

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

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

**FILE** P.I. # 0009971 & 0009972                      **OFFICE** Design Policy & Support  
Fayette County  
GDOT District 3 - Thomaston                      **DATE** 09/11/2015  
Roundabouts: SR 92 @ CR 138 & CR 308  
and SR 92 @ CR 138 & CR 129

**FROM**  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  
Darryl VanMeter, State Innovative Delivery Engineer  
Bobby Hilliard, Program Control Administrator  
Cindy VanDyke, State Transportation Planning Administrator  
Hiral Patel, State Environmental Administrator  
Ben Rabun, State Bridge Engineer  
Andrew Heath, State Traffic Engineer  
Angela Robinson, Financial Management Administrator  
Lisa Myers, State Project Review Engineer  
Charles "Chuck" Hasty, State Materials Engineer  
Lee Upkins, State Utilities Engineer  
Paul Tanner, State Transportation Data Administrator  
Attn: Systems & Classification Branch  
Richard Cobb, Statewide Location Bureau Chief  
Andy Casey, State Roadway Design Engineer  
Attn: Justin Lott, District Design Engineer  
Ed David Adams, State Safety Program Manager  
Michael Presley, District Engineer  
Adam Smith, District Preconstruction Engineer  
Scott Parker, District Utilities Engineer  
Banks Justin, Project Manager  
BOARD MEMBER - 3rd Congressional District

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

Project Type: Roundabouts  
 GDOT District: 3  
 Federal Route Number: None

P.I. Numbers: 0009971, 0009972  
 County: Fayette  
 State Route Number: 92

Rounabouts  
 Fayette 0009971 - SR92 @ CR149/Antioch Road and CR308/Lockwood Road  
 Fayette 0009972 - SR92 @ CR138/Seay Road and CR129/Harp Road

**Submitted for approval:**

|                                 |               |
|---------------------------------|---------------|
| <u><i>[Signature]</i></u>       | <u>7/2/15</u> |
| District Engineer               | Date          |
| <u><i>Albert Shelby</i></u>     | <u>7/7/15</u> |
| State Program Delivery Engineer | Date          |
| <u><i>[Signature]</i></u>       | <u>7/6/15</u> |
| GDOT Project Manager            | Date          |

