

D.O.T. 66

DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

**FILE** P. I. No. 671225-, Bartow County **OFFICE** Preconstruction  
BRZLB-15(17)  
CR 851/Harden Bridge Road Bridge Improvement **DATE** March 20, 2006  
**FROM** *Cybil Yarnall*  
Margaret B. Pirkle, P.E., Assistant Director of Preconstruction  
**TO** *MBP* SEE DISTRIBUTION

**SUBJECT APPROVED REVISED PROJECT CONCEPT REPORT**

Attached for your files is the approval for subject project.

MBP/cj

Attachment

DISTRIBUTION:

Brian Summers  
Harvey Keeper  
Ken Thompson  
Jamie Simpson  
Michael Henry  
Keith Golden  
Joe Palladi (file copy)  
Babs Abubakari  
Kent Sager  
BOARD MEMBER



# REVISED PROJECT CONCEPT REPORT

**Need and Purpose:** The existing structure is narrow, structurally deficient, and does not meet current design standards. This structure carries a county road that is a collector route and a school bus route.

**Project location:** Bridge replacement over Etowah River on Harden Bridge Road / County Road 851. The proposed length of project is 0.27 miles.

**Description of the approved concept:**

**PDP Classification:** Major ( ) Minor (X)

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

**Functional Classification:** Rural Minor Collector

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

**State Route Number(s):** N/A

**Traffic (AADT) as shown in the approved concept:**

Current Year: 1,000 (2005) Design Year: 1,400 (2025)

- **Proposed features to be revised:** The typical section, as shown in the current concept report, shows a 2 lane roadway with 12ft lanes and 6ft shoulders. Because of the addition of bike shoulders to the project, the shoulders will need to be 10ft. The original length of project is stated to be 0.27 miles. The length of project needed to be increased to 0.45 miles due to the elevation of the proposed bridge.

**Describe the revised feature(s) to be approved:** The new typical section will have 2 - 12ft lanes with 10ft shoulders. The beginning and ending mile points will be 2.83 and 3.28, respectively.

**Updated traffic data (AADT):**

Current Year: 2,900 (2008) Design Year: 4,640 (2028)

**Programmed/Schedule:**

P.E. 2000

R/W: LOCAL

Construction: 2007

**Revised cost estimates:**

1. Construction cost including inflation and E&C,
2. Right-of-way, and
3. Utilities

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

There will be no difference between the Concept and the Model Description.

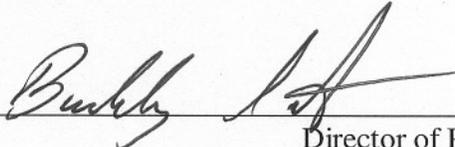
**Recommendation:** I recommend that the Typical Section be revised to allow for the addition of bike shoulders.

Attachments:

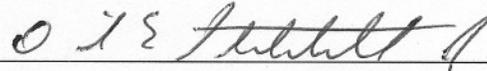
1. Sketch Map,  
2. Cost Estimate,  
3. Typical Section

• **Exempt projects**

Concur:

  
Director of Preconstruction

Approve:

  
Chief Engineer

## Estimate Report for file "671225"

### Section ROADWAY

| Item Number               | Quantity | Units | Unit Price | Item Description  | Cost                |
|---------------------------|----------|-------|------------|---|---------------------|
| 150-1000                  | 1        | LS    | 81385.76   | TRAFFIC CONTROL - BRZLB-15(17)                                | 81385.76            |
| 210-0100                  | 1        | LS    | 459800.00  | GRADING COMPLETE -  | 459800.00           |
| 310-1101                  | 5272     | TN    | 13.87      | GR AGGR BASE CRS, INCL MATL                                   | 73122.64            |
| 318-3000                  | 500      | TN    | 15.63      | AGGR SURF CRS   | 7815.00             |
| 402-3110                  | 825      | TN    | 38.34      | RECYCLED ASPH CONC 9.5 MM SUPERPAVE,<br>GP 1 OR 2, INCL BITUM | 31630.50            |
| 402-3112                  | 1007     | TN    | 45.62      | RECYCLED ASPH CONC 19 MM SUPERPAVE,<br>GP 1 OR 2, INCL BITUM  | 45939.34            |
| 402-3121                  | 1510     | TN    | 36.68      | RECYCLED ASPH CONC 25 MM SUPERPAVE,<br>GP 1 OR 2, INCL BITUM  | 55386.80            |
| 413-1000                  | 220      | GL    | 0.96       | BITUM TACK COAT   | 211.20              |
| 550-2150                  | 104      | LF    | 21.99      | SIDE DRAIN PIPE, 15 IN, H 1-10                                | 2286.96             |
| 550-3415                  | 8        | EA    | 341.88     | SAFETY END SECTION 15 IN, SIDE DRAIN,<br>4:1 SLOPE            | 2735.04             |
| 573-2006                  | 1800     | LF    | 11.52      | UNDDR PIPE INCL DRAINAGE AGGR, 6 IN                           | 20736.00            |
| 641-1100                  | 44       | LF    | 29.87      | GUARDRAIL, TP T   | 1314.28             |
| 641-1200                  | 1256     | LF    | 12.66      | GUARDRAIL, TP W   | 15900.96            |
| 641-5001                  | 5        | EA    | 453.70     | GUARDRAIL ANCHORAGE, TP 1                                     | 2268.50             |
| 641-5005                  | 3        | EA    | 535.63     | GUARDRAIL ANCHORAGE, TP 5                                     | 1606.89             |
| <b>Section Sub Total:</b> |          |       |            |   | <b>\$802,139.87</b> |

### Section SIGNING & MARKING

| Item Number               | Quantity | Units | Unit Price | Item Description                                 | Cost              |
|---------------------------|----------|-------|------------|--|-------------------|
| 636-1031                  | 25       | SF    | 17.32      | HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING<br>TP 6  | 433.00            |
| 636-2070                  | 52       | LF    | 6.82       | GALV STEEL POSTS, TP 7                           | 354.64            |
| 652-0094                  | 8        | EA    | 39.23      | PAVEMENT MARKING, SYMBOL, TP 4                   | 313.84            |
| 652-0110                  | 8        | EA    | 38.59      | PAVEMENT MARKING, ARROW, TP 1                    | 308.72            |
| 652-5301                  | 9660     | LF    | 0.16       | SOLID TRAF STRIPE, 6 IN, WHITE                   | 1545.60           |
| 653-1502                  | 4830     | LF    | 0.23       | THERMOPLASTIC SOLID TRAF STRIPE, 5 IN,<br>YELLOW | 1110.90           |
| <b>Section Sub Total:</b> |          |       |            |  | <b>\$4,066.70</b> |

### Section TEMPORARY EROSION CONTROL

| Item Number               | Quantity | Units | Unit Price | Item Description                                  | Cost               |
|---------------------------|----------|-------|------------|---|--------------------|
| 163-0232                  | 2        | AC    | 479.26     | TEMPORARY GRASSING                                | 1198.15            |
| 163-0240                  | 72       | TN    | 199.33     | MULCH   | 14351.76           |
| 163-0300                  | 2        | EA    | 1119.64    | CONSTRUCTION EXIT                                 | 2239.28            |
| 163-0501                  | 4        | EA    | 676.42     | CONSTRUCT AND REMOVE SILT CONTROL<br>GATE, TP 1   | 2705.68            |
| 163-0530                  | 1750     | LF    | 2.64       | CONSTRUCT AND REMOVE BALED STRAW<br>EROSION CHECK | 4620.00            |
| 165-0010                  | 760      | LF    | 0.90       | MAINTENANCE OF TEMPORARY SILT FENCE,<br>TP A      | 684.00             |
| 165-0030                  | 1550     | LF    | 1.18       | MAINTENANCE OF TEMPORARY SILT FENCE,<br>TP C      | 1829.00            |
| 165-0050                  | 650      | LF    | 2.16       | MAINTENANCE OF SILT RETENTION BARRIER             | 1404.00            |
| 165-0070                  | 875      | LF    | 1.44       | MAINTENANCE OF BALED STRAW EROSION<br>CHECK       | 1260.00            |
| 165-0085                  | 4        | EA    | 296.69     | MAINTENANCE OF SILT CONTROL GATE, TP 1            | 1186.76            |
| 165-0101                  | 2        | EA    | 357.89     | MAINTENANCE OF CONSTRUCTION EXIT                  | 715.78             |
| 170-1000                  | 650      | LF    | 11.35      | FLOATING SILT RETENTION BARRIER                   | 7377.50            |
| 171-0010                  | 1520     | LF    | 1.82       | TEMPORARY SILT FENCE, TYPE A                      | 2766.40            |
| 171-0030                  | 3100     | LF    | 3.10       | TEMPORARY SILT FENCE, TYPE C                      | 9610.00            |
| <b>Section Sub Total:</b> |          |       |            |   | <b>\$51,948.31</b> |

