

ORIGINAL TO GENERAL FILES

D.O.T. 66

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE MSL-0000-00(952) Douglas County **OFFICE** Preconstruction
P. I. No. 0000952
DATE August 23, 2001
FROM *CWHutto*
C. Wayne Hutto, Assistant Director of Preconstruction
TO SEE DISTRIBUTION
SUBJECT PROJECT CONCEPT REPORT APPROVAL

Attached for your files is the approval for subject project.

CWH/cj

Attachment

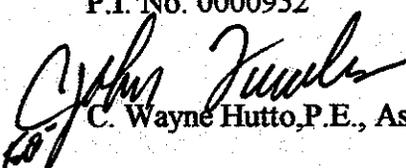
DISTRIBUTION:

Tom Turner
David Mulling
Harvey Keeper
Jerry Hobbs
Herman Griffin
Michael Henry
Marion Waters
Marta Rosen
Paul Liles
Jimmy Chambers
Jim Kennerly
Steve Henry
BOARD MEMBER

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE MSL-0000-00(952) Douglas County **OFFICE** Preconstruction
P.I. No. 0000952 **DATE** August 21, 2001

FROM  C. Wayne Hutto, P.E., Assistant Director of Preconstruction

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

SUBJECT PROJECT CONCEPT REPORT

This project is the replacement of the bridge on SR 166 over the Dog River, 1.25 miles north of the Dog River Dam in Douglas County. The Douglas County Water and Sewer Authority is planning to increase the county's water supply from 16 MGD to 20 MGD by raising the Dog River Reservoir 10'. The proposed reservoir level will inundate existing SR 166 at Dog River. The existing SR 166 within the project area consists of two, 12' lanes with 4' shoulders on a variable 100' to 160' of existing right-of-way. The existing bridge is 200' x 28'. The SR 166 corridor currently carries approximately 4,200 to 5,000 VPD. Projected volumes are 7,952 and 10,585 VPD in the years 2012 and 2032 respectively. The posted speed and the design speed are 55 MPH.

The construction proposes to relocate SR 166 south of its present location, extending a total of 1.0 mile. The proposed new bridge will be 355' x 44' and will be located south of the existing structure. The relocated SR 166 will consist of two, 12' lanes with 10' shoulders (6.5' paved) on a variable 200' to 260' of proposed right-of-way. The project will be designed to accommodate a future four lane on SR 166 from SR 5 in the west to SR 92 in the east. Traffic will be maintained on the existing bridge while the proposed bridge is constructed.

Environmental concerns include requiring a COE 404 Permit; a Categorical Exclusion will be prepared; a public hearing will be held; time saving procedures are not 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)	\$4,484,000	\$1,183,000	2005	FY-05
Right-of-Way*	\$ 250,000	\$ 10,000		
Utilities	\$ 60,000	----		

Frank L. Danchetz
Page 2

MSL-0000-00(952) Douglas
August 21, 2001

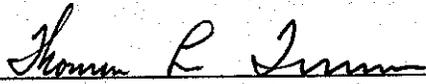
*Douglas County Water and Sewer Authority signed LGPA on 10-3-00 for PE and right-of-way.

I recommend this project concept be approved.

CWH:JDQ/cj

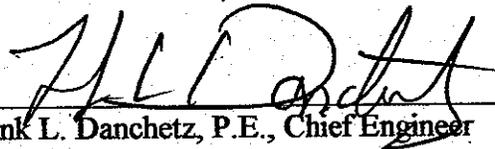
Attachment

CONCUR



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

APPROVE



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

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENTAL CORRESPONDENCE

FILE: MSL-0000-00(952)
P.I. Number 0000952

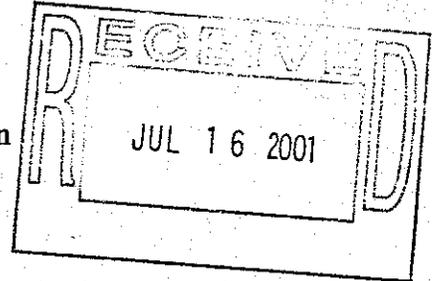
OFFICE: Engineering Services

DATE: July 12, 2001

FROM: *DTM*
David Mulling, Project Review Engineer

TO: Wayne Hutto, Assistant Director of Pre-construction

SUBJECT: CONCEPT REPORT



We have reviewed the concept report submitted July 9, 2001 by the letter from James A. Kennerly dated July 5, 2001, and have the following comments:

1. In order for the concept cost estimate to be verified the estimated quantities for the items of work need to be provided.

The costs for the project are:

Construction	\$3,882,000
Inflation	\$ 194,000
E&C	\$ 408,000
Reimbursable Utilities	\$ <i>60,000 - Jpe?</i>
Right of Way	\$ 250,000

DTM

c: Jim Kennerly

SCORING RESULTS AS PER MOG 2440-2

Project Number: MSL		County: DOUGLAS		PI No.: 0000952	
Report Date: 7/5/01		Concept By: DOT Office: Road Design			
<input checked="" type="checkbox"/> CONCEPT		Consultant: Mayes, Sudderth & Etheredge			
Project Type: Choose One From Each Column		<input type="checkbox"/> Major <input checked="" type="checkbox"/> Minor	<input type="checkbox"/> Urban <input checked="" type="checkbox"/> Rural	<input type="checkbox"/> ATMS <input checked="" type="checkbox"/> Bridge <input type="checkbox"/> Building <input type="checkbox"/> Interchange <input type="checkbox"/> Intersection <input type="checkbox"/> Interstate <input type="checkbox"/> New Location <input type="checkbox"/> Widening & Reconstruction <input type="checkbox"/> Miscellaneous	
FOCUS AREAS	SCORE	RESULTS			
Presentation	90%	Need to provide estimated quantities for items of work in the concept estimate			
Judgement	100%				
Environmental	100%				
Right of Way	100%				
Utility	100%				
Constructability	100%				
Schedule	100%				

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
OFFICE OF ROAD AND AIRPORT DESIGN

PROJECT CONCEPT REPORT

Project Number: MSL-0000-00-952

County: Douglas

P. I. Number: 0000952

Federal Route Number: Not Applicable

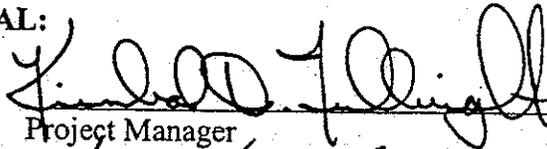
State Route Number: 166

Date of Report: July 5, 2001

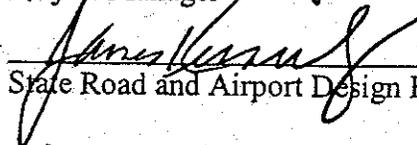
Relocated SR 166 at Dog River
Bridge Replacement and Approaches

RECOMMENDATION FOR APPROVAL:

DATE 07-05-01


Project Manager

DATE 07-06-01

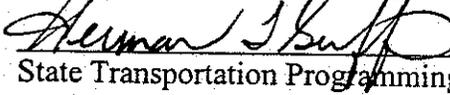

State Road and Airport Design Engineer

The 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 2/10/01


State Transportation Programming Engineer

DATE _____

State Environmental/Location Engineer

DATE _____

State Traffic Operations Engineer

DATE _____

District Engineer

DATE _____

Project Review Engineer

DATE _____

State Bridge and Structural Design Engineer

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
OFFICE OF ROAD AND AIRPORT DESIGN

PROJECT CONCEPT REPORT

Project Number: MSL-0000-00-952

County: Douglas

P. I. Number: 0000952

Federal Route Number: Not Applicable

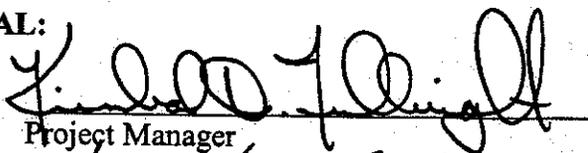
State Route Number: 166

Date of Report: July 5, 2001

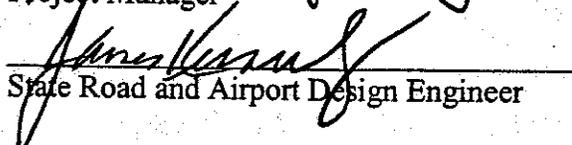
Relocated SR 166 at Dog River
Bridge Replacement and Approaches

RECOMMENDATION FOR APPROVAL:

DATE 07-05-01


Project Manager

DATE 08-06-01


State Road and Airport Design Engineer

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DATE _____

State Transportation Planning Administrator

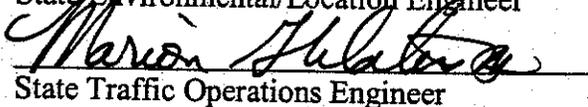
DATE _____

State Transportation Programming Engineer

DATE _____

State Environmental/Location Engineer

DATE 7/16/01


State Traffic Operations Engineer

DATE _____

District Engineer

DATE _____

Project Review Engineer

DATE _____

State Bridge and Structural Design Engineer

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
OFFICE OF ROAD AND AIRPORT DESIGN

PROJECT CONCEPT REPORT

Project Number: MSL-0000-00-952

County: Douglas

P. I. Number: 0000952

Federal Route Number: Not Applicable

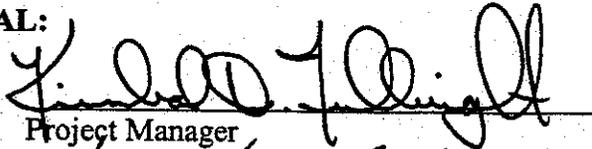
State Route Number: 166

Date of Report: July 5, 2001

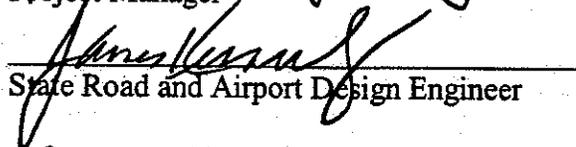
Relocated SR 166 at Dog River
Bridge Replacement and Approaches

RECOMMENDATION FOR APPROVAL:

DATE 07-05-01


Project Manager

DATE 08-06-01


State Road and Airport Design Engineer

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DATE _____

State Transportation Planning Administrator

DATE _____

State Transportation Programming Engineer

DATE _____

State Environmental/Location Engineer

DATE _____

State Traffic Operations Engineer

DATE _____

District Engineer

DATE _____

Project Review Engineer

DATE 7/21/01

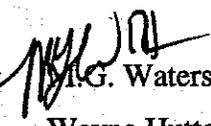

State Bridge and Structural Design Engineer

Department of Transportation State of Georgia

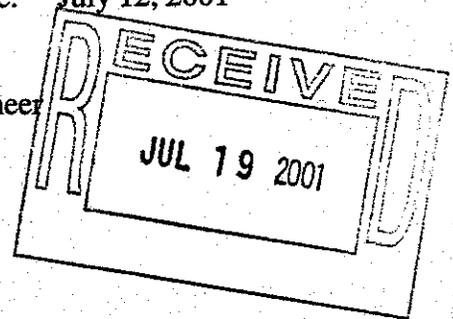
INTERDEPARTMENTAL CORRESPONDENCE

File: MSL - 0000-00952 / Douglas County
P.I. No. 000952

Office: Traffic Operations
Atlanta, Georgia
Date: July 12, 2001

From:  I.G. Waters, III, P.E., State Traffic Operations Engineer
To: Wayne Hutto, Assistant Director of Preconstruction

Subject: Project Concept Report Review



We have reviewed the above referenced concept report for the replacement of the bridge on SR 166 over the Dog River. This project is required to accommodate the Douglas County Water Authority's request to raise the river 10 feet to increase the county's water supply. This project is located 1.25 miles north of Dog River Dam in Douglas County.

The existing structure is 28 feet wide. The concept proposes to construct a new structure 44 feet wide for the two-lane roadway. The current ADT is 4240 vehicles and the design year ADT is projected to be 7952 vehicles. The proposed bridge width is in accordance with MOG 4265-10 for this type of roadway.

We believe this concept will improve safety and traffic operations within this area, therefore find this report satisfactory for approval.

MGW/BM

Attachment (signature page)

Cc: Harvey Keepler, State Environment/Location Engineer
James Kennerly, State Road and Airport Design Engineer
David Mulling, State Review Engineer, w/ attachment
Marta Rosen, State Transportation Planning Administrator
Paul Liles, State Bridge & Structural Design Engineer
Chuck Hasty, TMC
General Files

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
OFFICE OF ROAD AND AIRPORT DESIGN

PROJECT CONCEPT REPORT

Project Number: MSL-0000-00-952

County: Douglas

P. I. Number: 0000952

Federal Route Number: Not Applicable

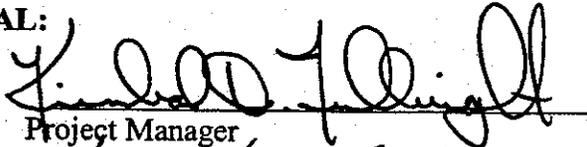
State Route Number: 166

Date of Report: July 5, 2001

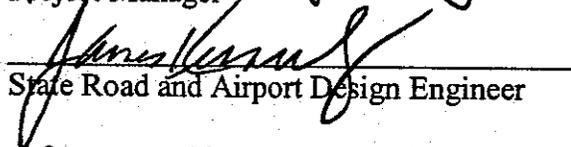
Relocated SR 166 at Dog River
Bridge Replacement and Approaches

RECOMMENDATION FOR APPROVAL:

DATE 07-05-01


Project Manager

DATE 08-06-01


State Road and Airport Design Engineer

The 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 _____

State Transportation Programming Engineer

DATE _____

State Environmental/Location Engineer

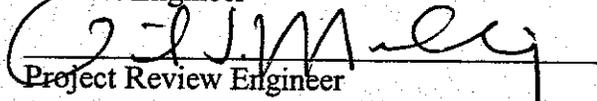
DATE _____

State Traffic Operations Engineer

DATE _____

District Engineer

DATE 7/12/01


Project Review Engineer

DATE _____

State Bridge and Structural Design Engineer

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
OFFICE OF ROAD AND AIRPORT DESIGN

PROJECT CONCEPT REPORT

Project Number: MSL-0000-00-952

County: Douglas

P. I. Number: 0000952

Federal Route Number: Not Applicable

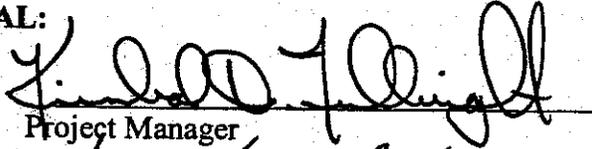
State Route Number: 166

Date of Report: July 5, 2001

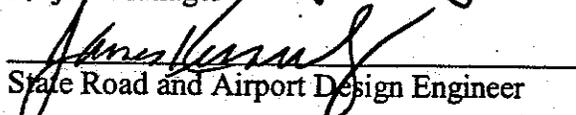
Relocated SR 166 at Dog River
Bridge Replacement and Approaches

RECOMMENDATION FOR APPROVAL:

DATE 07-05-01


Project Manager

DATE 07-06-01


State Road and Airport Design Engineer

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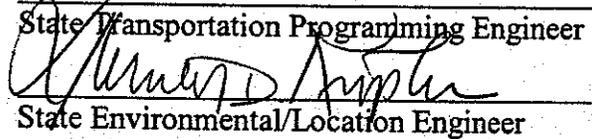
DATE _____

State Transportation Planning Administrator

DATE _____

State Transportation Programming Engineer

DATE 7/19/01


State Environmental/Location Engineer

DATE _____

State Traffic Operations Engineer

DATE _____

District Engineer

DATE _____

Project Review Engineer

DATE _____

State Bridge and Structural Design Engineer

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE:

P.I. No. 0000952

OFFICE: Environment/Location

DATE: July 26, 2001

FROM:

Harvey D. Keeper
Harvey D. Keeper, State Environmental/Location Engineer

TO:

Wayne Hutto, P.E., Assistant Director of Preconstruction

SUBJECT:

**PROJECT CONCEPT REPORT
MSL-0000-00(952), DOUGLAS COUNTY**



The above subject concept report has been reviewed. Page 9 - Level of Environmental Analysis should read Categorical Exclusion is anticipated.

