

D.O.T. 66

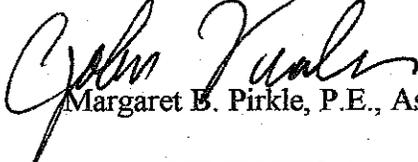
DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

**FILE** STP-M001-00(147) Colquitt County  
P. I. No. M001147

**OFFICE** Preconstruction

**DATE** February 11, 2003

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

**TO** SEE DISTRIBUTION

**SUBJECT** PROJECT CONCEPT REPORT APPROVAL

Attached for your files is the approval for subject project.

MBP/cj

Attachment

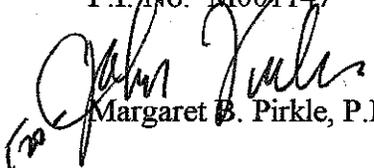
**DISTRIBUTION:**

David Mulling  
Harvey Keeper  
Jerry Hobbs  
Percy Middlebrooks  
Michael Henry  
Phillip Allen  
Marta Rosen  
Paul Liles  
Ben Buchan  
David Crim  
BOARD MEMBER

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

**INTERDEPARTMENT CORRESPONDENCE**

**FILE** STP-M001-00(147) Colquitt County **OFFICE** Preconstruction  
P.I. No. M001147 **DATE** January 23, 2003

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

**TO** Frank L. Danchetz, P.E., Chief Engineer

**SUBJECT PROJECT CONCEPT REPORT**

This project consists of the improvement of the drainage system between northwest/northeast 5th Avenue and northwest 4th Avenue along North Main Street/SR 33/US 319 Business in the city of Moultrie, Georgia. Drainage within this corridor is considered inadequate as a limited number of inlets exist, restricting the amount of runoff intercepted by the drainage system. Many existing inlets have small apertures resulting in large amounts of bypass flow, which collects at the low point of North Main Street. Several of the existing drainage pipes are not of sufficient size to pass the design flow without surcharging; and pipes within the existing drainage system are in disrepair. The existing roadway width is 50' with two lanes in each direction, curb and gutter and sidewalks. Traffic volumes are projected to be 10,000 VPD and 14,500 VPD in the years 2008 and 2028 respectively.

This project includes the hydrologic and hydraulic analysis of the existing drainage system within the project limits and the reconstruction of the existing pipe system with additional and larger inlets and sufficiency sized pipes. The proposed project length is 0.22 mile. Traffic will be maintained on existing SR 33 with temporary lane closures. Stage construction will be required to minimize disruption of traffic flow.

Environmental concerns include requiring a COE 404 Permit; a Categorical Exclusion will be prepared; a public hearing is not required; time saving procedures are appropriate.

The estimated costs for this project are:

	<u>PROPOSED</u>	<u>APPROVED</u>	<u>PROG DATE</u>	<u>LET DATE</u>
Construction (includes E&C and inflation)	\$289,000	\$288,000	Lump	Dec-03
Right-of-Way	\$ 28,000	\$ 28,000		
Utilities*	---	---		

Frank L. Danchetz

Page 2

STP-M001-00(147) Colquitt

January 23, 2003

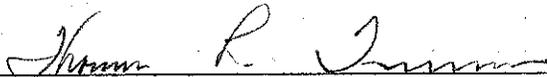
\*LGPA to be sent.

I recommend this project concept be approved.

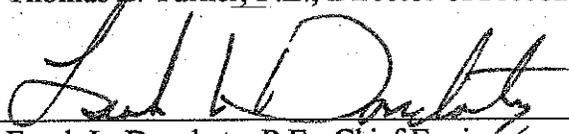
MBP:JDQ/cj

Attachment

CONCUR

  
Thomas L. Turner, P.E., Director of Preconstruction

APPROVE

  
Frank L. Danchetz, P.E., Chief Engineer

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

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**INTERDEPARTMENTAL CORRESPONDENCE**

**FILE:** STP-M001-00(147) Colquitt  
P.I. Number M001147

**OFFICE:** Engineering Services

**DATE:** January 10, 2003

**FROM:** David Mulling, Project Review Engineer *REW*

**TO:** Meg Pirkle, Assistant Director of Preconstruction

**SUBJECT: CONCEPT REPORT**

JAN 10 2003

We have reviewed the concept report submitted January 8, 2003 by the letter from Jeff Bridges dated January 7, 2003, and have no additional comments.

The costs for the project are:

Construction	\$249,359
Inflation	\$13,715
E&C	\$24,936
Reimbursable Utilities	LGPA anticipated *
Right of Way	\$28,000

\* LGPA has not been signed

REW

c: Jeff Bridges, District 4 Design, Tifton

## SCORING RESULTS AS PER MOG 2440-2

<b>Project Number:</b> STP-M001-00(147)		<b>County:</b> Colquitt		<b>PI No.:</b> M001147	
<b>Report Date:</b> January 7, 2003		<b>Concept By:</b> DOT Office: District 4			
<input checked="" type="checkbox"/> Concept Stage		Consultant: Parsons Brinckerhoff			
<b>Project Type:</b> Choose One From Each Column		<input type="checkbox"/> Major	<input checked="" type="checkbox"/> Urban	<input type="checkbox"/> ATMS	
		<input checked="" type="checkbox"/> Minor	<input type="checkbox"/> Rural	<input type="checkbox"/> Bridge Replacement	
				<input type="checkbox"/> Building	
				<input type="checkbox"/> Interchange Reconstruction	
				<input type="checkbox"/> Intersection Improvement	
				<input type="checkbox"/> Interstate	
				<input type="checkbox"/> New Location	
				<input type="checkbox"/> Widening & Reconstruction	
				<input checked="" type="checkbox"/> Miscellaneous	
<b>FOCUS AREAS      SCORE      RESULTS</b>					
<b>Presentation</b>	100				
<b>Judgement</b>	100				
<b>Environmental</b>	100				
<b>Right of Way</b>	100				
<b>Utility</b>	100				
<b>Constructability</b>	100				
<b>Schedule</b>	100				

DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA

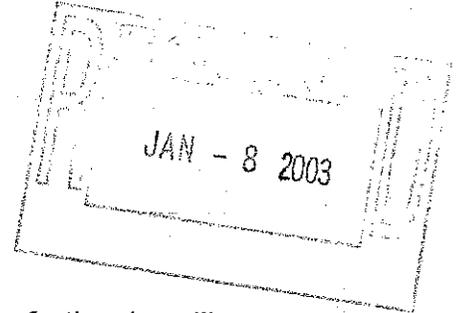
## INTERDEPARTMENT CORRESPONDENCE

FILE STP-M000-00(147), Colquitt County OFFICE Tifton, GA  
P.I. No. M001147 DATE January 7, 2003

FROM Jeff Bridges, District Design Engineer

TO Meg Pirkle, Assistant Director of Preconstruction

SUBJECT **Project Concept Report**



Attached is the Concept Report on the above project for your further handling.

