DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
TIA PROJECT CONCEPT REPORT

TIA

Project Type: Intersection Imp.
GDOT District: 2
Federal Route Number: N/A
State Route Number: SR 28 & SR 104

P.I. Number: 0011403
County: Richmond
RC Project ID: RC07-000140

Project Description: Riverwatch Parkway and Fury's Ferry Road intersection improvements including signal timing modifications and the addition of a west bound free flow right turn lane.

Submitted for approval:

Local Government Representative — DATE: 10-14-14

, CH2M HILL
District Engineer/Consultant & Firm — DATE: 10/8/14

TIA Project Manager — DATE: 10/14/14

GDOT TIA Regional Coordinator — DATE: 10/14/14

TIA Program Manager — DATE: 14 Oct 2014

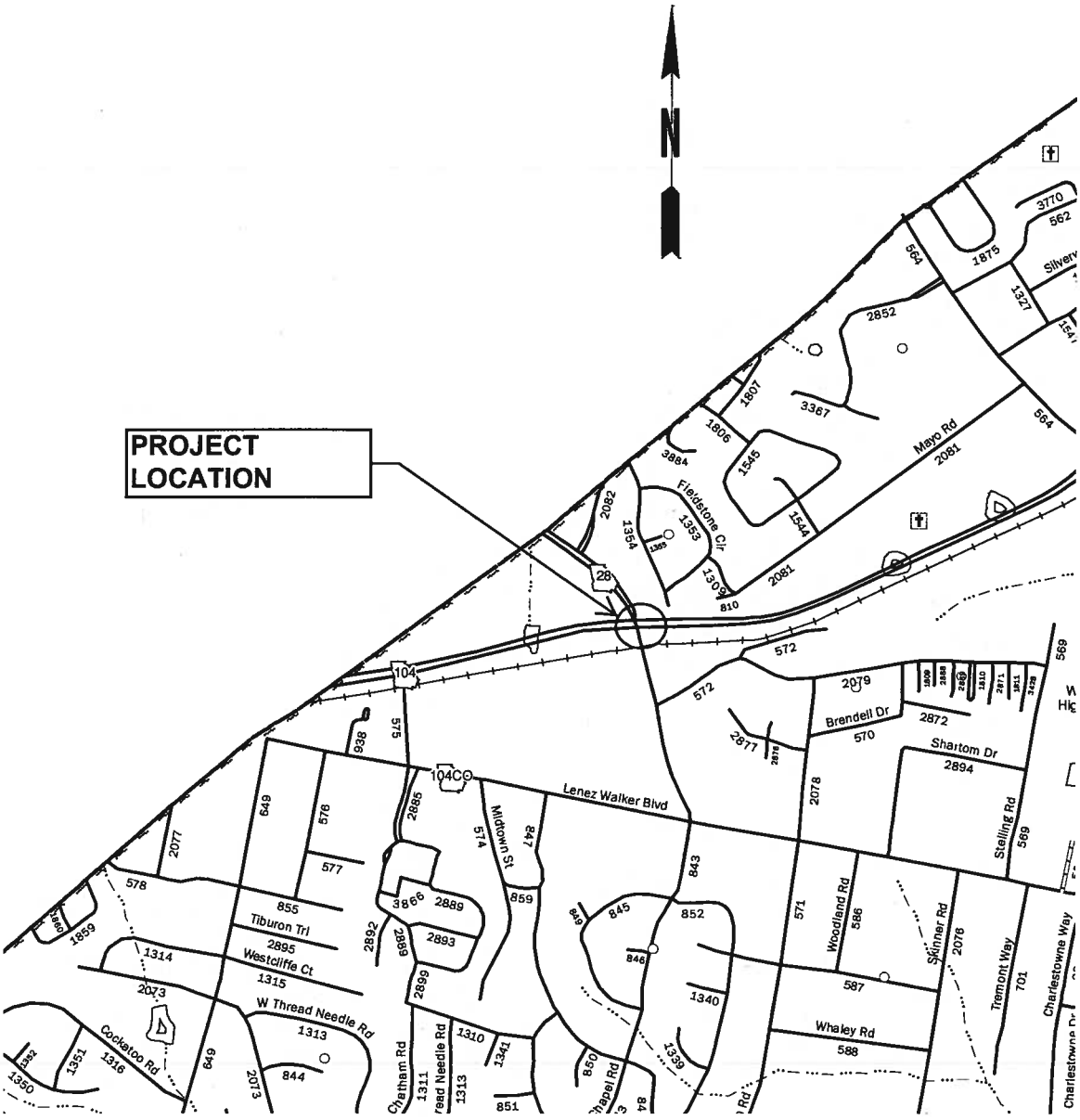
GDOT State TIA Administrator — DATE: 10/17/2014

Approval:

Concur: GDOT Director of Engineering — DATE: 10/23/14

Approve: GDOT Chief Engineer — DATE: 10/20/14

PROJECT LOCATION



PLANNING & BACKGROUND DATA

Project Intended Benefit: This project would benefit the public by potentially reducing the incidence of crashes along this roadway segment, corridor and/or intersection.

Description of the proposed project: This project would analyze, design, and construct appropriate improvements to increase the efficiency of the intersection of Riverwatch Parkway and Fury's Ferry Road. The recommended alternative involves widening on Fury's Ferry Road to construct a free flow movement from westbound Riverwatch Parkway to northbound Fury's Ferry Road, replacing all 5-section signal heads with 3-section heads, adding 3-section signal heads on the through lanes, realigning the existing and proposed signal heads to correspond with each lane, and signal timing modifications to allow for protected only phasing for all left turns. Additional work associated with these improvements includes relocating the existing guardrail, sidewalk, concrete strain pole, traffic signal controller, and signal pull boxes at the northeast quadrant of the intersection. The proposed free flow right turn lane ends at the signalized intersection of Fury's Ferry Road and Prattwood Drive. **Attachment A** shows the typical section for Fury's Ferry Road. **Attachment B** shows the conceptual layout of the additional free flow lane. Crash summaries, traffic projections, and traffic summaries are located in a separate Traffic Analysis Report.

This intersection currently operates at a Level of Service (LOS) C. If no improvements are made, the intersection degrades to a LOS D by 2038. If the recommended alternative is implemented, the intersection has a LOS D or better in 2038 with the main PM movement (westbound right turn) improving from a LOS C to a LOS A. The recommended improvements can also be expected to significantly reduce the number of angle crashes at this intersection due to the left turns operating under protected mode only.

A number of accidents occur at this intersection each year. Crash summaries from 2010 through 2013 are illustrated in **Attachment E**. The predominant type of crashes are rear-end collisions, but a large percentage are angle crashes. Generally, the rear-end collisions could be caused by distracted drivers, minimal lighting, inclement weather, or possibly limited sight distance. Angle crashes could be caused by the yield condition currently utilized for the single left turn lanes, distracted drivers, or drivers misjudging the speed of the oncoming vehicle. The proposed improvements will reduce these two predominant types of collisions because lighting will be added to the intersection, a left turn protected phase will be added to the signals for all approaches, and the proposed number of signal heads will correspond with the number of through and left turn lanes for each approach. An advance warning signal will be placed on the southbound approach to the intersection to inform drivers coming around the horizontal curve and up the vertical curve that there is a signalized intersection ahead. The proposed lighting will illuminate the existing intersection, and because the lighting increases the visibility at night, the number of crashes at this location is expected to decrease. Adding the left turn protected phase to the other three approaches essentially stops traffic from

other opposing directions, and vehicles turning left can proceed through the intersection without having to yield to traffic from opposing directions.