If you have any questions, please let me know.

HDK/rtt

Attachment

cc: David Mulling
James A. Kennerly

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
OFFICE OF ROAD AND AIRPORT DESIGN

PROJECT CONCEPT REPORT

Project Number: MSL-0000-00-952

County: Douglas

P. I. Number: 0000952

Federal Route Number: Not Applicable

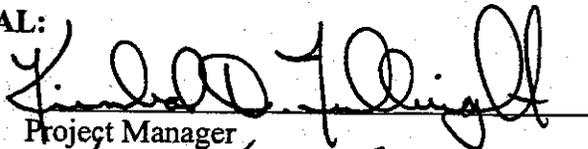
State Route Number: 166

Date of Report: July 5, 2001

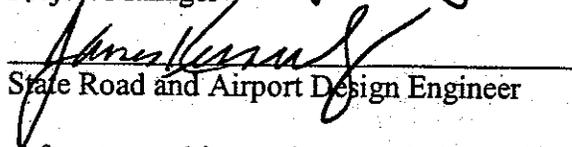
Relocated SR 166 at Dog River
Bridge Replacement and Approaches

RECOMMENDATION FOR APPROVAL:

DATE 07-05-01


Project Manager

DATE 08-06-01


State Road and Airport Design Engineer

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DATE _____

State Transportation Planning Administrator

DATE _____

State Transportation Programming Engineer

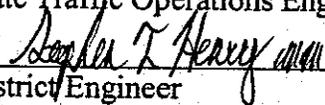
DATE _____

State Environmental/Location Engineer

DATE _____

State Traffic Operations Engineer

DATE 8-3-01


District Engineer

DATE _____

Project Review Engineer

DATE _____

State Bridge and Structural Design Engineer

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
OFFICE OF ROAD AND AIRPORT DESIGN**

INTERDEPARTMENT OF CORRESPONDENCE

FILE: MSL-0000-00-952 Douglas County
P.I. No. 0000952

OFFICE: Atlanta, Ga.

DATE: July 5, 2001

FROM: *Fol* *Joseph A. Kennerly*
James A. Kennerly, State Road & Airport Design Engineer

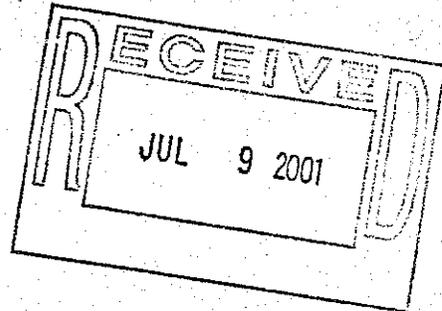
TO: Wayne Hutto, Assistant Director of Preconstruction

SUBJECT: Project Concept Report

Attached is the original copy of the Concept Report for your further handling for approval in accordance with the Plan Development Process (PDP).

JAK:KDF
attachment

cc: David Mulling, w/attachment
Harvey Keeper, w/attachment
Marion Waters, w/attachment
Marta Rosen, w/attachment
Herman Griffin, w/attachment
Steve Henry, w/attachment
Paul Liles, w/attachment



DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
OFFICE OF ROAD AND AIRPORT DESIGN

PROJECT CONCEPT REPORT

Project Number: MSL-0000-00-952

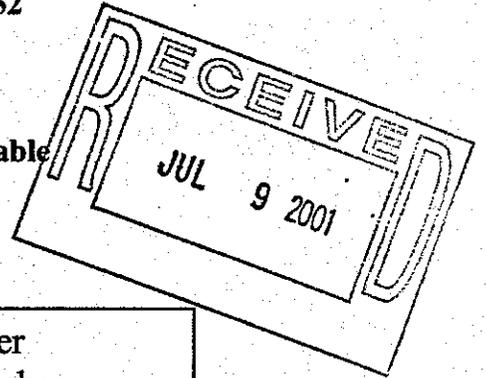
County: Douglas

P. I. Number: 0000952

Federal Route Number: Not Applicable

State Route Number: 166

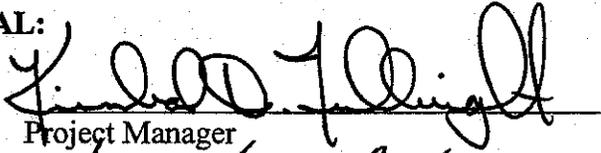
Date of Report: July 5, 2001



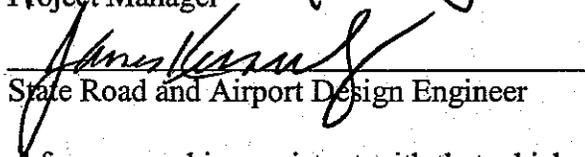
Relocated SR 166 at Dog River
Bridge Replacement and Approaches

RECOMMENDATION FOR APPROVAL:

DATE 07-05-01


Project Manager

DATE 07-06-01


State Road and Airport Design Engineer

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DATE _____

State Transportation Planning Administrator

DATE _____

State Transportation Programming Engineer

DATE _____

State Environmental/Location Engineer

DATE _____

State Traffic Operations Engineer

DATE _____

District Engineer

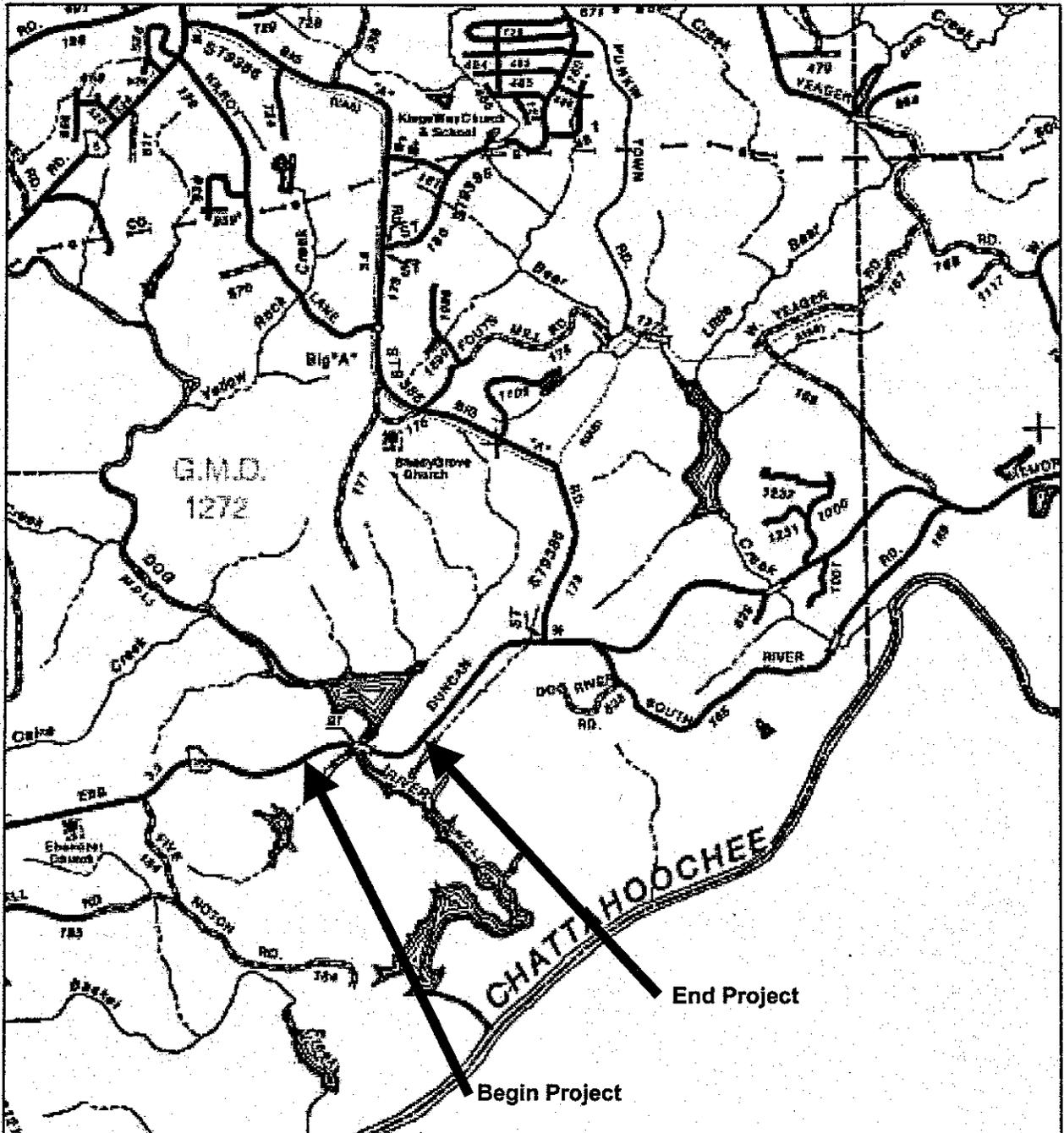
DATE _____

Project Review Engineer

DATE _____

State Bridge and Structural Design Engineer

July 5, 2001
Project Concept Report page 1
Project Number: MSL-0000-00952
P. I. Number: 0000952
County: Douglas



Project Location Map

July 5, 2001

Project Concept Report page 2

Project Number: MSL-0000-00952

P. I. Number: 0000952

County: Douglas

NEED AND PURPOSE:

The existing State Route 166 was constructed in mid -fifties and designed for a 40 miles per hour (mph) speed limit. This existing two-lane facility (roadway and bridge that crosses Dog River) between State Route 5 and Big "A" Road has a very minimum amount of accident rate and can accommodate the current traffic volumes (see Accident Summaries and Capacity Analysis presented on Attachments 4 and 5 respectively). Currently, this particular segment has no safety issues.

However, Douglas County Water and Sewer Authority (Authority) is planning to increase the County's water supply from 16 million gallons per day (MGD) to 20 MGD by raising the Dog River Reservoir by ten (10) feet. Due to this project, the proposed reservoir level will inundate the existing bridge along State Route 166 at Dog River and a portion of both roadway approaches. The affected bridge and roadway approaches are located approximately 2-½ miles east of State Route 5 and around 7-¼ miles west of State Route 92.

In order to obtain Georgia Department of Transportation (GDOT) funding to replace the affected bridge and roadway approaches, the local Authority agreed to provide pre-construction engineering for this project. The Authority retained R. J. Wood and Company to prepare a concept study, preliminary and construction plans through their sub-consultant, Mayes, Sudderth & Etheredge, Inc. (MSE).

The study includes bridge replacement and approximately half-mile of approach roadway on each side of the bridge (the termini of the project). New and replacement utilities such as communications and power will be installed within the right-of-way. The recommended roadway alignment is generally located in forested areas and will impact a minimum number of owners. This recommended roadway alignment will become a part of future improved SR 166 from SR 5 in the west to SR 92 in the east. The new and future roadway will be designed to a minimum speed of 55 mph.

With facts and reasoning presented above, it is imperative that the existing bridge crossing the Dog River shall be replaced to accommodate the increased water supply being proposed by the Authority.

DESCRIPTION OF THE PROPOSED PROJECT:

The scope of the project is to replace State Route 166 crossing of Dog River in Douglas County, Georgia. The project is located in a non-attainment area. The reason for the replacement is due to a planned increase in water depth of Dog River Reservoir.

July 5, 2001
Project Concept Report page 3
Project Number: MSL-0000-00952
P. I. Number: 0000952
County: Douglas

It is anticipated by the Authority that only small row boats and electric powered motor boats will be allowed to operate in the reservoir; operation of gasoline or diesel powered motor boats will be prohibited.

The proposed approaches and bridge roadway capacity is based on the year 2022 traffic volumes.

The proposed facilities will be planned such as to become a part of a future improved State Route 166 from State Route 5 in the west to State Route 92 in the east.

Future roadway capacity is tentatively based on 2032 traffic volume projections with a minimum design speed of 55 mph and a preferred speed of 65 mph.

PDP CLASSIFICATION: Minor Project

FEDERAL OVERSIGHT: Full Oversight (), Exempt (X), State Funded (), or Other ()

FUNCTIONAL CLASSIFICATION: Rural Minor Arterial (west of Dog River Bridge)
Urban Minor Arterial (east of Dog River Bridge)

U.S. ROUTE NUMBER(S): Not Applicable **STATE ROUTE NUMBER(S):** SR 166

TRAFFIC (AADT):

Current Year: (2000) 4,240

Design Year: (2022) 7,952

Future Design Year: (2032) 10,585

EXISTING DESIGN FEATURES:

General: Primary roadway limits in the study extend about 1/2 mile east and west of existing State Route 166 over Dog River Bridge. Secondary limits extend about 1/4 mile east of State Route 5 in the west to Five Notch Road, Douglas County, in the east; roadway plans are depicted in federal aid project No. S-0841 (2), Douglas County. This 6.6 mile stretch of road traverses extremely hilly terrain and includes two main stream crossings, one at Dog River and another at Bear Creek.

The existing two-lane facility was constructed in 1956. It was designed for 40-mph design speed. Horizontal and vertical curve criteria are consistent with the design speed. Passing zones are located near the beginning and end portions of the limits studied.

Typical Section: Two 12-foot lanes with 4 feet shoulders

Posted speed: 55 mph

Maximum degree of curvature: 8 Degrees

Maximum grade: 6% (Mainline)

Width of right-of-way: Varies between 100 ft. and 160 ft.

Major structures: One Bridge Stream Crossing

July 5, 2001

Project Concept Report page 4

Project Number: MSL-0000-00952

P. I. Number: 0000952

County: Douglas

DESCRIPTION OF EXISTING BRIDGE NO. 1, SR 166 OVER DOG RIVER :

Bridge consists of five (5) simple span steel rolled beams (middle span is designed with composite action); steel 'H' pile end bents; two (2) steel 'H' pile intermediate bents; and two (2) rigid frame intermediate bents with partial height shear walls.

Spans: 36'-0" , 36'-0" , 56'-0" , 36'-0" , 36'-0"

Roadway: 28' - 0" face to face of 2'-0" wide brush curbs with concrete hand railing.

Skew: None.

Alignment: Tangent.

Design Data

Specifications: AASHO 1953.

Live Loading: HS20-44, impact allowed.

Future Paving Allowance: 15 psf

Material Data

Class A Concrete: $f'c = 3,000$ psi

Reinforcing Steel: $f_y =$ ASTM A-305-50T

Structural Steel: ASTM A-373-54T

Drainage Data

Drainage Area: 74.63 square miles

High Water Elevation: 745.00', before downstream dam was built.

