DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
TIA PROJECT CONCEPT REPORT

TIA

Project Type:	Intersection Imp.	P.I. Number:	0011404
GDOT District:	2	County:	Richmond
Federal Route Number:	N/A	RC Project ID:	RC07-000141
State Route Number:	SR 104		

Project Description: Riverwatch Parkway and Stevens Creek Road intersection improvements, including timing modifications and the addition of pedestrian facilities.

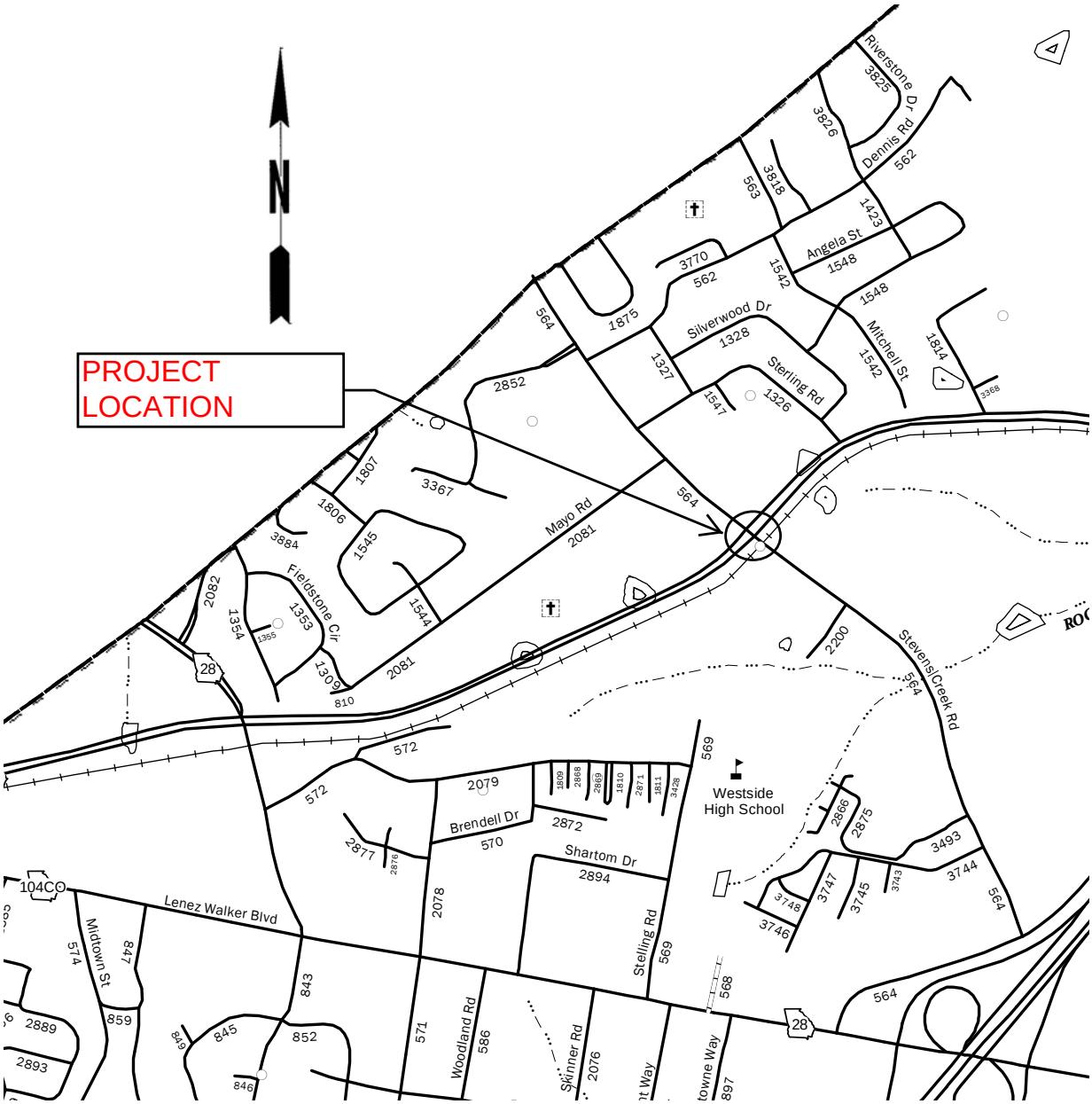
Submitted for approval:

Local Government Representative	11-19-14 DATE
,CH2M HILL District Engineer/Consultant & Firm	11/19/14 DATE
TIA Project Manager	11/19/14 DATE
GDOT TIA Regional Coordinator	11/20/14 DATE
TIA Program Manager	19 NOV 2014 DATE
GDOT State TIA Administrator	11/20/2014 DATE

Approval:

Concur:	GDOT Director of Engineering	11/20/14 DATE
Approve:	GDOT Chief Engineer	11/20/14 DATE

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 Stevens Creek Road while decreasing the number of accidents. The recommended alternative involves 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 adding sidewalk along the west side of Stevens Creek Road going north from the intersection with Riverwatch Parkway to Mayo Road, ramps on all other quadrants, pedestrian crosswalks and a pedestrian signal. **Attachment A** shows the typical section for Stevens Creek Road. **Attachment B** shows the conceptual layout. Traffic projections for the existing condition (2014), year 2018 and year 2038 are located in **Attachment D**.

