ORIGINAL TO GENERAL FILES

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

OFFICE OF DESIGN POLICY & SUPPORT
INTERDEPARTMENTAL CORRESPONDENCE

FILE P.I. #s 0006327, 0010554, & 0010555
CSSTP-0006-00(327)
Barrow County
GDOT District 1 - Gainesville
West Winder Bypass

OFFICE Design Policy & Support

DATE July 17, 2013

FROM for Brent Story, State Design Policy Engineer

TO SEE DISTRIBUTION

SUBJECT **APPROVED REVISED CONCEPT REPORT**

Attached is the approved Revised Concept Report for the above subject project.

Attachment

DISTRIBUTION:

Bobby Hilliard, Program Control Administrator
Genetha Rice-Singleton, State Program Delivery Engineer
Glenn Bowman, State Environmental Administrator
Cindy VanDyke, State Transportation Planning Administrator
Ben Rabun, State Bridge Engineer
Kathy Zahul, State Traffic Engineer
Angela Robinson, Financial Management Administrator
Lisa Myers, State Project Review Engineer
Charles "Chuck" Hasty, State Materials Engineer
Mike Bolden, State Utilities Engineer
Paul Tanner, Asst. State Transportation Data Administrator
Attn: Systems & Classification Branch
Ken Thompson, Statewide Location Bureau Chief
Bayne Smith, District Engineer
Brent Cook, District Preconstruction Engineer
Neil Kantner, District Utilities Engineer
Sue Anne Decker, Project Manager
Suzanne Dunn, Acting Project Manager
BOARD MEMBER - 10th Congressional District
FHWA – attn: Rodney Barry, Georgia Division Administrator

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
REVISED PROJECT CONCEPT REPORT

Project Type:	New Location and Widening	P.I. Number:	Phase 1: 0006327 Phase 2: 0010554 Phase 3: 0010555
GDOT District:	District 1	County:	Barrow
Federal Route Number:	N/A	State Route Number:	SR 8, SR 211, SR 316
Project Number:	CSSTP-0006-00(327)		

The horizontal geometry from the approved concept report is being revised to reduce environmental impacts to existing streams and wetland areas, reduce impacts to future expansion areas of the Johns Mansville industrial plant, and reduce construction staging and traffic control requirements at the proposed SR 316 interchange.

Submitted for approval:

James C. Garrison, III, P.E., — February 14, 2013
Consultant Designer and Firm or GDOT Concept/Design Phase Office Head & Office — DATE

Darrell Greeson — February 14, 2013
Local Government — DATE

2/19/2013
Office Head *(GDOT Project Manager's Office)* — DATE

Sue Anne Decker — 2/14/13
GDOT Project Manager — DATE

* Recommendation on file
Recommendation for approval:

*Glenn Bowman/KLP — 3-10-13
State Environmental Administrator — DATE

*Kathy Zahul/KLP — 3-19-13
State Traffic Engineer — DATE

*Ben Rabun/KLP — 3-23-13
State Bridge Design Engineer — DATE

The concept as presented herein and submitted for approval is consistent with that which is included in the Regional Transportation Plan (RTP) and/or the State Transportation Improvement Program (STIP).

Cynthia L Vanke — 3-15-13
State Transportation Planning Administrator — DATE

PLANNING, APPROVED CONCEPT, & BACKGROUND DATA

Project Justification Statements:

This project originated in response to the industrial growth that occurred in the region throughout the 1990's. Industrial and commercial traffic from this area in Barrow County primarily travel to and from the interstate system via SR 316 and SR 211. This travel pattern requires the industrial traffic to use both an at-grade railroad crossing and travel on residential collector roadways to reach SR 211, or travel through the downtown area of the City of Winder. In February 2010, representatives of Barrow County and GDOT agreed on a phasing plan to facilitate funding for this large project. This project is currently in the Atlanta Regional Commission's long-range plan.

The overall plan proposes to connect SR 316 to SR 211 to the west of Winder through both existing roadways and new alignment.

Barrow County P.I. 0006327, West Winder Bypass from CR 325/Matthews School Road to SR 211 – Phase 1

The need for the proposed project is to provide a bypass route on the west side of the City of Winder from SR 316 to SR 211 and to construct a grade-separated railroad crossing at the intersection of the West Winder Bypass and SR 8. The purpose is to alleviate the percentage of trucks utilizing minor arterial routes and to reduce congestion and accident rates along Patrick Mill Road, SR 8, SR 211 and Pearl Pentecost Road.

Barrow County P.I. 0010554, West Winder Bypass from SR 316 to CR 325/Matthews School Road – Phase 2

The proposed project limits for this phase are just east of SR 316 to the south and Matthews School Road to the north, with the majority of the alignment following Patrick Mill Road. These limits are proposed because they represent origin and destination points along the corridor due to their importance as regional roads and proximity to industrial and commercial development. At the northern terminus, 33% of traffic on Patrick Mill Road turns onto Matthews School Road. At the southern terminus, 52% of traffic on Patrick Mill Road turns onto SR 316.

Patrick Mill Road is classified as a rural minor collector. Design traffic projections forecast a Level of Service (LOS) D by 2040 with an average daily traffic of 17,080 vehicles per day. According to the Statewide Transportation Plan, congestion is defined as LOS D and below. The goal of this project is to improve the performance of this congested roadway and efficiently route trucks to and from the industrial areas in the county.

Barrow County P.I. 0010555, West Winder Bypass @ SR 316 New Interchange – Phase 3

In the "SR 316 Corridor Study" conducted in 2002, Patrick Mill Road was identified as a point of access in the improvement of SR 316 as a limited access freeway. The proposed interchange was identified in the Office of Planning's "SR 316 Implementation Study" in 2009.

The proposed location of the interchange is just southeast of the current intersection of Patrick Mill Road and SR 316 and is classified as a rural minor collector. Design traffic projections forecast a Level of Service (LOS) D by 2020 for the intersection of Patrick Mill Road and SR 316 under "no build" conditions, and a LOS E by 2040 under "no build" conditions. According to the Statewide Transportation Plan, congestion is defined as LOS D and below. The goal of this project is to improve the performance of this congested roadway and efficiently route trucks to and from the industrial areas in the county.

Description of the Approved Concept: The proposed project will widen Patrick Mill Road/CR 93 from a two-lane to a four-lane divided highway with a 20-foot raised median from Tom Miller Road to approximately 1,000 feet north of Burson Maddox Road. The roadway will continue north on new location, bridge over SR 8, the CSX railroad track and Bankhead Highway, cross Pearl Pentecost Road and connect to SR 211. The total length of the project is approximately 5.0 miles. The project will also include a full-diamond interchange at SR 316 and connector roadways from the West Winder Bypass to SR 8 and to Bankhead Highway.

Description of Previously Approved Revisions: On May 31, 2011 the approved concept was revised as follows.

The project was split into the individual projects (phases) for project funding purposes with reductions in the lane width, shoulders, and median per the Value Engineering Study recommendations. Below are the descriptions of the individual project phases:

Phase 1

Project Length is 2.26 miles. Phase 1 is located in the northern section of the overall West Winder Bypass from Matthews School Road to SR 211, located at Milepost 2.70 to Milepost 4.96.

Phase 2

Project length is 1.94 miles. Phase 2 consists of the southern section of the overall West Winder Bypass from SR 316 to Matthews School Road, located at Milepost 0.76 to Milepost 2.70.

Phase 3

Project length is 0.76 miles. Phase 3 consists of the new full diamond interchange at the West Winder Bypass and SR 316, located at Milepost 0.00 to Milepost 0.76.

In addition, the West Winder Bypass alignment was revised to curve south and cross Pearl Pentecost Road and continue parallel to Cedar Creek through property owned by Barrow County and then tie in to SR 211 at Milepost 2.14, approximately 3,000 feet south of the original alignment. The alignment was moved to prevent impacting a historical resource.

Annual Daily Traffic Volumes and Levels of Service

The existing roadway of SR 8 near the CSX railroad crossing is operating at a Level of Service (LOS) "E" under current peak hour conditions and Patrick Mill Road currently operates at LOS "C". Level of Service is a qualitative measurement of traffic flow, which ranges from "A" (unimpeded, free-flowing traffic) through "F" (virtual gridlocked traffic). These roadways currently serve local and commercial traffic in the area. The commercial, industrial and residential land uses along Patrick Mill Road and SR 8 contribute to the 8,800 vehicles per day (vpd) and 16,900 vpd, respectively on these existing facilities. Trucks contribute 10.2% of the 24-hour traffic volume on SR 8 and 8.9% of the traffic on Patrick Mill Road.

Historical traffic data for the area was obtained from GDOT from 1997 to 2008. A regression analysis was conducted to determine the average growth rate of 0.52% for this area. To determine the future no-build traffic volumes for the roads within the project study area for the years 2020 and 2040, the calculated 0.52% growth rate was applied to the 2009 traffic to obtain the 2020/2040 no-build traffic volumes. Up to thirty-five percent of the no-build design year traffic was diverted from multiple routes, including SR 211 east of the West Winder Bypass (WWBP) and SR 8 east of the WWBP. In addition, a significant amount of diverted traffic (approximately 15% of ADT) to and from the north on I-85 headed to and from SR 316 and beyond was diverted (assumption) to this new route, as the closest comparable north-south routes are in Lawrenceville to the west and Athens to the east. Part of this diversion is also due to an anticipated project that will widen SR 211 between the West Winder Bypass and I-85 from two lanes to four lanes with a median.

As a result of these traffic growth rates, it is projected that traffic will almost double on some routes by the year 2040. The traffic on SR 211 is almost at the roadway capacity, and the additional traffic attracted to this route pushes it just over the operational threshold. Although this segment is failing, it is doing so for the entire six-mile section between the Bypass and I-85; the northern terminus of the Bypass project is the first reasonable place to stop north of SR 8. In addition, SR 211 is under consideration for a separate project in the 2030 RTP that will widen SR 211 between the West Winder Bypass and I-85 from two lanes to four lanes with a median.

The ADT's and LOS's for the existing network are shown in the table below.

Roadway	2020 No-Build AADT (vpd)	LOS	2040 No-Build AADT (vpd)	LOS	2040 Build AADT (vpd)	LOS
SR 316	25,450	F	28,200	F	35,000	F
Patrick Mill Rd	9,350	C	10,400	C	16,350	B*

Roadway	2020 No-Build AADT (vpd)	LOS	2040 No-Build AADT (vpd)	LOS	2040 Build AADT (vpd)	LOS
SR 8	17,900	E	19,850	E	15,450	E
SR 211	15,800	E	17,500	E	20,550	F
Pearl Pentecost Rd	3,200	B	3,550	B	4,450	C

* Patrick Mill Road would be widened to four lanes during its conversion to the West Winder Bypass in the build condition.

It is anticipated that the capacity improvements would reduce truck traffic on the local roadway network. The local roadway network including SR 8, SR 211, Patrick Mill Road, and Pearl Pentecost Road are all currently two-lane facilities that are inadequate to handle the projected industrial/commercial traffic on the west side of Winder. Construction of the West Winder Bypass should remove all regional truck trips from local streets like Pearl Pentecost Road, as the proposed West Winder Bypass will provide a more efficient direct route. SR 8 (Atlanta Highway) and Bankhead Highway will still experience a significant number of local truck trips due to the concentration of industrial/commercial land uses, but regional trips beyond the Cities of Winder and Auburn will be diverted to the West Winder Bypass. Regional truck traffic on SR 211 north of the West Winder Bypass project will increase, as it provides the best route to I-85. Regional traffic on SR 211 south and east of the West Winder Bypass project will be diverted to the Bypass.

Intersection levels of service were determined at each of the major intersections within the project limits, and are shown in the table below. General traffic volumes will continue to grow on the local and regional roadway network including SR 8, SR 211, Patrick Mill Road, SR 316, and Pearl Pentecost Road. All of the intersections with these roadways and the West Winder Bypass are expected to operate at an acceptable level of service beyond the design year.

Summary of HCS Analysis Results

Intersections	2012 No-Build		2020 Build		2040 Build	
	AM	PM	AM	PM	AM	PM
Patrick Mill Road @ SR 316	C	C	---	---	---	---
West Winder Bypass @ SR 316 WB Ramps	---	---	B	A	B	B
West Winder Bypass @ SR 316 EB Ramps	---	---	C	C	C	C
West Winder Bypass @ Tom Miller Road	C**	B**	C	C	D	C
Patrick Mill Road @ Fred Kilcrease Road	B*	B*	---	---	---	---

Intersections	2012 No-Build		2020 Build		2040 Build	
Patrick Mill Road @ Bill Rutledge Road	B*	B*	---	---	---	---
West Winder Bypass @ Fred Kilcrease/Bill Rutledge Road	---	---	B	B	C	B
Patrick Mill Road @ Carl Bethlehem Road	A	B	C	C	C	D
Patrick Mill Road @ Burson Maddox Road	B*	B*	D*	D*	D*	D*
West Winder Bypass @ Mathews School Road	A	A	B	C	C	C
Mathews School Road @ SR 8	A*	A*	A	B	A	C
Bankhead Highway @ Pearl Pentecost Road	B*	B*	---	---	---	---
Bankhead Highway @ Bankhead Connector Road	---	---	B	B	B	B
West Winder Bypass @ Bankhead Connector Road	---	---	B	B	B	B
West Winder Bypass @ Pearl Pentecost Road	---	---	B	B	B	B
West Winder Bypass @ SR 211	---	---	B	B	B	B

* For unsignalized intersections, LOS is given for minor street approach.

** For Tom Miller Road existing, only Tom Miller Road LOS is reported and not the minor driveway.

Safety Analysis

An inventory of crash data from January 2008 to September 2012 is provided in the following table. The table lists the total number of accidents and injuries coded to roadway segments of SR 8, SR 211, Pearl Pentecost Road, Patrick Mill Road, Carl-Cedar Hill Road and Bankhead Highway that are improved by the West Winder Bypass project. During the 4.75-year study period 4 fatalities were recorded along SR 8 and one fatality was recorded along each of Patrick Mill Road and Carl-Cedar Hill Road.

Crash Data

Comparison to Statewide Rates for Major Collectors

Roadway Segment	Limits	Crashes per Year	Crashes per 10^8 Miles	Injuries per Year	Injuries per 10^8 Miles	Fatalities per Year	Fatalities per 10^8 Miles
SR 8 (2.4 mi)	From Carl-Cedar Hill Rd to Patrick Mill Rd	30.3	348.2	15.8	181.3	0.6	7.25
SR 8 (3.0 mi)	From Patrick Mill Rd to SR 81	91.4	593.1	32.4	210.5	0.2	1.37
SR 211 (1.2 mi)	From SR 81 to Bankhead Hwy	41.7	737.3	12.4	219.7	0.0	0.00
SR 211 (2.3 mi)	From Bankhead Hwy to Carl-Cedar Hill Rd	23.2	309.5	12.0	160.4	0.0	0.00
Pearl Pentecost Rd (2.0 mi)	From Carl-Cedar Hill Rd to Bankhead Hwy	6.7	174.3	2.9	76.2	0.0	0.00
Patrick Mill Rd (3.5 mi)	From County Line to SR 8	60.2	536.5	25.3	224.7	0.2	1.87
Carl-Cedar Hill Rd (3.2 mi)	From SR 8 to SR 211	28.0	560.0	15.4	307.4	0.2	4.21
Bankhead Hwy (4.3 mi)	From Carl-Cedar Hill Rd to SR 81	13.9	273.3	6.1	120.1	0.0	0.00
2009 Statewide Average	N/A	N/A	275	N/A	69	N/A	1.12

*2009 is the most recent year for which a statewide average is available.

The project area experiences a higher crash rate than the state average with a crash rate over two and a half times the state average, an injury rate up to four and a half times the state average, and a fatality

rate up to seven times the state average. The results indicate that Bankhead Highway, Carl-Cedar Hill Road, Patrick Mill Road, Pearl Pentecost Road, SR 8, and SR 211 all currently have accident, injury, and/or fatality rates above the statewide average rates. Every segment that exceeds the state average has been highlighted.

Operational and safety improvements will be provided throughout the project corridor including turn lanes at major intersections, improved intersection geometry, overall roadway capacity improvements, a grade separated interchange with SR 316, and a grade-separated crossing over SR 8, the CSX rail line, and Bankhead Highway. The railroad crossings in the vicinity of the proposed grade-separated crossing currently exceed 5,000 crossings per day. It is anticipated that the operational and safety improvements would reduce the overall system crashes.

Proposed construction of the West Winder Bypass will result in a decrease in traffic using the SR 8 at-grade railroad crossovers, and reduce the number of turns a vehicle would need to make to navigate through the north-south network. Consequently, the West Winder Bypass project would reduce the risk of various common accidents, specifically rear-end and angle collisions at intersections and at the railroad crossing.

In summary, the proposed construction of the West Winder Bypass will correct the existing roadway deficiencies, improve traffic safety and increase the capacity of the roadway to facilitate the projected traffic growth on the west side of Winder.

PDP Classification: ☒ Major ☐ Minor

Federal Oversight: ☒ Full Oversight ☒ Exempt ☐ State Funded ☐ Other

PI #	PHASE	FEDERAL OVERSIGHT
0006327	I	Exempt
0010554	II	Exempt
0010555	III	Federal Oversight

Projected Traffic as shown in the approved Concept Report: *ADT or AADT*

Open Year (2020): 15,400 Design Year (2040): 26,600

Updated Traffic: *ADT or AADT*

Open Year (2020): 15,400 Design Year (2040): 17,080

Functional Classification (Mainline): Rural Major Arterial (Phases 1, 2, and 3)

VE Study anticipated: ☐ No ☐ Yes ☒ Completed – Date:7/16/2010

PROPOSED REVISIONS

Approved Features:	Proposed Features:
The proposed project will widen Patrick Mill Road/CR 93 from a two-lane to a four-lane divided highway with a 20-foot raised median from Tom Miller Road to approximately 1,000 feet north of Burson Maddox Road. The roadway will continue north on new location, bridge over SR 8, the CSX railroad track and Bankhead Highway, cross Pearl Pentecost Road and connect to SR 211. The total length of the project is approximately 5.0 miles. The project will also include a full-diamond interchange at SR 316 and connector roadways from the West Winder Bypass to SR 8 and to Bankhead Highway.	The features from the approved concept report being revised are as described below: **Phase 1** The West Winder Bypass alignment was revised to curve to the northwest at the Bankhead Highway Connector (Milepost 3.2) and continue northeasterly adjacent to Cedar Creek through the Johns Mansville industrial tract. As you approach the rear of the Johns Mansville tract, the alignment curves to the southeast, parallels the Georgia Power Company easement, and crosses Pearl Pentecost Road at Milepost 4.2. The alignment continues to the southeast and then curves to the northeast and intersects existing Barrow Park Dive at approximate Milepost 4.5. The alignment continues along Barrow Park Drive until it approaches SR 211, where the alignment curves to the northwest and intersects SR 211 at Milepost 5.0. From this location it continues along SR 211 to the original alignment and ends at Milepost 5.63. **Phase 3** Phase 3 consists of a full diamond interchange at SR 316 on new location from Tom Miller Road (Milepost 0.00) to just south of existing Patrick Mill Road (Milepost 1.04). The full diamond interchange location is shifted to the southeast from the approved concept report location.

Reason(s) for change:

Phase 1: The Phase 1 alignment revision at the Bankhead Highway Connector (Milepost 3.2) will reduce impacts to future expansion areas of the Johns Mansville industrial plant. Alignment revisions at SR 211 and Barrow Park Drive (Milepost 4.5) will minimize impacts to existing wetland and stream areas adjacent to SR 211. This minimization will allow the use of a USACE Regional Permit instead of an Individual Permit, eliminate the need for a Practical Alternatives Report (PAR), and reduce environmental mitigation costs. Each revision will ultimately reduce the total project cost.

Phase 3: Shifting the full diamond interchange location at SR 316 to the southeast will reduce grades, construction staging, traffic control, and earthwork (fill) requirements as the alignment approaches and ties to existing Patrick Mill Road. This will ultimately reduce the total project costs.

ENVIRONMENTAL

Project Air Quality:

Is the project located in a PM 2.5 Non-attainment area?	☐ No	☒ Yes
Is the project located in an Ozone Non-attainment area?	☐ No	☒ Yes
Is a Carbon Monoxide hotspot analysis required?	☐ No	☒ Yes

The project is included in the Atlanta Regional Commission's (ARC) adopted 2040 Regional Transportation Plan as Projects BA-005A, BA-005B, and BA-005C. The conforming plans model description matches the proposed project concept description. The proposed projects are described as roadway/general purpose capacity projects from 2-lanes to 4-lanes from SR 316 (University Parkway) to SR 211. Right-of-Way funding is programmed for fiscal year 2015. The project has a proposed opening year of 2020 and is included in the ARC model and air quality conformity analysis.

Potential environmental impacts of proposed revision:

Phase 1: The alignment shifts proposed will reduce environmental impacts by avoiding wetland areas adjacent to SR 211 and minimizing impacts to streams and wetland areas along the alignment.

Phase 3: No additional environmental effects are anticipated.

For each phase, the environmental/project schedule will remain unchanged.

Have proposed revisions been reviewed by environmental staff? ☐ No ☒ Yes

Environmental responsibilities (Studies/Documents/Permits): *Barrow County, Consultant, GDOT*

PROJECT COST & ADDITIONAL INFORMATION

Phase 1: P.I. No. 0006327

Updated Cost Estimate		Date of Estimate
Base Construction Cost:	$21,360,297.72	1/29/2013
Engineering and Inspection:	$1,068,014.89	1/29/2013
Liquid AC Adjustment:	$1,311,957.87	1/29/2013
Total Construction Cost:	$23,740,270.48	
Right-of-Way:	$4,463,000.00	1/22/2013
Utilities (reimbursable costs):	$3,783,800.00	12/18/2012
Environmental Mitigation:	$247,440.00	2/1/2013
TOTAL PROJECT COST:	**$32,234,510.48**	

Phase 2: P.I. No. 0010554

Updated Cost Estimate		Date of Estimate
Base Construction Cost:	$8,908,874.98	1/29/2013
Engineering and Inspection:	$445,443.75	1/29/2013
Liquid AC Adjustment:	$755,593.44	1/29/2013
Total Construction Cost:	$10,109,912.17	
Right-of-Way:	$3,809,000.00	1/22/2013
Utilities (reimbursable costs):	$4,011,600.00	12/18/2012
Environmental Mitigation:	$81,895.00	2/1/2013
TOTAL PROJECT COST:	**$18,012,407.17**	

Phase 3: P.I. No. 0010555

Updated Cost Estimate		Date of Estimate
Base Construction Cost:	$13,739,833.91	1/29/2013
Engineering and Inspection:	$686,991.70	1/29/2013
Liquid AC Adjustment:	$565,236.81	1/29/2013
Total Construction Cost:	$14,992,062.42	
Right-of-Way:	$2,061,000.00	1/22/2013
Utilities (reimbursable costs):	$528,640.00	12/18/2012
Environmental Mitigation:	$10,500.00	2/1/2013
TOTAL PROJECT COST:	**$17,592,202.42**	

Recommendation: It is recommended that the proposed revisions to the concept report be approved for implementation.

Comments:

Review comments and responses are summarized on the following pages.

PROJECT MEMORANDUM

Project:	West Winder Bypass (WWB) Barrow County, Georgia	**Job No.:** 12-005	**Date:** 04/18/13
	Phase 1 P.I. No. 0006327 WWB, From CR 325/Matthews School Road to State Route 211 Phase 2 P.I. No. 0010554 WWB, From State Route 316 to CR 325/Matthews School Road Phase 3 P.I. No. 0010555 WWB @ SR 316 - New Interchange		

To: Project File

From: James C. Garrison, III, P.E. Development Planning & Engineering, Inc. (DPE)
Project Manager

Subject: ***Revised Concept Report Review Comments***

No. of Pages: 4 (including this page)

The following review comments related to the Revised Concept Report submission were received from the Georgia Department of Transportation (GDOT). Each comment is itemized below with the respective response.

State Bridge Engineer

Comment: It is recommended that early coordination be made with the RR with regards to future tracks and horizontal clearances. This comment does not require any further action relative to approving the Concept.

Response: Concur. Early coordination with CSX Railroad is scheduled.

Ben Rabun, P.E.
State Bridge Engineer
GA D.O.T.
One Georgia Center, Suite 24
600 West Peachtree Street, N.W.
Atlanta, GA 30308
(404) 631-1985

Assistant State Design Policy Engineer

I have reviewed this revised concept report and have the following comments/questions:

Comment 1. Has lighting been considered for inclusion in the project (Interchange and/or other locations)?

Response: Lighting is proposed for the interchange at State Route 316 (Phase 3, PI No. 0010555).

Comment 2. Is West Winder Bypass a part of any bike network or plan?

Response: Currently, the West Winder Bypass is not listed as a part of any bike network or plan. Accommodation for bikes can be accomplished using addition shoulder paving to meet the guidelines provided by AASHTO. The Value Engineering Study Alternatives (Alternative No. 18) recommended reducing the mainline shoulder paving from 6.5-feet to 4-feet and the response was to implement this alternative.

Comment 3. Consider reducing side road typical section (travel way and shoulder) widths if possible (Using AASHTO G.B. for appropriate functional classification, speed design and design year traffic).

Response: The typical section for the proposed side roads will be reviewed for width reduction using AASHTO/GDOT criteria.

Comment 4. Check roadway typical section vs. bridge typical section. Raised median width does not appear to match.

Response: Alternate No. 17 of the Value Engineering Study Alternatives suggests reducing the width of the median from 24-feet to 20-feet. The implementation letter states this will be implemented except at intersections, where the median will remain 24-feet to offset left turning movements. The typical section for the bridge has been revised to reflect the 20-foot raised median.