Normal Water Elevation: 750.25', on January 29, 2001.

High Water Elevation: 752.86', after downstream dam was built.

Flood Design Frequency: Not listed on the plans; it is presumed to be a 100-year frequency.

Area of Opening under High water: 1,640 square feet, before dam construction.

Area of Opening under High water: 2,910 square feet, after dam construction.

100-Year Design Discharge (from flood report) = 15,400 cfs

100-Year Average Velocity = 9.4 fps, before dam construction.

100-Year Average Velocity = 5.3 fps, after dam construction.

100-Year Low Steel Vertical Clearance: 12.1 feet, before dam construction.

100-Year Low Steel Vertical Clearance: 4.1 feet, after dam construction.

July 5, 2001

Project Concept Report page 5

Project Number: MSL-0000-00952

P. I. Number: 0000952

County: Douglas

MAJOR EXISTING INTERCHANGES OR INTERSECTIONS ALONG THE PROJECT:

River Road intersection with SR 166 is located about 0.8 mile west of existing bridge. River Road provides access to the marine facilities located north of the bridge. This 30-degree intersection is lacking sufficient sight distance and turning radius.

PROPOSED DESIGN FEATURES:

Proposed typical section(s): Two 12-foot lanes with 10' shoulders (6.5' paved)

Proposed Design Speed Mainline: 55 mph

Proposed Maximum grade on Mainline: 5.00%

Maximum grade allowable:

5% (Rural Minor Arterial)

6% (Urban Minor Arterial)

Proposed Maximum grade on Side Street: N/A

Maximum grade allowable: N/A

Proposed Maximum grade on driveway: 11%

Proposed Maximum degree of curve: 4

Maximum degree allowable: 6

Right of way:

- o Width 200 to 260 ft.
- o Easements: Temporary (X), Permanent (X), Utility (), Other ().
- o Type of access control: Full (), Partial (X), By Permit (), Other ().
- o Number of parcels: 2
- o Number of displacements:
 - o Business: 0
 - o Residences: 0
 - o Mobile homes: 0
 - o Other: _____

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Project Number: MSL-0000-00952

P. I. Number: 0000952

County: Douglas

STRUCTURES: One Bridge Stream Crossing

DESCRIPTION OF PROPOSED BRIDGE (ALTERNATE D)

Bridge consists of a three (3) span PSC Bulb Tee beams with composite action, steel 'H' end bents and hammerhead intermediate bents.

Spans: 126'-0", 126'-0", and 103'-0"

Roadway, Proposed Left Bridge: 44'-0" face to face barrier curbs.

Roadway, Future Right Bridge: 38'-0" face to face barrier curbs

Skew: 32 degrees

Alignment: Tangent

Design Data

Specifications: AASHTO 96, with 97, 98, and 99 Interim.

Live Loading: HS20-44 and/ or military loading, impact allowed.

Seismic performance category A.

Future Paving: Allowance: 30 psf

Material Data

PSC Bulb Tee Beams: $f'_c = 7,000$ psi

Superstructure Concrete: $f'_c = 3,500$ psi, Class AA

Substructure Concrete: $f'_c = 3,000$ psi, Class A

Reinforcing Steel: ASTM A615, Grade 60

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Project Number: MSL-0000-00952

P. I. Number: 0000952

County: Douglas

Drainage Data

Based on March, 2000, Engineering Report On The Hydrological Analysis For The Raising Of The Dog River Reservoir Dam By 10 Feet, prepared by R. J. WOOD AND COMPANY, Civil and Environmental Engineers, Macon, Georgia.

Drainage Area: 74.6 square miles.

Flood Design Frequency: 100-year.

Design High Water Elevation: 762.86', controlled by existing dam raised by 10 feet.

Design Discharge: 15,400 cfs

Net Area of Opening under Design High Water Elevation: 4,960 square feet.

Design Average Water Velocity: 3.1 fps

Design Discharge Low Steel Vertical Clearance: 2 feet minimum,

Vertical Clearance from Maximum Operating Pool: 8 feet minimum above 2-year High Water El.

(For additional details, see Attachment 9, Sheet 1 of 4 for Plan and Elevation (Bridge Alternate I))

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 Project Number: MSL-0000-00952
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 County: Douglas

TRAFFIC CONTROL DURING CONSTRUCTION:

To construct the western end roll of the bridge, it is anticipated that trucks will haul embankment material, from 20 feet deep cut located on eastern approach. It is preferred that egress and ingress be located on tangent portions of existing roadway and that signs be erected warning motorists about construction trucks entering and leaving the highway.

Tie-in construction to existing roadway will require that one lane of traffic is maintained while the crown or the grade of the other lane is being modified to fit the geometry of the tie-in roadway connection. Transition cones, striping, temporary traffic signs and flagmen will be required during roadway tie-in construction. It is anticipated that tie- in construction activities will be the last major construction activities of the project.

DESIGN EXCEPTIONS TO CONTROLLING CRITERIA ANTICIPATED :

	<u>UNDETERMINED</u>	<u>YES</u>	<u>NO</u>
HORIZONTAL ALIGNMENT:	()	()	(X)
ROADWAY WIDTH:	()	()	(X)
SHOULDER WIDTH:	()	()	(X)
CROSS SLOPES:	()	()	(X)
STOPPING SIGHT DISTANCE:	()	()	(X)
SUPERELEVATION RATES:	()	()	(X)
HORIZONTAL CLEARANCE:	()	()	(X)
SPEED DESIGN:	()	()	(X)
VERTICAL CLEARANCE:	()	()	(X)
BRIDGE WIDTH:	()	()	(X)
BRIDGE STRUCTURAL CAPACITY:	()	()	(X)

DESIGN VARIANCES: None

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Project Number: MSL-0000-00952

P. I. Number: 0000952

County: Douglas

ENVIRONMENTAL ISSUES:

In coordination with GDOT, the design consultant shall perform the following activities:

- a. Prepare an environmental study report and obtain approval of GDOT and Federal Highway Administration.
- b. Prepare and conduct public hearings necessary for the project.
- c. Prepare bridge hydraulic and roadway drainage studies and obtain approval of GDOT and Federal Emergency Management Agency.
- d. Obtain U. S. Army Corps Of Engineers approval for placing fill in the Dog River Reservoir area.

Level of environmental analysis:

- o Are TimeSavings Procedures appropriate? Yes (), No (X),
- o Categorical exclusion is anticipated (X),
- o Environmental Assessment/Finding of No Significant Impact (FONSI) (), or
- o Environmental Impact Statement (EIS) ().

UTILITY INVOLVEMENTS: Communications, Power

PROJECT RESPONSIBILITIES:

- o Design, by Douglasville- Douglas County Water and Sewer Authority through their Consultant
- o Right of Way Acquisition, by Douglasville- Douglas County Water and Sewer Authority
- o Relocation of Utilities, by affected Utility
- o Letting to contract, by GDOT
- o Supervision of construction, by GDOT
- o Providing material pits, by Contractor
- o Providing detours. None required

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Project Number: MSL-0000-00952

P. I. Number: 0000952

County: Douglas

COORDINATION: (See Attachment 7)

1. Initial Concept Meeting Minutes
2. Concept Team Meeting Minutes
3. Response to Concept Team Meeting Minutes

SCHEDULING – RESPONSIBLE PARTIES' ESTIMATE:

Time to complete the environmental process: 2 Months.

Time to complete preliminary construction plans: 3 Months.

Time to complete right-of-way plans: 2 Months.

Time to complete the Section 404 Permit: 2 Months.

Time to complete final construction plans: 4 Months.

Time to complete to purchase right-of-way: 2 Months.

Time to complete project construction: 10 Months.

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County: Douglas

OTHER ALTERNATES CONSIDERED:

Proposed depth increase of Dog River Reservoir at State Route 166 in Douglas County required a study for the replacement of existing bridge and affected roadway approaches. Proposed roadway alignment is to become part of a future improved SR 166 from SR 5 to SR 92 in Douglas County. Two alternate routes were considered in the study. Alternate I traverses the reservoir immediately north of the existing bridge and Alternate II traverses the reservoir just south of the bridge. The river channel and flood plain widen considerably immediately downstream from the existing bridge. This is caused by a confluence with a western tributary.

In planning the bridge opening in both alternates, end roll fill construction in the existing reservoir was to be avoided but limited to a depth of approximately 8 feet. Based on existing bridge plans, it appears the rock level in the main channel varies between elevations 717 and 722 or 6 to 9 feet below the channel flow line. Alternate I bridge length is about 355 feet long, cofferdams maximum design depth is approximately 12 feet, estimated average pile length for intermediate bents is about 19 feet. The estimated construction cost is \$1,982,400.

Alternate II Bridge length is about 450 feet long, cofferdams maximum design depth is about 26 feet, main channel intermediate bents are founded on rock or supported on 8 feet long caissons. The estimated construction cost is \$2,555,300. It is assumed that one cofferdam dam will be installed for each intermediate bent footing. It is anticipated that Alternate I cofferdams will have a horizontal 'U' shape with the opening facing the shoreline to facilitate access. Steel sheet piling in combination with beams and struts will be used to resist the hydrostatic pressures; struts will be placed near the dredge line and top of the piling. A platform forming the roof of the cofferdam may be installed to support the rig driving permanent steel 'H' piles for the foundations.

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For Alternate II, steel plate girder and post-tensioned girder bridge unit costs are nearly the same for grade separations. However with a relatively long span over the main channel, false work costs for cast-in-place construction become very expensive. To eliminate the need for shoring, high strength weathering steel plate girder type bridge was given first consideration. With bolted field splices in the middle span, the positive moment section could be field supported from the cantilevers extending from the intermediate bents; see Attachment 9, sheet 3 of 4 for proposed Bridge Plan And Elevation, Alternate II, for additional details.

Both roadway alternates were designed for 65 mph, except the tie-in connections, which were 55 mph.

Conclusions:

Alternate I bridge length is about 21% shorter than that of Alternate II; cofferdams in Alternate II are about twice as deep as Alternate I. Bridge Alternate I is about 35% less costly than Alternate II Bridge with much shorter construction duration. 26 feet deep cofferdam constructions will lengthen the construction time considerably.

Alternates I and II roadway lengths are nearly the same. Alternate II roadway crosses the existing roadway twice before merging with it; refer to Appendix for more details. Crossing with an alignment farther south will help solve this problem but lengthen the new bridge considerably as the facility will have to cross a tributary in addition to the main stream.

Alternate II traffic control cost will be about twice than that of Alternate I with additional two crossings of the existing roadway. Additional traffic control will lengthen construction time, increase fuel cost, add inconvenience to motorists, and produce more pollution.

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Project Number: MSL-0000-00952

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County: Douglas

RECOMMENDATIONS:

- A. Alternate I is recommended because of inherent dollar savings, benefits to motorists, and softer impact on the environment (shorter crossing of the flood plain and reservoir).
- B. No special protection for bents located in the reservoir is planned. However, to guard against illegal operation of gasoline powered motor boats, it is recommended that hammerhead type intermediate bents be constructed in lieu of a rigid frame type. The massive walls of the earlier stated would have a much greater capacity of resisting accidental impacts.
- C. In Alternate I, channel crossing is relatively narrower than that of Alternate II. Span lengths are within the limits of PSC bulb tee beams and shoring in the reservoir will not be required. To arrive at a more economical beam spacing for final design, preliminary design study should consider high strength concrete for the beams.
- D. River Road provides access from State Route 166 to the marina just north of the proposed bridge. The existing 30 degree intersection has insufficient sight distance for motorists to make a left hand turn on the state route and the small radius at the intersection makes it nearly impossible for westbound traffic to turn right into River Road. It is recommended that GDOT consider relocating the intersection to the tangent section of the proposed alignment.
- E. After completing the construction of the proposed bridge and the tie-in roads, it is recommended that the existing bridge be demolished and removed. Intermediate bents shall be removed to the adjacent natural ground line level.
- F. The existing bridge was constructed in 1956 before the Dog River Dam was constructed. Considerable fill was placed for the bridge end rolls to limit the length of the crossing and as a result the flood plain became a virtual bottleneck at that point. It is recommended that fill at the end rolls, between contours 730 and 760, be removed to nearly conform to the original topography, and blended with the proposed bridge waterway opening.

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Project Number: MSL-0000-00952

P. I. Number: 0000952

County: Douglas

Attachments:

1. Cost Estimates:
 - a. Construction including E&C
 - b. Right-of-Way
 - c. Utilities
2. Sketch location map & horizontal curve data
3. Typical sections
4. Accident summaries
5. Capacity analysis
6. Bridge inventory
7. Minutes of Initial Concept, Concept Team Meetings, and Responses
8. Roadway Plan & Profile
9. Bridge Plan, Elevation and Sections
10. Local Government Project Agreement
11. Location and Design Notice (On Minor Projects)

PRELIMINARY COST ESTIMATE

PROJECT NO: MSL-0000-00-952 PI NO: 0000952 COUNTY: DOUGLAS

Relocated SR 166 at Dog River including bridge replacement and approaches.

DATE: June 29, 2001

ESTIMATED LET DATE: April, 2002

PREPARED BY: MSE, Marietta, GA

PROJECT LENGTH: 1.0 mile

() PROGRAMMING PROCESS () CONCEPT DEVELOPMENT (X) DURING PROJECT DEVELOPMENT

PROJECT COST	
A. RIGHT-OF-WAY:	
1. PROPERTY (LAND & EASEMENT) 25 acres @ \$10,000	\$ 250,000
2. DISPLACEMENTS; RES: 0, BUS: 0, M.H.: 0	
3. OTHER COST (ADM. / COST, INFLATION)	
SUBTOTAL A:	\$ 250,000
B. REIMBURSABLE UTILITIES:	
1. RAILROAD	\$ -
2. TRANSMISSION LINES	\$ -
3. SERVICES	
a. ELECTRICAL	\$ 30,000
b. TELECOMMUNICATIONS	\$ 30,000
SUBTOTAL B:	\$ 60,000
C. CONSTRUCTION:	
1. MAJOR STRUCTURES	
a. BRIDGES 16,949 SF @ &110	\$ 1,864,430
b. COFFERDAMS 4,440 SF @ \$23	\$ 102,120
c. SEAL AND DEWATERING COST	\$ 30,000
d. REMOVE EXISTING BRIDGE	\$ 103,450
SUBTOTAL C-1	\$ 2,100,000
2. GRADING AND DRAINAGE:	
a. EARTHWORK Channel Excav. 6,400 CY @ \$12, Roadway Excav. 169,200 CY @ \$6	\$ 1,092,000
b. DRAINAGE:	\$ 75,000
1) CROSS DRAIN PIPE (EXCLUDE BOX CULVERTS)	\$ -
2) CURB AND GUTTER	\$ -
3) LONGITUDINAL SYSTEM (INCLUDE CATCH BASIN)	\$ -
SUBTOTAL C-2	\$ 1,167,000

