

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

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

FILE P.I. # 0011681

OFFICE Design Policy & Support

Crawford County
GDOT District 3 - Thomaston
SR 22 Culvert Replacement @ Bailey Branch

DATE 2/28/2014

*corrected 05/27/2014
(see page 4) (DKP)*

FROM *for [Signature]* Brent Story, State Design Policy Engineer

TO SEE DISTRIBUTION

SUBJECT APPROVED CONCEPT REPORT

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

Attachment

DISTRIBUTION:

Glenn Bowman, Director of Engineering
Joe Carpenter, Director of P3/Program Delivery
Genetha Rice-Singleton, Assistant Director of P3/Program Delivery
Albert Shelby, State Program Delivery Engineer
Bobby Hilliard, Program Control Administrator
Cindy VanDyke, State Transportation Planning Administrator
Hiral Patel, State Environmental Administrator
Ben Rabun, State Bridge Engineer
Kathy Zahul, State Traffic Engineer
Angela Robinson, Financial Management Administrator
Lisa Myers, State Project Review Engineer
Charles "Chuck" Hasty, State Materials Engineer
Mike Bolden, State Utilities Engineer
Jeff Fletcher, Statewide Location Bureau Chief
Andy Casey, State Roadway Design Engineer
Attn: Jason Mobley, Design Group Manager
Thomas Howell, District Engineer
Dan Pass, District Preconstruction Engineer
Kerry Gore, District Utilities Engineer
Sue Anne Decker, Project Manager
BOARD MEMBER - 2nd Congressional District

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
PROJECT CONCEPT REPORT**

Project Type: Culvert Replacement
 GDOT District: 3
 Federal Route Number: 80

P.I. Number: 0011681
 County: Crawford
 State Route Number: 22

Replacing a culvert along 0.40 miles of SR 22/US 80 at Bailey Branch about 8 miles west of Roberta.

Submitted for approval: [Signature]

District Engineer

12/11/13
DATE

[Signature]

State Program Delivery Engineer

12/19/2013
DATE

[Signature]

GDOT Project Manager

12/16/13
DATE

Recommendation for approval:

Program Control Administrator

DATE

GLENN BOWMAN*/EKP

1/3/2004
DATE

State Environmental Administrator

State Traffic Engineer

DATE

LISA MYERS*/EKP

1/3/2014
DATE

Project Review Engineer

DATE

JON BIRNKAMMER*/EKP

1/16/2014
DATE

FOR State Utilities Engineer

DATE

District Engineer

DATE

BEN RABUN*/EKP

2/3/2014
DATE

State Bridge Design Engineer

DATE

State Transportation Financial Management Administrator

DATE

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).

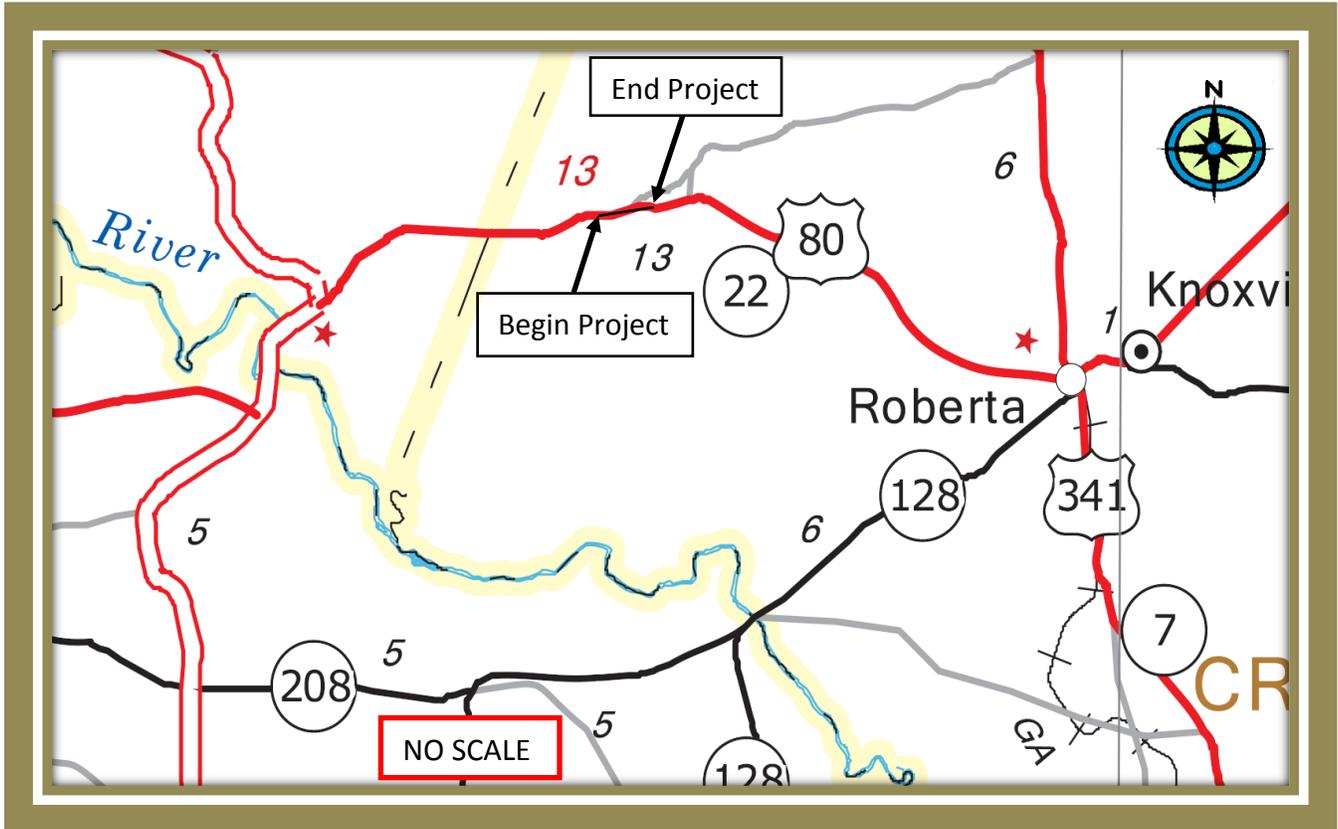
CINDY VANDYKE*/EKP

1/7/2014
DATE

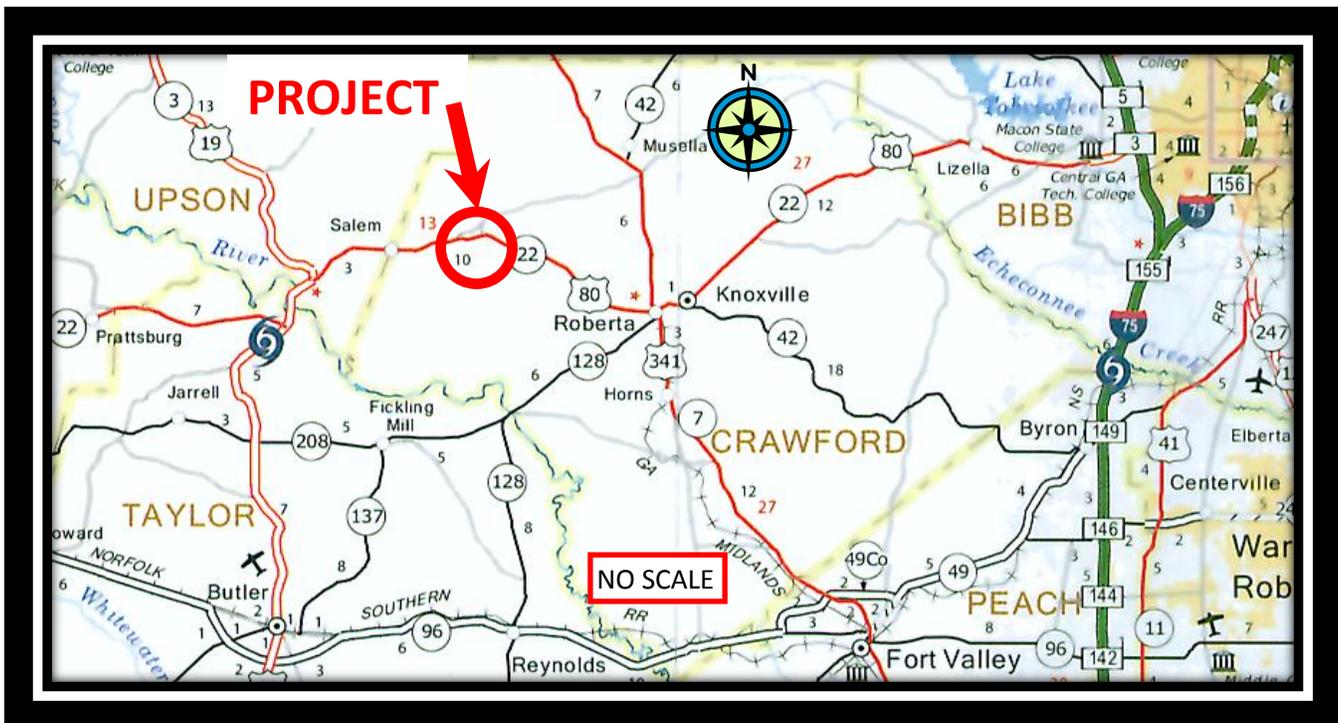
State Transportation Planning Administrator

* - RECOMMENDATION ON FILE

PROJECT LOCATION



SR 22 Culvert Replacement at Bailey Branch 8 miles west of Roberta



PLANNING AND BACKGROUND

Project Justification Statement

This culvert (Structure ID 079-0007-0; SR 22/US 80 over Bailey Branch) was built in 1936 and was extended in 1959. This is a four barrel reinforced concrete box culvert with a barrel length of 67 feet. Each barrel is seven feet high and ten feet wide. This culvert is in poor condition with concrete spalls, heavy concrete scaling and wide cracks. A portion of the culvert barrels 1, 2 and 3 have experienced settlement. The settlement issue has currently been stabilized, however the barrels of the culvert are still misaligned. Due to the structural integrity of this culvert and based on the inspection and settlement that has occurred, replacement of this culvert is recommended.