If you have any questions please contact Jeff Bridges at (229) 386-3618.

HJB;jb

Attachments

Cc:

Marta Rosen, State Transportation Planning Administrator  
Herman Griffin, Financial Management Administrator  
Harvey Keeper, State Environmental/Location Engineer  
Phillip Allen, State Traffic Safety and Design Engineer  
David Mulling, Project Review Engineer  
Robert Reid, Consultant Design

File

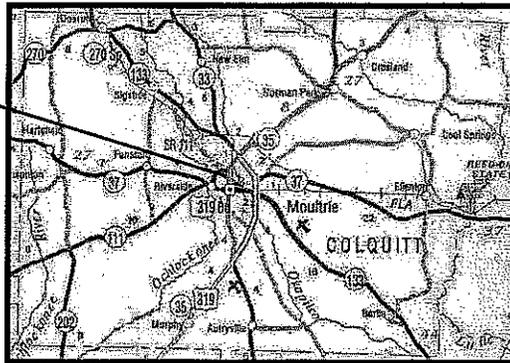
**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**  
*District 4 - Tifton, Ga.*

Project Number: STP-M001-00(147)  
County: Colquitt  
P. I. Number: M001147

**Project Concept Report**

U.S. Route: 319 Business  
State Route Number: SR 33 South

**Project Location**



**Drainage Improvements along North Main St. (SR 33 South/US 319 Bus.) in Moultrie**

Recommended for approval:

DATE: 1/6/2003

DATE: 1-6-03

Jeff B. [Signature]  
Project Manager  
[Signature]  
District Engineer

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

DATE: \_\_\_\_\_

\_\_\_\_\_  
State Transportation Planning Administrator

DATE: \_\_\_\_\_

\_\_\_\_\_  
Financial Management Administrator

DATE: \_\_\_\_\_

\_\_\_\_\_  
State Environmental/Location Engineer

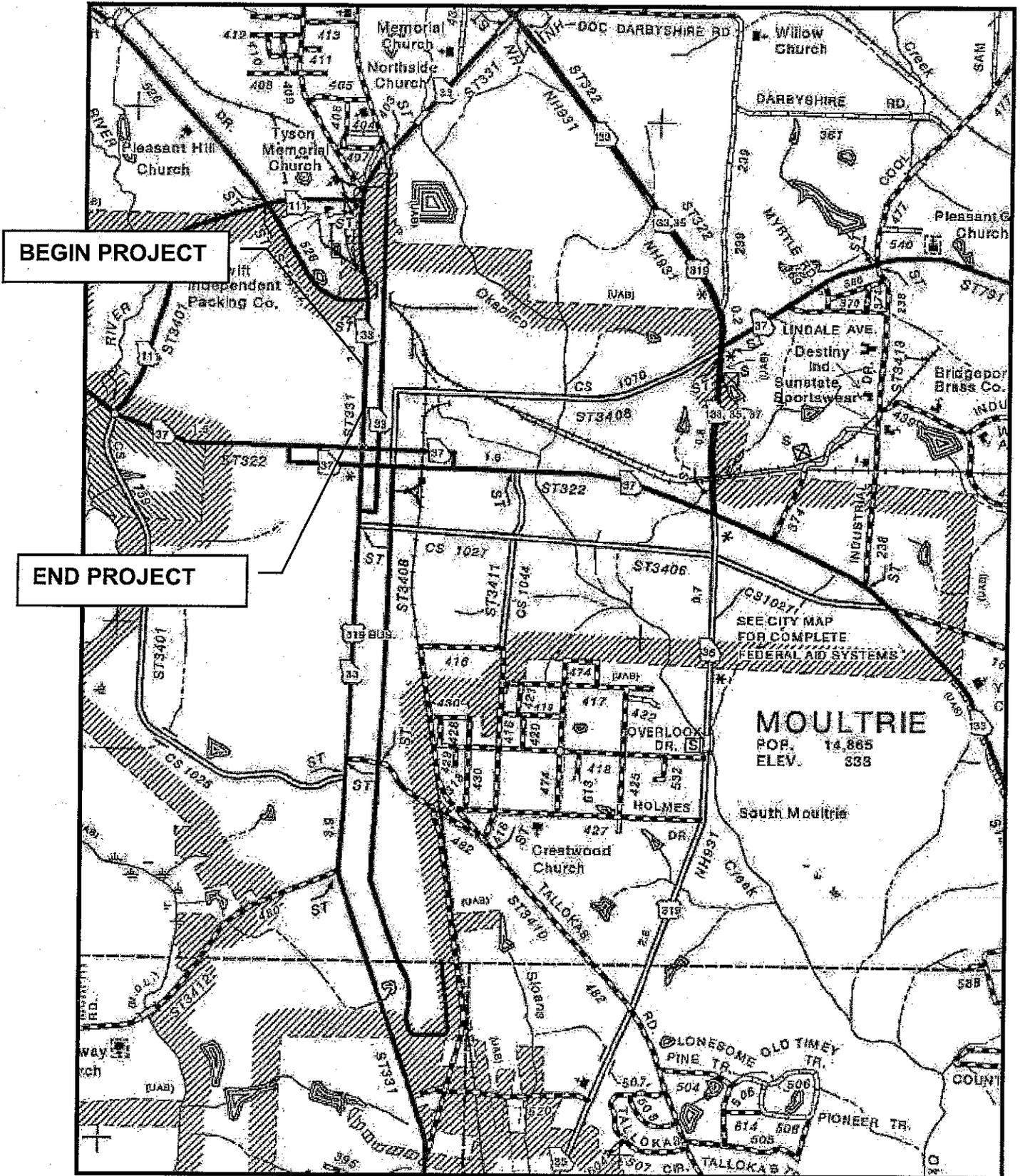
DATE: \_\_\_\_\_

\_\_\_\_\_  
State Traffic Safety and Design Engineer

DATE: \_\_\_\_\_

\_\_\_\_\_  
Project Review Engineer

Project Concept Report Page: 2  
Project Number: STP-M001-00(147)  
P. I. Number: M001147  
County: Colquitt



Project Concept Report Page: 3  
Project Number: STP-M001-00(147)  
P. I. Number: M001147  
County: Colquitt

**Need and Purpose:**

Project STP-M001-00(147) consists of the improvement of the drainage system between Northwest/Northeast 5<sup>th</sup> Avenue and Northwest 4<sup>th</sup> Avenue along North Main Street/SR 33/US 319 Business within the City of Moultrie in Colquitt County. Drainage within this corridor is considered inadequate, as a limited number of inlets exist, restricting the amount of runoff intercepted by the drainage system. Many existing inlets have small apertures resulting in large amounts of bypass flow, which collects at the low point of North Main Street; several of the existing drainage pipes are not of sufficient size to pass the design flow without surcharging; and pipes within the existing drainage system are in disrepair.