PROJECT COST		
3. BASE AND PAVING:		
a. AGGREGATE BASE 12701 SY @ \$13		\$ 165,113
b. ASPHALT PAVING: Surface 1674 TN @ \$40	\$ 66,960.00	
Binder 1452 TN @ \$39	\$ 56,628.00	
Base 19581 SY @ \$8.55	\$ 167,418.00	
SUBTOTAL C-3.b		\$ 291,006
c. CONCRETE PAVING Approach Slabs - 294.7 SY @ \$75		\$ 22,100
d. OTHER (TACK COAT) 1270 GL @ \$2		\$ 2,540
SUBTOTAL C-3		\$ 480,759
4. LUMP ITEMS:		
a. TRAFFIC CONTROL/MOBILIZATION		\$ 15,000
b. CLEARING AND GRUBBING		\$ 100,000
c. LANDSCAPING (GRASSING)		\$ 25,000
d. EROSION CONTROL		\$ 90,000
e. DETOURS		\$ -
SUBTOTAL C-4		\$ 230,000
5. MISCELLANEOUS:		
a. LIGHTING		\$ -
b. SIGNING - STRIPING - SIGNAL		\$ 20,000
c. GUARDRAIL 2000 LF @ \$15 ANCHORAGES - 16 @ \$625		\$ 40,000
d. SIDEWALK		\$ -
SUBTOTAL C-5		\$ 60,000
6. SPECIAL FEATURES: Mobilization, Engineer Field Office		SUBTOTAL C-6
		\$ 55,000

ESTIMATE SUMMARY		
A. RIGHT-OF-WAY		\$ 250,000
B. REIMBURSABLE UTILITIES		\$ 60,000
C. CONSTRUCTION		
1. MAJOR STRUCTURES		\$ 2,100,000
2. GRADING AND DRAINAGE		\$ 1,167,000
3. BASE AND PAVING		\$ 480,759
4. LUMP ITEMS		\$ 230,000
5. MISCELLANEOUS		\$ 60,000
6. SPECIAL FEATURES		\$ 55,000
SUBTOTAL CONSTRUCTION COST		\$ 4,092,759
E. & C. (10%)		\$ 410,000
INFLATION (5% PER YEAR)	NO. OF Y 1	\$ 226,000
TOTAL CONSTRUCTION COST		\$ 4,728,759
GRAND TOTAL PROJECT COST		\$ 5,038,759

DATE	PROJECT	SHEET NUMBER	TOTAL SHEETS
02/03/01	SR 166 AT DOG RIVER	11	12

HORIZONTAL CURVE DATA

CURVE NO. 1

A : 2°-08'-00"
 D : 0'-29'-55"
 R : 11,493.16'
 T : 214.00'
 L : 427.86'
 SE : NONE

CURVE NO. 2

A : 16°-45'-00"
 D : 2'-00'-00"
 R : 2,864.79'
 T : 421.76'
 L : 837.50'
 SE : 0.058'/'

CURVE NO. 3, TIE-IN CONNECTION

A : 34°-53'-16"
 D : 5'-35'-51"
 R : 7,027.00'
 T : 521.76'
 L : 823.52'
 SE : 0.080'/'

CURVE NO. 4

A : 28°-18'-19"
 D : 3'-45'-00"
 R : 3,527.89'
 T : 385.27'
 L : 754.81'
 SE : 0.080'/'

CURVE NO. 5

A : 53°-30'-29"
 D : 3'-45'-00"
 R : 1,527.89'
 T : 770.25'
 L : 1,426.88'
 SE : 0.080'/'

CURVE NO. 6, TIE-IN CONNECTION

A : 52°-47'-42"
 D : 5'-35'-43"
 R : 1,024.00'
 T : 508.26'
 L : 943.56'
 SE : 0.080'/'

CURVE NO. 7

A : 54°-00'-00"
 D : 4'-00'-00"
 R : 1,432.40'
 T : 297.83'
 L : 1,350.00'
 SE : 0.080'/'

CURVE NO. 8

A : 22°-20'-00"
 D : 2'-30'-00"
 R : 2,297.83'
 T : 452.41'
 L : 893.33'
 SE : 0.080'/'

CURVE NO. 9

A : 20°-00'-00"
 D : 2'-00'-00"
 R : 2,864.79'
 T : 505.14'
 L : 1,000.00'
 SE : 0.058'/'

CURVE NO. 10

A : 60°-00'-00"
 D : 4'-00'-00"
 R : 1,432.40'
 T : 827.00'
 L : 1,500.00'
 SE : 0.080'/'

CURVE NO. 11

A : 43°-00'-00"
 D : 4'-00'-00"
 R : 1,432.40'
 T : 564.24'
 L : 1,075.00'
 SE : 0.080'/'

CURVE NO. 12

A : 15°-00'-00"
 D : 2'-00'-00"
 R : 2,864.79'
 T : 377.16'
 L : 750.00'
 SE : 0.058'/'

CURVE NO. 4A (ALTERNATE 11)

A : 28°-18'-19"
 D : 3'-45'-00"
 R : 1,527.89'
 T : 385.27'
 L : 754.81'
 SE : 0.080'/'

CURVE NO. 5A (ALTERNATE 11)

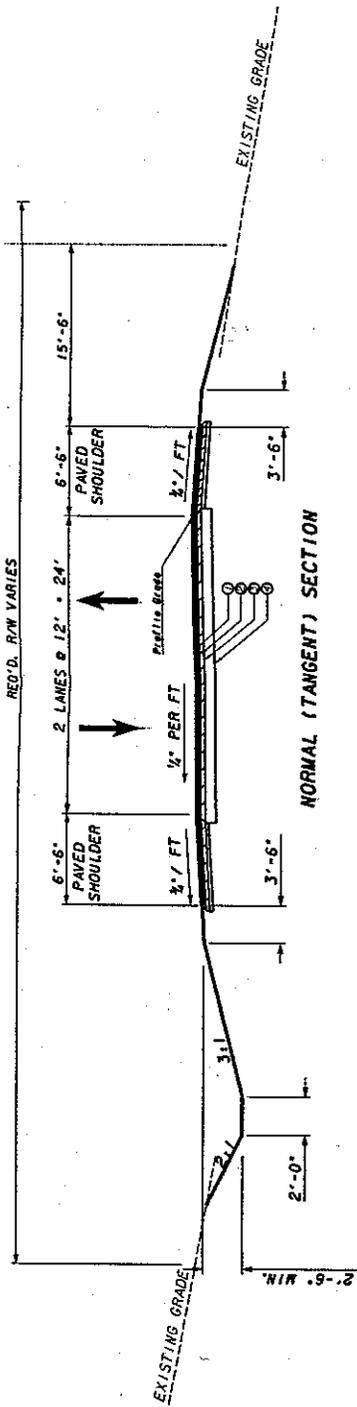
A : 53°-30'-29"
 D : 3'-45'-00"
 R : 1,527.89'
 T : 770.25'
 L : 1,426.88'
 SE : 0.080'/'



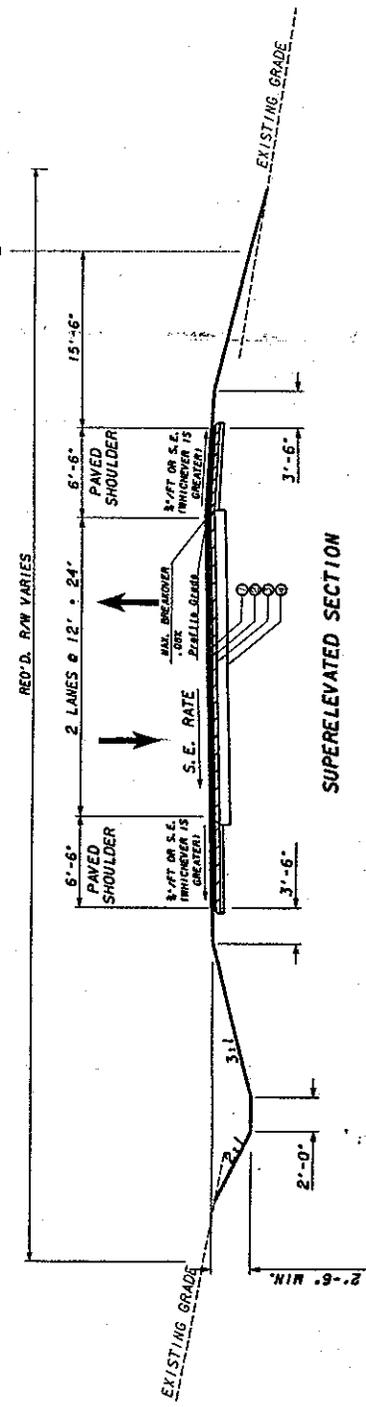
DATE	PROJECT	SHEET NUMBER	TOTAL SHEETS
02/03/01	SR 166 AT DOG RIVER	11	12

DATE	BY	CHECKED	SCALE

Q RELOC. SR 166



Q RELOC. SR 166



PROPOSED



DATE	BY	CHECKED	SCALE

ATTACHMENT 4
ACCIDENT SUMMARIES

ACCIDENT DATA COVER SHEET

(APPLIES TO THE 'TOTAL' ACCIDENT COMPUTER SYSTEM
FILES - NOT TO THE 'FATAL' (ONLY) ACCIDENT COMPUTER FILES)

THE ATTACHED ACCIDENT DATA ARE COMPLETE OR INCOMPLETE
FOR CODING STATEWIDE TO THE EXTENTS INDICATED BELOW

YEAR OF
DATA

STATUS

1993 and Prior --

Complete

1994 --

1994 INJURY and FATAL Accidents are complete for coding statewide, but TOTAL Accidents are only 59% complete.

1995, 1996 & 1997 --

Complete

1998 --

1998 TOTAL and INJURY Accidents are about 62% complete for coding statewide, but FATAL Accidents are 100% complete. Coding for 1998 is Final.

Latest Updates -
1998 Data 12/17/99(Final)

DATA FOR 1995
DOUGLAS CO. SR 166, MILELOGS 6.17 - 8.20

CASH	DATE	TIME	COU	TP	ROUTE	MILE	INT RD TYPE	INT RD	RAMP SECT	F	INJ	TYPE	ACCIDENT	LOC	LI	SUR	D1	D2	VM1	VM2
50440131	02/07/95	7:12	097	SR	166	6.17	CR	184	0	0	2	RKAR	RND	ON ROADWAY	1	SNOWY	E	E	05	05
51380871	06/11/95	23:50	097	SR	166	6.19			0	0	0	STRUCK	OBJEKT	ON ROADWAY	5	NET	W	0	05	00
51870181	08/21/95	5:00	097	SR	166	6.67			0	0	1	STRUCK	OBJEKT	RAMP	1	NET	H	0	05	00
52140221	09/23/95	1:00	097	SR	166	7.20			0	0	1	STRUCK	OBJEKT	OFF ROADWAY	5	DRY	H	0	05	00
51870111	08/11/95	18:32	097	SR	166	7.90			0	0	0	SIDESWIPE	OPP DIR	ON ROADWAY	1	DRY	N	E	05	05

REPORT TOTALS..... ACCIDENTS: 5 FATALITIES: 0 INJURIES: 4

PAGE TOTALS..... ACCIDENTS: 5 FATALITIES: 0 INJURIES: 4

DATA FOR 1996
DOUGLAS CO. SR 166, MILELOGS 6.17 - 8.20

CASH	DATE	TIME	COU	TP	ROUTE	MILE	INT RD TYPE	INT RD	RAMP SECT	F	INJ	TYPE	ACCIDENT	LOC	LI	SUR	D1	D2	VM1	VM2
63180591	12/07/96	9:40	097	SR	166	6.17	CR	184	0	0	0	STRUCK	OBJECT	ON SHOULDER	1	MET	E	0	05	00

REPORT TOTALS..... ACCIDENTS: 1 FATALITIES: 0 INJURIES: 0

PAGE TOTALS..... ACCIDENTS: 1 FATALITIES: 0 INJURIES: 0

DOUGLAS CO, SR 166, MILELOGS 6.17 - 8.20

CASE	DATE	TIME	COU	TP	ROUTE	MILE	INT RD TYPE	INT RD	RAMP SECT	F	INJ	TYPE	ACCIDENT	LOC	LI	SUR	D1	D2	VM1	VM2
73310181	12/29/97	6:48	097	SR	166	6.20			0	0	1	STRUCK OBJECT		OFF ROADWAY	5	SNOWY	E	0	05	00
73030506	11/30/97	23:19	097	SR	166	6.22			0	0	0	STRUCK OBJECT		OFF ROADWAY	5	DRY	E	0	05	00
70180500	01/09/97	5:20	097	SR	166	6.26			0	0	1	OVERTURNED		OFF ROADWAY	5	WET	E	0	05	00
70580701	02/25/97	7:50	097	SR	166	6.97			0	0	0	STRUCK OBJECT		OFF ROADWAY	1	WET	E	0	05	00
71350885	05/16/97	14:50	097	SR	166	7.17			0	0	0	STRUCK OBJECT		OFF ROADWAY	1	DRY	E	0	05	00
73310184	12/29/97	4:24	097	SR	166	7.40			0	0	1	STRUCK OBJECT		OFF ROADWAY	5	DRY	E	0	05	00
71570630	06/06/97	5:09	097	SR	166	7.50			0	0	1	STRUCK OBJECT		ON SHOULDER	5	DRY	E	0	05	00

REPORT TOTALS..... ACCIDENTS: 7 FATALITIES: 0 INJURIES: 4

PAGE TOTALS..... ACCIDENTS: 7 FATALITIES: 0 INJURIES: 4

DOUGLAS CO, SR 166, MILELOGS 6.17 - 8.20

CASE	DATE	TIME	COU	TP	ROUTE	MILE	INT RD TYPE	INT RD	RAMP SECT	F	INJ	TYPE	ACCIDENT	LOC	LI	SUR	D1	D2	VM1	VM2
81060604	04/03/98	18:32	097	SR	166	6.17	CR	184	0	0	1	STRUCK OBJECT		OFF ROADWAY	1	WET	E	0	05	00

REPORT TOTALS..... ACCIDENTS: 1 FATALITIES: 0 INJURIES: 1

PAGE TOTALS..... ACCIDENTS: 1 FATALITIES: 0 INJURIES: 1

RATES FOR 1995
DOUGLAS CO, SR 166, MILELOGS 6.17 - 8.20

5-Jun-2001
Page 1

COUNTY	ROUTE NUMBER	ROUTE SUFFIX	LOW MILELOG	HIGH MILELOG	ADT	DIST	VEHICLE MILES
097	0166	00	06.17	08.20	3700	2.03	7511

TOTAL VEHICLE MILES: 7511
AVERAGE ADT: 3700
LENGTH IN MILES: 2.03

TOTAL ACCIDENTS: 5	ACCIDENT RATE: 182
TOTAL INJURIES: 4	INJURY RATE: 146
TOTAL FATALITIES: 0	FATALITY RATE: 0.00

NOTE - RATES ARE PER 100 MILLION VEHICLE MILES.

YEAR OF DATA: 1995

RATES FOR 1996
DOUGLAS CO, SR 166, MILELOGS 6.17 - 8.20

5-Jun-2001
Page 1

COUNTY	ROUTE NUMBER	ROUTE SUFFIX	LOW MILELOG	HIGH MILELOG	ADT	DIST	VEHICLE MILES
097	0166	00	06.17	08.20	4200	2.03	8526

TOTAL VEHICLE MILES: 8526
AVERAGE ADT: 4200
LENGTH IN MILES: 2.03

TOTAL ACCIDENTS:	1	ACCIDENT RATE:	32
TOTAL INJURIES:	0	INJURY RATE:	0
TOTAL FATALITIES:	0	FATALITY RATE:	0.00

NOTE - RATES ARE PER 100 MILLION VEHICLE MILES.