This intersection currently operates at a Level of Service (LOS) C. With four main movements (EB, WB, NB and SB) and two peaks (AM and PM), there are eight main movements where the level of service is evaluated. Of those eight movements, there are two which are classified as LOS B and six are classified as LOS C. If no improvements are made, the two movements which were LOS B degrade to a LOS C, and four of the six remaining movements degrade to a LOS D by 2038 even though the overall LOS for the intersection remains at a C. If the recommended alternative is implemented, the intersection would operate at LOS C with three movements remaining at LOS C, four movements operating at LOS D, and one movement operating at LOS E. Even though some movements are operating at LOS D or LOS E indicating longer delays, all movements would operate within capacity with the volume / capacity ratio below 1.0. 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 the 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 and a left turn protected phase will be added to the signals for all approaches. 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 two 3-section heads. 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, providing additional 3-section heads to cover all through lanes for each movement, and replacing all existing 3-section heads. When the new signal heads are 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.

Utilizing the existing pavement width in this area will also allow existing utilities to remain in place. There is one main utility pole on the east side of the roadway and a second concrete strain pole for overhead signage which are both unaffected by the proposed improvements. Similarly, existing right-of-way is unaffected by the proposed improvements at this intersection.

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:** RC07-000141

Congressional District(s): 12

Projected Traffic (AADT):
Current Year (2014): 26,920 Open Year (2018): 28,040 Design Year (2038): 34,220
Traffic Projections Performed by: CH2M Hill, Inc. (see Traffic Diagrams in **Attachment D**)

Functional Classification (Mainline): Rural Local Road

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: *Stevens Creek Road*

Feature	Existing	Standard*	Proposed
Typical Section			
- **Number of Lanes**	**2**	**2**	**2**
- **Lane Width(s)**	**12'**	**12'**	**12'**
- **Cross Slope**	**2%**	**2-4%**	**2%**
- **Median Width & Type**	**None**	**None**	**---**
- **Shoulder Treatment**	**Curb & gutter**	**Curb & gutter**	**Curb & gutter**
- **Outside Shoulder Slope**	**13.5%**	**6%**	**13.5%**
- **Sidewalks**	**None**	**None**	**---**
- **Bike Lanes**	**None**	**None**	**---**
Posted Speed	**40 mph**	**No change**	**40 mph**
Design Speed	**45 mph**	**---**	**45 mph**
Min Horizontal Curve Radius	**N/A**	**675'**	**N/A**
Superelevation Rate	**N/A**	**4%**	**N/A**
Grade	**5.4%**	**7%**	**5.4%**
Access Control	**None**	**---**	**None**
Right-of-Way Width	**230' min**	**---**	**230' min**
Maximum Grade (Level @ 45 mph)	**6.5%**	**7%**	**6.5%**
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

Major Structures: None

Major Interchanges/Intersections: Stevens Creek Road

Utility Involvements: Overhead electrical lines run parallel to Stevens Creek Road and cross Riverwatch Parkway on the west side of the intersection. There is also a crossing of the overhead electrical lines from the NW corner to the east side of Stevens Creek Road then back to the west side of the road. The one pole located on the east side has several guy wires for support. Additional utilities attached to the electrical power poles could include telephone, cable TV, and fiber optic lines. Water main valves are located along Riverwatch Parkway on the NE, SW and SE corners of the intersection. Telephone markers are located in the NE quadrant of the intersection as well.

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

SUE Required: ☒ No ☐ Yes

Railroad Involvement: There is an at-grade CSX railroad crossing on the south side of the intersection. No impacts are expected to these facilities.

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. 0011403	Riverwatch Parkway / Fury's Ferry 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 pedestrian facilities to Mayo Road, providing mast arms if budget allowed, 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 $	$165,145.00	$654.73	$199,345.27	$65,594.00	$0.00	$430,739.00
Estimated $ Amount	$165,145.00	$0.00	$0.00	$248,856.34	$0.00	
Budget $ Contingency	$5,313.45	$21.55	$6,517.45	$4,112.76	$0.00	
Total Estimated Cost	$170,458.45	$21.55	$6,517.45	$252,969.10	$0.00	$429,966.55

*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: Yield-Controlled Westbound Right Turns & Protected Only Phasing for all Left Turns			
Estimated Property Impacts:	None	**Estimated Total Cost:**	$429,967
Estimated ROW Cost:	None	**Estimated CST Time:**	4 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. Overall, the intersection will operate more efficiently.			

Alternative 1: Protected Only Phasing for East-West Left Turns			
Estimated Property Impacts:	None	**Estimated Total Cost:**	$42,579
Estimated ROW Cost:	None	**Estimated CST Time:**	1 month
Rationale: This alternative is suggested because it adds two movements into the protected only phasing.			