The existing signals at this intersection consist of a combination of 5-section signal heads and 3-section signal heads. For the southbound (SB) direction, there are four 3-section signal heads aligned to correspond to the two through lanes and the two left turn lanes. The northbound (NB), eastbound (EB) and westbound (WB) directions all have one 5-section head and one 3-section head. At this intersection, Riverwatch Parkway has three through lanes and one left turn lane. Although the existing number of signals provides adequate coverage for these movements, their placement might cause some confusion to drivers. The proposed signal improvements include replacing all 5-section heads with a 3-section head and providing additional 3-section heads to cover all through lanes for each movement. When the combination of new and existing signal heads is realigned to be in the center of each lane, drivers will be less confused. The result will likely be a reduction in all types of accidents at this intersection.

There are three existing drainage inlets along the raised median on Fury's Ferry Road at this intersection. The proposed pavement widening associated with the recommended alternative will send more stormwater runoff into this existing piped collection system. Spread calculations have been performed on these inlets to determine the spread in both the existing and proposed conditions, and the calculations show that the actual spread is less than the maximum allowable spread at all three inlets.

Along the east side of Fury's Ferry Road at the intersection, there is existing guardrail which extends all the way to the next intersection with Prattwood Drive. In the proposed condition, the guardrail would be relocated to accommodate the pavement widening as seen on the typical section in **Attachment A**. There is a considerable grade differential between the Fury's Ferry Road alignment and the adjacent properties in this area, and preliminary measurements indicate that the existing slope of the embankment is about 1 (vertical) to 4 (horizontal). If the slope is steepened to 1 (vertical) to 2 (horizontal) maximum, the proposed embankment will fit within the existing right-of-way on the east side of the road. Cross-sections to be performed in the preliminary design phase are needed to verify the proposed construction limits of this embankment. Overhead utility poles are located at the base of the existing embankment, and the steepened slopes in the proposed condition would allow these utilities to remain in their current location as well.

To blend the pavement widening into the existing pavement for the northbound lanes, milling and resurfacing for those lanes only is suggested from Riverwatch Parkway to Prattwood Drive. Since the pavement markings throughout the intersection appear to be worn, repainted markings are shown in areas not milled and resurfaced a distance of approximately 100 feet from the stop bars.

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

MPO: Augusta Regional Transportation Study (ARTS) **MPO Project ID:** 680

Regional Commission: Central Savannah River RC **RC Project ID:** RC07-000140

Congressional District(s): 12

Projected Traffic (AADT):
Current Year (2014): 23,380 Open Year (2018): 24,320 Design Year (2038): 29,680
Traffic Projections Performed by: CH2M Hill, Inc. (see Traffic Diagrams in **Attachment D**)

Functional Classification (Fury's Ferry Road): Urban Collector Street

Is this a 3R (Resurfacing, Restoration, & Rehabilitation) Project? ☒ No ☐ Yes

Will Context Sensitive Solutions procedures be utilized? ☒ No ☐ Yes

DESIGN AND STRUCTURAL DATA

Mainline Design Features: *Fury's Ferry Road / SR 28*

Feature	Existing	Standard*	Proposed
Typical Section			
- **Number of Lanes**	**4**	**4**	**4**
- **Lane Width(s)**	**12'**	**12'**	**12'**
- **Cross Slope**	**2%**	**4% max**	**2%**
- **Median Width & Type**	**7' Raised**	**14' Flush**	**7' Raised**
- **Shoulder Treatment**	**Curb & gutter**	**Curb & gutter**	**Curb & gutter**
- **Outside Shoulder Slope**	**4:1**	**2:1 max**	**3:1**
- **Sidewalks**	**5'**	**5'**	**5'**
- **Bike Lanes**	**4'**	**4'**	**5'****
Posted Speed	**45 mph**	**No change**	**45 mph**
Design Speed	**50 mph**	**---**	**50 mph**
Min Horizontal Curve Radius	**530'**	**750'**	**530'**
Superelevation Rate	**3.6%**	**4% max**	**3.6%**
Grade	**5.1%**	**0.5% min**	**5.1%**
Access Control	**None**	**---**	**None**
Right-of-Way Width	**Varies (146' min)**	**---**	**Varies (146'min)**
Maximum Grade (Rolling terrain @ 50mph)	**5.7%**	**8% max**	**5.7%**
Design Vehicle	**WB-40 or BUS-40**	**WB-40 or BUS-40**	**WB-40 or BUS-40**

* According to current GDOT design policy, if applicable

** AASHTO Guide for the Development of Bicycle Facilities recommends a 5' bicycle lane width

Major Structures: None

Major Interchanges/Intersections: Fury's Ferry Road / SR 28

Utility Involvements: Overhead electrical lines run parallel to Fury's Ferry Road and cross Riverwatch Parkway on the east side of the intersection. If the existing slope is steepened to 1:2 maximum, the proposed embankment should allow all of these utilities to remain in their current location. The roadway widening impacts at the intersection will affect the existing pull boxes, loop detectors, traffic control cabinet, and a concrete strain pole in the northeast quadrant. The survey also indicates there is an underground telephone line in the area as well which may require relocation. Additional utilities are attached to the electrical power poles, and those utilities could include telephone, cable TV, and fiber optic lines. Gas markers are located along Fury's Ferry Road on the west side of the south approach to the intersection.

Public Interest Determination Policy and Procedure recommended (Utilities)? ☒ No ☐ Yes

SUE Required: ☒ No ☐ Yes

Railroad Involvement: There is a bridge over the CSX railroad on the south side of the intersection. However, the bridge should not be impacted by any of the proposed improvements.

Complete Streets - Bicycle, Pedestrian, and/or Transit Warrants:

Warrants met: ☐ None ☒ Bicycle ☒ Pedestrian ☐ Transit

Right-of-Way:

Required Right-of-Way anticipated: ☒ No ☐ Yes ☐ Undetermined

Easements anticipated: ☒ None ☐ Temporary ☐ Permanent ☐ Utility ☐ Other

Anticipated number of impacted parcels:	0
Displacements Anticipated:	0
Businesses:	0
Residences:	0
Other:	0

Transportation Management Plan [TMP] Required: ☒ No ☐ Yes

If Yes: Project classified as: ☐ Non-Significant ☐ Significant

TMP Components Anticipated: ☐ TTC ☐ TO ☐ PI

Design Exceptions to FHWA/AASHTO controlling criteria anticipated: None

Design Variances to GDOT Standard Criteria anticipated: None

ENVIRONMENTAL DATA

Anticipated Environmental Document:

GEPA: ☒ Type A Letter ☐ Type B Letter

NEPA: ☐ CE ☐ EA/FONSI

Project Air Quality: *(On-system projects only)*

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

MS4 Compliance – Is the project located in an MS4 area? ☐ No ☒ Yes

Environmental Permits/Variances/Commitments/Coordination anticipated: The project would consist of minor land disturbing activities within the existing right-of-way. The project is not anticipated to require a 404 Permit or Stream Buffer Variance. Additionally, no Section 4(f) involvement is anticipated.

NEPA/GEPA Comments & Information: The project would consist of minor land disturbing activities. Based on project type, the project would not be anticipated to significantly affect the quality of the environment; therefore, the project would qualify for a Type A letter.

