIATES PROVIDED IMAGERY, 2013
DATUM: NAD83

0 125 250 375 500
Feet

WETLANDS

- DATA POINT
- PFO WETLAND
- WATERBODY
- ALTERNATIVE 1-B ROW

STAGE 1 ENVIRONMENTAL ASSESSMENT
LA HWY 408 - HOOPER ROAD EXTENSION AND WIDENING (LA 16 - SULLIVAN ROAD)

LOCATION: T5S R2E S33, 49-51, 53-54
T5S R3E S47-49
T6S R2E S4-5
PARISH: EAST BATON ROUGE & LIVINGSTON
APPLICATION BY: LDOTD
DATE: 9/18/2013

N-Y ASSOCIATES - SHEET 117

FIGURE IV - 15

PURPOSE: EXTENSION & WIDENING OF HOOPER ROAD
(LA 16 - SULLIVAN ROAD)
SOURCE: CEI FIELD SURVEY, APRIL 9, 12, 15, 17, 19, 23, & 30, 2013
MAP BASE: NY ASSOCIATES PROVIDED IMAGERY, 2013
DATUM: NAD83

0 125 250 375 500
Feet

WETLANDS

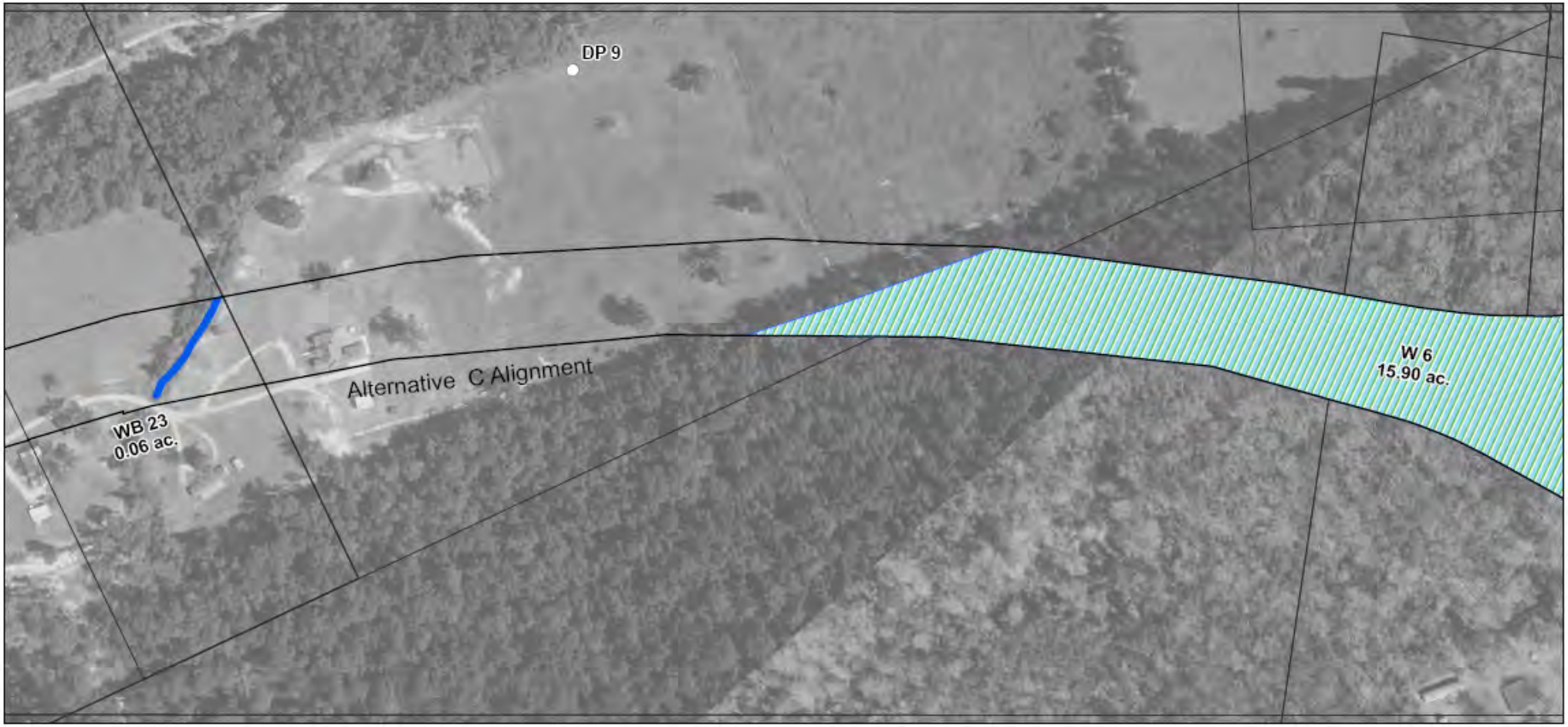
- DATA POINT
- PFO WETLAND
- WATERBODY
- ALTERNATIVE 1-B ROW

STAGE 1 ENVIRONMENTAL ASSESSMENT
LA HWY 408 - HOOPER ROAD EXTENSION AND WIDENING (LA 16 - SULLIVAN ROAD)

LOCATION: T5S R2E S33, 49-51, 53-54
T5S R3E S47-49
T6S R2E S4-5
PARISH: EAST BATON ROUGE & LIVINGSTON
APPLICATION BY: LDOTD
DATE: 9/18/2013

N-Y ASSOCIATES - SHEET 118

FIGURE IV-16



PURPOSE: EXTENSION & WIDENING OF HOOPER ROAD
(LA 16 - SULLIVAN ROAD)
SOURCE: CEI FIELD SURVEY, APRIL 9, 12, 15, 17, 19, 23, & 30, 2013
MAP BASE: NY ASSOCIATES PROVIDED IMAGERY, 2013
DATUM: NAD83

0 125 250 375 500
Feet

WETLANDS

- DATA POINT
- PFO WETLAND
- WATERBODY
- ALTERNATIVE 1-C ROW

STAGE 1 ENVIRONMENTAL ASSESSMENT
LA HWY 408 - HOOPER ROAD EXTENSION AND WIDENING (LA 16 - SULLIVAN ROAD)

LOCATION: T5S R2E S33, 49-51, 53-54
T5S R3E S47-49
T6S R2E S4-5
PARISH: EAST BATON ROUGE & LIVINGSTON
APPLICATION BY: LDOTD
DATE: 9/18/2013

N-Y ASSOCIATES - SHEET 123

FIGURE IV- 17

PURPOSE: EXTENSION & WIDENING OF HOOPER ROAD
(LA 16 - SULLIVAN ROAD)
SOURCE: CEI FIELD SURVEY, APRIL 9, 12, 15, 17, 19, 23, & 30, 2013
MAP BASE: NY ASSOCIATES PROVIDED IMAGERY, 2013
DATUM: NAD83

0 125 250 375 500
Feet

WETLANDS

- DATA POINT
- PFO WETLAND
- WATERBODY
- ALTERNATIVE 1-C ROW

STAGE 1 ENVIRONMENTAL ASSESSMENT
LA HWY 408 - HOOPER ROAD EXTENSION AND WIDENING (LA 16 - SULLIVAN ROAD)

LOCATION: T5S R2E S33, 49-51, 53-54
T5S R3E S47-49
T6S R2E S4-5
PARISH: EAST BATON ROUGE & LIVINGSTON
APPLICATION BY: LDOTD
DATE: 9/18/2013

N-Y ASSOCIATES - SHEET 124

FIGURE IV-18

PURPOSE: EXTENSION & WIDENING OF HOOPER ROAD (LA 16 - SULLIVAN ROAD)
SOURCE: CEI FIELD SURVEY, APRIL 9, 12, 15, 17, 19, 23, 30, AUG. 26-27, & SEPT. 4-6, 2013
MAP BASE: N-Y ASSOCIATES: AERIAL IMAGERY PROVIDED 2013
DATUM: NAD83

0 125 250 375 500
Feet

WETLANDS

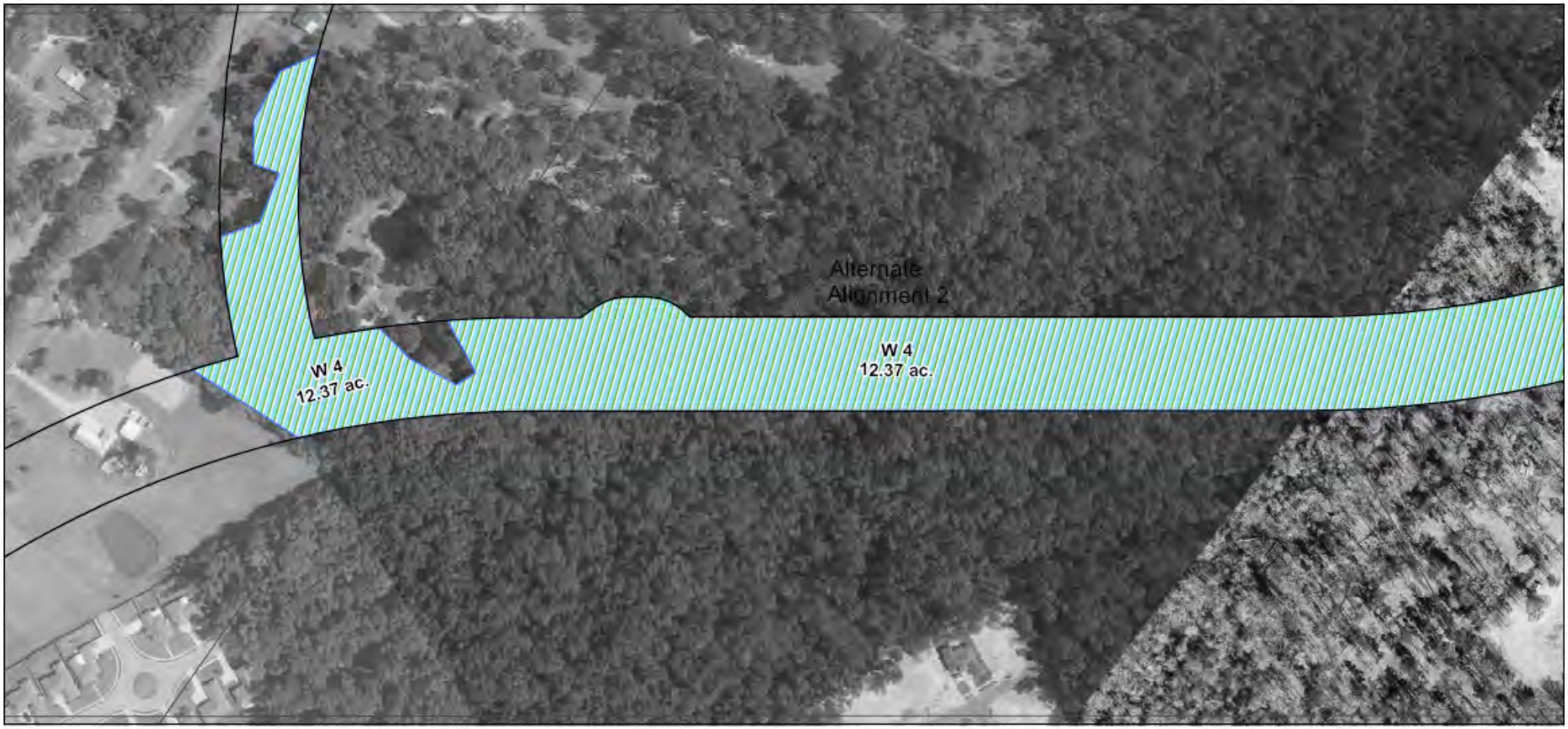
- DATA POINT
- PFO WETLAND
- WATERBODY
- ALTERNATIVE 2 ROW

STAGE 1 ENVIRONMENTAL ASSESSMENT LA HWY 408 - HOOPER ROAD EXTENSION AND WIDENING (LA 16 - SULLIVAN ROAD)

LOCATION: T5S R2E S33, 49-51, 52-54
T5S R3E S47-50
T6S R2E S4-5
PARISH: EAST BATON ROUGE & LIVINGSTON
APPLICATION BY: LDOTD
DATE: 9/18/2013

N-Y ASSOCIATES - SHEET P-28

FIGURE IV-19



PURPOSE: EXTENSION & WIDENING OF HOOPER ROAD
(LA 16 - SULLIVAN ROAD)
SOURCE: CEI FIELD SURVEY, APRIL 9, 12, 15, 17, 19, 23, 30,
AUG. 26-27, & SEPT. 4-6, 2013
MAP BASE: N-Y ASSOCIATES: AERIAL IMAGERY PROVIDED 2013
DATUM: NAD83

0 125 250 375 500
Feet

WETLANDS

- DATA POINT
- PFO WETLAND
- WATERBODY
- ALTERNATIVE 2 ROW

STAGE 1 ENVIRONMENTAL ASSESSMENT
LA HWY 408 - HOOPER ROAD EXTENSION AND WIDENING (LA 16 - SULLIVAN ROAD)

LOCATION: T5S R2E S33, 49-51, 52-54
T5S R3E S47-50
T6S R2E S4-5
PARISH: EAST BATON ROUGE & LIVINGSTON
APPLICATION BY: LDOTD
DATE: 9/18/2013

N-Y ASSOCIATES - SHEET P-29

FIGURE IV-20

PURPOSE: EXTENSION & WIDENING OF HOOPER ROAD (LA 16 - SULLIVAN ROAD)
SOURCE: CEI FIELD SURVEY, APRIL 9, 12, 15, 17, 19, 23, 30, AUG. 26-27, & SEPT. 4-6, 2013
MAP BASE: N-Y ASSOCIATES: AERIAL IMAGERY PROVIDED 2013
DATUM: NAD83

0 125 250 375 500
Feet

WETLANDS

- DATA POINT
- PFO WETLAND
- WATERBODY
- ALTERNATIVE 2 ROW

STAGE 1 ENVIRONMENTAL ASSESSMENT LA HWY 408 - HOOPER ROAD EXTENSION AND WIDENING (LA 16 - SULLIVAN ROAD)

LOCATION: T5S R2E S33, 49-51, 52-54
T5S R3E S47-50
T6S R2E S4-5
PARISH: EAST BATON ROUGE & LIVINGSTON
APPLICATION BY: LDOTD
DATE: 9/18/2013

N-Y ASSOCIATES - SHEET P-30

FIGURE IV-21

PURPOSE: EXTENSION & WIDENING OF HOOPER ROAD (LA 16 - SULLIVAN ROAD)
SOURCE: CEI FIELD SURVEY, APRIL 9, 12, 15, 17, 19, 23, 30, AUG. 26-27, & SEPT. 4-6, 2013
MAP BASE: N-Y ASSOCIATES: AERIAL IMAGERY PROVIDED 2013
DATUM: NAD83

0 125 250 375 500
Feet

WETLANDS

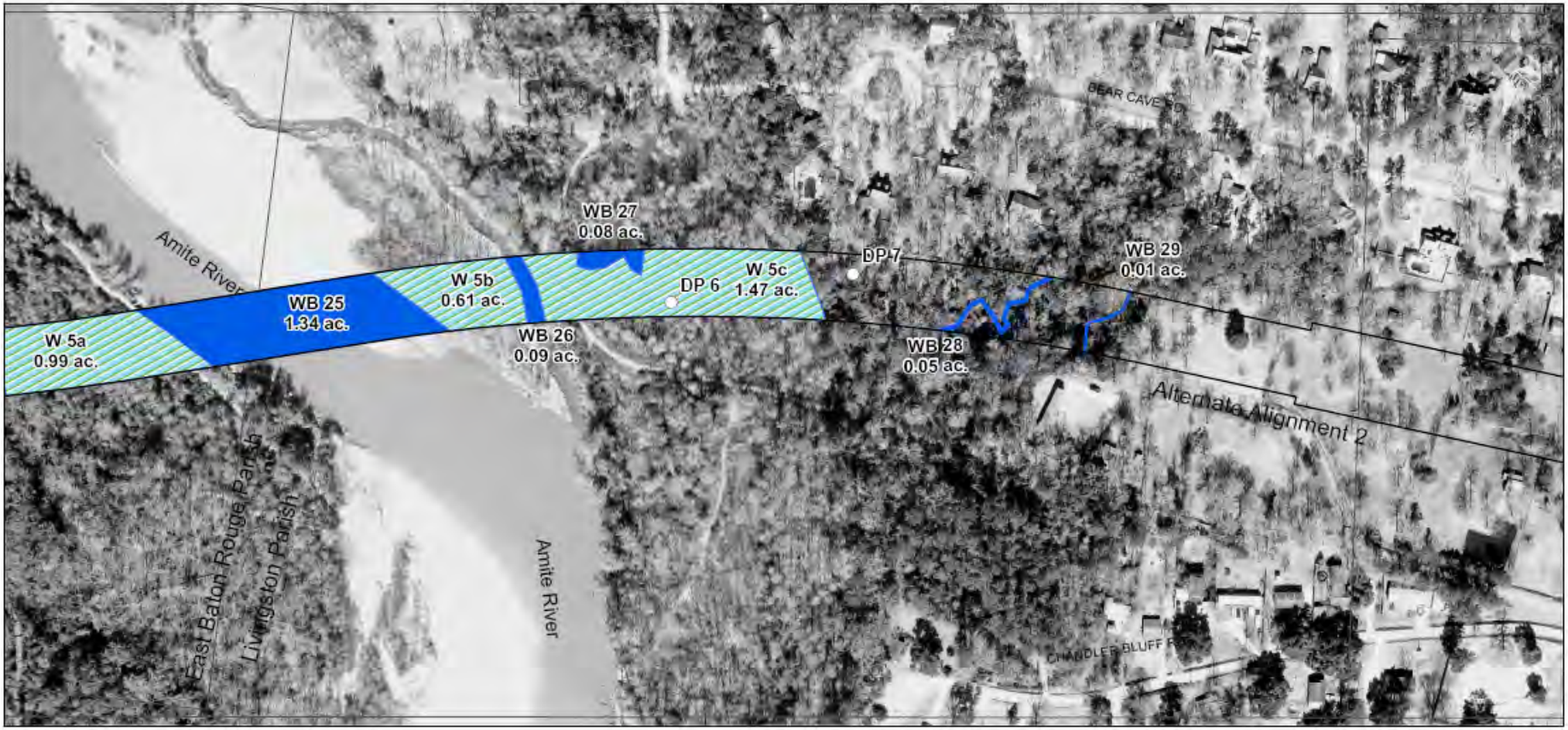
- DATA POINT
- PFO WETLAND
- WATERBODY
- ALTERNATIVE 2 ROW

STAGE 1 ENVIRONMENTAL ASSESSMENT LA HWY 408 - HOOPER ROAD EXTENSION AND WIDENING (LA 16 - SULLIVAN ROAD)

LOCATION: T5S R2E S33, 49-51, 52-54
T5S R3E S47-50
T6S R2E S4-5
PARISH: EAST BATON ROUGE & LIVINGSTON
APPLICATION BY: LDOTD
DATE: 9/18/2013

