

D.O.T. 66

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE P. I. No. 0005834, Washington County **OFFICE** Preconstruction
STP-0005-00(834)
SR 15 at Mathews Road Intersection Improvements **DATE** February 1, 2006

FROM *Cynthia J. Pirkle*
Margaret B. Pirkle, P.E., Assistant Director of Preconstruction

TO *to:* SEE DISTRIBUTION

SUBJECT APPROVED PROJECT CONCEPT REPORT

Attached for your files is the approval for subject project.

MBP/cj

Attachment

DISTRIBUTION:

Brian Summers
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DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

PROJECT CONCEPT REPORT

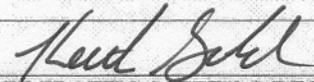
STP-0005-00 (834)
INTERSECTION IMPROVEMENTS ON SR 15 AT MATHEWS ROAD
WASHINGTON COUNTY

FEDERAL ROUTE NO: F45-1
STATE ROUTE NO: 15
GADOT P.I. NO: 0005834

SEE ATTACHED
LOCATION SKETCH

Date of Report: January 30, 2006

RECOMMENDED: 2-2-06
DATE


STATE TRAFFIC SAFETY & DESIGN ENGINEER

RECOMMENDED: 1-30-06
DATE


DISTRICT ENGINEER

RECOMMENDED: 2/6/06
DATE


CHIEF ENGINEER

PROJECT CONCEPT REPORT

P.I. No.: 0005834

Project No.: STP-0005-00 (834) Washington County

Route No.: SR 15
CR 347 (Matthews Road)

Location: This project is located at the north city limits of the City of Tennille on SR 15 and the intersection of Matthews Road (CR 347) - M.P. 12.49. The project begins at M.P. 12.33 and ends at M.P. 12.92

Description: Improvements for the intersection of SR 15 and Matthews Road were originally to be included in project MLP-15(136) which is to be deleted from the GDOT work program because private developments have constructed most of that project by installing turn lanes through the access permit process. This project has been established in an effort to extend the 5-lane section of SR 15 to this intersection, construct left-turn lanes on SR 15 and install a stop and go traffic signal at this location in order to improve safety and the functionality of this intersection.

Traffic – Current ADT: SR 15 ----- 16,000 (2007 ADT)
Matthews Rd ----- 28,500 (2027 ADT)

Existing Typical: SR 15: 4 – 10 ft. travel lanes, with curb & gutter each side. Concrete sidewalk exists on the east side of SR 15 throughout the project limits and from the beginning of the project to Matthews Road on the west side of SR 15.

Matthews Rd: 2 – 12 ft. travel lanes, one in each direction, with curb & gutter and sidewalk each side.

Existing Right of Way: SR 15 ----- 60' (Estimated)
Matthews Rd----- 40' (Estimated)

Existing Traffic Control: SR 15 is continuous and motorists are not required to stop. The northbound and southbound lanes have skip white lane markings and are divided by double yellow centerline markings. The eastbound approach of Matthews Road is controlled by double indicated stop ahead signs, a yield sign for right turners, stop sign with stop bar, and double yellow centerline markings.

Existing Major Structures: None.

Statement of Need & Purpose: See attached sheets.

Bicycle & Pedestrian Considerations: Sidewalk shall be installed to accommodate current ADA regulations throughout the project limits.

Length: 0.587 miles

<u>Termini:</u>	SR 15	CR 347
<u>From M.P.:</u>	12.33	10.45
<u>To M.P.:</u>	12.92	10.60

PDP Class: Minor on Existing Alignment

Functional Class: SR 15 ----- Rural Minor Arterial
 Matthews Road ----- Rural Major Collector

Max Degree of Curve: +/- 2 Degrees Max Grades: +/- 2.0 %

Design Speed: SR 15 - 45 mph
 Matthews Road – 35 mph

Proposed Typical Section: SR 15: 2 – 12-ft. travel lanes in each direction with a 14-ft. two-way left turn lane & 12-ft. right turn auxiliary lanes at traffic generators. The shoulders will consist of 10-ft. urban shoulders with curb, gutter and sidewalk each side.