PROJECT RESPONSIBILITIES

Project Activities:

Project Activity	Party Responsible for Performing Task(s)
Concept Development	CH2M Hill
Design	CH2M Hill
Right-of-Way Acquisition	N/A
Utility Relocation	GDOT TIA Office
Letting to Contract	GDOT TIA Office
Construction Supervision	GDOT TIA Office
Providing Material Pits	N/A
Providing Detours	N/A
Environmental Studies, Documents, and Permits	Edwards Pitman
Environmental Mitigation	Edwards Pitman
Construction Inspection & Materials Testing	GDOT TIA Office

Lighting required: ☐ No ☒ Yes

Other projects in the area:

P.I. Number	Description
P.I. 0011404	Riverwatch Parkway / Stevens Creek Road Intersection
P.I. 0011392	Richmond ITS Master Plan Implementation
P.I. 0011402	Riverwatch Parkway Adaptive Signal
P.I. 0232020	Riverwatch Parkway Median Improvements
P.I. 0011401	Riverwatch Parkway Resurfacing
P.I. 0011400	Richmond County Emergency and Transit Vehicle Preemption System
P.I. 0011699	Riverwatch Pkwy Corridor Improvements from I-20 to River Shoals Pkwy

Other coordination to date: On 11/5/13, a coordination meeting with Steve Cassell, City of Augusta Assistant Director at that time, was held about issues associated with the intersection. Issues discussed included providing mast arms if budget allowed, an issue with the line of sight for northbound vehicles turning left from Fury's Ferry Road onto Riverwatch Parkway, correcting the signage that indicated a separate northbound right turn lane, and providing lighting if budget allowed. On 8/1/14, a conference call with Marc Star of URS was held regarding the Augusta ITS project. Construction for this project is scheduled for Fall 2015. No coordination is required as long as the construction of the Fury's Ferry Road intersection at Riverwatch Parkway is completed by then.

Project Cost Estimate and Funding Responsibilities:

	Breakdown of PE	**ROW**	**Reimbursable Utility**	**CST***	**Environ. Mitigation**	**Total Cost**
By Whom	TIA	TIA	N/A	TIA	TIA	
Date of Estimate	6/18/2014	6/18/2014	6/18/2014	6/18/2014	6/18/2014	
TIA Current Programmed Budget $	$121,543.00	$409.21	$124,590.79	$269,423.00	$0.00	$515,966.00
Estimated $ Amount	$121,543.00	$0.00	$0.00	$278,634.13	$0.00	
Budget $ Contingency	$3,843.43	$13.09	$4,072.91	$16,890.92	$0.00	
Total Estimated Cost	$125,386.43	$13.09	$4,072.91	$295,525.05	$0.00	$424,997.48

*CST Cost includes: Construction, Engineering and Inspection.

Notes: (1) All phases contain 1% Department Management costs and calculated project risk contingency in the Budget Contingency $ line item.
(2) Construction phase contains 3% CEI in addition to other contingencies.
(3) Construction cost estimates for all three alternatives are located in **Attachment C**.

ALTERNATIVES

Preferred Alternative: Free Flow Westbound Right Turns & Protected Only Phasing for all Left Turns			
Estimated Property Impacts:	None	**Estimated Total Cost:**	$424,998
Estimated ROW Cost:	None	**Estimated CST Time:**	6 months
Rationale: This alternative is preferred because it is expected to significantly reduce the number of angle crashes at the intersection due to the left turns operating under protected mode only. Construction of the westbound free flow right turn from Riverwatch Parkway will result in reduced vehicle delay for the PM movement. Overall, the intersection will operate more efficiently.			

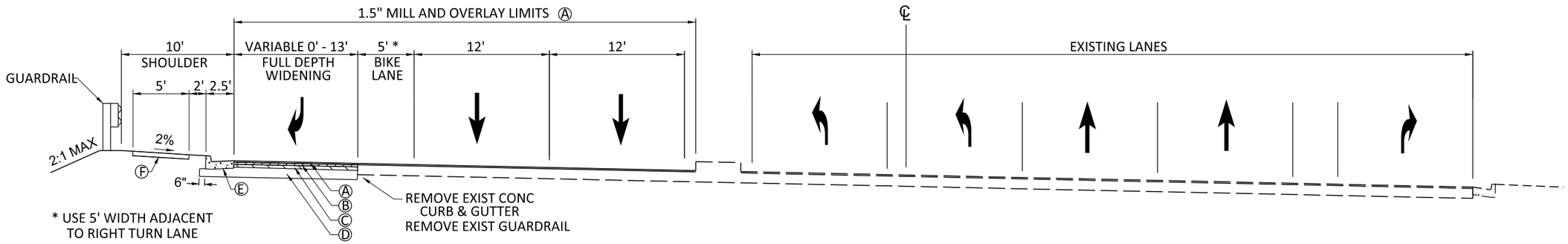
Alternative 1: Protected Only Phasing for East-West Left Turns			
Estimated Property Impacts:	None	**Estimated Total Cost:**	$70,574
Estimated ROW Cost:	None	**Estimated CST Time:**	1 month
Rationale: This alternative is suggested because it adds two movements into the protected only phasing.			

Alternative 2: Protected Only Phasing for all Left Turns			
Estimated Property Impacts:	None	**Estimated Total Cost:**	$70,574
Estimated ROW Cost:	None	**Estimated CST Time:**	1 month
Rationale: This alternative is suggested because it provides protected only phasing for all left turns.			

Comments/additional information:

Attachments:

A. Typical section
B. Concept layout
C. Cost estimates
D. Traffic Diagrams
E. Traffic Accident Exhibits
F. TIA Project Fact Sheet
G. Concept Team Meeting Minutes



FURY'S FERRY ROAD - TYPICAL SECTION

Ⓐ RECYCLED ASPH. CONC. 12.5 mm SUPERPAVE, GP 2 ONLY, INCL BITUM MATL & H LIME (1.5")

Ⓑ RECYCLED ASPH. CONC. 19 mm SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME (2")

Ⓒ RECYCLED ASPH. CONC. 25 mm SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME (4")

Ⓓ 10" GRADED AGGREGATE BASE (6" UNDER CURB AND GUTTER)

Ⓔ 6"X30" CONC. CURB & GUTTER, GA. STD. 9032-B, TYPE 2

Ⓕ CONCRETE SIDEWALK, 4", GA. STD. 9031-W

CH2MHILL
Embassy Row
6600 Peachtree Dunwood Road
Building 400 - Suite 600
Atlanta, GA 30328
770-604-9095

REVISION DATES

RICHMOND COUNTY
DEPARTMENT OF TRANSPORTATION

FURY'S FERRY ROAD

ATTACHMENT A - TYPICAL SECTION
FOR BUILD 3
ALTERNATIVE

DRAWING No.