Existing conditions: This project is located on SR 22/US 80 about 8 miles west of Roberta and about 2 miles east from the Upson/Crawford County line. The culvert is in poor condition and barrel number three is failing and supports have been inserted to stop complete failure of the barrel.

MPO: N/A - Project not in MPO

MPO Project ID: N/A

Regional Commission: Middle Georgia RC

RC Project ID: N/A

Congressional District(s): 2

Federal Oversight: Full Oversight Exempt State Funded Other

Projected Traffic: ADT

Current Year (2012): 1900 Open Year (2017): 2200 Design Year (2037): 3000
Traffic Projections Performed by: GDOT Office of Planning

Functional Classification (Mainline): Rural Minor Arterial

Complete Streets - Bicycle, Pedestrian, and/or Transit Warrants:

Warrants met: None Bicycle Pedestrian Transit

Is this a 3R (Resurfacing, Restoration, & Rehabilitation) Project? No Yes

Pavement Evaluation and Recommendations

Preliminary Pavement Evaluation Summary Report Required? No Yes
Preliminary Pavement Type Selection Report Required? No Yes
Feasible Pavement Alternatives: HMA PCC HMA & PCC

DESIGN AND STRUCTURAL

Description of the proposed project: The project is located on SR 22/US 80 about 8 miles west of Roberta and about 2 miles east of the Upson/Crawford County line. This project will replace the existing culvert with a bridge that is made of reinforced concrete and steel. The bridge is 120 feet long and 40 feet wide. The new bridge will be constructed in the same location as the existing culvert and will tie in with the existing road alignment.

Major Structures:

| Structure | Existing | Proposed |
|--|---|---|
| 079-0007-0 8 Miles West of Roberta | Four span concrete culvert- 10 X 7 with a sufficiency rating of 55.60 | The bridge is 120 feet long and 40 feet wide. This bridge will be constructed with reinforced concrete and steel. |

Mainline Design Features: SR 22/US 80- Rural Minor Arterial

| Feature | Existing | Standard* | Proposed |
|---|-----------------------------|-----------------------------|--------------------------|
| Typical Section | | | |
| - Number of Lanes | 2 | N/A | 2 |
| - Lane Width(s) | 12' | 9'-12' | 12' |
| - Median Width & Type | N/A | N/A | N/A |
| - Outside Shoulder or Border Area Width | 6'-8' | 10' | 10' |
| - Outside Shoulder Slope | 2% – 6% | 6% | 6% |
| - Inside Shoulder Width | N/A | N/A | N/A |
| - Sidewalks | N/A | N/A | N/A |
| - Auxiliary Lanes | N/A | N/A | N/A |
| - Bike Lanes | N/A | N/A | N/A |
| Posted Speed | 55 MPH | | 55 MPH |
| Design Speed | >65 MPH 50mph | 65 MPH 50-60 mph | 65 MPH 55 mph |
| Min Horizontal Curve Radius | N/A | 1480 | ≥1480 |
| Maximum Superelevation Rate | NC | 8% | 8% |
| Maximum Grade | 4 % | 4% | ≤ 4% |
| Access Control | By Permit | N/A | By Permit |
| Design Vehicle | SU | SU | SU |
| Pavement Type | Asphalt | Asphalt | Asphalt |

*corrected
05/27/2014*

Major Interchanges/Intersections: N/A

Lighting required: No Yes

Transportation Management Plan [TMP] Required: No Yes
 If Yes: Project classified as: Non-Significant Significant
 TMP Components Anticipated: TTC TO PI

The traffic will be maintained by using a temporary traffic signal. This will allow one lane open to the traffic during construction to avoid an offsite detour.

HSM: GDOT’s Office of Roadway Design directs that safety analysis is not required for bridge replacement projects with 0.5 miles or less of roadway construction on each bridge approach. This project has less than 0.5 miles of roadway construction proposed on each approach thus a HSM analysis is not included.

Crash Summary: There is only one recorded crash in the project limits.

Design Exceptions to FHWA/AASHTO controlling criteria anticipated:

| FHWA/AASHTO Controlling Criteria | No | Undetermined | Yes | Approval Date (if applicable) |
|-----------------------------------|-------------------------------------|--------------------------|--------------------------|-------------------------------|
| 1. Design Speed | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 2. Lane Width | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 3. Shoulder Width | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 4. Bridge Width | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 5. Horizontal Alignment | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 6. Superelevation | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 7. Vertical Alignment | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 8. Grade | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 9. Stopping Sight Distance | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 10. Cross Slope | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 11. Vertical Clearance | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 12. Lateral Offset to Obstruction | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 13. Bridge Structural Capacity | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

Design Variances to GDOT Standard Criteria anticipated:

| GDOT Standard Criteria | Reviewing Office | No | Undetermined | Yes | Approval Date (if applicable) |
|-------------------------------------|------------------|-------------------------------------|--------------------------|--------------------------|-------------------------------|
| 1. Access Control/Median Openings | DP&S | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 2. Intersection Sight Distance | DP&S | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 3. Intersection Skew Angle | DP&S | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 4. Lateral Offset to Obstruction | DP&S | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 5. Rumble Strips | DP&S | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 6. Safety Edge | DP&S | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 7. Median Usage | DP&S | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 8. Complete Streets | DP&S | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 9. ADA & PROWAG | DP&S | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 10. GDOT Construction Standards | DP&S | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 11. GDOT Drainage Manual | DP&S | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 12. GDOT Bridge & Structural Manual | Bridges | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

VE Study anticipated: No Yes Completed – Date:

UTILITY AND PROPERTY

Temporary State Route needed: No Yes Undetermined

Railroad Involvement: N/A

Utility Involvements: 1.) Public Service Telephone
 2.) Upson EMC

SUE Required: No Yes Undetermined

Public Interest Determination Policy and Procedure recommended (Utilities)? No Yes

Right-of-Way (ROW): Existing width: 100 ft Proposed width: 120 ft

Required Right-of-Way anticipated: None Yes Undetermined
 Easements anticipated: None Temporary Permanent Utility Other

| | |
|---|---------------|
| Anticipated total number of impacted parcels: | 5 |
| Displacements anticipated: | Businesses: 0 |
| | Residences: 0 |
| | Other: 0 |
| Total Displacements: | 0 |

Location and Design approval: Not Required Required

CONTEXT SENSITIVE SOLUTIONS

Issues of Concern: N/A

Context Sensitive Solutions Proposed:

ENVIRONMENTAL & PERMITS

Anticipated Environmental Document:

GEPA: NEPA: CE EA/FONSI EIS

MS4 Permit Compliance – Is the project located in a MS4 area? No Yes

Environmental Permits/Variations/Commitments/Coordination anticipated:

| Permit/ Variance/ Commitment/ Coordination Anticipated | No | Yes | Remarks |
|--|-------------------------------------|-------------------------------------|---|
| 1. U.S. Coast Guard Permit | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 2. Forest Service/Corps Land | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 3. CWA Section 404 Permit | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 4. Tennessee Valley Authority Permit | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 5. Buffer Variance | <input type="checkbox"/> | <input checked="" type="checkbox"/> | To be determined |
| 6. Coastal Zone Management Coordination | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 7. NPDES | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 8. FEMA | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 9. Cemetery Permit | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 10. Other Permits | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 11. Other Commitments | <input type="checkbox"/> | <input checked="" type="checkbox"/> | See Environmental Comments and Information: |
| 12. Other Coordination | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |

Is a PAR required? No Yes Completed – Date:

Environmental Comments and Information:

NEPA/GEPA: CE is not approved.

Ecology: The ecology resource survey has been completed, and the draft report has been prepared. There are two perennial streams, four wetlands, and three, ephemeral non-buffered state waters. There is potential habitat for 21 protected species. The aquatic species survey has been completed, and no suitable habitat for protected species was present. The proposed bridge will facilitate fish passage. If a culvert is used, it will be oversized and embedded 20% to facilitate fish passage.

History: The historic resource survey has not been completed. The anticipated completion date for the report is March 13, 2014.

Archeology: The archaeology field survey has not been completed. The anticipated completion date for the survey report is March 13, 2014.

Air Quality:

| | | |
|---|--|------------------------------|
| Is the project located in a PM 2.5 Non-attainment area? | <input checked="" type="checkbox"/> No | <input type="checkbox"/> Yes |
| Is the project located in an Ozone Non-attainment area? | <input checked="" type="checkbox"/> No | <input type="checkbox"/> Yes |
| Is a Carbon Monoxide hotspot analysis required? | <input checked="" type="checkbox"/> No | <input type="checkbox"/> Yes |

Noise Effects: A Type III noise analysis with no modeling required will be prepared for this project.