Matthews Road: 1 – 12 ft. travel lane in each direction with a 12-ft. left turn lane. The shoulders will consist of 8-ft. urban shoulders with curb, gutter and sidewalk each side.

Proposed major structures: None.

Type Access: By Permit.

Traffic Control During Construction: Existing traffic operation shall be maintained on the existing roadway during construction, some staging will be required.

Right-of-Way Requirement: Georgia Department of Transportation shall be responsible for the acquisition of all Required Right-of-Way for this project.

Utilities: Georgia Department of Transportation shall be responsible for all Utility adjustments.

Estimated Cost:

<u>Item</u>	<u>Total Amount</u>
Construction	\$1,261,359.07
E & C (10%)	\$126,135.91
Inflation	\$69,374.75
Estimated R/W Cost	\$908,720.00
Estimated Utility Cost	\$75,000.00
Total Estimated Project Costs	\$2,440,589.73

Permits Required: The proposed Traffic Signal will require a permit.

Level of Environmental Analysis: A Categorical Exclusion is anticipated.

Level of Public Involvement: None.

Time Saving Procedures Appropriate: Yes (X) No ()

Design Variances Required: None.

Alternatives Considered: None.

Comments: This office recommends that this concept be approved as written.

Prepared By:

Alan Smith, District Design Engineer

Attachments:

Location Sketch

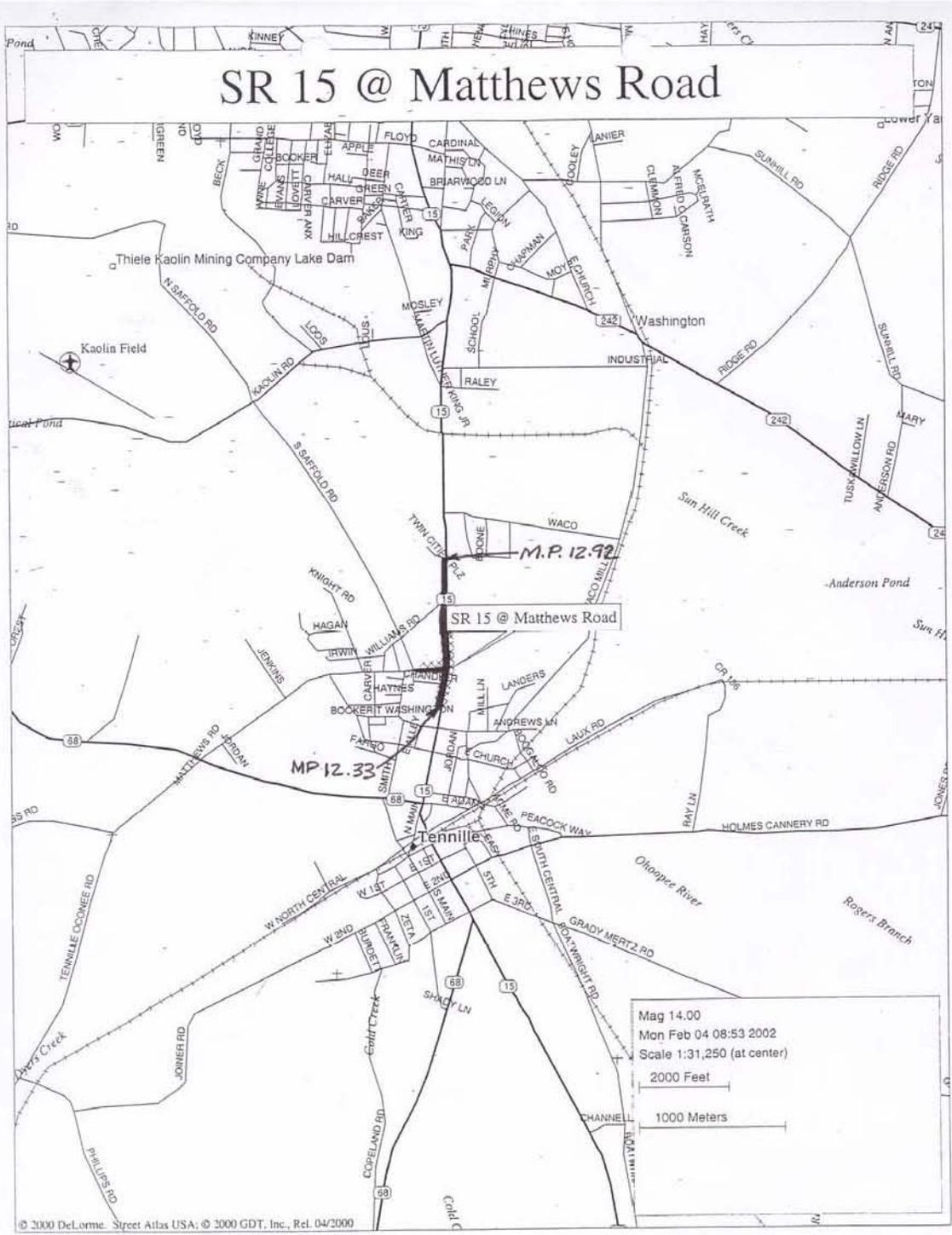
Traffic Engineering Report

R/W Estimate

Construction Estimate (Incl. E&C and Inflation)

Need and Purpose Statement

SR 15 @ Matthews Road



DEPARTMENT OF TRANSPORTATION

STATE OF GEORGIA



TRAFFIC ENGINEERING REPORT
May 9, 1995

LOCATION: State Route 15 at Matthews Road
COUNTY: Washington
CITY: Tennille
REQUESTED BY: Mayor David Hartley
REASON FOR INVESTIGATION: To determine if a stop and go traffic signal is warranted at this location.
MILE LOG: 12.49

FINDINGS

TOPOGRAPHY

State Route 15 at Matthews Road is a typical "T" intersection located within the City limits of Tennille, Washington County. State Route 15 runs north towards Sandersville and south towards Wrightsville. State Route 15 at this location is composed of asphaltic concrete paving with four ten foot lanes for a total pavement width of forty feet. There is curb and gutter along both sides of State Route 15. Matthews Road is a city street that serves a predominately residential area of Tennille. Matthews Road also serves as a local connector between State Route 15 and State Route 68. Matthews Road is composed of asphaltic concrete paving with two ten foot lanes and a eighteen foot right turn lane for a total pavement width of thirty eight feet.

A Jet food store, a car wash and a laundry mat are located in the northwest quadrant, and a residence is in both the southwest quadrant and on the east side of State Route 15. (See attached diagram).

Traffic Engineering Report
 State Route 15 at Matthews Road
 Page Two
 May 9, 1995

The sight distance on State Route 15 are as follows:

1. Looking North on State Route 15 from Matthews Road is approximately 730 feet.
2. Looking South on State Route 15 from Matthews Road is approximately 870 feet.

EXISTING TRAFFIC CONTROL

State Route 15 is continuous and motorists are not required to stop. The northbound and southbound lanes have skip white lane markings and are divided by double yellow centerline markings. The eastbound approach of Matthews Road is controlled by double indicated stop ahead signs, a yield sign for right turners, stop sign with stop bar, and double yellow centerline markings.

VEHICULAR VOLUMES

APPROACH	PEAK HOUR (4:30p.m. - 5:30p.m.)	ONE HOUR (7:45a.m. - 8:45a.m.)	24-HOUR
NORTHBOUND(Sr. 15)	386	587	5884
SOUTHBOUND(Sr. 15)	619	331	7585
EASTBOUND(Matthews Rd.)	141	168	2347
Total Volume	1146	1086	15,816

VEHICULAR SPEED

The posted speed limit on State Route 15 changes at the intersection of Matthews Road. The posted speed limit north of Matthews Road is 45 mph and south of Matthews Road is 40 mph. The posted speed limit on Matthews Road is 35 mph. A spot speed study was conducted on State Route 15 approximately 100 feet south of the subject intersection and the combined north and south 85th percentile speed was 49 mph.