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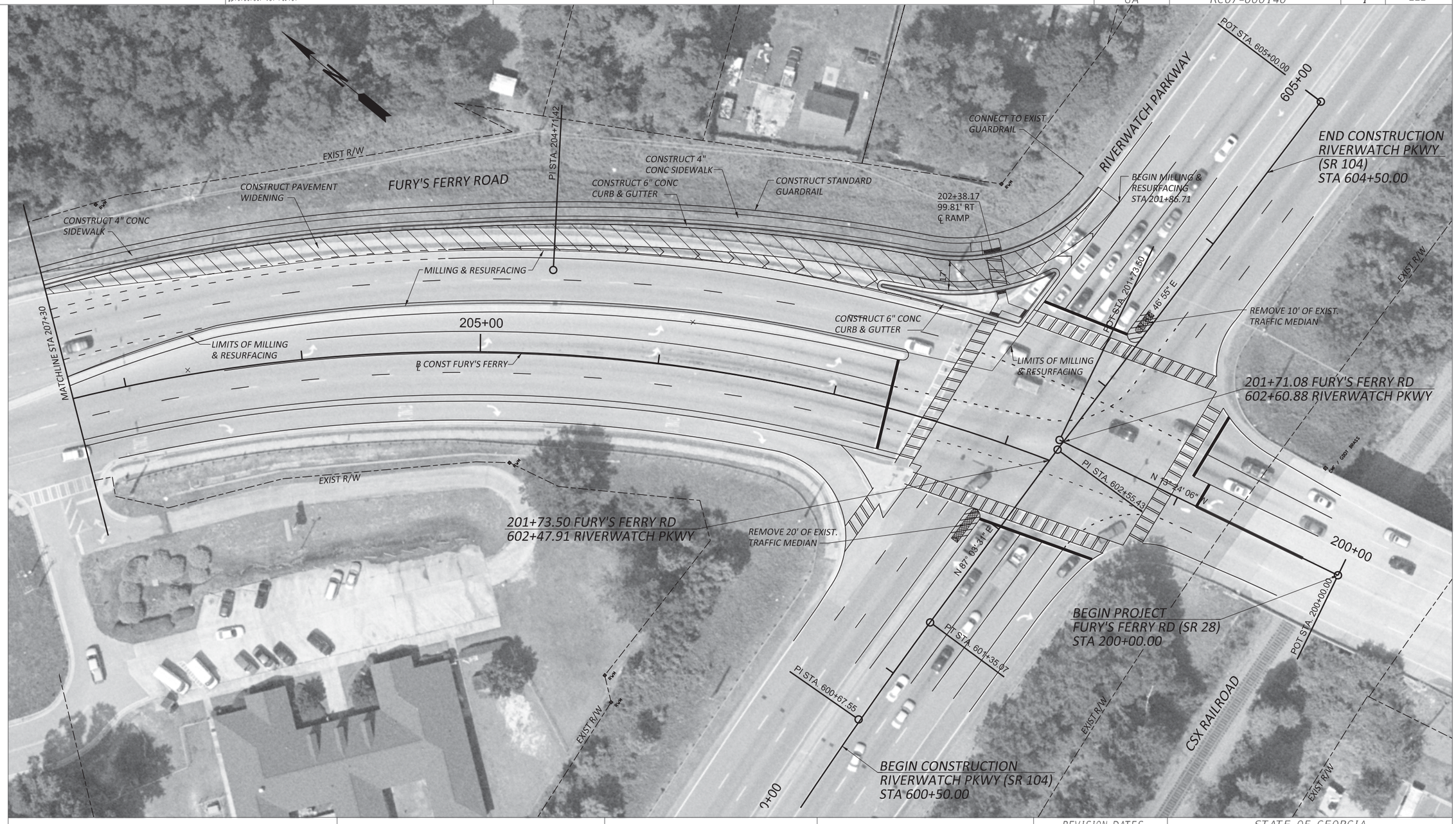

CH2MHILL

Embassy Row
6600 Peachtree Dunwoody Road
Building 400 - Suite 600
Atlanta, GA 30328
770-604-9095

SCALE IN FEET

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REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

MAINLINE ROADWAY PLAN

FURY'S FERRY RD (SR 28) AT
RIVERWATCH PKWY (SR 104)

DRAWING No. 13-01

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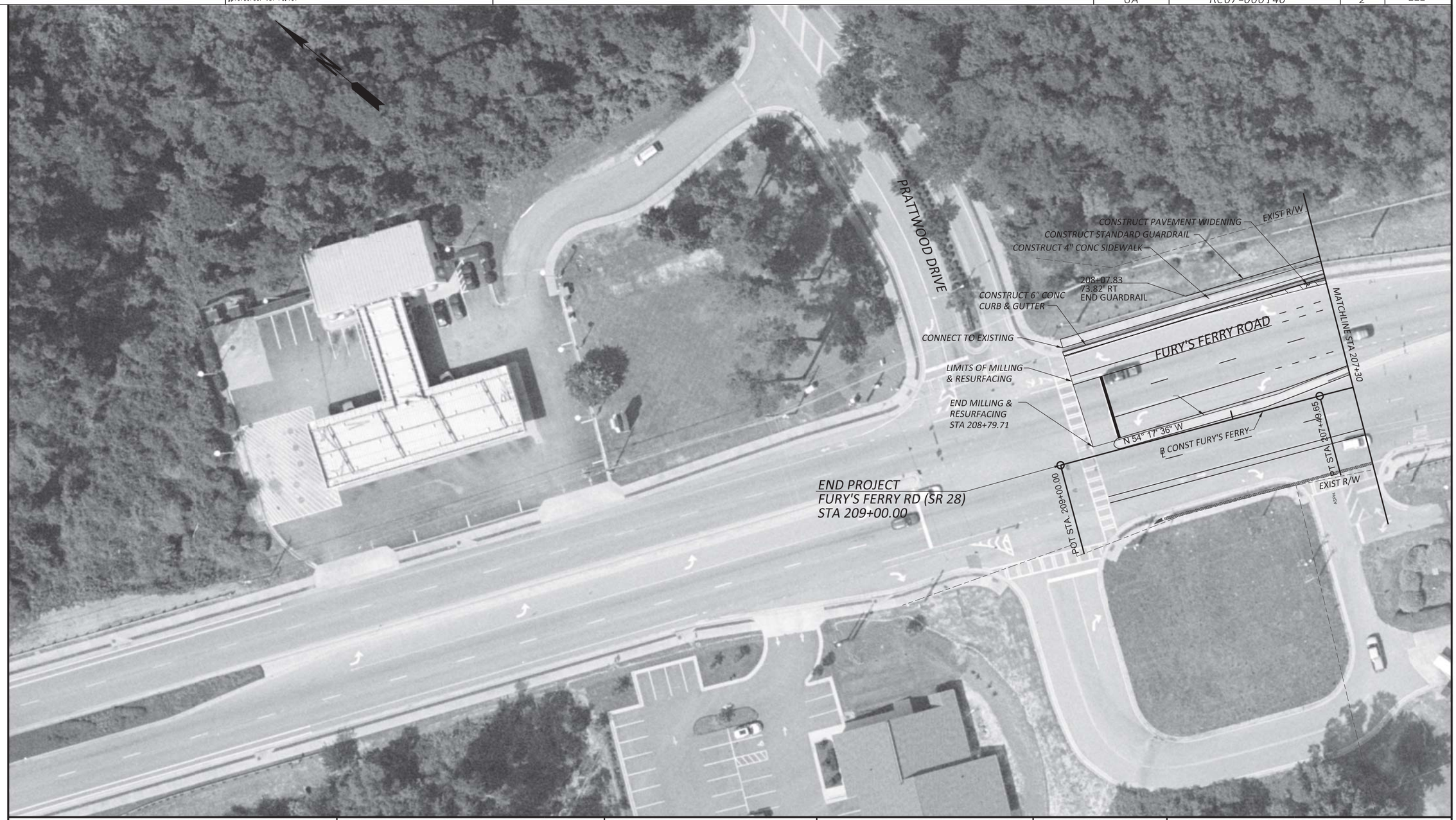

CH2MHILL

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770-604-9095

SCALE IN FEET
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REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

MAINLINE ROADWAY PLAN

FURY'S FERRY RD (SR 28) AT
RIVERWATCH PKWY (SR 104)

DRAWING No.
13-02

Attachment C
Fury's Ferry Intersection with Riverwatch Parkway
Conceptual Construction Cost Estimate - Alternate 1
P.I. Number: 0011403