Jim Simpson
Assistant State Design Policy Engineer
Georgia Department of Transportation
Office of Design Policy and Support
One Georgia Center, 26th Floor
(404)631-1605 – Office (404)895-4999 – BlackBerry

Office of Financial Management - Wendy Bickers

Comment: Page 8 is showing Exempt.

PI#	Phase	Federal Oversight
0006327	I	Exempt
0010554	II	Exempt
0010555	III	FOS

I am not sure how you can show this on the report.

Response: Information above incorporated into report.

Office of Utilities

The Office of Utilities has reviewed the Concept Report for the subject project and recommends approval with the following comments:

Comment 1. Please note that PI 0006327 has RR coordination required.

Response: Concur. Early coordination with CSX Railroad is scheduled.

Comment 1. PI 0006327 shows a bridge over CSXT.

Response: Concur/Correct.

Patrick Allen, P.E.
State Utilities Preconstruction Engineer
Office of Utilities
One Georgia Center
600 West Peachtree Street, 10th Floor
Atlanta, GA 30308
(404) 347-0606 office
(404) 631-1934 fax
paallen@dot.ga.gov

Kim Phillips

I had the following comments:

Comment 1. The Headers should not be on the signature cover page. (For future Reference please be sure to leave out, they have been whited out).

Response: The headers on the first page have been removed.

Comment 2. There is a large drop in the design year traffic. Is this correct?

Response: Yes. The growth rate used in the previous approved concept revision was incorrect.

Comment 3. ROW worksheets are not needed just the summary. They have been removed. If report is resubmitted, please ensure these pages are removed.

Response: Right-of-Way worksheets have been removed.

Comment 4. The ROW needs to be approved by GDOT.

Response: Right-of-Way Estimate has been approved by GDOT and is incorporated into this report.

Distribution:

File

administrative:documents:12:12005:revised concept report:review comments:12005-revised-concept-report-review-comment-response-041813.docx

Attachments:

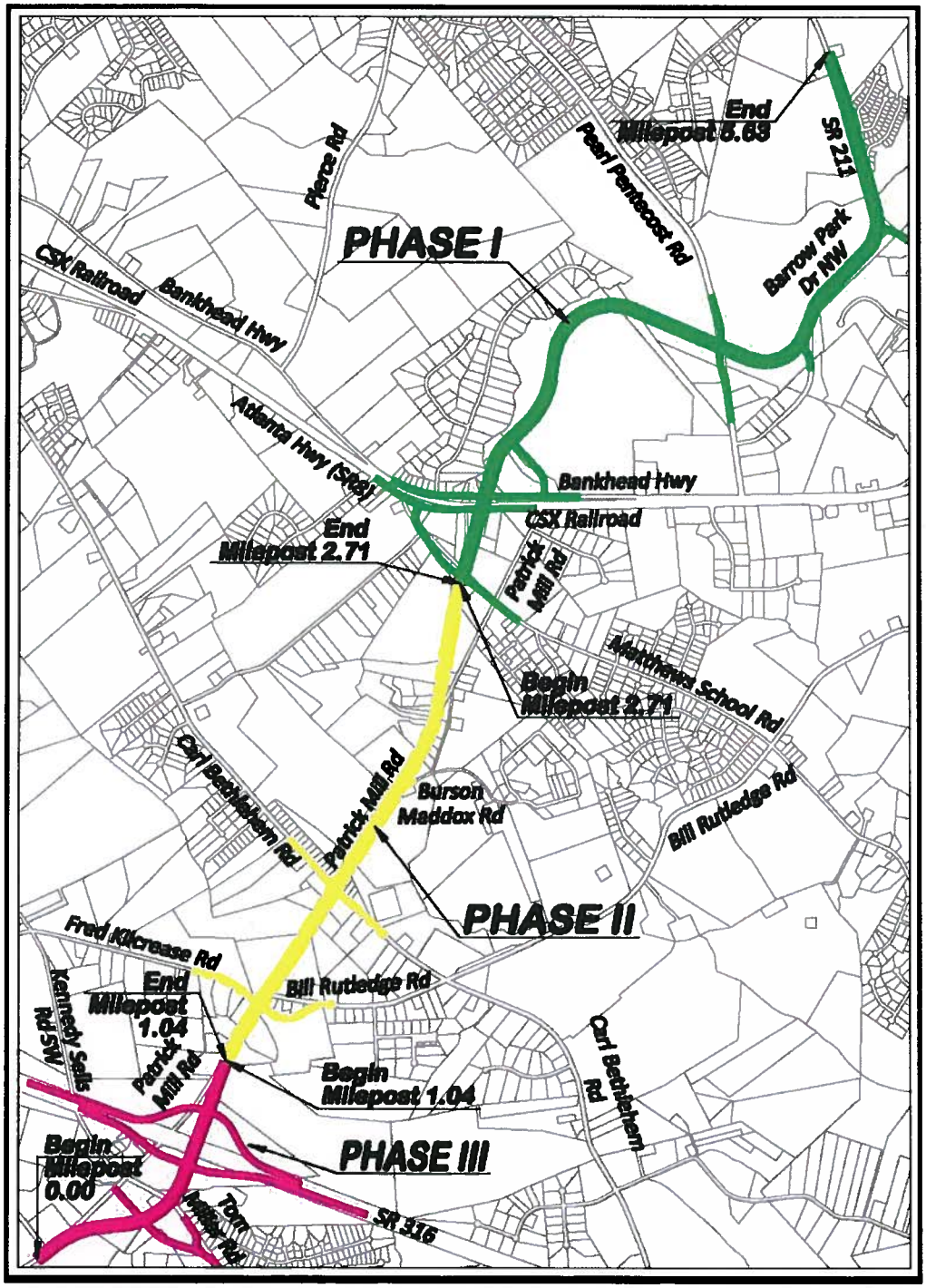
1. Project Location Map ..... Page 17
2. Future Lanes Schematic Plan ..... Page 18
3. Detailed Cost Estimate Data ..... Page 19
4. Benefit Cost Analysis ..... Page 52
5. Value Engineering Implementation Letter ..... Page 54
6. Typical Sections ..... Page 69
7. Revised Conceptual Plan ..... Page 75
8. Jurisdictional Waters Map ..... Page 79

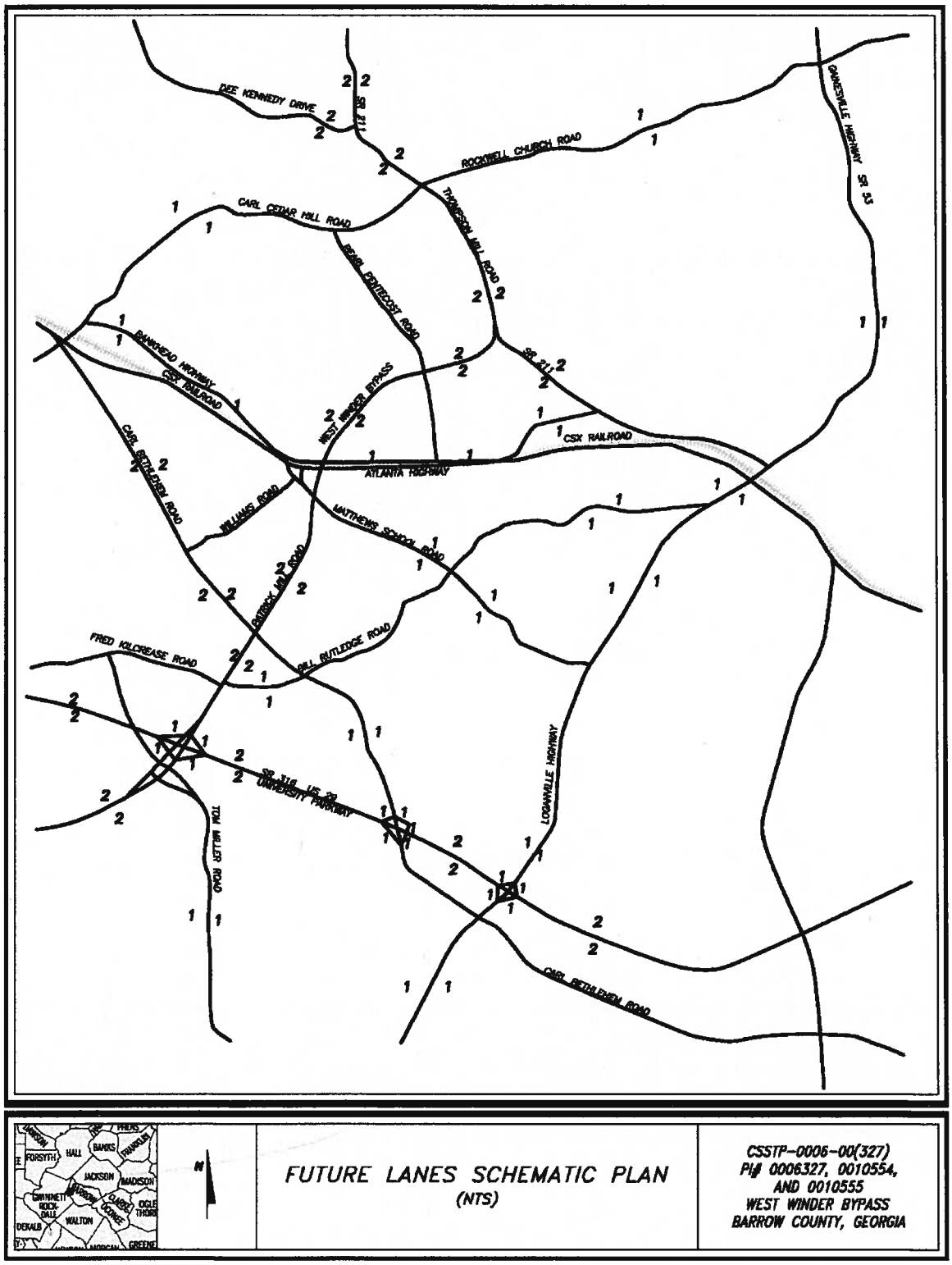
APPROVALS

Concur: _____ 5/29/13
Director of Engineering

Approve: for _____ 7/2/13
Division Administrator, FHWA Date

Approve: _____ 7/10/13
Chief Engineer Date


PHASE I
PHASE II
PHASE III
End Milepost 3.69
Begin Milepost 2.71
End Milepost 2.71
Begin Milepost 1.04
End Milepost 1.04
Begin Milepost 0.00
Pierce Rd
Pearl Pentecost Rd
SR 211
Barrow Park Dr NW
CSX Railroad
Bankhead Hwy
Atlanta Hwy (Stop)
Patrick Mill Rd
Matthews School Rd
Carl Bethlehem Rd
Burson Maddox Rd
Bill Rutledge Rd
Fred Kilcrease Rd
Kennedy Sells Rd SW
Town Athens Rd
SR 316
PROJECT LOCATION MAP
PHASE I
PHASE II
PHASE III
CSSTP-0008-00(327)
P# 0006327, 0010554
AND 0010555
WEST WINDER BYPASS
BARROW COUNTY, GEORGIA


DEE KENNEDY DRIVE
SR 211
ROCKWELL CHURCH ROAD
GAINESVILLE HIGHWAY SR 53
CARL CEDAR HILL ROAD
THOMPSON MILL ROAD
BEARL PENTECOST ROAD
BANKHEAD HIGHWAY
CSX RAILROAD
WEST WINDER BYPASS
SR 211
CSX RAILROAD
ATLANTA HIGHWAY
CARL BETHLEHEM ROAD
WILLIAMS ROAD
MATTHEWS SCHOOL ROAD
PATRICK MILL ROAD
FRED KILCREASE ROAD
BILL RUTLEDGE ROAD
SR 316 US 29
UNIVERSITY PARKWAY
TOM MILLER ROAD
LOGANVILLE HIGHWAY
CARL BETHLEHEM ROAD
FORSYTH
HALL
BANKS
FRANKLIN
JACKSON
MADISON
GWINNETT
ROCK-DALE
BARROW
CLARKE
OCONEE
OGLE THORP
DEKALB
WALTON
GREENE
N
FUTURE LANES SCHEMATIC PLAN
(NTS)
CSSTP-0006-00(327)
PI# 0006327, 0010554,
AND 0010555
WEST WINDER BYPASS
BARROW COUNTY, GEORGIA

DETAILED COST ESTIMATE DATA

CONSTRUCTION

STATE HIGHWAY AGENCY

DATE : 01/29/2013
PAGE : 1

JOB ESTIMATE REPORT

JOB NUMBER : 0006327_PHASE_1 SPEC YEAR: 01
DESCRIPTION: **WEST WINDER BYPASS_PHASE 1**
PHASE I

ITEMS FOR JOB 0006327_PHASE_1

LINE	ITEM	ALT	UNITS	DESCRIPTION	QUANTITY	PRICE	AMOUNT
0005	001-1000		*	FORCE ACCOUNT NO. RAILROAD PROTECTIVE INSURANCE	1.000	80711.63	80711.63
0010	150-1000		LS	TRAFFIC CONTROL - CSSTP-0006-00(327)	1.000	500000.00	500000.00
0015	153-1300		EA	FIELD ENGINEERS OFFICE TP 3	1.000	67008.48	67008.48
0020	210-0100		LS	GRADING COMPLETE - CSSTP-0006-00(327)	1.000	5750000.00	5750000.00
0025	310-1101		TN	GR AGGR BASE CRS, INCL MATL	113690.000	13.81	1570310.15
0035	402-3121		TN	RECYL AC 25MM SP,GP1/2,BM&HL	42230.000	57.23	2416953.39
0040	402-3130		TN	RECYL AC 12.5MM SP,GP2,BM&HL	12512.000	56.30	704487.78
0045	402-3190		TN	RECYL AC 19 MM SP,GP 1 OR 2 ,INC BM&HL	18366.000	59.50	1092834.30
0050	413-1000		GL	BITUM TACK COAT	45224.000	2.26	102577.08
0055	432-0206		SY	MILL ASPH CONC PVMT/ 1.50" DEP	5000.000	2.73	13684.85
0060	433-1000		SY	REINF CONC APPROACH SLAB	600.000	145.00	87000.00
0065	436-1000		LF	ASPH CONC CURB - CSSTP-0006-00(327)	8000.000	5.87	47027.12
0070	441-0016		SY	DRIVEWAY CONCRETE, 6 IN TK	2500.000	25.30	63258.68
0075	441-0754		SY	CONC MEDIAN, 7 1/2 IN	17372.000	28.30	491784.12
0080	441-6222		LF	CONC CURB & GUTTER/ 8"X30"TP2	924.000	14.39	13304.72
0085	441-6740		LF	CONC CURB & GUTTER/ 8"X30" TP7	24769.000	11.59	287211.91
0090	446-1100		LF	PVMT REF FAB STRIPS, TP2,18 INCH WIDTH	630.000	6.08	3830.82
0095	456-2015		GLM	INDENT. RUMB. STRIPS - GRND-IN-PL (SKIP)	2.920	3105.59	9068.34
0100	620-0100		LF	TEMP BARRIER, METHOD NO. 1	7000.000	20.90	146363.14
0105	634-1200		EA	RIGHT OF WAY MARKERS	225.000	84.31	18971.05
0110	641-1100		LF	GUARDRAIL, TP T	525.000	40.20	21108.92
0115	641-1200		LF	GUARDRAIL, TP W	4000.000	15.89	63563.32
0120	641-5001		EA	GUARDRAIL ANCHORAGE, TP 1	25.000	600.55	15013.93
0125	641-5012		EA	GUARDRAIL ANCHORAGE, TP 12	25.000	1586.88	39672.25
0130	207-0203		CY	FOUND BKFILL MATL, TP II	1000.000	37.54	37541.72

0135	441-0204	SY	PLAIN CONC DITCH PAVING, 4 IN	430.000	28.46	12239.56
0140	441-0301	EA	CONC SPILLWAY, TP 1	23.000	1711.05	39354.36
0145	441-0600	CY	CONC HEADWALLS	26.000	989.71	25732.46
0150	500-3101	CY	CLASS A CONCRETE CULVERT @ W. WINDER & PEARL P. RD	300.000	369.29	110787.02
0155	500-3101	CY	CLASS A CONCRETE CULVERT @ CEDAR CREEK	400.000	330.42	132168.63
0160	500-3101	CY	CLASS A CONCRETE	20.000	367.12	7342.41
0165	511-1000	LB	BAR REINF STEEL CULVERT @ W. WINDER & PEARL P. RD	39690.000	0.75	30147.73
0170	511-1000	LB	BAR REINF STEEL CULVERT @ CEDAR CREEK	52920.000	0.74	39175.62
0175	550-1180	LF	STM DR PIPE 18",H 1-10	1000.000	34.05	34050.88
0180	550-1240	LF	STM DR PIPE 24",H 1-10	1500.000	34.68	52026.69
0185	550-1300	LF	STM DR PIPE 30",H 1-10	1500.000	45.82	68739.33
0190	550-1363	LF	STM DR PIPE 36",H 20-25	1500.000	64.62	96938.67
0195	550-1421	LF	STM DR PIPE 42",H 10-15	150.000	75.69	11354.39
0200	550-1482	LF	STM DR PIPE 48",H 15-20	100.000	89.22	8922.18
0205	550-1483	LF	STM DR PIPE 48",H 20-25	100.000	103.54	10354.00
0210	550-1541	LF	STM DR PIPE 54",H 10-15	100.000	112.25	11225.00
0215	550-2180	LF	SIDE DR PIPE 18",H 1-10	75.000	25.36	1902.20
0220	550-2240	LF	SIDE DR PIPE 24",H 1-10	75.000	28.06	2104.51
0225	550-3324	EA	SAFETY END SECTION 24",STD,4:1	4.000	756.36	3025.46
0230	550-3524	EA	SAFETY END SECTION 24",STD,6:1	4.000	846.68	3386.74
0235	550-4118	EA	FLARED END SECT 18 IN, SIDE DR	20.000	304.76	6095.36
0240	550-4218	EA	FLARED END SECT 18 IN, ST DR	8.000	460.84	3686.80
0245	550-4224	EA	FLARED END SECT 24 IN, ST DR	6.000	505.02	3030.15
0250	550-4230	EA	FLARED END SECT 30 IN, ST DR	4.000	705.30	2821.23
0255	550-4236	EA	FLARED END SECT 36 IN, ST DR	4.000	963.44	3853.76
0260	603-2024	SY	STN DUMPED RIP RAP, TP 1, 24"	1250.000	29.74	37178.48
0265	603-2182	SY	STN DUMPED RIP RAP, TP 3, 24"	1000.000	29.01	29018.41
0270	603-7000	SY	PLASTIC FILTER FABRIC	2250.000	3.34	7515.09
0275	611-8050	EA	ADJUST MANHOLE TO GRADE	2.000	855.58	1711.17
0280	668-2100	EA	DROP INLET, GP 1	5.000	1568.34	7841.74
0285	668-5000	EA	JUNCTION BOX	2.000	1494.21	2988.44
0290	627-1000	SF	MSE WALL FACE, 0 - 10 FT HT, WALL NO - CSSTP-0006-00(327)	5130.000	30.73	157688.92
0295	627-1010	SF	MSE WALL FACE, 10 - 20 FT HT, WALL NO - CSSTP-0006-00(327)	7740.000	46.05	356451.92
0300	627-1020	SF	MSE WALL FACE, 20 - 30 FT HT, WALL NO - CSSTP-0006-00(327)	5130.000	46.69	239535.71
0305	636-1020	SF	HWY SGN,TP1MAT,REFL SH TP3	15.000	15.26	229.04
0310	636-1029	SF	HWY SGN,TP2 MATL,REFL SH TP 3	108.000	14.24	1538.55
0315	636-1029	SF	HWY SGN,TP2 MATL,REFL SH TP 3	170.000	14.23	2419.94
0320	636-1029	SF	HWY SGN,TP2 MATL,REFL SH TP 3	22.000	14.28	314.25
0323	636-1033	SF	HWY SIGNS, TP1MAT,REFL SH TP 9	288.000	18.32	5276.16
0325	636-1072	SF	HWY SIGNS,ALUM EXTRD PNLS, RS TP 3	602.000	23.25	13999.99

0330	636-2070	LF	GALV STEEL POSTS, TP 7	43.000	9.00	387.05
0335	636-2080	LF	GALV STEEL POSTS, TP 8	357.000	9.40	3356.77
0340	636-3000	LB	GALV STEEL STR SHAPE POST	3483.000	4.73	16493.78
0345	636-5010	EA	DELINEATOR, TP 1	22.000	68.64	1510.16
0350	636-9094	LF	P-IN-PL,SIGNS,STL H,HP 12 X 53	22.000	109.83	2416.48
0355	653-0110	EA	THERM PVMT MARK, ARROW, TP 1	6.000	80.93	485.62
0360	653-0120	EA	THERM PVMT MARK, ARROW, TP 2	57.000	68.31	3894.19
0365	653-0170	EA	THERM PVMT MARK, ARROW, TP 7	6.000	76.83	460.98
0370	653-0210	EA	THERM PVMT MARK, WORD , TP 1	13.000	109.51	1423.68
0375	653-1501	LF	THERMO SOLID TRAF ST 5 IN, WHI	50302.000	0.35	17887.89
0380	653-1502	LF	THERMO SOLID TRAF ST, 5 IN YEL	33089.000	0.35	11909.72
0385	653-1704	LF	THERM SOLID TRAF STRIPE,24",WH	2107.000	3.75	7922.07
0390	653-1804	LF	THERM SOLID TRAF STRIPE, 8",WH	731.000	1.89	1382.81
0395	653-3501	GLF	THERMO SKIP TRAF ST, 5 IN, WHI	24456.000	0.29	7262.94
0400	653-6004	SY	THERM TRAF STRIPING, WHITE	3913.000	2.67	10456.28
0405	653-6006	SY	THERM TRAF STRIPING, YELLOW	2199.000	2.74	6027.33
0410	654-1001	EA	RAISED PVMT MARKERS TP 1	295.000	3.66	1082.05
0415	654-1003	EA	RAISED PVMT MARKERS TP 3	730.000	3.49	2552.82
0420	655-7000	EA	PVMT ARROW, PREFORM PLASTIC W/RAISE REFL	2.000	853.75	1707.51
0425	657-1085	LF	PRF PL SD PVT MKG,8",B/W,TP PB	4937.000	4.55	22469.18
0430	657-3085	GLF	PRF PL SK PVMT MKG,8",B/W,TPPB	809.000	3.17	2567.88
0435	657-6085	LF	PRF PL SD PVMT MKG,8",B/Y,TPPB	5324.000	4.19	22320.44
0440	639-2002	LF	STEEL WIRE STRAND CABLE, 3/8"	3600.000	3.48	12528.00
0452	639-5000	EA	PRESTRESSED CONC STR POLE, TP- TP-4	24.000	5755.25	138126.00
0455	647-1000	LS	TRAF SIGNAL INSTALLATION NO - CSSTP-0006-00(327) NO.1	1.000	87600.00	87600.00
0460	647-1000	LS	TRAF SIGNAL INSTALLATION NO - CSSTP-0006-00(327) NO.2	1.000	87600.00	87600.00
0465	647-1000	LS	TRAF SIGNAL INSTALLATION NO - CSSTP-0006-00(327) NO.3	1.000	87600.00	87600.00
0470	647-1000	LS	TRAF SIGNAL INSTALLATION NO - CSSTP-0006-00(327) NO.4	1.000	87600.00	87600.00
0475	647-1000	LS	TRAF SIGNAL INSTALLATION NO - CSSTP-0006-00(327) NO.5	1.000	87600.00	87600.00
0477	647-1000	LS	TRAF SIGNAL INSTALLATION NO - CSSTP-0006-00(327) NO.6	1.000	87600.00	87600.00
0480	647-2150	EA	PULL BOX, PB-5	5.000	1298.03	6490.15
0485	682-6233	LF	CONDUIT, NONMETL, TP 3, 2 IN	473.000	5.16	2440.68
0490	682-7043	LF	MULTI-CELL COND SYS,4-WAY,FIBERGLASS	280.000		
0493	687-1000	LS	TRAFFIC SIGNAL TIMING - CSSTP-0006-00(327)	1.000	28200.00	28200.00
0495	935-1511	LF	OUT PLNT FBR OPT CBL,DROP,SM,6 FBR	600.000	1.93	1158.00
0497	935-1113	LF	OUT PLNT FBR OPT CBL,LOOSE TB,SM,24 FBR	28450.000	1.76	50072.00

0500	935-3203	EA	FBR OPTIC CLOSURE,AERL(SLD),24 FBR	7.000	550.00	3850.00
0505	935-4010	EA	FIBER OPTIC SPLICE, FUSION	108.000	41.41	4472.28
0507	935-5050	EA	FIBER OPTIC PATCH CORD, SM	6.000	74.00	444.00
0508	935-5060	EA	FIBER OPTIC SNOWSHOE	53.000	100.72	5338.16
0510	935-6562	EA	EXT TRNSCVR,DRP&RPT,1310SM,(SIGNAL JOBS)	6.000	1558.21	9349.31
0515	935-8000	LS	TESTING	1.000	7976.12	7976.12
0520	937-6150	EA	PROGRAMMING MONITOR, TP A	1.000	486.12	486.13
0525	937-8500	LS	TRAINING	1.000	2143.00	2143.00
0527	939-2305	EA	FIELD SWITCH, TYPE C	6.000	1832.10	10992.60
0528	939-5010	EA	ELEC PWR SVC ASSEMBLY,AERIAL SVC POINT	6.000	2160.22	12961.32
0530	009-3000	LS	MISCELLANEOUS CONSTRUCTION CONC. BRIDGE OVER CSX RR	1.000	4525800.00	4525800.00
0535	163-0232	AC	TEMPORARY GRASSING	25.000	350.34	8758.70
0540	163-0240	TN	MULCH	1500.000	138.60	207905.60
0545	163-0300	EA	CONSTRUCTION EXIT	10.000	985.84	9858.41
0550	163-0501	EA	CONSTR AND REMOVE SILT CONTROL GATE,TP 1	12.000	431.72	5180.65
0555	163-0502	EA	CONSTR AND REMOVE SILT CONTROL GATE,TP 2	7.000	557.52	3902.68
0560	163-0503	EA	CONSTR AND REMOVE SILT CONTROL GATE,TP 3	50.000	338.57	16928.51
0565	163-0520	LF	CONSTR AND REMOVE TEMP PIPE SLOPE DRAIN	5000.000	11.31	56598.80
0570	163-0528	LF	CONSTR AND REM FAB CK DAM -TP C SLT FN	2400.000	3.29	7913.88
0575	163-0529	LF	CNST/REM TEMP SED BAR OR BLD STRW CK DM	3679.000	3.62	13338.51
0580	163-0531	EA	CONSTR & REM SEDIMENT BASIN,TP 1,STA NO- CSSTP-0006-00(327)	6.000	9127.45	54764.75
0585	163-0550	EA	CONS & REM INLET SEDIMENT TRAP	30.000	137.71	4131.32
0590	165-0010	LF	MAINT OF TEMP SILT FENCE, TP A	15000.000	0.59	8949.30
0595	165-0030	LF	MAINT OF TEMP SILT FENCE, TP C	10000.000	0.78	7819.60
0600	165-0041	LF	MAINT OF CHECK DAMS - ALL TYPES	1500.000	1.40	2108.13
0605	165-0060	EA	MAINT OF TEMP SEDIMENT BASIN,STA NO -	6.000	2456.11	14736.67
0610	165-0071	LF	MAINT OF SEDIMENT BARRIER - BALED STRAW	4000.000	1.07	4304.92
0615	165-0085	EA	MAINT OF SILT CONTROL GATE, TP 1	12.000	82.08	984.99
0620	165-0086	EA	MAINT OF SILT CONTROL GATE, TP 2	7.000	122.57	857.99
0625	165-0087	EA	MAINT OF SILT CONTROL GATE, TP 3	50.000	78.71	3935.66
0630	165-0101	EA	MAINT OF CONST EXIT	10.000	471.46	4714.70
0635	165-0105	EA	MAINT OF INLET SEDIMENT TRAP	30.000	42.89	1286.97
0640	167-1000	EA	WATER QUALITY MONITORING AND SAMPLING	4.000	242.36	969.45

0645	167-1500	MO	WATER QUALITY INSPECTIONS	30.000	752.79	22583.95
0650	171-0010	LF	TEMPORARY SILT FENCE, TYPE A	30000.000	1.17	35248.20
0655	171-0030	LF	TEMPORARY SILT FENCE, TYPE C	20000.000	2.58	51712.40
0657	643-8200	LF	BARRIER FENCE (ORANGE), 4 FT	1000.000	1.50	1506.10
0660	700-6910	AC	PERMANENT GRASSING	50.000	659.02	32951.44
0665	700-7000	TN	AGRICULTURAL LIME	100.000	57.21	5721.39
0675	700-8000	TN	FERTILIZER MIXED GRADE	45.000	397.83	17902.38
0680	700-8100	LB	FERTILIZER NITROGEN CONTENT	2500.000	1.64	4122.78
0685	710-9000	SY	PERM SOIL REINFORCING MAT	2000.000	3.29	6590.78
0695	716-2000	SY	EROSION CONTROL MATS, SLOPES	40000.000	0.78	31200.40

ITEM TOTAL	21366017.87
INFLATED ITEM TOTAL	21366017.87

TOTALS FOR JOB 0006327_PHASE_1

ESTIMATED COST:	21360297.72
CONTINGENCY PERCENT (0.0):	0.00
ESTIMATED TOTAL:	**21360297.72**

NOTE: The item totals include all alternate items. The estimated totals include only the low cost alternate items.