This roadway is classified as an urban principal arterial. The existing roadway width is 50' with two lanes in each direction, curb & gutter and sidewalks. The current Average Daily Traffic (ADT) along this roadway is 6,100 with 5% truck traffic. Traffic volumes are projected to increase to 10,000-ADT by the year 2008 and 14,500 by 2028. Current Level of Service (LOS) is a B and projected LOS 2028 is a B. This section of roadway is not a part of the Statewide Bicycle and Pedestrian Plan. Land use along this roadway is primarily commercial with nearby residential.

This project is located in Census Tract 9704. According to the 2000 Census, tract 9704 has a minority population of 30.8%, while the county's minority population is 32.2%. In 1999, the poverty level for this tract was 15.7% and the county's poverty level was 24.7%.

Repair and improvement of the drainage system would help remedy the deficient drainage capacity, reducing the likelihood of flooding within the project corridor. As a secondary effect, implementation of the proposed project would also provide for safer travel for commuters and for the tenants of commercial establishments along the corridor through the reduction of standing water along North Main Street during heavy rain events.

**Description of the project:**

This project includes the hydrologic and hydraulic analysis of the existing drainage system along North Main St. (SR 33 South/US 319 Bus.) between 4<sup>th</sup> Ave. NW and 5<sup>th</sup> Ave. NW in the City of Moultrie and recommendations for improvements as a conceptual design. This project is located in the 8<sup>th</sup> Land District, Land Lot No. 262 & 263, and Ga. Militia District 1151. The proposed project will be approximately 0.22 miles in length.

Is the project located in a Non-attainment area?  Yes  No

PDP Classification: Major , Minor   
Federal Oversight: Full Oversight , Exempt , State Funded , or Others

Functional Classification: Urban Pricpal Arterial

Project Concept Report Page: 4  
Project Number: STP-M001-00(147)  
P. I. Number: M001147  
County: Colquitt

U. S. Route Number(s): US 319 Business

State Route Number(s): SR 33 South

**Traffic (AADT):**

Current Year: (2008) 10,000

Design Year: (2028) 14,500

**Existing Design Features:**

- Typical Section: SR 33/US 319 - Four 12' to 14' travel lanes (2 lanes each direction), curb & gutter with sidewalks
- Typical Section: NE 5<sup>th</sup> Ave. - Crosses SR 33, One 12' travel lane eastbound and one 12' travel lane and 12' left turn lane westbound with urban shoulders.
- Typical Section: NW 4<sup>th</sup> Ave. - Intersects SR 33 to the west. One 12' travel lane in each direction with urban shoulders.
- Typical Section: NE 1<sup>st</sup> St. - Four 12' travel lanes (2 lanes in each direction). Roadway runs in the north south direction parallel to SR 33.
- Posted Speed 35 mph Maximum degree curvature: None
- Maximum Grade: 1.0 %
- Width of right of way: SR 33/US 319 - 80 ft to 90 ft.
- Width of right of way: NE 4<sup>th</sup> Ave. and NW 5<sup>th</sup> Ave. - 60 ft.
- Width of right of way: NE 1<sup>st</sup> St. - 80 ft to 95 ft.
- Major structures: None
- Major interchanges or intersections along the project: None
- Existing length of roadway segment and the beginning mile logs for each county segment. Project begins at ML 10.61 (SR 33) and extends south approximately 0.22 miles to ML 10.39.

**Proposed Design Features:**

- Proposed typical section(s): No change to existing typical sections
- Proposed Design Speed Mainline 35 mph
- Proposed Maximum grade Mainline 1.0 % Maximum grade allowable 7.0 %
- Proposed Maximum grade Side Street 1.0 % Maximum grade allowable 7.0 %
- Proposed Maximum grade driveway N/A %
- Proposed Maximum degree of curve None Maximum degree allowable 16°00'
- Right off way
  - ⇒ Width: No Changes proposed to the existing R/W
  - ⇒ Easements: Temporary , Permanent , Utility , Others
  - ⇒ Type of access control: Full , Partial , By Permit , Others
  - ⇒ Number of parcels 6 Number of displacements:
    - ⇒ Business: 0
    - ⇒ Residents: 0
    - ⇒ Mobile homes: 0
    - ⇒ Others: 0

Project Concept Report Page: 5  
Project Number: STP-M001-00(147)  
P. I. Number: M001147  
County: Colquitt

- Structures:
  - ⇒ Bridges: None
  - ⇒ Retaining walls: None
- Major intersections and interchanges: None
- Traffic control during construction: Traffic will be maintained on existing SR 33 with temporary lane closures. Staged construction will be required and any temporary lane closures will be structured to minimize disruption to traffic flow.

- Design Exceptions to controlling criteria anticipated:

	<u>UNDETERMINED</u>	<u>YES</u>	<u>NO</u>
HORIZONTAL ALIGNMENT:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ROADWAY WIDTH:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SHOULDER WIDTH:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
VERTICAL GRADES:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CROSS SLOPES:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
STOPPING SITE DISTANCE:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SUPERELEVATION RATES:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
HORIZONTAL CLEARANCE	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SPEED DESIGN:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
VERTICAL CLEARANCE:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
BRIDGE WIDTH:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
BRIDGE STRUCTURAL CAPACITY:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- Design Variances: None
- Environmental concerns: Minimal ecological impacts. No historic, waste, or UST sites.
- Level of environmental analysis:
  - ⇒ Are Time Saving Procedures appropriate? Yes , No
  - ⇒ Categorical Exclusion:
  - ⇒ Environmental Assessment/Finding of No Significant Impact (FONSI) , or
  - ⇒ Environmental Impact Statement (EIS) .
- Utility involvement: City of Moultrie (Gas, Power, Water, Sewer), MediaCom, Alltel

**Project responsibilities:**

- ⇒ Design, GDOT, Parsons Brinckerhoff
- ⇒ Right of Way Acquisition, GDOT
- ⇒ Relocation of Utilities, City of Moultrie
- ⇒ Letting to contract, GDOT
- ⇒ Supervision of construction, GDOT
- ⇒ Providing material pits, N/A
- ⇒ Providing detours, N/A

6 January, 2003

State of Georgia  
Department of Transportation

Project Concept Report Page: 6  
Project Number: STP-M001-00(147)  
P. I. Number: M001147  
County: Colquitt

