

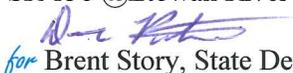
ORIGINAL TO GENERAL FILES

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

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**OFFICE OF DESIGN POLICY & SUPPORT  
INTERDEPARTMENTAL CORRESPONDENCE**

**FILE** P.I. #0007169 **OFFICE** Design Policy & Support  
CSBRG-0007-00(169)  
GDOT District 1 - Gainesville  
Dawson County **DATE** January 18, 2012  
SR 136 @Etowah River 5.7 Miles East of Dawsonville

**FROM**  Brent Story, State Design Policy Engineer

**TO** SEE DISTRIBUTION

**SUBJECT** APPROVED REVISED CONCEPT REPORT

Attached is the approved Revised Concept Report for the above subject project.

Attachment

**DISTRIBUTION:**

Genetha Rice-Singleton, Program Control Administrator  
Bobby Hilliard, State Program Delivery Engineer  
Cindy VanDyke, State Transportation Planning Administrator  
Angela Robinson, Financial Management Administrator  
Glenn Bowman, State Environmental Administrator  
Ben Rabun, State Bridge Engineer  
Kathy Zahul, State Traffic Engineer  
Georgene Geary, State Materials & Research Engineer  
Ron Wishon, State Project Review Engineer  
Jeff Baker, State Utilities Engineer  
Ken Thompson, Statewide Location Bureau Chief  
Michael Henry, Systems & Classification Branch Chief  
Kenneth Whitworth, District Engineer  
Robert Mahoney, District Preconstruction Engineer  
Allen Ferguson, District Utilities Engineer  
Lisa Deaton, District Environmentalist  
Hiral Patel, Project Manager  
BOARD MEMBER - 9th Congressional District

DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA  
REVISED PROJECT CONCEPT REPORT

Project Number: CSBRG-0007-00(169)  
County: Dawson  
P. I. Number: 0007169  
Federal Route Number: N/A  
State Route Number: 136

The revised concept shall be to construct the bridge with a staged construction approach rather than realigning the roadway.

Submitted for approval:

DATE 10/17/11 [Signature]  
Design Phase Office Head  
DATE 10/17/2011 [Signature]  
Office Head  
DATE 10/17/11 [Signature]  
Project Manager

Recommendation for approval:

DATE 11/28/2011 \* [Signature]  
State Environmental Administrator  
DATE 12/8/2011 \* [Signature]  
State Bridge Design Engineer

\* Recommendation on file

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

DATE 11-17-11 [Signature]  
State Transportation Planning Administrator

## REVISED PROJECT CONCEPT REPORT

**Need and Purpose:** This Bridge (Structure ID 085-0018-0) was built in 1965 and consists of 4 steel beam spans. The substructure consists of a concrete cap on concrete columns with spread footings (1 bent); also a concrete cap on steel piles (4 bents). The bridge was designed with typical loading of H15-44 specifications and has a calculated carrying capacity of less than HS-20. This bridge currently is posted and has a Sufficiency Rating of 47.62. The deck shows transverse cracking in all spans, in conjunction with moderate scaling and spalls in spans 2 and 5 with exposed rebar. The beams are showing minor to moderate deflection. The substructure is in good condition; however the steel piles are HP 10 x 42. These piles are one of the main factors pertaining to the posting of this bridge. Replacement of this functionally obsolete bridge is recommended.

**Project location:** The proposed project length is 2,734 ft which extends approximately 1,068 ft North-West and 1,426 ft South-East from MP 22.65 to MP 23.17 with the bridge being approximately 240 ft long. It is located in Dawson County about 5.7 miles east of Dawsonville.

**Description of the approved concept:** The approved concept is to build a new bridge downstream (south) of the current bridge, realign the roadway to the new bridge, and remove the existing bridge. The relocated bridge is the minimum required 50 ft offset of the existing bridge (Centerline to Centerline) and the roadway segments on either side have minor curvature change for a seamless tie-in to the existing. The road and bridge will continue to be a rural two lane, 55 mph corridor.

**PDP Classification:** Major \_\_\_\_\_ Minor X

**Federal Oversight:** Full Oversight ( ), Exempt ( X ), State Funded ( ), or Other ( )

**Functional Classification:** Rural Major Collector

**U. S. Route Number(s):** N/A

**State Route Number(s):** 136

**Traffic (AADT):**

Current Year: (2011) – 3,750

Base Year (2016) – 4,250

Design Year: (2036) – 7,000

**Approved Programmed/Schedule:**

P.E. 2007

R/W: 2013

Construction: 2015

**VE Study Required** Yes ( ) No ( X )

**Benefit/Cost Ratio** N/A

**Is the project located in an Ozone Non-attainment area?** Yes ( ) No ( X )

**Is the project in a PM2.5 Non-Attainment area?** Yes ( ) No ( X )

<p><b>Approved Features:</b></p> <ul style="list-style-type: none"><li>• Alignment: Realign the roadway centerline 50 ft to the south and construct a new bridge</li><li>• Project termini: Project length of 2734 ft, consisting of 1,068 ft North-West, 1,426 ft South-East, and a 240 ft bridge.</li><li>• Right-of-Way: 3.14 acres of required ROW</li></ul>	<p><b>Proposed Features:</b></p> <ul style="list-style-type: none"><li>• Alignment: Realign the roadway centerline 13 ft to the south and construct the new bridge nearly in place with a staged construction approach.</li><li>• Project termini: Project length of 1690 ft, consisting of 723 ft North-West, 727 ft South-East, and a 240 ft bridge.</li><li>• Right-of-Way: 1.16 acres of required ROW</li><li>• The profile will be raised by 2.5 ft to shift the low point of the roadway off of the bridge to facilitate better drainage.</li></ul>
<p><b>Reason for Change:</b> The proposed features greatly reduce the impacts to the surrounding area. This lowers the estimated right-of-way and construction costs.</p>	

**Potential Environmental Impacts of Proposed Revision:**

Environmental impacts are being reduced with the reduced footprint of the project that includes avoiding nearby wetlands.