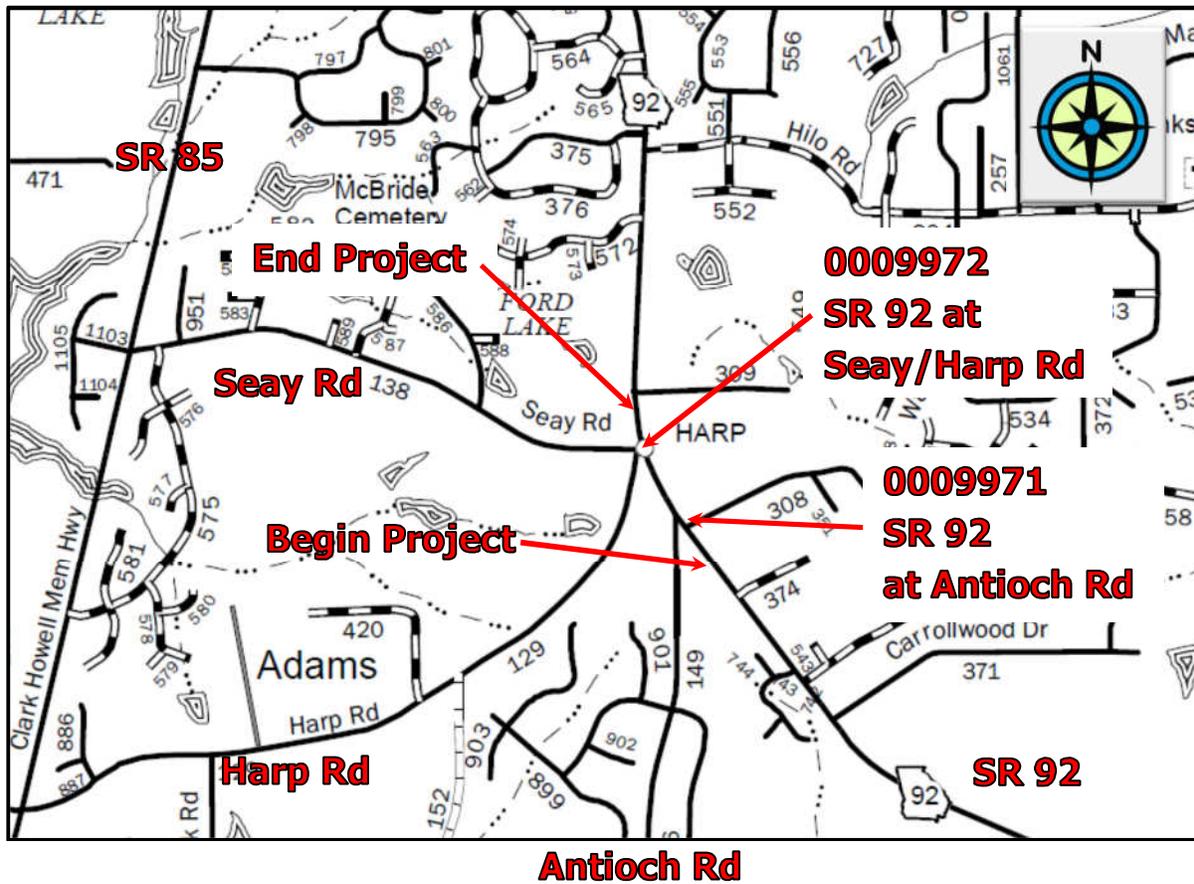
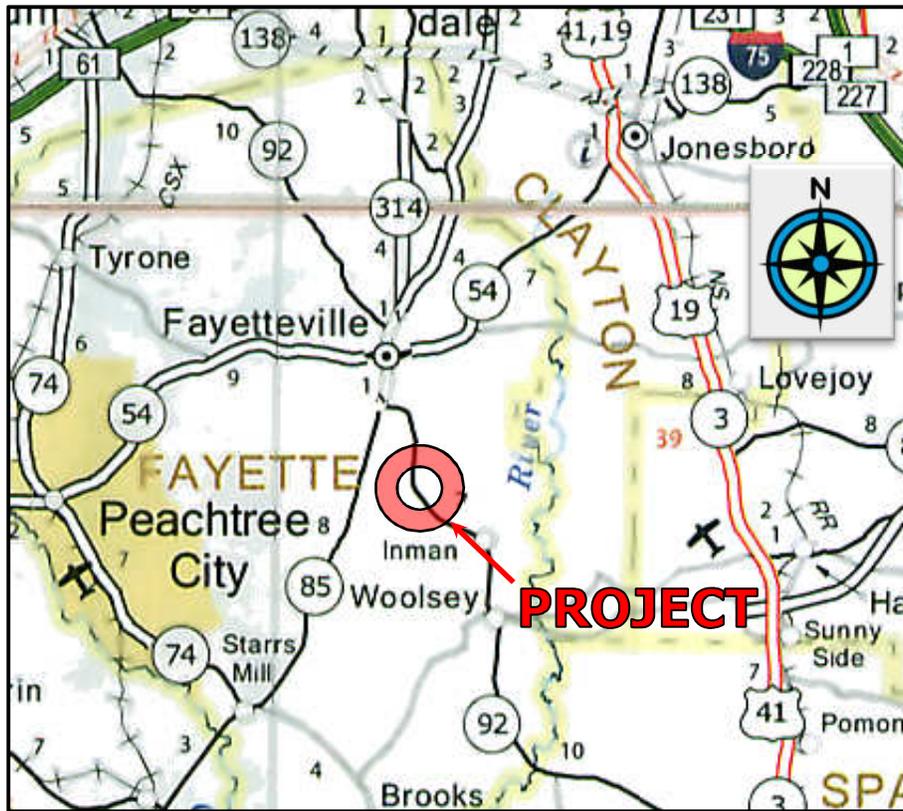
**Recommendation for approval:**

|   |                  |
|---|------------------|
| Program Control Administrator                           | Date             |
| * <u><i>HIRAL PATEL</i></u>                             | <u>8/10/2015</u> |
| State Environmental Administrator                       | Date             |
| * <u><i>KEN WERHO</i></u>                               | <u>7/17/2015</u> |
| for State Traffic Engineer                              | Date             |
| * <u><i>USA MYERS</i></u>                               | <u>7/10/2015</u> |
| Project Review Engineer                                 | Date             |
| * <u><i>YOLONDA PRIDE-FOSTER</i></u>                    | <u>7/15/2015</u> |
| for State Utilities Engineer                            | Date             |
| State Transportation Financial Management Administrator | Date             |

- MPO Area: This project is consistent with the MPO adopted Regional Transportation Plan (RTP)/Long Range Transportation Plan (LRTP).
- Rural Area: This project is consistent with the goals outlined in the Statewide Transportation Plan (SWTP) and/or is included in the State Transportation Improvement Program (STIP).

|   |                  |
|---|------------------|
| * <u><i>CYNTHIA L VANDYKE</i></u>           | <u>7/13/2015</u> |
| State Transportation Planning Administrator | Date             |

### PROJECT LOCATION MAP



## PLANNING AND BACKGROUND

### Project Justification Statement:

0009971

The purpose of the proposed project is to reduce crash frequency and severity while improving operational efficiency at the intersection of State Route 92 (SR 92) at CR149/Antioch Road & CR 308/Lockwood Road in Fayette County, GA. Crash data from 2009-2013 indicated that 9 correctable crashes occurred at this intersection resulting in 1 injury and 1 fatality. Of those crashes 36% were angle collisions accounting for 25% of the injuries and fatality.