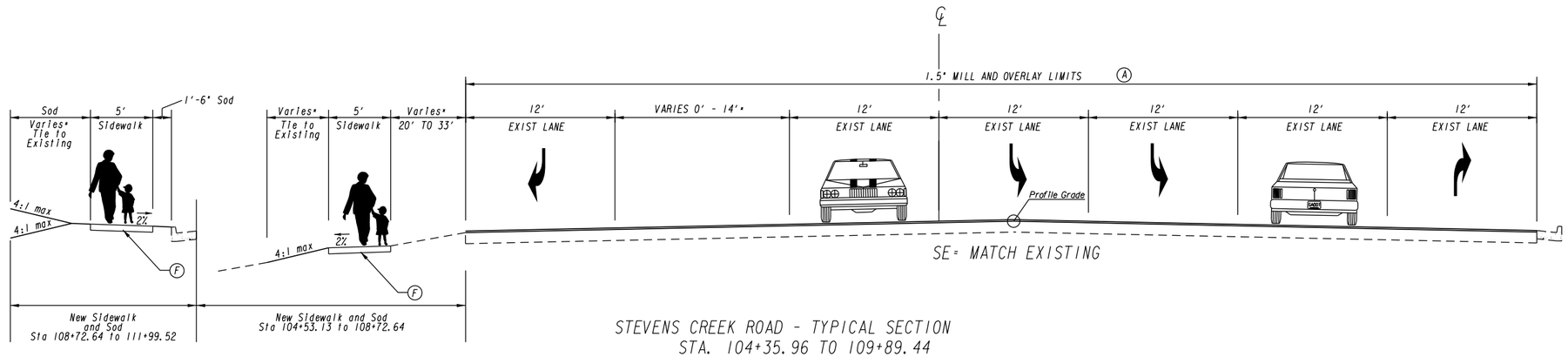
Alternative 2: Protected Only Phasing for all Left Turns			
Estimated Property Impacts:	None	**Estimated Total Cost:**	$42,579
Estimated ROW Cost:	None	**Estimated CST Time:**	1 month
Rationale: This alternative is suggested because it provides protected only phasing for all left turns.			

Comments/additional information: None

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

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	0011404	5	---



STEVENS CREEK ROAD - TYPICAL SECTION
STA. 104+35.96 TO 109+89.44

MILLING & RESURFACING

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

SIDEWALK CONSTRUCTION

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

*SEE PLAN SHEETS

SLOPE CONTROLS		
SLOPE	CUT	FILL
4:1		0-10'
2:1	ALL	OVER 10'

MILLING & RESURFACING

ALLOWABLE RANGES TABLE

FOR THIS PROJECT, CROSS SLOPES THAT ARE ADJUSTED TO "BEST FIT" EXISTING PAVEMENT SLOPES ARE SUBJECT TO THE FOLLOWING LIMITS:

A. NORMAL CROWN

SECTION WITH GRADES 0.5% OR GREATER	SECTION WITH GRADES LESS THAN 0.5%
0.0150 FT/FT - MINIMUM	0.0156 FT/FT - MINIMUM
0.0208 FT/FT - DESIRABLE	0.0208 FT/FT - DESIRABLE
0.0250 FT/FT - MAXIMUM	0.0300 FT/FT - MAXIMUM

B. SUPERELEVATION RATE

S.E. RATE SHOWN ON PLANS OR SE RATE EXISTING IN FIELD, WHICHEVER IS GREATER.

C. SUPERELEVATION TRANSITION LENGTH (LENGTH FROM FLAT POINT TO FULL SE)

	RATE OF CHANGE	CORRESPONDING DIFFERENCE IN GRADE BETWEEN PIVOT POINT AND EDGE OF PAVEMENT
MINIMUM	1:150	0.67%
DESIRABLE	1:200	0.50%
MAXIMUM	1:300	0.33%

LENGTH SHALL BE SET TO AVOID CREATING A FLAT GUTTER GRADE ON LOW SIDE AND TO AVOID FLAT CROSS SLOPES AT OR NEAR THE LOW POINT OF VERTICAL CURVES.

D. POSITIONING OF SUPERELEVATION TRANSITION LENGTH ON SIMPLE CURVES

50% OF TRANSITION INSIDE CURVE - MAXIMUM
33% OF TRANSITION INSIDE CURVE - DESIRABLE
20% OF TRANSITION INSIDE CURVE - MINIMUM

NOTE: CROWN WIPE-OUT SHALL BE AT THE SAME RATE AS THE SE TRANSITION.

E. SMOOTHING OF BREAKS IN EDGE PROFILE AT BEGIN AND END OF TRANSITION SHALL BE ACCOMPLISHED BY VERTICAL CURVE WITH A MINIMUM LENGTH (IN FEET) EQUAL TO THE SPEED DESIGN (IN MPH).