### Section EROSION CONTROL

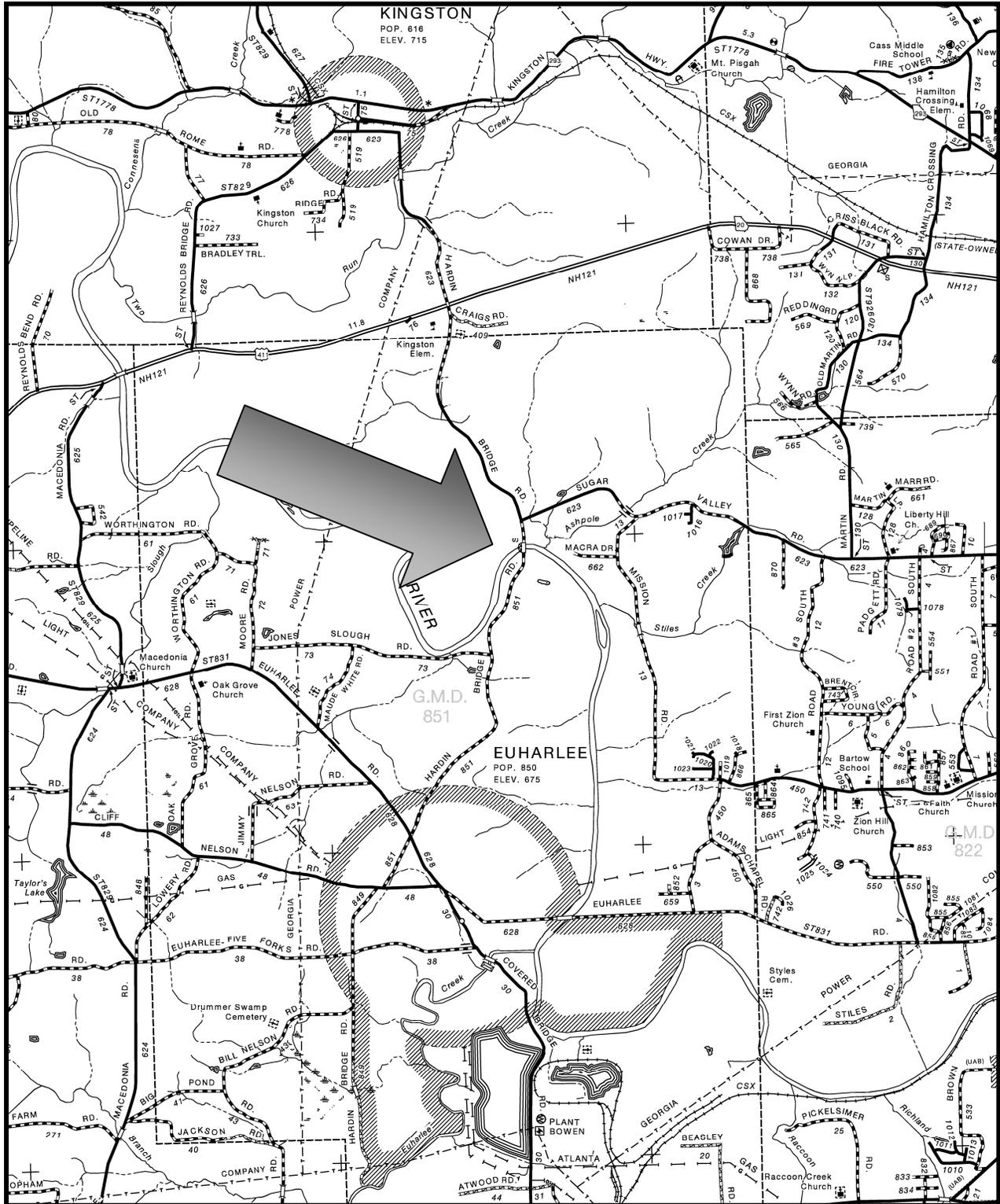
| Item Number               | Quantity | Units | Unit Price | Item Description                | Cost               |
|---------------------------|----------|-------|------------|---------------------------------|--------------------|
| 603-2018                  | 1580     | SY    | 37.10      | STN DUMPED RIP RAP, TP 1, 18 IN | 58618.00           |
| 603-7000                  | 1580     | SY    | 4.05       | PLASTIC FILTER FABRIC           | 6399.00            |
| 700-6910                  | 5        | AC    | 763.82     | PERMANENT GRASSING              | 3819.10            |
| 700-7000                  | 13       | TN    | 56.37      | AGRICULTURAL LIME               | 732.81             |
| 700-7010                  | 20       | GL    | 18.81      | LIQUID LIME                     | 376.20             |
| 700-8000                  | 5        | TN    | 249.21     | FERTILIZER MIXED GRADE          | 1246.05            |
| 700-8100                  | 238      | LB    | 1.43       | FERTILIZER NITROGEN CONTENT     | 340.34             |
| 716-2000                  | 1        | SY    | 1.13       | EROSION CONTROL MATS, SLOPES    | 1.38               |
| <b>Section Sub Total:</b> |          |       |            |                                 | <b>\$71,532.88</b> |