N-Y ASSOCIATES - SHEET P-31

FIGURE IV-22



PURPOSE: EXTENSION & WIDENING OF HOOPER ROAD (LA 16 - SULLIVAN ROAD)
SOURCE: CEI FIELD SURVEY, APRIL 9, 12, 15, 17, 19, 23, 30, AUG. 26-27, & SEPT. 4-6, 2013
MAP BASE: N-Y ASSOCIATES: AERIAL IMAGERY PROVIDED 2013
DATUM: NAD83

0 125 250 375 500
Feet

WETLANDS

- DATA POINT
- PFO WETLAND
- WATERBODY
- ALTERNATIVE 2 ROW

STAGE 1 ENVIRONMENTAL ASSESSMENT
LA HWY 408 - HOOPER ROAD EXTENSION AND WIDENING (LA 16 - SULLIVAN ROAD)

LOCATION: T5S R2E S33, 49-51, 52-54
T5S R3E S47-50
T6S R2E S4-5
PARISH: EAST BATON ROUGE & LIVINGSTON
APPLICATION BY: LDOTD
DATE: 9/18/2013

N-Y ASSOCIATES - SHEET P-32

FIGURE IV-23

PURPOSE: EXTENSION & WIDENING OF HOOPER ROAD (LA 16 - SULLIVAN ROAD)
SOURCE: CEI FIELD SURVEY, APRIL 9, 12, 15, 17, 19, 23, 30, AUG. 26-27, & SEPT. 4-6, 2013
MAP BASE: N-Y ASSOCIATES: AERIAL IMAGERY PROVIDED 2013
DATUM: NAD83

0 125 250 375 500
Feet

WETLANDS

- DATA POINT
- PFO WETLAND
- WATERBODY
- ALTERNATIVE 2 ROW

STAGE 1 ENVIRONMENTAL ASSESSMENT
LA HWY 408 - HOOPER ROAD EXTENSION AND WIDENING (LA 16 - SULLIVAN ROAD)

LOCATION: T5S R2E S33, 49-51, 52-54
T5S R3E S47-50
T6S R2E S4-5
PARISH: EAST BATON ROUGE & LIVINGSTON
APPLICATION BY: LDOTD
DATE: 9/18/2013

N-Y ASSOCIATES - SHEET P-33

FIGURE IV-24

PURPOSE: EXTENSION & WIDENING OF HOOPER ROAD (LA 16 - SULLIVAN ROAD)
SOURCE: CEI FIELD SURVEY, APRIL 9, 12, 15, 17, 19, 23, 30, AUG. 26-27, & SEPT. 4-6, 2013
MAP BASE: N-Y ASSOCIATES: AERIAL IMAGERY PROVIDED 2013
DATUM: NAD83

0 125 250 375 500
Feet

WETLANDS

- DATA POINT
- PFO WETLAND
- WATERBODY
- ALTERNATIVE 2 ROW

STAGE 1 ENVIRONMENTAL ASSESSMENT LA HWY 408 - HOOPER ROAD EXTENSION AND WIDENING (LA 16 - SULLIVAN ROAD)

LOCATION: T5S R2E S33, 49-51, 52-54
T5S R3E S47-50
T6S R2E S4-5
PARISH: EAST BATON ROUGE & LIVINGSTON
APPLICATION BY: LDOTD
DATE: 9/18/2013

N-Y ASSOCIATES - SHEET P-34

FIGURE IV-25

NATURAL AND SCENIC RIVERS

No Build Alternative

No impacts to the area's natural or scenic rivers would occur under the No Build Alternative.

Build Alternatives

No scenic rivers are present within a 1-mile radius of the project area. Therefore, the project will have no adverse impacts on natural and scenic rivers.

THREATENED AND ENDANGERED SPECIES

No Build Alternative

There would be probably be no adverse impacts to threatened or endangered species under the No Build Alternative because none was identified in the project area during the field investigations.

Alternative 1-A

Based on the results of agency coordination, research, and field surveys, it is unlikely the project will have any adverse effect on the Red-cockaded Woodpecker or the Alabama (inflated) Heelsplitter. Neither species was identified within the proposed project ROW or within the area of search in the Amite River. Only one Southern pocketbook mussel, having an S3 state rank and considered rare in Louisiana, was located downstream of the proposed bridge crossing well outside of the proposed ROW for the bridge. Construction and operation of the extension of Hooper Road would likely have no direct effect on this species.

Alternative 1-B

Based on the results of agency coordination, research, and field surveys, it is unlikely the project will have any adverse effect on the Red-cockaded Woodpecker or the Alabama (inflated) Heelsplitter. Neither species was identified within the proposed project ROW or within the area of search in the Amite River. Only one Southern Pocketbook mussel, having an S3 state rank and considered rare in Louisiana, was located downstream of the proposed bridge crossing well outside of the proposed ROW for the bridge. Construction and operation of the extension of Hooper Road would likely have no direct effect on this species.

Alternative 1-C

Based on the results of agency coordination, research, and field surveys, it is unlikely the project will have any adverse effect on the Red-cockaded Woodpecker or the Alabama (inflated) Heelsplitter. Neither species was identified within the proposed project ROW or within the area of search in the Amite River. Only one Southern Pocketbook mussel, having an S3 state rank and considered rare in Louisiana, was located downstream of the proposed bridge crossing well outside of the proposed ROW for the bridge. Construction and operation of the extension of Hooper Road would likely have no direct effect on this species.

Alternative 2

Based on the results of agency coordination, research, and field surveys, it is unlikely the project will have any adverse effect on the Red-cockaded Woodpecker or the Alabama (inflated) Heelsplitter. Neither species was identified within the proposed project ROW or within the area of search in the Amite River. Only one Southern Pocketbook mussel, having an S3 state rank and considered rare in Louisiana, was located downstream of the proposed bridge crossing well outside of the proposed ROW for the bridge. Construction and operation of the extension of Hooper Road would likely have no direct effect on this species.

HYDROLOGY, FLOODPLAINS AND FLOODING

No Build Alternative

The No-Build Alternative would not affect the current floodplain designations, nor would it likely affect the hydrology or flooding of the project area.

Build Alternatives

Similar to the No-Build Alternative, the hydrology in the project area is unlikely to be affected by the construction or operation of the projects included in any of the Build Alternatives. Either bridge structure across the Amite River is proposed to accommodate a 100-year flood, and should allow sufficient pass-through of water so as not to collect debris that would result in damming.

As noted in the **Drainage** section of *Chapter II* and as shown on the plan view drawings at the end of that chapter, all existing cross-drains under existing roadways are proposed to be increased by at least one (1) additional barrel or one (1) additional pipe. As a result, existing flooding problems reported during the public meeting may be improved by the project.

WATER RESOURCES (SOLE SOURCE AQUIFERS)

No Build Alternative

The No Build Alternative would not adversely affect water quality or sole source aquifers.

Build Alternatives

None of the Build Alternatives would affect water quality in the project area. Correspondence from the US EPA, Ground Water UIC section received in response to the *Solicitation of Views* stated that the project as proposed should not have an adverse effect on the quality of ground water underlying the project site. (Bechdol, 2011 and 2013).

PRIME FARMLAND AND SOILS

No Build Alternative

There would be no impacts to study area soils or geology if the No Build Alternative is selected. No mitigation would be proposed or required with this alternative.

Build Alternatives

The construction areas in the project study corridor have been designated as being within urban areas by the National Resources Conservation Service, and are therefore exempt from the rules and regulations of the Farmland Protection Policy Act (Norton 2012).

COMPARATIVE ANALYSIS OF THE ALTERNATIVES

EVALUATION MEASURES

Aspects of the stated purpose and need for of the project identified in *Chapter I* are used as criteria to assess the effectiveness of the alternatives considered (the No Build Alternative and the Build Alternatives) in addressing the purpose and need for the project. Additionally, the comparative impacts of each alternative are also used to evaluate from among the alternatives.

Evaluation Measure 1: Improved Connectivity between the Watson area of Livingston Parish and the City of Central in East Baton Rouge Parish.

Alternatives 1-A, 1-B, 1-C and 2 would all each improve connectivity between Livingston and East Baton Rouge Parishes, while the No Build Alternative would not. Currently the two Parishes are divided by water (the Amite River) and are only crossed by three (3) bridge locations (from south to north): I-12, US 190/Florida Avenue, and Magnolia Bridge Road. The next bridge north of Magnolia Bridge Road connects the two Parishes north of East Baton Rouge and Livingston Parishes (the LA 63 bridge linking East Feliciana Parish and St. Helena Parish). Each of the Build Alternatives would create a new crossing point for the northern reaches of East Baton Rouge and Livingston Parishes, particularly for the City of Central and the community of Watson, while the No Build Alternative does not.

Evaluation Measure 2: Provide roadway network continuity and linkages with existing area highways.

The Build Alternatives will enhance the overall transportation system by providing roadway network continuity and linkages with existing area highways, while the No Build Alternative will not. The north-south running Amite River currently creates a "disconnect" in east-west travel. East-west travelers in the project area are now required to travel some distances (depending on their origin and destination) north or south to either the LA 63 crossing or to the Magnolia Bridge crossing, thence often north or south again to continue traveling east or west. Under the No Build Alternative this situation will remain. The Build Alternatives will provide a shorter route and better systems linkages for east-west oriented highways such as LA 408 (Hooper Road), LA 64 (Greenwell Springs/Port Hudson Road), LA 1019 (Springfield Road), and LA 1024 (Cane Market Road). Of the four Build Alternatives, Alternatives 1-B and 1-C provide more roadway continuity with connections to LA 16 and a direct linkage to and from the east via LA 1019. Alternatives 1-A and Alternative 2 only provide a direct connections terminating at LA 16, and no direct linkages to/from the east. Any movements to and from the east (such as to LA 1019 or LA 1024) will require movements along LA 16.

Evaluation Measure 3: Comparative impacts relative to each alternative

Upon completion of the impact analyses, impacts of each of the alternatives can be compared to each other to judge relative impact. There are nine (9) categories which have some definitive impacts amongst at least one of the alternatives:

1. Relocations
2. Neighborhood and Community Cohesion
3. Parks and Recreation
4. Historic / Cultural Resources
5. Visual/Aesthetic Impacts

6. Noise Impacts
7. Vegetation
8. Wetlands
9. Hydrology, Floodplains and Flooding

Each are described beginning below. **Table IV-16** on the following page provides a summary matrix of the comparative impacts for all five alternatives.

Relocations

The No Build Alternative would result in no relocations, and of the Build Alternatives, Alternative 1-A has the least relocations, while Alternative 2 has the most (including a church relocation and relocations of forty units of a self-storage facility).

Neighborhood and Community Cohesion

Neither the No Build Alternative nor the Alterntive 1 Build Alternatives are expected to impact neighborhood/community cohesion, while Alternative 2 is expected to negatively impact the Chandler Bluff Road/ Bear Cave Road Community by permanently dividing "back fence" neighbors

Parks and Recreation

Alternatives 1-A, 2 and the No Build Alternative would have no impact on parks and recreation facilities, while Alternatives 1-B and 1-C would affect the Watson Community Center. However, as stated earlier in the chapter, Livingston Parish Recreation District 2 members have future plans to replace the Center with a new combination gymnasium and community center on a portion of the new ballpark site located a short distance north on LA 16 and if Alternative 1-B or 1-C were to be the selected alternative, they would prefer to sell the existing property as a total take and use those funds as seed money for construction of a new gym/community center.

Historic/Cultural Resources

Only Alternative 2 would have any impact on historic cultural resources; the Nunnally House which is recommended as eligible for the NRHP would be indirectly affected.

Visual/Aesthetic Impacts

As described earlier in the document, all Build Alternatives except for Alternative 2 are projected to have limited visual/aesthetic impacts. Alternative 2 is projected to have noticeable impacts to the Bear Cave Road/ Chandler Bluff Road residences.

Noise Impacts

While the noise impacts of the Build Alternatives did not result in noise barrier options that passed both the tests of acoustic feasibility and reasonableness, all of them did have a number of residences that are projected to be impacted by noise under future conditions. Only 17 were projected to be impacted under the No Build Alternative, while the number of projected residences with impacts under the Build Alternative was in the same range, from a low of 124 residences in Alternative 1-C to a high of 149 residences in Alternative 2.

Vegetation

While the No Build Alternative is expected to have no impact on vegetation, each of the Build Alternatives is expected to have some impact. Alternative 1-A, the shortest of the alternatives and the one which goes through the least amount of forested land would be ranked as low-moderate impact, Alternative 1-B would be ranked moderate impact. Alternative 1-C and Alternative 2, which are longer and would result in the most removal of wooded areas, are both ranked moderate-high.

Wetlands

The Wetland Delineation completed as part of the impact analysis provides qualitative figures for projected wetlands impacted (in terms of acreage). The No Build would affect no wetlands, Alternative 1-A would affect the least (17.563 acres), Alternative 1-C would affect the most (32.234 acres) and Alternative 1-B and Alternative 2 would affect similar numbers in the middle range (25.639 and 23.375 acres respectively).

Hydrology, Floodplains and Flooding

As noted earlier in this chapter, under each of the Build Alternatives, drainage in the Hooper Road widening area may be improved due to new cross drains being added with roadway construction for that widening. This positive impact would not occur under the No Build Alternative.

IDENTIFICATION OF THE PREFERRED ALTERNATIVE

In looking at the Comparative Analysis above, it is evident that the No Build Alterntive does not meet either of the two evaluation measures based on the Purpose and Need for the project. As such, the Preferred Alternative would be identified from amongst the four Build Alternatives.

TABLE IV-16
COMPARATIVE EVALAUTION MATRIX, HOOPER ROAD ENIVIRONMENTAL ASSESSMENT

ALTERNATIVE (*COST*):	Addresses Purpose and Need?:	Relocations:	Neighborhood & Community Cohesion	Parks and Recreation	Historic/ Cultural Resources	Visual/Aesthetic Impacts	Noise Impacts	Vegetation	Wetlands	Hydrology, Floodplains and Flooding
NO-BUILD ALTERNATIVE *($0)*	No	0 residential, 0 commercial	None	None	None	Limited	• 17 Residences • Live Oak Cemetery	None	none	No change
ALTERNATIVE 1-A *($168,256,007)*	• Fully addresses *Improved Connectivity*. • Partially provides *Roadway Network Continuity and Linkages*.	9 residential, 16 commercial	None	None	None	Limited	• 130 Residences • Football Stadium • Grace United Pentecostal Church • Live Oak Cemetery	Low-Moderate	17.563 acres impacted	Drainage in Hooper Road widening area may be improved
ALTERNATIVE 1-B *($179,319,070)*	• Fully addresses *Improved Connectivity*. • Provides *Roadway Network Continuity and Linkages*	14 residential, 23 commercial	None	Would affect Watson Community Center	None	Limited	• 132 Residences • Football Stadium • Grace United Pentecostal Church • Live Oak Cemetery • Watson Community Center	Moderate	25.639 acres impacted	Drainage in Hooper Road widening area may be improved
ALTERNATIVE 1-C *($188,995,661)*	• Fully addresses *Improved Connectivity.* • Provides *Roadway Network Continuity and Linkages*	11 residential, 23 commercial	None	Would affect Watson Community Center	None	Limited	• 124 Residences • Football Stadium • Grace United Pentecostal Church • Live Oak Cemetery • Watson Community Center	Moderate- high	32.234 acres impacted	Drainage in Hooper Road widening area may be improved
ALTERNATIVE 2 *($166,807,710)*	• Fully addresses *Improved Connectivity*. • Partially provides *Roadway Network Continuity and Linkages*	31 residential, 11 businesses, 1 church, 40 personal property displacements (self-storage)	Some impacts to the Bear Cave/Chandler Bluff community	None	Nunnally House; recommended eligible for listing on NRHP, indirectly affected	Noticeable impacts to the Bear Cave/ Chandler Bluff Road residences	• 149 Residences • Football Stadium	Moderate -high	25.375 acres impacted	Drainage in Hooper Road widening area may be improved

In looking at the comparative impacts, Alternative 2 clearly would have more of a negative impact on the community than the other three alternatives. Of the remaining three alternatives, Alternative 1-A clearly has the least amount of impacts overall.

However, in returning to the primary evaluation measures based the Purpose and Need for the project, Alternative 1-A does not fare as well as Alternatives 1-B and 1-C in providing more roadway continuity (Evaluation Measure 2) Alternative 1-A only provides a direct connection terminating at LA 16, and no direct linkages to/from the east. Alternatives 1-B and 1-C have connections to LA 16 and a direct linkage to and from the east via LA 1019.

Alternatives 1-B and 1-C best meet the purpose and need of the project, and have similar impacts, but of the two, Alternative 1-B has a slightly less amount of impact. Further more, as they essentially share the same alignment, Alternative B-- with some extra right-of-way purchased in reserve-- can later be upgraded to Alternative C if needed or desired, while Alternative A does not provide that flexibility.

As a result of the comparative analysis above and due to the consensus shown by local officials and residents, **Alternative 1-B** is identified as the Preferred Alternative.

CHAPTER V

THE PREFERRED ALTERNATIVE: IMPACT SUMMARY, MITIGATION MEASURES, COMMITMENTS AND PERMITS

The Direct Impacts to the transportation system and the human and natural environments as a result of the implementation of the Preferred Alternative are listed. For unavoidable adverse impacts, this chapter provides a discussion of mitigation measures recommended to reduce those adverse effects. The indirect and cumulative impacts of the Preferred Alternative are also examined in this chapter. Commitments made to further the project are then described. The Chapter concludes with a section in which the permits required to complete the project are listed.

DIRECT IMPACTS NOT REQUIRING MITIGATION

As outlined in *Chapter IV*, implementation of the Preferred Alternative (widening of Hooper Road and construction of the Hooper Road Extension under Alternative 1-B) will likely have some direct impacts within the project study area. Two (2) of these impact categories are considered non-adverse/beneficial, and require no mitigation measures. They include:

- Traffic Impacts
- Hydrology, Floodplains and Flooding

DIRECT IMPACTS REQUIRING MITIGATION

Three other impact area categories are considered unavoidable, adverse social, economic, or natural environmental impacts that require some form of mitigation:

- Relocations
- Wetlands
- Construction Period Impacts

A discussion of the proposed mitigation measures for each is provided below:

As the proposed Build Alternative is currently planned, the total number of **relocations** is thirty-seven (fourteen residential and twenty-three commercial). It is anticipated that many of the commercial tenants can be relocated to other strip shopping centers in their immediate vicinity.

In developing the layouts for each alternative, minimizing the number of relocations was a key criterion. Consequently, there has been some impact mitigation occurring in the planning phase.

In regards to relocations occurring as a result of this project, the LADOTD is committed to following the federal rules and regulations in providing relocation assistance for all displaced households. Under these regulations, homeowners and tenants are eligible for the fair market value for any real property purchased, payment of moving expenses, payment of closing costs on any new residence purchased, and possibly a housing differential payment (which would cover the gap between the fair market value of their current home and the cost to purchase a comparable home).