Public Involvement: Because no off-site detour is proposed for this project, no public involvement is anticipated.

Major stakeholders: Major stakeholders are the people of Crawford County and the traveling public

CONSTRUCTION

Issues potentially affecting constructability/construction schedule: None

Early Completion Incentives recommended for consideration: No Yes

COORDINATION, ACTIVITIES, RESPONSIBILITIES, AND COSTS

Initial Concept Meeting: N/A

Concept Meeting: There was a Concept Team Meeting held on November 26, 2013 and the minutes are attached.

Other coordination to date: There was a PTIP meeting held on September 21, 2012 and the minutes are attached.

FAA coordination will not be required. The nearest aviation facility is more than 6 miles away.

| Project Activity | Party Responsible for Performing Task(s) |
|---|---|
| Concept Development | GDOT District 3 Design |
| Design | GDOT District 3 Design |
| Right-of-Way Acquisition | GDOT District 3 Right of Way |
| Utility Relocation | Utility Owners |
| Letting to Contract | GDOT Bidding Administration |
| Construction Supervision | GDOT District 3 Construction |
| Providing Material Pits | Contractor |
| Providing Detours | N/A |
| Environmental Studies, Documents, & Permits | GDOT Office of Environmental Services and Consultant* |
| Environmental Mitigation | GDOT Office of Environmental Services |
| Construction Inspection & Materials Testing | GDOT District 3 Construction and Office of Materials |

* GDOT is performing History and Archeology. Consultant is providing Ecology, Air Quality and Noise Analysis.

Project Cost Estimate Summary and Funding Responsibilities:

| | Breakdown of PE | ROW | Reimbursable Utility | CST* | Environmental Mitigation** | Total Cost |
|------------------|-----------------|------------|----------------------|--------------|----------------------------|--------------|
| Funded By | GDOT | GDOT | GDOT | GDOT | GDOT | |
| \$ Amount | 488,443.48 | 291,000.00 | 54,760.00 | 1,007,481.63 | 97,785.00 | 1,939,470.11 |
| Date of Estimate | 7/19/2012 | 9/27/2013 | 4/11/2013 | 9/9/2013 | 11/8/2013 | |

* CST Cost includes: Construction, Engineering and Inspection, and Liquid AC Cost Adjustment.

** The estimated wetland impact is 0.411 acres. This is roughly 3.288 wetland credits with an estimated \$24,660 value.

The estimated stream impact is 150 linear feet. This is roughly 975 stream credits with an estimated \$73,125 value.

Total mitigation cost estimate = \$97,785

ALTERNATIVES DISCUSSION

Preferred Alternative: Replace the existing culvert with a reinforced concrete bridge on the existing alignment. Staged construction and temporary signal installation will be used to control traffic flow. The temporary signal will be used to maintain one open lane.

| | | | |
|------------------------------------|---------------------|------------------------------|-----------------------|
| Estimated Property Impacts: | 5 | Estimated Total Cost: | \$1,939,470.11 |
| Estimated ROW Cost: | \$291,000.00 | Estimated CST Time: | 12 months |

Rationale: It is more economical to replace the bridge in place.

No-Build Alternative:

| | | | |
|------------------------------------|--|------------------------------|----------|
| Estimated Property Impacts: | | Estimated Total Cost: | 0 |
| Estimated ROW Cost: | | Estimated CST Time: | 0 |

Rationale: Due to the structural integrity of the culvert, replacement of the culvert is recommended

Alternative 3: Replace the existing bridge with a reinforced concrete bridge offset parallel to the existing alignment and keep traffic on the existing road.

| | | | |
|------------------------------------|---------------------|------------------------------|-----------------------|
| Estimated Property Impacts: | 5 | Estimated Total Cost: | \$2,748,406.87 |
| Estimated ROW Cost: | \$800,250.00 | Estimated CST Time: | 18 months |

Rationale: Alternative 3 has an increase in cost. There is no future widening in the area of this project. This alternative would add an extra six months of inconvenience to the traveling public.

Alternative 4: Replace the existing culvert with a reinforced concrete bridge using the existing alignment with an offsite detour.

| | | | |
|------------------------------------|---------------------|------------------------------|-----------------------|
| Estimated Property Impacts: | 5 | Estimated Total Cost: | \$4,851,656.57 |
| Estimated ROW Cost: | \$291,000.00 | Estimated CST Time: | 9 months |

Rationale: A Road User Cost analysis was performed on this alternative and it showed that the detour was 36 miles and 0.65 hours one way per day. The cost incurred by the traveling public would be \$2,612,500.00

Comments: If the hydraulic study determines that a box culvert will be sufficient, a box culvert will be installed and a revised concept will be required.

LIST OF ATTACHMENTS/SUPPORTING DATA

1. Concept Layout
2. Typical Sections
 - a. Road Typical Section
 - b. Bridge Typical Section
3. Detailed Cost Estimates:
 - a. Construction including Engineering and Inspection
 - b. Completed Fuel & Asphalt Price Adjustment forms
 - c. Right-of-Way
 - d. Utilities
 - e. Environmental Mitigation
4. Bridge Inventory
5. Pavement Design
6. Design Traffic from GDOT's Office of Planning
7. Minutes of the PTIP Meeting
8. Minutes of the Concept Team Meeting
9. Concept Utility Report
10. Responses to the Concept Comments

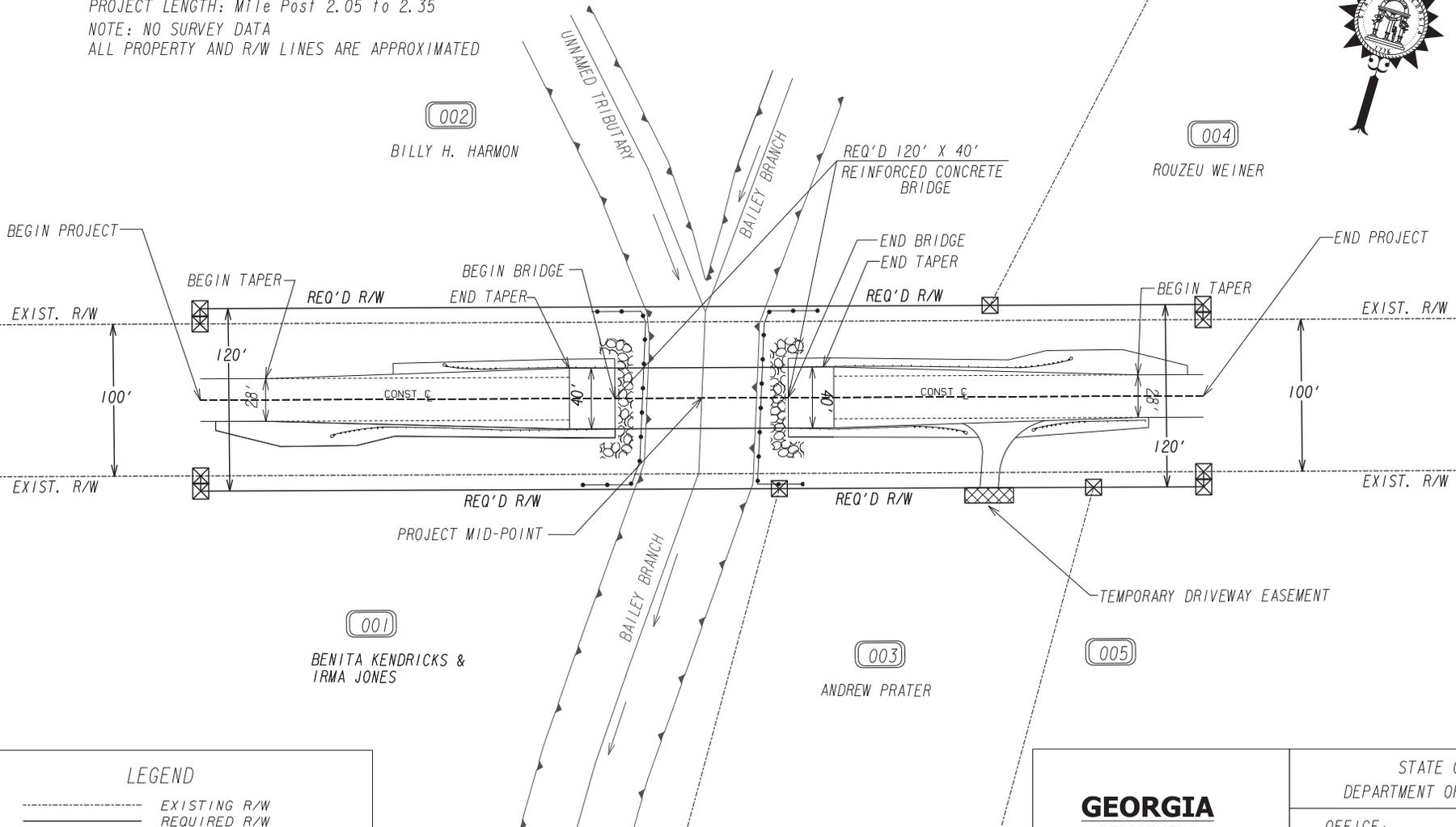
APPROVALS

Concur: 
Director of Engineering

Approve:  2/25/14
Chief Engineer Date

PI# 0011681 CRAWFORD CO.
SR 22 / US 80

PROJECT LENGTH: Mile Post 2.05 to 2.35
NOTE: NO SURVEY DATA
ALL PROPERTY AND R/W LINES ARE APPROXIMATED



LEGEND

- EXISTING R/W
- ===== REQUIRED R/W
- ===== EDGE OF PAVEMENT
- ===== GUARDRAIL
- ESA
- PROPERTY LINE
- ORANGE BARRIER FENCE