| <b>Section BRIDGE</b>     |          |       |            |                              |                     |
|---------------------------|----------|-------|------------|------------------------------|---------------------|
| Item Number               | Quantity | Units | Unit Price | Item Description             | Cost                |
| XXXX                      | 12267    | SF    | 65.00      | CR 851 BRIDGE @ ETOWAH RIVER | 797355.00           |
| <b>Section Sub Total:</b> |          |       |            |                              | <b>\$797,355.00</b> |

**Total Estimated Cost: \$1,727,042.76**

|                                   |                       |
|-----------------------------------|-----------------------|
| <b>Subtotal Construction Cost</b> | <b>\$1,727,042.76</b> |
| E&C Rate 10.0 %                   | \$172,704.28          |
| Inflation Rate 5.0 % @ 3.0 Years  | \$299,447.63          |
| <b>Total Construction Cost</b>    | <b>\$2,199,194.66</b> |
| Right Of Way                      | \$0.00                |
| ReImb. Utilities                  | \$0.00                |
| <b>Grand Total Project Cost</b>   | <b>\$2,199,194.66</b> |

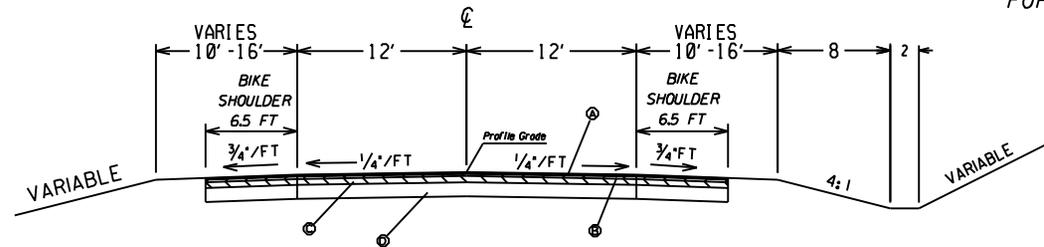
# PROJECT LOCATION



|       |                |             |
|-------|----------------|-------------|
| STATE | PROJECT NUMBER | SHEET TOTAL |
| GA.   | BRZLB-15(17)   | NO. SHEETS  |

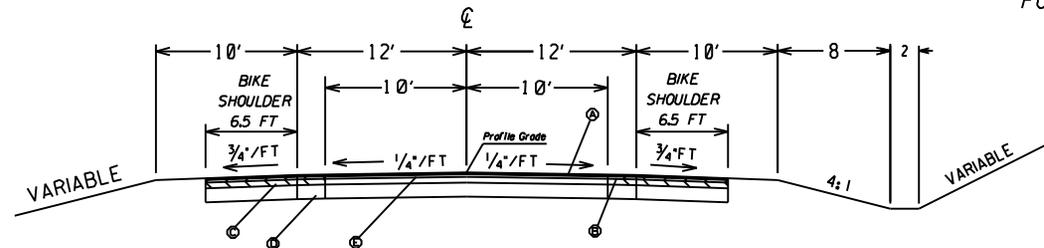
**TYPICAL SECTION 1**  
**HARDEN BRIDGE ROAD/ COUNTY ROAD 851**  
 NO SCALE