**Coordination:**

- Initial Concept Meeting Date \_\_\_\_\_
- Concept Meeting Date September 4, 2002
- P. A. R. Meeting Date \_\_\_\_\_
- Public involvement: None
- Local government comments: See attached Concept Meeting Minutes
- Other projects in area: None
- Other coordination to date: None
- Railroads: None

**Scheduling – Responsible Parties' Estimate**

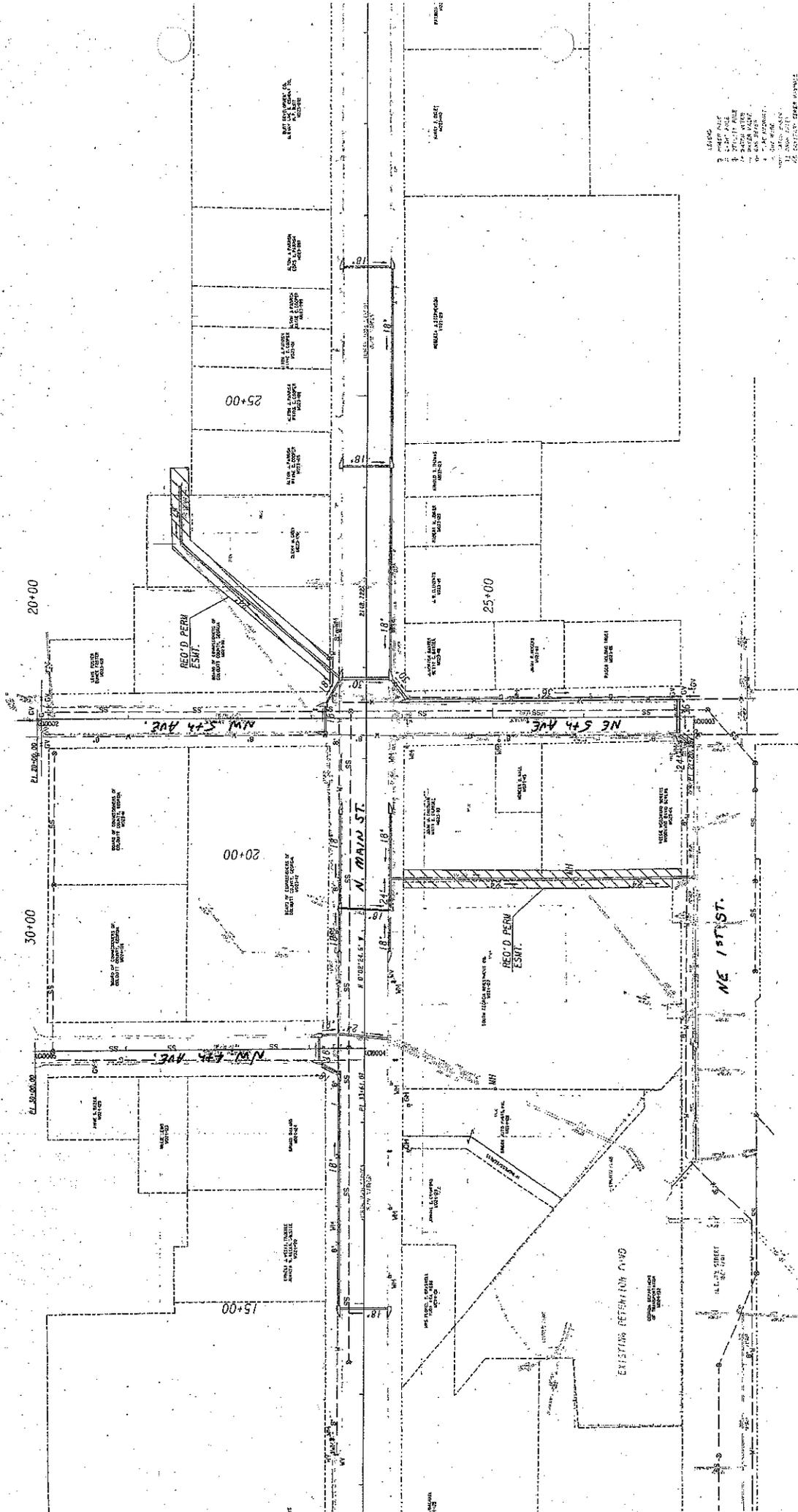
- Time to complete environmental process: 9 Months.
- Time to complete preliminary construction plans: 3 Months.
- Time to complete right of way plans: 1 Months.
- Time to complete the Section 404 Permit: 12 Months.
- Time to complete final construction plans: 2 Months.
- Time to complete to purchase right of way: 6 Months.
- List other major items that will affect the project schedule: None \_\_\_\_\_ Months.

**Other alternates considered:** 1) No build.

**Comments:**

**Attachments:**

1. Concept Display
2. Concept Meeting minutes
3. Cost Estimates:
  - a) Construction including E&C,
  - b) Right of Way, and
  - c) Utilities.
4. Location and Design Notice
5. LGPA
6. Draft Hydrologic/Hydraulic Study Summary



- 1. 15' WIDE
- 2. 15' WIDE
- 3. 15' WIDE
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- 29. 15' WIDE
- 30. 15' WIDE



### Concept Meeting Minutes

September 4, 2002

Concept Meeting for the Proposed Drainage Improvements along North Main Street (U.S. 319/S.R. 33) in Moultrie

Location: Georgia Department of Transportation  
Area 4 Office  
Moultrie, Georgia

Attendees: Jeff Bridges - GDOT District Design  
Joe Cowan - GDOT District Construction Engineer  
Don Gaskins - GDOT Planning/Programming Engineer  
Danny Gay - GDOT Traffic Operations  
Emory L. Giddens - GDOT Utilities  
Daveitta Jenkins - Parsons Brinckerhoff  
Roger King - City of Moultrie  
Cristina Ley - Parsons Brinckerhoff  
Greg Monfort - City of Moultrie  
Roger Ruis - City of Moultrie  
Wayne Sorrow - Wolverton and Associates  
Sonja Thompson - GDOT Area Engineer  
Michael Wooten - Parson Brinckerhoff

Distribution: Meeting Attendees

The purpose of the meeting was to discuss the concept development for project STP-M001-00(147), P.I. No. M001147, the proposed drainage improvements along North Main Street U.S. 319/S.R. 33 in Moultrie. After the introductions, the following items were discussed:

Daveitta Jenkins presented a brief project description noting the project as a minor project that includes the hydrologic and hydraulic analysis of the existing drainage system along North Main Street. It was noted that the concept report would be revised to include the updated traffic data that was provided at the meeting by Jeff Bridges. Also, the state route number would be corrected to S.R. 33 and the detour comment would be removed from the report.