NOT TO SCALE

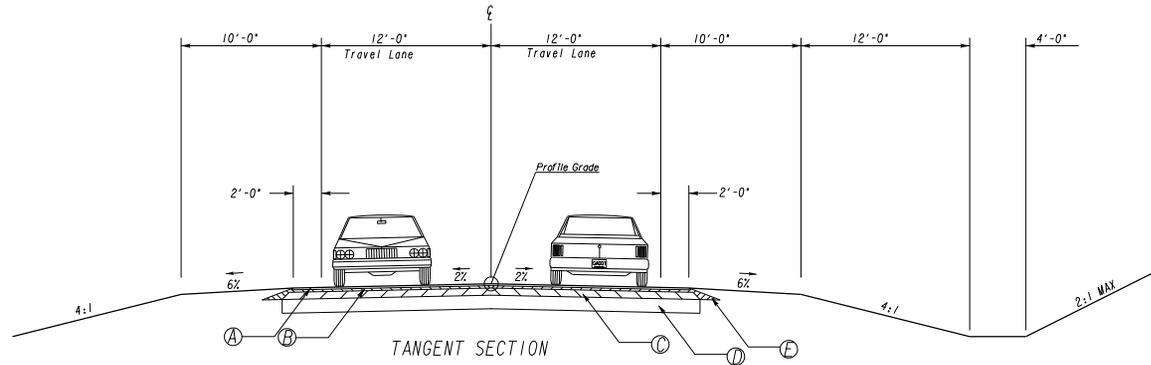
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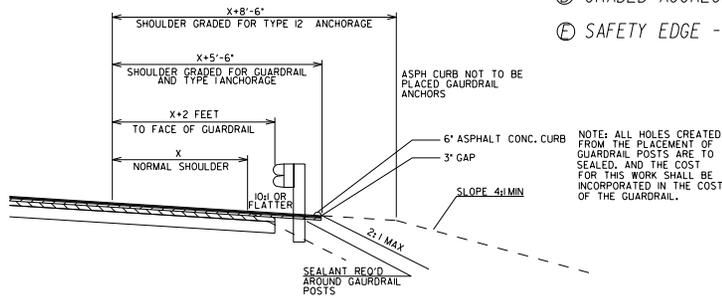
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CONCEPT LAYOUT

ROAD TYPICAL SECTION



- Ⓐ ASPHALTIC CONCRETE 9.5 mm SUPRPAVE, TYPE 1 (135 LBS/SQ. YD.)
- Ⓑ ASPHALTIC CONCRETE 19 mm SUPERPAVE, (220 LBS/SQ. YD.)
- Ⓒ ASPHALTIC CONCRETE 25 mm SUPERPAVE (330 LBS/SQ. YD.)
- Ⓓ GRADED AGGREGATE BASE, 8.0 BASE INCHES
- Ⓔ SAFETY EDGE - SEE DETAIL P-7



GEORGIA
DEPARTMENT
OF
TRANSPORTATION

NOT TO SCALE

REVISION DATES

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STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

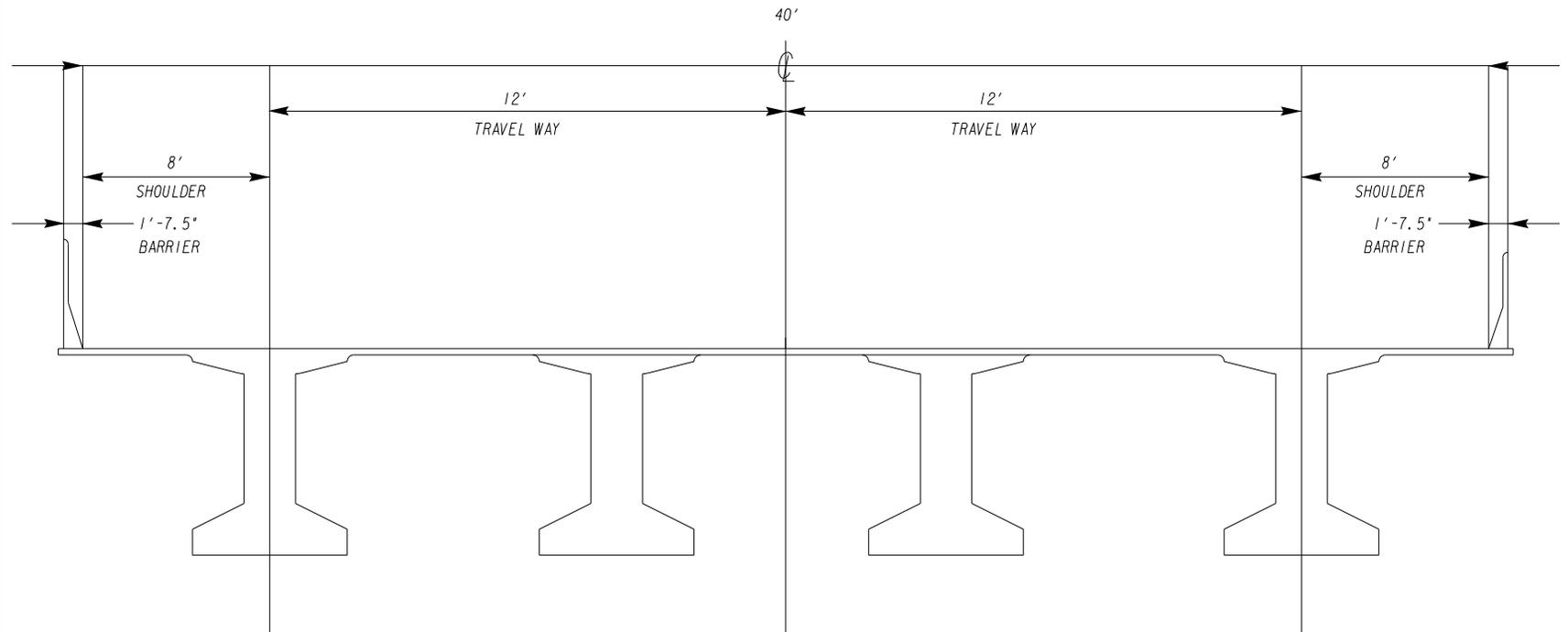
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TYPICAL SECTIONS

DRAWING No.
05

BRIDGE TYPICAL SECTION

40' BRIDGE



JOB NUM 0011681

FED/STATE PROJECT NU

SPEC YE. 01

DESCRIPTION: BRIDGE REPLACEMENT
CRAWFORD COUNTY

ITEMS FOR JOB 0011681

0010 - ROADWAY

| Line Number | ITEM | QUANTITY | UNITS | PRICE | DESCRIPTION | AMOUNT |
|------------------------------|----------|----------|-------|----------------|--|---------------------|
| 0005 | 150-1000 | 1.000 | LS | \$50,000.00000 | TRAFFIC CONTROL - 0011681 | \$50,000.00 |
| 0100 | 210-0100 | 1.000 | LS | \$85,000.00000 | GRADING COMPLETE - 0011681 | \$85,000.00 |
| 0110 | 310-1101 | 1500.000 | TN | \$22.00000 | GR AGGR BASE CRS, INCL MATL | \$33,000.00 |
| 0115 | 318-3000 | 300.000 | TN | \$20.00000 | AGGR SURF CRS | \$6,000.00 |
| 0120 | 402-1812 | 200.000 | TN | \$88.00000 | RECYL AC LEVELING,INC BM&HL | \$17,600.00 |
| 0125 | 402-3100 | 281.000 | TN | \$85.00000 | BM&HL | \$23,885.00 |
| 0130 | 402-3121 | 700.000 | TN | \$75.00000 | RECYL AC 25MM SP,GP1/2,BM&HL | \$52,500.00 |
| 0135 | 402-3190 | 330.000 | TN | \$83.00000 | RECYL AC 19 MM SP,GP 1 OR 2 ,INC BM&HL | \$27,390.00 |
| 0140 | 413-1000 | 300.000 | GL | \$3.50000 | BITUM TACK COAT | \$1,050.00 |
| 0145 | 432-5010 | 500.000 | SY | \$8.00000 | MILL ASPH CONC PVMT,VARB DEPTH | \$4,000.00 |
| 0150 | 433-1000 | 267.000 | SY | \$150.00000 | REINF CONC APPROACH SLAB | \$40,050.00 |
| 0155 | 436-1000 | 800.000 | LF | \$9.00000 | ASPH CONC CURB - 0011681 | \$7,200.00 |
| 0160 | 441-0016 | 100.000 | SY | \$35.00000 | DRIVEWAY CONCRETE, 6 IN TK | \$3,500.00 |
| 0165 | 441-0050 | 40.000 | SY | \$55.00000 | CONC SLOPE DRAIN | \$2,200.00 |
| 0170 | 441-0303 | 4.000 | EA | \$1,300.00000 | CONC SPILLWAY, TP 3 | \$5,200.00 |
| 0175 | 500-0100 | 267.000 | SY | \$5.00000 | GROOVED CONCRETE | \$1,335.00 |
| 0180 | 500-3200 | 20.000 | CY | \$450.00000 | CL B CONC | \$9,000.00 |
| 0195 | 550-2180 | 50.000 | LF | \$30.00000 | SIDE DR PIPE 18",H 1-10 | \$1,500.00 |
| 0200 | 550-3418 | 1.000 | EA | \$500.00000 | SAFETY END SECTION 18",SD,4:1 | \$500.00 |
| 0205 | 550-3618 | 1.000 | EA | \$475.00000 | SAFETY END SECTION 18",SD,6:1 | \$475.00 |
| 0270 | 643-8200 | 400.000 | LF | \$2.00000 | BARRIER FENCE (ORANGE), 4 FT | \$800.00 |
| SUBTOTAL FOR ROADWAY: | | | | | | \$372,185.00 |