As fully described in Chapter IV, the proposed project's **wetlands impacts** are projected to consist of 25.64 acres of jurisdictional wetlands that lie within the proposed right-of-way. Onsite mitigation of wetland impacts could include clearing and maintenance of the minimum area of right-of-way. Installing adequate cross-drains underneath the facility will facilitate maintenance of current surface water movement. Mitigation of unavoidable wetland impacts could also be achieved through a monetary contribution, as determined by the regulatory agencies, to the Louisiana Nature Conservancy that maintains several wetland mitigation areas in the Florida Parishes. There is also the possibility of purchasing wetland bank credits from a Corps of Engineers approved wetland bank. Generally, the mitigation bank would be located within the same watershed if possible.

In terms of mitigation of **construction period impacts** (noise, air quality and vibration), several mitigation steps shall be taken and proper procedures followed. To minimize noise impacts, all construction equipment used in the construction phase of the project should be properly muffled and all motor panels should be shut during operation. In order to minimize the potential for impacts of construction noise on the local residents, the contractor should operate, whenever possible, between the hours of 7:00 a.m. and 6:00 p.m. To minimize potential air quality impacts, particularly related to control of particulate matter, the contractor shall comply with all relevant State, Federal and local laws and regulations. To minimize vibration impacts, pile driving operations should be monitored at critical structures, pavements and utilities during all pile driving operations.
To minimize impacts to drainage channels and excavated ponds, the following procedures should be followed:

- Channel work should be minimized and the rerouting of stream segments should be avoided. If channel work is necessary, precautions should be taken to avoid channel degrading from head-cutting. For example, grades at the culverts and bridges should remain at their existing grade.

- Minimize impacts to the riparian corridor, especially forested areas. For new crossings, prior cleared areas in the floodplain should be used when possible.

- To reduce the width of impact through the floodplain/riparian area, the entire right-of-way through the riparian area of floodplain should not be cleared. Only

clear what is needed for access and construction. Avoid constructing feeder roads across floodplains.

- Minimize impacts to the creek banks (soil and vegetation). Stabilize and replant disturbed banks as soon as construction at that specific site is finished.

- Best Management Practices (BMPs) should be used to avoid and minimize water quality impacts and to minimize erosion of banks and bare soil and the siltation of streams. BMPs can be non-structural (procedural) or structural. An example of a procedural BMP is to ensure the stabilization and revegetation of bare soil as soon as possible following (or if possible, just prior to completion of) construction. Structural BMPs include use of such items as silt fencing, fiber rolls, sediment traps, check dams, and hay bales during construction

- Wetlands or forested floodplains should not be used for staging or storage area.

- The applicant should thoroughly brief contractors on all permit conditions. Copies of the issued permit should be posted at the project site during construction for easy reference to avoid misunderstanding and inadvertent violations.

INDIRECT (SECONDARY) IMPACTS

The indirect or secondary impacts discussed in this section concern possible future conditions following construction of the Hooper Road project (widening and extension).

As noted earlier in the document, residential development has increased in the study area, particularly on the Livingston Parish side of the Amite River. But even with the construction of the Hooper Road extension, this trend of residential (and commercial) development is expected to continue over the next twenty years. With a new route and improved access in place, there is also an opportunity for further economic growth than that which is anticipated-- perhaps commercial or other growth.

Some may see this economic growth as a positive trend, an economic boon to the area. Others see the growth as an encroachment of sprawl, and a degradation of the natural setting that makes this area of Livingston Parish and the City of Central so appealing. Depending on point of view, growth can be a positive or negative impact.

Transportation is, of course, tied into this growth. Without a transportation network there can be <u>no</u> growth. But transportation in and of itself does not and cannot create the growth-- there are several other factors at work, such as desirability of location, presence of utilities and other infrastructure, issuance of development permits by appropriate agencies, etc. Transportation developments, such as placement of a new highway interchange, can only *affect* this growth.

Normally, the mitigation measures for handling growth-related impacts are already in the public's hands, and the public sector will lead the way in determining the limit and scope of mitigation. The most common public process mechanism to do so is via *planning* and

zoning. However, much of the corridor lies in an area that does not have zoning in place (Livingston Parish does not have zoning). As such, Livingston Parish citizens may be subject to having a type of (or amount of) growth that they are not comfortable with occur (due to the presence of the project) and no mechanism to guide or control it.

CUMULATIVE IMPACTS

METHODOLOGY

The Code of Federal Regulations (Title 40, Section 1508.7), states that cumulative effects are *"…impacts which result from the incremental consequences of an action when added to other past and reasonably foreseeable future actions, …"* The assessment will determine the impact(s) upon quality of life and environmental quality. Consideration of past, present, and foreseeable future actions in conjunction with anticipated effects of the Preferred Alternative is required. The point of the assessment is to determine the past impacts that have occurred, the present impact implications, and future impacts to the entire study area.

Past Actions

The methodology of assessing the cumulative impacts of the Preferred Alternative also considers the impacts from past projects within the study area. Cumulative past impacts include the completion of the Central Thruway, the widening of the Magnolia Bridge to four lanes, widening of some sections of I-12 from four to six lanes, and widening of other roads within the roadway network (Joor Road, Greenwell Springs Road, Comite Road, etc.).

Current Projects

The methodology of assessing the cumulative impacts of the Preferred Alternative also considers the impacts on other major current projects within the study area. Current, ongoing projects or developments that are included in the Preferred Alternative's cumulative impact analysis include the widening of Sullivan Road under the Green Light Plan, and widening of additional sections of I-12 from four to six lanes.

Future Projects

The methodology of assessing the cumulative impacts of the Preferred Alternative also considers the impacts on future foreseeable projects or developments within the study area. Many roadway and highway projects programmed for development are included as part of the No Build Alternative and described in detail in *Chapter II*. These include the widening of Hooper Road west of Sullivan Road under the Green Light Plan.

CUMULATIVE IMPACTS EVALUATION AND SUMMARY

Transportation/Traffic Circulation

The cumulative impact on the roadway system is that the proposed widening and extension will serve as a supplement to that system. The project's cumulative impact on the surrounding routes is positive in that it would provide additional connectivity between Livingston and East Baton Rouge Parishes by adding a new route crossing the Amite River, by providing a better east-west linkages in the highway system, and by providing a new 4-laned, more direct alternate route between the Watson area of Livingston Parish and the city center of Baton Rouge.

As described in Chapter IV, using projections from the CRPC 2032 regional Alternative 1-B is projected to have some tangential impacts. Alternative 1-B is expected to have less length of roadway in the project area requiring additional capacity than under No Build conditions (4.09 vs. 8.93 miles), and it is expected to lower the volume to capacity ratio at the Magnolia Bridge crossing of the Amite River from the 0.80 to 1.00 range to the 0.60 to 0.80 range, while also lowering the volume to capacity ratio at the I-12 crossing from >1.00 range to the 0.80 to 1.00 range. On the basis of the new median in the widened segment of existing Hooper Road and the use of roundabouts at two (2) existing intersections, it is also expected to increase safety somewhat.

Residual impacts may include right-of-way improvements such as repaving/improvement of existing routes where they will be incorporated into the project (portions of LA 16 and LA 1019), and enhancements such as landscaping.

Land Use Development/Redevelopment

New land use development and redevelopment of uses could possibly be a positive residual effect as a result of the Preferred Alternative. New land use opportunities could entail further residential and possibly commercial, office, or light industrial uses. It is anticipated that land use patterns would continue in a similar manner as past development. Substantial change is not anticipated to occur relative to the entire study area's land use character.

Summary

The overall cumulative impacts of the Preferred Alternative on past, current, and foreseeable future projects in the project area would be generally beneficial. The additional transportation utility of the Preferred Alternative would assist in and could encourage and increase new land use opportunities.

COMMITMENTS

No commitments relating to the construction of the preferred alternative are currently in place at this time.

PERMITS REQUIRED

- A Section 401 Permit (Water Quality Certification) will be required from the Louisiana Department of Environmental Quality.

- Because the project affects wetlands, a Section 404 Permit will be required from the U. S. Army Corps of Engineers, New Orleans District.

- As per regulations required in 40 CFR 122, A National Pollutant Discharge Elimination System (NPDES) stormwater permit and Stormwater Pollution Prevention Plan (SWPPP)will be required.

CHAPTER VI

PUBLIC PARTICIPATION
AGENCY COMMENTS AND COORDINATION

This chapter describes the public participation process for the project, including documentation of public meetings, public hearings, and coordination efforts associated with the development of the project. These efforts included meetings with the LADOTD, FHWA, other agencies and elected officials and a *Solicitation of Views* requesting written comments on the project.

A complete record of all comments and coordination, including all responses from the *Solicitation of Views*, agency correspondence, public meeting summaries and transcripts sign-in sheets and handouts from the public meetings and all written comments received from citizens and interested parties are located in the project files of LADOTD.

PUBLIC PARTICIPATION

PUBLIC MEETINGS

1st Series

Two informational public meetings were held on January 16th and 17th of 2013 to familiarize area residents with the project and to obtain their input. The first meeting was held at the new Live Oak High School cafeteria in Watson, LA; the second meeting on the following night was held at Central High School's lecture theater.

The meetings were advertised on January 10th and 15th in *The Advocate*, and on January 10th and 17th in the *Central City News*. Notice was also sent to local radio and television stations, and flyers were sent to the two high schools to be distributed to students and staff to take home. WAFB-TV filmed a piece on the second meeting that was aired on the evening news the night of the meeting. One hundred and ten (110) persons signed in for the first meeting in Watson, while seventy-six (76) persons signed in for the second meeting in Central.

The meetings were an "open house" format, with the public free to show up at any time during the meeting sessions. The halls featured two display stations for engineering drawings, each manned by consultant staff that was available to answer questions. Each of these stations had a display of the full project alignment at 1"= 400' scale on an easel, and 24" x 36" blow-ups of the report document's 11" x 17" plan view, typical section and detail sheets (at 1"=100' scale). At another station, copies of the previous documents and reports relating to the project were available for review. These included the two Stage 0 Feasibility Reports, the 2000 Feasibility Study, and the City of Central Master Plan. At

another station, a transcriptionist was on hand to take any oral comments for the official record from attendees. The final station featured a PowerPoint presentation projected on a continuous loop in the middle front of the meeting hall, and seating was provided so that attendees could sit and watch the presentation at their leisure. The PowerPoint presentation provided an overview of the project.

Attendees were free to look at exhibits and ask questions of staff. Twelve (12) persons gave verbal comments to the court reporter during the open house public meetings (six at each meeting), and seventeen (17) comment forms were submitted either in person, by mail, or by e-mail following the public meetings. Several persons also contacted the project team directly afterwards with ideas and requests for additional information.

Public Comments and Input

Staff members who manned the stations at the public meetings made note of informal comments and questions received from attendees. Comments and questions discussed with project staff included:

- Meeting No. 1, Watson, LA January 16, 2013: Staff members who manned the exhibit stations made note of informal comments and questions received from attendees. These generally followed the themes of the verbal and written comments that were later received: concerns over acquisition of homes and businesses along the route, timetables for land acquisition and construction (including phasing for construction). There was an overwhelming consensus that the project was needed. There was also general consensus that regardless of Alternative A or B being selected, that at-grade traffic signals were NOT the desired intersection options at LA 16. The crowd seemed somewhat divided on the possibility of roundabouts as intersection options, with about half vociferously opposed to them based on previous "bad" examples they have seen, and the other half well in favor of them based on "working" examples they had seem. One gentleman remarked that while it would allow traffic to flow, it would slow down the speeding truck traffic on LA 16. Traffic impacts from the recently opened high school (site of the public meeting) were a current concern, which led to several attendees suggesting four-laning LA 16 even further north than the project limits, up to the new high school. There appeared to be no opposition to the overpass at Bend Road and not allowing access at that location. Several attendees commented on the ingenuity and efficiency of the alternatives design, noting that connections were made and linkages created while taking a minimum of existing uses. One of two attendees noted that the proposed roadway bisected their property. At least one attendee requested that the LADOTD go back to the drawing board and consider other alternatives.

- Meeting No. 2, Central, LA January 17, 2013: Staff members who manned the exhibit stations made note of informal comments and questions received from attendees. These were somewhat different than those of the previous night's meeting. One of the most common concerns was the impacts (including

acquisition) to homes and businesses along the widened portion of Hooper. Many residents along Hooper were present. Access to Hooper was also a concern, with questions as to how and where u-turns and left turns would be located in the switch to a divided highway. There appeared to be no issue with either a roundabout or traffic signal at the Hooper Road/Greenwell Springs Road intersection, though at least one attendee noted that there was a "blind" curve on Greenwell Springs Road just north of that intersection, and that either type of intersection would require ample warning, as people are notorious for breaking the 45 mph speed limit on Greenwell Springs Road. A common concern was drainage impacts, both in regards to cross drainage under the roadway and lateral drainage alongside the roadway. Several residents reported flooding during heavy rains along the north side of Hooper Road. One attendee questioned the alignment of the bridge, saying a different alignment would be best based on the river's meandering nature. Finally, one attendee noted that just north of the bridge location, on the west bank of the river, the Baton Rouge Recreation Department (BREC) was looking into developing a park. One of several options for development has beach access in the area not within the footprint of the bridge, but within visual proximity to the proposed bridge.

2nd Series

Two informational public meetings were held on August 20th and 21st of 2013 to provide area residents with an opportunity to see the fully defined Build Alternatives (including the new southerly alignment of Alternative 2) and to obtain their input. The first meeting was held at Central High School's lecture theater; the second meeting on the following night was held at the Live Oak High School cafeteria in Watson, LA.

The meetings were advertised on August 13th and 19th in *The Advocate*. Notice was also sent to local radio and television stations, and flyers were sent to the two high schools to be distributed to students and staff to take home. WAFB-TV filmed a piece on the first meeting that was aired on the evening news the night of the meeting. Seventy-two (72) persons signed in for the first meeting in Central, while one hundred and thirty-six (136) persons signed in for the second meeting in Watson,

The meetings were an "open house" format, with the public free to show up at any time during the meeting sessions. The halls featured two display stations for engineering drawings, each manned by consultant staff that was available to answer questions. Each of these stations had a display of the full project alignment at 1"= 250' scale on an easel, as well as all typical section and detail sheets (at 1"=15' scale) on easels as well. At another station, copies of the previous documents and reports relating to the project were available for review. These included the two Stage 0 Feasibility Reports, the 2000 Feasibility Study, and the City of Central Master Plan. At another station, a transcriptionist was on hand to take any oral comments for the official record from attendees. The final station featured a PowerPoint presentation projected on a continuous loop in the middle front of the meeting hall, and seating was provided so that attendees

could sit and watch the presentation at their leisure. The PowerPoint presentation provided an overview of the project.

Attendees were free to look at exhibits and ask questions of staff. Twenty-five (25) persons gave verbal comments to the court reporter during the open house public meetings (11 at Central, and 14 at Watson), and one-hundred and nine (109) comment forms were submitted either in person, by fax, by mail, or by e-mail following the public meetings. Several persons also contacted the project team directly afterwards with ideas and requests for additional information.

Public Comments and Input

Staff members who manned the stations at the public meetings made note of informal comments and questions received from attendees. Comments and questions discussed with project staff included:

- Meeting No. 1, Central, LA August 20, 2013: Staff members who manned the exhibit stations made note of informal comments and questions received from attendees. These often followed the themes from the previous meetings in January and of the verbal and written comments that were later received: Most of the attendees were from the Central area, though there were several from Livingston Parish. There were several attendees voicing personal concerns over the acquisition of their property along both Alternative 1 and the new Alternative 2. One of the most common concerns was the impacts (including acquisition) to homes and businesses along the widened portion of Hooper or the Alternative 2 extension. Access to Hooper was also a concern, with many not liking the idea of a median installation. Many attendees were from the Bridlewood subdivision and stated their desire for at least a northbound Hooper Road left turn-in for their subdivision.

- Meeting No. 2, Watson, LA August 21, 2013: Staff members who manned the exhibit stations made note of informal comments and questions received from attendees. Most of the attendees were from the Watson area and had questions and concerns regarding how the various alternatives affected Livingston Parish. One of the most common concerns were from people who would be affected by the new Alternative 2, most of which voiced their opposition to the Alternative. Many attendees also asked why Alternative 2 was added to the list of Alternatives. Similar to the January meeting, many attendees suggested four-laning LA 16 even further north than the project limits, up to the new high school. A number of attendees stated their desire for an even more northerly route than Alternative 1, with an Amite River crossing and connection to LA 16 north of either the new high school, the new ball fields, or even as far north as St. Helena Parish. Flooding and traffic were common concerns voiced.

The formal comments received via mail, e-mail, fax or given to the transcriptionist, as well as other information from the public meeting (including meeting notice and

advertisements, handouts, sign-in sheets, and PowerPoint presentation) are also included in the stand-alone document *Hooper Road Extension Environmental Assessment Meeting Report, Public Meetings Series # 1 and #2 (January 16-17, 2013 and August 20-21, 2013), State Project No. H.005403,* which is referenced in the Appendix of this EA document and is available for review from the LADOTD.

PUBLIC HEARINGS

(To be inserted after Public Hearings are held)

AGENCY AND ELECTED OFFICIAL MEETINGS

Seven (7) such meetings were held on this project:

- The first of these was a Project Initiation Meeting held at the LADOTD on May 31, 2012. In addition to discussing procedural, schedule, coordination and other matters, the primary purpose of this meeting was to clarify items in the Scope of Work, including specifics relating to the Line and Grade Study. During this meeting it was determined that rather than a UA- 2 as was projected in the extension Stage 0 study, a UA-4 (55 mph) design criteria would be used for horizontal and vertical geometry. The grade-separated free-flow interchange as an intersection alternative was clarified by LADOTD staff. It was also confirmed that there was no need for traffic analysis of the Sullivan/Hooper intersection. Originally, it was thought that the Sullivan/Hooper intersection was being done under the Green Light program; however it was brought to the consultants' attention that this intersection was being designed currently by LADOTD in advance of the Green Light program, and it will not include improvements east of Sullivan Road.

  In addition to the consultant team and LADOTD representatives, CRPC, FHWA, City of Central, East Baton Rouge Green Light Program, and East Baton Rouge Council representatives were in attendance.

- A project review meeting was held on October 3, 2012 at the LADOTD. The primary purpose of this meeting was to review conceptually-engineered drawings of the build alternative alignments that were re-engineered due to the change in design speed, as well as the designs of the conceptually engineered intersection alternatives. Traffic impacts (Levels of Service) of each of these intersection alternatives were also discussed, as was the geometry of each.

  Both consultant and LADOTD staff were present at this meeting.

- A follow up project review meeting was held on October 17, 2012 at LADOTD. The primary purpose of this meeting was further review and discussion of build alternative alignments and intersection alternatives. The consultant team was

directed to revise several intersection alternatives. At this meeting, it was confirmed that the LA 1020 overpass would be the only alternative carried forward and brought to the public meeting, based on the following reasons: reducing conflict points (safety); an at-grade intersection or j-turn could affect LA 408 operating speed, the overpass would reduce travel time, and an overpass would prevent cut through traffic (particularly truck cut-through traffic) on primarily residential LA 1020. The overpass at LA 1020 was also to be refined to lessen the footprint (use of retaining walls/other instead of embankment)

Both consultant and LADOTD staff were present at this meeting.