Michael Wooten discussed the preliminary drainage analysis. The preliminary drainage analysis indicates that the localized flooding is likely the result of a combination of factors. There is a limited number of existing inlets which limits the amount of runoff that is intercepted by the drainage system. Also, many of the existing inlets have small openings resulting in significant amounts of bypass flow which collects at the low point on North Main Street. Another factor is that several of the existing drainage pipes are not of sufficient size to pass the design flow without surcharging. The drainage system also contains pipes that are in various stages of disrepair. [It was recommended that the existing pipe systems in the vicinity be reconstructed as shown on the concept layout with additional larger inlets and sufficiently sized pipes.] It was also noted that GDOT may prefer permanent easements over the temporary easements shown on the concept layout for maintenance purposes.



Roger Ruis provided a site plan from the Planning & Safety Office of the DEFACS development that is planned at the corner of North Main Street and NW 5<sup>th</sup> Avenue. The site plan will be used to evaluate the efficiency of the proposed drainage improvements with and without onsite detention on the DEFACS property.

Roger King commented that there are some additional gas utilities that are not shown on the concept layout. The concept plans will be submitted to the District Utilities Office and to the City of Moultrie for early utility coordination. Michael noted that the drainage design can probably be worked around most of the utilities. However, the inverts of the utilities will be needed when the pipe profiles are developed.

Michael noted that there is landscaping along North Main Street that may be impacted by the construction. Construction can probably occur at the curb or under the street to minimize the impacts.

Cristina Ley noted that there are no potential historic or UST/hazardous waste sites impacted by the project and that there are minimal ecological concerns.

#### Office Comments

- 1 It was noted that this project is in the 2003-2005 State Transportation Plan.
- 2 Traffic Operations - Danny Gay provided a detail for asphalt patching (class B pavement widening). He also noted that standards 6050 and 9031J for driveways has been revised. Danny commented that his office was approached by the developer of the property at North Main and NW 5<sup>th</sup> Avenue regarding GDOT not requiring on site detention. If this project mitigates requirements for on site detention, then notify GDOT so that they can account for this during the permitting stage. Wayne Sorrow commented that PB would review the site design to determine if anything affected the design.
- 3 District Utilities – Emory Gidden provided the non-reimbursable utility costs of \$362,000. It was noted that there are gas, sewer, water, power and cable television services along the project. The sewer inverts will be located by the City of Moultrie. PB was asked to provide the benchmarks to Greg Monfort.
- 4 City of Moultrie – Roger King noted that there may be some sewer conflicts with the properties on the west side of North Main Street. Some small-water taps may need to be replaced. Roger Ruis requested an electronic file, preferably in AutoCAD, of the proposed project for use in coordinating the utilities. Ruis noted that power is on the east side of North Main Street and Alltel is on the west. He also commented that the development at the corner of NW 5<sup>th</sup> Avenue will probably be complete by the end of 2002. Ruis noted that there may be a conflict with the driveway at the Knico Engine property between the buildings.
- 5 Environmental – Cristina Ley noted that the estimated time for completion and approval of the environmental document will be 6 months.
- 6 R/W – A question was asked about who is acquiring the right-of-way. Sonya Harris noted that the City of Moultrie asked for GDOT assistance with purchasing the R/W.



- 7 Design – Jeff Bridges questioned if the temporary easements shown on the concept layout should be permanent. Sonya requested that the easements be shown as permanent. Jeff requested that the state route be corrected to 33, that the detest program be used to submit the cost estimate with a summary sheet attached, that the number of parcels be corrected to reflect those that will require right-of-way acquisition and that the borrow pits be shown as N/A.
- 8 District Construction – Joe Cowan questioned the grate inlet type shown on North Main Street. The inlet will be revised to 1034D.

<b>STP-M001-00(147) Colquitt County - ESTIMATE SUMMARY</b>				
<b>RIGHT OF WAY</b>	\$	<b>28,000</b>		
<b>REIMBURSABLE UTILITIES</b>	\$	*		
<b>CONSTRUCTION</b>				
ROADWAY	\$	<b>244,627.28</b>		
TEMPORARY EROSION CONTROL	\$	<b>3,270.87</b>		
PERMANENT EROSION CONTROL	\$	<b>1,461.34</b>		
	\$			
	\$			
<b><i>SUBTOTAL CONSTRUCTION COST</i></b>				<b>\$ 249,359.49</b>
E & C (10%)				<b>\$ 24,935.95</b>
INFLATION (5% PER YEAR)	NUMBER OF YEARS	1	<b>\$ 13,714.77</b>	
<b><i>TOTAL CONSTRUCTION COST</i></b>			<b>\$ 288,010.21</b>	
<b><i>GRAND TOTAL PROJECT COST</i></b>			<b>\$ 316,010.21</b>	

\* To be provided by City of Moultrie per LGPA.

STP-M001-00(147), COLQUITT CO. - CONCEPT REPORT

ITEM =====	DESCRIPTION =====	UNITS =====	WT. AVG. =====	QUANTITY =====	COST =====
ROADWAY					
150-1000	TRAFFIC CONTROL	LS	25000	LUMP	\$25000.00
210-0100	GRADING COMPLETE	LS	50000	LUMP	\$50000.00
318-3000	AGGR SURF CRS	TN	16.043369495	50	\$802.17
402-1812	RECYCLED ASPH CONC LEVELING, INCL BITUM MATL & H LIME	TN	36.670127813	150	\$5500.52
402-3130	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 2 ONLY, INCL BITUM	TN	35.844228311	800	\$28675.38
413-1000	BITUM TACK COAT	GL	0.9086641410	350	\$318.03
432-0206	MILL ASPH CONC PVMT, 1 1/2 IN DEPTH	SY	0.9602016262	8500	\$8161.71
441-6720	CONC CURB & GUTTER, 6 IN X 30 IN, TP 7	LF	10	500	\$5000.00
500-3200	CLASS B CONCRETE	CY	377.90853164	15	\$5668.63
550-1180	STORM DRAIN PIPE, 18 IN, H 1-10	LF	26.082987907	1270	\$33125.39
550-1240	STORM DRAIN PIPE, 24 IN, H 1-10	LF	30.246961153	705	\$21324.11
550-1300	STORM DRAIN PIPE, 30 IN, H 1-10	LF	40.973698741	75	\$3073.03
550-1360	STORM DRAIN PIPE, 36 IN, H 1-10	LF	47.710566767	350	\$16698.70
668-1100	CATCH BASIN, GP 1	LF	1651.1841365	25	\$41279.60
Section SUB TOTAL					\$244627.28
TEMPORARY EROSION CONTROL					
163-0230	TEMPORARY GRASSING	AC	27.378358809	1	\$27.38
163-0240	MULCH	TN	215.73125329	15	\$3235.97
163-0530	CONSTRUCT AND REMOVE BALED STRAW EROSION CHECK	LF	1.7913477813	1	\$1.79
165-0030	MAINTENANCE OF TEMPORARY SILT FENCE, TP C	LF	1.2898783955	1	\$1.29
165-0070	MAINTENANCE OF BALED STRAW EROSION CHECK	LF	1.2526760478	1	\$1.25
171-0030	TEMPORARY SILT FENCE, TYPE C	LF	3.1883447217	1	\$3.19
Section SUB TOTAL					\$3270.87
PERMANENT EROSION CONTROL					
700-6910	PERMANENT GRASSING - 1 acre	AC	900.39509940	1	\$900.40
700-7000	AGRICULTURAL LIME	TN	51.636872975	2	\$103.27
700-7010	LIQUID LIME	GL	24.692786324	3	\$74.08
700-8000	FERTILIZER MIXED GRADE	TN	237.03712521	1	\$237.04
700-8100	FERTILIZER NITROGEN CONTENT	LB	1.4655581381	100	\$146.56
Section SUB TOTAL					\$1461.34
Total Construction Cost					\$249359.49