0020 - STRUCTURES

| Line Number | ITEM | QUANTITY | UNITS | PRICE | DESCRIPTION | AMOUNT |
|---------------------------------|----------|----------|-------|-----------------|-------------------------------------|---------------------|
| 0325 | 211-0300 | 250.000 | CY | \$30.00000 | BR EXCAV, STREAM CROSSING | \$7,500.00 |
| 0185 | 540-1102 | 1.000 | LS | \$40,000.00000 | REM OF EX BR, BR NO - 0011681 | \$40,000.00 |
| 0330 | 543-9000 | 1.000 | LS | \$340,000.00000 | CONSTR OF BRIDGE COMPLETE - 0011681 | \$340,000.00 |
| SUBTOTAL FOR STRUCTURES: | | | | | | \$387,500.00 |

0040 - SIGNING & MARKING

| Line Number | ITEM | QUANTITY | UNITS | PRICE | DESCRIPTION | AMOUNT |
|--|----------|----------|-------|---------------|--------------------------------|--------------------|
| 0225 | 610-9001 | 2.000 | EA | \$100.00000 | REM SIGN | \$200.00 |
| 0230 | 611-5551 | 2.000 | EA | \$300.00000 | RESET SIGN | \$600.00 |
| 0235 | 634-1200 | 11.000 | EA | \$115.00000 | RIGHT OF WAY MARKERS | \$1,265.00 |
| 0240 | 636-1033 | 50.000 | SF | \$22.00000 | HWY SIGNS, TP1MAT,REFL SH TP 9 | \$1,100.00 |
| 0245 | 636-2070 | 80.000 | LF | \$8.00000 | GALV STEEL POSTS, TP 7 | \$640.00 |
| 0250 | 641-1100 | 84.000 | LF | \$60.00000 | GUARDRAIL, TP T | \$5,040.00 |
| 0255 | 641-1200 | 600.000 | LF | \$18.00000 | GUARDRAIL, TP W | \$10,800.00 |
| 0260 | 641-5001 | 2.000 | EA | \$700.00000 | GUARDRAIL ANCHORAGE, TP 1 | \$1,400.00 |
| 0265 | 641-5012 | 2.000 | EA | \$1,900.00000 | GUARDRAIL ANCHORAGE, TP 12 | \$3,800.00 |
| 0275 | 653-1501 | 2500.000 | LF | \$0.65000 | THERMO SOLID TRAF ST 5 IN, WHI | \$1,625.00 |
| 0280 | 653-1502 | 2500.000 | LF | \$0.70000 | THERMO SOLID TRAF ST, 5 IN YEL | \$1,750.00 |
| 0285 | 654-1001 | 50.000 | EA | \$3.00000 | RAISED PVMT MARKERS TP 1 | \$150.00 |
| 0290 | 657-1085 | 400.000 | LF | \$6.00000 | PRF PL SD PVT MKG,8",B/W,TP PB | \$2,400.00 |
| 0295 | 657-6085 | 400.000 | LF | \$6.00000 | PRF PL SD PVMT MKG,8",B/Y,TPPB | \$2,400.00 |
| SUBTOTAL FOR SIGNING & MARKING: | | | | | | \$33,170.00 |

0080 - EROSION CONTROL

| Line Number | ITEM | QUANTITY | UNITS | PRICE | DESCRIPTION | AMOUNT |
|--------------------------------------|----------|----------|-------|---------------|--|---------------------|
| 0010 | 163-0232 | 1.000 | AC | \$300.00000 | TEMPORARY GRASSING | \$300.00 |
| 0015 | 163-0240 | 150.000 | TN | \$200.00000 | MULCH | \$30,000.00 |
| 0020 | 163-0300 | 4.000 | EA | \$1,200.00000 | CONSTRUCTION EXIT | \$4,800.00 |
| 0025 | 163-0520 | 340.000 | LF | \$15.00000 | DRAIN | \$5,100.00 |
| 0030 | 163-0527 | 25.000 | EA | \$225.00000 | BG | \$5,625.00 |
| 0035 | 163-0528 | 200.000 | LF | \$3.00000 | CONSTR AND REM FAB CK DAM -TP C SLT FN | \$600.00 |
| 0040 | 163-0529 | 840.000 | LF | \$3.50000 | DM | \$2,940.00 |
| 0045 | 163-0541 | 4.000 | EA | \$400.00000 | CONSTR & REM ROCK FILTER DAMS | \$1,600.00 |
| 0050 | 165-0010 | 600.000 | LF | \$0.75000 | MAINT OF TEMP SILT FENCE, TP A | \$450.00 |
| 0055 | 165-0030 | 1750.000 | LF | \$1.00000 | MAINT OF TEMP SILT FENCE, TP C | \$1,750.00 |
| 0060 | 165-0041 | 350.000 | LF | \$2.50000 | MAINT OF CHECK DAMS - ALL TYPES | \$875.00 |
| 0065 | 165-0071 | 420.000 | LF | \$1.00000 | STRAW | \$420.00 |
| 0070 | 165-0101 | 4.000 | EA | \$700.00000 | MAINT OF CONST EXIT | \$2,800.00 |
| 0075 | 165-0110 | 4.000 | EA | \$175.00000 | MAINT OF ROCK FILTER DAM | \$700.00 |
| 0080 | 167-1000 | 2.000 | EA | \$500.00000 | SAMPLING | \$1,000.00 |
| 0085 | 167-1500 | 12.000 | MO | \$500.00000 | WATER QUALITY INSPECTIONS | \$6,000.00 |
| 0090 | 171-0010 | 1200.000 | LF | \$1.50000 | TEMPORARY SILT FENCE, TYPE A | \$1,800.00 |
| 0095 | 171-0030 | 3500.000 | LF | \$3.00000 | TEMPORARY SILT FENCE, TYPE C | \$10,500.00 |
| 0210 | 603-2024 | 600.000 | SY | \$43.00000 | STN DUMPED RIP RAP, TP 1, 24" | \$25,800.00 |
| 0215 | 603-2182 | 600.000 | SY | \$46.00000 | STN DUMPED RIP RAP, TP 3, 24" | \$27,600.00 |
| 0220 | 603-7000 | 1200.000 | SY | \$4.00000 | PLASTIC FILTER FABRIC | \$4,800.00 |
| 0300 | 700-6910 | 2.000 | AC | \$1,000.00000 | PERMANENT GRASSING | \$2,000.00 |
| 0305 | 700-7000 | 6.000 | TN | \$85.00000 | AGRICULTURAL LIME | \$510.00 |
| 0310 | 700-8000 | 2.000 | TN | \$450.00000 | FERTILIZER MIXED GRADE | \$900.00 |
| 0315 | 700-8100 | 100.000 | LB | \$2.30000 | FERTILIZER NITROGEN CONTENT | \$230.00 |
| 0320 | 716-2000 | 2000.000 | SY | \$1.24000 | EROSION CONTROL MATS, SLOPES | \$2,480.00 |
| SUBTOTAL FOR EROSION CONTROL: | | | | | | \$141,580.00 |

TOTALS FOR JOB 0011681

| | |
|---|-----------------------|
| ITEMS COST: | \$934,435.00 |
| COST GROUP COST: | \$0.00 |
| ESTIMATED COST: | \$934,435.00 |
| ASPHALT & FUEL ADJUSTMENT: | \$26,324.88 |
| ENGINEERING AND INSPECTION: | \$46,721.75 |
| ESTIMATED COST WITH ASPHALT & FUEL ADJUSTMENT AND E&I: | \$1,007,481.63 |

PROJ. NO.

0011681

CALL NO.

P.I. NO.

0011681

DATE

9/9/2013

INDEX (TYPE)

REG. UNLEADED

Sep-13

\$ 3.523

DIESEL

\$ 3.903

LIQUID AC

\$ 571.00

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)

25883.43

\$

25,883.43

Monthly Asphalt Cement Price month placed (APM)

Max. Cap

60%

\$ 913.60

Monthly Asphalt Cement Price month project let (APL)

\$ 571.00

Total Monthly Tonnage of asphalt cement (TMT)

75.55

| ASPHALT | Tons | %AC | AC ton |
|-----------|-------------|------|--------------|
| Leveling | 200 | 5.0% | 10 |
| 12.5 OGFC | | 5.0% | 0 |
| 12.5 mm | | 5.0% | 0 |
| 9.5 mm SP | 281 | 5.0% | 14.05 |
| 25 mm SP | 700 | 5.0% | 35 |
| 19 mm SP | 330 | 5.0% | 16.5 |
| | 1511 | | 75.55 |

BITUMINOUS TACK COAT

Price Adjustment (PA)

\$ 441.45

\$

441.45

Monthly Asphalt Cement Price month placed (APM)

Max. Cap

60%

\$ 913.60

Monthly Asphalt Cement Price month project let (APL)

\$ 571.00

Total Monthly Tonnage of asphalt cement (TMT)

1.288530277

Bitum Tack

| Gals | gals/ton | tons |
|------|----------|------------|
| 300 | 232.8234 | 1.28853028 |

PROJ. NO.