Description	Quantity	Unit	Unit Cost*	Total Cost
Traffic Control - Conceptual	1	LS	$ 6,360.00	$ 6,360.00
Traffic Signal Installation	1	LS	$ 14,466.77	$ 14,466.77
Signal Head Traffic Assembly Removal, 5-Section				
Traffic Signal, Furnish & Install, 3-Section, 1-Way, Aluminum				
Traffic Signal, Relocate				
Span Wire Assembly, Furnish & Install, Two Pt, Box				
Pull Box, Type 1				
Install W3-3 Flasher	1	EA	$ 7,156.07	$ 7,156.07
Conduit, Nonmetal, Tp 3, 2"	208	LF	$ 5.29	$ 1,100.32
Directional Bore	78	LF	$ 14.17	$ 1,105.26
Rem Hwy Sign, Ovhd	3	EA	$ 624.04	$ 1,872.12
Traffic Signal Timing	1	LS	$ 16,742.02	$ 16,742.02
Subtotal:				$ 48,802.56
10% Contingency:				$ 4,880.26
Budget Contingency (incl. Engr. and Inspection):				$ 16,890.92
Total:				**$ 70,573.74**

* Unit cost values were derived from 2013-2014 GDOT Item Mean Summary

Attachment C
Fury's Ferry Intersection with Riverwatch Parkway
Conceptual Construction Cost Estimate - Alternate 2
P.I. Number: 0011403

Description	Quantity	Unit	Unit Cost*	Total Cost
Traffic Control - Conceptual	1	LS	$ 6,360.00	$ 6,360.00
Traffic Signal Installation	1	LS	$ 14,466.77	$ 14,466.77
Signal Head Traffic Assembly Removal, 5-Section				
Traffic Signal, Furnish & Install, 3-Section, 1-Way, Aluminum				
Traffic Signal, Relocate				
Span Wire Assembly, Furnish & Install, Two Pt, Box				
Pull Box, Type 1				
Install W3-3 Flasher	1	EA	$ 7,156.07	$ 7,156.07
Conduit, Nonmetal, Tp 3, 2"	208	LF	$ 5.29	$ 1,100.32
Directional Bore	78	LF	$ 14.17	$ 1,105.26
Rem Hwy Sign, Ovhd	3	EA	$ 624.04	$ 1,872.12
Traffic Signal Timing	1	LS	$ 16,742.02	$ 16,742.02
Subtotal:				$ 48,802.56
10% Contingency:				$ 4,880.26
Budget Contingency (incl. Engr. and Inspection):				$ 16,890.92
Total:				**$ 70,573.74**

* Unit cost values were derived from 2013-2014 GDOT Item Mean Summary

Attachment C
Fury's Ferry Intersection with Riverwatch Parkway
Conceptual Construction Cost Estimate - Alternate 3
P.I. Number: 0011403

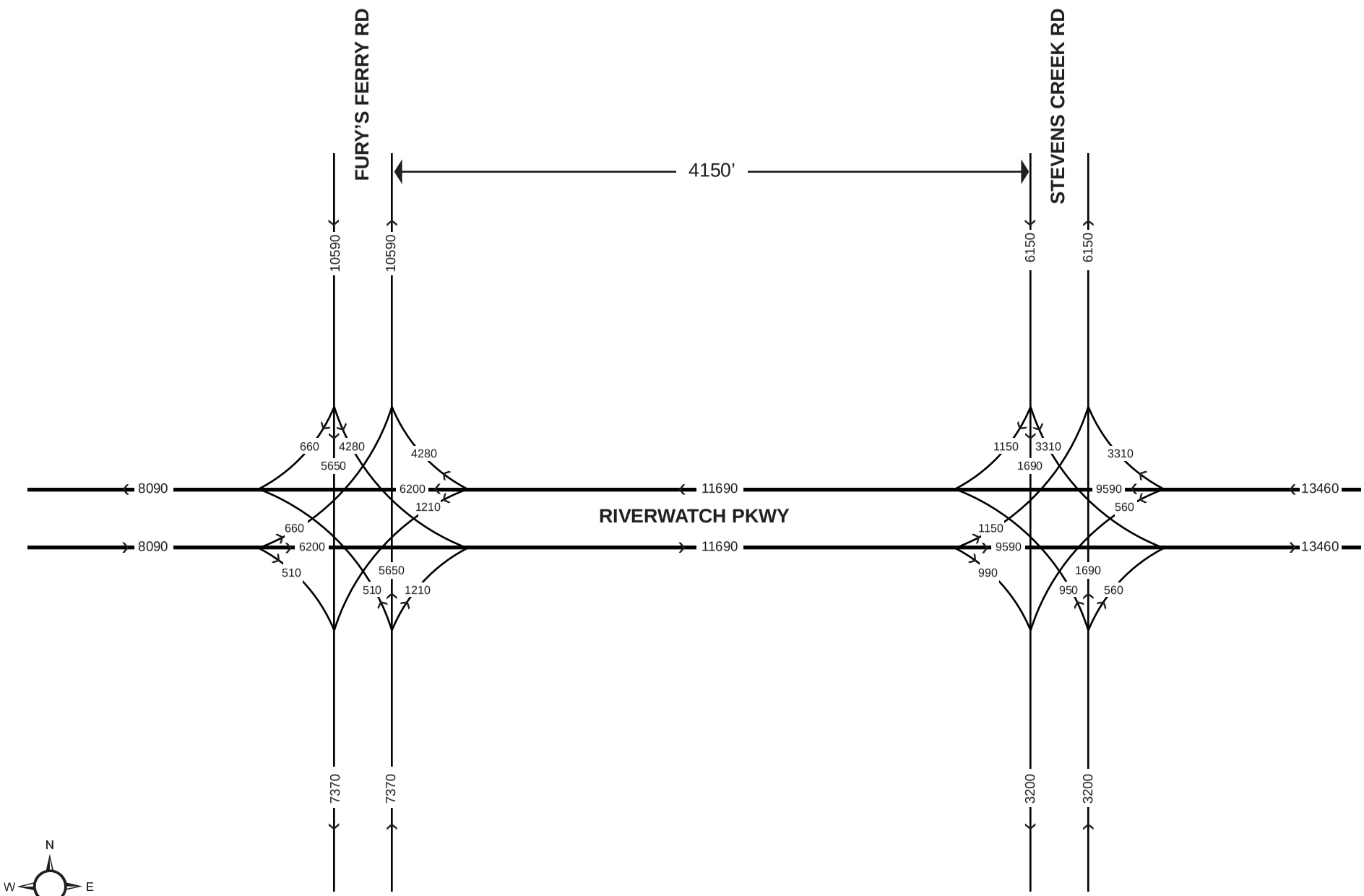
Description	Quantity	Unit	Unit Cost*	Total Cost
Traffic Control - Conceptual	1	LS	$ 22,617.40	$ 22,617.40
Erosion Control - Conceptual	1	LS	$ 4,523.48	$ 4,523.48
Excavation	150	CY	$ 6.49	$ 973.50
Borrow Excavation, incl Matl	450	CY	$ 6.25	$ 2,812.50
10" Graded Aggregate Base	959	SY	$ 20.68	$ 19,839.01
Recycled Asph. Conc. 12.5mm Superpave, GP2 Only, incl. bit matl & h lime (1.5")	325	TN	$ 89.03	$ 28,930.88
Recycled Asph. Conc. 19mm Superpave, GP1 or 2, incl. bit matl & h lime (2")	106	TN	$ 103.38	$ 10,909.35
Recycled Asph. Conc. 25mm Superpave, GP1 or 2, incl. bit matl & h lime (4")	211	TN	$ 80.01	$ 16,886.38
Mill Asphalt Concrete Pavement, 1.5" Depth	2980	SY	$ 2.38	$ 7,091.29
Concrete Sidewalk, 4"	389	SY	$ 34.61	$ 13,474.83
Conc Curb and Gutter, 6"x30", Type 2	946	LF	$ 13.74	$ 12,998.04
Rem Conc Curb & Gutter All Sizes	16	SY	$ 14.26	$ 228.16
Rem Hwy Sign, Ovhd	3	EA	$ 624.04	$ 1,872.12
Rem Highway Sign, Std	3	EA	$ 144.78	$ 434.34
Reset Guardrail	679	LF	$ 11.00	$ 7,469.00
Reset Sign	2	EA	$ 129.55	$ 259.10
Highway Signs, Type 1 Matl, Refl Sheeting, Type 3	2	EA	$ 15.87	$ 31.74
Ground-Mounted Breakaway Sign Support	2	EA	$ 480.12	$ 960.24
Traffic Signal Installation	1	LS	$ 29,989.87	$ 29,989.87
Signal Head Traffic Assembly Removal, 5-Section				
Traffic Signal, Furnish & Install, 3-Section, 1-Way, Aluminum				
Traffic Signal, Relocate				
Pull Box, Type 1				
Span Wire Assembly, Furnish & Install, Two Pt, Box				
Pedestrian Detector, Furnish & Install, Std				
Aluminum Signals Pole, Pedestal				
Complete Pole Removal - Deep, Direct Bury				
Traffic Control Assembly, Modify & Relocate				
Prestressed Conc. Pole, Furnish & Install, Type P-IV				
Pedestrian Signal, Furnish & Install, LED-Count Dwn, 2				