**Have proposed Revisions Been Reviewed by Environmental Staff? ( X ) Yes ( ) No**

**Environmental Responsibilities (Studies/Documents/Permits):** GDOT

Updated Cost Estimate	
Base Construction Cost	\$ 1,712,032.02
Engineering and Inspection (5%)	\$ 85,601.60
Fuel & Asphalt Adjustment	\$ 30,030.68
<u>Total Construction Cost</u>	\$ 1,827,664.30
Right-of-Way	\$ 183,000.00
Utilities (reimbursable)	\$ 0.00
Environmental Mitigation	\$ 22,190.00

**Recommendation:** Recommend that the proposed revision to the concept be approved for implementation.

Attachments:

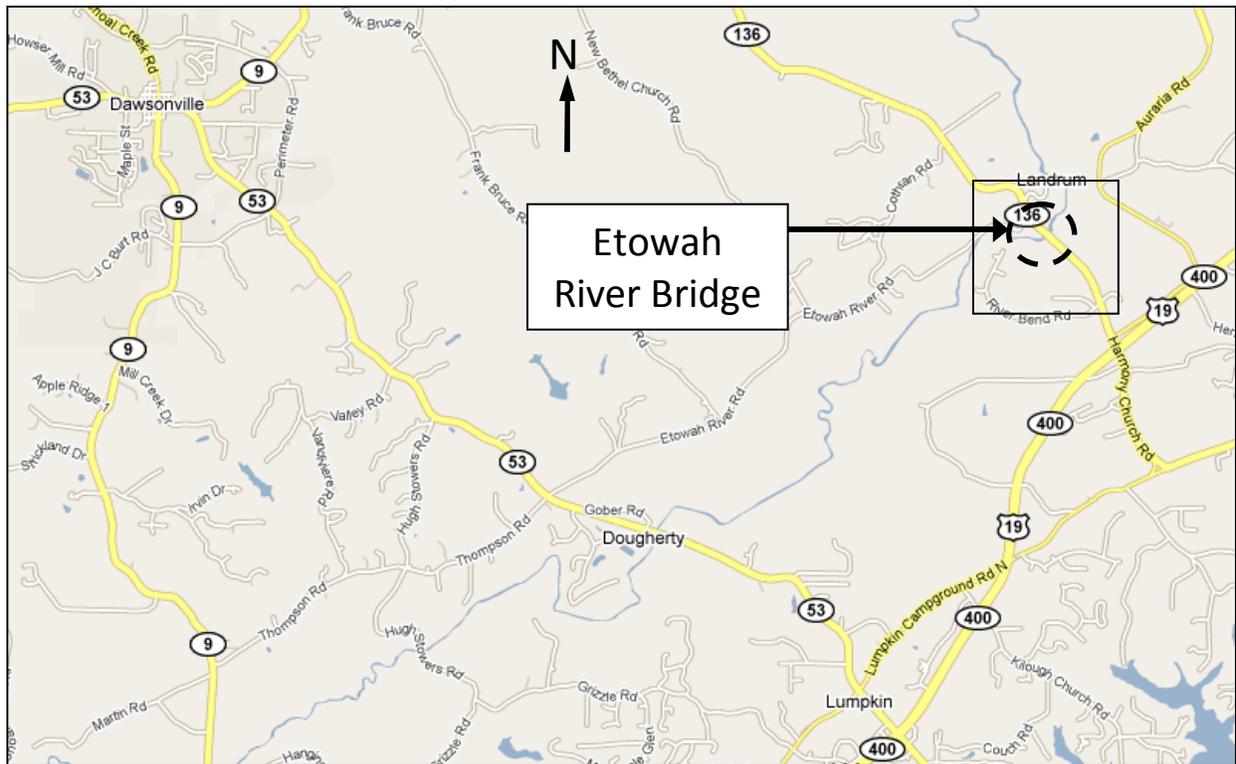
1. Sketch Map
2. Cost Estimates
3. Project Plan View
4. Project Profile View
5. Project Typical Section
6. Preliminary Bridge Plans & Typical

**Exempt projects**

Concur:   
Director of Engineering

Approve:   
Chief Engineer

Date: 1-11-12



***Project Location Map***  
Bridge Replacement on SR 136 at Etowah River  
Dawson County

# DETAILED COST ESTIMATE



**Job: 0007169\_DSGN1**

**JOB NUMBER:** 0007169\_DSGN1

**FED/STATE PROJECT NUMBER** CSBRG-0007-00(169)

**SPEC YEAR:** 01

**DESCRIPTION:** ESTIMATE FOR BRIDGE REPLACEMENT ON S.R. 136  
BRIDGE OVER ETOWAH RIVER 5.7 MI EAST OF DAWSONVILLE

**ITEMS FOR JOB 0007169\_DSGN1**

**0010 - ROADWAY**

Line Number	ITEM	QUANTITY	UNITS	PRICE	DESCRIPTION	AMOUNT
0005	150-1000	1.000	LS	\$15,000.00	TRAFFIC CONTROL - TRAFFIC CTRL	\$15,000.00
0010	153-1300	1.000	EA	\$67,184.84	FIELD ENGINEERS OFFICE TP 3	\$67,184.84
0015	210-0100	1.000	LS	\$96,500.00	GRADING COMPLETE - GRADING COMPLETE	\$96,500.00
0020	433-1000	320.000	SY	\$147.99	REINF CONC APPROACH SLAB	\$47,355.79
0025	620-0200	2500.000	LF	\$35.55	TEMP BARRIER, METHOD NO. 2	\$88,878.58
0030	634-1200	20.000	EA	\$116.16	RIGHT OF WAY MARKERS	\$2,323.26
0035	641-1100	83.000	LF	\$58.74	GUARDRAIL, TP T	\$4,875.57
0040	641-1200	1500.000	LF	\$15.80	GUARDRAIL, TP W	\$23,695.26
0045	641-5001	3.000	EA	\$684.10	GUARDRAIL ANCHORAGE, TP 1	\$2,052.30
0050	641-5012	3.000	EA	\$1,815.71	GUARDRAIL ANCHORAGE, TP 12	\$5,447.13
<b>SUBTOTAL FOR ROADWAY:</b>						<b>\$353,312.73</b>

**0020 - PAVEMENT**

Line Number	ITEM	QUANTITY	UNITS	PRICE	DESCRIPTION	AMOUNT
0055	310-1101	1800.000	TN	\$20.72	GR AGGR BASE CRS, INCL MATL	\$37,296.00
0220	402-1812	55.000	TN	\$76.38	RECYL AC LEVELING, INC BM&HL	\$4,200.98
0075	402-3103	184.000	TN	\$74.15	REC AC 9.5 MM SP, TP II, GP2, INCL BM & H L	\$13,643.54
0060	402-3121	1200.000	TN	\$63.32	RECYL AC 25MM SP, GP 1/2, BM&HL	\$75,989.58
0070	402-3190	300.000	TN	\$68.64	RECYL AC 19 MM SP, GP 1 OR 2, INC BM&HL	\$20,592.32
0080	413-1000	200.000	GL	\$2.40	BITUM TACK COAT	\$479.29
<b>SUBTOTAL FOR PAVEMENT:</b>						<b>\$152,201.71</b>