In Georgia, nearly a third of fatal crashes occur at intersections making intersection safety a focus area for the Georgia Department of Transportation (GDOT). Nationally, intersection crashes account for 40% of all reported crashes and approximately 20% of traffic fatalities. Of those fatalities, nearly 50% are the result of angle collisions. Angle collisions are often high speed, high impact crashes which often result in serious injuries or fatalities. The installation of roundabouts have resulted in a greater reduction in crash frequency and in many instances better operational efficiency; which is the intent of this project.

0009972

This project proposes to reduce the frequency and severity of crashes while improving the operation of the existing intersection of SR 92 at CR 138/Seay Road and CR 129/Harp Road. Crash data from 2009 to 2013 indicated that 9 correctable crashes occurred at this intersection resulting in 5 injuries. Of those crashes, 44% were angle collisions with two resulting in injury. A safety improvement project has been recommended for this intersection to reduce the crash frequency and severity while also reducing congestion.

Statements provided by: GDOT Office of Traffic Operations

### Existing conditions:

SR 92 is a two-lane highway with shoulders and no sidewalks traveling from the southeast to the north. There are two major T-intersections within the project limits, SR 92 at Antioch Rd and SR 92 at Seay Rd. Both side roads are to the west of SR 92, and the intersections are approximately 1000' apart. There are two other T-intersections located at this project location. The first is Harp Rd at Seay Rd approximately 50' west of SR 92. The other is SR 92 at Lockwood Rd approximately 150' southeast of Antioch Rd. All the side roads are two lanes with shoulders and no sidewalks.

Mostly residential areas border the projects along the eastern side of SR 92. Whitewater Church is located north of Seay Rd on the east side of SR 92. The western side of SR 92 consists of a mixture of residential and religious buildings. Harp's Crossing Baptist Church is located between the two major intersections and its facilities border SR 92, Antioch Rd, Seay Rd, and Harp Rd. It has four existing driveway access points: one on SR 92, one on Antioch Rd, and two on Harp Rd. There are several utility distribution lines in the area but no transmission lines.

### Other projects in the area:

Fayette 321960 will widen SR 85. Since it is located approximately 1.5 miles away, no impacts are anticipated. M005003 resurfacing project of SR 92 from Westmoreland Rd to SR 85 could affect the project. It currently does not have a let date.

**MPO:** Atlanta

**TIP #:** None

**TIA Regional Commission:** Atlanta Regional Commission

**Congressional District(s):** 3

**Federal Oversight:**  PoDI

Exempt

State Funded

Other

**Projected Traffic:** ADT (See attached traffic diagrams)

| <u>Roadway</u> | <u>Current Year (2014)</u> | <u>Open Year (2019)</u> | <u>Design Year (2039)</u> |
|----------------|----------------------------|-------------------------|---------------------------|
| SR 92          | 14,050                     | 15,500                  | 21,300                    |
| Antioch Road   | 4,500                      | 5,000                   | 6,900                     |
| Harp Road      | 1,400                      | 1,550                   | 2,100                     |
| Seay Road      | 800                        | 850                     | 1,200                     |
| Lockwood Road  | 150                        | 150                     | 200                       |
| 24 HR T: 4.0%  |                            |                         |                           |

Traffic Projections Provided by: GDOT Office of Planning

Traffic Projections Performed by: Grice Consulting Group

**Functional Classification:**

SR92 – Urban Minor Arterial

Antioch Road – Urban Major Collector

Harp Road – Urban Major Collector

Seay Road – Urban Local

Lockwood Road – Urban Local

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

Warrants met:  None  Bicycle  Pedestrian  Transit

Fayette County had a transportation plan prepared in 2010 that was used as guidance for complete street accommodations related to these projects. In the transportation plan, Fayette County designated Harp Rd and Antioch Rd as corridors for bicycle accommodations. The accommodations were a multi-use path along Harp Rd and widened shoulders on Antioch Rd. This warrants providing bike-able shoulders along Antioch Rd as part of the project. However, since the multi-use path is off-street, no bicycle accommodations on Harp Rd will be included.

The transportation plan does not include any pedestrian specific facilities near the project area. During site visits, no worn paths along SR 92 or any of the side roads were observed. However, the project is located in a suburban area with residential development, churches, and a business in the vicinity. It was also mentioned by the public that the school bus stops between the two intersections. The roundabout design also includes sidewalks around the intersection. With two roundabouts in close proximity and the school bus stop, a sidewalk will be included between the two intersections along SR 92.

There is currently no public transit system operating in Fayette County. And the transportation plan does not include any recommendations for transit infrastructure. Therefore, no transit accommodations will be included in these projects.

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

**Pavement Evaluation and Recommendations**

Initial Pavement Evaluation Summary Report Required?

No  Yes

Initial Pavement Type Selection Report Required?