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REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTION

STEVENS CREEK RD AT
RIVERWATCH PKWY (SR 104)

DRAWING No. 05-01

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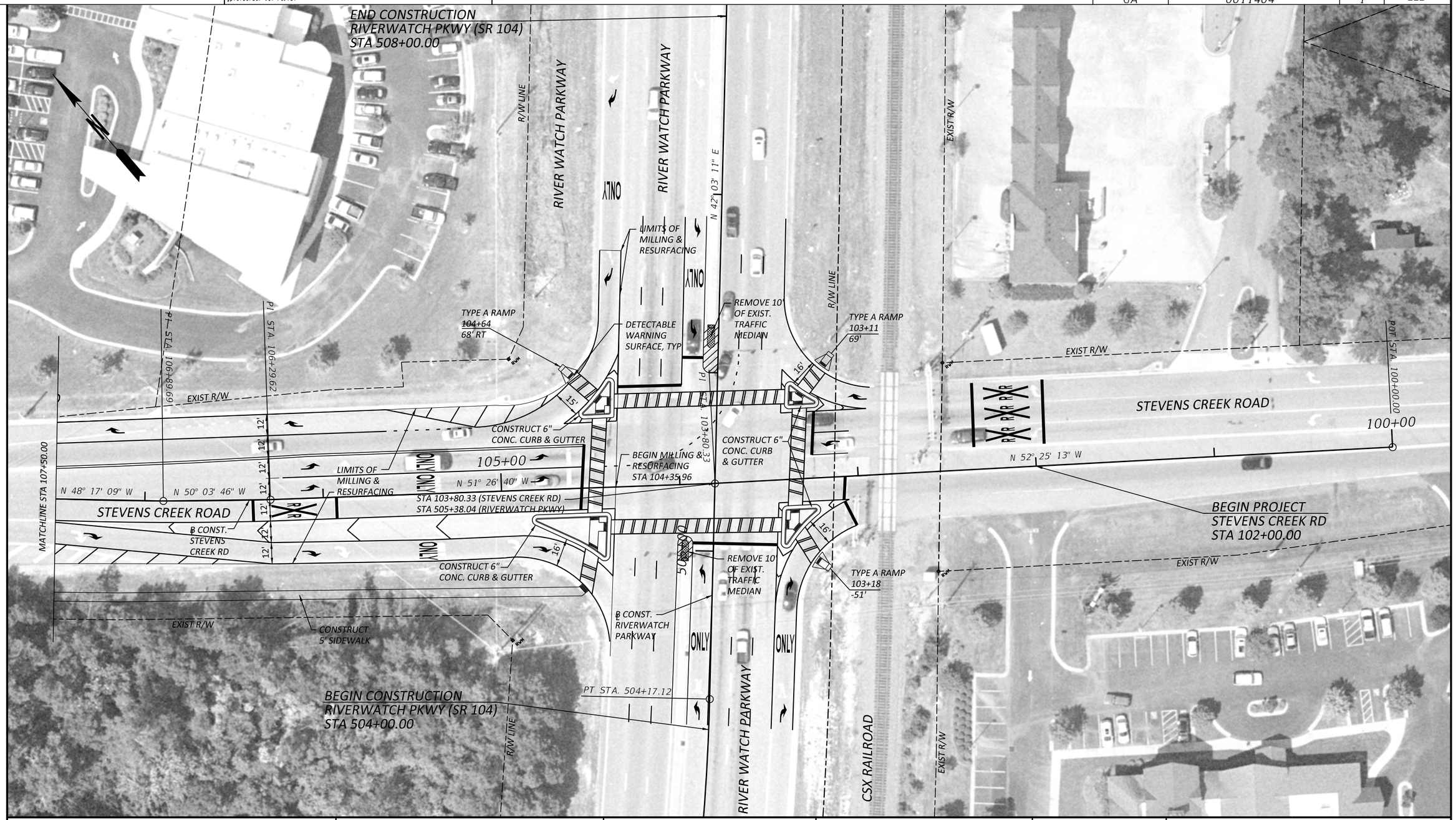
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	0011404	1	---



PROPERTY AND EXISTING R/W LINE
REQUIRED R/W LINE
CONSTRUCTION LIMITS
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES
EASEMENT FOR CONSTR OF SLOPES
EASEMENT FOR CONSTR OF DRIVES

BEGIN LIMIT OF ACCESS.....BLA
END LIMIT OF ACCESS.....ELA
LIMIT OF ACCESS
REQ'D R/W & LIMIT OF ACCESS

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SCALE IN FEET
0 25 50 100

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

MAINLINE ROADWAY PLAN

STEVENS CREEK RD AT RIVERWATCH PKWY (SR 104)

DRAWING No. 13-01

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA	0011404	2	---

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SCALE IN FEET
0 25 50 100

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

MAINLINE ROADWAY PLAN

STEVENS CREEK RD AT
RIVERWATCH PKWY (SR 104)

DRAWING No.
13-02

Attachment C
Stevens Creek Intersection with Riverwatch Parkway
Conceptual Construction Cost Estimate - Alternate 1
P.I. Number: 0011404