**0030 - SIGNING & MARKING**

Line Number	ITEM	QUANTITY	UNITS	PRICE	DESCRIPTION	AMOUNT
0085	653-1501	2700.000	LF	\$0.54	THERMO SOLID TRAF ST 5 IN, WHI	\$1,448.90
0090	653-1502	2700.000	LF	\$0.49	THERMO SOLID TRAF ST, 5 IN YEL	\$1,335.99
0095	654-1001	68.000	EA	\$4.76	RAISED PVMT MARKERS TP 1	\$323.70
<b>SUBTOTAL FOR SIGNING &amp; MARKING:</b>						<b>\$3,108.59</b>

**0040 - BRIDGE REPLACEMENT**

Line Number	ITEM	QUANTITY	UNITS	PRICE	DESCRIPTION	AMOUNT
0100	540-1102	1.000	LS	\$177,680.00	REM OF EX BR, BR NO - REMOVAL OF BRIDGE	\$177,680.00
0110	543-9000	1.000	LS	\$960,000.00	CONSTR OF BRIDGE COMPLETE - CONSTR OF BRIDGE	\$960,000.00
<b>SUBTOTAL FOR BRIDGE REPLACEMENT:</b>						<b>\$1,137,680.00</b>

# DETAILED COST ESTIMATE



**Job: 0007169\_DSGN1**

**0050 - EROSION CONTROL**

Line Number	ITEM	QUANTITY	UNITS	PRICE	DESCRIPTION	AMOUNT
0115	163-0232	3.500	AC	\$329.32	TEMPORARY GRASSING	\$1,152.61
0120	163-0240	7.000	TN	\$275.51	MULCH	\$1,928.59
0125	163-0300	2.000	EA	\$1,187.76	CONSTRUCTION EXIT	\$2,375.52
0130	163-0530	210.000	LF	\$4.00	CONSTR AND REMOVE BALED STRW EROSION CHK	\$840.00
0135	165-0030	9000.000	LF	\$0.72	MAINT OF TEMP SILT FENCE, TP C	\$6,510.51
0140	165-0050	240.000	LF	\$2.22	MAINT OF SILT RETENTION BARRIER	\$533.95
0145	165-0070	210.000	LF	\$1.50	MAINT OF BALED STRAW EROSION CHECK	\$315.00
0150	165-0101	2.000	EA	\$607.75	MAINT OF CONST EXIT	\$1,215.50
0155	167-1000	1.000	EA	\$232.45	WATER QUALITY MONITORING AND SAMPLING	\$232.45
0160	167-1500	18.000	MO	\$362.50	WATER QUALITY INSPECTIONS	\$6,525.00
0165	170-1000	240.000	LF	\$11.03	FLOAT SILT RETENTION BARRIER	\$2,647.20
0170	171-0030	9000.000	LF	\$2.57	TEMPORARY SILT FENCE, TYPE C	\$23,166.09
0190	700-6910	3.500	AC	\$748.80	PERMANENT GRASSING	\$2,620.81
0195	700-7000	7.000	TN	\$72.16	AGRICULTURAL LIME	\$505.10
0205	700-8000	2.100	TN	\$445.51	FERTILIZER MIXED GRADE	\$935.57
0210	700-8100	175.000	LB	\$2.11	FERTILIZER NITROGEN CONTENT	\$369.73
0215	716-2000	16000.000	SY	\$0.87	EROSION CONTROL MATS, SLOPES	\$13,855.36
<b>SUBTOTAL FOR EROSION CONTROL:</b>						<b>\$65,728.99</b>

**TOTALS FOR JOB 0007169\_DSGN1**

<b>ITEMS COST:</b>	<b>\$1,712,032.02</b>
<b>COST GROUP COST:</b>	<b>\$0.00</b>
<b>ESTIMATED COST:</b>	<b>\$1,712,032.02</b>
<b>CONTINGENCY PERCENT:</b>	<b>0.00</b>
<b>ENGINEERING AND INSPECTION:</b>	<b>0.05</b>
<b>ESTIMATED COST WITH CONTINGENCY AND E&amp;I:</b>	<b>\$1,797,633.62</b>

PROJ. NO. CSBRG-0007-00(169)  
P.I. NO. 0007169  
DATE 9/27/2011

CALL NO.

INDEX (TYPE)	DATE	INDEX
REG. UNLEADED	Sep-11	\$ 3.582
DIESEL		\$ 3.873
LIQUID AC		\$ 570.00

Link to Fuel and AC Index:  
<http://www.dot.ga.gov/doingbusiness/Materials/Pages/asphaltcementindex.aspx>

**LIQUID AC ADJUSTMENTS**

PA=[((APM-APL)/APL)]xTMTxAPL

**Asphalt**

Price Adjustment (PA)					29736.9	\$	29,736.90
Monthly Asphalt Cement Price month placed (APM)	Max. Cap	60%	\$	912.00			
Monthly Asphalt Cement Price month project let (APL)			\$	570.00			
Total Monthly Tonnage of asphalt cement (TMT)					86.95		

ASPHALT	Tons	%AC	AC ton
Leveling	55	5.0%	2.75
12.5 OGFC	0	5.0%	0
12.5 mm	0	5.0%	0
9.5 mm SP	184	5.0%	9.2
25 mm SP	1200	5.0%	60
19 mm SP	300	5.0%	15
	<b>1739</b>		<b>86.95</b>

**BITUMINOUS TACK COAT**

Price Adjustment (PA)				\$	293.78	\$	293.78
Monthly Asphalt Cement Price month placed (APM)	Max. Cap	60%	\$	912.00			
Monthly Asphalt Cement Price month project let (APL)			\$	570.00			
Total Monthly Tonnage of asphalt cement (TMT)					0.859020184		

**Bitum Tack**

Gals	gals/ton	tons
200	232.8234	0.85902018

**BITUMINOUS TACK COAT (surface treatment)**

Price Adjustment (PA)					0	\$	-
Monthly Asphalt Cement Price month placed (APM)	Max. Cap	60%	\$	912.00			
Monthly Asphalt Cement Price month project let (APL)			\$	570.00			
Total Monthly Tonnage of asphalt cement (TMT)					0		