PROJ. NO.	12-005	CALL NO.
P.I. NO.	0006327	
DATE	1/29/13	

INDEX (TYPE)	**DATE**	**INDEX**
REG. UNLEADED	Jan-13	$3.278
DIESEL		$3.938
LIQUID AC		$568.00

Link to Fuel and AC Index:
http://www.dot.ga.gov/doingbusiness/Materials/Pages/asphaltcementindex.aspx

LIQUID AC ADJUSTMENTS

PA=[((APM-APL)/APL)]xTMTxAPL

Asphalt Price Adjustment (PA)			**1245760.32**	**$1,245,760.32**
Monthly Asphalt Cement Price month placed (APM)	Max. Cap	60%	$908.80	
Monthly Asphalt Cement Price month project let (APL)			$568.00	
Total Monthly Tonnage of asphalt cement (TMT)			3655.4	

ASPHALT	**Tons**	**%AC**	**AC ton**
Leveling		5.0%	0
12.5 OGFC		5.0%	0
12.5 mm	12512	5.0%	625.6
9.5 mm SP		5.0%	0
25 mm SP	42230	5.0%	2111.5
19 mm SP	18366	5.0%	918.3
	73108		**3655.4**

BITUMINOUS TACK COAT

Price Adjustment (PA)			**$66,197.55**	**$66,197.55**
Monthly Asphalt Cement Price month placed (APM)	Max. Cap	60%	$908.80	
Monthly Asphalt Cement Price month project let (APL)			$568.00	
Total Monthly Tonnage of asphalt cement (TMT)			194.2416441	

Bitum Tack Gals	gals/ton	tons
45224	232.8234	194.2416441

BITUMINOUS TACK COAT (surface treatment)

Price Adjustment (PA)			**0**	**$-**
Monthly Asphalt Cement Price month placed (APM)	Max. Cap	60%	$908.80	
Monthly Asphalt Cement Price month project let (APL)			$568.00	
Total Monthly Tonnage of asphalt cement (TMT)			0	

Bitum Tack	SY	Gals/SY	Gals	gals/ton	tons
Single Surf. Trmt.		0.20	0	232.8234	0
Double Surf.Trmt.		0.44	0	232.8234	0
Triple Surf. Trmt		0.71	0	232.8234	0
					0

TOTAL LIQUID AC ADJUSTMENT	**$1,311,957.87**

STATE HIGHWAY AGENCY

DATE : 01/29/2013
PAGE : 1

JOB ESTIMATE REPORT

JOB NUMBER : 0006327_PHASE_2 SPEC YEAR: 01
DESCRIPTION: **WEST WINDER BYPASS_PHASE 2**
PHASE II

ITEMS FOR JOB 0006327_PHASE_2

LINE	ITEM	ALT	UNITS	DESCRIPTION	QUANTITY	PRICE	AMOUNT
0005	150-1000		LS	TRAFFIC CONTROL - CSSTP-0006-00(327)	1.000	350000.00	350000.00
0010	153-1300		EA	FIELD ENGINEERS OFFICE TP 3	1.000	63538.32	63538.32
0015	210-0100		LS	GRADING COMPLETE - CSSTP-0006-00(327)	1.000	2840000.00	2840000.00
0020	310-1101		TN	GR AGGR BASE CRS, INCL MATL	64482.000	13.13	846844.04
0030	402-3121		TN	RECYL AC 25MM SP,GP1/2,BM&HL	23658.000	51.30	1213805.63
0035	402-3130		TN	RECYL AC 12.5MM SP,GP2,BM&HL	7806.000	58.10	453536.95
0040	402-3190		TN	RECYL AC 19 MM SP,GP 1 OR 2 ,INC BM&HL	10671.000	53.70	573049.13
0045	413-1000		GL	BITUM TACK COAT	25696.000	2.12	54628.67
0050	432-0202		SY	MILL ASPH CONC PVMT/ 1/2" DEP	400.000	1.32	528.00
0055	433-1000		SY	REINF CONC APPROACH SLAB	1200.000	145.00	174000.00
0060	436-1000		LF	ASPH CONC CURB - CSSTP-0006-00(327)	6000.000	8.79	52750.08
0065	441-0016		SY	DRIVEWAY CONCRETE, 6 IN TK	2500.000	28.94	72355.80
0070	441-0754		SY	CONC MEDIAN, 7 1/2 IN	13428.000	39.32	528017.83
0075	441-6740		LF	CONC CURB & GUTTER/ 8"X30" TP7	20087.000	10.49	210836.57
0080	446-1100		LF	PVMT REF FAB STRIPS, TP2,18 INCH WIDTH	400.000	7.11	2844.11
0085	456-2015		GLM	INDENT. RUMB. STRIPS - GRND-IN-PL (SKIP)	1.650	2590.14	4273.73
0090	620-0100		LF	TEMP BARRIER, METHOD NO. 1	3000.000	20.27	60821.34
0095	634-1200		EA	RIGHT OF WAY MARKERS	150.000	78.29	11744.10
0100	641-1100		LF	GUARDRAIL, TP T	300.000	48.76	14628.40
0105	641-1200		LF	GUARDRAIL, TP W	3000.000	14.36	43084.47
0110	641-5001		EA	GUARDRAIL ANCHORAGE, TP 1	15.000	632.41	9486.20
0115	641-5012		EA	GUARDRAIL ANCHORAGE, TP 12	15.000	1724.23	25863.53
0120	207-0203		CY	FOUND BKFILL MATL, TP II	364.000	39.03	14208.70
0125	441-0204		SY	PLAIN CONC DITCH PAVING, 4 IN	280.000	28.92	8099.43
0130	441-0301		EA	CONC SPILLWAY, TP 1	12.000	2017.23	24206.85
0135	441-0600		CY	CONC HEADWALLS	17.000	939.26	15967.44

0140	500-3101	CY	CLASS A CONCRETE	300.000	367.67	110302.38
0145	500-3101	CY	CLASS A CONCRETE CULVERT @ WILLIAMSON CREEK	400.000	364.75	145902.35
0150	500-3101	CY	CLASS A CONCRETE	20.000	332.46	6649.25
0155	511-1000	LB	BAR REINF STEEL CULVERT @ WILLIAMSON CREEK	39690.000	0.65	25968.77
0160	511-1000	LB	BAR REINF STEEL	52920.000	0.64	33911.67
0165	550-1180	LF	STM DR PIPE 18",H 1-10	200.000	30.44	6089.48
0170	550-1241	LF	STM DR PIPE 24",H 10-15	125.000	36.51	4564.30
0175	550-1303	LF	STM DR PIPE 30",H 20-25	150.000	57.80	8670.00
0180	550-1361	LF	STM DR PIPE 36",H 10-15	310.000	50.64	15701.49
0185	550-1421	LF	STM DR PIPE 42",H 10-15	75.000	84.39	6329.43
0190	550-1422	LF	STM DR PIPE 42",H 15-20	225.000	76.25	17157.97
0195	550-1481	LF	STM DR PIPE 48",H 10-15	50.000	81.57	4078.91
0200	550-1541	LF	STM DR PIPE 54",H 10-15	50.000	130.70	6535.33
0205	550-2180	LF	SIDE DR PIPE 18",H 1-10	200.000	25.86	5173.65
0210	550-2240	LF	SIDE DR PIPE 24",H 1-10	100.000	23.61	2361.88
0215	550-3318	EA	SAFETY END SECTION 18",STD,4:1	4.000	676.63	2706.53
0220	550-3324	EA	SAFETY END SECTION 24",STD,4:1	4.000	866.05	3464.21
0225	550-3518	EA	SAFETY END SECTION 18",STD,6:1	4.000	675.72	2702.90
0230	550-3524	EA	SAFETY END SECTION 24",STD,6:1	4.000	838.49	3353.96
0235	550-4118	EA	FLARED END SECT 18 IN, SIDE DR	8.000	305.79	2446.34
0240	550-4124	EA	FLARED END SECT 24 IN, SIDE DR	6.000	505.31	3031.90
0245	550-4230	EA	FLARED END SECT 30 IN, ST DR	4.000	655.91	2623.66
0250	550-4236	EA	FLARED END SECT 36 IN, ST DR	4.000	893.08	3572.32
0255	603-2024	SY	STN DUMPED RIP RAP, TP 1, 24"	400.000	38.60	15443.02
0260	603-2182	SY	STN DUMPED RIP RAP, TP 3, 24"	500.000	31.68	15842.13
0265	603-7000	SY	PLASTIC FILTER FABRIC	900.000	3.39	3055.98
0270	611-3100	EA	RECONSTR JCT BOX	1.000	1355.60	1355.60
0275	668-2100	EA	DROP INLET, GP 1	3.000	1698.86	5096.61
0280	668-5000	EA	JUNCTION BOX	2.000	1628.24	3256.49
0285	636-1020	SF	HWY SGN,TP1MAT,REFL SH TP3	10.000	15.64	156.48
0290	636-1029	SF	HWY SGN,TP2 MATL,REFL SH TP 3	70.000	13.77	964.25
0295	636-1033	SF	HWY SIGNS, TP1MAT,REFL SH TP 9	111.000	18.98	2107.42
0300	636-1033	SF	HWY SIGNS, TP1MAT,REFL SH TP 9	96.000	19.11	1834.68
0305	636-1072	SF	HWY SIGNS,ALUM EXTRD PNLS, RS TP 3	392.000	22.07	8655.29
0310	636-2070	LF	GALV STEEL POSTS, TP 7	28.000	8.42	235.89
0315	636-2080	LF	GALV STEEL POSTS, TP 8	232.000	9.13	2118.65
0320	636-3000	LB	GALV STEEL STR SHAPE POST	2268.000	4.41	10023.70
0325	636-5010	EA	DELINEATOR, TP 1	14.000	47.57	666.10
0330	636-9094	LF	P-IN-PL,SIGNS,STL H,HP 12 X 53	14.000	93.03	1302.42
0335	653-0110	EA	THERM PVMT MARK, ARROW, TP 1	2.000	72.19	144.39
0340	653-0120	EA	THERM PVMT MARK, ARROW, TP 2	30.000	68.91	2067.31
0345	653-0170	EA	THERM PVMT MARK, ARROW, TP 7	2.000	85.48	170.96
0350	653-0210	EA	THERM PVMT MARK, WORD , TP 1	4.000	96.35	385.41

0355	653-1501	LF	THERMO SOLID TRAF ST 5 IN, WHI	39063.000	0.26	10373.96
0360	653-1502	LF	THERMO SOLID TRAF ST, 5 IN YEL	33662.000	0.24	8255.27
0365	653-1704	LF	THERM SOLID TRAF STRIPE,24",WH	1372.000	2.65	3643.03
0370	653-1804	LF	THERM SOLID TRAF STRIPE, 8",WH	476.000	1.83	875.25
0375	653-3501	GLF	THERMO SKIP TRAF ST, 5 IN, WHI	22712.000	0.21	4931.23
0380	653-6004	SY	THERM TRAF STRIPING, WHITE	776.000	2.79	2171.28
0385	653-6006	SY	THERM TRAF STRIPING, YELLOW	5411.000	2.52	13650.44
0390	654-1001	EA	RAISED PVMT MARKERS TP 1	200.000	3.49	698.48
0395	654-1003	EA	RAISED PVMT MARKERS TP 3	436.000	3.71	1619.61
0400	655-7000	EA	PVMT ARROW, PREFORM PLASTIC W/RAISE REFL	2.000	642.61	1285.23
0405	657-1085	LF	PRF PL SD PVT MKG,8",B/W,TP PB	3214.000	4.95	15920.26
0410	657-3085	GLF	PRF PL SK PVMT MKG,8",B/W,TPPB	526.000	3.58	1885.83
0415	657-6085	LF	PRF PL SD PVMT MKG,8",B/Y,TPPB	3466.000	4.91	17042.53
0420	639-2002	LF	STEEL WIRE STRAND CABLE, 3/8"	1200.000	3.48	4176.00
0434	639-5000	EA	PRESTRESSED CONC STR POLE, TP- TP-4	8.000	5755.25	46042.00
0435	647-1000	LS	TRAF SIGNAL INSTALLATION NO - CSSTP-0006-00(327) NO. 1	1.000	87600.00	87600.00
0440	647-1000	LS	TRAF SIGNAL INSTALLATION NO - CSSTP-0006-00(327) NO. 2	1.000	87600.00	87600.00
0445	687-1000	LS	TRAFFIC SIGNAL TIMING - CORRIDOR TIMING	1.000	9400.00	9400.00
0450	647-2150	EA	PULL BOX, PB-5	3.000	1479.76	4439.30
0455	682-6233	LF	CONDUIT, NONMETL, TP 3, 2 IN	308.000	5.52	1700.16
0460	682-7043	LF	MULTI-CELL COND SYS,4-WAY,FIBERGLASS	182.000	49.50	9009.00
0464	935-1113	LF	OUT PLNT FBR OPT CBL,LOOSE TB,SM,24 FBR	11270.000	2.16	24412.85
0465	935-1511	LF	OUT PLNT FBR OPT CBL,DROP,SM,6 FBR	200.000	1.93	386.00
0470	935-3203	EA	FBR OPTIC CLOSURE,AERL(SLD),24 FBR	3.000	550.00	1650.00
0475	935-4010	EA	FIBER OPTIC SPLICE, FUSION	36.000	61.54	2215.53
0477	935-5050	EA	FIBER OPTIC PATCH CORD, SM	2.000	110.48	220.96
0478	935-5060	EA	FIBER OPTIC SNOWSHOE	40.000	143.05	5722.08
0480	935-6562	EA	EXT TRNSCVR,DRP&RPT,1310SM,(SIGNAL JOBS)	2.000	1603.00	3206.00
0485	935-8000	LS	TESTING	1.000	3988.06	3988.06
0490	937-6150	EA	PROGRAMMING MONITOR, TP A	1.000	437.04	437.04
0495	937-8500	LS	TRAINING	1.000	2143.00	2143.00
0497	939-2305	EA	FIELD SWITCH, TYPE C	2.000	1832.10	3664.20
0499	939-5010	EA	ELEC PWR SVC ASSEMBLY,AERIAL SVC POINT	2.000	2941.67	5883.36
0500	163-0232	AC	TEMPORARY GRASSING	15.000	247.79	3716.88
0505	163-0240	TN	MULCH	1000.000	144.43	144432.08
0510	163-0300	EA	CONSTRUCTION EXIT	6.000	1020.04	6120.27
0515	163-0501	EA	CONSTR AND REMOVE SILT CONTROL GATE,TP 1	6.000	691.59	4149.55
0520	163-0502	EA	CONSTR AND REMOVE SILT CONTROL GATE,TP 2	4.000	587.84	2351.39

0525	163-0503	EA	CONSTR AND REMOVE SILT CONTROL GATE,TP 3	36.000	361.53	13015.22
0530	163-0520	LF	CONSTR AND REMOVE TEMP PIPE SLOPE DRAIN	600.000	11.88	7130.15
0535	163-0528	LF	CONSTR AND REM FAB CK DAM -TP C SLT FN	300.000	3.56	1070.44
0540	163-0529	LF	CNST/REM TEMP SED BAR OR BLD STRW CK DM	4958.000	2.83	14069.37
0545	163-0531	EA	CONSTR & REM SEDIMENT BASIN,TP 1,STA NO- CSSTP-0006-00(327)	2.000	3201.79	6403.58
0550	163-0550	EA	CONS & REM INLET SEDIMENT TRAP	2.000	153.44	306.89
0555	165-0010	LF	MAINT OF TEMP SILT FENCE, TP A	9916.000	0.48	4847.34
0560	165-0030	LF	MAINT OF TEMP SILT FENCE, TP C	4958.000	0.61	3058.44
0565	165-0041	LF	MAINT OF CHECK DAMS - ALL TYPES	150.000	1.37	206.54
0570	165-0060	EA	MAINT OF TEMP SEDIMENT BASIN,STA NO -	2.000	798.65	1597.30
0575	165-0071	LF	MAINT OF SEDIMENT BARRIER - BALED STRAW	2479.000	0.80	1989.12
0580	165-0085	EA	MAINT OF SILT CONTROL GATE, TP 1	6.000	189.43	1136.63
0585	165-0086	EA	MAINT OF SILT CONTROL GATE, TP 2	4.000	148.74	594.97
0590	165-0087	EA	MAINT OF SILT CONTROL GATE, TP 3	36.000	95.99	3455.99
0595	165-0101	EA	MAINT OF CONST EXIT	6.000	347.70	2086.23
0600	165-0105	EA	MAINT OF INLET SEDIMENT TRAP	2.000	51.82	103.64
0605	167-1000	EA	WATER QUALITY MONITORING AND SAMPLING	2.000	526.88	1053.78
0610	167-1500	MO	WATER QUALITY INSPECTIONS	30.000	557.83	16734.99
0615	171-0010	LF	TEMPORARY SILT FENCE, TYPE A	19832.000	1.44	28600.72
0620	171-0030	LF	TEMPORARY SILT FENCE, TYPE C	9916.000	2.75	27273.36
0625	643-8200	LF	BARRIER FENCE (ORANGE), 4 FT	1000.000	1.68	1687.50
0630	700-6910	AC	PERMANENT GRASSING	30.000	660.63	19819.18
0635	700-7000	TN	AGRICULTURAL LIME	60.000	64.79	3887.74
0645	700-8000	TN	FERTILIZER MIXED GRADE	27.000	359.97	9719.37
0650	700-8100	LB	FERTILIZER NITROGEN CONTENT	1500.000	1.75	2634.86
0655	710-9000	SY	PERM SOIL REINFORCING MAT	1000.000	3.78	3784.58
0665	716-2000	SY	EROSION CONTROL MATS, SLOPES	22000.000	0.83	18288.16
ITEM TOTAL						8908874.95
INFLATED ITEM TOTAL						8908874.95

TOTALS FOR JOB 0006327_PHASE_2

ESTIMATED COST:	8908874.98
CONTINGENCY PERCENT (0.0):	0.00
ESTIMATED TOTAL:	**8908874.98**

PROJ. NO.	12-005		CALL NO.
P.I. NO.	0006327		
DATE	1/29/13		

INDEX (TYPE)	**DATE**	**INDEX**
REG. UNLEADED	Jan-13	$3.278
DIESEL		$3.938
LIQUID AC		$568.00

Link to Fuel and AC Index:
http://www.dot.ga.gov/doingbusiness/Materials/Pages/asphaltcementindex.aspx

LIQUID AC ADJUSTMENTS

PA=[((APM-APL)/APL)]xTMTxAPL

Asphalt

Price Adjustment (PA)			**717980.4**	**$717,980.40**
Monthly Asphalt Cement Price month placed (APM)	Max. Cap	60%	$908.80	
Monthly Asphalt Cement Price month project let (APL)			$568.00	
Total Monthly Tonnage of asphalt cement (TMT)			2106.75	

ASPHALT	**Tons**	**%AC**	**AC ton**
Leveling		5.0%	0
12.5 OGFC		5.0%	0
12.5 mm	7806	5.0%	390.3
9.5 mm SP		5.0%	0
25 mm SP	23658	5.0%	1182.9
19 mm SP	10671	5.0%	533.55
	42135		**2106.75**

BITUMINOUS TACK COAT

Price Adjustment (PA)			**$37,613.04**	**$37,613.04**
Monthly Asphalt Cement Price month placed (APM)	Max. Cap	60%	$908.80	
Monthly Asphalt Cement Price month project let (APL)			$568.00	
Total Monthly Tonnage of asphalt cement (TMT)			110.3669133	

Bitum Tack Gals	gals/ton	tons
25696	232.8234	110.3669133

BITUMINOUS TACK COAT (surface treatment)

Price Adjustment (PA)			**0**	**$-**
Monthly Asphalt Cement Price month placed (APM)	Max. Cap	60%	$908.80	
Monthly Asphalt Cement Price month project let (APL)			$568.00	
Total Monthly Tonnage of asphalt cement (TMT)			0	

Bitum Tack	SY	Gals/SY	Gals	gals/ton	tons
Single Surf. Trmt.		0.20	0	232.8234	0
Double Surf.Trmt.		0.44	0	232.8234	0
Triple Surf. Trmt		0.71	0	232.8234	0
					0

TOTAL LIQUID AC ADJUSTMENT	**$755,593.44**

STATE HIGHWAY AGENCY

DATE : 01/29/2013
PAGE : 1

JOB ESTIMATE REPORT

JOB NUMBER : 0006327_PHASE_3 SPEC YEAR: 01
DESCRIPTION: **WEST WINDER BYPASS_PHASE 3**
PHASE 3

ITEMS FOR JOB 0006327_PHASE_3

LINE	ITEM	ALT	UNITS	DESCRIPTION	QUANTITY	PRICE	AMOUNT
0005	150-1000		LS	TRAFFIC CONTROL - CSSTP-0006-00(327)	1.000	350000.00	350000.00
0010	153-1300		EA	FIELD ENGINEERS OFFICE TP 3	1.000	67008.48	67008.48
0015	210-0100		LS	GRADING COMPLETE - CSSTP-0006-00(327)	1.000	3270000.00	3270000.00
0020	310-1101		TN	GR AGGR BASE CRS, INCL MATL	54690.000	14.76	807510.43
0025	400-3624		TN	ASPH CONC 12.5 MM PEM,GP2,INCL P-MBM&HL	788.000	109.68	86430.68
0030	402-3121		TN	RECYL AC 25MM SP,GP1/2,BM&HL	20926.000	59.67	1248800.69
0035	402-3130		TN	RECYL AC 12.5MM SP,GP2,BM&HL	3850.000	61.44	236573.11
0040	402-3190		TN	RECYL AC 19 MM SP,GP 1 OR 2 ,INC BM&HL	5236.000	65.10	340864.59
0045	402-3600		TN	RECY AC 12.5,SMA,GP2 ON,INCLP-,BM&HL	788.000	100.31	79045.79
0050	413-1000		GL	BITUM TACK COAT	18430.000	2.43	44818.44
0053	430-0220		SY	PLN PC CONC PVMT/CL1C/ 12" TK	31039.000	50.67	1573007.17
0055	432-0206		SY	MILL ASPH CONC PVMT/ 1.50" DEP	400.000	8.46	3384.88
0060	433-1000		SY	REINF CONC APPROACH SLAB	600.000	145.00	87000.00
0065	436-1000		LF	ASPH CONC CURB - CSSTP-0006-00(327)	8000.000	5.87	47027.12
0070	441-0016		SY	DRIVEWAY CONCRETE, 6 IN TK	725.000	28.03	20328.08
0075	441-0754		SY	CONC MEDIAN, 7 1/2 IN	2991.000	32.90	98430.22
0085	441-6740		LF	CONC CURB & GUTTER/ 8"X30" TP7	7440.000	13.33	99203.40
0090	446-1100		LF	PVMT REF FAB STRIPS, TP2,18 INCH WIDTH	1800.000	4.62	8319.62
0095	456-2015		GLM	INDENT. RUMB. STRIPS - GRND-IN-PL (SKIP)	7.000	873.49	6114.46