0011681

CALL NO.

P.I. NO.

0011681

DATE

9/9/2013

BITUMINOUS TACK COAT (surface treatment)

| | | | | | | | | |
|--|--|----------|-----|----|--------|----------|----|---|
| Price Adjustment (PA) | | | | | | 0 | \$ | - |
| Monthly Asphalt Cement Price month placed (APM) | | Max. Cap | 60% | \$ | 913.60 | | | |
| Monthly Asphalt Cement Price month project let (APL) | | | | \$ | 571.00 | | | |
| Total Monthly Tonnage of asphalt cement (TMT) | | | | | 0 | | | |

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

| | | | | | | | | |
|-----------------------------------|--|--|--|--|--|--|----|------------------|
| TOTAL LIQUID AC ADJUSTMENT | | | | | | | \$ | 26,324.88 |
|-----------------------------------|--|--|--|--|--|--|----|------------------|

GEORGIA DEPARTMENT OF TRANSPORTATION
PRELIMINARY ROW COST ESTIMATE SUMMARY

Date: 9/27/2013 Project: 0011681
 Revised: County: Crawford
 PI: 0011681

Description: SR 22/US 80 Culvert Replacement
 Project Termini: Culvert Replacement on SR 22 @ Bailey Branch

Existing ROW: Varies
 Required ROW: Varies
 Parcels: 5

Land and Improvements _____ \$74,520.00

| | |
|----------------------|-------------|
| Proximity Damage | \$0.00 |
| Consequential Damage | \$0.00 |
| Cost to Cures | \$0.00 |
| Trade Fixtures | \$0.00 |
| Improvements | \$45,000.00 |

Valuation Services _____ \$5,000.00

Legal Services _____ \$40,875.00

Relocation _____ \$90,000.00

Demolition _____ \$30,000.00

Administrative _____ \$50,000.00

TOTAL ESTIMATED COSTS _____ \$290,395.00

TOTAL ESTIMATED COSTS (ROUNDED) _____ \$291,000.00

| Preparation Credits | Hours | Signature |
|---------------------|-------|-----------|
| | | |
| | | |
| | | |

Prepared By: Dashone Alexander CG#: 286999 09/27/2013 (DATE)

Approved By: Dashone Alexander CG#: 286999 09/27/2013 (DATE)

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

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE **N/A, Crawford County, P.I. # 0011681**
SR 22 / US 80 @ Bailey Branch

OFFICE Thomaston

DATE 04/11/2013

FROM Kerry Gore, District Utilities Engineer

TO Sue Anne Decker, Project Manager

SUBJECT **PRELIMINARY UTILITY COST (ESTIMATE)**

As requested by your office, we are furnishing you with a Preliminary Utility Cost estimate for each utility with facilities potentially located within the project limits.

| <u>FACILITY OWNER</u> | <u>NON- REIMBURSABLE</u> | <u>REIMBURSABLE</u> |
|--------------------------|------------------------------|---------------------|
| Public Service Telephone | \$0.00 | \$26,760.00 |
| Upson EMC | \$0.00 | \$28,000.00 |
| <hr/> | | |
| TOTALS | \$ 0.00 | \$54,760.00 |

Total Preliminary Utility Cost Estimate **\$54,760.00**.

If you have any questions, please contact Harland Smith at 706-646-7606.

KG/pls

From: Lenor Bromberg <lbromberg@keagroup.com>
Sent: Friday, November 08, 2013 1:54 PM
To: Decker, Sue Anne
Cc: Hoskins, Jim; Brown, Cameron R; Mobley, Jason; Flint, Constance
Subject: RE: 0011681 - Env and Concept Report

Sue Anne,

The following is the estimate from the ecologist for mitigation costs. These are conservative estimates.

I estimate they will impact 0.411 acres of wetland. This is roughly 3.288 wetland credits with an estimated \$24,660 value.

I estimate they will impact 150 linear feet of stream. This is roughly 975 stream credits with an estimated \$73,125 value.

Total mitigation cost estimate = \$97,785

Please let me know if you need anything else.

-Lenor

Lenor M. Bromberg, PE, AVS, LEED® AP BD+C
Associate Vice President - Environmental and Design

Kennedy Engineering & Associates Group LLC
Exceptional People, Exceptional Service, Exceptional Solutions

678-904-8591 ext. 27
404-805-8244 - cell



Please consider the environment before printing this email.

From: Decker, Sue Anne [mailto:sdecker@dot.ga.gov]
Sent: Thursday, November 07, 2013 2:49 PM
To: 'Lenor Bromberg'
Cc: Hoskins, Jim; Brown, Cameron R; Mobley, Jason; Flint, Constance
Subject: RE: 0011681 - Env and Concept Report

Lenor,

We need the following information for the concept report:

- Environmental impacts/identification
- Cost for Environmental mitigation

If you have any questions/comments, please feel free to contact me.

Thanks and have a great day!

Sue Anne H. Decker, P.E.
Project Manager
Office: 706-646-7559
Blackberry: 404-987-1990

Bridge Inventory Data Listing



Parameters: Bridge Serial Num

Structure ID:079-0007-0

Crawford

SUFF. RATING: 55.60

Location & Geography

Structure ID: 079-0007-0
 200 Bridge Information: 07
 *6A Feature Int: BAILEY BRANCH
 *6B Critical Bridge: 0
 *7A Route No Carried: SR00022
 *7B Facility Carried: US 80
 9 Location: 8 MI W OF ROBERTA
 2 Dot District: 3
 207 Year Photo: 2012
 *91 Inspection Frequency: 24 Date: 10/17/2012
 92A Fract Crit Insp Freq: 0 Date: 02/01/1901
 92B Underwater Insp Freq: 1 Date: 08/13/2008
 92C Other Spc. Insp Freq: 0 Date: 02/01/1901
 * 4 Place Code: 00000
 *5 Inventory Route(O/U): 1
 Type: 2
 Designation: 1
 Number: 00080
 Direction: 0
 *16 Latitude: 32 45.4262 HMMS Prefix:SR
 *17 Longitude: 84 -08.1448 HMMS Suffix:00 MP:2.24
 98 Border Bridge: 000%Shared:00
 99 ID Number: 0000000000000000
 *100 STRAHNET: 2
 12 Base Highway Network: 1
 13A LRS Inventory Route: 791002200
 13B Sub Inventory Route: 2
 101 parallel Structure: N
 *102 Direction of Traffic: 2
 *264 Road Inventory Mile Post: 002.18
 *208 Inspection Area: 3 Initials: EFP
 Engineer's Initials: bcn
 * Location ID No: 079-00022D-002.24E

*104 Highway System: 0
 *26 Functional Classification: 06
 *204 Federal Route Type: F No: 00041
 105 Federal Lands Highway: 0
 *110 Truck Route: 0
 2006 School Bus Route: 1
 217 Benchmark Elevation: 0000.00
 218 Datum: 0
 *19 Bypass Length: 36
 *20 Toll: 3
 *21 Maintenance: 01
 *22 Owner: 01
 *31 Design Load: 2
 37 Historical Significance: 5
 205 Congressional District: 02
 27 Year Constructed: 1936
 106 Year Reconstructed: 1959
 33 Bridge Medium: 0
 34 Skew: 00
 35 Structure Flared: 0
 38 Navigation Control: 0
 213 Special Steel Design: 0
 267 Type of Paint: 0
 *42 Type of Service On: 1
 Type of Service Under: 5
 214 Movable Bridge: 0
 203 Type Bridge: Q
 259 Pile Encasement 3
 *43 Structure Type Main: 1 19
 45 No.Spans Main: 004
 44 Structure Type Appr: 0 00
 46 No Spans Appr: 0000
 226 Bridge Curve Horz 0 Vert: 0
 111 pier Protection 0
 107 Deck Structure Type: N
 108 Wearing Structure Type: N
 Membrane Type: N
 Deck Protection: N

Signs & Attachments

225 Expansion Joint Type: 00
 242 Deck Drains: 0
 243 Parapet Location: 0
 Height: 0
 Width: 0
 238 Curb Height: 0
 Curb Material: 0
 239 Handrail 0 0
 *240 Medium Barrier Rail: 0
 241 Bridge Median Height: 0
 * Bridge Median Width: 0
 230 Guardrail Loc. Dir. Rear: 0
 Fwd: 0
 Oppo. Dir. Rear: 0
 Oppo. Fwd: 0
 244 Approach Slab 0
 224 Retaining Wall: 0
 233 Posted Speed Limit: 55
 236 Warning Sign: 0.00
 234 Delineator: 1.00
 235 Hazzard Boards: 0
 237 Utilities Gas: 00
 Water: 00
 Electric: 00
 Telephone: 00
 Sewer: 00
 247 Lighting Street: 0
 Navigation: 0
 Aerial: 0
 *248 County Continuity No.: 00