YEAR OF DATA: 1996

RATES FOR 1997
DOUGLAS CO, SR 166, MILELOGS 6.17 - 8.20

5-Jun-2001
Page 1

COUNTY	ROUTE NUMBER	ROUTE SUFFIX	LOW MILELOG	HIGH MILELOG	ADT	DIST	VEHICLE MILES
097	0166	00	06.17	08.20	3900	2.03	7917

TOTAL VEHICLE MILES: 7917
AVERAGE ADT: 3900
LENGTH IN MILES: 2.03

TOTAL ACCIDENTS:	7	ACCIDENT RATE:	242
TOTAL INJURIES:	4	INJURY RATE:	138
TOTAL FATALITIES:	0	FATALITY RATE:	0.00

NOTE - RATES ARE PER 100 MILLION VEHICLE MILES.

YEAR OF DATA: 1997

ATTACHMENT 5

Capacity Analysis

By

Day Wilburn Associates , Inc.



1718 Peachtree Street NW • Suite 461 • Atlanta, Georgia 30309

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January 22, 2001

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Suite C-100
Marietta, Georgia 30062

Reference: SR 166 at Dog River Reservoir / Douglas County, Georgia

Dear Mr. Cooper:

Day Wilburn Associates, Inc. (DWA) has performed a traffic analysis on SR 166 in Douglas County to determine an appropriate cross-section for use in designing a replacement bridge over the Dog River Reservoir. DWA examined traffic volumes and level of service for SR 166 in the vicinity of the bridge to determine whether a two-lane cross-section will be adequate for existing and future year traffic volumes.

Future traffic volumes were projected for opening year 2002 and design year 2025. Analysis of these future traffic conditions indicates a two-lane cross-section can adequately accommodate traffic volumes along this roadway segment. The following paragraphs indicate the existing conditions, project future traffic growth, and summarize the analysis and findings.

Study Area

The SR 166 corridor is an east/west route through the southern end of the metropolitan Atlanta area from approximately parallel to the I-20 corridor and located several miles to the south. The bridge across the Dog River Reservoir is located in a rural to suburban portion of Douglas County. The SR 5 corridor is a north/south route crossing SR 166 east of the Dog River Reservoir. The SR 166 corridor currently carries approximately 4,200 to 5,000 vehicles per day. The SR 5 corridor carries approximately 5,000 vehicles per day north of SR 166 and 3,000 vehicles per day south of SR 166. Figure 1 shows these existing traffic volumes in the study area.

Methodology

The SR 166 corridor was examined to determine its traffic volumes and level of service experienced with existing conditions, opening year 2002 conditions, and design year 2025 conditions. Existing traffic volumes were collected along SR 166 and factored up to reflect area growth providing future year traffic volumes. The factors considered in determining a traffic volume growth rate included historic traffic volume growth trends based on GDOT traffic count stations and projected growth for years 2000 to 2025 from the ARC regional TRANPLAN model. These growth trends were discussed with the Douglas County Planning and Zoning Department and determined to be

Mr. Ron Cooper
Mayes, Sudderth & Etheridge, Inc.
January 22, 2001
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reasonable for the area. Counted traffic volumes along SR 166 near the Dog River Reservoir were factored to provide future year projected traffic. The SR 166 roadway segment was examined with both existing and projected traffic volumes to determine level of service using the methodology defined in the Highway Capacity Manual by the Transportation Research Board. These capacity analysis results were used to examine the potential need for additional lanes on this roadway.

Collected Traffic Data

Existing traffic volumes were counted along SR 166 in the vicinity of the Dog River Reservoir and East of Big "A" Road. These traffic volume counts, performed in December of 2000, were adjusted to account for month of year and day of week, by 0.96 and 1.02 respectively. This overall factor of 0.9792 results in AADT volumes of 4,240 for SR 166 at the Dog River Reservoir and 4,975 for SR 166 east of Big "A" Road. These traffic volumes were examined by hour of the day to determine AM and PM peak hour traffic volumes as well as the following factors:

- Directional Distribution (D Factor)
- Peak Hour Factor
- Proportion of Daily Traffic in Peak Hour (K Factor)
- Percent Trucks

These traffic characteristics are shown in Table 1. The counted traffic volumes are shown graphically by time of day in Appendix A.

Future Year Traffic Projections

The existing traffic volume counts were factored to provide future volume projections based on historic traffic volume growth trends and growth projected in the ARC regional TRANPLAN model. Traffic volume counts were obtained for four GDOT count stations along SR 166 and SR 5 for years 1985 through 1999 (refer to Table 2). These traffic volume count trends were determined via linear regression analysis. Appendix B contains graphs showing these trendline analysis. Table 3 shows the year 2000 and year 2025 ARC TRANPLAN model volumes for segments of SR 166 and SR 5 along with a computed annual growth rate.

The historic growth indicated by the GDOT count station data is compared with the ARC TRANPLAN model projections in Table 4. As this table shows, the ARC TRANPLAN model predicts slightly higher growth rates than the historic traffic count data. This is indicative of planned growth in southern Douglas County over the next 25 years. Based on this examination of possible traffic volume growth, the average growth rate for the SR 166 and SR 5 corridors in the vicinity of the Dog River Reservoir (2.9% per year) was used to factor existing year traffic volumes to provide

Mr. Ron Cooper
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opening year 2002 and design year 2025 traffic volumes. The existing and projected traffic volumes for the segments of SR 166 adjacent to the Dog River Reservoir are shown in Table 5. As this table shows, with background traffic volume growth, the projected design year 2025 traffic volumes remain less than 10,200 vehicles per hour along this segment of SR 166.

Analysis of Existing and Future Year Traffic Conditions

The traffic conditions along the segment of SR 166 crossing the Dog River Reservoir and those along an adjacent segment east of Big "A" Road, were analyzed to determine the level of service experienced. Existing year, opening year 2002, and design year 2025 conditions were analyzed using the Highway Capacity Manual methods for two-lane highways. The results of this analysis are provided in Appendix C. These results are summarized in Table 6. As this table shows, SR 166 at the Dog River Reservoir is projected to operate with LOS C conditions for the opening year of the bridge. Traffic volume growth over the design life of the facilities will increase volumes along the SR 166 corridor approximately 104% from 5,000 vpd to 10,200 vpd in design year 2025. With this overall traffic growth, SR 166 maintains LOS D conditions in design year 2025. Therefore, the need for a bridge cross-section greater than two lanes is not anticipated through year 2025.

Summary of Findings

The replacement of the SR 166 bridge over the Dog River Reservoir is scheduled for completion in year 2002. Traffic analysis was performed for the existing conditions and opening year 2002 and design year 2025. The following is a summary of findings based on these analyses:

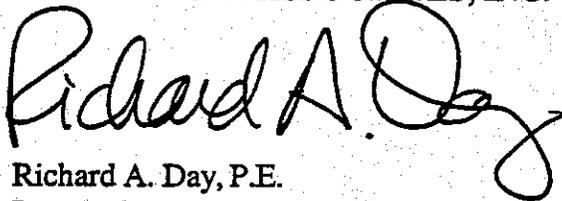
- Traffic flow characteristics for this segment of SR 166 were determined based on traffic volume counts and are indicated in Table 1.
- Traffic growth rates along the SR 166 corridor through year 2025 were estimated at 2.9% per year.
- No large developments are currently planned in the immediate area that would significantly alter the growth estimates assumed in the ARC regional TRANPLAN model.
- Current traffic volumes along SR 166 east of Big "A" Road are 5,000. These are projected to increase to 10,200 in design year 2025.
- Current traffic volumes along SR 166 across the Dog River Reservoir are 4,200. These are projected to increase to 8,700 in design year 2025.
- Design year 2025 level of service was calculated as LOS D with the existing two-lane cross-section for the SR 166 segments at the Dog River Reservoir and east of Big "A" Road.

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We appreciate the opportunity to provide traffic engineering services in examining traffic along SR 166 at the Dog River Reservoir. As always, if you have any questions regarding our study assumptions, analysis results, or findings please do not hesitate to call me.

Very truly yours,

DAY WILBURN ASSOCIATES, INC.

A handwritten signature in black ink, appearing to read "Richard A. Day". The signature is written in a cursive style with a large, looping "D" at the end.

Richard A. Day, P.E.
Principal

Attachments: Figure 1
Tables 1-6
Appendices A, B, and C

SECTION 1 - Location & Geography
 Screen 1
 * Structure I.D. No.: 097-0012-0
 * Bridge Information: 07
 * 6A Feature Int.: DOG RIVER
 * 6B Critical Bridge: 0
 * 7A Route Number Carried: SR00166
 * 7B Facility Carried: SR 166
 * Location: 9.2 MI S OF DOUGLASVILLE
 * 2 DOT District: 7
 * 207 Year Photo: 97

* 91 Inspection Frequency: 24 Date: 10/99
 92A Fract Crit Insp Freq: 0 00 Date: 02/01
 92B Underwater Insp Freq: 1 60 Date: 07/00
 92C Other Spc. Insp Freq: 0 00 Date: 02/01

* 4 Place Code: 00000

* 5 Inventory Route (O/U): 1
 Type: 3
 Designator: 1
 Number: 00166
 Direction: 0

* 16 Latitude: 33-37.3
 * 17 Longitude: 084-47.6

98 Border Bridge: 000 \$Shared: 00
 99 ID. Number: 000000000000000

*100 Defense Highway: 0
 *101 Parallel Structure: N
 *102 Direction of Traffic: 2
 264 Road Inventory Mile Post: 007.19

*208 Inspection Area: 09 Initials: JMC
 *Location I.D. No: 097-00166D-00735E
 *XReferen I.D. No: 000-000000-000000

SECTION 1 - CONTINUED
 *104 Highway System: 1
 * 26 Functional Classification: 16
 *204 Federal Route Type: F No: 021-1
 *110 Truck Route: 0
 206 School Bus Route: 1
 217 Benchmark Elevation: 0000.00
 218 Datum: 0
 Screen 2

* 19 Bypass Length: 08
 * 20 Toll: 3
 * 21 Maintenance: 01
 * 22 Owner: 01
 31 Design Load: 5
 37 Historical Significance: 5
 205 Congressional District: 07
 * 27 Year Constructed: 1956
 106 Year Reconstructed: 0000
 33 Bridge Median: 0
 34 Skew: 00
 35 Structure Flared: 0
 38 Navigation Control: 0
 213 Special Steel Design: 0
 267 Type of Paint: 4
 * 42 Type Service On: 1
 Under: 5

214 Movable Bridge: 00

203 Type Bridge: O-N-M-O
 259 Pile Encasement: 2
 * 43 Structure Type Main: 3 02
 45 No. Spans Main: 005
 44 Structure Type Appr: 000
 46 No. Spans Appr: 0000
 226 Bridge Curve Horz.: 0 Vert: 1
 111 Pier Protection: 0
 107 Deck Structure Type: 1

108 Wearing Surface Type: 1
 Membrane: 0
 Protection: 0
 *248 County Continuity No: 00

SECTION 2 - Signs & Attachments
 Screen 3
 225 Expansion Joint Type: 02
 242 Deck Drains: 1

243 Parapet Location: 0
 Height: 00.0
 Width: 00.0

238 Curb: 1.2 1
 239 Handrail: 1 1
 *240 Median Barrier Rail: 0

241 Bridge Median Height: 0.0
 Width: 00.0

*230 Guardrail Loc Dir Rear: 3
 Fwd: 3
 Oppo Dir Rear: 0
 Fwd: 0

244 Approach Slab: 3
 224 Retaining Wall: 0

233 Posted Speed Limit: 55
 236 Warning Sign: 0
 234 Delineator: 0
 235 Hazard Boards: 0

237 Utilities Gas: 00
 Water: 00
 Electric: 00
 Telephone: 00
 Sewer: 00

247 Lighting Street: 0
 Navigation: 0
 Aerial: 0

SECTION 3 - Programming Data
Screen 4
201 Project No.: S-0841 (2) CT.2
202 Plans Available: 1
249 Proposed Proj No:MSL-0000-00 (952)
250 Approval Status: 0000
251 P.I. No.: 000952
252 Contract Date: 02/01/05
260 Seismic No.: 00000
75 Type Work: 31 1
94 Bridge Imp. Cost.: \$000446
95 Roadway Imp. Cost.: \$000279
96 Total Imp. Cost.: \$000843
76 Imp. Length: 001520
97 Imp. Year: 90
114 Future ADT: 007560 Year: 19

SECTION 4 - Hydraulic Data
Screen 5
215 Waterway Data
Highwater Elev.: 0000.0 Year: 00
Flood Elev.: 0000.0 Freq: 000
Avg Streambed Elev: 0000.0
Drainage Area: 00000
Area of Opening: 000000
113 Scour Critical: 6
216 Water Depth: 21.0 Br. Height: 12.0
222 Slope Protection: 5 Fwd: 0
221 Spur Dikes Rear: 0
219 Fender System: 0
220 Dolphin: 0
223 Culvert Cover: 000
Type: 0
No Barrels: 0
Width: 00.0
Height: 00.0
Length: 000
Apron: 0
*265 U/W Insp. Area: 1 Diver: RMO

*Location I.D. No: 097-00166D-00735E
*XReferen I.D. No: 000-000000-000000

SECTION 5 - Measurements
Screen 6
* 29 ADT: 005040 Year: 99
* 109 # Trucks: 09
* 28 Lanes On: 02 Under: 00
210 No. Tracks On: 00 Under: 00
254 FC Classification: 0
255 FC Rank Factor: 0003
* 48 Max. Span Length: 0056
* 49 Structure Length: 000200
51 Br. Rdwy. Width: 027.7
52 Deck Width: 034.0
* 47 Tot. Horz. Cl.: 27.7
50 Curb/Sdewlk Width: 02.0/02.0
32 Approach Rdwy Width: 024
*229 Shoulder Width
Rear Lt: 08.0 Type: 8 Rt: 08.0
Fwd Lt: 08.0 Type: 8 Rt: 08.0
Pvment Width
Rear: 24.0 Type: 2
Fwd: 24.0 Type: 2
Intersection Rear: 0 Fwd: 0
36 Safety Features Br. Rail: 2
Transition: 2
App. G. Rail: 2
App. Rail End: 2
Screen 7
53 Minimum Cl. Over: 99 99"
54 Under: N 00 00"
*228 Min. Vert. Cl Under: N 00 00"
Act. Odm. Dir.: 99 99"
Oppo. Dir.: 99 99"
Posted Odm. Dir: 00 00"
Oppo. Dir.: 00 00"
55 Lateral Undercl. Rt: N 99.9
56 Lateral Undercl. Lt: 00.0
* 10 Max Min Vert Cl.: 99 99" Dir: 0
39 Nav Vert Cl: 000 Horz: 0000
116 Nav Vert Cl Closed: 000
245 Deck Thickness Main: 07.0
Deck Thick Approach: 00.0
246 Overlay Thickness: 00.0
211 Tons Structural Steel: 0000
212 Year Last Painted: 9090

SECTION 6 - Ratings
Screen 8
66 Inventory Type: 2 Rating: 36
64 Operating Type: 2 Rating: 51
231 Calculated Loads
H-Modified: 20 0
HS-Modified: 25 0
Type 3: 28 0
Type 3S2: 40 0
Timber: 36 0
Piggyback: 00 0
261 H Inventory Rating: 20
262 H Operating Rating: 28
67 Structural Evaluation: 7
58 Deck Condition: 6
59 Superstructure Condition: 7
*227 Collision Damage:
60A Substructure Condition: 7
60B Scour Condition: 7
60C Underway Condition: 7
71 Waterway Adequacy: 8
61 Channel Protection Cond.: 8
68 Deck Geometry: 2
69 UnderClr. Horz/Vert.: N
72 Appr. Alignment: 6
62 Culvert: N

SECTION 7 - Posting Data
Screen 9
70 Bridge Posting Required: 5
41 Struct Open, Posted, Cl: A
*103 Temporary Structure: 0
232 Posted Loads H-Modified: 00
HS-Modified: 00
Type 3: 00
Type 3S2: 00
Timber: 00
Piggyback: 0
253 Notification Date: 02/01/01
258 Fed Notify Date: 02/01/01 0

MINUTES OF CONCEPT TEAM MEETING

PROJECT: Relocated SR 166 at Dog River
Bridge Replacement and Approaches
Douglas County, GA.
MSL-0000-00-952
P.I. No. 0000952
MSE Proj. No. 99-000159.03

Meeting Date/Time: June 7, 2001 at 10:00 A.M.