No  Yes

Feasible Pavement Alternatives:

HMA  PCC  HMA & PCC

**DESIGN AND STRUCTURAL****Description of the proposed projects:**

The projects will improve the intersections of SR 92 at Antioch Road / Lockwood Road and SR 92 at Seay Road / Harp Road. The proposed length is approximately 0.5 miles. The projects are located approximately 1.5 miles south of the city limits of Fayetteville.

**Major Structures:** N/A**Mainline Design Features:** SR 92 – Urban Minor Arterial (with existing rural cross-section)

| Feature                                 | Existing*         | Standard**      | Proposed          |
|---|-------------------|-----------------|-------------------|
| <b>Typical Section</b>                  |                   |                 |                   |
| - Number of Lanes                       | 2                 | N/A             | 2                 |
| - Lane Width(s)                         | 12'               | 11-12'          | 12'               |
| - Median Width & Type                   | N/A               | N/A             | N/A               |
| - Outside Shoulder or Border Area Width | 2'                | 8-10'           | 16'               |
| - Outside Shoulder Slope                | 7%                | 6%              | 2%                |
| - Inside Shoulder Width                 | N/A               | N/A             | N/A               |
| - Sidewalks                             | N/A               | N/A             | 5'                |
| - Auxiliary Lanes                       | 1-Right Turn Lane | N/A             | 1-Right Turn Lane |
| - Bike Lanes                            | N/A               | N/A             | N/A               |
| Posted Speed                            | 55 mph            | N/A             | 55 mph            |
| Design Speed                            | 45 mph            | 30-60 mph       | 55 mph            |
| Min Horizontal Curve Radius             | 2,865'            | > 587'          | > 960'            |
| Maximum Superelevation Rate             | 8%                | 6 or 8%         | 8%                |
| Maximum Grade                           | 2%                | 6%              | < 6%              |
| Access Control                          | Permitted         | Permitted       | Permitted         |
| Design Vehicle                          | Unknown           | WB-40 or BUS-40 | WB-67             |
| Pavement Type                           | HMA               | N/A             | HMA               |

\*According to original plans and field measurements

\*\*According to current design policy if applicable

**Side Road Design Features:** CR 149 / Antioch Road – Urban Major Collector (with existing rural cross-section)  
 CR 129 / Harp Road – Urban Major Collector (with existing rural cross-section)

| Feature   | Existing*                          | Standard**   | Proposed                          |
|---|------------------------------------|--------------|-----------------------------------|
| <b>Typical Section</b>  |                                    |              |                                   |
| - Number of Lanes   | 2                                  | N/A          | 2                                 |
| - Lane Width(s)   | Antioch - 11'<br>Harp – 11.5'      | 11-12'       | 12'                               |
| - Median Width & Type   | N/A                                | N/A          | N/A                               |
| - Outside Shoulder or Border Area Width                             | 2'                                 | 8-10'        | 8'                                |
| - Outside Shoulder Slope  | 7%                                 | 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<br>6.5 ft shoulder with space for 4 ft bike travel way | N/A                                | 4'           | Antioch - 4'<br>Harp – N/A        |
| Posted Speed  | Antioch - -45 mph<br>Harp – 40 mph | N/A          | Antioch - 45 mph<br>Harp – 40 mph |
| Design Speed  | Unknown                            | < 30 mph     | 45 mph                            |
| Min Horizontal Curve Radius   | Antioch - -N/A<br>Harp – 2,864'    | > 643'       | > 643'                            |
| Maximum Superelevation Rate   | N/A                                | 6%           | 6%                                |
| Maximum Grade   | 2%                                 | 9%           | < 9%                              |
| Access Control  | Permitted                          | Permitted    | Permitted                         |
| Design Vehicle  | Unknown                            | BUS-40 or SU | SU                                |
| Pavement Type   | HMA                                | N/A          | HMA                               |

\*According to original plans and field measurements

\*\*According to current design policy if applicable

**Side Road Design Features: CR 138 / Seay Road – Urban Local (with existing rural cross-section)**

| Feature                                 | Existing* | Standard** | Proposed  |
|---|-----------|------------|-----------|
| <b>Typical Section</b>                  |           |            |           |
| - Number of Lanes                       | 2         | N/A        | 2         |
| - Lane Width(s)                         | 12'       | 11-12'     | 12'       |
| - Median Width & Type                   | N/A       | N/A        | N/A       |
| - Outside Shoulder or Border Area Width | 2'        | 8-10'      | 8'        |
| - Outside Shoulder Slope                | 5.5%      | 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                            | 35 mph    | N/A        | 35 mph    |
| Design Speed                            | Unknown   | 20-30 mph  | 35 mph    |
| Min Horizontal Curve Radius             | N/A       | > 340'     | > 340'    |
| Maximum Superelevation Rate             | N/A       | 6%         | 6%        |
| Maximum Grade                           | 3%        | 11%        | < 11%     |
| Access Control                          | Permitted | Permitted  | Permitted |
| Design Vehicle                          | Unknown   | SU or P    | SU        |
| Pavement Type                           | HMA       | N/A        | HMA       |