PEDESTRIAN MOVEMENTS

During the on site inspection of the intersection, no pedestrians were present at or along any approach to the intersection. However, it is believed that pedestrians could be present due to the following: the intersection is located in a predominately residential section of town, there is sidewalk on Matthews road and on the east side of State Route 15, and a convenience store is located in the northwest quadrant of the intersection.

DELAY

A stopped-time delay study was conducted for the east bound approach of Matthews Road. The largest total delay for Matthews Road occurred from 7:47 A.M. to 7:52 A.M. The total delay was 1410 seconds and the average delay per stopped vehicle was 117.5 seconds. The average total delay per stopped vehicle per sample was 37.07 seconds.

During the delay study, several vehicles were observed going through the parking lot of the Jet Food store and utilizing their drives to get onto State Route 15.

PARKING

Parking is prohibited on State Route 15 in the City of Tennille beginning at Fourth street and extending north to Matthews Road. The ordinance was signed by Mayor C.E. Byrne on October 10, 1983.

ACCIDENT HISTORY

Reports for accidents that occurred at this intersection from January 1, 1994 thru January 1, 1995 were requested from the Georgia State Patrol, The Tennille Police Department and the Washington County Sheriff's Department. The Georgia State Patrol reported one right angle accident. There was one injury and no fatalities reported. The Tennille Police reported no accidents. The Washington County Sheriff's Department reported three right angle accidents and one struck object accident. There was one injury and no fatalities. In addition to these five accidents, the accident data was checked for three years prior and found that eight accidents had been reported.

Traffic Engineering Study
State Route 15 at Matthews Road
Page Four
May 9, 1995

ADJACENT SIGNALIZED INTERSECTION

There is a stop and go traffic signal on State Route 15 at Adams Street approximately 0.6 miles south of the subject intersection. The controller brand is Transyt model number 1880. The signal operation is fully actuated with two phases being operated.

INTERSECTION HISTORY

1. In April of 1982, a Traffic Engineering study was conducted to determine if a stop and go traffic signal was warranted at the intersection. Based on the findings of that study, the warrants for signalization were not met. However, it was concluded that long wheel base vehicles such as trucks and school buses were having trouble entering and exiting Matthews Road. It was recommended that Matthews Road be widened to provide a left turn bay and that the size of the radii be increased.
2. In May of 1985, a Traffic Engineering study was conducted to determine if a stop and go traffic signal was warranted at the intersection. Based on the findings of that study, the warrants for signalization were not met.
3. In April of 1990, a Traffic Engineering study was conducted to determine if a stop and go traffic signal was warranted at the intersection. Based on the findings of that study, the warrants for signalization were not met.

OTHER INFORMATION

As stated previously in this report, Matthews Road is a city street that serves a residential area of the City of Tennille. There are several subdivisions and a government housing project on Matthews Road which may generate a significant amount of vehicle and pedestrian traffic at the intersection. Also, there are several undeveloped areas that are served by Matthews Road that are zoned as residential.

There is a project MLP 15-(136) (P.I.#220545) in the Department's construction work program that is tentatively scheduled for letting in June of 1997 which will include this intersection. The project will extend the five(5) lane section from Waco Drive south to a point 800 feet south of subject intersection.

Traffic Engineering Report
State Route 15 at Matthews Road
Page Five
May 9, 1995

A Traffic Engineering Study is also being conducted at the intersection of State Route 15 and Twin Cities Plaza (Walmart). This location is also going to be included in project MLP 15-(136). Preliminary indications are that a stop and go traffic signal may be warranted at this location.

WARRANT ANALYSIS

An analysis was performed using the twenty four hour counts taken on March 15, 1995. The results indicate that warrant number one was satisfied for eleven hours and warrant number two was satisfied for thirteen hours.

CONCLUSION

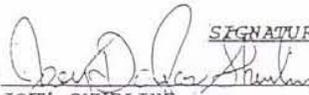
Based on the traffic signal warrants one and two being satisfied for eleven and thirteen hours respectively, it is concluded that a stop and go traffic signal is warranted at this location.