Attachment C
Fury's Ferry Intersection with Riverwatch Parkway
Conceptual Construction Cost Estimate - Alternate 3
P.I. Number: 0011403

Description	Quantity	Unit	Unit Cost*	Total Cost
Pull Box, PB-4S	1	EA	$ 1,003.80	$ 1,003.80
Install W3-3 Flasher	1	EA	$ 7,156.07	$ 7,156.07
Loop Detector, 6ft x 40ft, Quadrupole	3	EA	$ 948.50	$ 2,845.50
Thermoplastic Pvmt Marking, Arrow, Type 2	29	EA	$ 97.85	$ 2,837.65
Thermoplastic Solid Traffic Stripe, 5", White	5981	LF	$ 0.63	$ 3,768.03
Thermoplastic Solid Traffic Stripe, 5", Yellow	1793	LF	$ 0.63	$ 1,129.59
Thermoplastic Solid Traffic Stripe, 18", White	128	LF	$ 3.50	$ 448.00
Thermoplastic Solid Traffic Stripe, 24", White	222	LF	$ 6.56	$ 1,456.32
Thermoplastic Solid Traffic Stripe, 8", White (ped crosswalks)	2182	LF	$ 2.66	$ 5,804.12
Thermoplastic Skip Traffic Stripe, 5", White	0.539	GLM	$ 1,431.09	$ 771.92
Thermoplastic Traffic Striping, Yellow	14	SY	$ 4.89	$ 69.00
Luminaire Bracket Arm, 15-ft Arm	4	EA	$ 832.50	$ 3,330.00
Luminaire, TP 4, 400 W, HP Sodium	4	EA	$ 880.00	$ 3,520.00
Cable, TP XHHW, Awg No 6	500	LF	$ 1.40	$ 700.00
Conduit, Rigid, 2"	450	LF	$ 12.50	$ 5,625.00
Conduit, Nonmetal, Tp 2, 2"	380	LF	$ 7.21	$ 2,739.80
Conduit, Nonmetal, Tp 3, 2"	260	LF	$ 5.29	$ 1,375.40
Electrical Junction Box	2	EA	$ 700.00	$ 1,400.00
Directional Bore	278	LF	$ 14.17	$ 3,939.26
Traffic Signal Timing	1	LS	$ 16,742.02	$ 16,742.02
Sod	785	SY	$ 5.53	$ 4,341.05
Subtotal:				$ 253,303.76
10% Contingency:				$ 25,330.38
Budget Contingency (incl. Engr. and Inspection):				$ 16,890.92
Total:				**$ 295,525.05**