- A project review meeting was held on December 13, 2012 at LADOTD. The primary focus of the meeting was to present the revised project alternative alignments for discussion and approval by LADOTD before presenting them to the public at the public informational meetings. It was at this meeting that the grade-separated intersection at Greenwell Springs Road was eliminated from further consideration, and the remaining alignments and intersections were approved as feasible by the LADOTD. Initial discussions for the public meeting series, including determining dates and locations, were also held at this project review meeting.

  Both consultant and LADOTD staff were present at this meeting.

- A follow-up meeting to the Public Informational Meeting was held on January 28, 2013. The primary purpose of this meeting was to recap the public meetings conducted on the Hooper Road Extension project in mid-January and to come to a decision on amalgamating alignment alternatives and intersection alternatives into three (3) final alternatives to be carried forward for impact analysis. It was noted that at the first meeting held in Livingston Parish, there was a strong consensus in favor of the project. Generally, the public was not in favor of the signalized intersections options, about half of the participants were opposed to roundabouts, and there was a preponderance of people in favor of Alternative B with its connectivity at Greenwell Springs Road and the free flow intersection option of Alternative A. It was noted that the comments received at the second public meeting held in Central were focused more from people living directly on Hooper Road, who had concerns with items such as access, drainage, and design. From comments received, it appeared no one at the Central meeting liked the signalized intersection at Greenwell Springs Road.

  In regards to determining the three build alternatives, that decision was delayed for several reasons. One was that the LADOTD staff noted that there was an ongoing study of the LA 1019/1016 intersection to be completed in a few months with recommendation for a roundabout highly likely, and that the LADOTD may wish to await that study's results before making a determination on LA 408 extension alternatives. Another pressing matter related to comments from the LADOTD bridge section that were received at the same time as the public meetings; wherein, the Section noted that they did not agree with the bridge

location, as they felt that with the aggressive meandering of the Amite River, the river may shift course and run parallel to the current alignment. It was agreed at this meeting that the consultant would develop options to the current bridge crossing for LADOTD review.

Both consultant and LADOTD staff were present at this meeting.

- A public officials briefing was held on February 7, 2013, at the City of Central Municipal Services Center. The purpose of the meeting was to bring elected officials up-to-date on the project. They were presented with the alignment and intersection alternatives, given a recap of the public meetings, and brought up to date on outstanding issues including the relocation of the bridge crossing. The LADOTD staff and consultants answered questions posed by the elected officials in attendance.

  Consultant staff, LADOTD staff, elected officials and/or their designees were present at this meeting.

- A project review meeting was held on February 25, 2012 at LADOTD. The primary focus of the meeting was to discuss the previously submitted options for relocating the bridge. At the meeting, it was determined that the northerly alternate bridge location would be the one to replace the previous alignment, as it would have less projected impacts, particularly in terms of relocations. The decision on the final three alternatives to be carried forward into impact analysis was also decided upon at this meeting; however, impact analysis was not to begin until the three alternatives were fully developed with vertical and horizontal geometry and given final approved by LADOTD.

  Both consultant and LADOTD staff were present at this meeting.

- A public officials briefing was held on June 11, 2013, at the City of Central Municipal Services Center. The purpose of the meeting was to bring elected officials up-to-date on the project and allow those officials to ask questions of project staff on the impact analysis for each alternative. The project team described the relocation of the bridge alignment to the north common to each of the current alternatives, due to the hydrology of the Amite River, the elimination of traffic signal intersection options and the elimination of free flow grade-separated interchange option on Alternative A. The project team then described how the LADOTD recently requested that the consultant team examine additional alternatives with southerly alignments, and presented two (2) possible southerly alignments that had been conceptually examined. The LADOTD staff and consultants answered questions posed by the elected officials in attendance.

  Consultant staff, LADOTD staff, elected officials and/or their designees were present at this meeting.

- A brief meeting was held on August 15th, 2013, between consultant staff, LADOTD and FHWA staff to review preparations and materials for the 2nd Public Informational Meeting series.

SOLICITATION OF VIEWS

Early in the planning stages of a transportation facility, views from federal, state and local agencies, organizations and individuals are solicited. The special expertise of these groups can often assist in the early identification of possible adverse economic, social, or environmental impacts or concerns.

A *Solicitation of Views* (SOV) package regarding the project was distributed by the LADOTD. The package included a map showing the general location of the project, and a preliminary project description.

Seventeen (17) responses were received from the following agencies and organizations:

- Department of the Army, New Orleans District, Corps of Engineers
- Louisiana Department of Health and Hospitals, Office of Public Health
- Louisiana Department of Natural Resources, Office of Conservation
- US Department of the Interior, Fish and Wildlife Service
- US Environmental Protection Agency, Ground Water /UIC Section
- US Environmental Protection Agency, Office of Planning and Coordination
- US Department of Agriculture, National Resources Conservation Service
- Louisiana Department of Culture, Recreation & Tourism, Division of Archaeology
- Louisiana Department of Children and Family Services
- Louisiana Department of Wildlife and Fisheries, Office of Wildlife
- Louisiana Department of Transportation and Development, Floodplain Management Program Coordinator
- Livingston Parish Floodplain Manager
- East Baton Rouge Parish Department of Public Works (Floodplain Management)
- Capital Area Ground Water Conservation Commission
- City of Baton Rouge and Parish of Baton Rouge, Office of the Planning Commission
- Choctaw Nation of Oklahoma
- Jena Band of Choctaw Indians

Most of the responses stated that the agencies had no comment, that the project would have no impact in regards to their particular jurisdiction, or that the agency had no objections to the project.

The US Fish and Wildlife Service did state that the project area may be inhabited by the Red-Cockaded Woodpecker, an endangered species, and that the Alabama Heelsplitter Mussel, a threatened species, occurs in the stretch of the Amite River where the crossing is planned. The Service also presented steps to follow for surveying the area for these

species. The Louisiana Department of Wildlife and Fisheries also noted the presence of the Alabama (Inflated) Heelsplitter Mussel in their response. The Louisiana Department of Culture, Recreation & Tourism, Division of Archaeology stated that a Phase I Cultural Resources survey was warranted.

A full copy of the *Solicitation of Views* responses is included in the Appendix of this document.

CHAPTER VII

REFERENCES AND APPENDIX

The Environmental Assessment concludes with this chapter. The References section lists publications, websites and other sources of information used in the writing of this document. The Appendix lists the stand-alone documents and other data which were completed as part of this EA and are considered part of this EA. The Appendix also includes copies of the responses to the *Solicitation of Views* and formal agency responses received during the Draft EA review process. Finally, the Appendix also includes specific information used in the cost estimate, including a complete breakdown of projected right-of way and relocation costs as well as a utility disposition table listing the public and private utilities identified within the roadway alternative alignments.

REFERENCES:

Abbreviated Stage 0 Feasibility Study – Hooper Road Widening, prepared for LADOTD by N-Y Associates, Inc., May 2012

American FactFinder, U.S. Census Bureau, 2006-2010 American Community Survey
Capital Regional Planning Commission, Baton Rouge Metropolitan Transportation Plan 2037

American Society for Testing and Materials. 2005.ASTM Designation: E 1527-05, *Standard Practice for Environmental Site Assessments: Phase 1 Environmental Assessment Process.* ASTM International, West Conshohocken, PA. 35 pp.

Bass, A. 2011 (Oct. 18). Response to Solicitation of Views Letter from LA Dept. of Transportation and Development (Sept. 21, 2011) re Hooper Road Extension Project. Coordinator, Natural Heritage Program, Louisiana Department of Wildlife and Fisheries, Baton Rouge, LA

Bechdol, Michael. Coordinator, Sole Source Aquifer Program, Ground Water/UIC Section, U. S. Environmental Protection Agency, Region 6, Dallas, TX. Written communication to Ed Fike dated October 24, 2007.

Dance, R. E, B. J. Griffis, B. B. Nutt, A. G. White, S. A. Lytle, and J. E. Seaholm. 1968. *Soil Survey of East Baton Rouge Parish, Louisiana.* U. S. Department of Agriculture, Soil Conservation Service, Washington, DC.

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Rep. Y-87-1, U.S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, MS.

Environmental Laboratory. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0).

U.S. Army Corps of Engineers, Vicksburg District, Wetlands Regulatory Assistance Program, ERDC/El TR-10-20, Nov. 2010. Prepared for U.S. Army Corps of Engineers, Washington, DC. 180 pp

Federal Emergency Management Agency 2008a. *Flood Insurance Rate Map of City of Central, LA.* Community Panel No.22033C0185 F, June 19, 2008. Silver Spring, MD.

Federal Emergency Management Agency 2008b. *Flood Insurance Rate Map of City of Central, LA.* Community Panel No.22033C0195 F, June 19, 2008. Silver Spring, MD.

Federal Emergency Management Agency 2008c. *Flood Insurance Rate Map of City of Central, LA.* Community Panel No.22033C0205 E, May 2, 2008. Silver Spring, MD.

Federal Emergency Management Agency
2012. *Flood Insurance Rate Map of Livingston Parish and Incorporated Areas.* Community Panel No. 22063C0125 E, April 3, 2012. Silver Spring, MD.

GCR 2008. Central, Louisiana: Demographics and Econmic Analysis

Hahn, Sara. 2013. Archaeologist, Coastal Environments, Inc., Baton Rouge, LA. Personal communication with Ed Fike on April 18, 2013.

Hartfield, P. 1988. Status Survey of the Alabama Heelsplitter Mussel, *Potamilus inflatus* (Lea, 1831). A Report of the U.S. Fish and Wildlife Service. 27 pp. + Appendix.

Hooper Road Extension Stage "0" Feasibility Study – Traffic Impact Analysis, Prepared fro N-Y Associates by Urban Systems, Inc., August 2011

http://brgov.com/dept/planning/CPElements.htm

http://centralgov.com/CityClerk/Budget/2011/2011_Financial_Sta.

http://centralgov.com/CityClerk/MasterPlan/land-use-plan-2010

http://crpc-la.org/crpc_new?Documents/TIP/TIP_2011-2014_Fina.

http:// factfinder2census.gov. 2006-2010 American Survey.

http:// factfinder2census.gov. DP-1 Profile of General Population and Housing Characteristics 2010 Demographic Profile Data.

http://maps.google.com

http://soildata.mart.nrcs.usda.gov/manuscripts/LA033/0/EBR.pdf

http://soilsdatamart.nrcs.usda/manuscripts/LA063/0/livingston.pdf

http://www.epa.gov/enviro/ 2013. U. S. Environmental Protection Agency. Envirofacts Data Warehouse.

http://www.epa.gov/enviro/sf/ 2013. U. S. Environmental Protection Agency. Enviromapper for Superfund.

http://www.epa.gov/superfund/resources/database/index.htm 2013. U. S. Environmental Protection Agency. Superfund Databases.

http://www.fhwa.dot.gov/environmental/environmental_justice/ej_at_dot/order_56102a/inda...

http://www.floods.org/index.asp?menuID+651&firstlevelmenuID=187&siteID=1.

http//www.livingstonparishla.gov/Documents/2010%20LPC%201.

http//www.livingstonparishla.gov/PDF/EDMasterPLan.pdf.

[1]http://www.lpsb.org/District/schools.htm.

http://www.nh.gov/oep/programs/floodplainmangement/docu.

http://www.npms.phmsa.dot.gov 2013. National Pipeline Mapping System. Public map view was accessed on April 30, 2013.

http://www.nrc.uscg.mil/nrchp.html 2013. National Response Center. Online Spill Report.

http://www.rtknet.org. 2013. The Right-to-Know Network. Online agency databases.

https://msc.fema.gov/webapp/wcs/stores/servlet/info?storeId=10001&catalogId=1001&la

Hunter, Don 2013. Archaeologist, Coastal Environments, Inc., Baton Rouge, LA. Personal communication with Ed Fike on multiple dates in April, 2013.
Leone, Daniel (Engineering Manager for City of Central), phone conversation, July 2012.

Leone, Daniel, PE 2013. Engineering Manager, Central Municipal Services, Central, LA. Personal communication with Ed Fike on April 24, 2013.

Louisiana Department of Transportation and Development. 2010. Black and white photomosaic base maps of the LA HWY 408 Hooper Road Widening and Extension Project, East Baton Rouge and Livingston Parishes, LA. Baton Rouge, LA.

Louisiana Department of Wildlife and Fisheries. Electronic Document.
http://www.wlf.louisiana.gov/wildlife/species-parish-list?tid=237&type_1=fact_sheet_animal. Accessed 5/3/2013.

Luke, S. 2013, Personnel Communication. LA Dept. of Transportation and Development, Environmental Section, Baton Rouge, LA

McDaniel, Donald 1991. *Soil Survey of Livingston Parish, Louisiana.* U. S. Department of Agriculture, Soil Conservation Service, Washington, DC.

MetroKey Mapbook 1991. *Baton Rouge and Surrounding Parishes Street Atlas*. Stinson Map Co., Baton Rouge, LA.

NRCS Web Soil Survey. U.S. Department of Agriculture, Natural Resource Conservation Service. http://websoilsurvey.nrcs.usda.gov Downloaded June 2012.

Price, J. Southern Rainbow. Electronic Document. www.dnr.sc.gov/cwcs/pdf/SouthernRainbow.pdf. Accessed 5/3/2013.

Rieck, B. S., 2011 (Oct 18). Response to Solicitation of Views Letter from LA Dept. of Transportation and Development (Sept. 21, 2011) re Hooper Road Extension Project. Acting Field Supervisor, Louisiana Ecological Services Office, US Fish and Wildlife Service, Lafayette, LA.

Shaw, Hamilton 2013. Geologist, Louisiana Department of Environmental Quality, Baton Rouge, LA. Personal communication with Ed Fike on April 15, 2013.

Sikes, M. 2013 (April19 – 23) Emails regarding development of survey protocol. Biologist, U.S. Fish and Wildlife Service, LA Ecological Services Office, Lafayette, LA

Stage 0 Feasibility Study – Hooper Road Extension, prepared for the LADOTD by N-Y Associates, Inc., August 2011.

Stage 0 Feasibility Study – Hooper Road Extension – Preliminary Toll Road Evaluation, prepared for the LADOTD by N-Y Associates, Inc., December 2012.

Stuart, C. G., Darwin Knochenmus, and Benton McGee 1994. *Guide to Louisiana's Ground-Water Resources*, Water-Resources Investigations Report 94-4085, U. S. Geological Survey, Baton Rouge, LA.

Stewart, J. H. 1993. Inflated Heelsplitter (*Potamilus inflata*) Recovery Plan. U.S. Fish and Wildlife Service (USFWS), Jackson, MS. Prepared for the Southeast Region, USFWS, Atlanta, GA. Approved April 13, 1993. 20 pp.

U.S. Department of Agriculture, Farm Service Agency, Aerial Photography Field Office (USDA-FSA-APFO). 2010. USDA-FSA-APFO Digital Ortho Mosaic of the Project Area. National Agriculture Imagery Program (NAIP) 1 m True Color. Salt Lake City, UT.

U.S. Department of Agriculture, Natural Resources Conservation Service. 2011. Soil Survey Geographic (SSURGO) Database for East Baton Rouge and Livingston Parishes, LA. Available online at http://soildatamart.nrcs.usda.gov

U.S. Department of Agriculture, U.S. Environmental Protection Agency, U.S. Army Corps of Engineers, and U.S. Fish and Wildlife Service. 1995. Louisiana Coordinated Conventions and Procedures for Implementing the 1994 Wetland Delineation Memorandum of Agreement.

U. S. Department of the Interior, Geological Survey 2012. *Comite, LA* 1:24,000 topographic quadrangle map, U. S. Government Printing Office, Denver, CO.

U. S. Department of the Interior, Geological Survey. 1996. *Comite, LA* 1:24,000 topographic quadrangle map, U. S. Government Printing Office, Denver, CO.

U. S. Department of the Interior, Geological Survey. 1972. *Comite, LA* 1:24,000 topographic quadrangle map, U. S. Government Printing Office, Denver, CO.

U. S. Department of the Interior, Geological Survey. 1960. *Comite, LA* 1:24,000 topographic quadrangle map, U. S. Government Printing Office, Denver, CO.

U. S. Department of the Interior, Geological Survey. 1950. *Comite, LA* 1:62,500 topographic quadrangle map, U. S. Government Printing Office, Denver, CO.

U. S. Department of the Interior, Geological Survey. 2012. *Watson, LA* 1:24,000 topographic quadrangle map, U. S. Government Printing Office, Denver, CO.

U. S. Department of the Interior, Geological Survey. 2005. *Watson, LA* 1:24,000 topographic quadrangle map, U. S. Government Printing Office, Denver, CO.

U. S. Department of the Interior, Geological Survey. 1980. *Watson, LA* 1:24,000 topographic quadrangle map, U. S. Government Printing Office, Denver, CO.

U. S. Department of the Interior, Geological Survey. 1954. *Watson, LA* 1:24,000 topographic quadrangle map, U. S. Government Printing Office, Denver, CO.

U. S. Department of the Interior, Geological Survey. 1942. *Watson, LA* 1:31,680 topographic quadrangle map, U. S. Government Printing Office, Denver, CO.

U. S. Environmental Protection Agency. 2008. *State of the Ground Water Report*. Ground Water Center, U. S. Environmental Protection Agency, Region VI, Dallas, TX. 60 pp.

U.S. Fish and Wildlife Service. 1992. 1:24,000 National Wetlands Inventory Map, interpreted from CIR NASA (Nov. 1988) photography. Atlanta, GA. Digital source: http://107.20.228.18/Wetlands/WetlandsMapper.html Downloaded June 2012.

U.S. Fish and Wildlife Service. 2012. National Wetlands Inventory Data for East Baton Rouge and Livingston Parish, LA.
http://www.fws.gov/wetalands/Data/Datadownload/html.

U.S. Geological Survey. Date Unknown. Comite, LA. 1:24,000 scale topographic map. Digital download from National Park Service 2009 map mosaic.

U.S. Geological Survey. Date Unknown. Watson, LA. 1:24,000 scale topographic map. Digital download from National Park Service 2009 map mosaic

University of Georgia. Southern Pocketbook. Electronic Document. http://naturalhistory.uga.edu/~GMNH/gawildlife/index.php?page=speciespages/ai_species_page&key=lornata. Accessed 5/3/2013.

Varnado, Spencer. 2013. Biologist, Coastal Environments, Inc., Baton Rouge, LA. Personal communication with Ed Fike on various dates, 2013.

Vendor Conveyance Indices. 1973-2013. East Baton Rouge Clerk of Court's Office, Baton Rouge, LA. Reviewed by CEI on April 19, 2013.

Vendor Conveyance Indices. 1977-2013. Livingston Parish Clerk of Court's Office, Livingston, LA. Reviewed by CEI on April 23, 2013.

Vidrine, M. F. 1993. The Historical Distributions of Fresh Water Mussels in Louisiana. Gail Q. Vidrine Collectables (Eunice, LA). 225pp.

Williams, J.D., A.E. Bogan and J.T. Garner. 2008. Freshwater Mussels of Alabama and the Mobile Basin in Georgia, Mississippi and Tennessee. The University of Alabama Press. Tuscaloosa, AL.

Willis, Sam. 2013 (April). personal communication. District Conservationist, Natural Resources Conservation Service, East Baton Rouge & Livingston Parishes, LA

APPENDIX:

The following are stand-alone documents which were completed as part of this EA and are considered as part of this EA. They are available for review from the LADOTD.