0100	620-0100	LF	TEMP BARRIER, METHOD NO. 1	10000.000	19.81	198115.30
0105	634-1200	EA	RIGHT OF WAY MARKERS	100.000	88.31	8831.11
0110	641-1100	LF	GUARDRAIL, TP T	1250.000	31.87	39842.66
0115	641-1200	LF	GUARDRAIL, TP W	8000.000	15.27	122174.48
0120	641-5001	EA	GUARDRAIL ANCHORAGE, TP 1	18.000	566.04	10188.84
0125	641-5012	EA	GUARDRAIL ANCHORAGE, TP 12	18.000	1586.88	28564.02
0127	643-1171	LF	CH LK FEN, ZC COAT, 8', 9 GA	600.000	24.45	14672.51
0130	207-0203	CY	FOUND BKFILL MATL, TP II	377.000	40.02	15089.72
0135	441-0204	SY	PLAIN CONC DITCH PAVING, 4 IN	290.000	29.38	8522.15
0140	441-0301	EA	CONC SPILLWAY, TP 1	20.000	1711.05	34221.18
0145	441-0600	CY	CONC HEADWALLS	18.000	989.71	17814.78
0150	500-3101	CY	CLASS A CONCRETE	20.000	367.12	7342.41
0175	550-1180	LF	STM DR PIPE 18",H 1-10	250.000	38.02	9505.56
0180	550-1242	LF	STM DR PIPE 24",H 15-20	125.000	41.87	5233.76
0185	550-1300	LF	STM DR PIPE 30",H 1-10	100.000	51.65	5165.86
0190	550-1361	LF	STM DR PIPE 36",H 10-15	75.000	63.48	4761.51
0195	550-1421	LF	STM DR PIPE 42",H 10-15	75.000	81.01	6075.77
0200	550-1482	LF	STM DR PIPE 48",H 15-20	50.000	89.22	4461.09
0210	550-1541	LF	STM DR PIPE 54",H 10-15	50.000	112.25	5612.50
0215	550-2180	LF	SIDE DR PIPE 18",H 1-10	100.000	25.09	2509.54
0220	550-2240	LF	SIDE DR PIPE 24",H 1-10	100.000	27.74	2774.48
0222	550-3418	EA	SAFETY END SECTION 18",SD,4:1	4.000	414.46	1657.88
0225	550-3424	EA	SAFETY END SECTION 24",SD,4:1	4.000	636.23	2544.96
0227	550-3518	EA	SAFETY END SECTION 18",STD,6:1	4.000	559.64	2238.59
0230	550-3524	EA	SAFETY END SECTION 24",STD,6:1	4.000	846.68	3386.74
0235	550-4118	EA	FLARED END SECT 18 IN, SIDE DR	6.000	304.76	1828.61
0237	550-4124	EA	FLARED END SECT 24 IN, SIDE DR	8.000	439.02	3512.21
0240	550-4136	EA	FLARED END SECT 36 IN, SIDE DR	4.000	780.32	3121.28
0245	550-4224	EA	FLARED END SECT 24 IN, ST DR	4.000	642.33	2569.33
0250	550-4230	EA	FLARED END SECT 30 IN, ST DR	6.000	705.30	4231.85
0255	550-4236	EA	FLARED END SECT 36 IN, ST DR	4.000	963.44	3853.76
0257	550-4242	EA	FLARED END SECT 42 IN, ST DR	2.000	1527.46	3054.94
0260	603-2024	SY	STN DUMPED RIP RAP, TP 1, 24"	400.000	30.40	12163.61
0265	603-2182	SY	STN DUMPED RIP RAP, TP 3, 24"	500.000	30.08	15042.52
0270	603-7000	SY	PLASTIC FILTER FABRIC	900.000	3.46	3115.84
0275	611-3010	EA	RECONSTR DROP INLET, GROUP 1	2.000	1481.08	2962.17
0277	611-3100	EA	RECONSTR JCT BOX	2.000	1324.74	2649.48
0280	668-2100	EA	DROP INLET, GP 1	5.000	1568.34	7841.74
0285	668-5000	EA	JUNCTION BOX	3.000	1491.33	4473.99

0290	627-1000	SF	MSE WALL FACE, 0 - 10 FT HT, WALL NO - CSSTP-0006-00(327)	3870.000	31.15	120570.82
0295	627-1010	SF	MSE WALL FACE, 10 - 20 FT HT, WALL NO - CSSTP-0006-00(327)	7740.000	46.05	356451.92
0300	627-1020	SF	MSE WALL FACE, 20 - 30 FT HT, WALL NO - CSSTP-0006-00(327)	3870.000	46.69	180702.37
0305	636-1020	SF	HWY SGN,TP1MAT,REFL SH TP3	11.000	15.54	170.97
0310	636-1029	SF	HWY SGN,TP2 MATL,REFL SH TP 3	73.000	14.25	1040.64
0315	636-1029	SF	HWY SGN,TP2 MATL,REFL SH TP 3	115.000	14.24	1638.10
0320	636-1033	SF	HWY SIGNS, TP1MAT,REFL SH TP 9	144.000	18.32	2638.08
0325	636-1072	SF	HWY SIGNS,ALUM EXTRD PNLS, RS TP 3	406.000	24.16	9812.31
0330	636-2070	LF	GALV STEEL POSTS, TP 7	29.000	9.22	267.61
0335	636-2080	LF	GALV STEEL POSTS, TP 8	241.000	9.56	2304.04
0340	636-3000	LB	GALV STEEL STR SHAPE POST	2349.000	5.13	12055.11
0345	636-5010	EA	DELINEATOR, TP 1	15.000	74.21	1113.16
0350	636-9094	LF	P-IN-PL,SIGNS,STL H,HP 12 X 53	15.000	117.75	1766.39
0355	653-0110	EA	THERM PVMT MARK, ARROW, TP 1	5.000	81.60	408.01
0360	653-0120	EA	THERM PVMT MARK, ARROW, TP 2	23.000	70.31	1617.22
0365	653-0170	EA	THERM PVMT MARK, ARROW, TP 7	2.000	76.92	153.85
0370	653-0210	EA	THERM PVMT MARK, WORD , TP 1	4.000	99.31	397.24
0375	653-1501	LF	THERMO SOLID TRAF ST 5 IN, WHI	27652.000	0.38	10745.84
0380	653-1502	LF	THERMO SOLID TRAF ST, 5 IN YEL	22315.000	0.37	8446.00
0385	653-1704	LF	THERM SOLID TRAF STRIPE,24",WH	1421.000	3.83	5445.46
0390	653-1804	LF	THERM SOLID TRAF STRIPE, 8",WH	493.000	1.90	939.61
0395	653-3501	GLF	THERMO SKIP TRAF ST, 5 IN, WHI	15341.000	0.31	4770.28
0410	654-1001	EA	RAISED PVMT MARKERS TP 1	200.000	3.82	765.14
0415	654-1003	EA	RAISED PVMT MARKERS TP 3	451.000	3.57	1610.30
0420	655-7000	EA	PVMT ARROW, PREFORM PLASTIC W/RAISE REFL	2.000	853.75	1707.51
0425	657-1085	LF	PRF PL SD PVT MKG,8",B/W,TP PB	3329.000	4.67	15576.49
0430	657-3085	GLF	PRF PL SK PVMT MKG,8",B/W,TPPB	546.000	3.27	1786.53
0435	657-6085	LF	PRF PL SD PVMT MKG,8",B/Y,TPPB	3591.000	4.37	15719.10
0437	638-1003	LS	STR SUPPORT OVHD,SIGN,TPIIISTA CSSTP-0006-00(327)	1.000	225541.32	225541.32
0440	639-2002	LF	STEEL WIRE STRAND CABLE, 3/8"	1800.000	3.48	6264.00
0450	639-5000	EA	PRESTRESSED CONC STR POLE, TP- TP-4	12.000	5755.25	69063.00
0455	647-1000	LS	TRAF SIGNAL INSTALLATION NO - CSSTP-0006-00(327) NO.1	1.000	87600.00	87600.00

0460	647-1000	LS	TRAF SIGNAL INSTALLATION NO - CSSTP-0006-00(327) NO.2	1.000	87600.00	87600.00
0465	647-1000	LS	TRAF SIGNAL INSTALLATION NO - CSSTP-0006-00(327) NO.3	1.000	87600.00	87600.00
0480	647-2150	EA	PULL BOX, PB-5	3.000	1320.18	3960.54
0485	682-6233	LF	CONDUIT, NONMETL, TP 3, 2 IN	319.000	5.16	1646.04
0490	682-7043	LF	MULTI-CELL COND SYS,4-WAY,FIBERGLASS	189.000		
0493	687-1000	LS	TRAFFIC SIGNAL TIMING - CORRIDOR TIMING	1.000	51700.00	51700.00
0494	935-1113	LF	OUT PLNT FBR OPT CBL,LOOSE TB,SM,24 FBR	4415.000	1.76	7770.40
0495	935-1511	LF	OUT PLNT FBR OPT CBL,DROP,SM,6 FBR	300.000	1.93	579.00
0500	935-3203	EA	FBR OPTIC CLOSURE,AERL(SLD),24 FBR	3.000	550.00	1650.00
0505	935-4010	EA	FIBER OPTIC SPLICE, FUSION	36.000	43.49	1565.67
0507	935-5050	EA	FIBER OPTIC PATCH CORD, SM	3.000	74.00	222.00
0508	935-5060	EA	FIBER OPTIC SNOWSHOE	8.000	105.34	842.73
0510	935-6562	EA	EXT TRNSCVR,DRP&RPT,1310SM,(SIGNAL JOBS)	3.000	1529.21	4587.66
0515	935-8000	LS	TESTING	1.000	3988.06	3988.06
0520	937-6150	EA	PROGRAMMING MONITOR, TP A	1.000	362.03	362.03
0525	937-8500	LS	TRAINING	1.000	2143.00	2143.00
0528	939-2305	EA	FIELD SWITCH, TYPE C	3.000	1832.10	5496.30
0529	939-5010	EA	ELEC PWR SVC ASSEMBLY,AERIAL SVC POINT	3.000	2160.22	6480.66
0530	009-3000	LS	MISCELLANEOUS CONSTRUCTION CONC. BRIDGE OVER SR 316	1.000	2878300.00	2878300.00
0535	163-0232	AC	TEMPORARY GRASSING	15.000	371.29	5569.49
0540	163-0240	TN	MULCH	450.000	163.33	73501.39
0545	163-0300	EA	CONSTRUCTION EXIT	6.000	1126.41	6758.50
0550	163-0501	EA	CONSTR AND REMOVE SILT CONTROL GATE,TP 1	4.000	503.81	2015.25
0555	163-0502	EA	CONSTR AND REMOVE SILT CONTROL GATE,TP 2	4.000	443.43	1773.74
0560	163-0503	EA	CONSTR AND REMOVE SILT CONTROL GATE,TP 3	38.000	345.30	13121.62
0565	163-0520	LF	CONSTR AND REMOVE TEMP PIPE SLOPE DRAIN	2000.000	11.52	23041.56
0570	163-0528	LF	CONSTR AND REM FAB CK DAM -TP C SLT FN	300.000	3.66	1100.83

0575	163-0529	LF	CNST/REM TEMP SED BAR OR BLD STRW CK DM	7701.000	3.54	27333.93
0580	163-0531	EA	CONSTR & REM SEDIMENT BASIN,TP 1,STA NO- CSSTP-0006-00(327)	2.000	9127.45	18254.92
0585	163-0550	EA	CONS & REM INLET SEDIMENT TRAP	2.000	137.84	275.70
0590	165-0010	LF	MAINT OF TEMP SILT FENCE, TP A	15402.000	0.59	9156.33
0595	165-0030	LF	MAINT OF TEMP SILT FENCE, TP C	7701.000	0.79	6112.21
0600	165-0041	LF	MAINT OF CHECK DAMS - ALL TYPES	150.000	2.09	314.91
0605	165-0060	EA	MAINT OF TEMP SEDIMENT BASIN,STA NO -	1.000	2456.11	2456.11
0610	165-0071	LF	MAINT OF SEDIMENT BARRIER - BALED STRAW	3851.000	1.08	4159.73
0615	165-0085	EA	MAINT OF SILT CONTROL GATE, TP 1	4.000	110.35	441.43
0620	165-0086	EA	MAINT OF SILT CONTROL GATE, TP 2	4.000	122.57	490.28
0625	165-0087	EA	MAINT OF SILT CONTROL GATE, TP 3	38.000	80.89	3073.89
0630	165-0101	EA	MAINT OF CONST EXIT	6.000	471.46	2828.82
0635	165-0105	EA	MAINT OF INLET SEDIMENT TRAP	2.000	48.71	97.43
0640	167-1000	EA	WATER QUALITY MONITORING AND SAMPLING	2.000	242.36	484.72
0645	167-1500	MO	WATER QUALITY INSPECTIONS	24.000	752.79	18067.16
0650	171-0010	LF	TEMPORARY SILT FENCE, TYPE A	30804.000	1.17	36125.39
0655	171-0030	LF	TEMPORARY SILT FENCE, TYPE C	15402.000	2.60	40116.82
0660	700-6910	AC	PERMANENT GRASSING	30.000	682.69	20480.99
0665	700-7000	TN	AGRICULTURAL LIME	60.000	59.86	3592.18
0675	700-8000	TN	FERTILIZER MIXED GRADE	27.000	405.57	10950.65
0680	700-8100	LB	FERTILIZER NITROGEN CONTENT	1500.000	1.73	2595.33
0685	710-9000	SY	PERM SOIL REINFORCING MAT	1000.000	3.37	3375.18
0695	716-2000	SY	EROSION CONTROL MATS, SLOPES	1000.000	0.98	989.02

ITEM TOTAL	13739833.91
INFLATED ITEM TOTAL	13739833.91

TOTALS FOR JOB 0006327_PHASE_3

ESTIMATED COST:	13739833.91
CONTINGENCY PERCENT (0.0):	0.00
ESTIMATED TOTAL:	**13739833.91**

PROJ. NO.	12-005		CALL NO.
P.I. NO.	0006327		
DATE	1/29/13		

INDEX (TYPE)	**DATE**	**INDEX**
REG. UNLEADED	Jan-13	$3.278
DIESEL		$3.938
LIQUID AC		$568.00

Link to Fuel and AC Index:
http://www.dot.ga.gov/doingbusiness/Materials/Pages/asphaltcementindex.aspx

LIQUID AC ADJUSTMENTS

PA=[((APM-APL)/APL)]xTMTxAPL

Asphalt

Price Adjustment (PA)			**538259.52**	**$538,259.52**
Monthly Asphalt Cement Price month placed (APM)	Max. Cap	60%	$908.80	
Monthly Asphalt Cement Price month project let (APL)			$568.00	
Total Monthly Tonnage of asphalt cement (TMT)			1579.4	

ASPHALT	**Tons**	**%AC**	**AC ton**
Leveling		5.0%	0
12.5 OGFC		5.0%	0
12.5 mm	5426	5.0%	271.3
9.5 mm SP		5.0%	0
25 mm SP	20926	5.0%	1046.3
19 mm SP	5236	5.0%	261.8
	31588		**1579.4**

BITUMINOUS TACK COAT

Price Adjustment (PA)			**$26,977.29**	**$26,977.29**
Monthly Asphalt Cement Price month placed (APM)	Max. Cap	60%	$908.80	
Monthly Asphalt Cement Price month project let (APL)			$568.00	
Total Monthly Tonnage of asphalt cement (TMT)			79.15870999	

Bitum Tack Gals	gals/ton	tons
18430	232.8234	79.15870999

BITUMINOUS TACK COAT (surface treatment)

Price Adjustment (PA)			**0**	**$-**
Monthly Asphalt Cement Price month placed (APM)	Max. Cap	60%	$908.80	
Monthly Asphalt Cement Price month project let (APL)			$568.00	
Total Monthly Tonnage of asphalt cement (TMT)			0	

Bitum Tack	SY	Gals/SY	Gals	gals/ton	tons
Single Surf. Trmt.		0.20	0	232.8234	0
Double Surf.Trmt.		0.44	0	232.8234	0
Triple Surf. Trmt		0.71	0	232.8234	0
					0

TOTAL LIQUID AC ADJUSTMENT	**$565,236.81**

DETAILED COST ESTIMATE DATA

RIGHT-OF-WAY

6-6-12 Preliminary Cost Estimate VS 1-24-13 Cost Estimate

Item	Prelim Cost 6/6/2012	Prelim Cost 1/24/2013	Parcel Count 6/6/2012	Parcel Count 1/24/2013	Estimated Req'd R/W/ Ease Acres 6/6/2012	Estimated Req'd R/W/ Base Acres 1/24/2013	Est Land & Improv 6/6/2012	Est Land & Improv 1/24/2013	Relocation Parcels 6/6/2012	Relocation Parcels 1/24/2013	Comments
Phase 1	$ 2,711,000.00	$ 4,463,000.00	38	65	42 Ac 21 Ac	48 Ac 28 Ac	$1,636,620.00	$2,828,355.00	7	9	The primary reason for the increased cost is due to the significant change in parcel count
Phase 2	$ 2,100,000.00	$ 3,839,000.00	40	73	25.5 Ac 12.65 Ac	25 Ac 15 Ac	$1,102,005.00	$1,834,575.00	5	12	The primary reason for the increased cost is due to the significant change in parcel count & Relocation
Phase 3	$ 6,170,000.00	$ 2,061,060.00	10	17	47 Ac 23.53 Ac	39 Ac 10 Ac	$5,888,482.00	$1,676,662.00	1	1	The reason for the decrease is due to the change in opinion of affected Commercial use property & reduction in required R/W
Totals	$ 10,984,000.00	$ 10,333,000.00	88	155	114.30Ac 57.18 Ac	112 Ac 53Ac	$8,627,107.00	$6,339,772.00	13	22	

GEORGIA DEPARTMENT OF TRANSPORTATION
PRELIMINARY ROW COST ESTIMATE SUMMARY

Date: 6/6/2012 Project: CCSTP-0006-00(327)
Revised: 1/22/2013 County: Barrow
PI: 6327

Description: West Winder Bypass-Phase 1
Project Termini: Matthews School Rd to SR 211

Existing ROW: Varies
Parcels: 65 Required ROW: Varies

Land and Improvements	$2,828,535.00
Proximity Damage $50,000.00	
Consequential Damage $50,000.00	
Cost to Cures $130,000.00	
Trade Fixtures $0.00	
Improvements $520,000.00	
Valuation Services	$108,250.00
Legal Services	$418,875.00
Relocation	$380,000.00
Demolition	$179,000.00
Administrative	$547,500.00
TOTAL ESTIMATED COSTS	$4,462,160.00
TOTAL ESTIMATED COSTS (ROUNDED)	***$4,463,000.00***

Preparation Credits	Hours	Signature

Prepared By: CG#: 3213 (DATE) 1-22-13
Approved By: CG#: 286999 (DATE) 05/03/2013

NOTE: No Market Appreciation is included in this Preliminary Cost Estimate

GEORGIA DEPARTMENT OF TRANSPORTATION
PRELIMINARY ROW COST ESTIMATE SUMMARY

Date: 6/6/2012 Project: CCSTP-0006-00(327)
Revised: 1/22/2013 County: Barrow
PI: 10554

Description: West Winder Bypass - Phase 2
Project Termini: SR 316 to Matthews School Rd

Existing ROW: Varies
Parcels: 73 Required ROW: Varies

Land and Improvements	$1,834,575.00
Proximity Damage $10,000.00	
Consequential Damage $50,000.00	
Cost to Cures $50,000.00	
Trade Fixtures $0.00	
Improvements $735,000.00	
Valuation Services	$130,000.00
Legal Services	$461,775.00
Relocation	$546,000.00
Demolition	$210,000.00
Administrative	$626,000.00
TOTAL ESTIMATED COSTS	$3,808,350.00
TOTAL ESTIMATED COSTS (ROUNDED)	***$3,809,000.00***

Preparation Credits	Hours	Signature

Prepared By: CG#: 3213 (DATE) 1-22-13
Approved By: CG#: 286999 (DATE) 05/03/2013

NOTE: No Market Appreciation Is Included In this Preliminary Cost Estimate

GEORGIA DEPARTMENT OF TRANSPORTATION
PRELIMINARY ROW COST ESTIMATE SUMMARY

Date: 6/16/2012 Project: CCSTP-0006-00(327)
Revised: 1/22/2013 County: Barrow
PI: 10555

Description: Winder Bypass- Phase 3
Project Termini: SR316 Interchange

Existing ROW: Varies
Parcels: 17 Required ROW: Varies

Land and Improvements		$1,676,662.50
Proximity Damage	*$0.00*	
Consequential Damage	*$50,000.00*	
Cost to Cures	*$0.00*	
Trade Fixtures	*$0.00*	
Improvements	*$150,000.00*	
Valuation Services		$29,875.00
Legal Services		$123,975.00
Relocation		$49,000.00
Demolition		$29,000.00
Administrative		$151,500.00
TOTAL ESTIMATED COSTS		$2,060,012.50
TOTAL ESTIMATED COSTS (ROUNDED)		***$2,061,000.00***

Preparation Credits	Hours	Signature

Prepared By: CGI#: 3213 (DATE) 1-23-13
Approved By: CGI#: 286999 (DATE) 05/03/2013

NOTE: No Market Appreciation is included in this Preliminary Cost Estimate

DETAILED COST ESTIMATE DATA

UTILITIES

UTILITY COST ESTIMATE FOR WEST WINDER BYPASS

Barrow County, Georgia
December 18, 2012

PHASE 1	
ITEM	**ESTIMATED COST**
CSX Railroad New Highway Bridge	$151,000.00
Georgia Power Transmission (Six Structures)	$1,200,000.00
Georgia Power Distribution (Estimated 1.25 Miles of Poles)	$530,000.00
Jackson EMC (Unknown Amount of Facilities)	$54,000.00
Comcast Cable TV (They Have No Prior Rights per Approved Concept Report)	$0.00
Telephone Facilities (No Payment for Relocation)	$0.00
City of Winder Gas (Unknown Quantity – Estimated 0.7 Miles of 4-inch Steel Pipe @ $60/L.F.)	$221,800.00
Water Utility (1.25 Miles of New Construction @ $95/L.F.)	$627,000.00
Sanitary Sewer Relocation	$1,000,000.00
TOTAL ESTIMATED COSTS:	**$3,783,800.00**

PHASE 2	
ITEM	**ESTIMATED COST**
Colonial Pipeline	$2,000,000.00
Georgia Power Distribution (Estimated 1.75 Miles of Poles)	$742,000.00
Jackson EMC (Unknown Amount of Facilities)	$75,000.00
Comcast Cable TV (They Have No Prior Rights per Approved Concept Report)	$0.00
Telephone Facilities (No Payment for Relocation)	$0.00
City of Winder Gas (Unknown Quantity – Estimated 1 Mile of 4-inch Steel Pipe @ $60/L.F.)	$316,800.00
Water Utility (1.75 Miles of New Construction @ $95/L.F.)	$877,800.00
TOTAL ESTIMATED COSTS:	**$4,011,600.00**

PHASE 3	
ITEM	**ESTIMATED COST**
Georgia Power Distribution (Estimated 0.5 Miles of Poles)	$212,000.00
Jackson EMC (Unknown Amount of Facilities)	$21,000.00
Comcast Cable TV (They Have No Prior Rights per Approved Concept Report)	$0.00
Telephone Facilities (No Payment for Relocation)	$0.00
City of Winder Gas (Unknown Quantity – Estimated 0.30 Miles of 4-inch Steel Pipe @ $60/L.F.)	$95,000.00
Water Utility (0.4 Miles of New Construction @ $95/L.F.)	$200,640.00
TOTAL ESTIMATED COSTS:	**$528,640.00**

DETAILED COST ESTIMATE DATA

ENVIRONMENTAL MITIGATION

ENVIRONMENTAL MITIGATION COST ESTIMATE

Barrow County, Georgia
February 1, 2013

Phase 1: 0006327 CR 325/Matthews School Road to SR 211			
Phase 1	**Credits**	**Cost/Credit**	**Total Cost**
Wetland	12.5	$12,000.00	$150,000.00
Stream	2,420	$35.00	$84,700.00
Buffer	364	$35.00	$12,740.00
		Total:	**$247,440.00**

Phase 2: 0010554 SR 316 to CR 325/Matthews School Road			
Phase 2	**Credits**	**Cost/Credit**	**Total Cost**
Wetland	0.02	$12,000.00	$240.00
Stream	1,859	$35.00	$65,065.00
Buffer	474	$35.00	$16,590.00
		Total:	**$81,895.00**

Phase 3: 0010555 New Interchange at SR 316			
Phase 3	**Credits**	**Cost/Credit**	**Total Cost**
Wetland	0	$12,000.00	$0.00
Stream	300	$35.00	$10,500.00
Buffer	0	$35.00	$0.00
		Total:	**$10,500.00**

REGISTER NELSON
Environmental Consultants

February 1, 2013

Mr. James Garrison, III, PE, LEED AP
Development Planning and Engineering, Inc.
5074 Bristol Industrial Way, Suite A
Buford, Georgia 30518

Subject: Mitigation Costs for West Winder Bypass
CSSTP-0006-00(37)
GDOT PI# 0006327/0010554/0010555
Barrow County, Georgia

Dear Mr. Garrison:

This correspondence provides our estimate of potential mitigation costs that may be required by the US Army Corps of Engineers (Corps) and Georgia Department of Natural Resources, Environmental Protection Division (EPD) for impacts to wetlands, streams, and stream buffers associated with the above referenced project. Per your request, these cost estimates are separated by project phase, as follows:

Phase 1 0006327 CR 325/Matthews School Road to SR 211

	Credits	Cost per Credit	Total
Wetlands	12.5	$12,000	$150,000
Streams	2,420	$35	$84,700
Buffers	364	$35	$12,740
		Phase 1 Total	$247,440

Phase 2 0010554 SR 316 to CR 325/Matthews School Road

	Credits	Cost per Credit	Total
Wetlands	0.02	$12,000	$240
Streams	1,859	$35	$65,065
Buffers	474	$35	$16,590
		Phase 2 Total	$81,895

Phase 3 0010555 New Diamond Interchange at SR 316

	Credits	Cost per Credit	Total
Wetlands	0	$12,000	$0
Streams	300	$35	$10,500
Buffers	0	$35	$0
		Phase 3 Total	$10,500

45 Parkland Drive – Stockbridge, Georgia 30253
PH: 678-432-2636 FX: 678-432-2464
www.registernelson.com

We have record of a recent GDOT mitigation bid and purchase in the Upper Oconee watershed. To calculate mitigation costs, we have "thrown out" the high and low bids from the GDOT transactions and averaged the rest of the bids, giving estimated current costs of $35 per stream credit and $12,000 per wetland credit. Please note that mitigation credit costs can fluctuate based on market demand and can range widely above or below the current reported rate.