RECOMMENDATIONS

1. It is recommended that a permit for the erection, operation and maintenance of a stop and go traffic signal be issued to the City of Tennille.
2. Should the City of Tennille decide not to proceed with the installation of a stop and go signal at this time, it is recommended that a stop and go traffic signal be included as part of DOT project MLP-15(136).

Traffic Engineering Report
State Route 15 at Matthews Road
Page Six
May 9, 1995

SIGNATURES

PREPARED BY:  DATE: 05/09/95
JOEY SHURLING

RECOMMENDED:  DATE: 05/09/95
DISTRICT TRAFFIC ENGINEER

RECOMMENDED: _____ DATE: _____
STATE TRAFFIC ENGINEER

RECOMMENDED: _____ DATE: _____
DIRECTOR OF OPERATIONS

PRELIMINARY RIGHT OF WAY COST ESTIMATE

Date: April 13, 2005 **P.I. #** 5834
Project: STP-005-00 (834) Washington County - Revised
Existing/Required R/W: Varies/Varies **# Parcels** 31
Project Termini: SR 15 - Washington County - From M.L. 12.33 to M.L. 12.86 & Matthews Road from Charles Street to SR 15
Project Description: Intersection Improvements on S.R. 15 At Matthews Road North of the City of Tennille

LAND

	<i>Estimated Area</i>	<i>Estimated Value/Acre</i>		<i>Subtotals</i>
Residential *	1.39 Acres	\$3,000	\$	4,170
Commercial *	1.73 Acres	\$ 75,000	\$	129,750
Easement	0.16 Acres	\$ 30,000	\$	4,800
* Revised areas			\$	138,720

IMPROVEMENTS

Fuel Island Canopies, single family residence, commercial yard lights, billboard signs, on site signs, propane tanks, chain link fence, miscellaneous. **\$ 550,000**

RELOCATION

0 Commercial	\$ 25,000	Per Parcel	\$	-
1 Residential	\$ 20,000	Per Parcel	\$	20,000
			\$	20,000

DAMAGES

Proximity	\$	50,000
Cost to Cure	\$	150,000
	\$	200,000

NET COST \$ 908,720

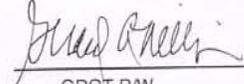
SCHEDULING CONTINGENCY**	0%	\$	-
ADM/COURT COST**	0%	\$	-
INFLATION FACTOR**	0%	\$	-

** Requested as 0%.

TOTAL COST	\$ 908,720
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SAY: \$ 908,720

Prepared By: _____
Daniel A. Langston

Approved: 
GDOT R/W

Estimate Report for file "0005834"

Section ROADWAY					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
150-1000	1	LS	75000.00	TRAFFIC CONTROL -	75000.00
210-0100	1	LS	100000.00	GRADING COMPLETE -	100000.00
310-1101	5720	TN	15.24	GR AGGR BASE CRS, INCL MATL	87172.80
318-3000	1000	TN	16.59	AGGR SURF CRS	16590.00
402-1812	727	TN	41.25	RECYCLED ASPH CONC LEVELING, INCL BITUM MATL & H LIME	29988.75
402-3112	1156	TN	55.14	RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	63741.84
402-3121	2795	TN	42.15	RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	117809.25
402-3130	852	TN	39.95	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 2 ONLY, INCL BITUM MATL & H LIME	34037.40
413-1000	1122	GL	1.03	BITUM TACK COAT	1155.66
432-5010	278	SY	1.67	MILL ASPH CONC PVMT, VARIABLE DEPTH	464.26
441-0016	120	SY	29.07	DRIVEWAY CONCRETE, 6 IN TK	3488.40
441-0104	3240	SY	25.17	CONC SIDEWALK, 4 IN	81550.80
441-4030	524	SY	42.22	CONC VALLEY GUTTER, 8 IN	22123.28
441-6222	6330	LF	12.81	CONC CURB & GUTTER, 8 IN X 30 IN, TP 2	81087.30
444-1000	98	LF	2.28	SAWED JOINTS IN EXIST PAVEMENTS - PCC	223.44
446-1002	4013	LF	2.64	PVMT REINF FABRIC STRIPS, TP 2, INCL BITUM BINDER	10594.32
500-3201	570	CY	365.02	CLASS B CONCRETE, RETAINING WALL	208061.40
550-1180	992	LF	32.67	STORM DRAIN PIPE, 18 IN, H 1-10	32408.64
550-1240	1124	LF	39.51	STORM DRAIN PIPE, 24 IN, H 1-10	44409.24
550-1300	368	LF	49.58	STORM DRAIN PIPE, 30 IN, H 1-10	18245.44
550-4230	2	EA	666.98	FLARED END SECTION 30 IN, STORM DRAIN	1333.96
611-3000	7	EA	1696.01	RECONSTR CATCH BASIN, GROUP 1	11872.07
611-4001	2	EA	1811.69	RECONSTR MINOR DRAINAGE STR	3623.38
634-1200	56	EA	89.00	RIGHT OF WAY MARKERS	4984.00
668-1100	21	EA	1787.86	CATCH BASIN, GP 1	37545.06
668-1110	4	LF	194.74	CATCH BASIN, GP 1, ADDL DEPTH	778.96
668-2100	15	EA	2685.01	DROP INLET, GP 1	40275.15
668-2110	7	LF	248.93	DROP INLET, GP 1, ADDL DEPTH	1742.51
668-5000	1	EA	1628.08	JUNCTION BOX	1628.08
Section Sub Total:					\$1,131,935.39