- *Draft Phase I Cultural Resource Investigations: Hooper Road Extension (LA 408) East Baton Rouge and Livingston Parishes, LA,* Prepared by Coastal Environments, Inc. September 2013

- *Draft Biological Assessment: LA 408 - Hooper Road Extension and Widening (LA 16-Sullivan Road) East Baton Rouge and Livingston Parishes, LA,* Prepared by Coastal Environments, Inc. September 2013

- *Traffic Noise and Air Quality Analysis Draft Technical Report – Hooper Road Extension and Widening (LA 16- Sullivan Road) East Baton Rouge and Livingston Parishes, LA,* Prepared by Bowlby and Associates, Inc. April 2014.

- *Draft Environmental Site Assessment, Phase I – : LA 408 - Hooper Road Extension and Widening (LA 16- Sullivan Road) East Baton Rouge and Livingston Parishes, LA,* Prepared by Coastal Environments, Inc. September 2013

- *Draft Wetlands: LA 408 - Hooper Road Extension and Widening (LA 16- Sullivan Road) East Baton Rouge and Livingston Parishes, LA,* Prepared by Coastal Environments, Inc. September 2013

- *LA 408 (Hooper Road) Extension, Stage "1" Environmental Assessment East Baton Rouge and Livingston Parishes, LA Traffic Study*. Prepared by Urban Systems Associates, Inc., March 2014.

- *Conceptual Stage Relocation Plan, State project Number H.005403, FAP Project Number H005403, Route LA 408 (Hooper Road) Extension Environmental Assessment*. Prepared by O.R. Colan Associates, Revised September 2013

- *Hooper Road Extension Environmental Assessment Meeting Report, Public Meetings Series # 1 and #2 (January 16-17, 2013 and August 20-21, 2013), State Project No. H.005403.* Prepared for the LADOTD by N-Y Associates, Inc.

Copies of the *Solicitation of Views* responses and formal agency responses during the Draft EA review process are presented beginning on the following page. Following the *Solicitation of Views* responses is a complete copy of the *Conceptual Relocation Plan* including projected right-of way and relocation costs. The document ends with a *Utility Disposition Table* listing the public and private utilities identified within the roadway alternative alignments.

SOLICITATION

OF

VIEWS

RESPONSES

BOBBY JINDAL
GOVERNOR

State of Louisiana
DEPARTMENT OF WILDLIFE AND FISHERIES
OFFICE OF WILDLIFE

ROBERT J. BARHAM
SECRETARY
JIMMY L. ANTHONY
ASSISTANT SECRETARY

Date	October 18, 2011
Name	Noel Ardoin
Company	LA DOTD
Street Address	P.O. Box 94245
City, State, Zip	Baton Rouge, LA 70804-9245
Project	State Project No.: H.005403 Hooper Road Extension
Project ID	5512011
Invoice Number	11101807

Personnel of the Habitat Section of the Coastal & Nongame Resources Division have reviewed the preliminary data for the captioned project.

The Inflated Heelsplitter (Potamilus inflatus) may be impacted by the proposed project. This species is listed as threatened under the Endangered Species Act (16 U.S. C. 1533-1544) and is considered critically imperiled in the state of Louisiana. The Inflated Heelsplitter prefers a soft, stable substrate in slow to moderate currents, and has been found in sand, mud, silt, and sandy-gravel. The degradation of water quality is one of the leading threats to this species. Erosion control measures are recommend at the proposed construction site and include silt fencing, mulching, seeding and vegetation to decrease the amount of soil eroded by rainfall and runoff. All construction waste and debris should be placed in containers and disposed offsite, and surveying 500 feet upstream and downstream of the project site for the presence of Inflated Heelsplitters is recommended. If this mussel is found, the applicant must contact Beau Gregory at 225-765-2820 with the LNHP and Debbie Fuller at 337-291-3124 with the USFWS to coordinate activities.

Our records also indicate that several species of fresh water mussel occur within the project area. Southern rainbow (Villosa vibex) has an S1 state rank and is considered critically imperiled in Louisiana because of its extreme rarity. Southern pocketbook (Lampsilis ornata) has an S3 state rank and is considered rare in Louisiana. Habitat protection is recommended for this species by avoiding disturbances such as water pollution, siltation, and the construction of dams. In addition, it is important to avoid disturbances of the soil / stream bottoms and existing mussel beds. If you have any questions, please contact Beau Gregory at 225-765-2820.

After careful review of our database, no other impacts to rare, threatened, or endangered species or critical habitats are anticipated for the proposed project. No state or federal parks, wildlife refuges, scenic streams, or wildlife management areas are known at the specified site within Louisiana's boundaries.

The Louisiana Natural Heritage Program (LNHP) has compiled data on rare, endangered, or otherwise significant plant and animal species, plant communities, and other natural features throughout the state of Louisiana. Heritage reports summarize the existing information known at the time of the request regarding the location in question. The quantity and quality of data collected by the LNHP are dependent on the research and observations of many individuals. In most cases, this information is not the result of comprehensive or site-specific field surveys; many natural areas in Louisiana have not been surveyed. This report does not address the occurrence of wetlands at the site in question. Heritage reports should not be considered final statements on the biological elements or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments. LNHP requires that this office be acknowledged in all reports as the

source of all data provided here. If at any time Heritage tracked species are encountered within the project area, please contact the LNHP Data Manager at 225-765-2643. If you have any questions, or need additional information, please call 225-765-2357.

Sincerely,

Amity Bass, Coordinator
Natural Heritage Program

BOBBY JINDAL
GOVERNOR

State of Louisiana
DEPARTMENT OF WILDLIFE AND FISHERIES
OFFICE OF WILDLIFE

ROBERT J. BARHAM
SECRETARY
JIMMY L. ANTHONY
ASSISTANT SECRETARY

INVOICE

RETAIN THIS COPY FOR YOUR RECORDS

Date	October 18, 2011
Invoice Number	11101807
Project	State Project No.: H.005403 Hooper Road Extension
Name	Noel Ardoin
Company	LA DOTD
Street Address	P.O. Box 94245
City, State, Zip	Baton Rouge, LA 70804-9245
Number of Quads Reviewed	1
Total Due	$0.00

Payment should be made to "Louisiana Department of Wildlife & Fisheries" within 30 days of the date of this invoice. Please include the invoice number on your check and return a copy of this invoice with your remittance to the following address:

Louisiana Department of Wildlife & Fisheries
Attn: Jennifer Riddle
P.O. Box 80399
Baton Rouge, LA 70898-0399

Should you have any questions regarding this invoice, for review of the Louisiana Natural Heritage database for information on known sensitive elements at a charge of $20.00 per quad reviewed, please contact LNHP at (225) 765-2357.

BOBBY JINDAL
GOVERNOR

State of Louisiana
DEPARTMENT OF WILDLIFE AND FISHERIES
OFFICE OF WILDLIFE

ROBERT J. BARHAM
SECRETARY
JIMMY L. ANTHONY
ASSISTANT SECRETARY

INVOICE

RETURN THIS COPY OF INVOICE WITH PAYMENT

Date	October 18, 2011
Invoice Number	11101807
Project	State Project No.: H.005403 Hooper Road Extension
Name	Noel Ardoin
Company	LA DOTD
Street Address	P.O. Box 94245
City, State, Zip	Baton Rouge, LA 70804-9245
Number of Quads Reviewed	1
Total Due	$0.00

Payment should be made to "Louisiana Department of Wildlife & Fisheries" within 30 days of the date of this invoice. Please include the invoice number on your check and return a copy of this invoice with your remittance to the following address:

Louisiana Department of Wildlife & Fisheries
Attn: Jennifer Riddle
P.O. Box 80399
Baton Rouge, LA 70898-0399

Should you have any questions regarding this invoice, for review of the Louisiana Natural Heritage database for information on known sensitive elements at a charge of $20.00 per quad reviewed, please contact LNHP at (225) 765-2357.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
646 Cajundome Blvd.
Suite 400
Lafayette, Louisiana 70506

October 18, 2011

Mr. Noel A. Ardoin
Environmental Engineer Administrator
Louisiana Department of Transportation and Development
P.O. Box 94245
Baton Rouge, La 70804-9245

Dear Mr. Ardoin:

Please reference your September 21, 2011, letter (received in this office September 28, 2011) regarding the proposed Hooper Road extensions (State Project No. H.005403) in East Baton Rouge and Livingston Parishes, Louisiana. The Service has reviewed the information provided and offers the following comments in accordance with the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.).

The proposed project area is located within areas that may be inhabited by the red-cockaded woodpecker (RCW, *Picoides borealis*), federally listed as an endangered species. RCWs inhabit open, park-like stands of mature (i.e., greater than 60 years of age) pine trees containing little hardwood understory or midstory. They can tolerate small numbers of overstory hardwoods, or large midstory hardwoods at low densities found naturally in many southern pine forests, but they are not tolerant of dense hardwood midstories resulting from fire suppression. RCWs excavate roost and nest cavities in large living pines (i.e., 10 inches or greater in diameter at breast height). The cavity trees and the foraging area within 200 feet of those trees are known as a cluster. Foraging habitat is defined as pine and pine-hardwood (i.e., 50 percent or more of the dominant trees are pine trees) stands over 30 years of age that are located contiguous to and within one-half mile of the cluster.

If the proposed project area does not contain suitable foraging or nesting habitat, further coordination with the Service for the RCW will not be necessary. However, if RCW foraging and/or nesting habitat does exist within the proposed project boundary, all suitable nesting habitat within a one-half mile radius of this habitat within the project boundary should be carefully surveyed by a qualified biologist for the presence of RCW clusters in accordance with the RCW Recovery Plan (2003) survey protocol. If RCW clusters are found within the area surveyed, further coordination with this office is recommended. We recommend that you

TAKE PRIDE IN AMERICA

provide this office with a copy of the survey report, which should include the following details:

1. survey methodology including dates, size of survey area, and transect length and density;

2. pine stand characteristics including acreage of suitable nesting habitat, species, basal area, percent cover of pine trees greater than 60 years of age, species of dominant vegetation within each canopy layer, and understory conditions and species composition (photographs should be included);

3. number of active and inactive RCW cavity trees observed, and the condition of the cavities (e.g., resin flow, shape of cavity, start-holes);

4. presence or absence of RCWs; and

5. topographic quadrangle maps which illustrate areas of adequate RCW habitat, cluster sites, and cavity tree locations relative to the proposed construction activities.

Federally listed as a threatened species, the Alabama (=inflated) heelsplitter mussel (*Potamilus inflatus*) occurs in the Amite and Pearl Rivers in Louisiana. In the Amite River, the mussel occurs between Louisiana Highway 37 and Louisiana Highway 42 (with the highest concentrations between Grangeville and Port Vincent). This freshwater mussel is typically found in soft, stable substrates such as sand, mud, silt, and sandy gravel, in slow to moderate currents. Heelsplitter mussels are usually found in depositional pools below sand point bars, and in shallow pools between sandbars and river banks. Major threats to this species in the Amite River are the loss of habitat resulting from sand and gravel dredging, and channel modifications for flood control.

If the proposed project would directly or indirectly affect the Amite (or Pearl) River, further consultation with this office, for project effects on the Alabama heelsplitter, may be necessary.

Should the proposed activities affect the Amite (or Pearl) River, a survey for the presence of the Alabama heelsplitter mussel should be conducted by a qualified biologist. The survey area should be determined in coordination with the Service, and will depend upon the proposed activities and anticipated project effects. We recommend that you provide this office with a copy of the survey report, which should include the following details:

1. survey methodology including dates, qualifications of survey personnel, determination and size of survey area, and transect density;

2. the habitat characteristics of the survey area;

3. the number of Alabama heelsplitter mussels, including photographs and global positioning system coordinates;

4. the numbers and names of other mussel species found during the survey, including photographs;

5. the river stage at time of survey, avoiding extreme (low or high) river stages; and,

6. a map which illustrates the area surveyed and locations of Alabama heelsplitter mussels found.

If no Alabama heelsplitter mussels are found, a request for our concurrence with your "not likely to adversely affect" determination, as well as the basis for your determination, should be included with the survey report. If we concur with that determination, no further consultation with this office will be necessary. If Alabama heelsplitter mussels are found in the surveyed area, however, then further consultation with this office will be necessary.

The proposed project may impact wetlands. For a complete jurisdictional wetland delineation of the proposed project, please contact Mr. Robert Hefner (504/862-2274) at the New Orleans District, U.S. Army Corps of Engineers (Corps). If the Corps determines that the proposed project is within their regulatory jurisdiction, official U.S. Fish and Wildlife Service comments will be provided in response to the corresponding Public Notice.

We appreciate the opportunity to provide comments in the planning stages of this proposed activity. If you need further assistance, please contact Amy Trahan of this office at 337/291-3126.

Sincerely,

Brad S. Rieck
Acting Field Supervisor
Louisiana Ecological Services Office

cc: LDWF, Natural Heritage Program, Baton Rouge, LA
USACE, New Orleans, LA

Literature Cited

U.S. Fish and Wildlife Service. 2003. Recovery plan for the red-cockaded woodpecker (*Picoides borealis*): second revision. U.S. Fish and Wildlife Service, Atlanta, GA. 296 pp.

STATE OF LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
P.O. Box 94245
Baton Rouge, Louisiana 70804-9245
www.dotd.la.gov
225-379-3005

BOBBY JINDAL
GOVERNOR

SHERRI H. LEBAS, P.E.
SECRETARY

October 26, 2011

PROJECT NO.: H. 005403
FEDERAL PROJECT NO.: H. 005403
NAME: HOOPER ROAD EXTENSION
ROUTE: LA 408
PARISH: EAST BATON ROUGE AND LIVINGSTON

Ms. Noel Ardoin
Environmental Engineer Administrator
LADOTD
P.O. Box 94245
Baton Rouge70804-9245

Subject: Solicitation of Views

Dear Ms. Ardoin:

The proposed project is located in a special flood hazard area. The proposed project crosses over the Amite River, which is a designated *floodway*.

> Section 60.3(d)(3) of National Flood Insurance Program Regulations states: "Prohibit encroachments, including fill, new construction, substantial improvements, and other development within the adopted regulatory *floodway*, unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice, that the proposed encroachment would not result in any increase in flood levels within the community during the occurrence of the base flood discharge;"

If a person wishes to build in a floodway and can show through technical analysis that the construction would have no adverse effect on the floodway and provide a "No-Rise Certification" (copy enclosed), then the floodplain administrator has the authority to grant the permit.

During construction, there must be allowance for the adequate flow of water and assurance that there will be no back up of water. There must be no instance of the creation of flooding where there was no flooding prior to construction. At this time, consideration must also be given to the responsibility for clearing debris and keeping the surrounding area clear in order to allow for the accumulation and flow of flood water.

Our office cautions that development in the floodway fringe area may alter drainage patterns, reduce the natural storage of flood waters, and/or compound the damages caused by smaller floods.

In order to assure compliance with the City of Central and Livingston Parish requirements for the National Flood Insurance Program (NFIP), and ensure that appropriate permits are obtained, please contact the floodplain administrators for the City of Central and Livingston Parish. The contacts are listed respectively: Mr. Greg Blount, 707 Benton Road, Bossier City, LA, 71111, Mr. Chuck Vincent, P.O. Box 998, Livingston, LA 70754 and telephone no. 225-686-3021.

We thank you for the opportunity to comment on this project. If you need additional information, please contact our office, (225) 379-3005.

Sincerely,

Susan Veillon

Susan Veillon, CFM
Floodplain Management Program Coordinator

pc: Mr. Greg Blount, IBTS
Mr. Chuck Vincent

Engineering "No Rise" Certification

This is to certify that I am a duly qualified registered professional engineer licensed to practice in the State of Louisiana.

It is further to certify that the attached technical data supports the fact that proposed

_____
(Name of Development)

will not impact (0.000 foot rise) the base (100-year) flood elevations, floodway elevations and floodway widths on

_____
(Name of Stream)

at published sections in the Flood Insurance Study for _____
(Name of Community)

dated _____ and will not impact (0.000 foot rise) the base (100-year) flood elevations, floodway elevations, and floodway widths at unpublished cross sections in the vicinity of the proposed development.

_____ (Date)

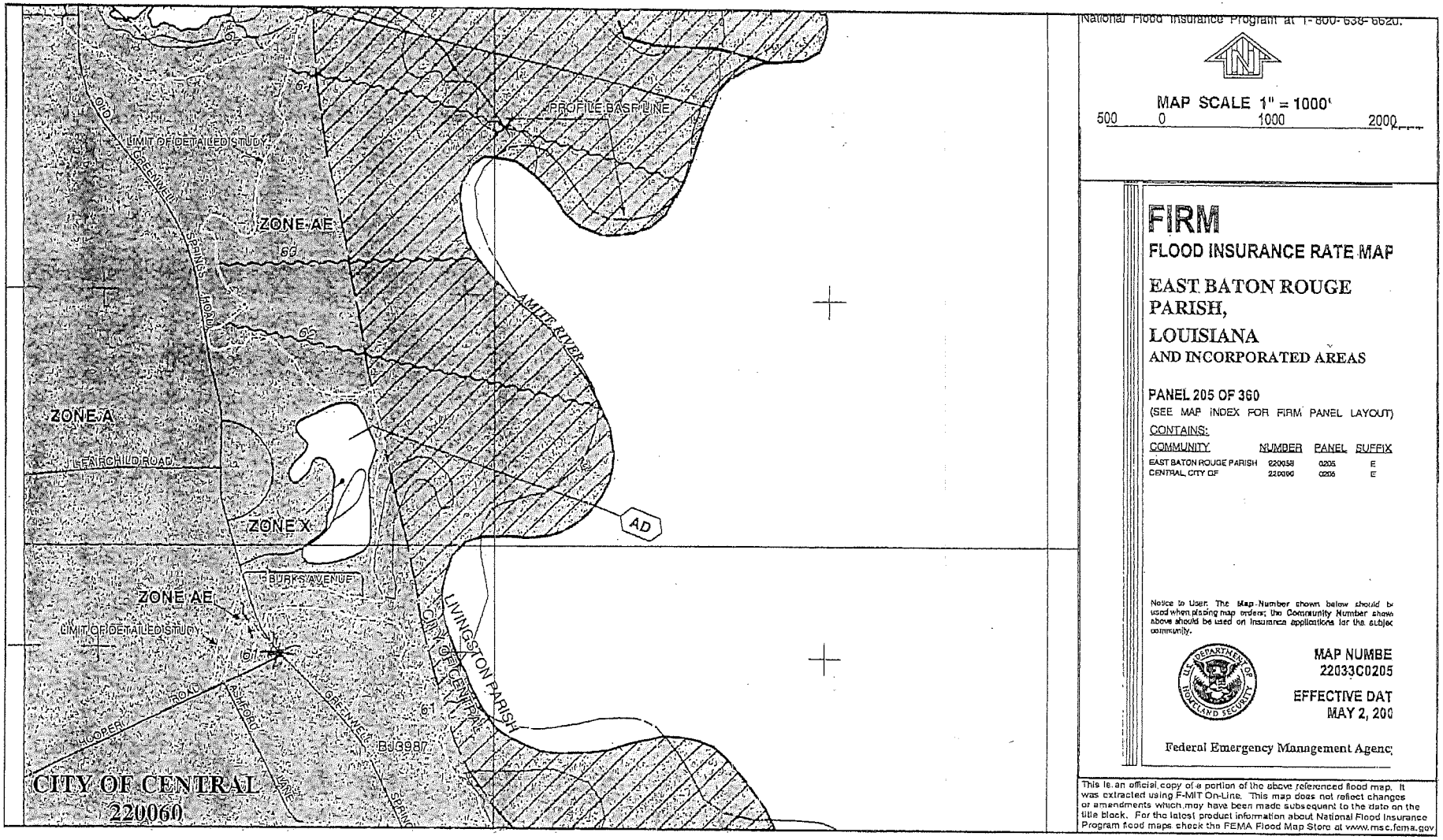
_____ (Signature)