Location: GDOT Main Office, Road Design Conference Room No. 444

Attendees:

Kim Fulbright, Georgia Dept. of Transportation (GDOT), Road Design/(404) 656-5407
Scott Zehngraff, GDOT- Traffic Operations/(770) 986-1073
Pam Black, GDOT- Right-of-Way/(404) 986-1113
Kevin Vinson, GDOT-District 7-Area 3/(404) 559-6658
Keisha Jackson, GDOT-OEL/(404) 699-6866
Windy Bickers, GDOT-Programming/(404) 693-5023
Key Phillips, GDOT-District 7-Design/(770) 986-1050
Wade Harris, GDOT- Engineering Services/(404) 651-7462
Clyde Cunningham, GDOT-District 7-Utilities/(770)986-1090
Ronnie Wood, R.J. Wood and Co/(912) 741-7044
Hal McClain, Mayes, Sudderth and Etheredge, Inc. (MSE)/(770) 971-5407
Ron Cooper, MSE/(770) 971-5407
Gina Inklebarger, MSE/(770) 971-5407
Erwin Espiritu, MSE/(770) 971-5407

MSE presented the Concept Report. Mr. Fulbright then reiterated to those attending that the proposed State Route (SR) 166 will be a part of the future improved SR 166. The GDOT Design Team for this future project has looked at this concept to verify that MSE's design will fit in with GDOT's. After his remarks, the questions and comments followed and are summarized below:

Questions and Answers:

1. Mr. Zehngraff suggested that MSE should look at possibility of tying River Road to the tangent section of the proposed road (within the vicinity of Station 15+00). This eliminates the recommendation of improving the existing intersection located at approximately 1000' west of the proposed beginning of the project. However, additional right-of-way/easement will be needed.

Mr. Wood noted that within this location, the possible right-of-way/easement required was private ownership. Mr. Fulbright added that MSE should review and come up with recommendation about this scenario.

2. Ms. Jackson asked who will be doing the Environmental portion of work?

Mr. Fulbright stated that the Douglasville-Douglas County Water and Sewer Authority is responsible for this matter. The report needs to be revised noting this change.

Mr. Wood stated that they are conducting some environmental work for the dam portion and could include this bridge portion.

3. Ms. Bickers asked who will acquire Right-of-ways?

Mr. Fulbright stated that the Douglasville-Douglas County Water and Sewer Authority is responsible for this matter. The report needs to be revised noting this change.

Mr. Wood stated that some right-of-way have been acquired.

4. Mr. Harris asked if SR 166 is a bike route? If so, the typical section should be changed.

Mr. Fulbright responded no, but paved shoulder dimension should change from 8' to 6.5' in accordance with the new GDOT policy (he furnished a copy of this new policy to MSE). He added that, they do not usually provide paved shoulders for 2 lanes. However, he thinks, we should on this project because of the future 4-lane divided highway design.

Mr. McClain noted that the bridge shoulders have similar situation (10' both sides for proposed and a 10' and a 4' for future). Mr. Fulbright replied that, usually GDOT does not build bridge with 10' shoulders on both sides. However, keep the design as shown now for bridge typical section as he does not know when the future 4-lane divided highway will be started.

5. Mr. Harris asked if we need passing lanes at each end of the bridge? On the bridge?

Mr. Fulbright replied that, passing lanes may not be appropriate for these areas.

6. Mr. Zehngraft inquired about using epoxy coated reinforcing bars instead of the lean concrete MSE showed on the proposed bents for future project.

Mr. Harris replied that the Bridge Department approved either method in the past. Mr. Fulbright reiterated that the Bridge Department had reviewed and approved this bridge concept design.

Comments:

1. Local Authority has no representative.

2. Planning has no comments.

3. Programming has no comments.

4. Environmental:

a. Ms. Jackson noted that Categorical Exclusion would be more appropriate than the Environmental Impact Statement shown on page 10 of the Concept Report (Level of Environmental Analysis).

b. Mr. Fulbright asked Ms. Jackson what does the GDOT expect for review?

Ms. Jackson requested all sections for each report and permit (e.g. 404, etc...). Usually this consists of six sets. Mr. McClain said that the GDOT will probably receive the Dam and Road Report together. MSE will coordinate with Mr. Wood regarding this matter.

5. Right-of-Way has no comments.

6. Utility:

a. Mr. Vinson said there is no local government participation agreement for this project. He also noted that he is not anticipating any problems at this stage.

7. Traffic Operations has no further comments.

8. Engineering Services:

a. Mr. Harris requested that the low point in the vertical curve shall be moved off the bridge. The drains may clog and any fuel spills (or other contaminates) will go directly into the lake.

b. Mr. Harris noted that the bridge deck slope should be $\frac{1}{4}$ " per foot instead of $\frac{3}{16}$ " per foot as shown. In addition, the phrase stated on page 14 of the report "and negative moment continuity for live load plus impact" should be deleted.

c. Mr. Harris stated that four sediment basins should be located in each quadrant of the bridge where these can serve on the future 4-lane project and also serve as permanent detention/retention basins. These will also help protect the reservoir from fuel spills.

Mr. Fulbright added that he will give MSE a copy of the latest memorandum on sediment basins (MSE received a copy of the said memorandum at the end of the meeting).

9. Maintenance has no representative.

10. Planning and Design:

- a. Mr. Phillips stated that the project is located in a non-attainment area and the report should be revised.
- b. Mr. Phillips recommended that the future bridge bents should not be included in this project.

Mr. Harris agreed; since we do not know when the future facility will be built, the codes and standards in the future might be different than what it is now, resulting to a possible non-standard structure.

Mr. Fulbright said to show this item as a comment and let the recommendation remain in the report. GDOT will decide whether the bents will be included on this project.

Meeting Date/Time: June 11, 2001 at 11:00 A.M.

Location: GDOT Main Office, Road Design Conference Room No. 444

Attendees:

Kim Fulbright, Georgia Dept. of Transportation (GDOT), Road Design/(404) 656-5407
Mike McBrier, Douglas County Public Works Department/(770) 920-7243
Carolyn Westbrook, Douglas County Engineering Department/(770) 920-7340
Hal McClain, Mayes, Sudderth and Etheredge, Inc. (MSE)/(770) 971-5407
Erwin Espiritu, MSE/(770) 971-5407

MSE presented the concept report for the Douglas County (DC) personnel. After some clarifications, the discussion about their concerns followed and are listed as follows:

Questions and Answers:

1. Mr. Fulbright noted that MSE should verify that the bridge would not lie within the transition segments of the superelevation areas.
2. Mr. McBrier suggested that the approximate 100-year high water elevation marks should be shown on the plans.
3. Mr. McBrier suggested that the construction of water and sewer lines be included in this project.

Ms. Westbrook stated that the Douglas County Water and Sewer Authority (WSA) should decide on this matter. Mr. McClain added that MSE will show some provisions for bridge design that the future utilities can be located safely.

4. DC is concerned about the situation (e.g. required, remainder, swap, etc...) of the existing right-of-ways in relation with the proposed.

Mr. Fulbright stated that the layout of the proposed right-of-way is premature at present time and this issue will be resolved once the preliminary design starts.

5. DC is suggesting that since the existing bridge will be demolished later once the proposed road is finished, abandoning just portions of the existing road will minimize the obliteration of roadways. And can these abandoned roadways be connected to the proposed road for maintenance/emergency purposes that WSA may encounter in the future?

Mr. Fulbright stated that this could be done. However, the details will be included during the preliminary design stage.

RESPONSE TO MINUTES OF CONCEPT TEAM MEETING

PROJECT: Relocated SR 166 at Dog River
Bridge Replacement and Approaches
Douglas County, GA.
MSL-0000-00-952
P.I. No. 0000952
MSE Proj. No. 99-000159.03

Meeting Date/Time: June 7, 2001 at 10:00 A.M.

Location: GDOT Main Office, Road Design Conference Room No. 444

Attendees:

Kim Fulbright, Georgia Dept. of Transportation (GDOT), Road Design/(404) 656-5407
Scott Zehngraff, GDOT- Traffic Operations/(770) 986-1073
Pam Black, GDOT- Right-of-Way/(404) 986-1113
Kevin Vinson, GDOT-District 7-Area 3/(404) 559-6658
Keisha Jackson, GDOT-OEL/(404) 699-6866
Windy Bickers, GDOT-Programming/(404) 693-5023
Key Phillips, GDOT-District 7-Design/(770) 986-1050
Wade Harris, GDOT- Engineering Services/(404) 651-7462
Clyde Cunningham, GDOT-District 7-Utilities/(770)986-1090
Ronnie Wood, R.J. Wood and Co./(912) 741-7044
Hal McClain, Mayes, Sudderth and Etheredge, Inc. (MSE)/(770) 971-5407
Ron Cooper, MSE/(770) 971-5407
Gina Inklebarger, MSE/(770) 971-5407
Erwin Espiritu, MSE/(770) 971-5407

MSE presented the Concept Report. Mr. Fulbright then reiterated to those attending that the proposed State Route (SR) 166 will be a part of the future improved SR 166. The GDOT Design Team for this future project has looked at this concept to verify that MSE's design will fit in with GDOT's. After his remarks, the questions and comments followed and are summarized on the following pages:

Questions and Answers:

1. Mr. Zehngraff suggested that MSE should look at possibility of tying River Road to the tangent section of the proposed road (within the vicinity of Station 15+00). This eliminates the recommendation of improving the existing intersection located at approximately 1000' west of the proposed beginning of the project. However, additional right-of-way/easement will be needed.

Mr. Wood noted that within this location, the possible right-of-way/easement required was private ownership. Mr. Fulbright added that MSE should review and come up with recommendation about this scenario.

Due to time constraints, GDOT advised not showing the intersection but will continue to review this proposed intersection for possible future inclusion into the project

2. Ms. Jackson asked who will be doing the Environmental portion of work?

Mr. Fulbright stated that the Douglasville-Douglas County Water and Sewer Authority is responsible for this matter. The report needs to be revised noting this change.

Will comply.

Mr. Wood stated that they are conducting some environmental work for the dam portion and could include this bridge portion.

During a follow up call on June 22, 2001, Ms. Jackson noted that this method of submittal is acceptable to the GDOT.

3. Ms. Bickers asked who will acquire Right-of-ways?

Mr. Fulbright stated that the Douglasville-Douglas County Water and Sewer Authority is responsible for this matter. The report needs to be revised noting this change.

Will comply.

Mr. Wood stated that some right-of-way have been acquired.

WSA will coordinate with GDOT in the procurement of right-of-ways during the design stages.

4. Mr. Harris asked if SR 166 is a bike route? If so, the typical section should be changed.

Mr. Fulbright responded no, but paved shoulder dimension should change from 8' to 6.5' in accordance with the new GDOT policy (he furnished a copy of this new policy to MSE). He added that, they do not usually provide paved shoulders for 2 lanes. However, he thinks, we should on this project because of the future 4-lane divided highway design.

Will comply. The paved shoulder width will be revised in accordance with the GDOT's new policy.

Mr. McClain noted that the bridge shoulders have similar situation (10' both sides for proposed and a 10' and a 4' for future). Mr. Fulbright replied that, usually GDOT does not build bridge with 10' shoulders on both sides. However, keep the design as shown now for bridge typical section as he does not know when the future 4-lane divided highway will be started.

Will comply.

5. Mr. Harris asked if we need passing lanes at each end of the bridge? On the bridge?

Mr. Fulbright replied that, passing lanes may not be appropriate for these areas.

6. Mr. Zehngraft inquired about using epoxy coated reinforcing bars instead of the lean concrete MSE showed on the proposed bents for future project.

Mr. Harris replied that the Bridge Department approved either method in the past. Mr. Fulbright reiterated that the Bridge Department had reviewed and approved this bridge concept design.

Comments:

1. Local Authority has no representative.
2. Planning has no comments.
3. Programming has no comments.
4. Environmental:

- a. Ms. Jackson noted that Categorical Exclusion would be more appropriate than the Environmental Impact Statement shown on page 10 of the Concept Report (Level of Environmental Analysis).

Will comply.

- b. Mr. Fulbright asked Ms. Jackson what does the GDOT expect for review?

Ms. Jackson requested all sections for each report and permit (e.g. 404, etc...). Usually this consists of six sets. Mr. McClain said that the GDOT will probably receive the Dam and Road Report together. MSE will coordinate with Mr. Wood regarding this matter.

Will comply. The dam and bridge environmental studies will be submitted together in one package. This method of submittal was acceptable according to Ms. Jackson during a conference call on July 22, 2001.

5. Right-of-Way has no comments.

6. Utility:

- a. Mr. Vinson said there is no local government participation agreement for this project. He also noted that he is not anticipating any problems at this stage.

7. Traffic Operations has no further comments.

8. Engineering Services:

- a. Mr. Harris requested that the low point in the vertical curve shall be moved off the bridge. The drains may clog and any fuel spills (or other contaminates) will go directly into the lake.

Will comply. The profile will be revised.

- b. Mr. Harris noted that the bridge deck slope should be $\frac{1}{4}$ " per foot instead of $\frac{3}{16}$ " per foot as shown. In addition, the phrase stated on page 14 of the report "and negative moment continuity for live load plus impact" should be deleted.

Will comply with both comments.

- c. Mr. Harris stated that four sediment basins should be located in each quadrant of the bridge where these can serve on the future 4-lane project and also serve as permanent detention/retention basins. These will also help protect the reservoir from fuel spills.

Mr. Fulbright added that he will give MSE a copy of the latest memorandum on sediment basins (MSE received a copy of the said memorandum at the end of the meeting).

Will comply.

9. Maintenance has no representative.

10. Planning and Design:

- a. Mr. Phillips stated that the project is located in a non-attainment area and the report should be revised.

Will comply.

- b. Mr. Phillips recommended that the future bridge bents should not be included in this project.

Mr. Harris agreed; since we do not know when the future facility will be built, the codes and standards in the future might be different than what it is now, resulting to a possible non-standard structure.

Mr. Fulbright said to show this item as a comment and let the recommendation remain in the report. GDOT will decide whether the bents will be included on this project.

WSA instructed MSE that these future bridge bents should not be included in this project. Not only, that they do not like them sticking out and pose as a hazard; these structures will also be a problem for acquiring the 404 Permit.

Upon consultation with Mr. Fulbright, he agreed that this recommendation can be deleted from the Concept Report.