* Unit cost values were derived from 2013-2014 GDOT Item Mean Summary

ATTACHMENT D



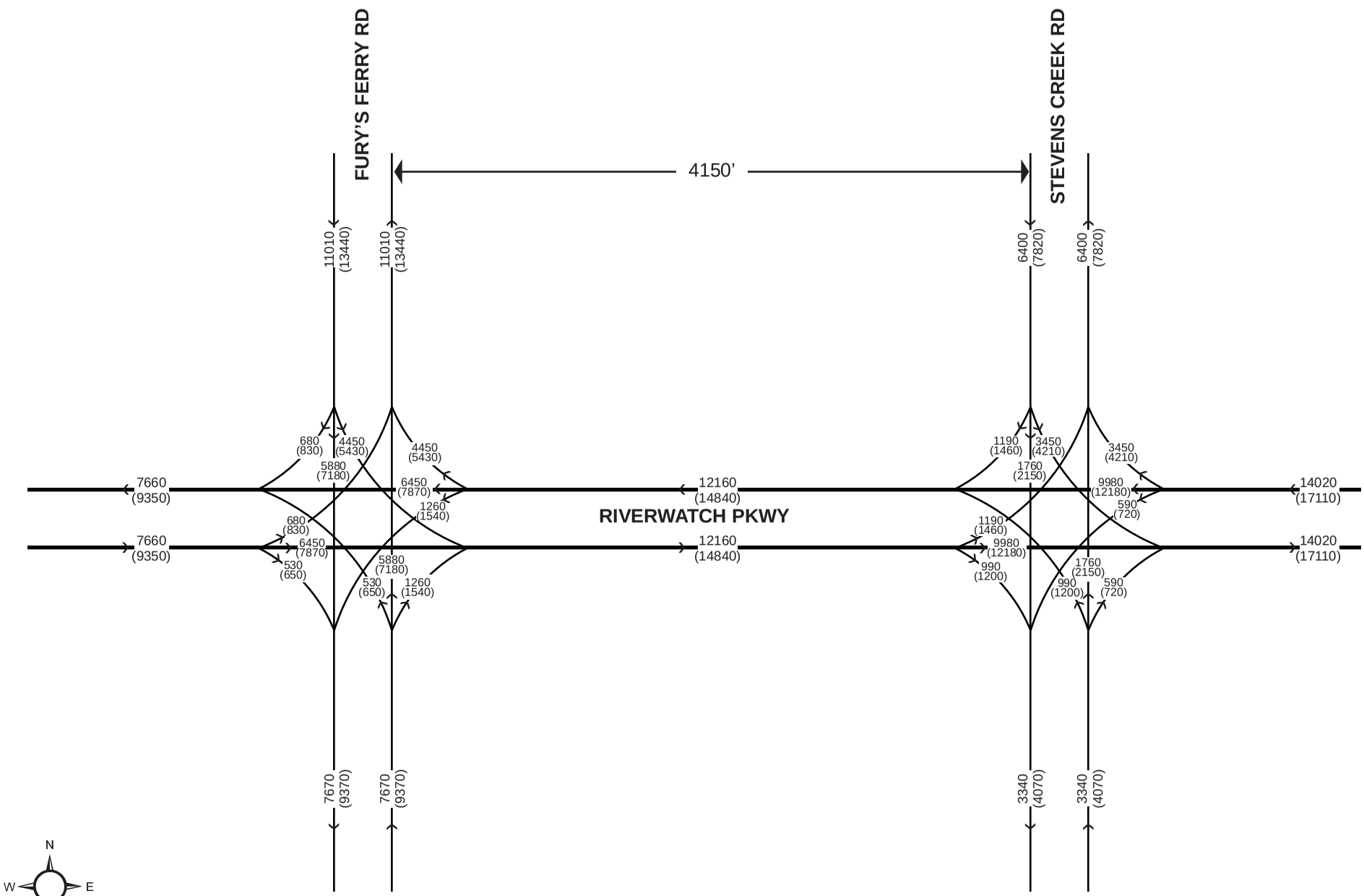
Legend

XXX = 2014 AADT

2% = 24 HR. T

Existing 2014 AADT

Riverwatch Pkwy at Fury's Ferry Rd and Stevens Creek Rd



Legend

XXX = 2018 AADT

(XXX) = 2038 AADT

2% = 24 HR. T

2018 & 2038 AADT

Riverwatch Pkwy at Fury's Ferry Rd and Stevens Creek Rd

ATTACHMENT E

$DATE$ USER:kfalkenb	2:18:57 PM	$FILE$	COUNTY RICHMOND	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS

TOTAL CRASHES = 34
REAR END = 24
ANGLE = 8
SIDE SWIPE SAME DIR = 1
OUT OF CONTROL = 1

LEGEND:
- (X) = NUMBER OF CRASHES
- = REAR END
- = SIDE SWIPE SAME DIRECTION
- = HEAD ON
- = ANGLE
- = OUT OF CONTROL
- = BACKING VEHICLE

CH2MHILL
Embassy Row
6600 Peachtree Dunwood Road
Building 400 - Suite 600
Atlanta, GA 30328
770-604-9095

SCALE IN FEET
0 25 50 100

REVISION DATES

RICHMOND COUNTY
DEPARTMENT OF TRANSPORTATION

RIVERWATCH PARKWAY @ FURY'S FERRY ROAD 2010 CRASH DATA EXHIBIT

DRAWING No.

$DATE$ USER:kfalkenb	2:41:30 PM	$FILE$	COUNTY	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
			RICHMOND			

TOTAL CRASHES = 38
REAR END = 21
ANGLE = 10
SIDE SWIPE SAME DIR = 5
OUT OF CONTROL = 2

LEGEND:
- ⓧ = NUMBER OF CRASHES
- = REAR END
- = SIDE SWIPE SAME DIRECTION
- = HEAD ON
- = ANGLE
- = OUT OF CONTROL
- = BACKING VEHICLE

CH2MHILL
Embassy Row
6600 Peachtree Dunwood Road
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Atlanta, GA 30328
770-604-9095

SCALE IN FEET
0 25 50 100

REVISION DATES

RICHMOND COUNTY
DEPARTMENT OF TRANSPORTATION

RIVERWATCH PARKWAY @ FURY'S FERRY ROAD 2011 CRASH DATA EXHIBIT

DRAWING No.

$DATE$ USER:kfalkenb	1:49:15 PM	$FILE$	COUNTY RICHMOND	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS

TOTAL CRASHES = 48
REAR END = 28
ANGLE = 12
SIDE SWIPE SAME DIR = 4
OUT OF CONTROL = 3
BACKING VEHICLE = 1

LEGEND:
- (X) = NUMBER OF CRASHES
- = REAR END
- = SIDE SWIPE SAME DIRECTION
- = HEAD ON
- = ANGLE
- = OUT OF CONTROL
- = BACKING VEHICLE

CH2MHILL
Embassy Row
6600 Peachtree Dunwood Road
Building 400 - Suite 600
Atlanta, GA 30328
770-604-9095

SCALE IN FEET
0 25 50 100

REVISION DATES

RICHMOND COUNTY
DEPARTMENT OF TRANSPORTATION

RIVERWATCH PARKWAY @ FURY'S FERRY ROAD 2012 CRASH DATA EXHIBIT

DRAWING No.

$DATE$ USER:kfalkenb	1:51:04 PM	$FILE$	COUNTY	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
			RICHMOND			

TOTAL CRASHES = 32
REAR END = 18
ANGLE = 8
SIDE SWIPE SAME DIR = 2
OUT OF CONTROL = 3
HEAD ON = 1

LEGEND:
- (X) = NUMBER OF CRASHES
- = REAR END
- = SIDE SWIPE SAME DIRECTION
- = HEAD ON
- = ANGLE
- = OUT OF CONTROL
- = BACKING VEHICLE

CH2MHILL
Embassy Row
6600 Peachtree Dunwood Road
Building 400 - Suite 600
Atlanta, GA 30328
770-604-9095

SCALE IN FEET
0 25 50 100

REVISION DATES

RICHMOND COUNTY
DEPARTMENT OF TRANSPORTATION

RIVERWATCH PARKWAY @ FURY'S FERRY ROAD 2013 CRASH DATA EXHIBIT

DRAWING No.

Attachment F
Project Sheet

Project Number: RC07-000140 ***Project Name:*** Riverwatch Parkway and Fury's Ferry Road Intersection Improvements

GDOT ID: 0011403

Project Description: This project would analyze, design, and construct appropriate treatments to improve the intersection of Riverwatch Parkway and Fury`s Ferry Road. Possible improvements include signal upgrade, reassignment of lanes, improved lighting, and pedestrian facilities.