Bitum Tack	SY	Gals/SY	Gals	gals/ton	tons
Single Surf. Trmt.	0	0.20	0	232.8234	0
Double Surf.Trmt.	0	0.44	0	232.8234	0
Triple Surf. Trmt	0	0.71	0	232.8234	0

**TOTAL LIQUID AC ADJUSTMENT \$ 30,030.68**

**GEORGIA DEPARTMENT OF TRANSPORTATION  
PRELIMINARY ROW COST ESTIMATE SUMMARY**

Date: 10/14/2011  
Revised:

Project: CSBRG-0007-00(169)  
County: Dawson  
PI: 0007169

Description: Etowah River Bridge Replacement on SR  
Project Termini: Etowah River Bridge Replacement on SR

Existing ROW: Varies  
Required ROW: Varies  
Parcels: 5

**Land and Improvements** \_\_\_\_\_ **\$82,108.50**

Proximity Damage	\$0.00
Consequential Damage	\$0.00
Cost to Cures	\$0.00
Trade Fixtures	\$0.00
Improvements	\$25,000.00

Valuation Services \_\_\_\_\_ \$5,000.00

Legal Services \_\_\_\_\_ \$40,875.00

Relocation \_\_\_\_\_ \$10,000.00

Demolition \_\_\_\_\_ \$0.00

Administrative \_\_\_\_\_ \$45,000.00

**TOTAL ESTIMATED COSTS** \_\_\_\_\_ **\$182,983.50**

**TOTAL ESTIMATED COSTS (ROUNDED)** \_\_\_\_\_ **\$183,000.00**

Preparation Credits	Hours	Signature

Prepared By:

*Lashore Alexander*

CG#: 286999

10/14/11

Approved By:

*Lashore B. Alexander*

CG#: 286999

10/14/11

**NOTE: No Market Appreciation is included in this Preliminary Cost Estimate**



## Houppermans, Colin

---

**From:** Aaron Caldwell [acaldwell@mulkeyinc.com]  
**Sent:** Monday, October 31, 2011 1:29 PM  
**To:** Patel, Hiral  
**Cc:** Houppermans, Colin  
**Subject:** RE: PI 0007169, Dawson -Revised Concept report

Hiral,

Yes, the impacts that would occur under the new concept are much less than the previous ones.

The new design would impact about 66 linear feet of perennial stream; I would estimate the mitigation cost as \$22,190 (317 credits x \$70/credit). The cost of mitigation is dependent upon credit availability and market conditions at the time of let. Further changes in design can increase or decrease the amount of required mitigation.

Overall, the revised concept would save the Department about \$200K in mitigation cost.

Regards,  
Aaron

-----Original Message-----

**From:** Patel, Hiral [<mailto:hpatel@dot.ga.gov>]  
**Sent:** Monday, October 31, 2011 12:08 PM  
**To:** Aaron Caldwell  
**Subject:** FW: PI 0007169, Dawson -Revised Concept report

Aaron,

Do you think the last mitigation estimate is still good or need to be updated? Thanks.

-----Original Message-----

**From:** Houppermans, Colin  
**Sent:** Monday, October 31, 2011 11:02 AM  
**To:** Patel, Hiral  
**Subject:** RE: PI 0007169, Dawson -Revised Concept report

Hiral,

- I used the enviro mitigation costs from the original concept so at this time the estimate has not changed.
- The cost estimates were included in the revised concept so I don't understand Kim's comment.
- This wasn't evaluated in the original concept report because we hadn't heard of this method of construction before (the staged bridge construction). This was not the "rebuild bridge in place" option.

Colin Houppermans, E.I.T.  
Design Engineer II  
District 1 Design - Gainesville  
Office Phone: (770) 718-5011  
E-mail: [chouppermans@dot.ga.gov](mailto:chouppermans@dot.ga.gov)

-----Original Message-----

**From:** Patel, Hiral  
**Sent:** Thursday, October 27, 2011 12:07 PM

To: Houppermans, Colin  
Subject: FW: PI 0007169, Dawson -Revised Concept report

I just got this e-mail so have not checked on this but I thought the cost estimates were revised with new concept.

-----Original Message-----

From: Phillips, Kim  
Sent: Thursday, October 27, 2011 11:58 AM  
To: Patel, Hiral  
Subject: RE: PI 0007169, Dawson -Revised Concept report

Hiral:

I had the following question/comments:

- \* Will mitigation cost remain unchanged with the revision?
- \* The cost estimate and cost adjustment were not attached.
- \* Why wasn't this evaluated in the concept report alternates or was it? (one alternate dismisses building the bridge in place)

Your assistance is appreciated.

Sincerely,

Kim L. Phillips

[kiphillips@dot.ga.gov](mailto:kiphillips@dot.ga.gov)

Location Engineer 3

Georgia Department of Transportation

Office of Design Policy and Support

Conceptual Design Section

404-631-1775 Office

-----Original Message-----

From: Patel, Hiral  
Sent: Tuesday, October 18, 2011 1:25 PM  
To: Concept Reports  
Subject: PI 0007169, Dawson -Revised Concept report