_____ (Title)

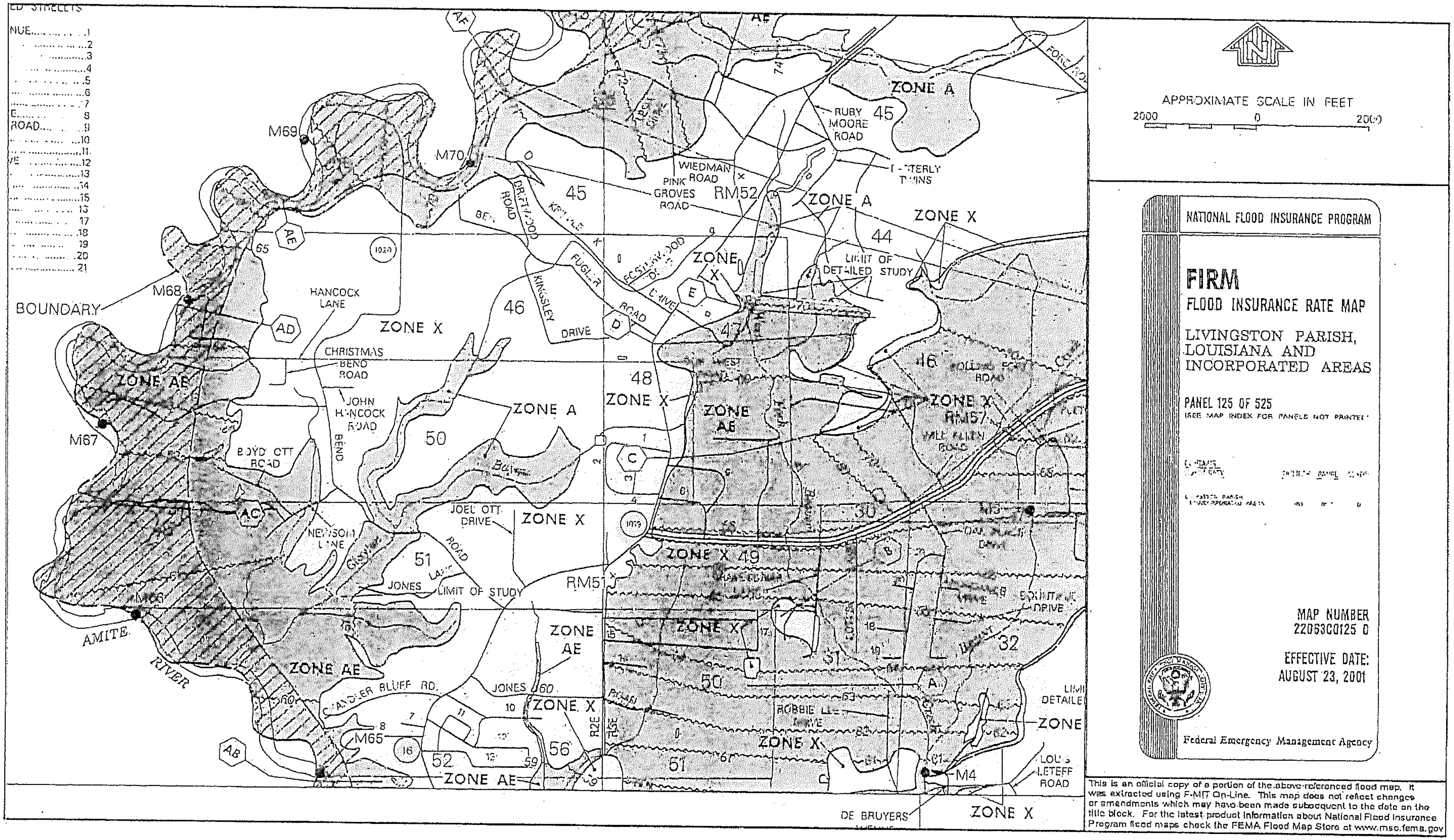
SEAL:

_____ (Address)

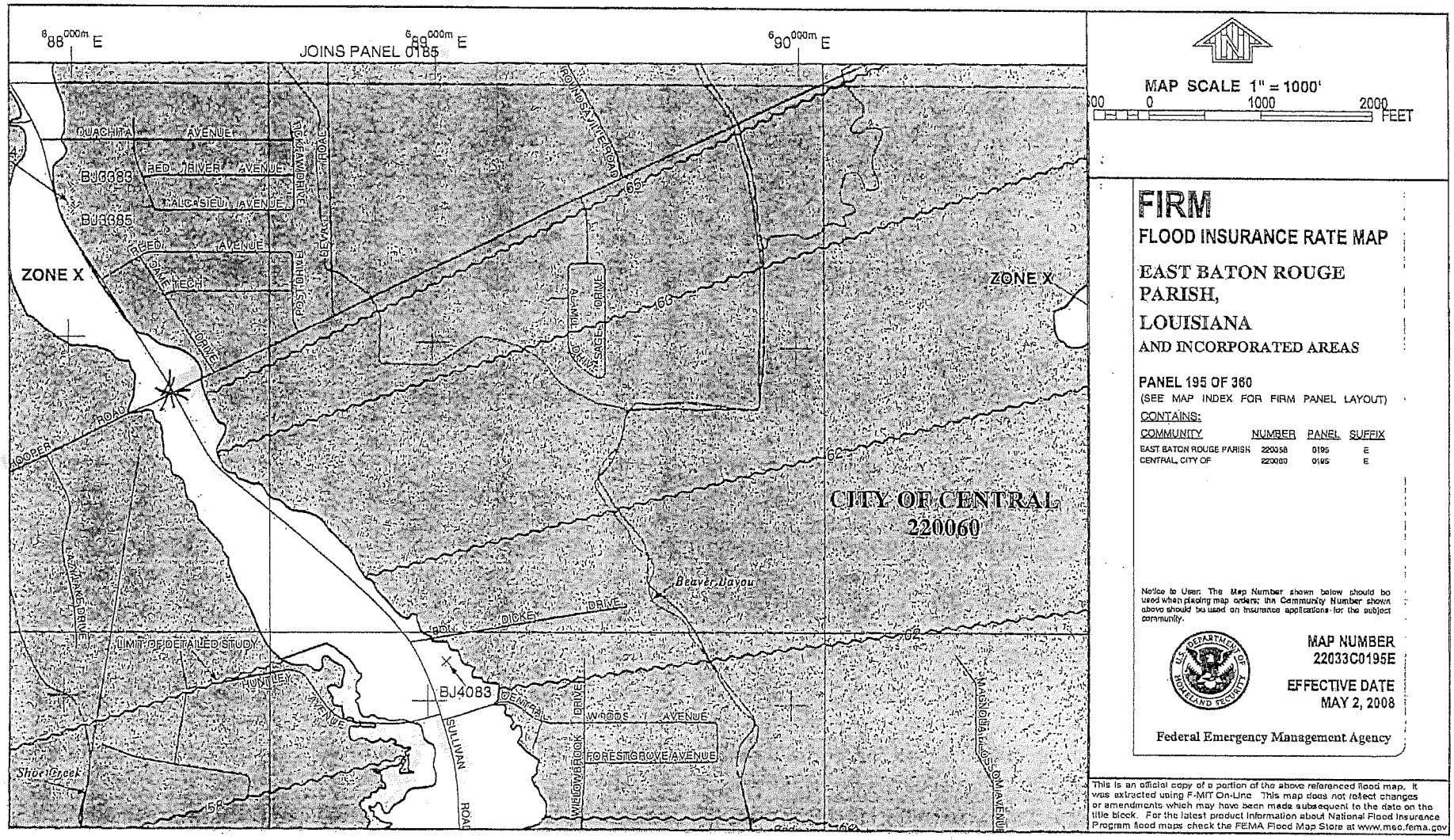
_____ (License number)



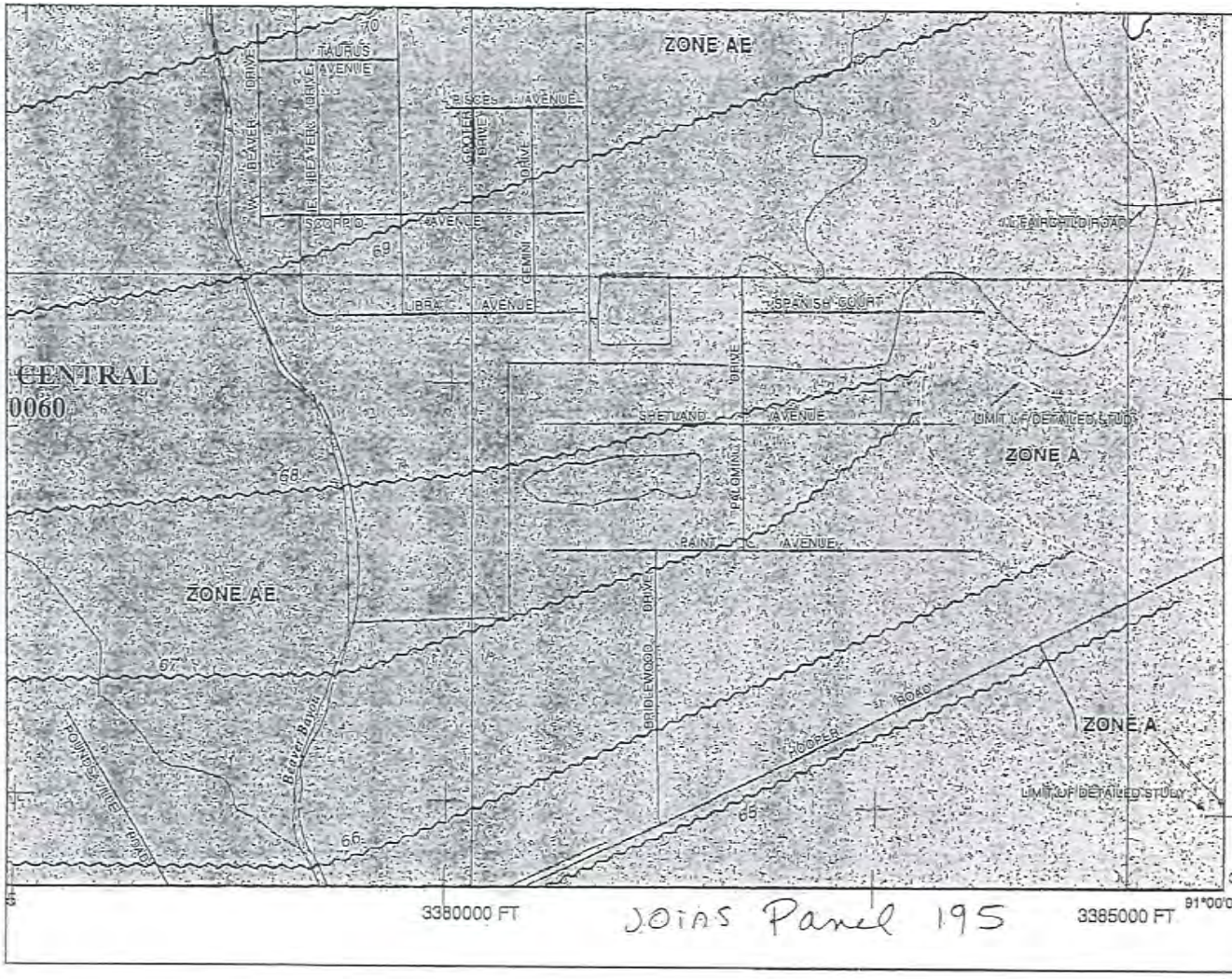
ALTERNATIVE A AND B
MAP 1 OF 2



ALTERNATIVE A AND B
MAP 2 OF 2



BOTH ALTERNATIVES A AND B
WIDEN HOOPER RD FROM 2 TO 4
LANES FROM SULLIVAN TO
GREENWELL SPRINGS
MAP 1 OF 3



Joins Panel 205

JOINS Panel 195

MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

FIRM

FLOOD INSURANCE RATE MAP

EAST BATON ROUGE PARISH, LOUISIANA

AND INCORPORATED AREAS

PANEL 185 OF 360

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
EAST BATON ROUGE PARISH	220030	0185	E
CENTRAL, CITY OF	220039	0185	E

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

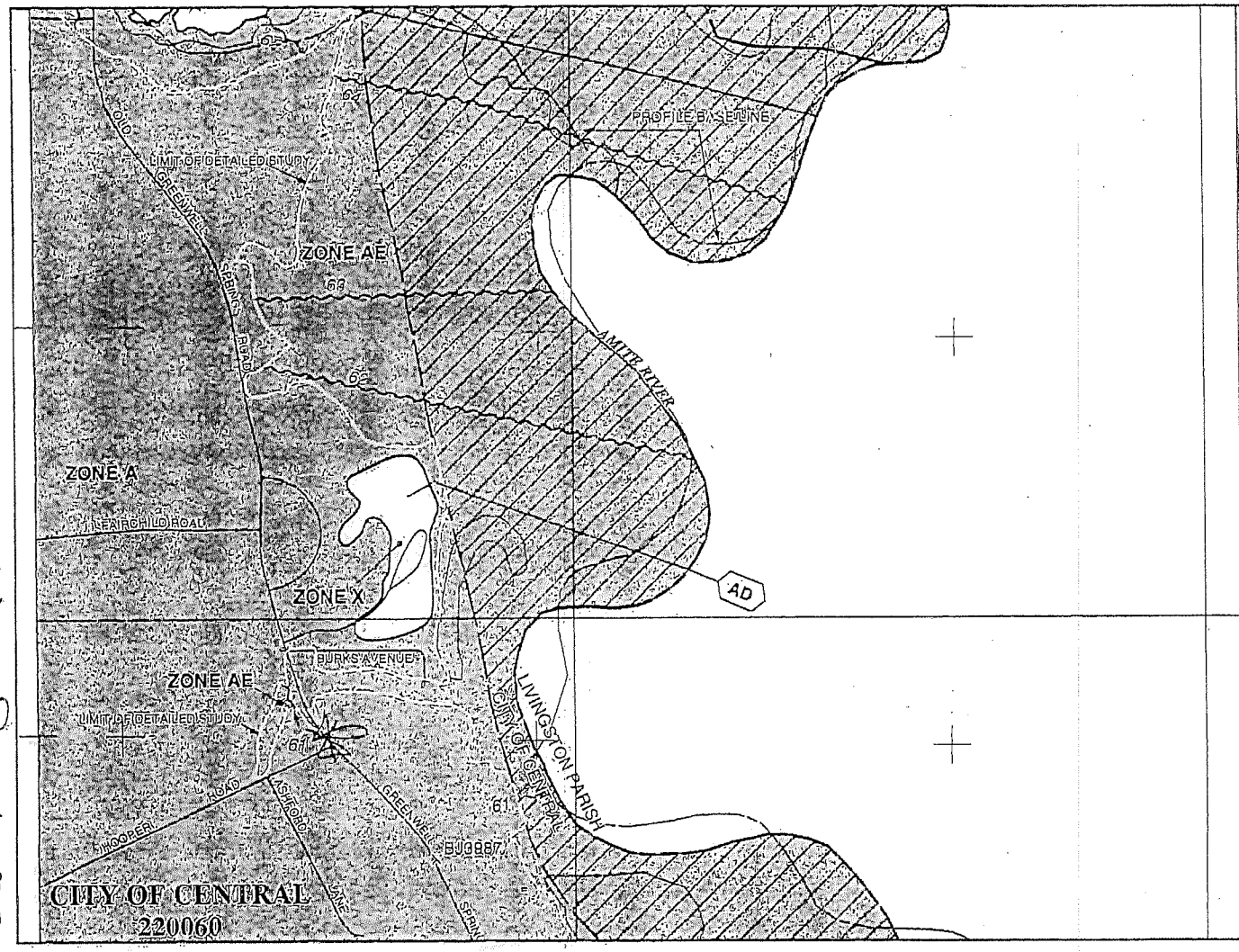
MAP NUMBER
22033C0185E

EFFECTIVE DATE
MAY 2, 2008

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

BOTH ALTERNATIVES A AND B
WIDEN HOOPER RD FROM 2 TO 4
LANES FROM SULLIVAN TO
GREENWELL SPRINGS
MAP 2 OF 3



National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 1000'

500 0 1000 2000

FIRM

FLOOD INSURANCE RATE MAP

EAST BATON ROUGE PARISH, LOUISIANA AND INCORPORATED AREAS

PANEL 205 OF 360

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
EAST BATON ROUGE PARISH	220058	0205	E
CENTRAL, CITY OF	220060	0205	E