The mitigation costs provided here are based on delineations of federal and state waters and state stream buffers that have not been verified at the federal or state level. The locations of wetlands and streams were mapped using submeter GPS accuracy and connected with the most recent West Winder Bypass alignment corridor, as produced by PPI and DPE.

Mitigation credit requirements were calculated based on the Savannah Corps of Engineers 2004 Mitigation Guidelines, including appended mitigation calculation worksheets. Some of the impact multipliers used for determining credit requirements are subjective. The Corps has the ultimate discretion in the determination of mitigation requirement and quantities. EPD-regulated buffer mitigation was calculated using a 0.115 x impact buffer area (SF) = Required Buffer Credits equation for those applicable impacts to buffers where mitigation is expected to be required.

Please let us know if you have any questions or if we can provide additional information.

Sincerely,

Kendall W. Cochran
Senior Scientist

BENEFIT COST ANALYSIS

GDOT Benefit-Cost Calculator

enter information in green cells

Project Information

ID	PI#0006327/0010554/0010555
Description	West Winder Bypass

Cost Estimate

Date of estimate	2/6/2013
PE cost	$2,500,000.00
ROW cost	$32,360,000.00
UTILITY cost	$8,316,100.00
CST cost	$46,713,819.99
Total	$89,889,919.99

Traffic in 2040

Source of traffic data	Design traffic provided by PE consultant (Southeastern Engineering, Inc.)

Without project (nobuild)	
Annual VMT	27,510,000
Annual VHT	908,789.01
Average speed (mph)	30.271
With project (build)	
Annual VMT	18,324,050
Annual VHT	413,635.44
Average speed (mph)	44.300

Parameters	Default	Override	Used
Analysis year	2035	2040	2040
Discount rate	7.0%		7%
Design life (years)	25	20	20
Base year of cost estimate	N/A	2012	2012
Current CST program year	N/A	2020	2020
Fuel price ($/gallon)	3.22	3.46	3.46
Fuel economy (mpg)	18.03		18.03
Value of auto travel ($/hr)	13.75		13.75
Value of truck travel ($/hr)	72.65		72.65
Percent trucks	12%	9%	9%
Include GSP benefits	No	No	No

Costs		
Total cost	$	89,889,920
Annualized cost	$	**6,021,466**
Auto Delay Costs		
Nobuild	$	11,433,702
Build	$	5,204,051
Auto delay savings	$	**6,229,651**
Truck Delay Costs		
Nobuild	$	5,611,999
Build	$	2,554,302
Truck delay savings	$	**3,057,697**
Fuel Costs		
Nobuild	$	5,283,812
Build	$	3,519,478
Fuel cost savings	$	**1,764,334**
Change in GSP		NA
Auto delay cost adjustment		NA
Truck delay cost adjustment		NA
Fuel cost adjustment		NA
Total benefit adjustment		**NA**
Benefits in 2040	$	**11,051,682**
Benefit-Cost Ratio		**1.84**

Notes

Severe difference between build and no-build average speeds are accounted by the fact that there is a large difference in vehicle-hours delays, from which the average speed is calculated

VALUE ENGINEERING STUDY

IMPLEMENTATION LETTER

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE: CSSTP-0006-00(327) Barrow
P.I. No.: 0006327
West Winder Bypass - 3 phases

OFFICE: Engineering Services

DATE: July 16, 2010

FROM: Ronald E. Wishon, State Project Review Engineer

TO: Bobby K. Hilliard, PE, State Program Delivery Engineer
Attn.: Douglas Fadool

SUBJECT: IMPLEMENTATION OF VALUE ENGINEERING STUDY ALTERNATIVES

The VE Study for the above project was held April 19-22, 2010. Responses were received on July 15, 2010. Recommendations for implementation of Value Engineering Study Alternatives are indicated in the table below. The Project Manager shall incorporate the VE alternatives recommended for implementation to the extent reasonable in the design of the project.

ALT #	Description	Potential Savings/LCC	Implement	Comments
1	Modify realignment north of Fred Kilcrease Road to line up with a slight realignment of Bill Rutledge Road to the north	$298,000	No	The originally proposed design includes the desirable angle of intersection (90°). By changing the intersection to 70° as recommended by the VE Team, individual stream impacts will increase.
2	Realign the bridge over Bankhead Highway, CSX RR and SR 8 closer to a 90° skew	$438,000	Yes	This will be done.
6	Remove the cul-de-sac on Patrick Mill Road and create a right-in right-out intersection with the West Winder Bypass	Design Suggestion	No	This recommendation would add an undesirable point of access to the West Winder Bypass and increase the construction costs.
7	Move the cul-de-sac on Patrick Mill Road 500 ft south to provide access to the historic property	Design Suggestion	No	The cost savings of eliminating the demolition of 500 ft of pavement is negligible. If left undisturbed, this section of pavement would serve no practical use and would be an unnecessary maintenance issue. The historic property already has access to the retained portion of the pavement.

9	Modify the realignment of Tom Miller Road and Fair Long Way	$646,000	No	This recommendation reduces the distance between signalized intersections from 1,150 feet to 800 feet. Acquiring the access rights from the ramps to the new median opening for Tom Miller Road/Fair Long Way as proposed by the VE Team would reduce the potential VE savings.
12	Reduce the length of the ramps to and from SR 316 and the West Winder Bypass	$2,188,000	Yes	This will be done.
13	Use 11 ft wide inside lanes in lieu of 12 ft wide lanes	$509,000	Yes	This will be done.
14	Move the Burson Maddox Road intersection 300 ft south of the original design intersection with West Winder Bypass	$344,000	Yes	This will be done.
15	Revise the alignment of Matthews School Road to connect to SR 8 close to the existing intersection	$14,000	Yes, partially	To avoid additional ROW and construction costs, the "right in" portion of the VE recommendation will be eliminated, and the right turn movements will utilize the newly proposed intersection.
16	Reduce the concrete paved shoulder widths on the ramps to and from SR 316 and the new West Winder bypass	$310,000	Yes	This will be done.
17	Reduce the width of the median from 24 ft to 20 ft	$935,000	Yes	This will be done. A width of 24 ft will be provided at intersections to offset left turn lanes.
18	Use 4 ft wide outside paved shoulders in lieu of 6.5 ft wide outside paved shoulders	$418,000	Yes	This will be done.

19	Use vertical bridge abutments in lieu of slope paving	$1,219,000	No	The Office of Bridge Design indicates there would be a cost increase with the implementation of this alternative. There are also increased maintenance costs with MSE walls, and future expansion is limited. Due to the sequence of construction and coordination with subcontractors and equipment, bridge and wall costs are higher than the general bridge and wall costs for separate structures.
24	Use a partial cloverleaf interchange for the West Winder Bypass and SR 316 connection in lieu of a diamond interchange	$6,180,000	No	The proposed partial cloverleaf would have weaving operational issues between the two loop ramps.
25	Remove the middle pier on the bridge over Bankhead Highway, CSX RR and SR 8	$160,000	No	There is not sufficient information to determine which option is most efficient. Once the survey has been completed and the structure type and length are determined, the most economical span arrangements will be developed.
26	Use 10 ft wide shoulders on bridges in lieu of 12 ft wide shoulders	$323,000	Yes	This will be done.
28	Reduce the length of the bridge over Bankhead Highway, CSX RR and SR 8	$241,000	No	Recommendation No. 2 provides greater cost savings.
33	Use 4:1 slopes where 6:1 slopes are being used to save ROW acquisition	$1,718,000	Yes	This will be done.
34	Eliminate the traffic signal at the intersection of Bill Rutledge Road and Fred Kilcrease Road	$127,000	No	A traffic signal warrant analysis was performed and it shows the need for a signal based upon the build year traffic volumes.
35	Reduce turn lane storage lengths at the intersection of Carl Bethlehem Road and the West Winder Bypass	Proposed = $171,000 Actual = $130,000	Yes, partially	The reductions will apply to six of the eight storage bays. Based on analysis of traffic counts, all but the NB left turn lane on West Winder Bypass and the EB right turn lane on Carl Bethlehem Road will be shortened. This will result in a revised savings of $130,000.

The Office of Engineering Services concurs with the Project Manager's responses.

Approved: _____ **Date:** 7/16/10
Gerald M. Ross, PE, Chief Engineer

REW/LLM
Attachments
c: Ben Buchan
Bobby Hilliard/Michael Haithcock/Douglas Fadool
Paul Liles/Bill Duvall/Bill Ingalsbe
Larry Bowman
Randall Davis
Ken Werho
Lisa Myers
Matt Sanders

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE: CSSTP-0006-00(327) Barrow County
P.I. No.: 0006327
West Winder Bypass

OFFICE: Program Delivery

DATE: July 15, 2010

FROM: Bobby K. Hilliard, PE, State Program Delivery Engineer BH

TO: Ronald E. Wishon, State Project Review Engineer
Attn.: Lisa Myers

SUBJECT: RESPONSE TO VALUE ENGINEERING STUDY ALTERNATIVES

Attached are the responses for the referenced Value Engineering Study. This office concurs with the responses.

If you have any questions, please contact Douglas Fadool, AVS, Project Manager at 404-308-1353.

MH

BKH:MAH:DF:sha
c: Ben Buchan

MorelandAltobelliAssociates,Inc

2211 Beaver Ruin Road, Suite 190 • Norcross, Georgia 30071 • 770/263-5945 • Fax: 770/263-0165 • ma@mail.net

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Value Engineering Responses

CSSTP-0006-00(327)
PI No. 0006327
Barrow County

1) **Alt. No. 1: Modify realignment of Fred Kilcrease Road to line up with a slight realignment of Bill Rutledge Road to the North.**
VE Team Savings = $298,000

No, will not implement. The proposed design includes the desirable angle for intersections, which is 90 degrees. By changing the intersection angle to 70 degrees, individual stream impacts will likely be greater and the skew is not desirable. The proposed truck percentage on the West Winder Bypass is 22%. The proposed VE savings will likely be reduced.

2) **Alt. No. 2: Realign West Winder Bypass bridge over Bankhead Highway, the CSX Railroad and SR 8 closer to a 90 degree skew.**
VE Team Savings = $438,000

Yes, will implement.

3) **Alt. No. 6: Remove cul-de-sac on exiting Patrick Mill Road and create a right-in/right-out connection to the West Winder Bypass.**
VE Team Savings = N/A

No, will not implement. This recommendation will slightly add to the overall construction cost and will add an undesirable point of access to the West Winder Bypass.

4) **Alt. No. 7: Move cul-de-sac on Patrick Mill Road South to provide access to the historic property.**
VE Team Savings = N/A

No, will not implement. The cost savings of preventing the demolition of 500 feet of pavement is negligible and could be offset in the event that the contractor would be able

to use this space as a paved staging area. The historic property already has access to the retained portion of the pavement. If left undisturbed, this section of pavement would serve no practical use and would simply be an additional unnecessary maintenance issue.

5) **Alt. No. 9 Modify the alignment of Tom Miller Road and Fair Long Way.**
VE Team Savings = $646,000

No, will not implement. The proposed VE recommendation reduces the distance between signalized intersections from 1,150 feet to 800 feet. As stated in the VE report, "it is recommended that limit of access rights be acquired from the ramps to the new median opening for Tom Miller Road/Fair Long Way because the desirable distance for the first median opening from the ramps is 1,000 feet". Reducing the intersection distance to less than 1000 feet between signalized intersections is highly undesirable and the recommendation to buy the limited access right for corner properties next to SR 316 will be costly and potentially litigious. The proposed VE savings will likely be reduced after taking into account the purchase of access rights.

6) **Alt. No. 12: Shorten the ramps to and from SR 316 to the new West Winder Bypass.**
VE Team Savings = $2,188,000

Yes, will implement.

7) **Alt. No. 13: Use an 11-ft. wide inside lane in lieu of a 12-ft.-wide lane.**
VE Team Savings = $509,000

Yes, will implement.

8) **Alt. No. 14: Move Burson Maddox Road 300 ft. South of as-designed intersection with the Bypass.**
VE Team Savings = $344,000

Yes, will implement.

9) **Alt. No. 15: Connect Mathews School Road directly to SR 8 close to the existing connection to SR 8.**
VE Team Savings = $14,000

Recycled Paper

Yes, partial implement. To avoid additional right of way and construction cost, the design team proposes to eliminate the "right in" portion of the recommendation and bring the right turn movement to the new proposed intersection resulting in a more conventional, less costly design.

10) **Alt. No. 16: Narrow the paved concrete shoulders on the ramps to and from SR 316 and the new West Winder Bypass.**
VE Team Savings = $310,000

Yes, will implement.

11) **Alt. No. 17: Narrow the median from 24-ft.-wide to 20-ft.-wide.**
VE Team Savings = $935,000

Yes, will implement. Will provide 24 feet at intersections to offset left turns.

12) **Alt. No. 18: Use 4-ft.-wide paved outside shoulders in lieu of 6.5-ft.-wide paved outside shoulders.**
VE Team Savings = $418,000

Yes, will implement.

13) **Alt. No. 19: Use vertical bridge abutments in lieu of ends with sloped paving.**
VE Team Savings = $1,219,000

No, will not implement. See attached memo dated 7-12-10 from Mr. Paul V. Liles.

14) **Alt. No. 24: Use a partial cloverleaf in lieu of a diamond interchange.**
VE Team Savings= $ 6,180,000

No, Will not implement. See Alt. No. 12. In addition, the design team prefers to maintain the diamond interchange since other nearby grade separations along SR 316 that under design are being proposed as diamond interchanges. The proposed partial cloverleaf would have weaving operational issues between the two loop ramps over the bridge in the am and pm peak hours, at a minimum. Also, there are ROW savings that

can be realized by moving the diamond ramps in tighter while maintaining the proposed signal spacing.

15) **Alt. No. 25: Delete the center pier for the West Winder Bypass bridge over Bankhead Highway, CSX Railroad and SR 8.**
VE Team Savings = $160,000

No, will not implement. See attached memo dated 7-12-10 from Mr. Paul V. Liles.

16) **Alt. No. 26: Use 10-ft.-wide shoulders on the bridge to match the roadway shoulders in lieu of 12-ft.-wide shoulders.**
VE Team Savings = $ 322,000

Yes, will implement the 10 ft. shoulder, truck percentage is 22%..

17) **Alt. No. 28: Shorten the West Winder Bridge over Bankhead Highway, CSX Railroad and SR 8 by 22 ft. 6 in.**
VE Team Savings = $ 241,000

N/A, will not implement. See Alt. No. 2. The implementation of Alt. No. 2 produces a greater cost savings.

18) **Alt. No. 33: Use 4:1 slopes in lieu of 6:1 slopes at the end of the shoulders and reduce the width of the right-of-way.**
VE Team Savings = $ 1,718,000

Yes, will implement.

19) **Alt. No. 34: Eliminate the traffic signal at the intersection of Bill Rutledge Road and Fred Kilcrease Road and the West Winder Bypass.**
VE Team Savings = $127,000

No, will not implement. A traffic signal warrant analysis was performed (see attached) that shows the need for a signal based upon the "build year" traffic volumes. The analysis includes 100% volume threshold and right turn reduction procedures (NCHRP 457).

20) **Alt. No. 35: Reduce turn lane storage lengths at the intersection of Carl Bethlehem Road and the West Winder Bypass.**
VE Team Savings = $171,000

Yes, will partially implement this proposal. The reductions will apply to six of the eight turn lane storage bays. The reductions are based on analysis of the traffic counts and apply to all but the northbound left turn lane on West Winder Bypass and the eastbound right turn lane on Carl Bethlehem Road. As a result of partial implementation, the realized VE Team Savings would be approximately $130,000.

Traffic Signal Warrant Analysis

West Winder Bypass at Bill Rutledge Rd
and Fred Kilcrease Rd

Signal Warrants - Summary

Major Street Approaches

Northbound: **West Winder Bypass**
Number of Lanes: **2**
Approach Speed: **45**
Total Approach Volume: **10,254**

Southbound: **West Winder Bypass**
Number of Lanes: **2**
Approach Speed: **45**
Total Approach Volume: **9,723**

Minor Street Approaches

Eastbound: **Fred Kilcrease Rd**
Number of Lanes: **2**
Total Approach Volume: **2,184**

Westbound: **Bill Rutledge Rd**
Number of Lanes: **2**
Total Approach Volume: **1,953**

Warrant Summary (Urban values apply.)

Warrant 1 - Eight Hour Vehicular Volumes ..... Satisfied

Warrant 1A - Minimum Vehicular Volume .....Not Satisfied
Required volumes reached for 2 hours, 8 are needed

Warrant 1B - Interruption of Continuous Traffic .....Satisfied
Required volumes reached for 13 hours, 8 are needed

Warrant 1 A&B - Combination of Warrants .....Not Satisfied
Required volumes reached for 3 hours, 8 are needed

Warrant 2 - Four Hour Volumes ..... Satisfied
Number of hours (7) volumes exceed minimum >= minimum required (4)

Warrant 3 - Peak Hour ..... Not Evaluated

Warrant 3A - Peak Hour Delay .....Not Evaluated

Warrant 3B - Peak Hour Volumes .....Not Evaluated

Warrant 4 - Pedestrian Volumes ..... Not Evaluated

Warrant 5 - School Crossing ..... Not Evaluated

Warrant 6 - Coordinated Signal System ..... Not Evaluated

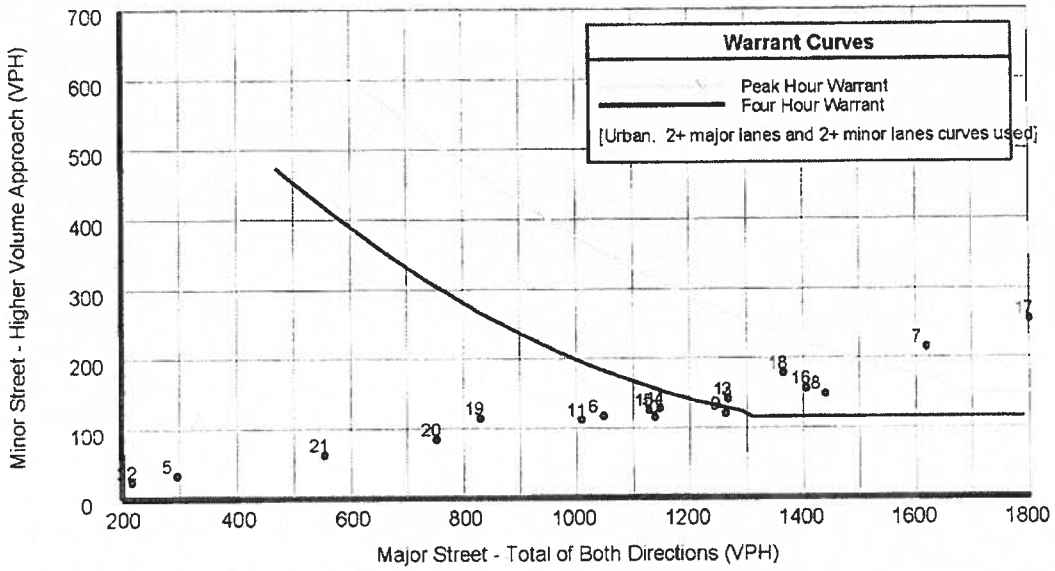
Warrant 7 - Crash Experience ..... Not Evaluated

Warrant 8 - Roadway Network ..... Not Evaluated

Traffic Signal Warrant Analysis

West Winder Bypass at Bill Rutledge Rd
and Fred Kilcrease Rd

Signal Warrants - Summary



Analysis of 8-Hour Volume Warrants:

Hour	Major	Higher Minor		War-1A			War-1B			War-1A&B		
Begin	Total	Vol	Dir	Major Crit	Minor Crit	Meets?	Major Crit	Minor Crit	Meets?	Major Crit	Minor Crit	Meets?
00:00	58	6	EB	600-No	200-No	---	900-No	100-No	---	720-No	160-No	---
01:00	30	3	EB	600-No	200-No	---	900-No	100-No	---	720-No	160-No	---
02:00	30	3	EB	600-No	200-No	---	900-No	100-No	---	720-No	160-No	---
03:00	30	3	EB	600-No	200-No	---	900-No	100-No	---	720-No	160-No	---
04:00	79	9	EB	600-No	200-No	---	900-No	100-No	---	720-No	160-No	---
05:00	297	33	EB	600-No	200-No	---	900-No	100-No	---	720-No	160-No	---
06:00	1,049	117	EB	600-Yes	200-No	Major	900-Yes	100-Yes	Both	720-Yes	160-No	Major
07:00	1,620	215	WB	600-Yes	200-Yes	Both	900-Yes	100-Yes	Both	720-Yes	160-Yes	Both
08:00	1,440	148	WB	600-Yes	200-No	Major	900-Yes	100-Yes	Both	720-Yes	160-No	Major
09:00	1,263	120	EB	600-Yes	200-No	Major	900-Yes	100-Yes	Both	720-Yes	160-No	Major
10:00	1,139	115	EB	600-Yes	200-No	Major	900-Yes	100-Yes	Both	720-Yes	160-No	Major
11:00	1,010	112	EB	600-Yes	200-No	Major	900-Yes	100-Yes	Both	720-Yes	160-No	Major
12:00	1,267	141	EB	600-Yes	200-No	Major	900-Yes	100-Yes	Both	720-Yes	160-No	Major
13:00	1,267	141	EB	600-Yes	200-No	Major	900-Yes	100-Yes	Both	720-Yes	160-No	Major
14:00	1,148	128	EB	600-Yes	200-No	Major	900-Yes	100-Yes	Both	720-Yes	160-No	Major
15:00	1,128	125	EB	600-Yes	200-No	Major	900-Yes	100-Yes	Both	720-Yes	160-No	Major
16:00	1,406	156	EB	600-Yes	200-No	Major	900-Yes	100-Yes	Both	720-Yes	160-No	Major
17:00	1,895	255	EB	600-Yes	200-Yes	Both	900-Yes	100-Yes	Both	720-Yes	160-Yes	Both
18:00	1,366	178	EB	600-Yes	200-No	Major	900-Yes	100-Yes	Both	720-Yes	160-Yes	Both
19:00	831	114	WB	600-Yes	200-No	Major	900-No	100-Yes	Minor	720-Yes	160-No	Major
20:00	753	84	EB	600-Yes	200-No	Major	900-No	100-No	---	720-Yes	160-No	Major
21:00	554	62	EB	600-No	200-No	---	900-No	100-No	---	720-No	160-No	---
22:00	218	24	EB	600-No	200-No	---	900-No	100-No	---	720-No	160-No	---
23:00	99	11	EB	600-No	200-No	---	900-No	100-No	---	720-No	160-No	---

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE CSSTP-0006-00(327) BARROW COUNTY P.I No. 0006327 **DATE** July 12, 2010

FROM Paul V. Liles, Jr., P.E., State Bridge Engineer

TO Bobby Hilliard, P.E., State Program Delivery Engineer
Attn: Douglas Fadool

SUBJECT **BRIDGE DESIGN VALUE ENGINEERING RESPONSE**

The Value Engineering Study for the above referenced project dated April 29, 2010 contained five VE Alternatives requiring responses from the Bridge Office, VE Alternatives 2, 19, 25, 26 and 28. Below are our recommendations for these alternatives.

VE Alternative 2 – "Realign West Winder Bypass bridge over Bankhead Highway, the CSX Railroad and SR 8 closer to a 90 degree skew."

Recommendation: **Possible Implementation**. Structurally it is more efficient to construct the proposed bridge over Bankhead Highway, CSX Transportation and SR 8 with minimal skew. However, at this site other factors must be considered by the engineer of record to determine the most economical solution including alignment, profile, horizontal clearances, vertical clearances, ROW, drainage, etc.

VE Alternative 19 – "Use vertical bridge abutments in lieu of ends with sloped paving."

Recommendation: **Do Not Implement**. Based on our estimate there would be a cost increase to implement this alternative. In addition to cost, long term there are more maintenance issues with MSE walls and the approach roadway than there are with typical spill through abutments. MSE wall abutments limit the possibility of future expansion for both the road being carried as well as the facility beneath the structure. Due to sequence of construction, coordination with subcontractors and equipment, bridge costs and wall costs are higher than the general bridge and wall costs for separate structures.