\*According to original plans and field measurements

\*\*According to current design policy if applicable

**Side Road Design Features: CR 308 / Lockwood Road – Urban Local**

| Feature                                 | Existing* | Standard** | Proposed  |
|---|-----------|------------|-----------|
| <b>Typical Section</b>                  |           |            |           |
| - Number of Lanes                       | 2         | N/A        | 2         |
| - Lane Width(s)                         | 11'       | 10-12'     | 11'       |
| - Median Width & Type                   | N/A       | N/A        | N/A       |
| - Outside Shoulder or Border Area Width | Unknown   | 10-16'     | 10'       |
| - Outside Shoulder Slope                | Unknown   | 2%         | 2%        |
| - 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                            | 25 mph    | N/A        | 25 mph    |
| Design Speed                            | Unknown   | 20-30 mph  | 25 mph    |
| Min Horizontal Curve Radius             | N/A       | > 154'     | > 154'    |
| Maximum Superelevation Rate             | N/A       | 4%         | 4%        |
| Maximum Grade                           | 5%        | 12%        | < 12%     |
| Access Control                          | Permitted | Permitted  | Permitted |
| Design Vehicle                          | Unknown   | SU or P    | P         |
| Pavement Type                           | HMA       | N/A        | HMA       |

\*According to original plans and field measurements

\*\*According to current design policy if applicable

**Major Interchanges/Intersections:**

- SR92 @ Antioch Road
- SR92 @ Seay Road
- Seay Road @ Harp Road
- SR92 @ Lockwood Road

**Lighting required:**  No  Yes

**Off-site Detours Anticipated:**  No  Undetermined  Yes

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

**Design Exceptions to FHWA/AASHTO controlling criteria anticipated:**

| FHWA/AASHTO Controlling Criteria  | No                                  | Undeter-<br>mined        | Yes                      | Appvl Date<br>(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<br>Office | No                                  | Undeter-<br>mined        | Yes                      | Appvl Date<br>(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. Roundabout Illumination Levels   | DP&S                | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                               |
| 9. Complete Streets                 | DP&S                | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                               |
| 10. ADA & PROWAG                    | DP&S                | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                               |
| 11. GDOT Construction Standards     | DP&S                | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                               |
| 12. GDOT Drainage Manual            | DP&S                | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                               |
| 13. GDOT Bridge & Structural Manual | Bridge              | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                               |

**VE Study anticipated:**  No  Yes  Completed – Data:

**UTILITY AND PROPERTY**

Temporary State Route needed:  No  Yes  Undetermined

Railroad Involvement: None

Utility Involvements: (See attached concept utility report)

- Electric Distribution: Coweta-Fayette EMC
- Cable TV: Comcast
- Telephone: BellSouth d/b/a AT&T
- Gas: Atlanta Gas Light
- Water & Sewer: Fayette County Water

SUE Required:  No  Yes  Undetermined

Public Interest Determination Policy and Procedure recommended?  No  Yes

**Right-of-Way (ROW):**

| <u>Roadway</u> | <u>Existing Width</u> | <u>Proposed Width</u> |
|----------------|-----------------------|-----------------------|
| SR92           | 100'                  | 100'                  |
| Antioch Road   | 80'                   | 80'                   |
| Harp Road      | 80'                   | 80'                   |
| Seay Road      | 80'                   | 80'                   |
| Lockwood Road  | 50'                   | 50'                   |

Required Right-of-Way anticipated:  None  Yes  Undetermined

The width of the roadways is not being widened as part of the project. But ROW is being acquired around the intersections.

Easements anticipated:  None  Temporary  Permanent  Utility  Other

|   |                      |   |
|---|----------------------|---|
| Anticipated total number of impacted parcels: |                      | 8 |
| Displacements anticipated:                    | Businesses:          | 0 |
|   | Residences:          | 0 |
|   | Other:               | 0 |
|   | Total Displacements: | 0 |

Location and Design approval:  Not Required  Required

Impacts to USACE property anticipated?  No  Yes  Undetermined

**ROUNDBABOUTS**

Roundabout Lighting Agreement/Commitment Letter received:  No  Yes (See attached)

**Roundabout Feasibility Study:**

0009971

Operational analysis was performed on the SR 92 at Antioch Rd intersection for existing conditions and a roundabout using projected traffic volumes. A traffic signal was not included in the analysis because traffic volumes only met signal warrants for peak hour at this location. Results of the analysis showed a roundabout would perform at acceptable levels in the design year. The analysis is attached to the report.

Fayette County, in their letter of support, asked what would happen if SR 92 was widened to 4 lanes in the future. Future expansion of the roundabout will be considered in the design of the roundabout, and it will be built with the diameter of a multilane roundabout but with only a single lane, initially. In the future, the center island can be reduced to add a second lane without additional impacts to property adjacent to the intersection.