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE **STP-M001-00 (147) Colquitt County** OFFICE Tifton  
**P.I. M001147**

DATE August 28, 2002

FROM Jerry A. Bruce, District Utilities Engineer

TO Jeff Baker, P.E. State Utilities Engineer  
ATTN: Scott Greene

SUBJECT **UTILITY COST ESTIMATE**

A field review of utilities located on the above referenced project has been conducted without a design concept. Listed below is a breakdown of reimbursable and non-reimbursable cost.

City of Moultrie Non-Reimbursable	=	\$324,500.00
Alltel Non-Reimbursable	=	\$ 26,000.00
Mediacom Non-Reimbursable	=	\$ 11,500.00
TOTAL-Non-Reimbursable	=	\$362,000.00

If additional information is needed, contact Emory L. Giddens, Assistant District Utilities Engineer at (229) 386-3288.

*JAB ELG*  
JAB:ELG:BC:sm

c: Tom Turner, Director of Preconstruction  
Herman Griffin, State Transportation Programming Adm.  
Gerald Ross, State Road & Airport Design Engineer  
Paul V. Liles, State Bridge Engineer  
Joe Palladi, State Urban Design Engineer  
Ben Buchan, State Consultant Design Engineer  
Harvey D. Keepler, State Environmental/Location Engineer

# **NOTICE OF LOCATION AND DESIGN APPROVAL**

**STP-M001-00(147), Colquitt County  
PI No. M001147**

Notice is hereby given in compliance with Georgia Code 22-2-109 that the Georgia Department of Transportation has approved the Location and Design of the above project.

The date of location approval is \_\_\_\_\_.

This project includes the hydrologic and hydraulic analysis of the existing drainage system along North Main St. (SR 33/US 319 Business) between 4<sup>th</sup> Ave. NW and 5<sup>th</sup> Ave. NW in the City of Moultrie and recommendations for improvements as a conceptual design. This project is located in the 8<sup>th</sup> Land District, Land Lot No. 262 & 263, and Ga. Militia District 1151. The proposed project will be approximately 0.22 miles in length.

Drawings or maps or plats of the proposed project, as approved, are on file and are available for public inspection at the Georgia Department of Transportation:

Sonja Thompson, Area Engineer  
120 East Bypass NE  
Moultrie, GA 31788  
Sonja.Thompson@dot.state.ga.us  
(229) 891-7129

Any interested party may obtain a copy of the drawings or maps or plats or portions thereof by paying a nominal fee and requesting in writing to:

Jeff Bridges, District Design Engineer  
Georgia Department of Transportation  
PO Box 7510  
Tifton, GA 31793  
Jeff.Bridges@dot.state.ga.us  
(229) 386-3300

Any written request or communication in reference to this project or notice SHOULD include the Project and P. I. Numbers as noted at the top of this notice.



# Department of Transportation

State of Georgia  
#2 Capitol Square, S.W.  
Atlanta, Georgia 30334-1002

J. TOM COLEMAN, JR.  
COMMISSIONER  
(404) 656-5206

FRANK L. DANCHETZ  
CHIEF ENGINEER  
(404) 656-5277

HAROLD E. LINNENKOHL  
DEPUTY COMMISSIONER  
(404) 656-5212

EARL L. MAHFUZ  
TREASURER  
(404) 656-5224

December 16, 2002

## LOCAL GOVERNMENT PROJECT AGREEMENT

*In consideration of the proposed improvements, the City of MOULTRIE agrees to provide or perform the following at no cost to the Georgia D.O.T. for project STP-M001-00(147) Colquitt Co., PI# M001147: MISCELLANEOUS IMPROVEMENTS SR 33DU BET NE 5TH AVE TO NE 4TH AVE*

- Provide all rights-of-way and/or easements needed for the construction of the project and remove existing structures or obstructions within the rights-of-way.*
- Make all utility relocations, adjustments or betterments of publicly owned utilities that are in conflict with construction of this project. Reimburse Georgia D.O.T. for any damages paid to the contractor for delay of construction caused by a delay in relocating the publicly owned utilities.*
- Relocate or adjust all privately owned utilities to clear construction of this project, including adjustments at railroad crossings if required.*
- Furnish detours, local borrow and waste pits as needed.*
- We support this project but choose not to commit any funding, realizing this may delay the project until additional funding can be found.*

This \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

APPROVED \_\_\_\_\_

City/County Official

**STATE OF GEORGIA**  
**DEPARTMENT OF TRANSPORTATION**

**U.S. 319 BUS./S.R. 33**  
**NORTH MAIN STREET**  
**DRAINAGE IMPROVEMENTS**

**JULY 2002**

Submitted by:

**Parsons Brinckerhoff Quade & Douglas, inc.**  
**Atlanta, GA**

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1. Project Overview
2. Design Criteria
  - 2.1 Hydrology
  - 2.2 Detention Pond Analysis
  - 2.3 Curb Inlet and Pipe Capacity Analysis
3. Results
  - 3.1 Pipe System A
  - 3.2 Pipe System B
  - 3.3 Pipe System C
4. Conclusions and Recommendations

APPENDIX A	Concept Display
APPENDIX B	Curb Inlet and Pipe Computations
APPENDIX C	Detention Pond Analysis

## **1. Project Overview**

Project No. STP-M001-00(147) includes the hydrologic and hydraulic analysis of the drainage system along and adjacent to North Main Street (S.R. 33) in the City of Moultrie. Property owners along this section of roadway have reported frequent flooding of their property during significant rainfall events, which they attribute to inadequate street drainage. In 1997 The Georgia Department of Transportation conducted an inspection of the storm drainage pipe system using a remotely operated video camera to determine if any blockages were present. The inspection revealed that the pipe system was in various stages of disrepair and appeared to have several drainage pipes from unknown points of origin attached. The pipes also contained significant amounts of debris at some locations and an unidentified obstruction in one of the main drainage pipes which would not allow the camera to pass. This analysis seeks to identify the source(s) of the flooding problem and provide recommendations for corrective measures to minimize localized flooding.