VE Alternative 25 – "Delete the center pier for the West Winder Bypass bridge over Bankhead Highway, CSX Railroad and SR 8."

Recommendation: **Do Not Implement**. The project is currently in the concept phase; this alternative should have been a Design Suggestion. There is not sufficient information at this point in the design to determine which option is most efficient. Once the survey is completed and the structure type and length are determined then economical span arrangements will be developed.

VE Alternative 26 – "Use 10-ft.-wide shoulders on the bridge to match the roadway shoulders in lieu of 12-ft.-wide shoulders."

Recommendation: **Implement with Modifications**. In accordance with Policy 4265-9 (Geometric Design Guide for Bridges on Local Roads and Streets, Not Having State Route Numbers) the outside bridge shoulder width should be a minimum of 8 feet. The designer needs to determine if a wider shoulder is warranted for this project based on volume of truck traffic.

VE Alternative 28 – "Shorten the West Winder Bridge over Bankhead Highway, CSX Railroad and SR 8 by 22ft. 6 in."

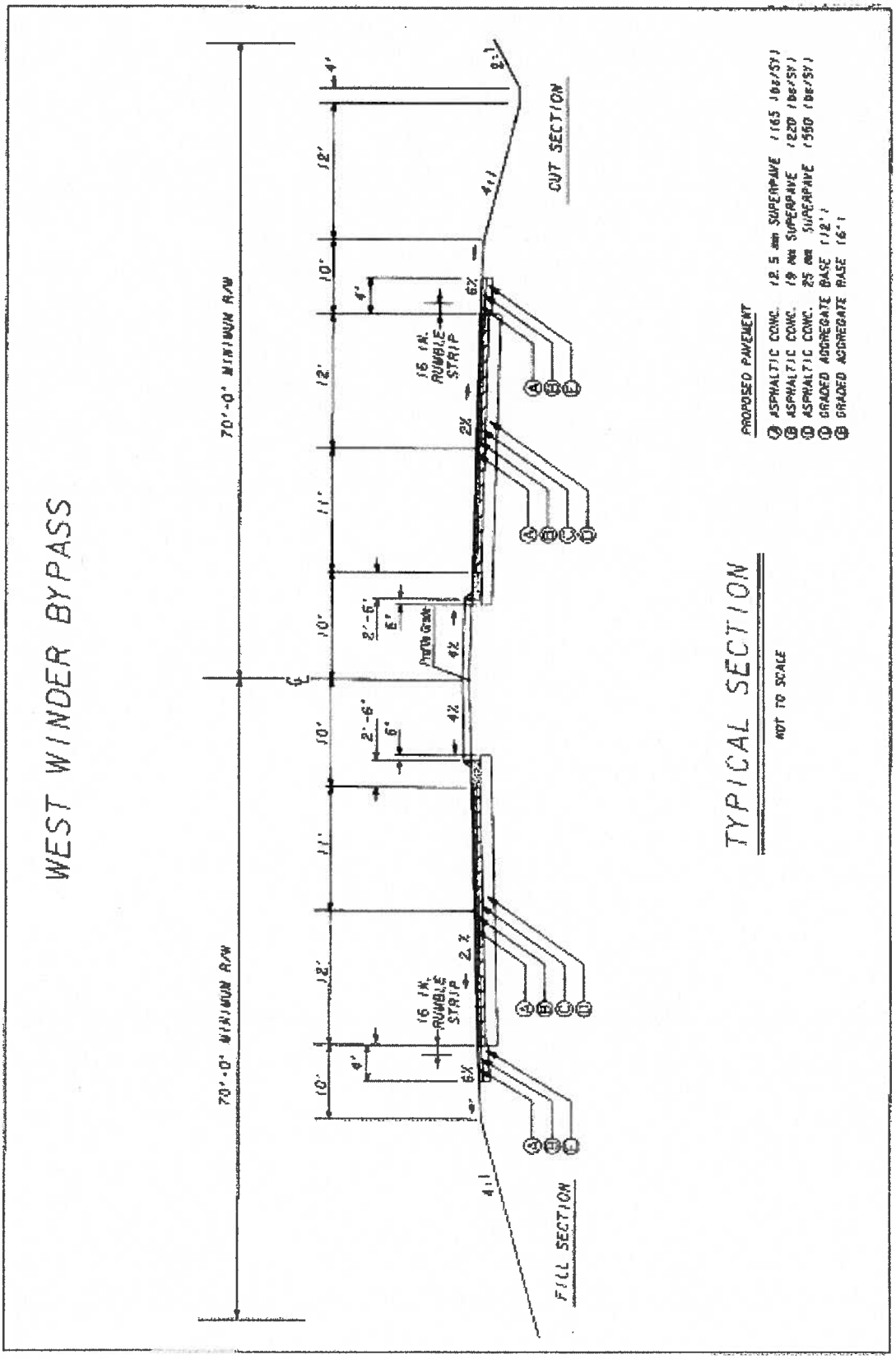
Recommendation: **Do Not Implement**. The project is currently in the concept phase; this alternative should have been a Design Suggestion. Constructing an obstruction within the clear-zone is not desirable. There is not sufficient information at this point in the design to determine which option is most efficient. Once the survey is completed and the structure type and length are determined then economical span arrangements will be developed.

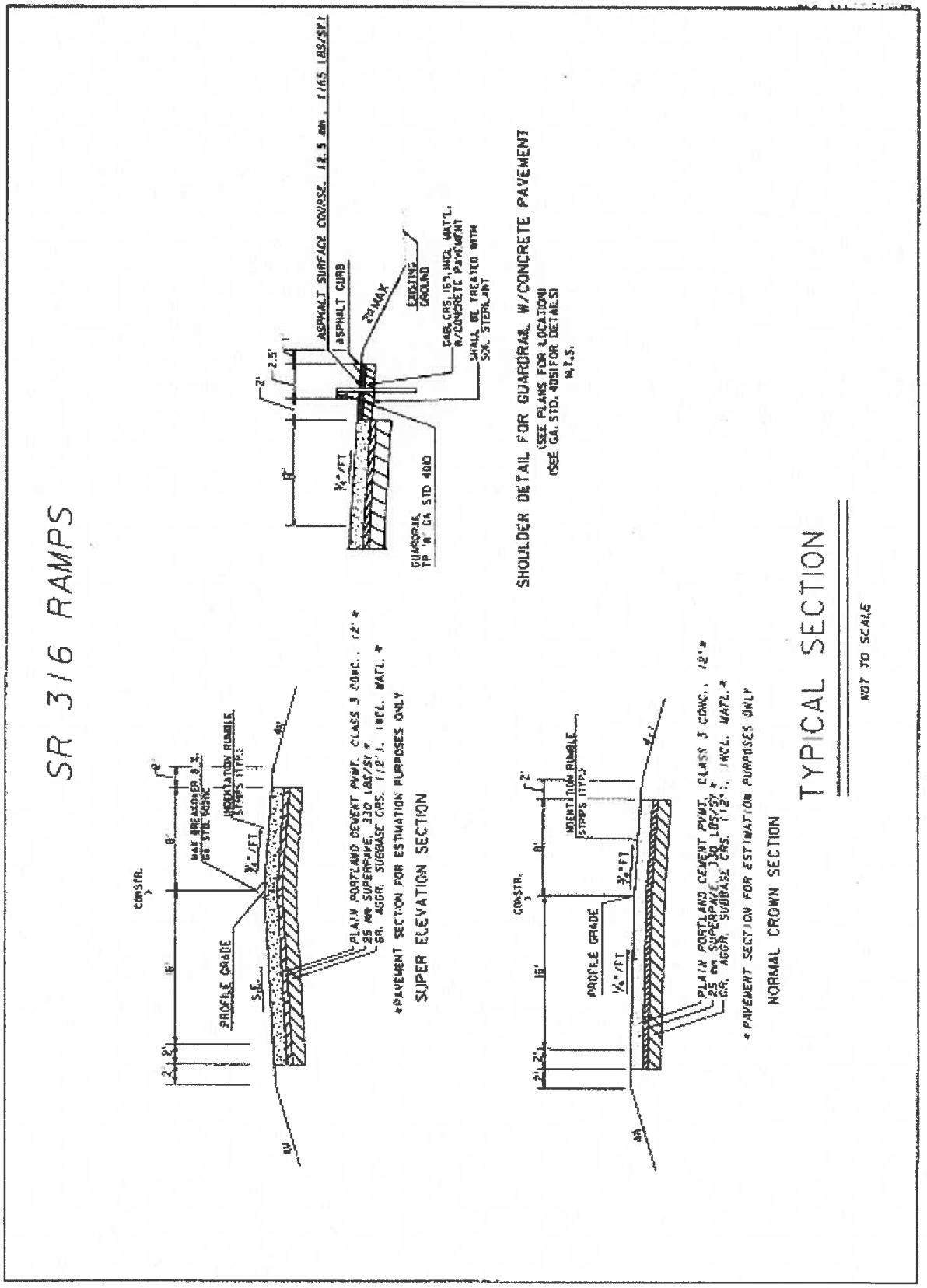
If you have any questions and/or comments, please contact Bill DuVall of the Bridge Design Office at (404) 631-1883 or at email address bduvall@dot.ga.gov.

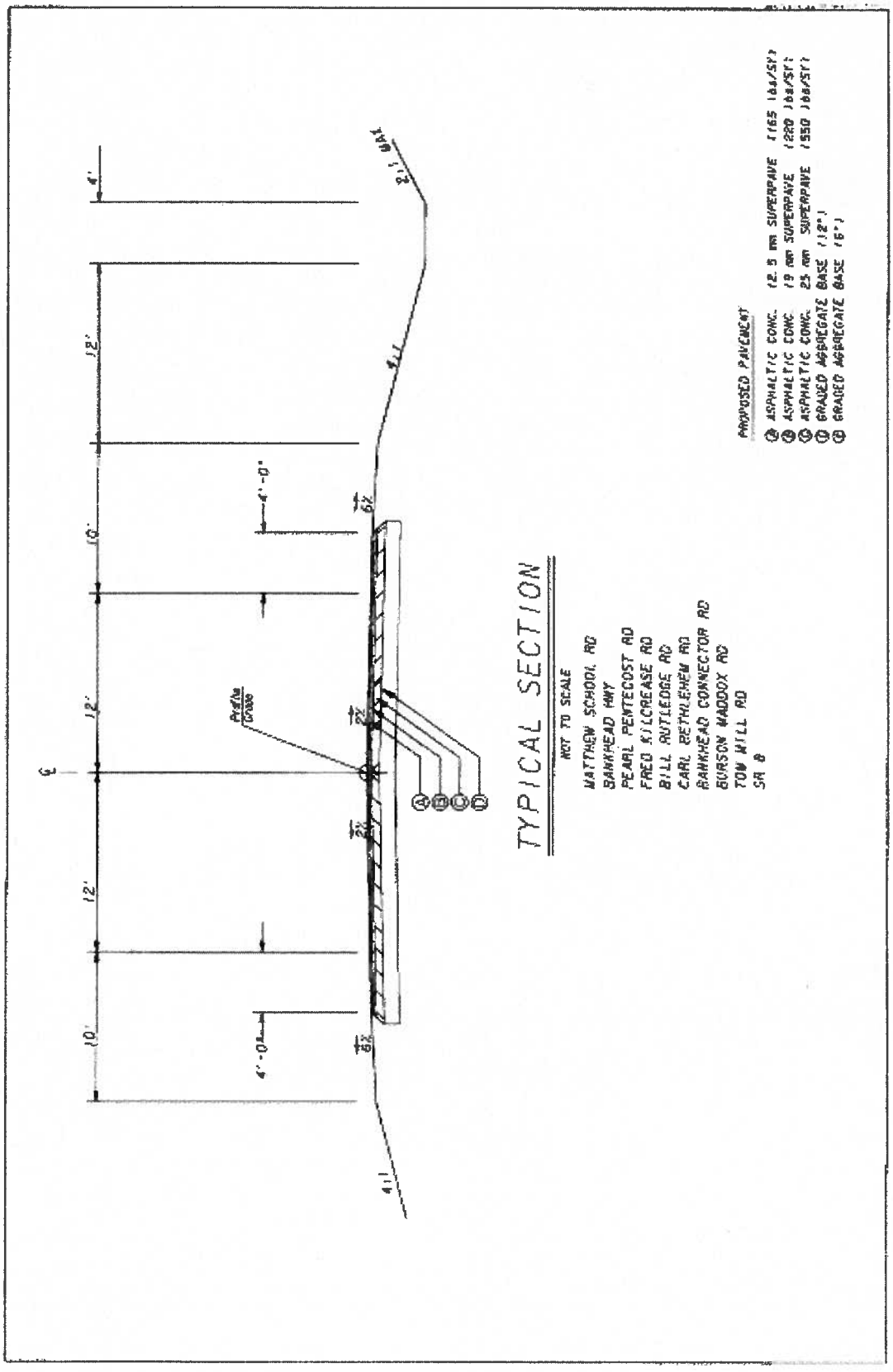
PVL/WMD

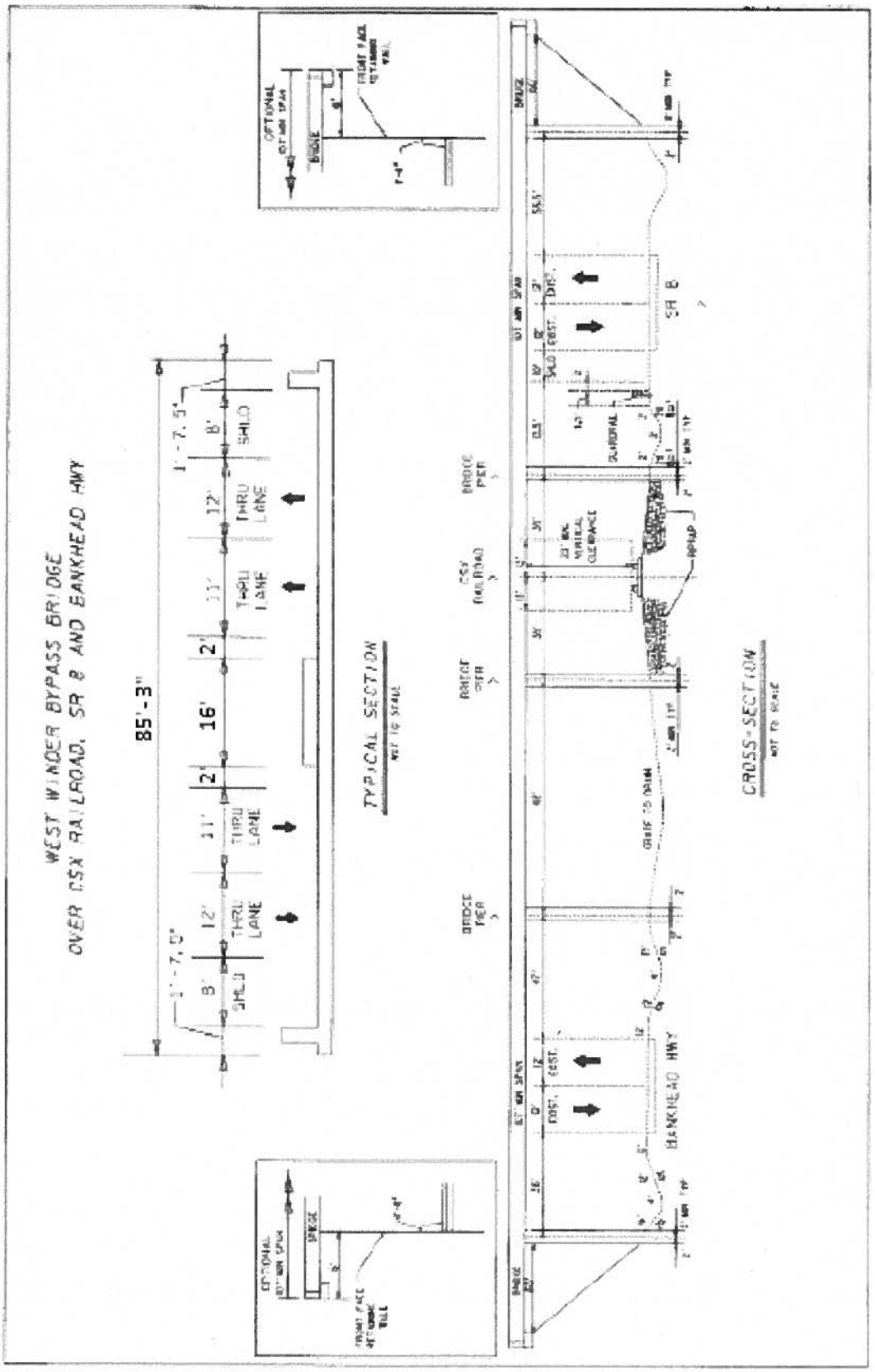
cc: Ron Wishon, Engineering Services
Bill DuVall, Bridge Office

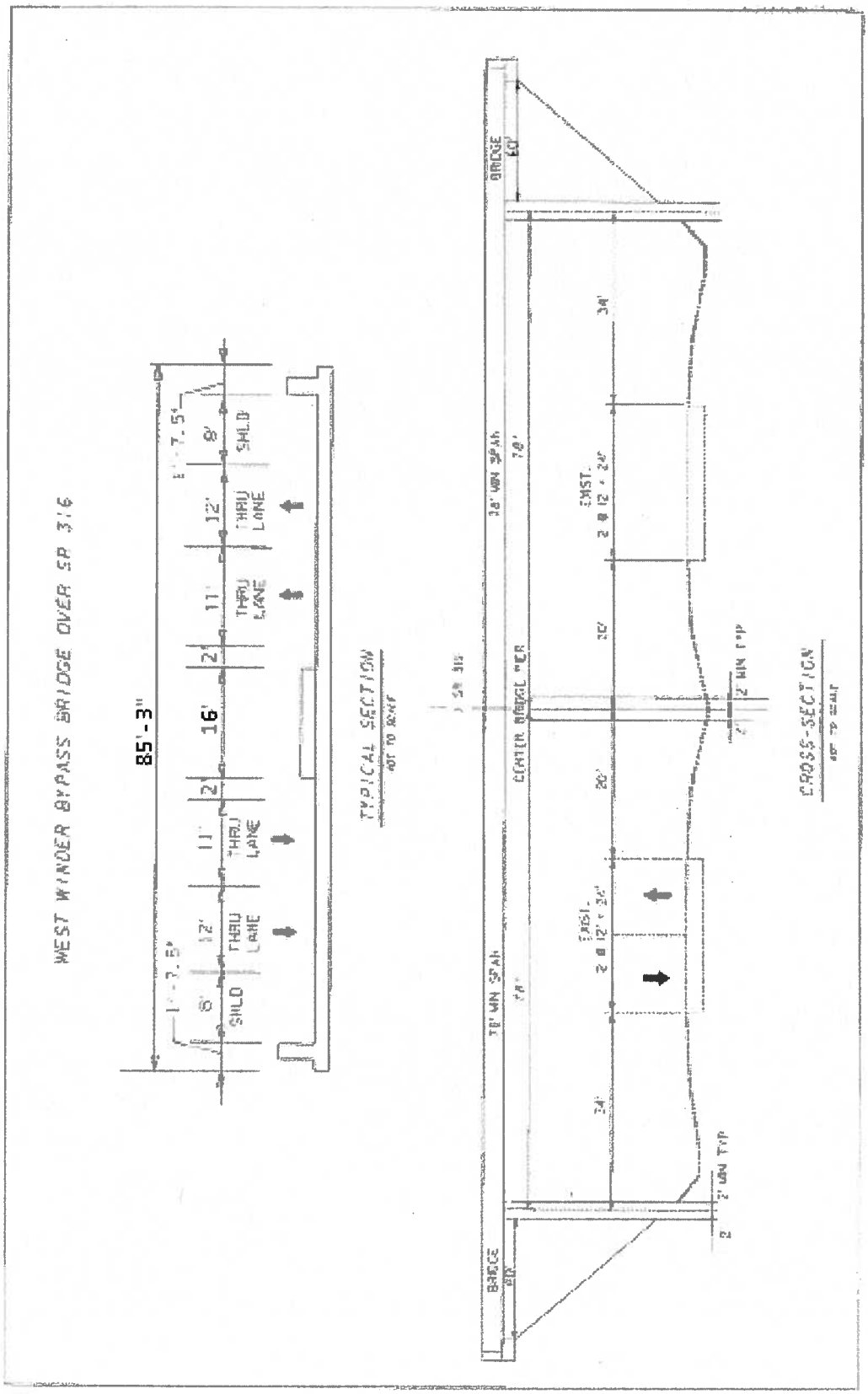
TYPICAL SECTIONS


WEST WINDER BYPASS
TYPICAL SECTION
NOT TO SCALE
CUT SECTION
FILL SECTION
70'-0" MINIMUM R/W
70'-0" MINIMUM R/W
16 IN. RUMBLE STRIP
16 IN. RUMBLE STRIP
PROPOSED PAVEMENT
A ASPHALTIC CONC. 12.5 mm SUPERPAVE (165 lbs/SY)
B ASPHALTIC CONC. 19 mm SUPERPAVE (220 lbs/SY)
C ASPHALTIC CONC. 25 mm SUPERPAVE (550 lbs/SY)
D GRADED AGGREGATE BASE (12")
E GRADED AGGREGATE BASE (16")


SR 316 RAMPS
TYPICAL SECTION
NOT TO SCALE
NORMAL CROWN SECTION
* PAVEMENT SECTION FOR ESTIMATION PURPOSES ONLY
SUPER ELEVATION SECTION
* PAVEMENT SECTION FOR ESTIMATION PURPOSES ONLY
SHOULDER DETAIL FOR GUARDRAIL W/CONCRETE PAVEMENT
(SEE PLANS FOR LOCATION)
(SEE GA. STD. 400 FOR DETAILS)
N.T.S.
ASPHALT SURFACE COURSE
ASPHALT CURB
EXISTING GROUND
GUARDRAIL TP W GA STD 400
PROFILE GRADE
CONSTR.

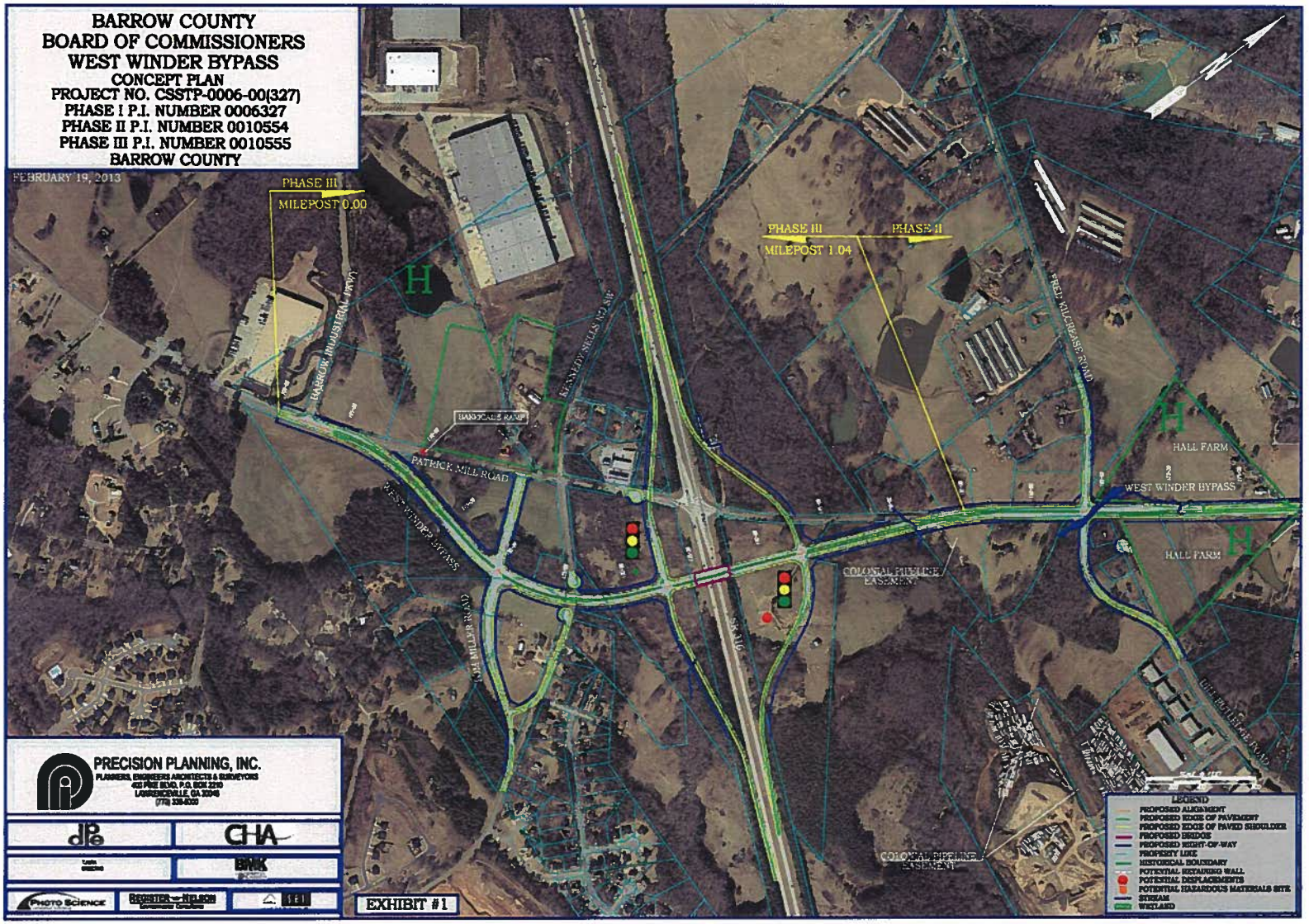

TYPICAL SECTION
NOT TO SCALE
MATTHEW SCHOOL RD
BANKHEAD HWY
PEARL PENTECOST RD
FRED KILCREASE RD
BILL RUTLEDGE RD
CARL BETHLEHEM RD
BANKHEAD CONNECTOR RD
BURSON WADDOX RD
TOW MILL RD
SR 8
PROPOSED PAVEMENT
A ASPHALTIC CONC. 12.5 mm SUPERPAVE (165 lbs/SY)
B ASPHALTIC CONC. 19 mm SUPERPAVE (220 lbs/SY)
C ASPHALTIC CONC. 25 mm SUPERPAVE (550 lbs/SY)
D GRADED AGGREGATE BASE (12")
E GRADED AGGREGATE BASE (6")
4'
12'
10'
12'
12'
10'
4'-0"
4'-0"
Profile Grade
2:1 MAX
4:1