The roundabout would also address a severe crash history at this location. Crash data for 2009-2013 shows 9 correctable crashes at this location. The majority of these crashes involve vehicles attempting to complete a left turn. Based on the Crash Modification Factors, a roundabout would provide the greatest reduction in crash rate. A crash diagram is attached to the report.

Since the roundabout is to address a severe crash history, a cost comparison is not necessary. However, an estimated cost for construction was calculated. The construction cost of the roundabout is similar to the construction cost for a traffic signal. The table below is a summary of the alternatives considered.

|                    | <b>No Build</b>                               | <b>Traffic Signal</b>           | <b>Roundabout</b>                               |
|--------------------|---|---------------------------------|---|
| Operation Analysis | Unacceptable levels of service for Antioch Rd | N/A, only met peak hour warrant | Acceptable levels of service for all approaches |
| Safety             | Does not address safety                       | Moderate safety improvement     | Eliminates angle crashes and high speeds        |
| Cost               | None  | Moderate Cost                   | Moderate Cost                                   |

The Feasibility Study concludes that a roundabout is the most favorable alternative. It addresses the safety issue while providing acceptable levels of service.

0009972

Operational analysis was performed on the SR 92 at Seay Rd intersection for the following alternatives: no build, adding a turn lane, and a roundabout. A traffic signal was not included in the analysis because traffic volumes did not meet signal warrants at this location. Results of the analysis showed a roundabout would perform at acceptable levels in the design year. The analysis is attached to the report.

The roundabout would also address a severe crash history at this location. Crash data for 2009-2013 shows 9 correctable crashes at this location. The majority of these crashes involve vehicles attempting to complete a left turn. Based on the Crash Modification Factors, a roundabout would provide the greatest reduction in crash rate. A summary of the crash history is attached to the report. A crash diagram is attached to the report.

Since the roundabout is to address a severe crash history, a cost comparison is not necessary. However, an estimated cost for construction was calculated. The construction cost of the roundabout is similar to the construction cost for a traffic signal. The table below is a summary of the alternatives considered.

|                    | <b>No Build</b>                            | <b>Left Turn Lane</b>          | <b>Traffic Signal</b>                 | <b>Roundabout</b>                               |
|--------------------|--|--------------------------------|---------------------------------------|---|
| Operation Analysis | Unacceptable levels of service for Seay Rd | Similar to existing conditions | N/A, did not meet any signal warrants | Acceptable levels of service for all approaches |
| Safety             | Does not address safety                    | Minimal safety improvement     | Moderate safety improvement           | Eliminates angle crashes and high speeds        |
| Cost               | None                                       | Low Cost                       | Moderate Cost                         | Moderate Cost                                   |

The Feasibility Study concludes that a roundabout is the most favorable alternative. It addresses the safety issue while providing acceptable levels of service.

**Roundabout Peer Review Required:**  No  Yes  Completed – Date:

The roundabout peer review will continue through PFPR. For the concept report, the peer review included review of alternatives, capacity, and geometrics. The peer reviewers also supported public outreach efforts.

## CONTEXT SENSITIVE SOLUTIONS

Issues of Concern: None

Context Sensitive Solutions Proposed: None

## ENVIRONMENTAL & PERMITS

Anticipated Environmental Document:

GEPA:  NEPA:  CE  EA/FONSI  EIS

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

This project does not meet any of the project level exclusions and will required BMPs. Water quality is the most critical stormwater criteria with the increase in impervious area for most of the drainage areas. Only Drainage Area 1 has a post construction runoff greater than 2 ft<sup>3</sup>/s and will require channel protection. Drainage Area 4 has a negligible increase in impervious area of 0.02 acres and will not require any BMPs. Much of the shoulder is changing from rural to curb and gutter, eliminating BMPs such as a filter strip and bioslope. To minimize cost and avoid relocations, either a grass channel or dry enhanced swale along SR 92 may be used to treat runoff. A map of the outfalls and the calculated measures are attached to the report.

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 checked="" type="checkbox"/> | <input type="checkbox"/>            |         |
| 4.  | Tennessee Valley Authority Permit    | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |         |
| 5.  | 33 USC 408 Decision                  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |         |
| 6.  | Buffer Variance                      | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |         |
| 7.  | Coastal Zone Management Coordination | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |         |
| 8.  | NPDES                                | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |         |
| 9.  | FEMA                                 | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |         |
| 10.   | Cemetery Permit                      | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |         |
| 11.   | Other Permits                        | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |         |
| 12.   | Other Commitments                    | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |         |
| 13.   | Other Coordination                   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |         |

Is a PAR required?  No  Yes  Completed – Date:

Environmental Comments and Information:

NEPA: CE approval is scheduled for March 2017.

**Ecology:** The ecology survey was completed April 10, 2015. There is one wetland located in the project study area. There are no Biota Impaired streams located near the project. No fish passage will be required as there are no streams crossing the project.