A field survey of the existing roadway, drainage system and property lines was conducted by Street Smarts, Inc. The layout of the existing drainage network is shown in Appendix B. The inlets, outlets and junctions could not be located and/or verified for several of the pipes in the network. It is reasonable to assume that if an inlet or outlet could not be located, that the particular pipe system has been rendered ineffective. Therefore, for the purpose of this analysis, those pipes for which the origin or terminus could not be determined were considered to be non-existent.

## **2. Design Criteria**

### **2.1 Hydrology**

All hydrologic computations are based on the Rational Method using the Intensity Duration Frequency (IDF) curves for Thomasville, GA. Thomasville is the nearest location for which IDF curves have been developed. Runoff coefficients were determined based on field observation of the ground cover and topography and the table of runoff coefficients contained on page 4-1 of the GDOT Drainage Manual. Times of concentration were established based on the Kirpich nomograph, also contained in the GDOT Drainage Manual (Chart 4-1), with 10 minutes being the minimum.

### **2.2 Detention Pond Analysis**

Two of the existing pipe systems analyzed discharge directly into a detention pond located adjacent to N.E. 1<sup>st</sup> Street. A hydrologic and hydraulic analysis was performed on the detention pond to determine what effect, if any, it has on the

upstream pipe systems. A stage-storage curve was developed from the field survey. Outflow from the pond is controlled by a 48" RCP culvert. The HY-8 computer model was used to determine the hydraulic characteristics of the outlet pipe and establish the stage discharge for the detention pond. Inflow hydrographs were created using the Rational Method for the 2yr, 10yr, 25yr, 50yr and 100yr design storms. The hydrographs were then routed through the detention pond using the Storage Indication Method to establish the appropriate discharge and water surface elevation. The Storage Indication Method is based on the following equation.

$$\text{Inflow} - \text{Outflow} = ds / dt$$

Where:  $ds / dt$  = change in storage

### 2.3 Curb Inlet and Pipe Capacity Analysis

The storm drainage calculations were done in accordance with the Georgia Department of Transportation (GDOT) *Manual on Drainage Design for Highways*. In addition, the Federal Highway Administration (FHWA) *HEC-22 Urban Drainage Design Manual* was used. The 10-year frequency storm event was selected as the design storm.

#### Gutter Spread (On Grade)

Gutter spread was calculated using a variation of Manning's equation.

$$T = \left\{ (Q n) / (K S_x^{1.67} S^{0.5}) \right\}^{0.375} \quad (\text{Equation 1})$$

Where:

- Q = rate of discharge [ $m^3/s$ ;  $ft^3/s$ ]
- K = constant [0.56 for English; 0.38 for SI]
- n = Manning's coefficient of roughness (0.015)
- S = longitudinal slope [ $m/m$ ;  $ft/ft$ ]
- $S_x$  = equivalent cross slope [ $m/m$ ;  $ft/ft$ ]
- T = spread of water on the pavement [ $m$ ;  $ft$ ]

Flow depth in the gutter was calculated using the following equation.

$$D = T S_x \quad (\text{Equation 2})$$

### Inlet Efficiency (On Grade)

The length of curb-opening inlet required for total interception of gutter flow on a pavement section with a uniform cross slope was determined by the following equation.

$$L_T = K_U Q^{0.42} S_L^{0.3} (1/n S_X)^{0.6} \quad (\text{Equation 3})$$

Where:

$K_U = 0.6$  (English Units)

$L_T$  = curb opening length required to intercept 100% of gutter flow

$S_L$  = longitudinal slope

$Q$  = gutter flow, (ft<sup>3</sup> / s)

The efficiency of curb opening inlets that are shorter than the length required for total interception was calculated using the following equation.

$$E = 1 - (1 - L / L_T)^{1.6} \quad (\text{Equation 4})$$

### Grate Inlets

There is a grated inlet located in low point of North Main Street on the west side of the road. A grated inlet located in a sag point will operate as a weir to depths dependent on the size of the grate and as an orifice at greater depths. The capacity of the grated inlet was calculated using the following equation.

$$Q_i = C_w P d^{1.5} \quad (\text{Equation 5})$$

Where:

$P$  = perimeter of the grate in feet

$C_w = 3.0$  (weir coefficient)

$d$  = depth of flow across grate

### Pipe Capacity

The capacity of existing pipes was calculated using Manning's equation.

$$Q = (1.49 / n) A R^{2/3} S^{1/2} \quad (\text{Equation 6})$$

Where:

n = roughness coefficient  
A = area (ft<sup>2</sup>)  
R = Hydraulic Radius  
S = pipe slope (ft/ft)

The inlet and pipe computations are shown in Table 1 in Appendix B, which is based on Chart 10-25 in the GDOT Drainage Manual.

## **3.0 Results**

### **3.1 Detention Pond**

The 10yr and 100yr water surface elevations for the detention pond were determined to be 289.82ft and 290.86ft respectively. The invert of Pipe System A discharging into the pond is 297.26ft. Therefore, it can be concluded that the detention pond does not affect the operation of the Pipe System A. Pipe System B, which includes a 6' X 4' box culvert, has an invert elevation of 286.74ft, which is below the 10yr water surface elevation for the pond. The effect of the detention pond is included in the analysis of Pipe System B. The detailed analysis of the detention pond is included in Appendix C.

### **3.2 Pipe System A**

Pipe System A originates behind a repair shop in the NW quadrant of the intersection of N. Main Street and N.W. 5<sup>th</sup> Avenue. The existing 18 inch RCP at the upstream end of the pipe system receives flow from a ditch that runs behind the residential properties along N.W. 1<sup>st</sup> Street. The drainage area is approximately 8 acres and the 10 yr flow is 31.6cfs. The existing 18inch RCP is not sufficient to accommodate the flow without surcharging. Pipe System A continues south and runoff is collected from the south side of 5<sup>th</sup> Avenue and both sides of 4<sup>th</sup> Avenue with catch basins (structures A5, A4 and A4.1). The opening for some of these catch basins is only 4 ft in length, therefore their efficiency is minimal and much of the runoff appears to bypass the inlet structures. The undersized pipes on the upstream end of the pipe system and small inlet openings on the existing catch basins are believed to contribute significantly to the localized flooding problem.