Description	Quantity	Unit	Unit Cost*	Total Cost
Traffic Control - Conceptual	1	LS	$ 3,180.00	$ 3,180.00
Traffic Signal Installation	1	LS	$ 13,175.14	$ 13,175.14
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				
Rem Hwy Sign, Ovhd	3	EA	$ 624.04	$ 1,872.12
Traffic Signal Timing	1	LS	$ 16,742.02	$ 16,742.02
Subtotal:				$ 34,969.28
10% Contingency:				$ 3,496.93
Budget Contingency (incl. Engr. and Inspection):				$ 4,112.76
Total:				**$ 42,578.97**

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

Attachment C
Stevens Creek Intersection with Riverwatch Parkway
Conceptual Construction Cost Estimate - Alternate 2
P.I. Number: 0011404

Description	Quantity	Unit	Unit Cost*	Total Cost
Traffic Control - Conceptual	1	LS	$ 3,180.00	$ 3,180.00
Traffic Signal Installation	1	LS	$ 13,175.14	$ 13,175.14
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				
Rem Hwy Sign, Ovhd	3	EA	$ 624.04	$ 1,872.12
Traffic Signal Timing	1	LS	$ 16,742.02	$ 16,742.02
Subtotal:				$ 34,969.28
10% Contingency:				$ 3,496.93
Budget Contingency (incl. Engr. and Inspection):				$ 4,112.76
Total:				**$ 42,578.97**

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

Attachment C
Stevens Creek Intersection with Riverwatch Parkway
Conceptual Construction Cost Estimate - Alternate 3
P.I. Number: 0011404

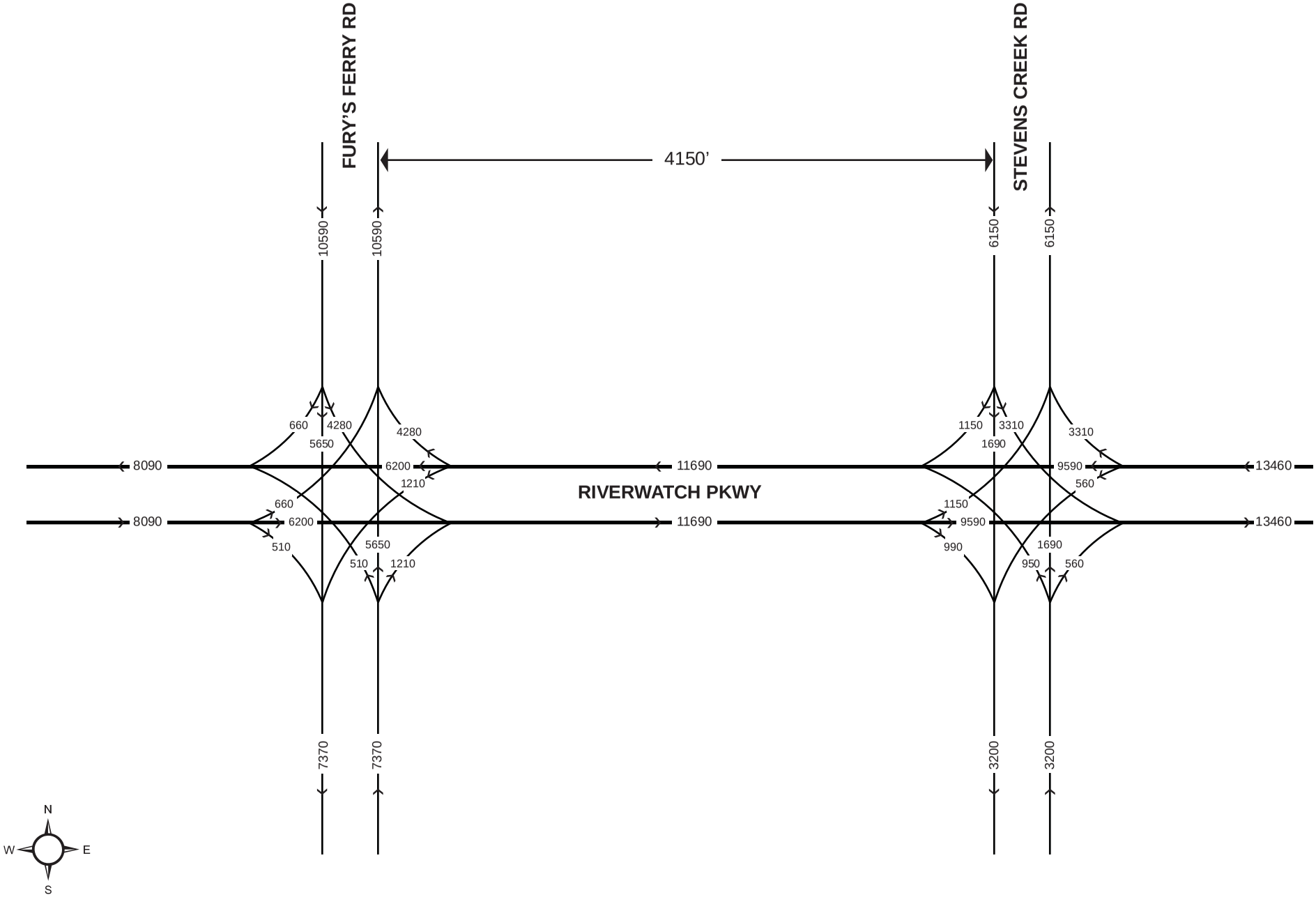
Description	Quantity	Unit	Unit Cost*	Total Cost
Traffic Control - Conceptual	1	LS	$ 18,271.17	$ 18,271.17
Erosion Control - Conceptual	1	LS	$ 4,060.26	$ 4,060.26
Recycled Asph. Conc. 12.5mm Superpave, GP2 Only, incl. bit matl & h lime (1.5")	404	TN	$ 89.03	$ 35,949.94
Mill Asphalt Concrete Pavement, 1.5" Depth	4894	SY	$ 2.38	$ 11,648.90
Concrete Sidewalk, 4"	398	SY	$ 34.61	$ 13,762.47
Conc Curb and Gutter, 6"x30", Type 2	276	LF	$ 13.74	$ 3,789.49
Rem Conc Curb & Gutter, All Sizes	31	LF	$ 14.26	$ 434.93
Rem Hwy Sign, Ovhd	3	EA	$ 624.04	$ 1,872.12
Highway Signs, Type 1 Matl, Refl Sheeting, Type 1	20	SF	$ 20.00	$ 400.00
Highway Signs, Type 1 Matl, Refl Sheeting, Type 3	18	SF	$ 15.87	$ 285.66
Highway Signs, Type 2 Matl, Refl Sheeting, Type 3	32	SF	$ 21.04	$ 673.28
Ground-Mounted Breakaway Sign Support	4	EA	$ 480.12	$ 1,920.48
Concrete Strain Pole, TP IV, including Luminaire Arm	4	EA	$ 7,678.60	$ 30,714.40
Traffic Signal Installation	1	LS	$ 49,983.67	$ 49,983.67
Signal Head Traffic Assembly Removal, 5-Section				
Traffic Signal, Furnish & Install, 3-Section, 1-Way, Aluminum				
Span Wire Assembly, Furnish & Install, Two Pt, Box				
Pull Box, Type 1				
Pull Box, Type 2				
Pull Box, Type 3				
Pedestrian Signal, Furnish & Install, LED-Count Dwn, 8				
Aluminum Signals Pole, Pedestal				
Pedestrian Detector, Furnish & Install, Std				
Sign Panel, Relocate, up to 12 sf				
Sign Panel, Relocate, 12-20 sf				
Complete Pole Removal - Deep, Direct Bury				
Blank Out Sign, Relocate				
Electrical Service Disconnect, F&I, Pole Mount				