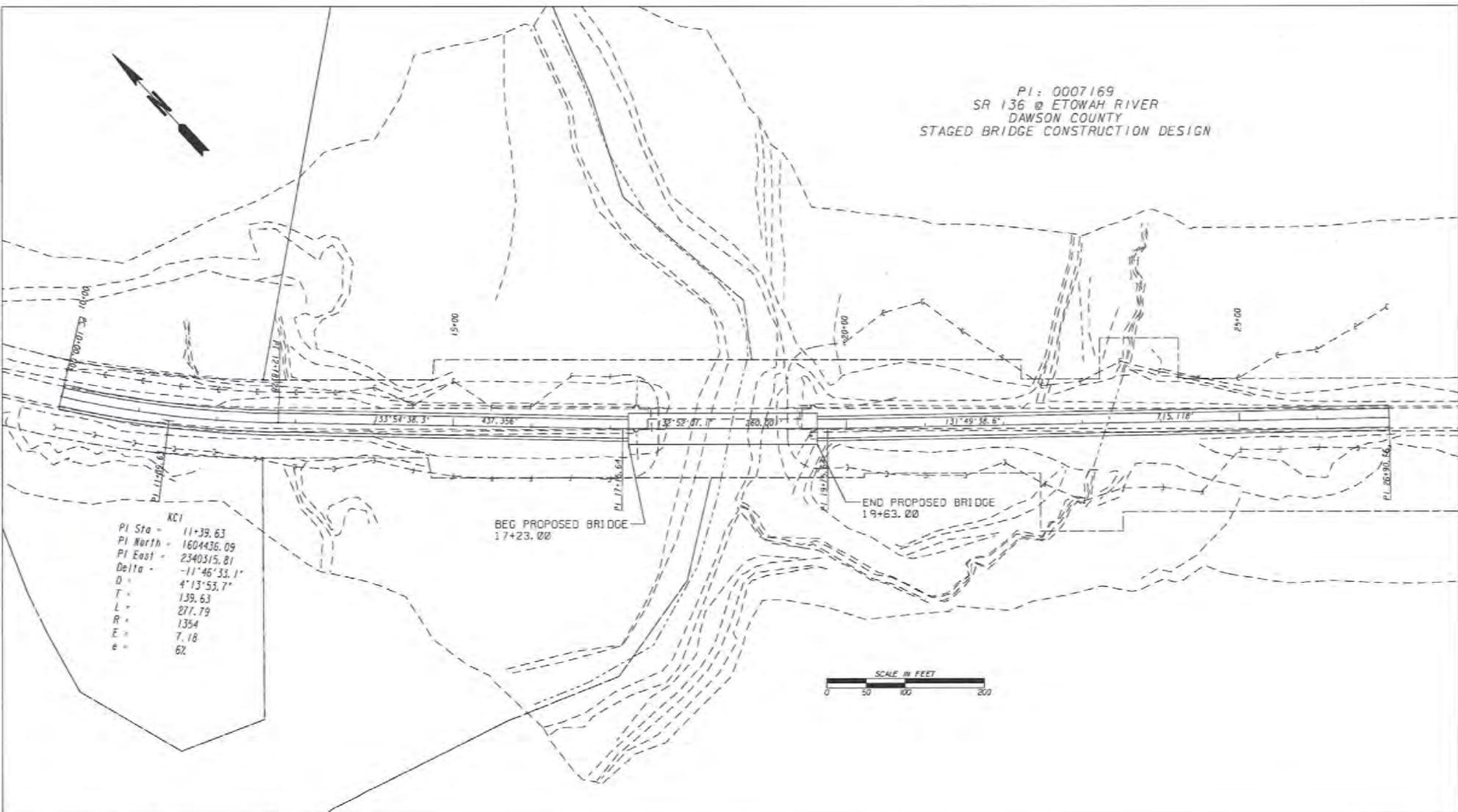
Hiral Patel, P.E.

Project Manager

Office of Program Delivery

706-601-1849

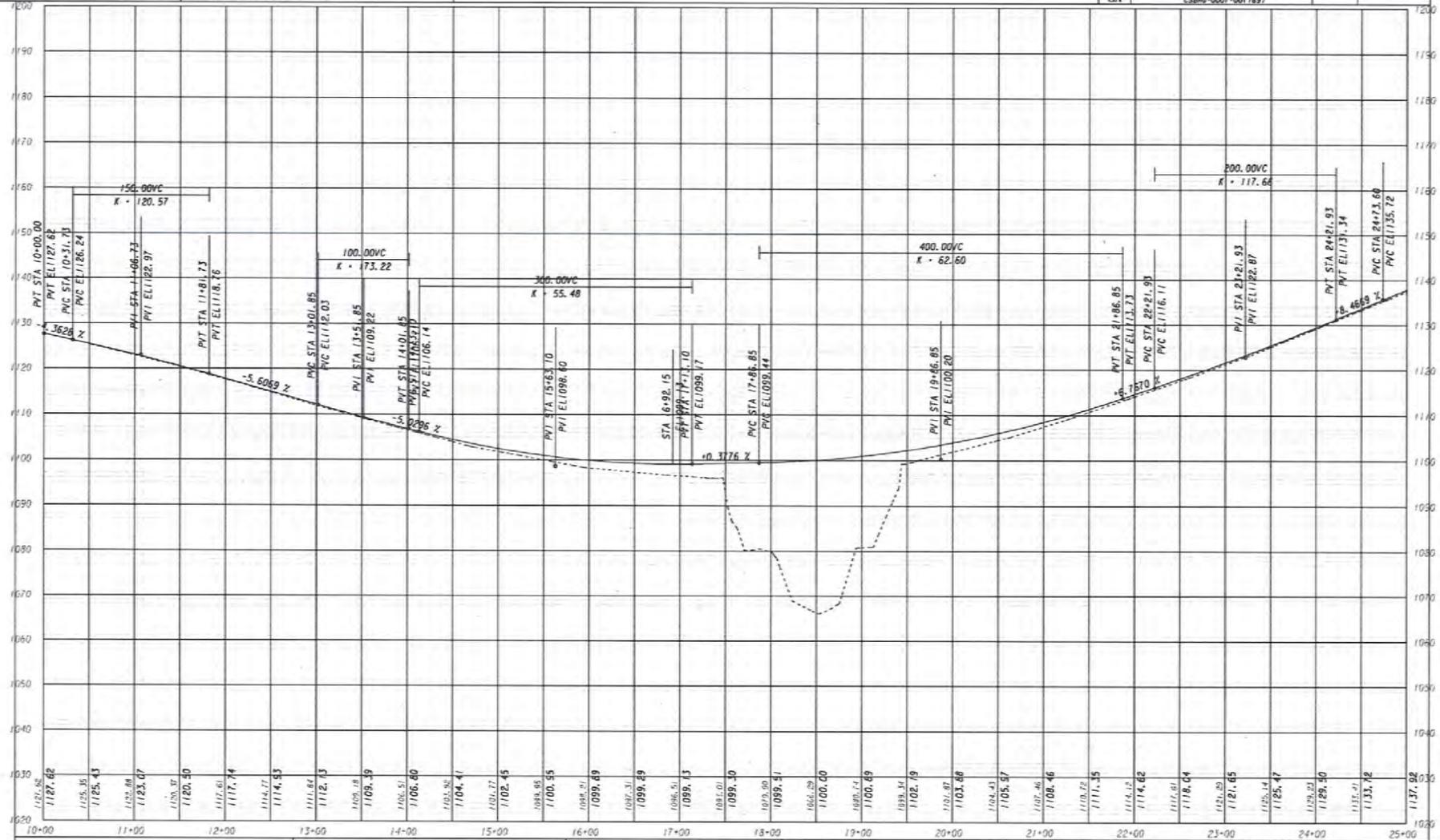
PI: 0007169  
 SR 136 @ ETOWAH RIVER  
 DAWSON COUNTY  
 STAGED BRIDGE CONSTRUCTION DESIGN