Bridge Inventory Data Listing



Parameters: Bridge Serial Num

Structure ID:079-0007-0

| Programming Data | | Measurements: | | | | |
|-----------------------|--------------------------|------------------------------|------------------|----------------|------------------------------|---------------------|
| 201 Project No: | F-004-1 (5) | *29ADT | 001720 | Year:2011 | 65 Inventory Rating Method: | 0 |
| 202 Plans Available: | 1 | 109%Trucks: | 16 | | 63 Operating Rating Method: | 0 |
| 249 Prop Proj No: | 000000000000000000000000 | * 28 Lanes On: | 02 | Under:00 | 66 Inventory Type: | 2 Rating: 27 |
| 250 Approval Status: | 0000 | 210 No. Tracks On: | 00 | Under:00 | 64 Operating Type: | 2 Rating: 27 |
| 251 PI Number: | 0000000 | * 48 Max. Span Length | 0010 | | 231 Calculated Loads: | |
| 252 Contract Date: | 02/01/1901 | * 49 Structure Length: | 43 | | H-Modified: | 00 0 |
| 260 Seismic No: | 00000 | 51 Br. Rwdy. Width | 0.00 | | HS-Modified: | 00 0 |
| 75 Type Work: | 00 0 | 52 Deck Width: | 0.00 | | Type 3: | 00 0 |
| 94 Bridge Imp. Cost: | \$168 | * 47 Tot. Horiz. Cl: | 44 | | Type 3s2: | 00 0 |
| 95 Roadway Imp. Cost: | 17 | 50 Curb / Sidewalk Width | 0.00 / 0.00 | | Timber: | 00 0 |
| 96 Total Imp Cost: | 252 | 32 Approach Rdwy. Width | 028 | | Piggyback: | 00 0 |
| 76 Imp Length: | 000000 | *229 Shoulder Width: | | | 261 H Inventory Rating: | 15 |
| 97 Imp Year: | 2013 | Rear Lt: | 2.00 | Type:2 Rt:2.00 | 262 H Operating Rating | 25 |
| 114 Future ADT: | 002580 | Fwd. Lt: | 2.00 | Type:2 Rt:2.00 | 67 Structural Evaluation: | 4 |
| Hydraulic Data | | Permanent Width: | | | 58 Deck Condition: | N |
| 215 Waterway Data: | | Rear: | 24.00 | Type:2 | 59 Superstructure Condition: | N |
| High Water Elev: | 0000.0 | Freq: | 24.00 | Type:2 | * 227 Collision Damage: | 0 |
| Flood Elev: | 0000.0 | Intersaction Rear: | 0 | Fwd: 1 | 60A Substructure Condition: | N |
| Avg Streambed Elev: | 0000.0 | 36 Safety Features Br. Rail: | N | | 60B Scour Condition: | 8 |
| Drainage Area: | 00000 | Transition: | N | | 60C Underwater Condition | 5 |
| Area of Opening: | 000280 | App. G. Rail: | N | | 71 Waterway Adequacy: | 6 |
| 113 Scour Critical | 8 | App. Rail End: | N | | 61 Channel Protection Cond.: | 6 |
| 216 Water Depth: | 04.4 | 53 Minimum Cl. Over: | 99' 99 " | | 68 Deck Geometry: | N |
| 222 Slope Protection: | 0 | Under: | | | 69 UnderClr. Horz/Vert: | N |
| 221 Slope Protection | 0 | *228 Minimum Vertical Cl | | | 72 Appr. Alignment: | 6 |
| 219 Fender System | 0 | Act. Odm Dir.: | 99' 99" | | 62 Culvert: | 4 |
| 220 Dolphin: | 0 | Oppo. Dir: | 99' 99" | | Posting Data | |
| 223 Current Cover: | 8 | Posted Odm. Dir: | 00' 00" | | 70 Bridge Posting Required | 5 |
| Type: | 1 | Oppo. Dir: | 00' 00" | | 41 Struct Open, Posted, CL: | A |
| No. Barrels: | 4 | 55 Lateral Undercl. Rt: | N 0 0 | | * 103 Temporary Structure: | 0 |
| * Width: | 10.00 | 56 Lateral Undercl. Lt: | 0.00 | | 232 Posted Loads | |
| * Length: | 67 | *10 Max Min Vert Cl: | 99' 99" Dir:0 | | H-Modified: | 00 |
| 265 U/W Insp. Area | 2 | 39 Nav Vert Cl: | 000 Horiz:0000 | | HS-Modified: | 00 |
| Diver:WSR | | 116 Nav Vert Cl Closed: | 000 | | Type 3: | 00 |
| Location ID No: | 079-00022D-002.24E | 245 Deck Thickness Main | 0.00 | | Type 3s2: | 00 |
| | | Deck Thick Approach: | 0.00 | | Timber: | 00 |
| | | 246 Overlay Thickness: | 0.00 | | Piggyback | 00 |
| | | 212 Year Last Painted: | Sup:0000Sub:0000 | | 253 Notification Date: | 02/01/1901 |
| | | | | | 258 Fed Notify Date: | 2/1/1901 12:00:00AM |

Flexible Pavement Design Analysis

| | | | |
|----------------------------|--|--------------------|-------------------------|
| PI Number | 0011681 | County(s) | Crawford |
| Project Number | | Design Name | Crawford Co. Pavement 1 |
| Project Description | Culvert Replacement about 8 miles west of Roberta. | | |

| Traffic Data (AADTs are one-way) | | | | | Miscellaneous Data | | |
|----------------------------------|------|--------------------------|-------|------------------------|--------------------|----------------------------------|----|
| Initial Design Year | 2017 | Initial AADT, VPD | 1,100 | 24 Hour Truck % | 18.00 | Lanes in one direction | 1 |
| Final Design Year | 2037 | Final AADT, VPD | 1,500 | SU Truck % | 8.50 | Curb & Gutter/Barrier | No |
| | | Mean AADT, VPD | 1,300 | MU Truck % | 9.50 | | |

| Design Data | | | | | |
|--------------------------------------|--------|---------------------------------|------|-------------------------------|------|
| Lane Distribution Factor (%) | 100.00 | Soil Support Value | 3.00 | Single Unit ESAL | 0.40 |
| Terminal Serviceability Index | 2.00 | Regional Factor | 1.60 | Multiple Unit ESAL | 1.50 |
| | | User Defined 18-KIP ESAL | 0.62 | Calculated 18-KIP ESAL | 0.98 |
| Non-Standard Value Comment | | | | | |

| Design Loading (Calculated 18-KIP ESAL) | | | | | |
|---|----------------|---------------------|-------------------|--------------------|-------------------|
| Mean AADT, VPD | LDF (%) | Vehicle Type | Volume (%) | ESAL Factor | Daily ESAL |
| 1,300 | 100.00 | Single Unit Truck | 8.50 | 0.40 | 45 |
| | | Multi Unit Truck | 9.50 | 1.50 | 186 |
| Total Daily ESALs | | | | | 231 |
| Total Design Period ESALs | | | | | 1,686,300 |

| Proposed Flexible Full Depth Pavement Structure | | | | |
|---|-------------------------|--|-------------------------------|-------------------------|
| Course | Material | Thickness (inches) | Structural Coefficient | Structural Value |
| Course 1 | 9.5 mm Type I Superpave | 1.25 | 0.4400 | 0.55 |
| Course 2 | 19 mm Superpave | 2.00 | 0.4400 | 0.88 |
| Course 3 | 25 mm Superpave | 1.25 | 0.4400 | 0.55 |
| | | 1.75 | 0.3000 | 0.53 |
| Course 4 | Graded Aggregate Base | 8.00 | 0.1600 | 1.28 |
| Required SN | 4.31 | Proposed pavement is 12.12% Underdesigned | | Proposed SN |
| | | | | 3.79 |

| | |
|-----------------------|--|
| Design Remarks | Crawford Co. Flexible Pavement 2 Lanes |
|-----------------------|--|

| | | |
|-----------------------|--|-------------------|
| Prepared By | Cameron Brown, Transportation Engineer Associate | 6/12/2013 2:20 PM |
| | Date | |
| Recommended By | Office Head | Date |
| | Date | |
| Approved By | State Pavement Engineer | Date |
| | Date | |

NO BUILD ADT = BUILD ADT

Department of Transportation

State of Georgia

INTERDEPARTMENT CORRESPONDENCE

FILE P.I. # 0011681 **OFFICE** Planning
Crawford County **DATE** November 5, 2012

FROM Cynthia L. VanDyke, State Transportation Planning Administrator

TO Genetha Rice-Singleton, State Program Delivery Design Engineer
Attention: Sue Anne Decker

SUBJECT **Traffic Assignment** for SR 22 @ BAILEY BRANCH 8 MI. W. OF ROBERTA.

We are furnishing estimated Traffic Assignment for the above project as follows:

2012 ADT = 1900
2017 ADT = 2200
2037 ADT = 3000
2012 DHV = 155
2017 DHV = 175
2037 DHV = 240
K = 8%
D = 60%
T. = 19%
S.U.T. = 9%
COMB.T = 10%
24-HOUR T. = 18%
S.U. = 8.5%
COMB. = 9.5%

If you have any questions concerning this information please contact Abby Ebodaghe at (404) 631-1923.