Attachment C
Stevens Creek Intersection with Riverwatch Parkway
Conceptual Construction Cost Estimate - Alternate 3
P.I. Number: 0011404

Description	Quantity	Unit	Unit Cost*	Total Cost
Loop Detector, 6ft x 40ft, Quadrupole	4	EA	$ 948.50	$ 3,794.00
Conduit, Nonmetal, Tp 3, 2"	72	LF	$ 5.29	$ 380.88
Directional Bore	475	LF	$ 14.17	$ 6,730.75
Traffic Signal Timing	1	LS	$ 16,742.02	$ 16,742.02
Thermoplastic Pvmt Marking, RR/Hwy Crossing Symbol	4	EA	$ 495.71	$ 1,982.84
Thermoplastic Pvmt Marking, Arrow, Type 2	21	EA	$ 97.85	$ 2,054.85
Thermoplastic Pvmt Marking, Word, Type 1	7	EA	$ 131.90	$ 923.30
Thermoplastic Solid Traffic Stripe, 5", White	3769	LF	$ 0.63	$ 2,374.53
Thermoplastic Solid Traffic Stripe, 5", Yellow	1897	LF	$ 0.63	$ 1,195.11
Thermoplastic Solid Traffic Stripe, 18", White	277	LF	$ 3.50	$ 967.75
Thermoplastic Solid Traffic Stripe, 18", Yellow	258	LF	$ 3.50	$ 903.00
Thermoplastic Solid Traffic Stripe, 24", White	280	LF	$ 6.56	$ 1,836.80
Thermoplastic Solid Traffic Stripe, 8", White (ped crosswalk)	1633	LF	$ 2.66	$ 4,342.45
Thermoplastic Skip Traffic Stripe, 5", White	0.179	GLM	$ 1,431.09	$ 256.76
Thermoplastic Traffic Striping, Yellow	11	SY	$ 4.89	$ 55.96
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, Nonmetal, TP 2, 1 IN	40	LF	$ 6.01	$ 240.40
Conduit, Nonmetal, Tp 2, 2"	77	LF	$ 7.21	$ 555.17
Electrical Junction Box	2	EA	$ 700.00	$ 1,400.00
Sod	273	SY	$ 5.53	$ 1,509.69
Subtotal:				$ 226,233.04
10% Contingency:				$ 22,623.30
Budget Contingency (incl. Engr. and Inspection):				$ 4,112.76
Total:				**$ 252,969.10**