Section EROSION CONTROL					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
603-2181	24	SY	36.88	STN DUMPED RIP RAP, TP 3, 18 IN	885.12
603-7000	24	SY	4.05	PLASTIC FILTER FABRIC	97.20
700-6910	3	AC	783.13	PERMANENT GRASSING	2349.39
700-7000	5	TN	58.04	AGRICULTURAL LIME	290.20
700-7010	6	GL	18.81	LIQUID LIME	112.86
700-8000	3	TN	264.51	FERTILIZER MIXED GRADE	793.53
700-8100	220	LB	1.52	FERTILIZER NITROGEN CONTENT	334.40
Section Sub Total:					\$4,862.70

Section TEMPORARY EROSION CONTROL					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
163-0232	7	AC	479.26	TEMPORARY GRASSING	3354.82
163-0240	20	TN	196.32	MULCH	3926.40
163-0300	2	EA	1239.82	CONSTRUCTION EXIT	2479.64
163-0550	39	EA	241.20	CONSTRUCT AND REMOVE INLET SEDIMENT TRAP	9406.80
165-0010	2608	LF	1.07	MAINTENANCE OF TEMPORARY SILT FENCE, TP A	2790.56
165-0030	1120	LF	1.16	MAINTENANCE OF TEMPORARY SILT FENCE, TP C	1299.20
165-0101	2	EA	408.66	MAINTENANCE OF CONSTRUCTION EXIT	817.32
167-0100	18	MO	860.85	WATER QUALITY MONITORING	15495.30
171-0010	2608	LF	1.84	TEMPORARY SILT FENCE, TYPE A	4798.72
171-0030	1120	LF	3.20	TEMPORARY SILT FENCE, TYPE C	3584.00

700-8000	2	TN	264.44	FERTILIZER MIXED GRADE	528.88
716-2000	770	SY	1.06	EROSION CONTROL MATS, SLOPES	816.20
Section Sub Total:					\$49,297.84