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
22033C0205

EFFECTIVE DATE
MAY 2, 2010

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

BOTH ALTERNATIVES A AND B
WIDEN HOOPER RD FROM 2 TO 4
LANES FROM SULLIVAN TO
GREENWELL SPRINGS
MAP 3 OF 3

Jimo Panel 185

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

300 0 300 600 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0205E

FIRM

FLOOD INSURANCE RATE MAP

EAST BATON ROUGE PARISH, LOUISIANA

AND INCORPORATED AREAS

PANEL 205 OF 360

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

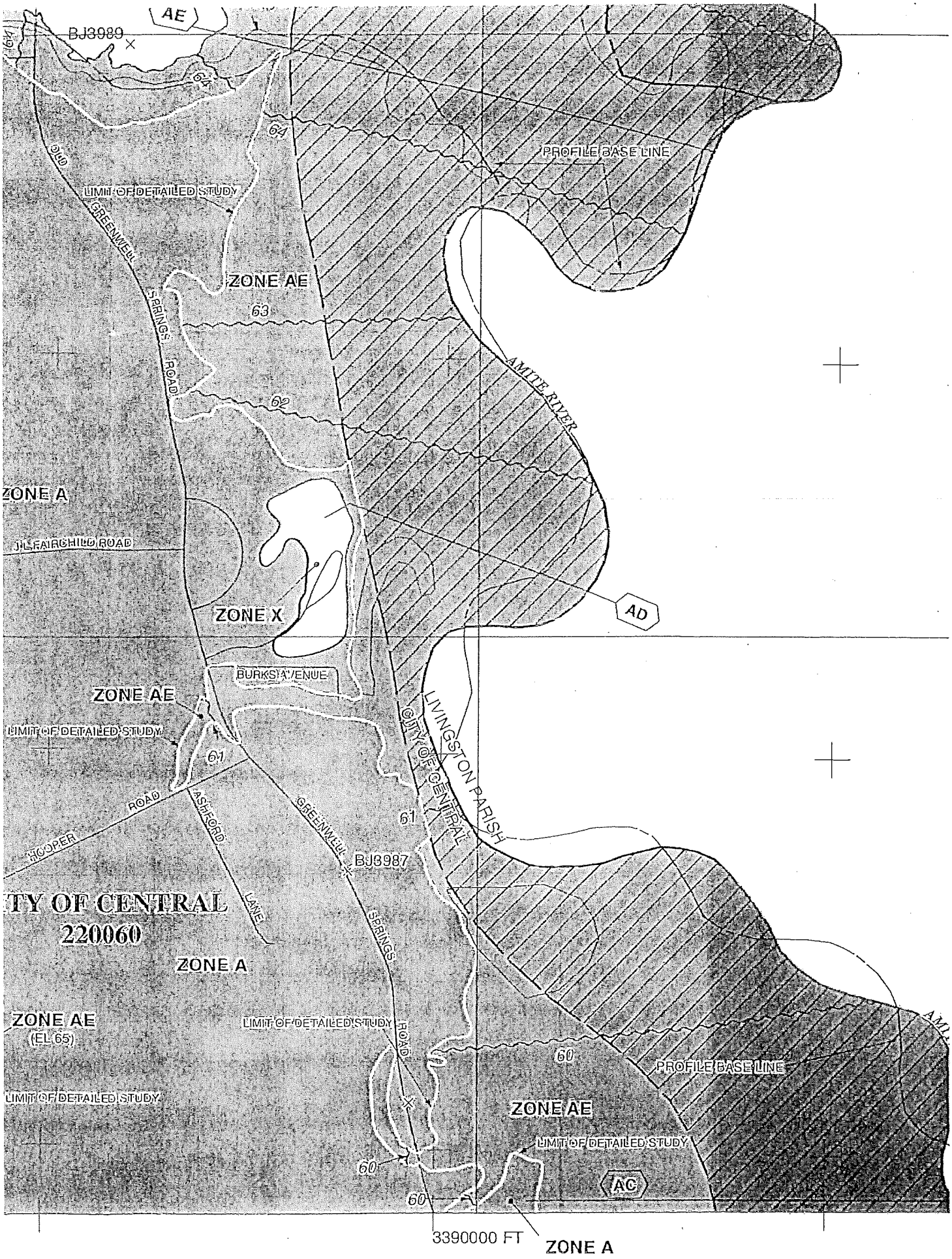
COMMUNITY	NUMBER	PANEL	SUFFIX
EAST BATON ROUGE PARISH	220058	0205	E
CENTRAL, CITY OF	220060	0205	E

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
22033C0205E

EFFECTIVE DATE
MAY 2, 2008

Federal Emergency Management Agency


AE
BJ3989
64
64
PROFILE BASE LINE
LIMIT OF DETAILED STUDY
GREENWELL SPRINGS ROAD
ZONE AE
63
AMITE RIVER
62
ZONE A
J.L. FAIRCHILD ROAD
ZONE X
AD
BURKS AVENUE
ZONE AE
LIMIT OF DETAILED STUDY
61
LIVINGSTON PARISH
CITY OF CENTRAL
61
HOOPER ROAD
ASHFORD LANE
GREENWELL SPRINGS ROAD
BJ3987
CITY OF CENTRAL
220060
ZONE A
ZONE AE
(EL 65)
LIMIT OF DETAILED STUDY
60
PROFILE BASE LINE
LIMIT OF DETAILED STUDY
ZONE AE
LIMIT OF DETAILED STUDY
60
AC
60
3390000 FT
ZONE A

U. S. Department of Homeland Security
FEMA Region 6
800 North Loop 288
Denton, TX 76209-3698

FEMA

FEDERAL EMERGENCY MANAGEMENT AGENCY
REGION VI
MITIGATION DIVISION

PUBLIC NOTICE REVIEW/ENVIRONMENTAL CONSULTATION

☐ We have no comments to offer. ☒ We offer the following comments:

WE WOULD REQUEST THAT THE COUNTY FLOODPLAIN ADMINISTRATOR BE CONTACTED FOR THE REVIEW AND POSSIBLE PERMIT REQUIREMENTS FOR THIS PROJECT.

We would request Project to be compliant with EO 11988 & 11990.

Jim Ferguson
Chief Engineer/ FPA
Parish of East Baton Rouge
P.O. Box 1471, BR 70821
Baton Rouge, LA 70821
225-389-3196

REVIEWER:

Mayra G. Diaz
Floodplain Management and Insurance Branch
940-898-5541

DATE: October 3, 2011

U. S. Department of Homeland Security
FEMA Region 6
800 North Loop 288
Denton, TX 76209-3698

FEMA

FEDERAL EMERGENCY MANAGEMENT AGENCY
REGION VI
MITIGATION DIVISION

PUBLIC NOTICE REVIEW/ENVIRONMENTAL CONSULTATION

☐ We have no comments to offer. ☒ We offer the following comments:

WE WOULD REQUEST THAT THE COUNTY FLOODPLAIN ADMINISTRATOR BE CONTACTED FOR THE REVIEW AND POSSIBLE PERMIT REQUIREMENTS FOR THIS PROJECT.
We would request Project to be compliant with EO 11988 & 11990.

Chuck Vincent
Permit Director/ FPA
Parish of Livingston
P.O. Box 998,
Livingston, LA 70754
cvincent@livingstonparishla.gov
225-686-3021

REVIEWER:

Mayra G. Diaz
Floodplain Management and Insurance Branch
940-898-5541

DATE: October 3, 2011

United States Department of Agriculture

NRCS

Natural Resources Conservation Service
3737 Government Street
Alexandria, LA 71302

(318) 473-7751
Fax: (318) 473-7626

September 30, 2011

Noel Ardoin
DOTD
P.O. Box 94245
Baton Rouge, Louisiana 70804-9245

RE: Hooper Road Extension – State Project No. H.005403

Dear Noel:

I have reviewed the above referenced project for potential requirements of the Farmland Protection Policy Act (FPPA) and potential impact to Natural Resource Conservation Service projects in the immediate vicinity.

Projects are subject to FPPA requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use and are completed by a federal agency or with assistance from a federal agency. For the purpose of FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Farmland subject to FPPA requirements can be forest land, pastureland, cropland, or other land, but not water or urban built-up land.

The project map submitted with your request indicates that the proposed construction areas are within urban areas and therefore is exempt from the rules and regulations of the Farmland Protection Policy Act (FPPA)—Subtitle I of Title XV, Section 1539-1549.

For specific information about the soils found in the project area, please visit our Web Soil Survey at the following location:

http://websoilsurvey.nrcs.usda.gov/

Please direct all future correspondence to me at the address shown above.

Respectfully,

W. Britt Paul ACTING FOR
Acting State Conservationist

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS TX 75202-2733

October 3, 2011

Ms. Noel A. Ardoin
Environmental Engineer Administrator
State of Louisiana
Department of Transportation
and Development
P.O. Box 94245
Baton Rouge, LA 70804-9245

Dear Ms. Ardoin:

We have received your September 21, 2011, letter requesting our evaluation of the potential environmental impacts which might result from the following project:

STP No. H.005403
FAP No. H.005403
Road Extension
Hooper Road
East Baton Rouge &
Livingston Parish, Louisiana

The project, proposed for financial assistance through the Federal Highway Association is located on the Southern Hills aquifer system which has been designated a sole source aquifer by the EPA. Based on the information provided for the project, we have determined that the project, as proposed, should not have an adverse effect on the quality of the ground water underlying the project site.

This approval of the proposed project does not relieve the applicant from adhering to other State and Federal requirements, which may apply. This approval is based solely upon the potential impact to the quality of ground water as it relates to the EPA's authority pursuant to Section 1424(e) of the Safe Drinking Water Act.

If you did not include the Parish/County; a legal description; project location and the latitude and longitude if available, please do so in future Sole Source Aquifer correspondence.

If you have any questions on this letter or the sole source aquifer program please contact me at (214) 665-7133.

Sincerely yours,

Michael Bechdol, Coordinator
Sole Source Aquifer Program
Ground Water/UIC Section

cc: Jesse Means, LDEO

LIVINGSTON PARISH

Office of the President
Building Department
An Equal Opportunity Employer

MIKE GRIMMER
Parish President

CHARLES "CHUCK" VINCENT
Building Official

October 05, 2011

LA DOTD; Environmental Engineer Administrator
P.O. Box 94245
Baton Rouge, LA 70804-9245

RE: STATE PROJECT NO: H.005403
F.A.P.: H.005403
NAME: Hooper Road Extension
ROUTE: LA 408
PARISH: East Baton Rouge and Livingston

SUBJECT: SOLICITATION OF VIEWS

To Whom It May Concern:

This letter addresses your request for any floodplain comments or concerns the Parish might have with the construction of the above referenced state project.

Being the Floodplain Manager for Livingston Parish, I do not foresee any effect the construction will have on the floodplain areas, as long as the rivers, creeks and drainage ditches do not get blocked or choked down due to erosion silting or construction debris.

If further documentation is needed, please contact me at (225) 686-3021.

Sincerely,

10-05-11

Chuck Vincent, C.B.O.
Floodplain Manager

CV/dd

P. O. Box 998 • Livingston, Louisiana 70754
(225) 686-3023 • (888) 204-7420 • Fax (225) 686-9989 • (225) 686-1900 TDD

Department of Children & Family Services
Building a Stronger Louisiana

Baton Rouge Regional
8585 Archives Ave.
Ste. 210
P.O. Box 66789
Baton Rouge, LA 70896

(O) 225.922.3099
(F) 225.922.2922
www.dcfs.la.gov

Bobby Jindal, Governor
Ruth Johnson,
Secretary

October 21, 2011

State of Louisiana
Department of Transportation and Development
P.O. Box 94245
Baton Rouge, LA 70804-9245
Attention: Noel A. Ardoin

RE: State Project No. H005403

Dear Mr. Ardoin:

I have reviewed the plan and map regarding Project No. H005403; Hooper Road Extension, and do not anticipate a negative impact with this project.

If you require additional information, feel free to contact me 225-922-3099.

Sincerely,

Lisa Welch

Lisa K. Welch, LCSW-BACS
Regional Administrator
Baton Rouge Region

Department of Children & Family Services
Building a Stronger Louisiana

Undersecretary
Division of Management and Finance
627 North 4th Street
Baton Rouge, LA 70802

(O) 225.342.0805
(F) 225.342.8636
www.dcfs.la.gov

Bobby Jindal, Governor
Ruth Johnson, Secretary

November 11, 2011

Mr. Noel Ardoin
Environmental Engineer Administrator
Department of Transportation & Development
Post Office Box 94245
Baton Rouge, Louisiana 70804-9245

Re: Solicitation of Views
Hooper Road Extension
Project # H.0050403
East Baton Rouge/Livingston Parishes

Dear Mr. Ardoin:

The Department of Children and Family Services has reviewed the proposed project information supplied in the East Baton Rouge/Livingston Parishes Solicitation of Views. We have determined that the project will not adversely impact the operations of our agency or the delivery of services to our consumers who reside in the affected area.

We offer no objection to this undertaking and look forward to its successfully completion.

Sincerely,

Richard Howze
Undersecretary

RH: sg

Department of Public Works
Engineering Division

City of Baton Rouge
Parish of East Baton Rouge

Post Office Box 1471
Baton Rouge, Louisiana 70821

Administration (225) 389-3186
Design (225) 389-5310
Drainage/Flood (225) 389-3196
Field Office (225) 389-3202
Right-of-Way (225) 389-3175
Sewer (225) 389-5623
Fax (225) 389-4948

October 12, 2011

LA DOTD
P.O. Box 94245
Baton Rouge, La 70814-9245
Attention: Environmental Engineer

State Project number: H.005403
Federal Aid Project No.: H.005403
Name: Hooper Road Extension
Route: La 408
Parish: East Baton Rouge and Livingston

Dear Ms. Noel A. Ardoin,

Reference is made to your letter of September 21, 2011 concerning solicitation of views for the above referenced project. Considering the nature and location of the project, it is our opinion that the proposed construction work, as described in the preliminary project description, will not have an adverse impact on the existing flood plain or environment provided the improvements, and all associated drainage structures are properly engineered.

This project is located in the City of Central of East Baton Rouge Parish and part of Livingston Parish which it falls in Flood Zone A and Zone AE and also it is in the Amite River Floodway. The construction of this project must be in compliance with all local flood plain regulations which would limit the possibility of flooding.

We have enclosed a copy of a portion of the FEMA community Panel 220060-22033C0250E dated May 2, 2008.

Yours truly,

Mr. A. J. Ferguson, Jr., P.E.
Chief Engineer

BOBBY JINDAL
GOVERNOR

State of Louisiana
DEPARTMENT OF NATURAL RESOURCES
OFFICE OF CONSERVATION

SCOTT A. ANGELLE
SECRETARY

JAMES H. WELSH
COMMISSIONER OF CONSERVATION

October 12, 2011

TO: Ms. Noel Ardoin
Environmental Engineer Administrator
LADOTD
P. O. Box 94245
Baton Rouge, Louisiana 70804-9245

RE: State Project No. H.005403
Federal Aid Project No. H.005403
Name: Hooper Road Extension
Route: LA 408
Parish: East Baton Rouge and Livingston

Dear Ms. Ardoin:

In response to your letter dated September 21, 2011, concerning the referenced matter, please be advised that the Office of Conservation collects and maintains many types of information regarding oil and gas exploration, production, distribution, and other data relative to the petroleum industry as well as related and non-related injection well information, surface mining and ground water information and other natural resource related data. Most information concerning oil, gas and injection wells for any given area of the state, including the subject area of your letter can be obtained through records search via the SONRIS data access application available at:

http://www.dnr.louisiana.gov

A review of our computer records for the referenced project area indicates no active oil, gas or injection wells located in the immediate vicinity of the proposed project area, although there are plugged and abandoned wells in the area. Furthermore, the DNR water well database indicates the possibility that there are registered water wells in the project area. Additionally, unregistered water wells may be located in the area.

The Office of Conservation maintains records of all activities within its jurisdiction in paper, microfilm or electronic format. These records may be accessed during normal business hours, Monday through Friday, except on State holidays or emergencies that require the Office to be closed. Please call 225-342-5540 for specific contact information or for directions to the Office of Conservation, located in the LaSalle Building, 617 North Third Street, Baton Rouge, Louisiana. For pipelines and other underground hazards, please contact Louisiana One Call at 1-800-272-3020 prior to commencing operations. Should you need to direct your inquiry to any of our Divisions, you may use the following contact information:

Division	Contact	Phone No.	E-mail Address
Engineering	Jeff Wells	225-342-5638	jeff.wells@la.gov
Pipeline	Steven Giambrone	225-342-2989	steven.giambrone@la.gov
Injection & Mining	Laurence Bland	225-342-5515	laurence.bland@la.gov
Geological	Mike Kline	225-342-3335	mike.kline@la.gov
Environmental	Gary Snellgrove	225-342-7222	gary.snellgrove@la.gov

If you have difficulty in accessing the data via the referenced website because of computer related issues, you may obtain assistance from our technical support section by selecting Help on the SONRIS tool bar and submitting an email describing your problems and including a telephone number where you may be reached.

Sincerely,

James H. Welsh
AR Commissioner of Conservation

JHW:MBK

CAPITAL AREA GROUND WATER CONSERVATION COMMISSION

WEST FELICIANA
EAST FELICIANA
POINTE COUPEE
EAST BATON ROUGE
WEST BATON ROUGE

3535 S. Sherwood Forest Blvd., Suite 129
Baton Rouge, Louisiana 70816-2255
Telephone (225) 293-7370

October 11, 2011

LA DOTD
Environmental Engineer Administrator
P.O. Box 94245
Baton Rouge, LA 70804-9245

Re: State Project No. H.00543
Federal Aid Project No. H.005403
Name: Hooper Road Extension
Route: LA 408
Parish: East Baton Rouge & Livingston Parish

Dear Sir:

Concerning the referenced project, we anticipate no detrimental effects on the groundwater resources resulting from the project.

Sincerely,

Anthony J. Duplechin
Director

Bobby Jindal
GOVERNOR

Bruce D. Greenstein
SECRETARY

State of Louisiana

Department of Health and Hospitals
Office of Public Health

September 30, 2011

LA DOTD
Environmental Engineer Administrator
P.O. Box 94245
Baton Rouge, LA 70804-9245

Re: State Project No. H.005403; Hooper Road Extension, LA 408, East Baton Rouge and Livingston Parish.

This office is in receipt of a Solicitation of View regarding the above referenced project(s).

Based upon the information received from the applicant we have no objection to the referenced project(s) at this time. The applicant shall be aware of and comply with any and all applicable Louisiana State Sanitary Code regulations (LAC 51, as applicable). Furthermore, should additional project data become available to this office that in any way amend the information upon which this office's response has been based, we reserve the right of additional comment on the referenced project(s).

In the event of any future discovery of evidence of non-compliance with the Louisiana Administrative Code Title 51 (Public Health-Sanitary Code) and the Title 48 (Public Health-General) regulations or any applicable public health laws or statutes which may have escaped our awareness during the course of this cursory review, please be advised that this office's preliminary determination on this Solicitation of View of the project(s) shall not be construed as absolving the applicant of responsibility, if any, with respect to compliance with the Louisiana Administrative Code Title 51 (Public Health-Sanitary Code) and the Title 48 (Public Health-General) regulations or any other applicable public health laws or statutes.

Respectfully,

Johan Forsman
Geologist
Louisiana Department of Health and Hospitals, Office of Public Health
Center for Environmental Health Services
Telephone: (225) 342-7309
Electronic mail: johan.forsman@la.gov

Office of the Planning Commission

City of Baton Rouge and Parish of East Baton Rouge
Post Office Box 1471, Baton Rouge, Louisiana 70821
or
1755 Florida Street, 3rd Floor, Baton Rouge, LA 70802
Phone (225) 389-3144 Fax (225) 389-5342

Troy L. Bunch, FASLA
Planning Director

October 20, 2011

Ms. Noel A. Ardoin, Environmental Engineer Administrator
LADOTD
P.O. Box 94245
Baton Rouge, LA 70804-9245

Dear Ms. Ardoin:

This letter is in response to the request for a Solicitation of Views (State Project Number H.005403) for the proposed Hooper Road Extension, including Alternative A and Alternative B road segments.

The City of Baton Rouge – Parish of East Baton Rouge Planning Commission (CPPC) is responsible for implementing the FUTUREBR Comprehensive Plan, update of the Horizon Plan. FUTUREBR consists of nine elements that outline Goals, Objectives, and Action Items for implementation.

The proposed project is located within the city limits of the City of Central and Livingston Parish. The CPPC does not regulate the planning and zoning for the City of Central, but will substantiate how the following Action Items of FUTUREBR relates to roadway improvements within and around the City-Parish.

Action Item TR1.2.1, Prioritize regional transportation projects, facilitate adoption within the Capital Area Metropolitan Planning Organization (MPO)'s TIP and DOTD's STIP. The Lead Agency for this Action Item is the Capital Region Planning Commission (CRPC).