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

ATTACHMENT D



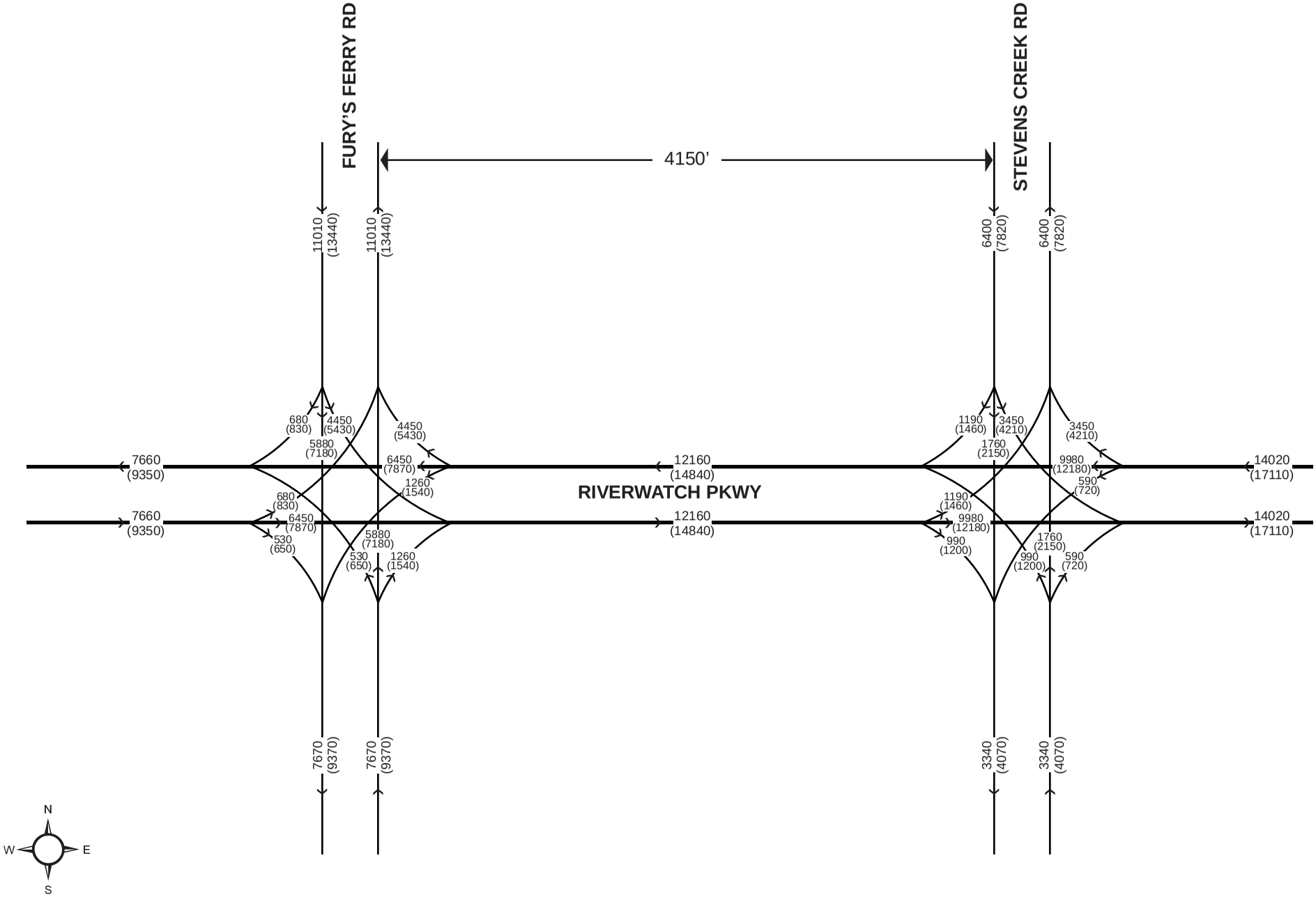
Legend

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	1:42:26 PM	$FILE$	COUNTY	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
			RICHMOND			

TOTAL CRASHES = 20
REAR END = 12
ANGLE = 4
SIDE SWIPE SAME DIR = 3
HEAD ON = 1

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

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SCALE IN FEET
0 25 50 100

REVISION DATES

RICHMOND COUNTY
DEPARTMENT OF TRANSPORTATION

RIVERWATCH PARKWAY
@ STEVENS CREEK RD
2010 CRASH DATA EXHIBIT

DRAWING No.