Section HIGHWAY SIGNS					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
636-1020	48	SF	13.60	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING, TP 3	652.80
636-1031	18	SF	16.91	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING TP 6	304.38
636-2070	106	LF	7.01	GALV STEEL POSTS, TP 7	743.06
639-4004	4	EA	4354.44	STRAIN POLE, TP IV	17417.76
647-1000	1	LS	41975.44	TRAFFIC SIGNAL INSTALLATION NO -	41975.44
652-5701	112	LF	2.30	SOLID TRAF STRIPE, 24 IN, WHITE	257.60
653-0120	29	EA	59.25	THERMOPLASTIC PVMT MARKING, ARROW, TP 2	1718.25
653-0220	4	EA	84.12	THERMOPLASTIC PVMT MARKING, WORD, TP 2	336.48
653-1501	10181	LF	0.27	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, WHITE	2748.87
653-1502	6806	LF	0.27	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	1837.62
653-1804	1091	LF	1.65	THERMOPLASTIC SOLID TRAF STRIPE, 8 IN, WHITE	1800.15
653-3501	6840	GLF	0.17	THERMOPLASTIC SKIP TRAF STRIPE, 5 IN, WHITE	1162.80
653-3502	4358	GLF	0.17	THERMOPLASTIC SKIP TRAF STRIPE, 5 IN, YELLOW	740.86
653-6004	806	SY	2.54	THERMOPLASTIC TRAF STRIPING, WHITE	2047.24
653-6006	176	SY	2.69	THERMOPLASTIC TRAF STRIPING, YELLOW	473.44
654-1001	163	EA	3.49	RAISED PVMT MARKERS TP 1	568.87
654-1003	127	EA	3.76	RAISED PVMT MARKERS TP 3	477.52
Section Sub Total:					\$75,263.14

Total Estimated Cost: \$1,261,359.07

Subtotal Construction Cost	\$1,261,359.07
E&C Rate 10.0 %	\$126,135.91
Inflation Rate 5.0 % @ 1.0 Years	\$69,374.75
Total Construction Cost	\$1,456,869.73
Right Of Way	\$908,720.00
ReImb. Utilities	\$75,000.00
Grand Total Project Cost	\$2,440,589.73

Need and Purpose Statement

Project: STP-0005-00 (384)

P.I. #: 0005834

Washington County

Intersection improvements on SR15 at Mathews Road just north of the City of Tennille

Location / Background:

This project was established as a safety enhancement project to include the installation of a traffic signal at the intersection of SR 15 and Mathews Road just north of the city limits of Tennille. This project was created based on accident data at this intersection. The project limits were originally established from just south of Mathews Road to Waco Drive in the City of Sandersville. Due to rapid development of this area, portions of SR 15 have been widened with the construction of driveway permits. This has caused the project limits to be revised to the current locations.

Functional Classification:

The Functional Classification for this portion of SR 15 is a Minor Arterial Street.

Roadway Characteristics:

The Functional Classification for this portion of SR 15 is a Minor Arterial Street.

Travel Demand and Operational Conditions:

SR 15 serves as the main connector route between the cities of Tennille and Sandersville. The traffic is a cross section of commuters driving lightweight vehicles, trucks, tractor-trailers and school buses. The current Traffic is 16,000 AADT for 2007 and 28,500 AADT of 2027 with a truck percentage of 7%. There is a Super Wal-Mart that has recently been constructed that acts as a major traffic generator for this area . This route is also the primary emergency response route for Fire, EMS and Law Enforcement.

SR 15 at Mathews Road has poor operational conditions due to narrow travel lanes (10 foot wide) combined with the large traffic volumes during peak hours. Also, turning movements appear to be unsafe due to small radii at the intersection. The absence of a left turn lane on SR 15 from the northbound approach also makes this movement more difficult. Between January 2000 to December 2005, 31 accidents have occurred at this intersection. Most of these accidents have been angle intersecting, head on and rear end collisions caused by vehicles trying to make a left turn from SR 15 onto Mathews Road from the South and from vehicles turning north onto SR 15 from Mathews Road.

Logical Termini:

Logical Termini for this project has been established based on the need for improving the intersection of SR 15 and Mathews Road to reduce accident rates. This project's beginning location has been established based on the lengths required to provide adequate left turn lane storage and tapers to the south of the intersection of SR 15 and Mathews Road. This project's ending location has been established by tying this project into an existing 5 lane section of SR 15 consisting of 4 -12 foot travel lanes with a 14 foot flush median.

Project Need and Purpose:

The need exists to improve the safety of the intersection of SR 15 and Mathews Road and to improve the functional capacity of SR 15 from Mathews Road to the existing 5 lane section of SR 15 in the City of Sandersville. The purpose of this project is to widen the existing roadway to 4 – 12' travel lanes with a 14' flush median, provide left turn lanes, larger radii and a stop-and-go signal at the intersection of SR 15 and Mathews Road which will make the intersection safer for the traveling public.