KCI

PI Sta	=	11+39.63
PI North	=	1604436.09
PI East	=	2340315.81
Delta	=	-11°46'33.1"
D	=	4'13'53.7"
T	=	139.63
L	=	277.79
R	=	1354
E	=	7.18
e	=	62





1250 1200 1150 1100 1050 1000 950 900 850 800 750 700 650 600 550 500 450 400 350 300 250 200 150 100 50 0

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00 24+00 25+00

GDOT DISTRICT 1

STATE OF GEORGIA  
 DEPARTMENT OF TRANSPORTATION  
 OFFICE: DISTRICT ONE DESIGN  
 MAINLINE PROFILE  
 SR 136 • ETOWAH RV

REVISION DATES


15-01

### ALLOWABLE RANGES TABLE

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

#### A. NORMAL CROWN

SECTION WITH GRADES 0.5% OR GREATER	SECTION WITH GRADES LESS THAN 0.5%
0.0150 FT/FT - MINIMUM	0.0150 FT/FT - MINIMUM
0.0200 FT/FT - DESIRABLE	0.0250 FT/FT - DESIRABLE
0.0250 FT/FT - MAXIMUM	0.0300 FT/FT - MAXIMUM

#### B. SUPERELEVATION RATE

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

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

	RATE OF CHANGE	CONSPICUOUS DIFFERENCE IN GRADE BETWEEN PIVOT POINT AND EDGE OF PAVEMENT
MINIMUM	1:150	0.075
DESIRABLE	1:200	0.05%
MAXIMUM	1:300	0.03%

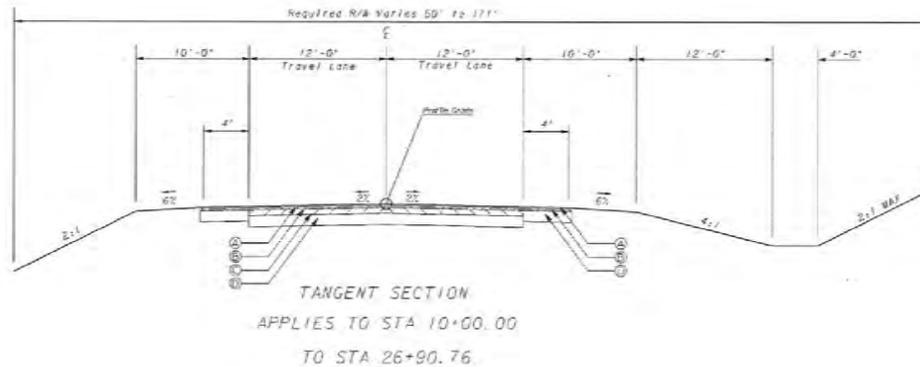
LENGTH SHALL BE SET TO AVOID CREATING A FLAT BUTTER GRADE ON LOW SIDE, AND TO AVOID FLAT CROSS SLOPES AT OR NEAR THE LOW POINT OF VERTICAL CURVES.

#### D. POSITIONING OF SUPERELEVATION TRANSITION LENGTH ON SIMPLE CURVES

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

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

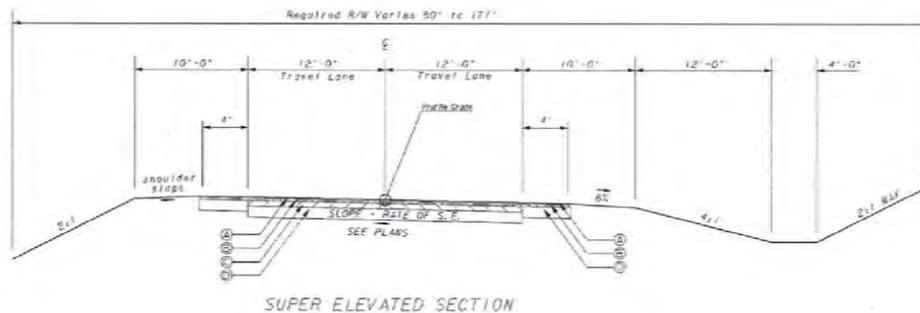
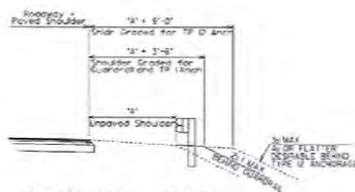
#### E. SMOOTHING OF GRADES IN EDGE PROFILE AT BEGIN AND END OF TRANSITION SHALL BE ACCOMPLISHED BY VERTICAL CURVE WITH A MINIMUM LENGTH 1/4 FEET EQUAL TO THE SPEED DESIGN 1/4 MPH.



S. E. RATE	Shoulder Slope
2.0% OR 3.0%	4.0%
4.0% OR 5.0%	2.0%
6.0% OR 7.0%	1.0%
8.0% -	0.0%

- Ⓐ 9.5 mm SUPERPAVE, TYPE II, GP 2 ONLY, INCL BITUM MATL AND H LIME, 135 LB/SY
- Ⓑ 19 mm SUPERPAVE, GP 1 OR II, INCL BITUM MATL AND H LIME, 220 LB/SY
- Ⓒ 25 mm SUPERPAVE, GP 1 OR II, INCL BITUM MATL AND H LIME, 380 LB/SY
- Ⓓ GRADED AGGREGATE BASE COURSE, INCL MATL, 12 IN