WEST WINDER BYPASS BRIDGE
OVER CSX RAILROAD, SR 8 AND BANKHEAD HWY
85'-3"
TYPICAL SECTION
CROSS-SECTION
SR 8
BANKHEAD HWY


WEST WINDER BYPASS BRIDGE OVER SR 316
85'-3"
16'
12'
11'
8'
SHLD
THRU LANE
TYPICAL SECTION
CROSS-SECTION

REVISED

CONCEPTUAL PLAN

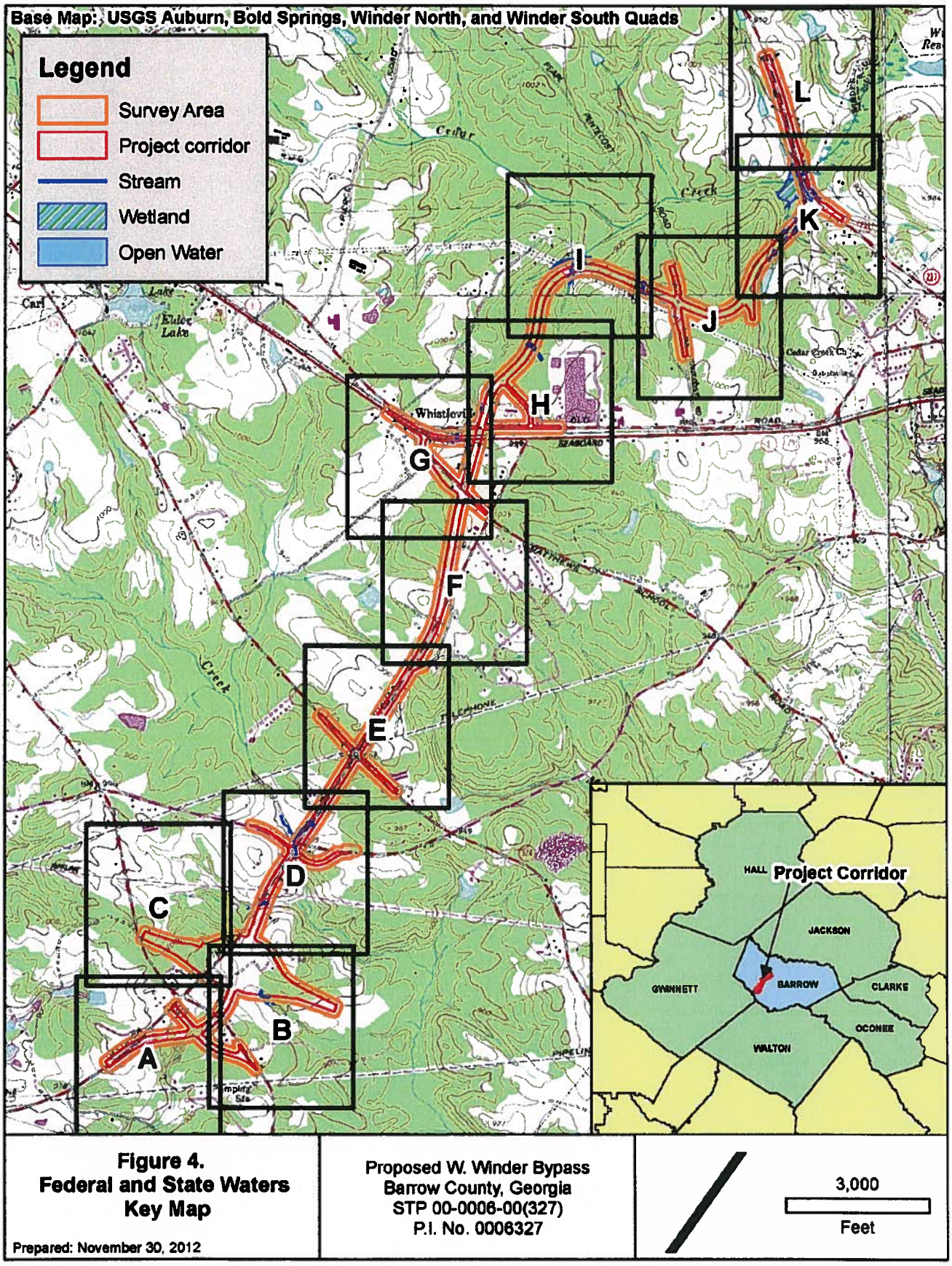

BARROW COUNTY
BOARD OF COMMISSIONERS
WEST WINDER BYPASS
CONCEPT PLAN
PROJECT NO. CSSTP-0006-00(327)
PHASE I P.I. NUMBER 0006327
PHASE II P.I. NUMBER 0010554
PHASE III P.I. NUMBER 0010555
BARROW COUNTY
FEBRUARY 19, 2013
PHASE III
MILEPOST 0.00
PHASE III
PHASE II
MILEPOST 1.04
PATRICK MILL ROAD
WEST WINDER BYPASS
HALL FARM
COLONIAL PIPELINE EASEMENT
PRECISION PLANNING, INC.
EXHIBIT #1
LEGEND

PHASE II
PHASE I
MILEPOST 2.71
HELTON AGRICULTURAL DISTRICT
HELTON AGRICULTURAL DISTRICT
HELTON AGRICULTURAL DISTRICT
DUNAGAN HOUSE
MATTHEWS SCHOOL ROAD
WEST WINDER BYPASS
PATRICK MILL ROAD
BUSBY MADDOX ROAD
CARL BETHLEHEM ROAD
LEGEND
PROPOSED ALIGNMENT
PROPOSED EDGE OF PAVEMENT
PROPOSED EDGE OF PAVED SHOULDER
PROPOSED BRIDGE
PROPOSED RIGHT-OF-WAY
PROPERTY LINE
HISTORICAL BOUNDARY
POTENTIAL RETAINING WALL
POTENTIAL DISPLACEMENTS
POTENTIAL HAZARDOUS MATERIALS SITE
STREAM
WETLAND
EXHIBIT #2

PHASE I
MILEPOST 5.63
CARLYLE-BLAKEY FARM
WEST WINDER BYPASS
HARROW PARK DRIVE
SR 211
LEGEND
PROPOSED ALIGNMENT
PROPOSED EDGE OF PAVEMENT
PROPOSED EDGE OF PAVED SHOULDER
PROPOSED BRIDGE
PROPOSED RIGHT-OF-WAY
PROPERTY LINE
HISTORICAL BOUNDARY
POTENTIAL RETAINING WALL
POTENTIAL DISPLACEMENTS
POTENTIAL HAZARDOUS MATERIALS SITE
STREAM
WETLAND
EXHIBIT #3

JURISDICTIONAL WATERS

MAP


Base Map: USGS Auburn, Bold Springs, Winder North, and Winder South Quads
Legend
Survey Area
Project corridor
Stream
Wetland
Open Water
A
B
C
D
E
F
G
H
I
J
K
L
Project Corridor
HALL
JACKSON
GWINNETT
BARROW
CLARKE
OCONEE
WALTON
Figure 4.
Federal and State Waters
Key Map
Prepared: November 30, 2012
Proposed W. Winder Bypass
Barrow County, Georgia
STP 00-0006-00(327)
P.I. No. 0006327
3,000
Feet

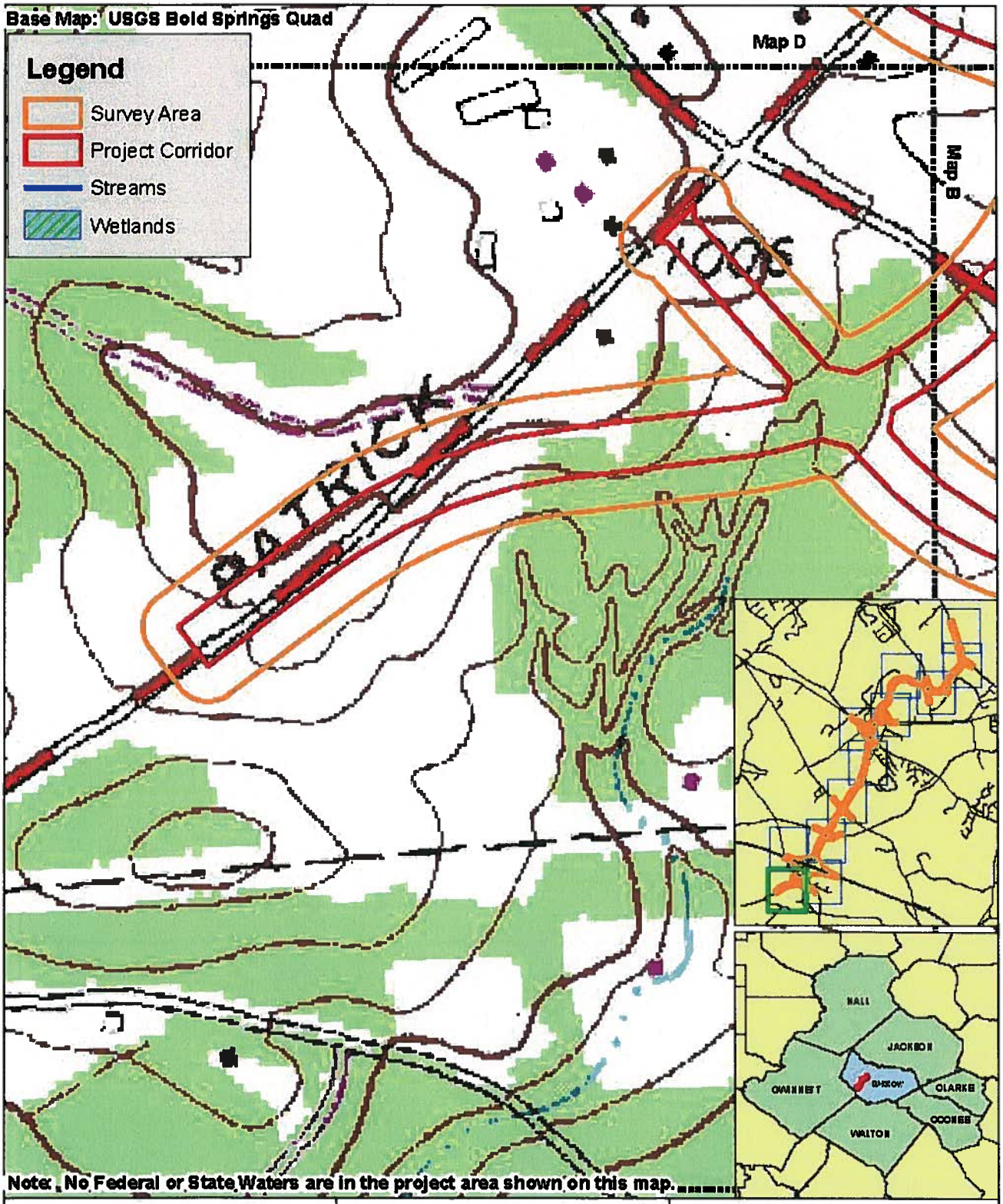


Figure 4.
Federal and State Waters
Map A

Prepared: November 30, 2012

Proposed W. Winder Bypass
Barrow County, Georgia
STP 00-0006-00(327)
P.I. No. 0006327

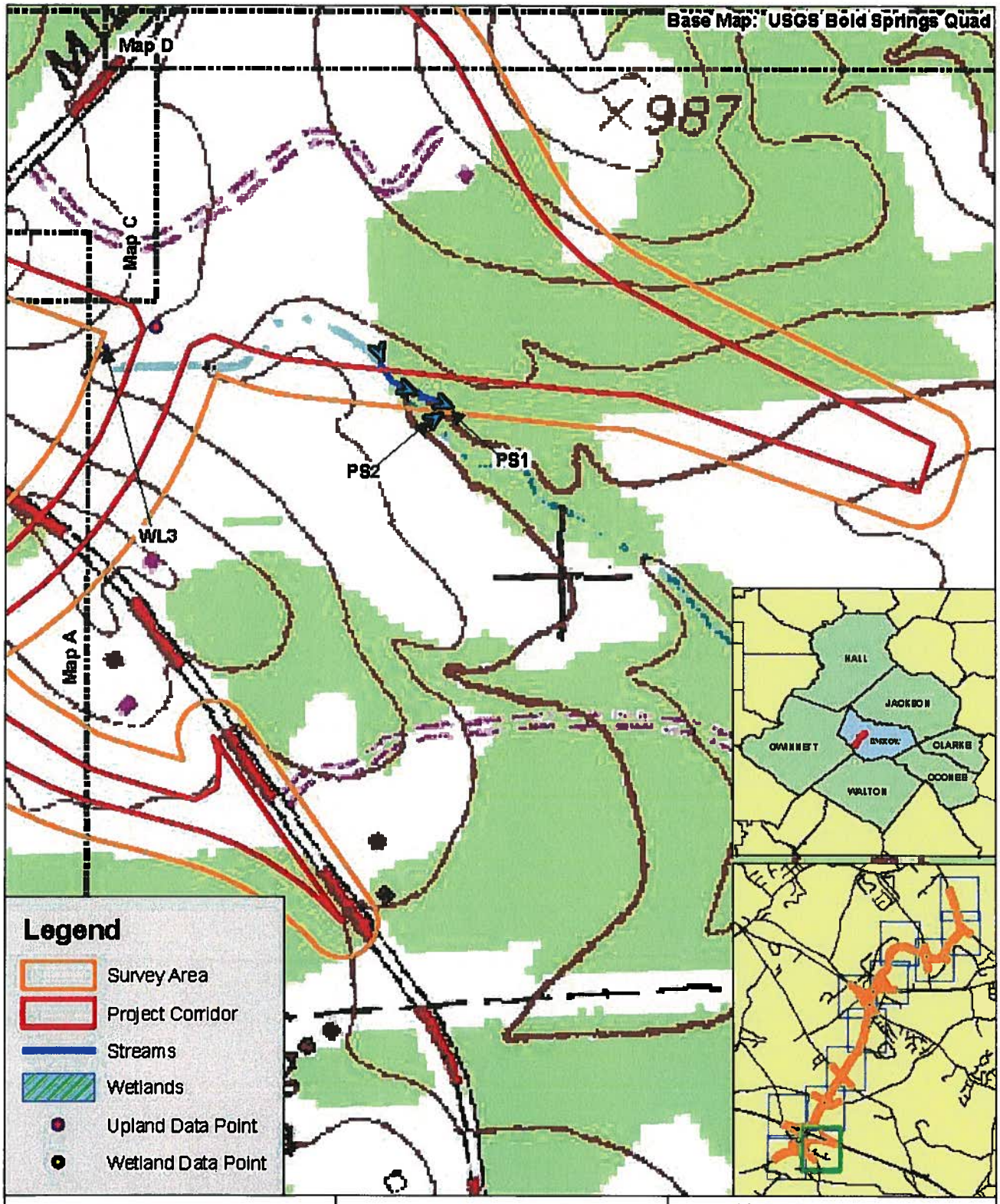


Figure 4.
Federal and State Waters
Map B

Prepared: November 30, 2012

Proposed W. Winder Bypass
Barrow County, Georgia
STP 00-0006-00(327)
P.I. No. 0006327

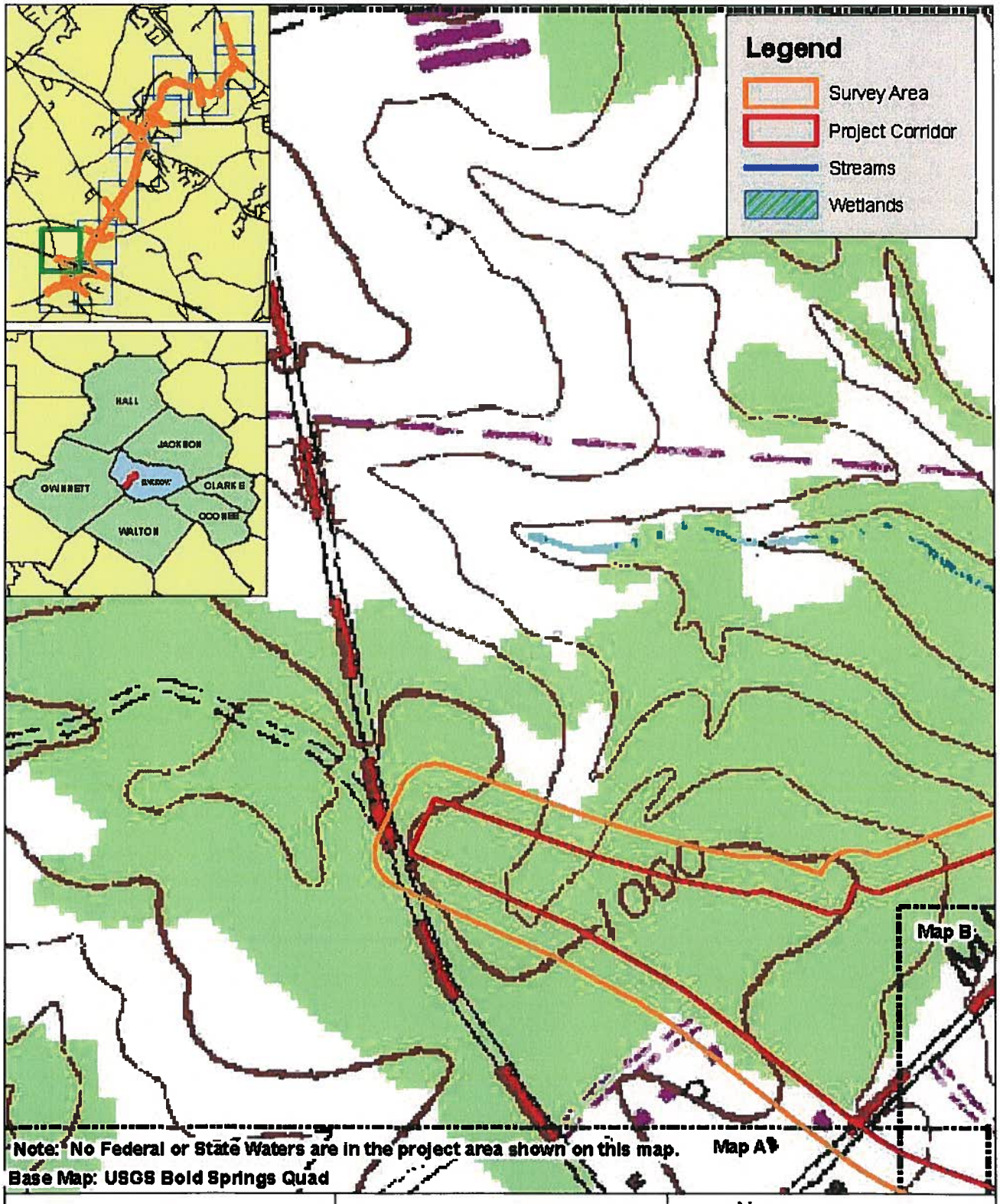


Figure 4.
Federal and State Waters
Map C

Prepared: November 30, 2012

Proposed W. Winder Bypass
Barrow County, Georgia
STP 00-0006-00(327)
P.I. No. 0006327

N
W E
S

375
Feet

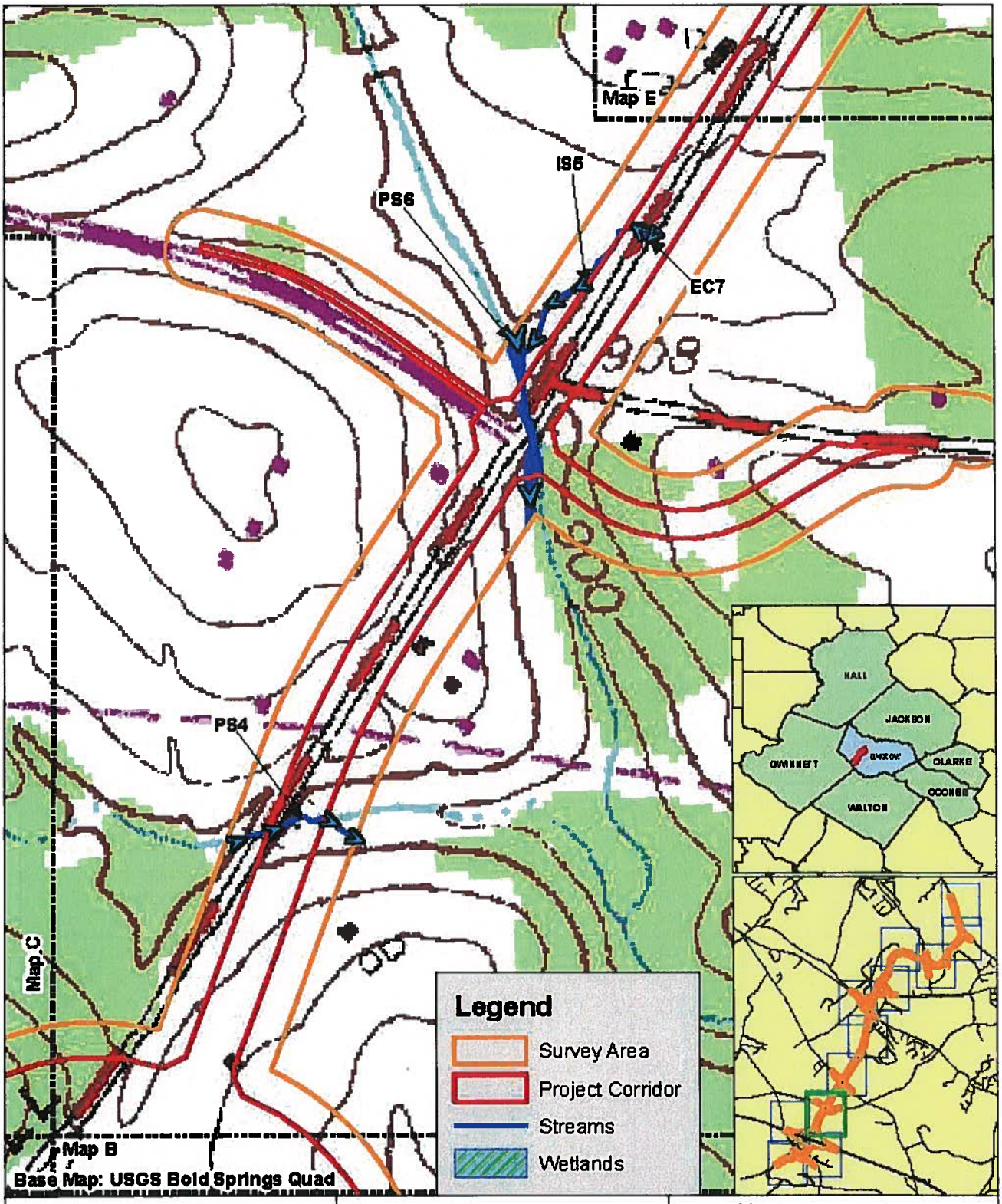


Figure 4.
Federal and State Waters
Map D

Prepared: November 30, 2012

Proposed W. Winder Bypass
Barrow County, Georgia
STP 00-0006-00(327)
P.I. No. 0006327

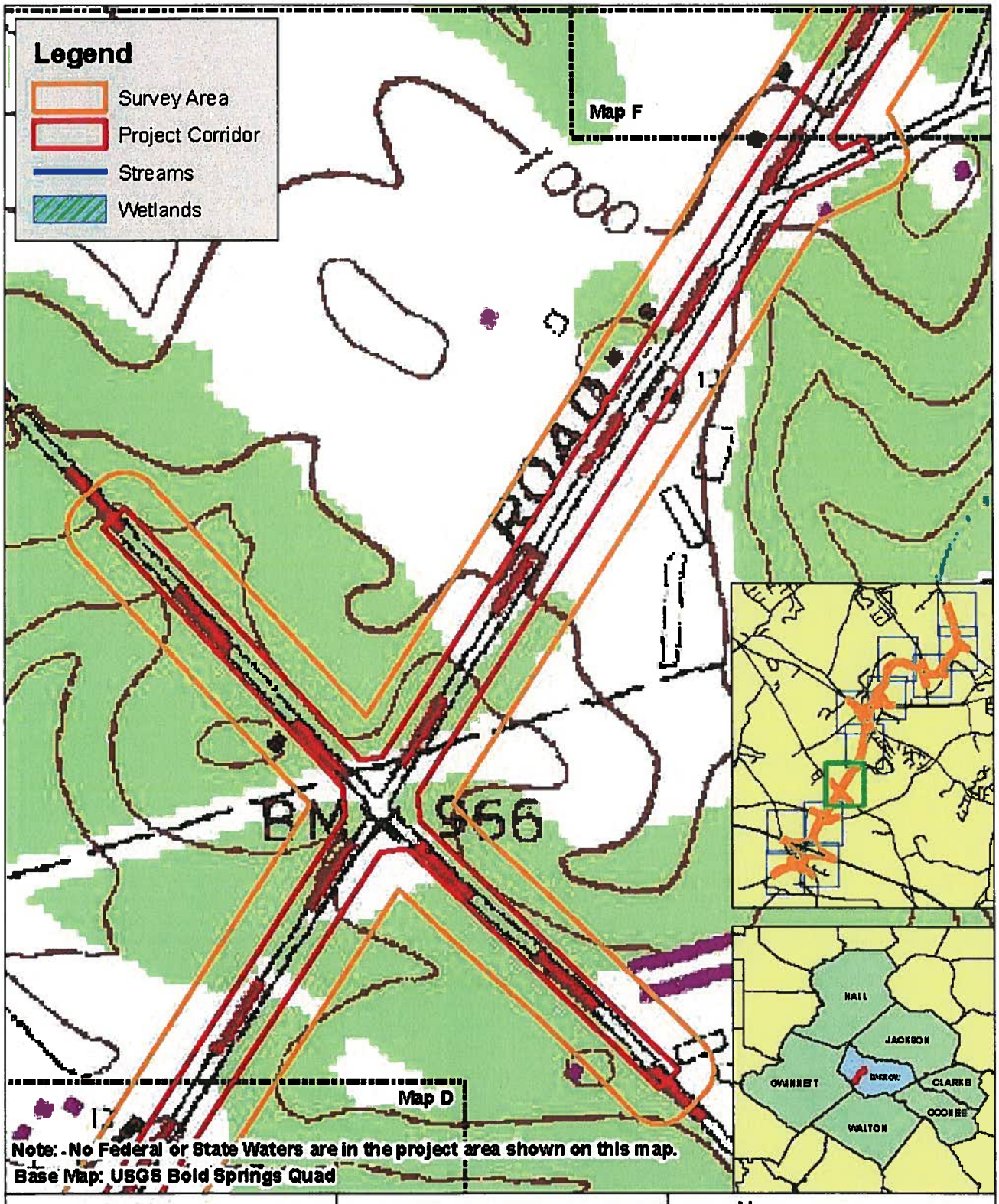


Figure 4.
Federal and State Waters
Map E

Prepared: November 30, 2012

Proposed W. Winder Bypass
Barrow County, Georgia
STP 00-0006-00(327)
P.I. No. 0006327