Meeting Date/Time: June 11, 2001 at 11:00 A.M.

Location: GDOT Main Office, Road Design Conference Room No. 444

Attendees:

Kim Fulbright, Georgia Dept. of Transportation (GDOT), Road Design/(404) 656-5407
Mike McBrier, Douglas County Public Works Department/(770) 920-7243
Carolyn Westbrook, Douglas County Engineering Department/(770) 920-7340
Hal McClain, Mayes, Sudderth and Etheredge, Inc. (MSE)/(770) 971-5407
Erwin Espiritu, MSE/(770) 971-5407

MSE presented the concept report for the Douglas County (DC) personnel. After some clarifications, the discussion about their concerns followed and are listed as follows:

Questions and Answers:

1. Mr. Fulbright noted that MSE should verify that the bridge would not lie within the transition segments of the superelevation areas.

Will comply. The present location/length of the Alternate I proposed bridge will be maintained. The point of curvature (PC) station will be moved easterly to accommodate the 55 mph speed for the tie-in connection.

2. Mr. McBrier suggested that the approximate 100-year high water elevation marks should be shown on the plans.

Will comply.

3. Mr. McBrier suggested that the construction of water and sewer lines be included in this project.

Ms. Westbrook stated that the Douglas County Water and Sewer Authority (WSA) should decide on this matter. Mr. McClain added that MSE will show some provisions for bridge design that the future utilities can be located safely.

WSA instructed MSE that provisions for the installation of a 20" water line within the bridge should be made. In addition, sewer lines should not be included for this project.

No water or sewer lines will be provided along the roadway portion of the project.

4. DC is concerned about the situation (e.g. required, remainder, swap, etc...) of the existing right-of-ways in relation with the proposed.

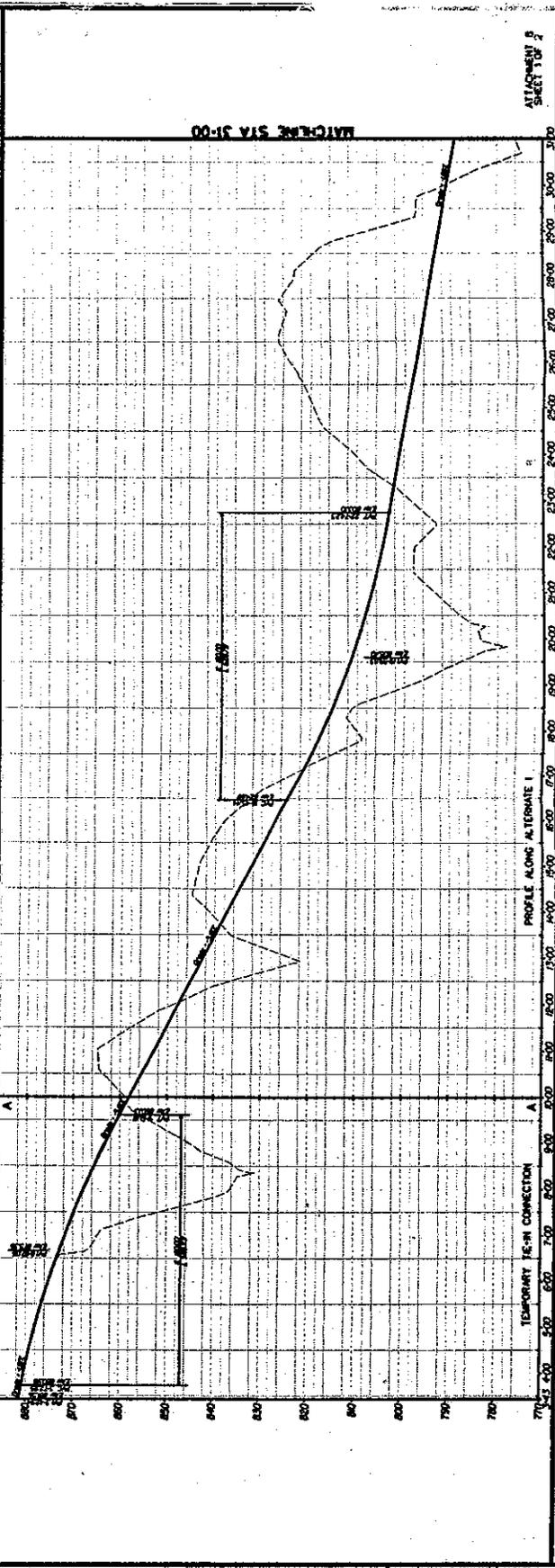
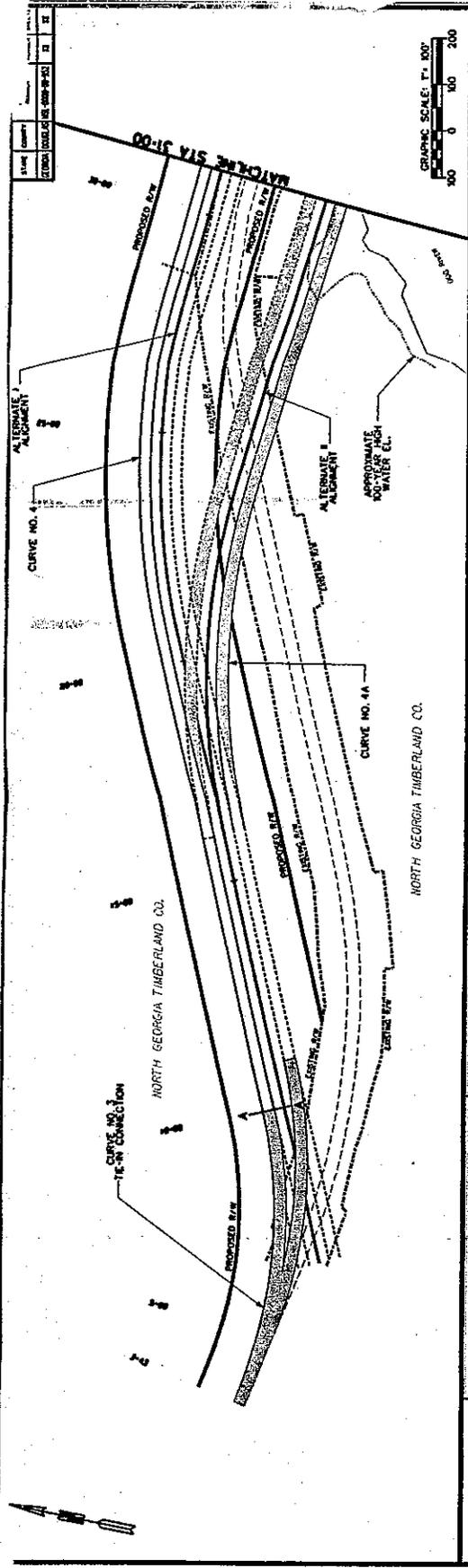
Mr. Fulbright stated that the layout of the proposed right-of-way is premature at present time and this issue will be resolved once the preliminary design starts.

WSA will coordinate with GDOT in the procurement of right-of-ways during the design stages.

5. DC is suggesting that since the existing bridge will be demolished later once the proposed road is finished, abandoning just portions of the existing road will minimize the obliteration of roadways. And can these abandoned roadways be connected to the proposed road for maintenance/emergency purposes that WSA may encounter in the future?

Mr. Fulbright stated that this could be done. However, the details will be included during the preliminary design stage.

WSA's position regarding this issue, would be to demolish both the existing road and bridge after the construction of the proposed facilities. They want a full control of any access leading to the reservoir along these areas.



Station	Profile Elevation (ft)	Ground Elevation (ft)	Grade (%)
31+00	750	750	1.50
31+10	755	755	1.50
31+20	760	760	1.50
31+30	765	765	1.50
31+40	770	770	1.50
31+50	775	775	2.50
31+60	780	780	2.50
31+70	785	785	2.50
31+80	790	790	2.50
31+90	795	795	2.50
31+00	800	800	2.50

ATTACHMENT 2
SHEET 1 OF 2

RELOCATED SR 166 AT DOG RIVER
PLAN AND PROFILE



DATE	REVISION	BY	CHKD	APP'D

DATE	DESIGNED	CHECKED	APPROVED

PROJECT NUMBER
 COUNTY
 DISTRICT

RELOC. SR 166
 MEDIAN

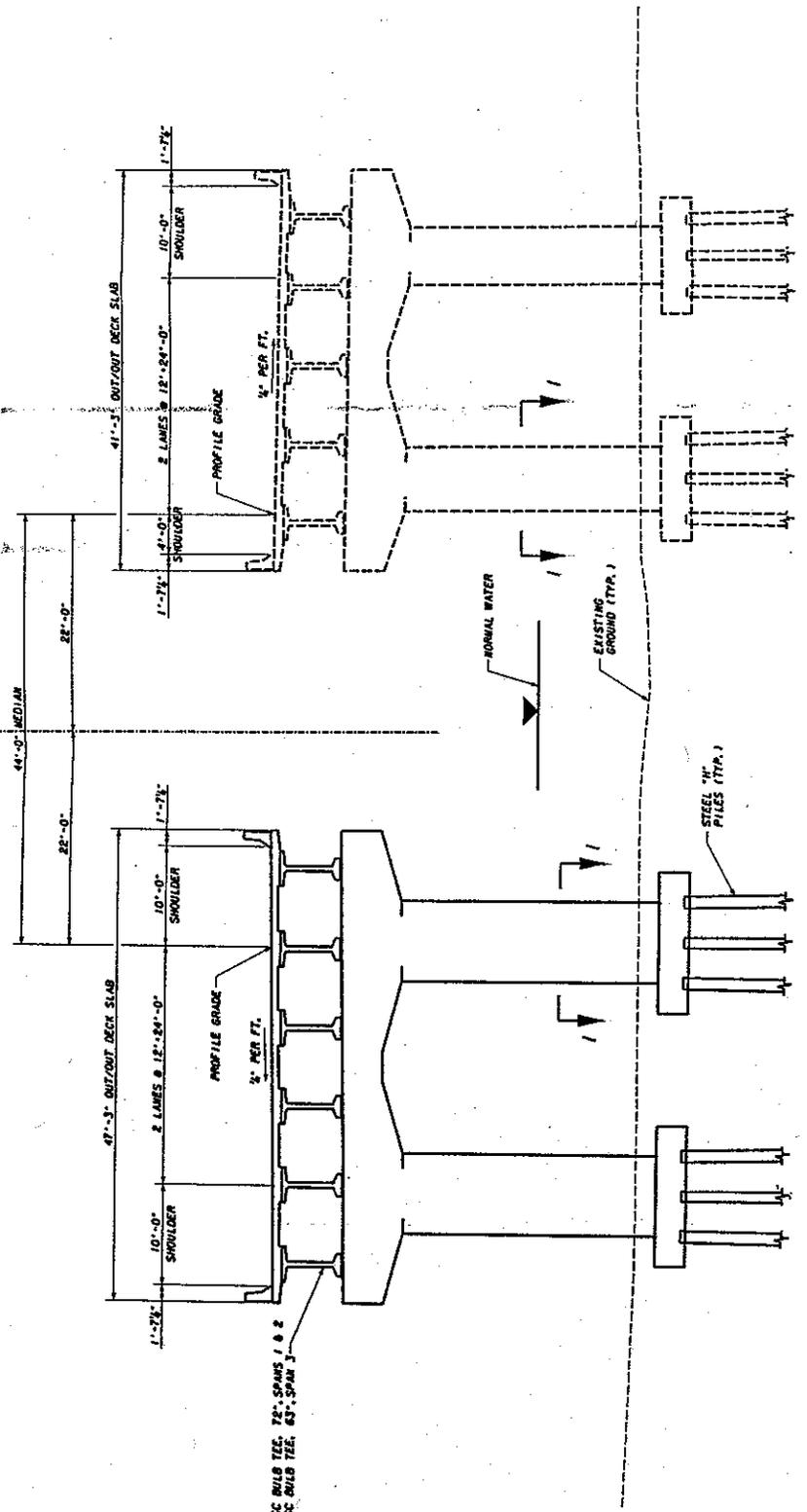
44'-0" MEDIAN
 22'-0" 22'-0"

47'-3" OUT/OUT DECK SLAB
 10'-0" SHOULDER
 12'-8 1/2" SHOULDER

41'-3" OUT/OUT DECK SLAB
 10'-0" SHOULDER
 12'-8 1/2" SHOULDER

PROFILE GRADE
 2" PER FT.
 1" PER FT.

PSC BULB TEE, 72" SPAN 1 & 2
 PSC BULB TEE, 65" SPAN 3



TYPICAL BRIDGE SECTION
 R.T.S.



SECTION 1-1
 R.T.S.

KEY
 PROPOSED
 FUTURE

ATTACHMENT 2
 SHEET 2 OF 4

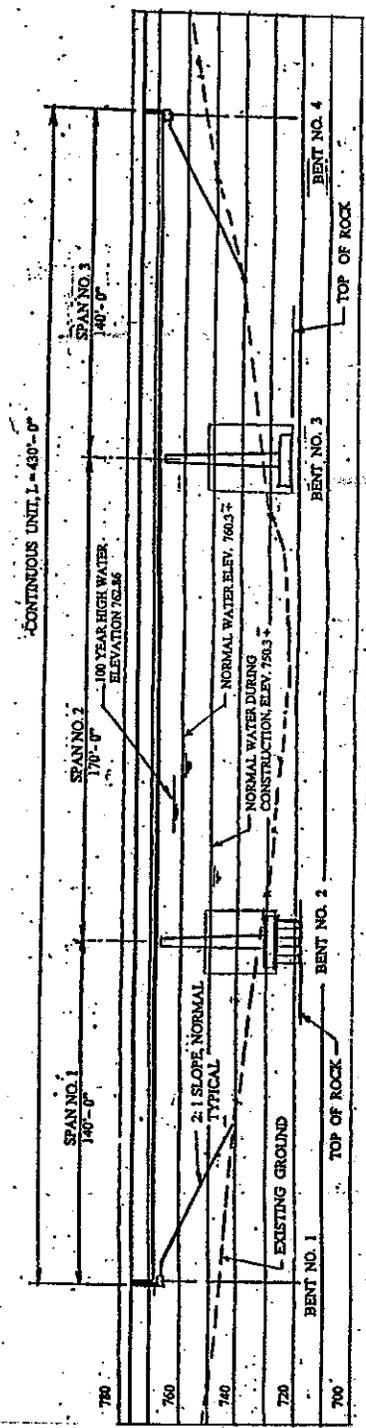
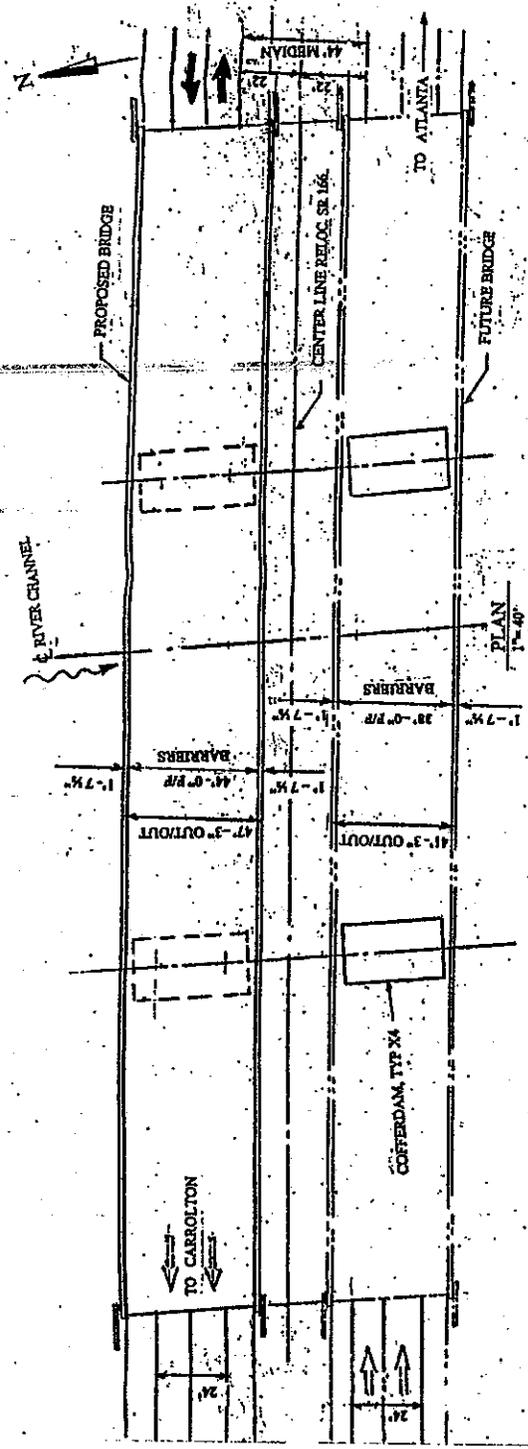
RELOCATED SR 166 AT DOG RIVER
 TYPICAL BRIDGE SECTION (BRIDGE ALTERNATE 1)