**History:** History is clear with a finding of No Historic Properties Affected, as of April 30, 2015.

**Archeology:** The archeology survey has not been completed.

**Air Quality:**

Is the project located in a PM 2.5 Non-attainment area?  No  Yes  
 Is the project located in an Ozone Non-attainment area?  No  Yes  
 Is a Carbon Monoxide hotspot analysis required?  No  Yes

**Noise Effects:** This project is classified as a Type III project and does not require the preparation of a noise study or abatement of highway noise impacts.

**Public Involvement:** A PIOH was held April 28, 2015. The project team talked with the public about the project and answered any questions. The response letter for the PIOH meeting is attached. Fayette County Commissioners held a second public meeting on June 2, 2015 and asked GDOT to attend. A presentation on roundabouts was given before opening the floor to questions from the public that were answered by a panel of GDOT personnel.

**Major stakeholders:**

- Harps Crossing Baptist Church
- Episcopal Church of the Nativity
- St. Gabriel Catholic Church
- Whitewater Church
- Prime Family of Companies
- Fayette County Fire Department
- Fayette County School System
- Local Residents
- Traveling Public
- FAA

## CONSTRUCTION

**Issues potentially affecting constructability/construction schedule:** None

**Early Completion Incentives recommended for consideration:**  No  Yes

## COORDINATION, ACTIVITIES, RESPONSIBILITIES, AND COSTS

**Project Team Initiation Process (PTIP) Meeting:**

0009971

A PTIP meeting was held March 26, 2014. Items discussed included coordination with project 0009972, the potentially historic property in the south quadrant, utility coordination, resource recommendations, scope, schedule, lighting, and traffic. See the attached minutes.

0009972

A PTIP meeting was held June 24, 2014. Some items discussed during the meeting included twinning the project with 0009971, fence located on parcel at intersection of SR 92 and Seay Rd, utility coordination, and peer review tasks. The minutes are attached.

**Initial Concept Meeting:** N/A

**Concept Meeting:** The concept meeting was held for January 27, 2015. A background of the project and the existing conditions were presented to the group before reviewing the alternatives. A separate feasibility study was not required as long as all the components are included in the report. The peer review would aide in selecting the preferred alternative. The minutes are attached.

**Other coordination to date:** There is an FAA communication tower located south of Harp's Crossing Baptist Church and an airport located within 5 miles of the project, so FAA coordination may be required.

| 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 Coordination (Preconstruction)      | GDOT – District 3 Utilities                       |
| Utility Relocation (Construction)           | Utility Owners                                    |
| Letting to Contract                         | GDOT – Bidding Administration                     |
| Construction Supervision                    | GDOT – District 3 Construction                    |
| Providing Material Pits                     | Contractor  |
| Providing Detours                           | GDOT and Contractor                               |
| Environmental Studies, Documents, & Permits | GDOT – Environmental Services                     |
| Environmental Mitigation                    | GDOT – Environmental Services                     |
| Construction Inspection & Materials Testing | GDOT – District 3 Construction & GDOT - Materials |

**Project Cost Estimate Summary and Funding Responsibilities:**

|                  | PE           | ROW            | Utility*    | CST**          | Mitigation | Total Cost     |
|------------------|--------------|----------------|-------------|----------------|------------|----------------|
| Funded By        | GDOT         | GDOT           | GDOT        | GDOT           | GDOT       |                |
| Total \$ Amount  | \$684,052.30 | \$2,805,000.00 | \$99,000.00 | \$5,224,981.31 | \$0.00     | \$8,813,033.61 |
| For 0009971      | \$342,026.30 | \$1,346,000.00 |             | \$2,833,594.92 | \$0.00     |                |
| For 0009972      | \$342,026.00 | \$1,459,000.00 |             | \$2,391,386.39 | \$0.00     |                |
| Date of Estimate | 11/17/2014   | 6/18/2015      | 1/22/2015   | 6/30/2015      | 5/7/2015   |                |

\*Reimbursable Utility Costs only

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

**ALTERNATIVES DISCUSSION**

**Alternative selection:**

**Preferred Alternative:**

|   |                       |                              |                       |
|---|-----------------------|------------------------------|-----------------------|
| <b>0009971:</b> Construct a roundabout at the intersection of SR 92 and Antioch Rd  |                       |                              |                       |
| <b>0009972:</b> Construct a roundabout at the intersection of SR 92 and Seay Rd   |                       |                              |                       |
| <b>Estimated Property Impacts:</b>  | <b>8</b>              | <b>Estimated Total Cost:</b> | <b>\$8,813,033.61</b> |
| <b>Estimated ROW Cost:</b>  | <b>\$2,805,000.00</b> | <b>Estimated CST Time:</b>   | <b>30 Months</b>      |
| <b>Rationale:</b> Providing a roundabout at each location would address the safety issue with angle crashes while improving level of service for the minor streets. Two roundabouts close together would also lower speeds on SR 92 through the area. |                       |                              |                       |