NOTE: SEE GA. STD 9028C FOR SUPER ELEVATION



STATIONS  
 19+00 - 20+99.94  
 24+47.94 - 26+30

NOTE: SEE GA. STD 9028C FOR SUPER ELEVATION

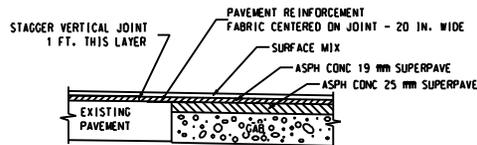


STATIONS  
 11+00 - 12+50

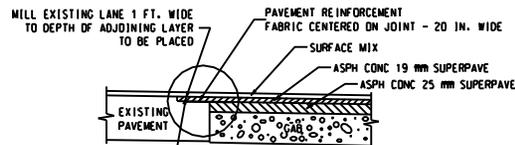
- Ⓐ ASPHALTIC CONCRETE 9.5 mm SUPERPAVE, TYPE 2, BLEND (INCL BITUM MATL & H-LINE. ( 135 LB/YD<sup>3</sup> )
- Ⓑ ASPHALTIC CONCRETE 19 mm SUPERPAVE, GP 1 OR 2, INCL MATL & H-LINE. ( 220 LB/YD<sup>3</sup> )
- Ⓒ ASPHALTIC CONCRETE 25 mm SUPERPAVE, GP 1 OR 2, INCL MATL & H-LINE. ( 330 LB/YD<sup>3</sup> )
- Ⓓ GRADED AGGREGATE BASE CRS, INCL MATL. 8"
- Ⓔ RECYCLED ASPH CONC LEVELING INC BITUM MATL & H-LINE (AS DIRECTED BY THE ENGINEER)

**DETAIL "A"**

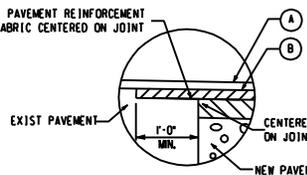
TYPICAL SECTION DETAIL TO BE USED WHEN EXISTING PAVEMENT IS TO BE RESURFACED WITH 2 INCHES OR MORE OF ASPHALTIC CONCRETE



TYPICAL SECTION DETAIL TO BE USED WHEN EXISTING PAVEMENT IS TO BE RESURFACED WITH LESS THAN 2 INCHES OF ASPHALTIC CONCRETE



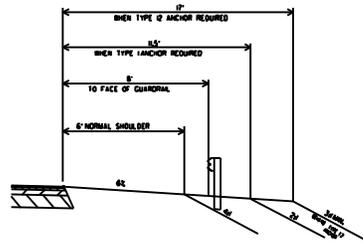
COST OF MILLING FOR THIS WORK TO BE INCLUDED IN THE UNIT PRICE BID FOR PAVEMENT REINFORCING FABRIC



| DATE | REVISIONS | DATE | REVISIONS |
|------|-----------|------|-----------|
|      |           |      |           |
|      |           |      |           |
|      |           |      |           |
|      |           |      |           |

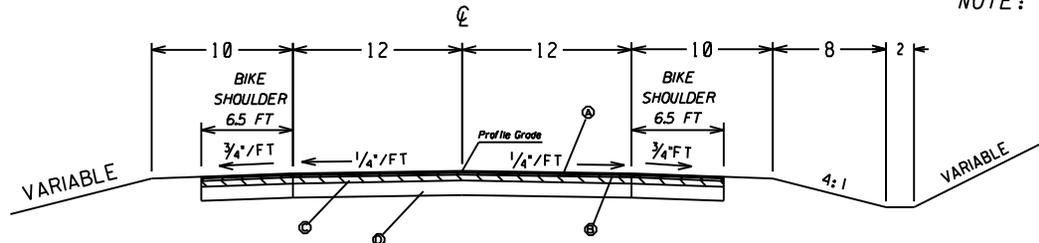
GEORGIA  
 DEPARTMENT OF TRANSPORTATION  
 TYPICAL SECTION  
 SHEET 2 OF 2  
 NO SCALE

|       |                |             |
|-------|----------------|-------------|
| STATE | PROJECT NUMBER | SHEET TOTAL |
| GA.   | BRZLB-15(17)   | NO. SHEETS  |