NO.	DATE	BY	CHKD	APP'D

NO.	DATE	BY	CHKD	APP'D

10/26/2010 10:26 AM (V:\2010\10\26\1026.dwg)

DATE	DESIGN	PROJECT	SCALE



ATTACHMENT 9
SHEET 3 OF 4

RELOCATED SR 166 AT DOG RIVER
PLAN AND ELEVATION (BRIDGE ALTERNATE II)

DATE	DESIGN	PROJECT	SCALE

MSC

MECHANICAL SERVICES COMPANY

10000 W. 10th Street, Suite 100, Overland Park, KS 66211
913.666.1000

AGREEMENT

BETWEEN

DEPARTMENT OF TRANSPORTATION

STATE OF GEORGIA

AND

DOUGLASVILLE-DOUGLAS COUNTY WATER AND SEWER AUTHORITY

FOR

STATE ROUTE 166 AT DOG RIVER

THIS AGREEMENT, is made and entered into this 3rd day of October, 2000, by and between the DEPARTMENT OF TRANSPORTATION, an agency of the State of Georgia, hereinafter called the "DEPARTMENT", and DOUGLAVILLE-DOUGLAS COUNTY WATER AND SEWER AUTHORITY, acting by and through its Chairman and Executive Director, hereinafter called the "LOCAL AUTHORITY".

WHEREAS, the LOCAL AUTHORITY has represented to the DEPARTMENT a desire to replace the existing bridge on State Route 166 at Dog River including the two-lane roadway approaches, Georgia Department of Transportation Project Number MSL-0000-00-952, P.I. Number 0000952 hereinafter referred to as the "PROJECT"; and

WHEREAS, the LOCAL AUTHORITY has represented to the DEPARTMENT a desire to participate in providing the preconstruction engineering activities needed for the improvements, and other costs as specified in the AGREEMENT, and the DEPARTMENT has relied upon such representations; and

WHEREAS, the DEPARTMENT has expressed a willingness to participate in the funding of the construction of the PROJECT with funds of the DEPARTMENT, funds apportioned to the DEPARTMENT by the Federal Highway Administration, hereinafter referred to as the "FHWA", under Title 23, United States Code, Section 104, or a combination of funds from any of the above sources subject to those certain conditions set forth in the AGREEMENT.

NOW, THEREFORE, in consideration of the mutual promises made and of the benefits to flow from one to the other, the DEPARTMENT and the LOCAL AUTHORITY hereby agree each with the other as follows:

1. All Primary Consultant firms hired by the LOCAL AUTHORITY to provide services on the PROJECT shall be prequalified with the DEPARTMENT in the appropriate area-classes. The DEPARTMENT shall, on request, furnish the LOCAL AUTHORITY with a list of prequalified consultant firms in the appropriate area-classes.
2. The PROJECT construction and right-of-way plans shall be prepared in English units.
3. Both the LOCAL AUTHORITY and the DEPARTMENT hereby acknowledge that time is of the essence and both parties shall adhere to the priorities established in the approved State Transportation Improvement Program (STIP) or earlier. Furthermore, all parties shall adhere to the detailed project schedule, as approved by the DEPARTMENT. In the completion of respective commitments contained herein, if a change in schedule is needed, the

DEPARTMENT shall have final authority. If, for any reason, the LOCAL GOVERNMENT does not produce acceptable deliverables at the milestone dates defined in the STIP, or in the approved schedule, the DEPARTMENT reserves the right to delay the project's implementation until funds can be re-identified for construction or right-of-way, as applicable.

4. All drafting and design work performed on the project shall be done utilizing Microstation and CAICE software respectively, and shall be organized as per the DEPARTMENT'S guidelines on electronic file management.

5. The LOCAL GOVERNMENT shall contribute towards the PROJECT by funding all cost for the preconstruction engineering (design). The preconstruction engineering activities shall be accomplished in accordance with the DEPARTMENT'S Plan Development Process, the Plan Presentation Guide, the applicable guidelines of the American Association of State Highway and Transportation Officials, hereinafter referred to as "AASHTO", the DEPARTMENT'S Standard Specification for the Construction of Transportation Systems, PROJECT schedules, and applicable guidelines of the DEPARTMENT. The LOCAL AUTHORITY responsibility for design shall include, but is not limited to the following items.

a. Prepare the PROJECT concept report in accordance with the format used by the DEPARTMENT. The concept for the PROJECT shall be developed to accommodate the future traffic volumes as generated by the LOCAL AUTHORITY as provided for in paragraph 5b and approved by the DEPARTMENT. It is recognized by the parties that the approved concept may be modified by the LOCAL AUTHORITY as required by the DEPARTMENT and reapproved by the DEPARTMENT during the course of design due to public input, environmental

requirements, or right-of-way considerations.

b. Develop the PROJECT'S base year (year facility is expected to be open to traffic) and design year (base year plus 20 years) traffic volumes. This shall include average daily traffic (ADT) and morning (am) and evening (pm) peak hour volumes. The traffic shall show all through and turning movement volumes at intersections for the ADT and peak hour volumes and shall indicate the percentage of trucks expected on the facility.

c. Validate (check and update) the approved PROJECT concept and prepare a PROJECT Design Book for approval by the DEPARTMENT prior to the beginning of preliminary plans.

d. Prepare environmental studies, documentation, and reports for the PROJECT that show the PROJECT is in compliance with the provisions of the National Environmental Protection Act and Georgia Environmental Protection Act, as appropriate to the PROJECT funding. This shall include any and all archaeological, historical, ecological, air, noise, underground storage tanks (UST), and hazardous waste site studies required. The LOCAL AUTHORITY shall submit to the DEPARTMENT all environmental documents and reports for review and approval by the DEPARTMENT and the FHWA.

e. Prepare all public hearing and public information displays and conduct all required public hearings and public information meetings in accordance with DEPARTMENT practice.

f. Perform all surveys, mapping, and soil investigation studies needed for design of the PROJECT.

g. Perform all work required to obtain project permits, including, but not limited to, US Army Corps of Engineers 404 and Federal Emergency Management Agency (FEMA)

approvals. These efforts shall be coordinated with the DEPARTMENT.

h. Prepare the PROJECT'S drainage design including erosion control plans and the development of the hydraulic studies for the Federal Emergency Management Agency Floodways and acquisition of all necessary permits associated with the drainage design.

i. Prepare traffic studies, preliminary construction plans, preliminary and final utility plans, preliminary and final right-of-way plans, staking of the required right-of-way, and final construction plans including erosion control, traffic handling, and construction sequence plans and specification including special provisions for the PROJECT.

j. Provide certification, by a Georgia Registered Professional Engineer, that the construction plans have been prepared under the guidance of the professional engineer and are in accordance with acceptable industry standards.

6. The DEPARTMENT shall review and has approval authority for all aspects of the PROJECT. The DEPARTMENT will work with the FHWA to obtain all needed approvals with information furnished by the LOCAL AUTHORITY.

7. Upon the LOCAL AUTHORITY'S determination of the rights-of-way required for the PROJECT and the approval of the right-of-way plans by the DEPARTMENT, the LOCAL AUTHORITY shall fund the acquisition and acquire the necessary rights-of-way for the PROJECT. Right-of-way acquisition shall be in accordance with the law and the rules and regulations of the FHWA including, but not limited to, Title 23, United States Code; 23 CFR 710, et. seq., and 49 CFR Part 24, and the rules and regulations of the DEPARTMENT. Failure to follow these requirements will result in loss of Federal funding for the PROJECT, and it will

be the responsibility of the LOCAL AUTHORITY to make up the loss of that funding. All required right-of-way shall be obtained and cleared of obstructions, including underground storage tanks, prior to the DEPARTMENT'S advertising the PROJECT for bids. The LOCAL AUTHORITY shall further be responsible for making all changes to the approved right-of-way plans, as deemed necessary by the DEPARTMENT, for whatever reason, as needed to purchase the right-of-way or to match actual conditions encountered.

8. The LOCAL AUTHORITY shall be responsible for the design of any bridges which lay within the limits of this PROJECT. The LOCAL AUTHORITY shall perform all necessary survey efforts regarding the design of the bridge and shall incorporate these plans into this PROJECT as a part of this Agreement.

9. The DEPARTMENT shall be responsible for all utility relocation costs necessary for the construction of the PROJECT.

10. The LOCAL AUTHORITY shall follow the DEPARTMENT'S procedures for identification of existing and proposed utility facilities on the PROJECT. These procedures, in part, require all requests for existing, proposed, or relocated facilities to flow through the DEPARTMENT'S Project Liaison and the District Utilities Engineer.

11. Upon completion and approval of the PROJECT plans, certification that all needed rights-of-way have been obtained and cleared of obstructions, and certification that all needed permits for the PROJECT have been obtained by the LOCAL AUTHORITY, the

DEPARTMENT shall let the PROJECT for construction. Except as provided herein and upon receipt of an acceptable bid, the DEPARTMENT shall bear all costs for construction, including all costs associated with inspection and materials testing during construction. The DEPARTMENT shall be solely responsible for securing and awarding the construction contract for the PROJECT.

12. The LOCAL AUTHORITY agrees that all reports, plans, drawings, studies, specifications, estimates, maps, computations, computer diskettes and printouts, and any other data prepared under the terms of this agreement shall become the property of the DEPARTMENT. This data shall be organized, indexed, bound, and delivered to the DEPARTMENT no later than the advertisement of the PROJECT for letting. The DEPARTMENT shall have the right to use this material without restriction or limitation and without compensation to the LOCAL AUTHORITY.

13. The LOCAL AUTHORITY shall be responsible for the professional quality, technical accuracy, and the coordination of all designs, drawings, specifications, and other services furnished by or on behalf of the LOCAL AUTHORITY pursuant to this AGREEMENT. The LOCAL AUTHORITY shall correct or revise, or cause to be corrected or revised, any errors or deficiencies in the designs, drawings, specifications, and other services furnished for this PROJECT. All revisions shall be coordinated with the DEPARTMENT prior to issuance. The LOCAL AUTHORITY shall also be responsible for any claim, damage, loss or expense that is attributable to negligent acts, errors, or omissions related to the designs, drawings, specifications,

and other services furnished by or on behalf of the LOCAL AUTHORITY pursuant to this AGREEMENT.

14. The LOCAL AUTHORITY shall prepare all shop drawings for approval by the DEPARTMENT.

15. This AGREEMENT is made and entered into in Fulton County, Georgia, and shall be governed and construed under the laws of the State of Georgia.

16. The covenants herein contained shall, except as otherwise provided, accrue to the benefit of and be binding upon the successors and assigns of the parties hereto.

IN WITNESS WHEREOF, the DEPARTMENT and the LOCAL AUTHORITY have caused these presents to be executed under seal by their duly authorized representatives.

RECOMMENDED:

James A. Kennerly
James A. Kennerly
State Road & Airport Design Engineer

Thomas L. Linn
Director of Preconstruction

W. L. O'Neil
Chief Engineer

DEPARTMENT OF TRANSPORTATION

BY: Paul R. Linnick
Commissioner

ATTEST:

Billy J. Sharp
Treasurer

REVIEWED AS TO LEGAL FORM:

Sandra S. Bowen
Office of Legal Services

DATE: 9-27-00

No Pre-Award Examination
Required [Signature]

BOARD OF DIRECTOR'S

BY: [Signature]
Chairman of the Board

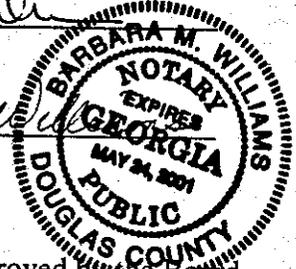
BY: [Signature]
Executive Director

Signed, sealed and delivered this 17th
day of August, 2000 in
the presence of:

[Signature]
Witness

[Signature]
Witness

Barbara M. Williams
Notary Public



This Agreement approved by the Board
of Director's at a meeting held at:

8763 Hospital Dr, Newfawville, Ga 30135
the 17th day of August, 2000

[Signature]
Secretary

NOTICE OF LOCATION AND DESIGN APPROVAL

**PROJECT: MSL-0000-00-952 DOUGLAS COUNTY
P. I. NO. 0000952**

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 and design approval is _____.

Project MSL-0000-00-952 Douglas County begins approximately 3200 feet west of Dog River and continues in an easterly direction along State Route 166 to approximately 1900 feet east of Dog River. The total length of project is approximately one mile. From the beginning of the project the proposed roadway would shift north of existing State Route 166 and cross the Dog River Reservoir approximately 200 ft. north of the existing bridge and tie back into existing State Route 166 at the end of the project. This project is located within Georgia Militia Districts 1260 and 1272, Georgia Land District 3 and Georgia Land Lots 20, 21, 26 and 27.

This project would consist of the relocation and replacement of the State Route 166 bridge over Dog River, including roadway approaches. The proposed typical section maintains two 12 ft. lanes (one lane in each direction) with 10 ft. wide shoulders (6.5 ft. paved) and would accommodate future widening of SR 166. The proposed bridge would be 44 ft. wide providing for a 24 ft. roadway with 10 ft. shoulders each side.

The proposed construction would improve safety along this section of State Route 166 while accommodating a planned increase of 10 feet in water depth of Dog River Reservoir.

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, Douglas County Headquarters:

Joe Carr
6287 Fairburn Road
Douglasville, Georgia 30134
E-mail address: Louie.Carr@dot.state.ga.us
Telephone: (770) 489-3120

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:

Kimbal D. Fulbright
Design Engineer Group Manager
GEORGIA DEPARTMENT OF TRANSPORTATION
No. 2 Capitol Square, Room 444
Atlanta, Georgia 30334
E-mail address: kim.fulbright@dot.state.ga.us
Telephone (404) 656-5407

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