$DATE$ USER:kfalkenb	1:41:19 PM	$FILE$	COUNTY	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
			RICHMOND			

TOTAL CRASHES = 14
REAR END = 7
ANGLE = 5
SIDE SWIPE SAME DIR = 1
OUT OF CONTROL = 1

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
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
@ STEVENS CREEK RD
2011 CRASH DATA EXHIBIT

DRAWING No.

$DATE$ USER:kfalkenb	1:39:47 PM	$FILE$	COUNTY	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
			RICHMOND			

TOTAL CRASHES = 25
REAR END = 12
ANGLE = 7
SIDE SWIPE SAME DIR = 2
OUT OF CONTROL = 4

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
@ STEVENS CREEK RD
2012 CRASH DATA EXHIBIT

DRAWING No.

$DATE$ USER:kfalkenb	1:38:23 PM	$FILE$	COUNTY	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
			RICHMOND			

TOTAL CRASHES = 21
REAR END = 11
ANGLE = 7
SIDE SWIPE SAME DIR = 2
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
@ STEVENS CREEK RD
2013 CRASH DATA EXHIBIT

DRAWING No.

Attachment F
Project Sheet

Project Number: RC07-000141 ***Project Name:*** Riverwatch Parkway and Stevens Creek Road Intersection Improvements

GDOT ID: 0011404

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

Regional Commission: Central Savannah River Area

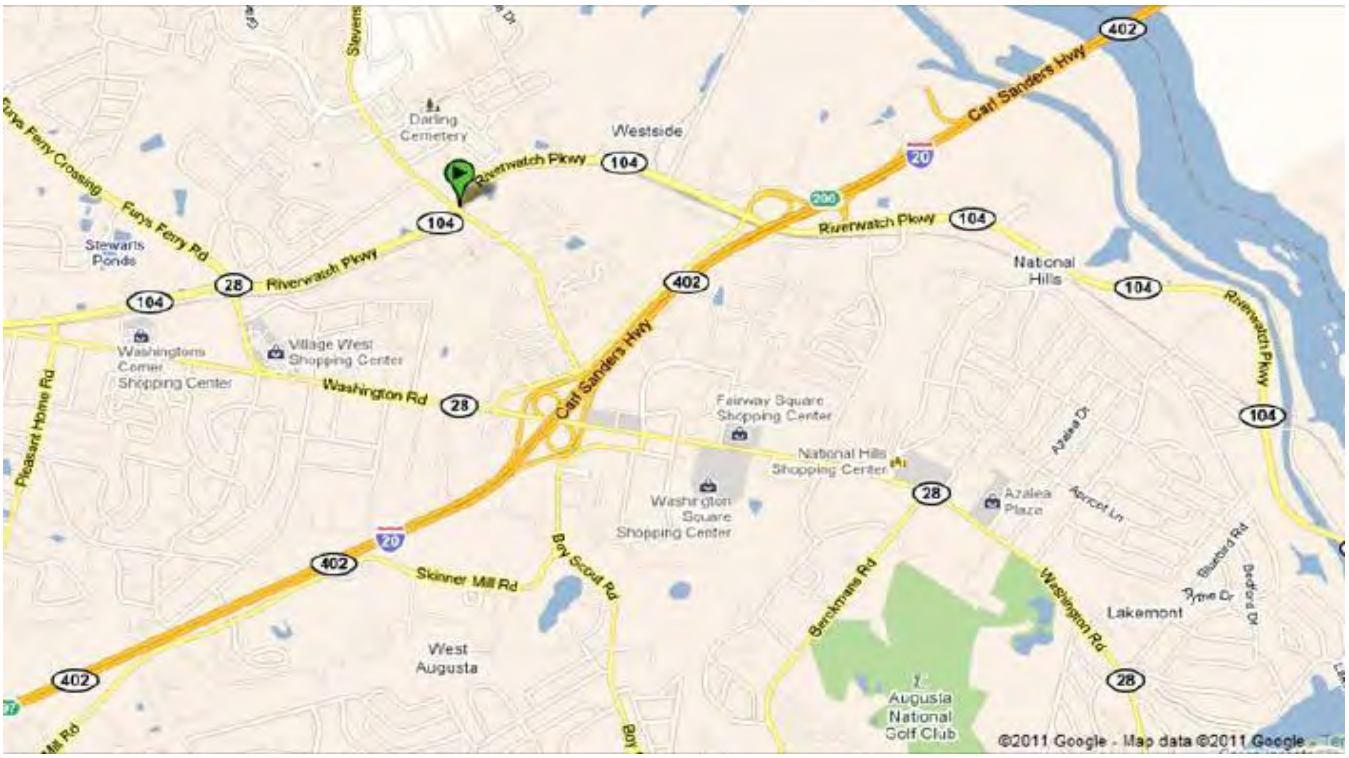
County: Richmond County

Phase	Total Project Cost	Total TIA Amount
PE	$5,145	$5,145
ROW	$160,000	$160,000
CST	$65,594	$65,594
UTL	$200,000	$200,000
Total	**$430,739**	**$430,739**

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 as a potential reduction factor for the current high number of accidents at this intersection. 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.