N
W E
S

375
Feet

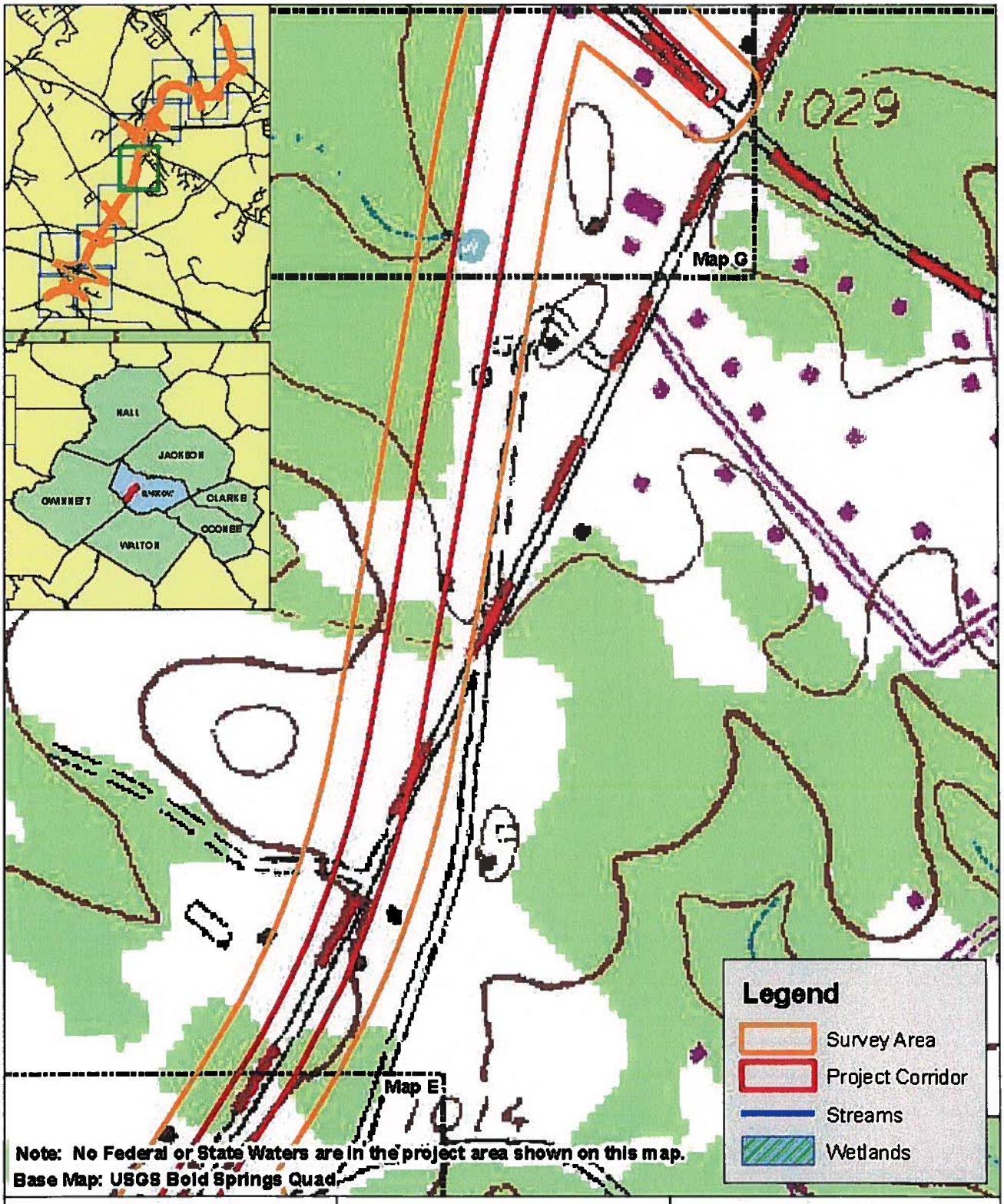


Figure 4.
Federal and State Waters
Map F

Prepared: November 30, 2012

Proposed W. Winder Bypass
Barrow County, Georgia
STP 00-0006-00(327)
P.I. No. 0006327

Figure 4.
Federal and State Waters
Map G

Prepared: November 30, 2012

Proposed W. Winder Bypass
Barrow County, Georgia
STP 00-0006-00(327)
P.I. No. 0006327

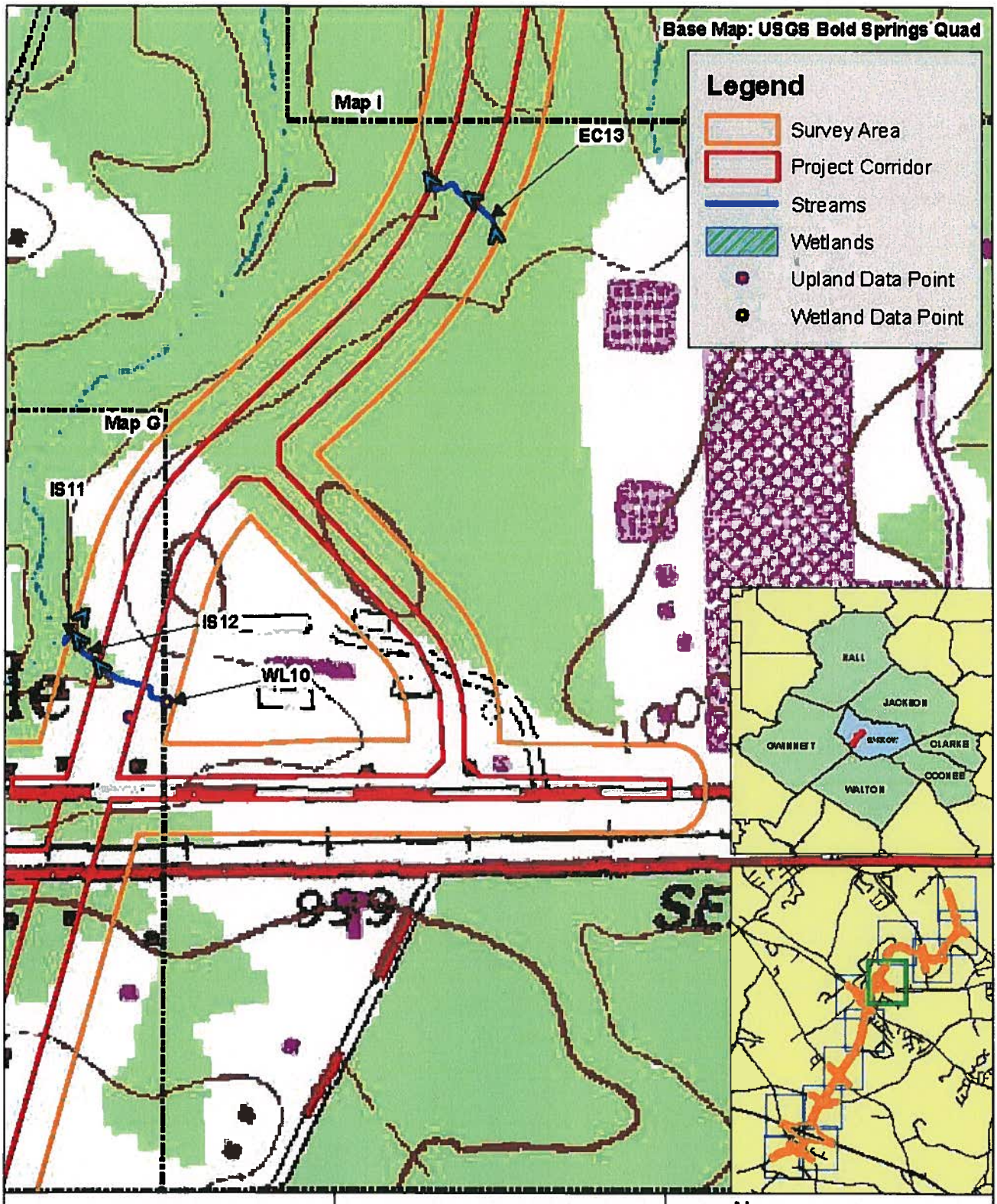


Figure 4.
Federal and State Waters
Map H

Prepared: November 30, 2012

Proposed W. Winder Bypass
Barrow County, Georgia
STP 00-0006-00(327)
P.I. No. 0006327

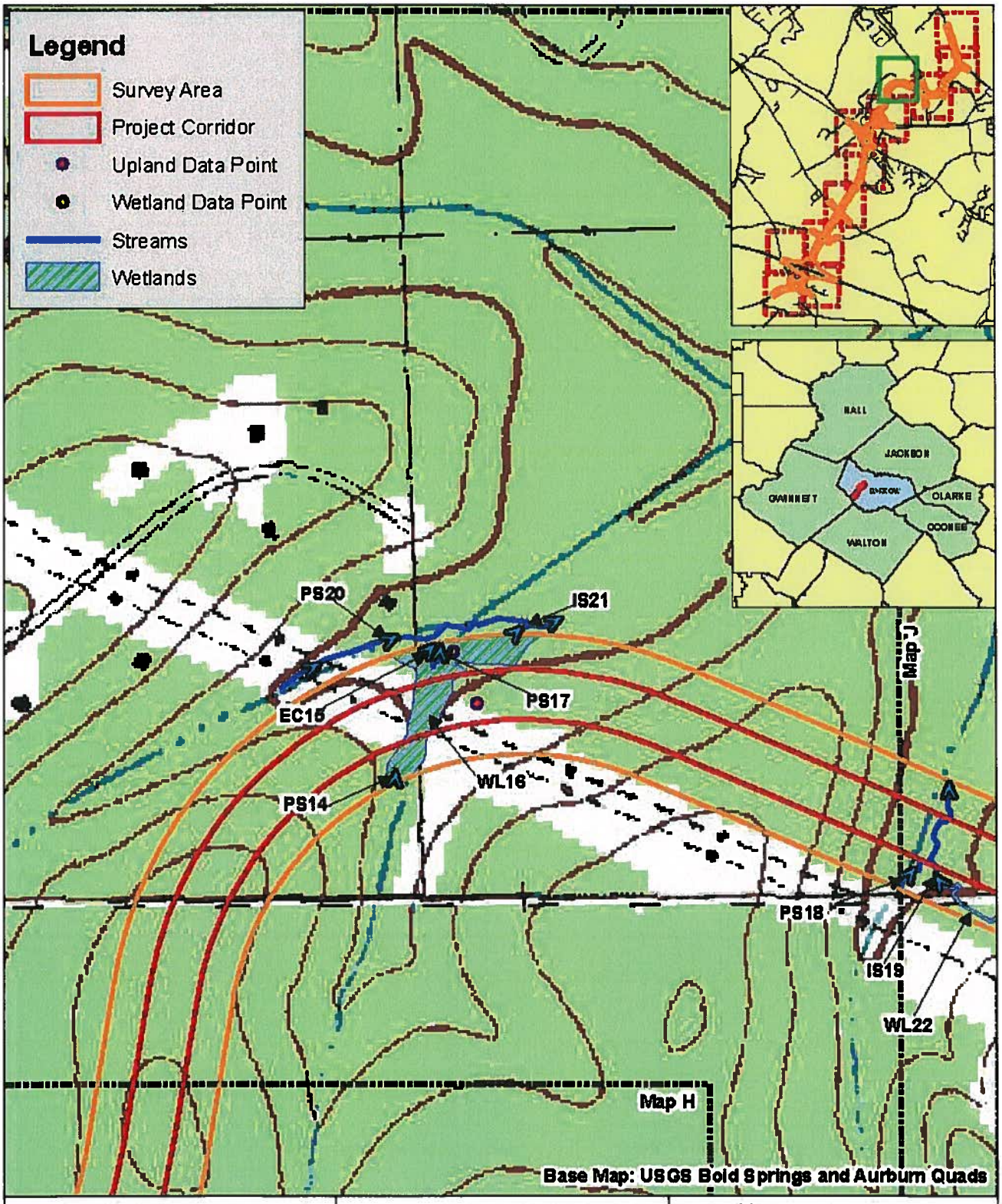


Figure 4.
Federal and State Waters
Map I

Prepared: November 30, 2012

Proposed W. Winder Bypass
Barrow County, Georgia
STP 00-0006-00(327)
P.I. No. 0006327

N
W E
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Feet

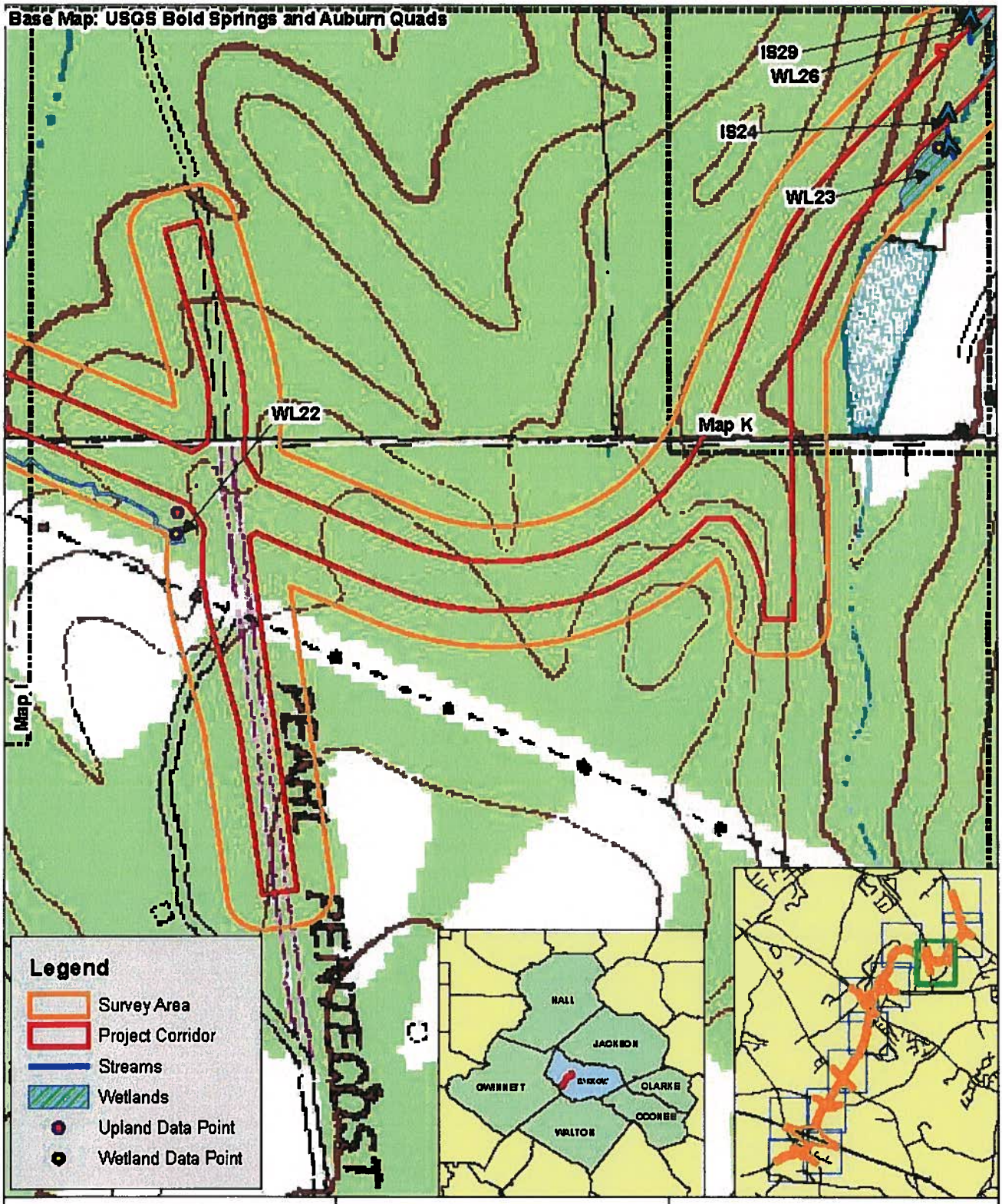

Figure 4.
Federal and State Waters
Map J

Prepared: November 30, 2012

Proposed W. Winder Bypass
Barrow County, Georgia
STP 00-0006-00(327)
P.I. No. 0006327

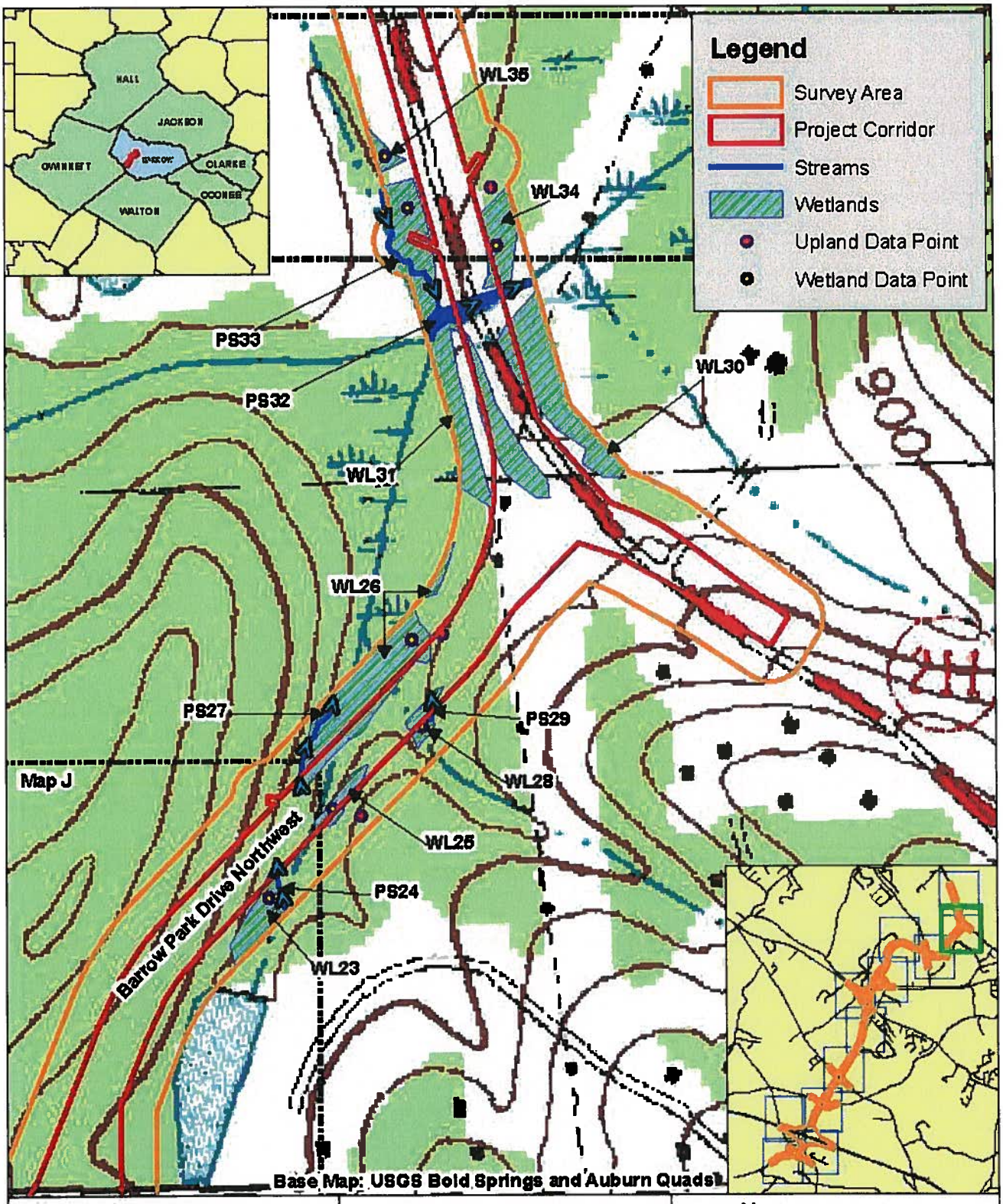

Figure 4.
Federal and State Waters
Map K

Prepared: November 30, 2012

Proposed W. Winder Bypass
Barrow County, Georgia
STP 00-0006-00(327)
P.I. No. 0006327

N
W E
S

375
Feet

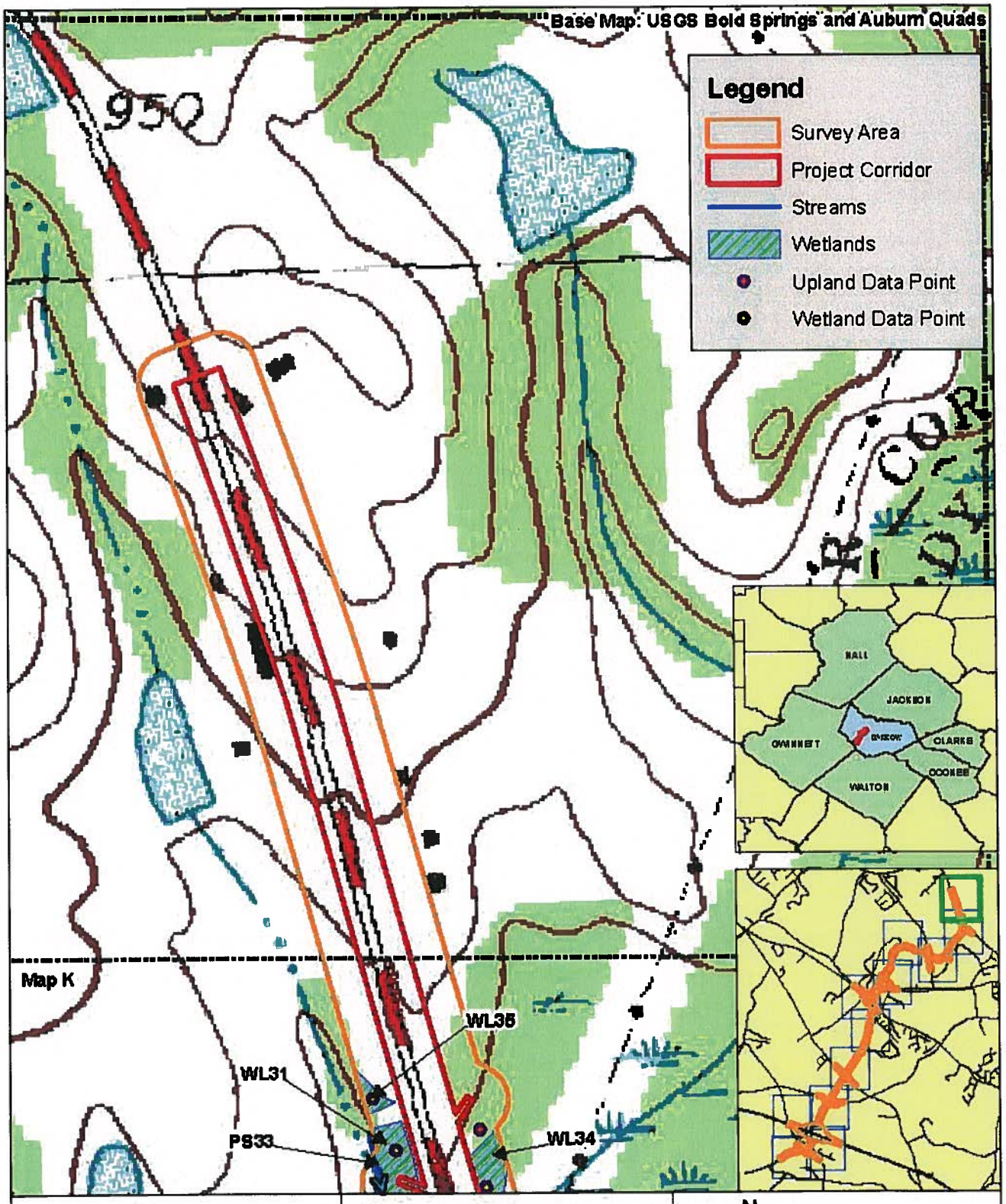

Figure 4.
Federal and State Waters
Map L

Prepared: November 30, 2012

Proposed W. Winder Bypass
Barrow County, Georgia
STP 00-0006-00(327)
P.I. No. 0006327