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

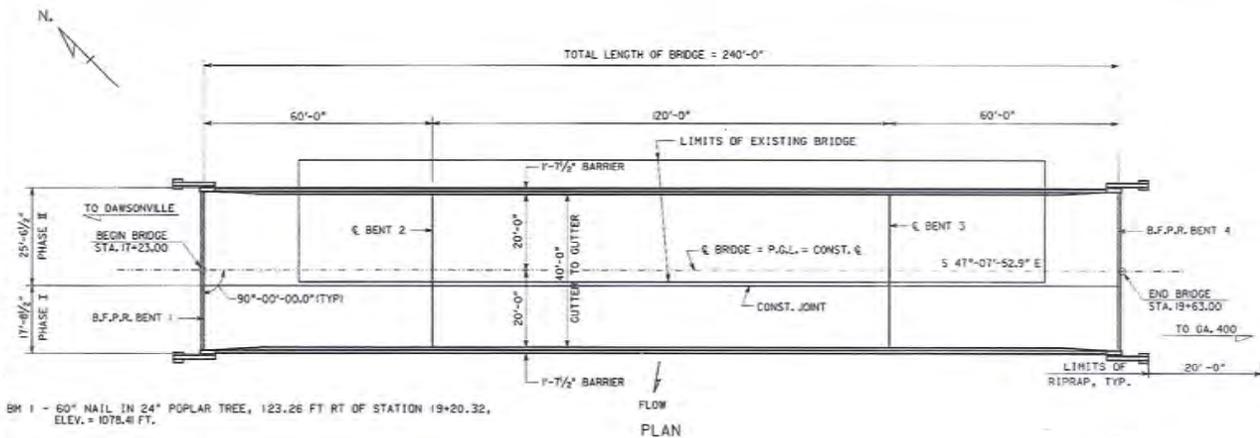


NOTE: NOT TO SCALE

#### REVISION DATES

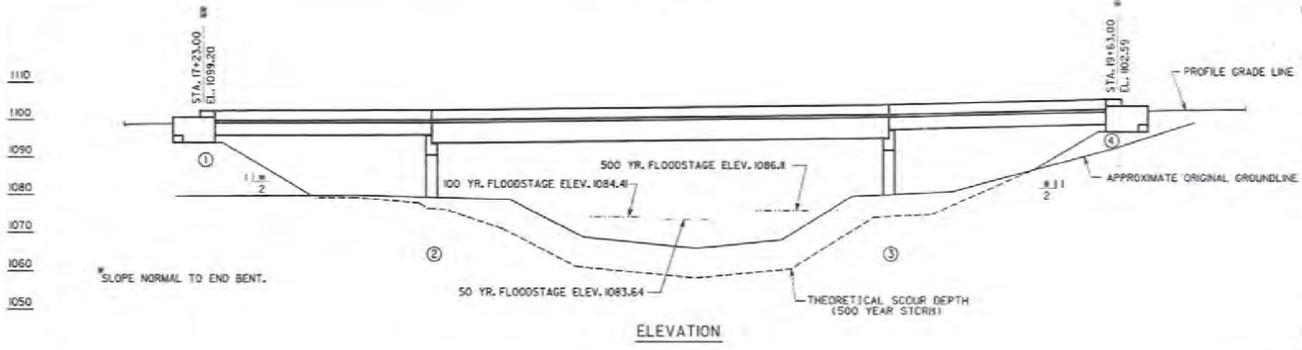

STATE OF GEORGIA  
DEPARTMENT OF TRANSPORTATION  
OFFICE: DISTRICT ONE DESIGN  
**TYPICAL SECTIONS**

SR 136 @ ETOWAH RIVER

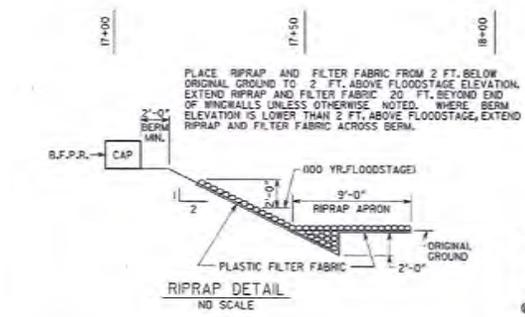


BH 1 - 60" NAIL IN 24" POPLAR TREE, 123.26 FT RT OF STATION 19+20.32, ELEV. = 1078.41 FT.

PLAN



ELEVATION



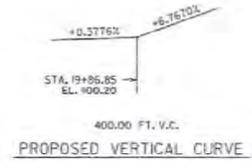
RIPRAP DETAIL  
NO SCALE

BERM ELEVATIONS	
END BENT	ELEVATIONS
1 LT. & RT.	1082.60
4 LT. & RT.	1095.89

NOTE: FOR BRIDGE ENROLL STAKING PURPOSES ONLY.

SPECIFICATIONS ----- AASHTO 17TH EDITION, 2002  
(DESIGNED FOR SEISMIC PERFORMANCE CATEGORY B)  
TYPICAL HS20-44 AND/OR MILITARY LOADING ----- IMPACT ALLOWED  
FUTURE PAVING ALLOWANCE ----- 30 LBS PER SQ FT

BENT LOCATION	THEORETICAL SCOUR DEPTHS (FT)					
	100 YEAR STORM			500 YEAR STORM		
	GENERAL	LOCAL	TOTAL	GENERAL	LOCAL	TOTAL
BENT 2	0.0	2.6	2.6	0.6	3.0	3.6
BENT 3	0.0	5.4	5.4	0.0	5.7	5.7



PROPOSED VERTICAL CURVE

PROPOSED BRIDGE CONSISTS OF

- 1 - 120'-0" BULB TEE, G3 IN, PSC BEAM SPAN ----- SPECIAL DESIGN
- 2 - 60'-0" TYPE II PSC BEAM SPANS ----- SPECIAL DESIGN
- 2 - PILE END BENTS ----- SPECIAL DESIGN
- 2 - CONCRETE INTERMEDIATE BENTS ----- SPECIAL DESIGN
- 24" TYPE I RIP RAP

NOTES

- CROSS-SLOPE - THE PROPOSED BRIDGE DECK IS TO BE BUILT ON A NORMAL CROWN OF 2.0%.
- BENT LAYOUT - ALL BENTS ARE PARALLEL TO BENT 1.
- BEAM ELEVATION - MINIMUM BOTTOM OF BEAM ELEVATION FOR PROPOSED BRIDGE SHALL BE NO LOWER THAN ELEVATION 1087.11.
- TRAFFIC CONTROLS - TRAFFIC TO BE MAINTAINED ON EXISTING BRIDGE DURING PROPOSED CONSTRUCTION.
- FILL REMOVAL - REMOVE EXISTING ROADWAY FILL FROM THE ENDS OF THE EXISTING BRIDGE TO THE WEDGERS WITH THE NEW ALIGNMENT.
- USGS STREAM FLOW GAGE - CONTACT CHRIS SMITH OR BRIAN MCCALLUM OF THE USGS REGIONAL OFFICE IN ATLANTA AT (770)903-3115 AND (770)903-3127 RESPECTIVELY FOR THE REMOVAL AND RESETTING OF THE STREAM GAGE ATTACHED TO THE DOWNSTREAM FACE OF THE EXISTING BRIDGE.
- DECK DRAINS - DECK DRAINS TO BE ELIMINATED.