Action Item PS4.1.1, Provide a coordinated system where the Comprehensive Plans of Baker, Central and Zachary are reviewed for consistency with the Comprehensive Plan of East Baton Rouge Parish.

The proposed improvements are consistent with transportation and public service goals in FUTUREBR. These enhancements ensure the continuing operation and adequate maintenance of existing infrastructure.

Please contact our office if you have questions concerning this subject.

Sincerely,

Troy L. Bunch, FASLA
Planning Director

TLB/VB/jsm

c: Ellen A. Miller, Assistant Planning Director
Ryan Holcomb, Planning Project Coordinator
C. Lael Holton, Manager, Advance Planning and Research

Choctaw Nation of Oklahoma

P.O. Box 1210 • Durant, OK 74702-1210 • (580) 924-8280

Gregory E. Pyle
Chief

Gary Batton
Assistant Chief

October 26, 2011

LA DOTD
Environmental Engineer Administrator
P.O. Box 94245
Baton Rouge, Louisiana 70804-9245

Dear Noel Ardoin:

We have reviewed the following proposed project (s) as to its effect regarding religious and/or cultural significance to historic properties that may be affected by an undertaking of the projects area of potential effect.

RE: State Project No H.005403
F.A.P. No. H.005403
Route: LA 408
Parish: East Baton Rouge and Livingston

Comments: This project is located within the Choctaw Nation of Oklahoma's areas of historic interest. In order to evaluate the projects potential for disturbing Choctaw historic/sacred sites, we will need a detailed description of the anticipated work, maps, and copies of any cultural resources surveys that may be conducted in connection with it. The 30 day response period will be the date we receive all requested information. If you have any questions, please feel free to call the Choctaw Nation of Oklahoma Historic Preservation Department at 1-800-522-6170 ext. 2216.

Sincerely,

Ian Thompson PhD, RPA
Director Historic Preservation Department
Tribal Archaeologist, NAGRPA Specialist
Choctaw Nation of Oklahoma

By: _____
Caren A. Johnson
Administrative Assistant

IT/cj

Choctaws...growing with pride, hope and success!

JAY DARDENNE
LIEUTENANT GOVERNOR

State of Louisiana

OFFICE OF THE LIEUTENANT GOVERNOR
DEPARTMENT OF CULTURE, RECREATION & TOURISM
OFFICE OF CULTURAL DEVELOPMENT
DIVISION OF ARCHAEOLOGY

CHARLES R. DAVIS
DEPUTY SECRETARY

PAM BREAUX
ASSISTANT SECRETARY

November 28, 2011

Ms. Noel Ardoin
DOTD
P.O. Box 94245
Baton Rouge, LA 70804-9245

Re: State Project No. H.005403
Hooper Road Extension
LA 408
East Baton Rouge and Livingston Parish

Dear Ms. Ardoin,

This in response to your letter dated September 21, 2011, concerning the above-referenced project. It is the opinion of our office that a Phase I cultural resources survey is warranted.

Please contact Rachel Watson at (225)342-8165 if you have any questions concerning our recommendation.

Sincerely,

Pam Breaux

Pam Breaux
State Historic Preservation Officer

PB:RW:s

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P. O. BOX 60267
NEW ORLEANS, LOUISIANA 701600267

REPLY TO
ATTENTION OF

DEC 0 8 2011

Operations Division
Operations Manager,
Completed Works

Mr. Noel A. Ardoin
State of Louisiana
Department of Transportation and Development
Post Office Box 94245
Baton Rouge, Louisiana 70804-9245

Dear Mr. Ardoin:

This is in response to your Solicitation of Views request dated September 21, 2011, concerning the Hooper Road extension on Louisiana Highway 408 in East Baton Rouge and Livingston Parishes, Louisiana, (State Project Number H.005403, Federal Aid Project Number H.005403).

We have reviewed your request for potential Department of the Army regulatory requirements and impacts on any Department of the Army projects.

We do not anticipate any adverse impacts to any Corps of Engineers projects.

Information and signatures obtained from recent maps, aerial photography, and local soil surveys concerning this site are indicative of the occurrence of wetlands. Department of the Army (DA) permits are required prior to the deposition or redistribution of dredged or fill material into wetlands that are waters of the United States. Additionally, the Amite River is a navigable waterway and subject to Corps of Engineers' jurisdiction under Section 10 of the Rivers and Harbors Act. A DA Section 10 permit will be required prior to any work in the Amite River.

This preliminary determination is advisory in nature. If an approved delineation is needed please furnish us with the detailed field data concerning vegetation, soils, and hydrology that we require for all jurisdictional decisions. The fact that a field wetland delineation/determination has not been completed does not alleviate your responsibility to obtain the proper DA permits prior to working in wetlands occurring on this property.

Off-site locations of activities such as borrow, disposals, haul-and detour-roads and work mobilization site developments may be subject to Department of the Army regulatory requirements and may have an impact on a Department of the Army project.

You should apply for said permit well in advance of the work to be performed. The application should include sufficiently detailed maps, drawings, photographs, and descriptive text for accurate evaluation of the proposal.

Please contact Mr. Robert Heffner, of our Regulatory Branch by telephone at (504) 862-1288, or by e-mail at Robert.A.Heffner@usace.army.mil for questions concerning wetlands determinations or need for on-site evaluations. Questions concerning regulatory permit requirements may be addressed to Mr. Martin Mayer by telephone at (504) 862-2276 or by e-mail at Martin.S.Mayer@usace.army.mil.

Future correspondence concerning this matter should reference our account number MVN-2011-02707-SG. This will allow us to more easily locate records of previous correspondence, and thus provide a quicker response.

We apologize for missing the target date of October 21, 2011 listed in your request. Thank you for your patience in this matter.

Sincerely,

Karen L. Oberlies

Karen L. Oberlies
Solicitation of Views Manager

Jena Band of Choctaw Indians

P. O. Box 14 • Jena, Louisiana 71342-0014 • Phone: 318-992-2717 • Fax: 318-992-8244

December 13, 2011

LA DOTD; Environmental Engineer Administrator
P.O. Box 94245
Baton Rouge, LA 70804

RE: Solicitation of views. Project No. H.005403, East Baton Rouge and Livingston Parishes.

Dear Mr. Ardoin,

At this time, we are not aware of any sacred and/or ceremonial sites in the immediate area. Although, if any cultural resources, such as; bone, pottery, flakes or stone tools, etc., are found during the installation; please contact us immediately.

Sincerely,

Dana Masters

Dana Masters
THPO

P.O. Box 14
Jena, LA 71342

Ph: 318.992.1205
Fax: 318.992.8244

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

October 20, 2011

Noel Ardoin
Louisiana DOTD
Environmental Engineer Administrator
P.O. Box 94245
Baton Rouge, Louisiana 70804-9245

SUBJECT: Hooper Road Extension

Dear Ms. Ardoin:

The Environmental Protection Agency (EPA) Region 6 has received your correspondence, dated September 21, 2011, regarding a request for information for the Hooper Road Extension project. In accordance with the National Environmental Policy Act, and under Section 309 of the Clean Air Act, our agency has identified areas of concern that should be addressed in your environmental assessment:

- project area is within 100 meters of regulated facilities
- project area is over the Southern Hills Aquifer; a sole source aquifer
- project area is within the 100 year floodplain
- project area contains rare and/or sensitive species; coordinate with the Louisiana Natural Heritage Program
- project area contain wetlands; a U.S. Army Corps of Engineers Section 404 permit may be required
- project is within an ozone nonattainment area
- project area may contain the inflated heelsplitter, a federal and state listed threatened species documented in the Amite River

Please note that the proposed project may be subject to other federal, state, and local regulations. Please see attached documentation. For sole source aquifer coordination, please contact EPA Region 6 Ground Water/UIC Section (6WQ-SG), 1445 Ross Avenue, Dallas, TX 75202. Thank you for your coordination and don't hesitate to contact John MacFarlane, of my staff, at 214-665-7491 or macfarlane.john@epa.gov should you have any questions or concerns regarding this letter.

Sincerely,

Rhonda Smith
Chief, Office of Planning and Coordination

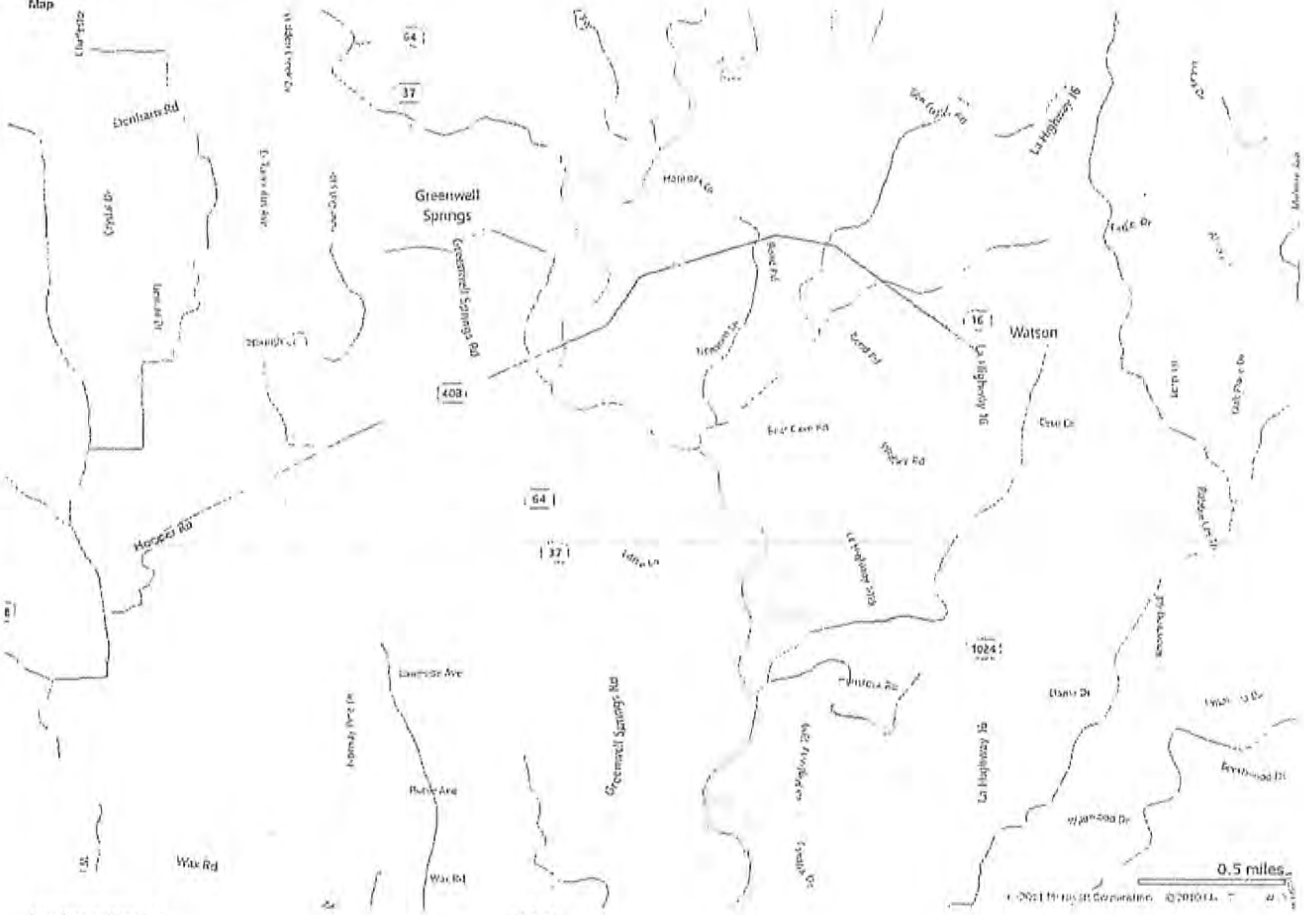
Enclosure

http://r6gis1.r06.epa.gov/NEPAVE/analysis_gisst.aspx
Last updated on Tuesday, October 11, 2011

NEPAssist

You are here: EPA Home NEPAssist Home

Map



Length of digitized line	2.54 mi
Facility	
Within 100 meters of a hospital?	no
Within 1000 meters of a hospital?	no
Within 100 meters of a TRI facility?	no
Within 1000 meters of a TRI facility?	no
Within 100 meters of a regulated facility?	yes
Within 1000 meters of a regulated facility?	yes
Within 100 meters of an airport?	no
Water	
Within 100 meters of a Wild and Scenic River?	no
Within an area over a Sole Source Aquifer?	yes
Within the 100 year flood plain?	yes
Within the 500 year flood plain?	yes
Within 400 meters of an NWI wetland?	no
Within an NLCD wetland?	yes
Within 1000 meters of an NLCD wetland?	yes
Ecology	
Within a federal/state park or wildlife area?	no
Within 1000 meters of a federal/state park or wildlife area?	no
Within a critical habitat area?	no
Within 1000 meters of a critical habitat area?	no
Within 100 meters of a REAP Composite area that is within the Top 10% highest scores?	no
Within 100 meters of a REAP Diversity area that is within the Top 10% highest scores?	yes
Within 100 meters of a REAP Rarity area that is within the Top 10% highest scores?	no
Within 100 meters of a REAP Sustainability area that is within the Top 10% highest scores?	no
Other	

Within 100 meters of a place on the National Historic Register?	no
Within 1000 meters of a place on the National Historic Register?	no
Within 100 meters of a school?	no
Within 1000 meters of a school?	yes
Within a nonattainment area?	yes
Within a previous nonattainment, maintenance, or EAC area?	yes
Within 1000 meters of a Tribal boundary or property of interest?	no
NatureServe data	
Within an area with known rare, endangered, or at-risk species?	click here

Download XML Environmental Justice Analysis

GISST Analysis

RECEIVED
OCT 24 2011

http://r6gis1.r06.epa.gov/NEPAVEtools/NepaCall/NatureServeDrill.aspx
Last updated on Tuesday, October 11, 2011

NEPAssist

You are here: EPA Home NEPAssist Home

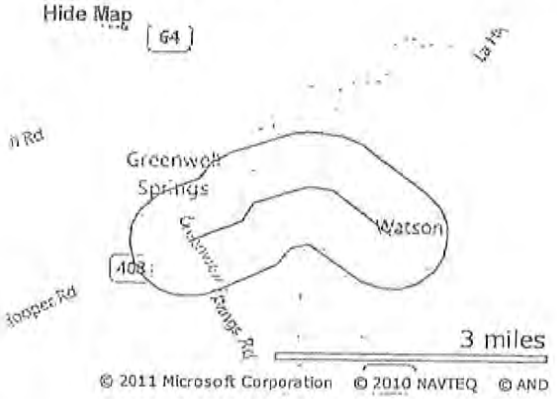
NEPAssist NatureServe Report

This information is provided by NatureServe and its network of natural heritage member programs, a leading source of information about rare and endangered species, and threatened ecosystems. For more detail about the data and how the queries work, and links to related information resources, please review the report on "How to Interpret the Data".

Please note: As an EPA employee, you may receive more detailed information in the following NatureServe Reports than you are permitted to share in communications with outside stakeholders in accordance with the NatureServe data usage agreement with EPA. Read the references to data distribution in the terms and conditions carefully. Also, refer to the Data Distribution Restriction Section on the NatureServe entry page which provides acceptable types of statements that can be included in correspondence to outside stakeholders.

EPA pays for an annual subscription to the NatureServe web service data. While use of the web service for your business needs is strongly encouraged, please limit your use to queries you need for your work. If you encounter an error message when accessing the web service, please document the occurrence and send that information to: greene.ana@epa.gov

Hide Map



Results for 1000 meters from study area
Study area type: line
Total area of study area plus buffer: 11.1 sq km / 4.29 sq mi

Enter a new buffer distance and units for the selected study area.
Please be patient. Queries of large areas can take a minute or two.

1000 meters Submit Query

Note: Buffers of 0 distance are not valid for point and line study area type, a 1000 meter buffer is applied by default.

Hide Area Size Reference

Size of Queried Area	Information Detail Returned
Polygon larger than or equal to 36 sq. km (¼ quad)	Exact species
Polygon smaller than 36 sq. km (¼ quad) and larger than or equal to 10 sq. km (¼ of ¼ quad)	Major taxonomic group
Polygon smaller than 10 sq. km (¼ of ¼ quad) and larger than or equal to 2.6 sq. km (1 sq. mile)	Known presence
Polygon smaller than 2.6 sq. km (1 sq. mile)	Data not available

Your query area was less than 36 square kilometers. The response format is: Major Taxonomic Group. Larger query areas will return additional information.

Major Taxonomic Group	NatureServe Global Status	Other Status	Fuzzing	Data Steward
Flowering Plants sp. 1	G4		N	Louisiana Natural Heritage Program
Freshwater Mussels sp. 1	G1G2Q	**USESA Status:** LT: Listed threatened	N	Louisiana Natural Heritage Program
Freshwater Mussels sp. 2	G5Q		N	Louisiana Natural Heritage Program
Freshwater Mussels sp. 3	G5		N	Louisiana Natural Heritage Program
Lizards, Snakes, Turtles, and Crocodilians sp. 1	G5		N	Louisiana Natural Heritage Program
Lizards, Snakes, Turtles, and Crocodilians sp. 2	G4		N	Louisiana Natural Heritage Program
Mammals sp. 1	G5		N	Louisiana Natural Heritage Program

There were no excluded areas found in the query area.

Information on the NatureServe Web Service – Use Guidelines and Citation

RECEIVED

OCT 24 2011

STATE OF LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
P.O. Box 94245
Baton Rouge, Louisiana 70804-9245
www.dotd.la.gov
(225) 242-4502

BOBBY JINDAL
GOVERNOR

SHERRI LEBAS
SECRETARY

(225) 242-4507
September 21, 2011

STATE PROJECT NO.: H.005403
FEDERAL AID PROJECT NO.: H.005403
NAME: Hooper Road Extension
ROUTE: LA 408
PARISH: East Baton Rouge and Livingston

SUBJECT: **SOLICITATION OF VIEWS**

Early in the planning stages of a transportation facility, views from federal, state, and local agencies, organizations, and individuals are solicited. The special expertise of these groups can assist DOTD with the early identification of possible adverse economic, social, or environmental effects or concerns. Your assistance in this regard will be appreciated.

Due to the earliness of this request for your views, very limited data concerning the proposed project exists. We have, however, attached a sketch map showing the general location of the proposed project, along with a preliminary project description.

It is requested that you review the attached information and furnish us with your views and comments by **October 21, 2011**. Replies should be addressed to LA DOTD; Environmental Engineer Administrator; P.O. Box 94245; Baton Rouge, Louisiana 70804-9245. Please reference the State Project Number in your reply.

Sincerely,

N. Ardoin

Noel A. Ardoin
Environmental Engineer Administrator

Attachments
NA/RL/sl
cc: Mr. Roy Schmidt, District 61 Engineer Administrator
Ms. Connie Standige, District 62 Engineer Administrator

AN EQUAL OPPORTUNITY EMPLOYER
A DRUG-FREE WORKPLACE
02 53 2010