Regional Commission: Central Savannah River Area

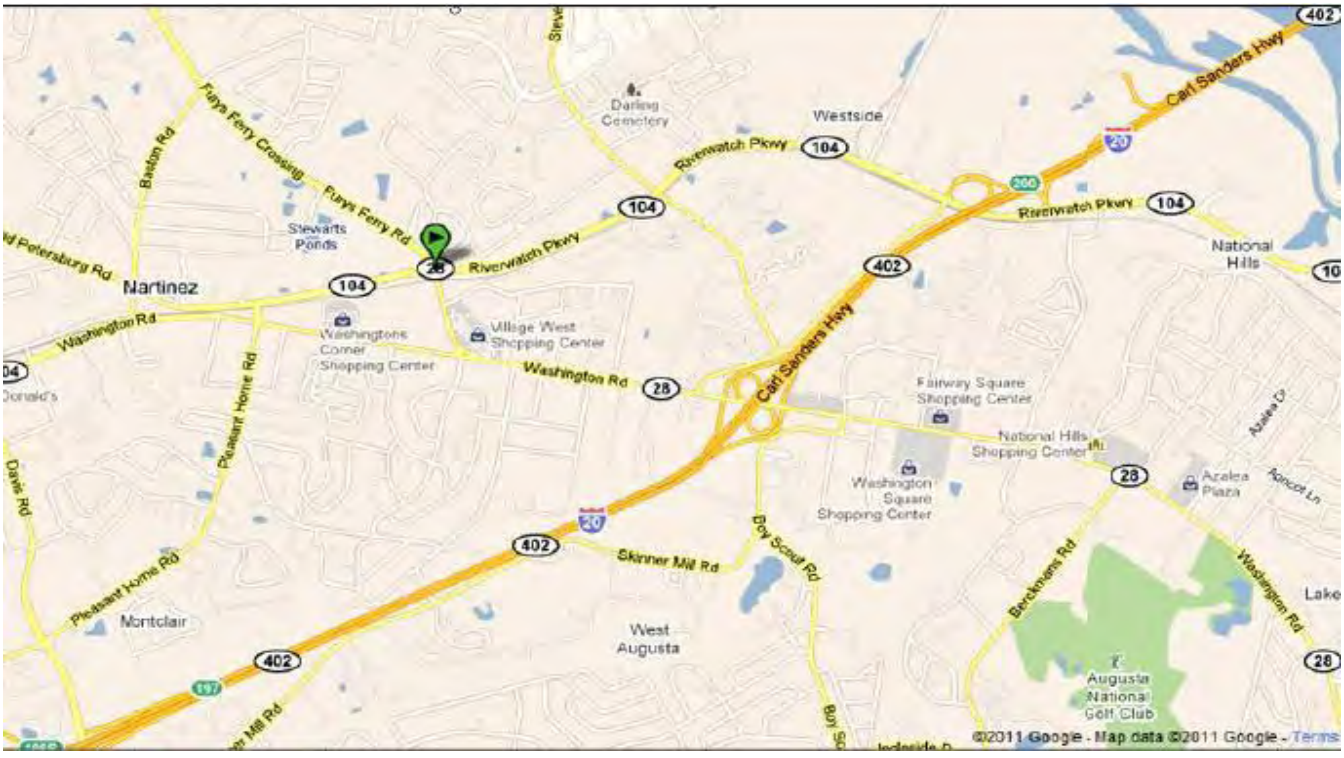
County: Richmond County

Phase	Total Project Cost	Total TIA Amount
PE	$21,543	$21,543
ROW	$100,000	$100,000
CST	$269,423	$269,423
UTL	$125,000	$125,000
Total	**$515,966**	**$515,966**

Comments (Please note all cost estimates are in 2011 dollars and actual costs for all phases at year of expenditure will be higher):

Public Benefit	Notes
Ensuring Safety and Security	This project would benefit the public by potentially reducing the incidence of crashes along this roadway segment, corridor, and/or intersection.
Additional Benefits	This project would benefit the public by enhancing safety through reconstructing the intersection. Currently, there are a high number of accidents at this intersection. This project would analyze, design, and construct appropriate treatments at the intersection to improve the safety. Possible improvements include signal upgrade, reassignment of lanes, improved lighting, and pedestrian facilities.

Project Location



Date: Wednesday, August 20, 2014

To: Attendees and Project File
From: Daveitta Jenkins
Place: Georgia Department of Transportation
Attendees: Tim Matthews (GDOT TIA), Dan Bodycomb (GDOT TIA), Steve Tiedemann (GDOT TIA), Daveitta Jenkins (CH2M HILL), Pramod Choudhary via conference call (CH2M HILL) & Karen Falkenberry via conference call (CH2M HILL)

Subject: Meeting Notes – Concept Team Meeting [P.I. 0011403-Riverwatch Pkwy at Fury's Ferry Rd & 0011404-Riverwatch Pkwy at Stevens Creek Rd]

The Concept Team Meeting was held on August 20, 2014 for the Riverwatch Parkway at Fury's Ferry Road and Stevens Creek Road intersection projects. After the introductions, the meeting began with Daveitta Jenkins addressing the general comments from her call with Dan Bodycomb on August 19th. Dan noted during the call on August 19th that there were some general concerns from the TIA Office about whether the proposed recommendations fully met the stated benefits of the TIA Investment Report and would address the high number of rear end crashes. Dan added that he, Tim Matthews and Steve Tiedemann discussed the possibility of pulling the signal heads on Fury's Ferry Road forward to provide a better line of sight as was done on the Johnson Ferry at Lower Roswell project.

During the Concept Team Meeting Daveitta noted that the TIA Investment Report Project Fact Sheets for these two projects are very general and notes to improve the intersection and provide a public benefit by potentially reducing the incidence of crashes. Daveitta noted that CH2M HILL did not only focus on the traffic analysis in identifying the proposed recommendations, but reviewed the accident history, geometry, existing signage, etc. in coming up with potential solutions. The recommended alternative for each intersection provides for signal timing modifications to allow for protected only phasing for all left turns and a westbound free flow right turn lane. Daveitta commented that during a field visit it did not appear that there were issues with motorists being able to see the signal heads and that the setbacks on all of the existing signal heads meet the MUTCD recommended range of 40'-180'. At the Fury's Ferry Road intersection the greatest setback is on the northbound approach and the setback is around 160' and on Stevens Creek Road they all fall within 100'-120'. Daveitta noted that there is limited opportunity to implement drastic improvements at these intersections considering the budget constraints.

Pramod Choudhary then elaborated on the operational issues at each intersection. He noted that the predominant type of crashes at these intersections are rear end collisions, but a large percentage are angle crashes. Pramod commented that the number of the crashes at the intersections don't necessarily stand out compared to some other projects in Georgia. He noted that the protected left turn signals will help with addressing the angle crashes. Tim Matthews commented that from the accident exhibits there are a lot of rear end crashes

occurring in the thru lanes and it is imperative that the benefit is maximized with the funding provided. Pramod added that nothing stood out in terms of trends and the rear end crashes and they could be a matter of distracted driving. Pramod suggested that the heavy movement on the westbound to northbound right turn lane could be creating some friction for the thru lanes with people slowing down to get into the turn lane and that could also create some challenges with rear end crashes in the thru lanes. He added that the improved operations with the free flow right turn lane could also provide some benefit to addressing this issue. Pramod noted that he was not overly concerned about the potential weaving considering the benefits of the free flow right turn lane. Daveitta added that there is approximately 700' along the free flow right turn lane on Fury's Ferry Road between Riverwatch Parkway and Prattwood Drive. Pramod comment that the westbound free flow right turn lane would provide greater opportunity to merge and travel northbound. Pramod noted that we could add an advanced warning beacon on Fury's Ferry Road to flash when the signal ahead is red.

Dan noted that the traffic analysis indicated that in the Build 2 alternative the Level of Service (LOS) in the AM stays the same and improves the PM over the No Build at a cost of around $50,000. With the proposed alternative there is some slight improvement in LOS, but it comes at a costs of $270,000 and that the GDOT District Traffic Office may not have bought into the free flow right turn lane concept. Daveitta commented that CH2M HILL would schedule a call with the GDOT District Traffic Engineer, Kedrick Collins, to discuss his comments to the Traffic Report and the free flow right turn lanes before submitting the final Concept Report. Tim Matthews commented that he thought there would be some value in adding the free flow right turn lane at the Fury's Ferry Road, but he was not sure about Stevens Creek Road. Tim requested a cost estimate with and without the improved right turn lane at Stevens Creek Road.

Karen added that the placement of the existing signal heads could also be contributing to driver confusion. She noted that the proposed signal improvements include replacing all existing 5-section heads with a 3-section head and providing additional 3-section heads to cover all thru lanes for each movement and realigning them to the center of each lane. The Concept Report will be revised to elaborate on this point.

Tim noted to add sidewalk and wheel chair ramps at Stevens Creek Road. Daveitta commented that there is a limitation on the northeast side of Stevens Creek Road due to right of way constraints, so sidewalk won't be added in that area.

Dan provided a hard copy to Daveitta of a few comments to address in each of the Concept Reports. Dan also requested that the Technical Memo that was provided regarding additional improvements on Fury's Ferry Road that are cost prohibitive be put on CH2M HILL letterhead instead of GDOT letterhead.

Tim directed Daveitta to send a copy of the Concept Reports to Glenn Bollinger with Augusta for his reference.