CLV/AFE

Traffic Projections/Forecasting Summary Sheet

P.I. # 0011681

Crawford County

Counts were taken from 2012 special count request.

Growth Factors

Build = No-Build

Existing Year to Base Year 2.0%

Base Year to Design Year 1.5%

K = 8%

D = 60%

Assumptions

- Looked at 10-year historical trend.
- Considered ARC projections for Crawford County as an additional tool (1.8%).

PTIP Meeting Minutes
September 21, 2012 1:30 p.m.
PI No. 0011681, Crawford County

Attendees

- Sue Anne Decker, GDOT Project Manager
- Ken Thompson, GDOT Location Bureau
- Jason Mobley, GDOT District 3 Design
- Dave Peters, GDOT Design Policy and Support
- Katrina Anderson, GDOT Right-of-Way
- Hiral Patel, GDOT Program Delivery
- Jonathan Cox, GDOT Environmental Services
- Andy Casey, GDOT Roadway Design
- Ben Rabun, GDOT Bridge Design
- Bill DuVall, GDOT Bridge Design

Sue Anne opened the meeting with a description of the project. Pictures from GEO Traqs were shown to get an understanding of the field conditions. Then the schedule's activities were discussed.

Dave Peters agreed to do the concept report. Jason Mobley stated his office would be able to complete the concept report as well. Dave stated that his office was losing an employee and asked if D3 could complete the concept report since he was unsure what their workload would be like after losing the employee. The concept report activities were assigned to District 3.

Jason mentioned that there didn't seem to be a suitable detour, if the concept report stated to replace the existing culvert with a bridge. Bill asked Jason to pull up the Bridge Inventory Data Listing. The team noted that the bypass length was 36 miles and the ADT was 1720 vehicles per day.

A PIOH will be needed only if we have a detour. Since this activity is not critical to the schedule, the team decided to leave them in the schedule and remove them later, if needed.

Ben Rabun stated that we could install a pre-cast box culvert to accelerate construction and stage the construction so the road could remain open to traffic. He went on to say since the culvert had been lengthened we could tear out the old culvert at the joint. The discussion then went to the fill height. If this is not too high, then the shoulder could be used during construction as well. The hydraulic study would tell us if a culvert would work. It was also pointed out that the Bridge Inventory Data Listing showed the drainage area to be five square miles. Ben stated that a drainage area that size would typically require a culvert versus a bridge.

Ben also noted that the locals would use CR 103 and CR 101 for a detour. Jason stated that these roads seemed to be dirt.

Ben asked which two major cities would use US 80/SR 22. Jason stated that US 80 Connected Roberta to US 19/SR 3, which would take you north to Thomaston and south to Butler. Sue Anne stated that US 80/SR 22 was a major route between Macon and Columbus.

Ben stated that if the construction were staged and single lane was used for traffic, then a temporary traffic signal would be needed. Hiral added that a project in District 1 had used this method during construction. Sue Anne asked if this temporary traffic signal would have to be permitted through the TMC. Hiral stated that we needed their blessing.

Jason asked if the concept report should state that the culvert would be replaced by a bridge or a culvert. Ben told him to proceed as if a bridge would replace the culvert and that a revised concept report would be needed if the hydraulic study found that a culvert would meet requirements.

The discussion then focused on environmental impacts. Jonathan Cox stated that an aquatic survey would be needed as well as a protected species survey. He stated that these surveys are seasonal and need to take place in April. Additionally, he stated that a PAR may be needed depending on the wetland impacts. The PAR would add an additional 6 months to the schedule. Ecology will need 18 months to complete the aquatic and protected species surveys and reports. If the PAR is needed, then an additional 6 months will be added. The total time for Ecology would be 22 months. Depending on the detour used (if a bridge is constructed) we may need an Environmental Assessment (EA). However, this project would mostly likely only require a Categorical Exclusion (CE).

Ben asked if we could engineer our way out of a 22 month environmental process. Jonathan responded by asking the design team to span as much of the environmentally sensitive areas as possible. Ben noted that a culvert would have very little fill and therefore minimal impacts. Construction can be staged to eliminate the need for a lengthy detour. Jonathan agreed. The team noted that we are unsure at this time if a culvert will be an option. Sue Anne stated that the schedule can be set for the worst case scenario and accelerated as the project moves on. Ben doubted that the schedule would be accelerated once it was set. Sue Anne reassured Ben that if she continued to managed this project that she would accelerate it if she could.

Jonathan stated that staying below the thresholds for disturbance would be significant in keeping environmental impacts low. A discussion was held as to what the thresholds were and if they would change during the course of the project.

Jason stated that the schedule would conflict with the concept report if the concept stated a bridge was necessary and the schedule showed a PAR.

Dave asked what the cost difference was between a culvert and a bridge. Bill stated that they were fairly similar. Dave asked if there were any reason to use a culvert instead of a bridge. Bill stated that water is allowed to back up onto a culvert. However a bridge must span the high water level by one foot minimum.

Katrina stated that RW could be reduced to 9 months and that all the activities she needed were shown.

After the meeting, Jonathan Cox and Sue Anne discussed the scope of a task order for environmental services. Jonathan stated he needed to speak with the specialists to see which activities would be completed in-house.

Action Items

PM

- Meeting Minutes
- Environmental Task Order

Design

- Schedule with duration
- In-house Man hour estimate

Attachments:

0011681 Crawford Bridge Inventory Data Listing
0011681 Crawford PTIP Package
0011681 Crawford and 0006967 Upson Sign-in Sheet

CC: Project file
Attendees
Russell McMurry, Director of Engineering
Genetha Rice-Singleton, State Program Delivery Engineer
Glenn Bowman, State Environmental Administrator
Phil Copeland, State Right-of-Way Administrator

Concept Team Meeting Minutes
November 26, 2013, 10:00 a.m.
PI No. 0011681, Crawford County

Attendees

- Sue Anne Decker, Program Delivery
- Jason Mobley, District 3 Design
- Greg Smith, District 3 Location
- Stanford Taylor, District 3 Traffic Operations
- Michael Lewis, District 3 Right-of-Way
- Ken Robinson, District 3 Construction
- Cameron Brown, District 3 Design
- Jack Reed, District 3 Planning and Programming
- Bill DuVall, Bridge Design (Via Video Conference)
- Lyn Clements, Bridge Design (Via Video Conference)
- Christine Quinn, KEA Group
- Gene McKissick, District 3 Utilities
- Cathy Pollard, District 3 Design

Sue Anne opened the meeting with a description of the project, an overview of the project's schedule and an overview of the concept report. Pictures from GEO Traqs and Google Earth were shown to get an understanding of the field conditions.

The Bridge office commented on the amount of silt in the pictures and stated that a new culvert may not be an option. Their office will conduct a hydraulic study to determine if the plans should show a bridge or culvert. Design stated that one possible reason for the silt could be convergence of two streams at the inlet of the existing culvert.

Design and Bridge discussed the profile submission to Bridge Design. Design suggested submitting two separate profiles for review; one profile for the proposed bridge, which is higher than the existing roadway, and another profile for the box culvert, which is on the existing roadway. Bill advised to just submit one profile with the original profile. The bridge office stated that they could consider a shallow box beam bridge to keep the proposed roadway elevation close to the existing elevation.

KEA stated that the ecology survey was complete and that the area has habitat that could support some threatened or endangered species. Their team also noted that there appeared to be a Gopher Tortoise burrow on the project, but it looked abandoned. They will continue to monitor the activity of the T&E species as the project progresses. They also added that Archeology and History special studies, which are to be completed by GDOT, have not been assigned by OES.

Construction was concerned about staging the construction. It was explained that, at this time, the staging consisted of placing temporary pavement on the existing shoulder, using a temporary traffic signal for traffic control, and having traffic on only one lane while the existing culvert is replaced. This method was recommended by the Bridge Office at the PTIP meeting.

Action Items

PM

- Meeting Minutes
- Request Archeology and History surveys from OES
- Submit concept report for signatures

Design

- Corrected concept report and add attachments
- Submit report to PM for review and signatures

Attachments:

0011681 Crawford Sign-in Sheet

CC: Project file
Attendees
Russell McMurry, Director of Engineering
Genetha Rice-Singleton, State Program Delivery Engineer
Glenn Bowman, State Environmental Administrator
Phil Copeland, State Right-of-Way Administrator
Ben Rabun, State Bridge Engineer
Thomas Howell, District 3 District Engineer

Concept Utility Report

Project Number: N/A

District: 3rd

County: Crawford

Prepared by: Harland Smith

P.I. # 00110681

Date: 11-22-2013

Project Description: SR 22 / US 80 @ Bailey Branch

The information provided herein has been gathered from Georgia811and/or field visits and serves as an estimate. Nothing contained in this report is to be used as a substitute for 1st Submission or SUE.

Are SUE services recommended? No Level: A B C D

Public Interest Determination (PID): Automatic Mandatory Consideration
 No Use Exempt

Is a separate utility funding phase recommended? No

Existing Facilities: Public Service Telephone, Upson EMC

Potential Project (Schedule/Budget) Impacts: The existing utilities could possibly be reimbursable .

Capital Improvement Projects (Utilities) Anticipated in the Area: N/A

Project Specific Recommendations for Avoidance/Mitigation: N/A

Right of Way Coordination: N/A

Environmental Coordination: Any utility relocation could impact environmental area.

Additional Remarks: N/A