SHOULDER SECTION W/ GUARDRAIL  
SEE PLAN FOR LOCATION

TYPICAL SECTION 1  
HARDEN BRIDGE ROAD/ COUNTY ROAD 851  
NO SCALE

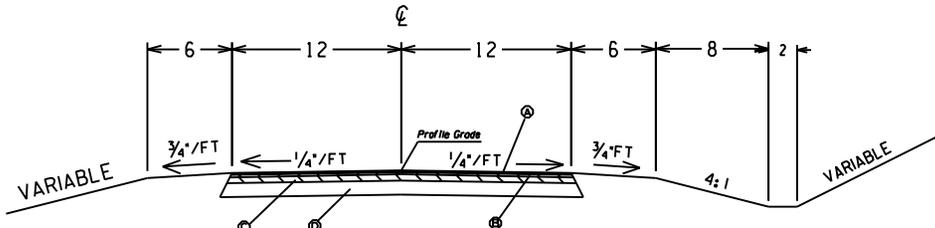


NOTE: SEE GA. STD 9028C  
FOR SUPER ELEVATION

STATIONS  
13+00 - 19+00  
26+30 - 33+50

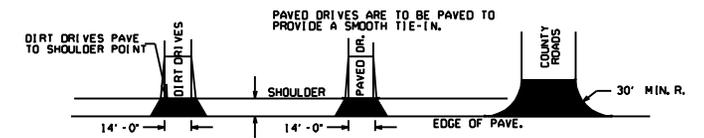
- Ⓐ ASPHALTIC CONCRETE 9.5 mm SUPERPAVE, TYPE 2, BLEND (INCL BITUM MATL & H-LIME. ( 135 LB/YD<sup>3</sup> )
- Ⓑ ASPHALTIC CONCRETE 19 mm SUPERPAVE, GP 1 OR 2, INCL MATL & H-LIME. ( 220 LB/YD<sup>3</sup> )
- Ⓒ ASPHALTIC CONCRETE 25 mm SUPERPAVE, GP 1 OR 2, INCL MATL & H-LIME. ( 330 LB/YD<sup>3</sup> )
- Ⓓ GRADED AGGREGATE BASE CRS, INCL MATL. 8'

TYPICAL SECTION 2  
SUGER VALLEY ROAD  
NO SCALE



STATIONS  
50+00 - 50+47.11

- ASPHALTIC DRIVES: ASPH. CONC. 9.5 mm = 1/2" ( 165 LB/YD<sup>3</sup> )  
GRADE AGG. BASE- APPROX. 6"
- CONCRETE DRIVES: DRIVEWAY CONC. - APPROX. 4"
- EARTH DRIVES: GRADE AGG. BASE- APPROX. 6"



ALLOWABLE RANGES TABLE

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

A. NORMAL CROWN

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

B. SUPERELEVATION RATE

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

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

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

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

D. POSITIONING OF SUPERELEVATION TRANSITION LENGTH ON SIMPLE CURVES

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

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

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

| SLOPE CONTROLS |          |
|----------------|----------|
| SLOPE          | FILL     |
| 4:1 OR FLATTER | 0' - 10' |
| 2:1            | OVER 10' |

SLOPES MAY BE ADJUSTED BY THE ENGINEER TO STAY WITHIN THE REQUIRED RIGHT-OF-WAY OR EASEMENTS

GUARDRAIL SHALL BE REQUIRED ON FILL SLOPES STEEPER THAN 3:1

| DATE | REVISIONS | DATE | REVISIONS |
|------|-----------|------|-----------|
|      |           |      |           |
|      |           |      |           |
|      |           |      |           |
|      |           |      |           |

GEORGIA  
DEPARTMENT OF TRANSPORTATION  
TYPICAL SECTION  
SHEET 1 OF 2  
NO SCALE