### **3.3 Pipe System B**

Pipe System B includes the inlets located in the sag point of North Main Street. The areas drained by this pipe system include the property west of North Main Street between 4<sup>th</sup> Avenue and 5<sup>th</sup> Avenue. Based on field observations, it is unclear how the drainage from this property is handled. However, it appears that

the drainage is collected in a separate pipe system and discharged directly on to the surface of North Main Street. The analysis indicates that the 15 inch cross drain pipe between structures B9 and B8 is not adequately sized. The existing 24inch RCP from structure B7 appears to have sufficient capacity, however, the aforementioned video inspection showed the pipe to be in need of repair or replacement. Since Pipe System B discharges into the detention pond below the 10yr water surface elevation, a hydraulic grade line (HGL) analysis was performed to determine the effects of the pond on the upstream pipe system. The results of the analysis indicate that the 10 yr HGL elevation at structure B4 is 289.76 ft. For comparison, a baseline HGL analysis was performed for the same section of Pipe System B assuming no tailwater condition at the outfall. The results of the baseline analysis yield the same HGL elevation of 289.76 ft at structure B4. Therefore it can be concluded that the detention pond has no significant effect on the function of the Pipe System B. The analysis and results are included in Appendix B.

### **3.4 Pipe System C**

Pipe System C collects runoff primarily from the north along North Main Street and adjacent areas as well as N.W. 5<sup>th</sup> Avenue. The existing catch basins in this pipe system also have 4 ft openings and the analysis indicates significant bypass flows, which range from 10 percent to 80 percent. The analysis also indicates that the pipe system, which ranges from 15 inches to 30 inches, has adequate capacity if the runoff could be collected by the inlets. There is some question as to the condition of the pipes and structures in this system. Significant damage was observed to some of the structures on the upstream end of the system at structure C3.2 and some of the pipes could not be accessed for field survey.

## **4.0 Conclusion and Recommendations**

Recommendations for improvements to the drainage system are illustrated on the Concept Display included in Appendix A. The recommendations include the following.

- Additional catch basins to be constructed along North Main Street to minimize the bypass flow, which currently collects in the sag point.
- Replace the existing 18inch RCP behind the mechanic shop west of North Main Street and improve the remainder of the pipe system as shown on the concept. Construct parallel drainage pipe along 5<sup>th</sup> Avenue and tie to existing 48inch RCP at the corner of 5<sup>th</sup> Avenue and N.E. 1<sup>st</sup> Street to provide relief for Pipe Systems A, B and C.

- Replace existing 24inch RCP on Pipe System A adjacent to mechanic shop on the east side of North Main Street and tie to existing 48inch RCP along N.E. 1<sup>st</sup> Street.
- Replace small opening catch basins at the corners of 4<sup>th</sup> Avenue and N. Main Street and 5<sup>th</sup> Avenue and North Main Street with GDOT standard structures.
- Reconstruct all hidden or buried pipe junctions with manholes to allow access for maintenance and cleanout.

The existing system will remain in place, except where proposed new construction will occur, to act as an overflow and provide additional hydraulic capacity. It is anticipated that these proposed improvements along with regular maintenance will significantly reduce the incidents of flooding currently experienced by the property owners.

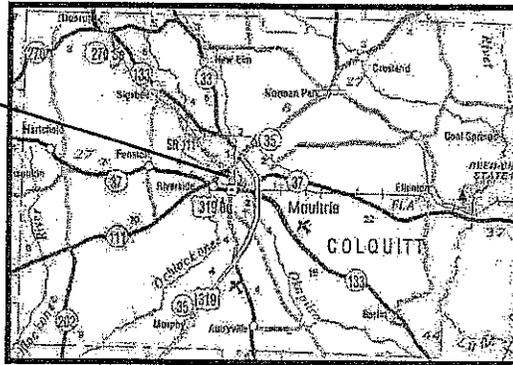
**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**  
*District 4 -- Tifton, Ga.*

Project Number: STP-M001-00(147)  
County: Colquitt  
P. I. Number: M001147

**Project Concept Report**

U.S. Route: 319 Business  
State Route Number: SR 33 South

**Project Location**



**Drainage Improvements along North Main St. (SR 33 South/US 319 Bus.) in Moultrie**

Recommended for approval:

DATE: 1/6/2003

DATE: 1-6-03

Jeff B. [Signature]  
Project Manager  
[Signature]  
District Engineer

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

DATE: \_\_\_\_\_

\_\_\_\_\_  
State Transportation Planning Administrator

DATE: \_\_\_\_\_

DATE: 1/15/03

\_\_\_\_\_  
Financial Management Administrator  
[Signature]  
State Environmental/Location Engineer

DATE: \_\_\_\_\_

\_\_\_\_\_  
State Traffic Safety and Design Engineer

DATE: \_\_\_\_\_

\_\_\_\_\_  
Project Review Engineer

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

*District 4 - Tifton, Ga.*

Project Number: STP-M001-00(147)

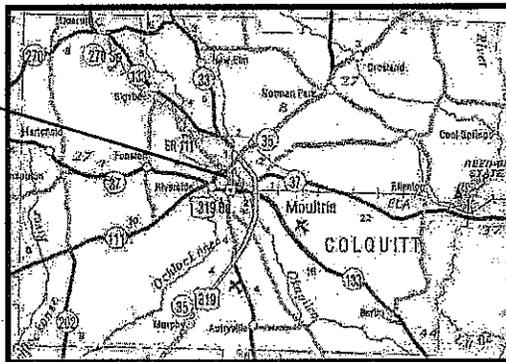
County: Colquitt

P. I. Number: M001147

**Project Concept Report**

U.S. Route: 319 Business  
State Route Number: SR 33 South

**Project Location**



**Drainage Improvements along North Main St. (SR 33 South/US 319 Bus.) in Moultrie**

Recommended for approval:

DATE: 1/6/2003

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Jeff B. [Signature]  
Project Manager  
[Signature]  
District Engineer

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

DATE: \_\_\_\_\_

\_\_\_\_\_  
State Transportation Planning Administrator

DATE: \_\_\_\_\_

\_\_\_\_\_  
Financial Management Administrator

DATE: \_\_\_\_\_

\_\_\_\_\_  
State Environmental/Location Engineer

DATE: \_\_\_\_\_

\_\_\_\_\_  
State Traffic Safety and Design Engineer

DATE: 1/10/03

David J. [Signature]  
Project Review Engineer