DRAINAGE AREA	DRAINAGE DATA			
	TOTAL	MEAN DISCHARGE	VELOCITY UNDER FLOODSTAGE	AREA OF OPENING
57.3 SQ MILES				
FLOOD FREQUENCY				BACKWATER
50 YEAR	7,580 CFS	4.75 FPS	1,597 SQ FT	0.20 FT
100 YEAR	8,480 CFS	5.80 FPS	1,733 SQ FT	0.25 FT
500 YEAR	10,600 CFS	6.38 FPS	2,060 SQ FT	0.36 FT

TRAFFIC DATA

TRAFFIC ----- ADT = 4,250 (2012)  
ADT = 7,000 (2032)  
DESIGN SPEED ----- 55 MPH  
TRUCKS ----- 4 %  
24 HR TRUCKS ----- 6 %  
DIRECTIONAL ----- 60 %

EXISTING UTILITIES

PHONE LINE DOWNSTREAM SIDE OF EXISTING BRIDGE  
USGS STREAM GAGE ATTACHED TO DOWNSTREAM FACE OF EXISTING BRIDGE

REVISION: REVISED AND REWORKED BY JAB 10/17/11

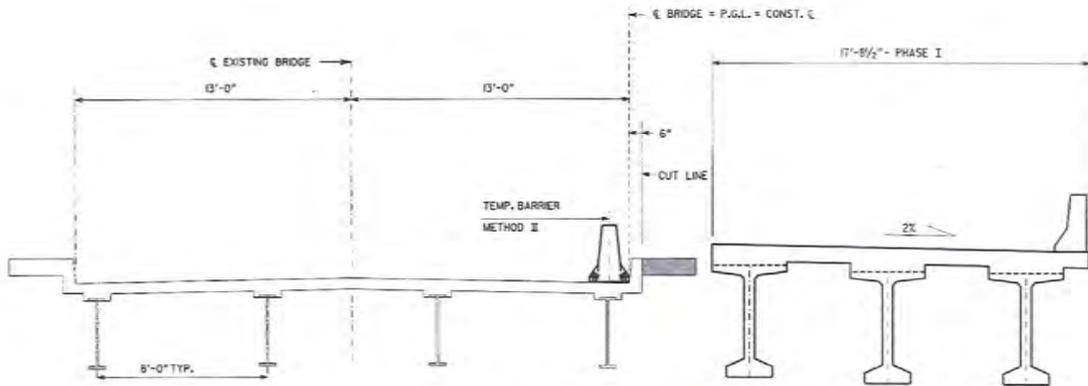
BRIDGE NO. 1

EXISTING BRIDGE SERIAL NO. 085-0018-0  
EXISTING BRIDGE I.D. NO. 085-001360-023.00E  
P.I. NO. 0007169

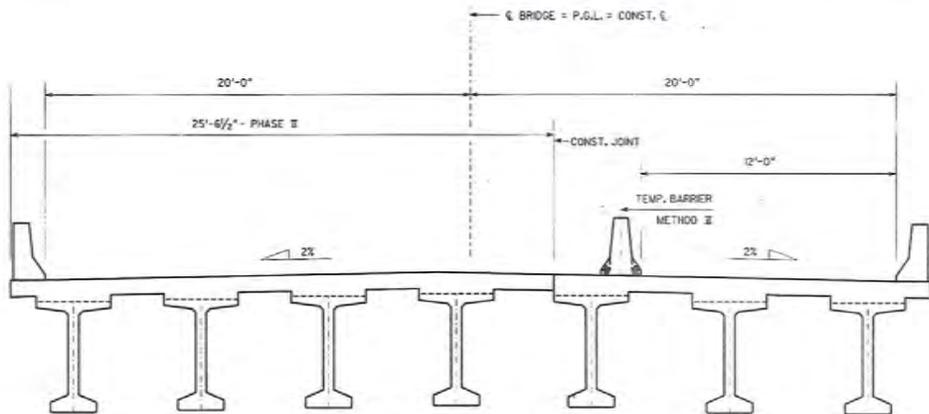
PRELIMINARY LAYOUT  
PROJECT : CSBRG-0007-00(169)  
NAME : S.R. 136 OVER ETOWAH RIVER  
DAWSON CO.

DRAWN BY : JMC  
DATE : JANUARY 2011  
SCALE : 1" = 15'-0"

PREPARED BY : JAB



■ DENOTES PORTION OF EXISTING BRIDGE TO BE REMOVED FOR PHASE I



**PROPOSED TYPICAL SECTIONS**

LOOKING AHEAD  
(SPAN 2 SHOWN)  
SPANS 1 & 3 SIMILAR  
NO SCALE

**CONSTRUCTION SEQUENCE**

1. PLACE TEMPORARY SHORING AS NECESSARY.
2. PLACE TEMPORARY BARRIER AS SHOWN. MAINTAIN 2 - 10'-0" TRAFFIC LANES ON EXISTING BRIDGE.
3. REMOVE PORTION OF EXISTING BRIDGE AS SHOWN.
4. BUILD PHASE I ACCORDING TO PLANS.
5. PLACE TEMPORARY BARRIER ON NEW PORTION OF BRIDGE. SHIFT TRAFFIC TO PHASE I ACCORDING TO PLANS, MAINTAINING 1 - 10'-0" TRAFFIC LANE TO BE CONTROLLED WITH TRAFFIC SIGNAL.
6. REMOVE REMAINING PORTION OF EXISTING BRIDGE.
7. COMPLETE PHASE II CONSTRUCTION ACCORDING TO PLANS.
8. REMOVE TEMPORARY BARRIER FROM BRIDGE, OPEN COMPLETED BRIDGE TO TRAFFIC.

THE AFOREMENTION SEQUENCE SHALL BE COORDINATED WITH ROADWAY OPERATIONS, SEE ROADWAY PLANS. IN LIEU OF THE ABOVE CONSTRUCTION SEQUENCE, THE CONTRACTOR MAY SUBMIT A PROPOSED CONSTRUCTION SEQUENCE FOR APPROVAL.

REVISIONS & REVISED AND REMARKS BY: JAB 02/21/11

BRIDGE NO. 1	
EXISTING BRIDGE SERIAL NO. 085-0018-0	
EXISTING BRIDGE I.D. NO. 085-001360-023.00E	
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SHEET 2 OF 2