**Alternative 1A:**

|   |                       |                              |                       |
|---|-----------------------|------------------------------|-----------------------|
| <b>0009971:</b> Construct a roundabout at the intersection of SR 92 and Antioch Rd  |                       |                              |                       |
| <b>0009972:</b> Add a left turn lane at the intersection of SR 92 and Seay Rd   |                       |                              |                       |
| <b>Estimated Property Impacts:</b>  | <b>6</b>              | <b>Estimated Total Cost:</b> | <b>\$5,010,181.76</b> |
| <b>Estimated ROW Cost:</b>  | <b>\$1,496,000.00</b> | <b>Estimated CST Time:</b>   | <b>18 Months</b>      |
| <b>Rationale:</b> This alternative improves the intersection of SR 92 and Antioch Rd with a roundabout, addressing both the safety issues and improves operations. The left turn lane could address rear end crashes at the Seay intersection, but not the angle crashes. The turn lane would not provide the greatest B/C ratio for the Seay intersection. |                       |                              |                       |

**Alternative 1B:**

**0009971:** Realign Antioch Rd to intersect SR 92 near Cedar Cove Trail, construct a roundabout at the new intersection, and cul-de-sac Antioch Rd

**0009972:** Add a left turn lane at the intersection of SR 92 and Seay Rd

|                                    |                       |                              |                       |
|------------------------------------|-----------------------|------------------------------|-----------------------|
| <b>Estimated Property Impacts:</b> | <b>7</b>              | <b>Estimated Total Cost:</b> | <b>\$7,374,782.80</b> |
| <b>Estimated ROW Cost:</b>         | <b>\$3,878,572.96</b> | <b>Estimated CST Time:</b>   | <b>24 Months</b>      |

**Rationale:** Similar to Alternative 1A, this alternative would move the intersection further south away from the business and Harp's Crossing church, avoiding their parking lots. But would require a larger amount of land from the Episcopal and Catholic churches to construct the road, and was strongly opposed by the Catholic church. The left turn lane still does not provide the greatest B/C ratio at the Seay intersection.

**Alternative 2A:**

**0009971:** Construct a roundabout at the intersection of SR 92 and Antioch Rd

**0009972:** Construct a connecting road between Harp Rd and Antioch Rd and cul-de-sac Harp Rd

|                                    |                       |                              |                       |
|------------------------------------|-----------------------|------------------------------|-----------------------|
| <b>Estimated Property Impacts:</b> | <b>10</b>             | <b>Estimated Total Cost:</b> | <b>\$9,414,061.82</b> |
| <b>Estimated ROW Cost:</b>         | <b>\$6,039,223.15</b> | <b>Estimated CST Time:</b>   | <b>24 Months</b>      |

**Rationale:** This alternative diverts Harp Rd traffic to Antioch Rd, greatly reducing the number of turning movements at the Seay Intersection. A single roundabout would provide the capacity to handle the combined traffic of Antioch Rd and Harp Rd. However, it does not eliminate the potential for high-speed, angle crashes at the Seay intersection. It would also require a significant amount of ROW, including a displacement.

**Alternative 2B:**

**0009971:** Realign Antioch Rd to intersection SR 92 near Cedar Cove Trail, construct a roundabout at the new intersection, and cul-de-sac Antioch Rd

**0009972:** Construct a connecting road between Harp Rd and Antioch Rd and cul-de-sac Harp Rd

|                                    |                       |                              |                        |
|------------------------------------|-----------------------|------------------------------|------------------------|
| <b>Estimated Property Impacts:</b> | <b>13</b>             | <b>Estimated Total Cost:</b> | <b>\$13,219,258.00</b> |
| <b>Estimated ROW Cost:</b>         | <b>\$9,677,416.16</b> | <b>Estimated CST Time:</b>   | <b>30 Months</b>       |

**Rationale:** This alternative would locate the roundabout away from Harp's Crossing church and business parking lots to a less developed area. A single roundabout would provide the capacity to handle the combined traffic of Antioch Rd and Harp Rd. But, this alternative does not eliminate the potential for high-speed, angle crashes at the Seay intersection. It also requires significant ROW from the Episcopal and Catholic churches, and was strongly opposed by the Catholic church.

**Alternative 3:**

**0009971:** Construct a connecting road between Harp Rd and Antioch Rd and cul-de-sac Antioch Rd

**0009972:** Construct a roundabout at the intersection of SR 92 and Seay Rd

|                                    |                       |                              |                       |
|------------------------------------|-----------------------|------------------------------|-----------------------|
| <b>Estimated Property Impacts:</b> | <b>8</b>              | <b>Estimated Total Cost:</b> | <b>\$8,868,420.47</b> |
| <b>Estimated ROW Cost:</b>         | <b>\$5,066,995.18</b> | <b>Estimated CST Time:</b>   | <b>24 Months</b>      |

**Rationale:** This alternative would construct the roundabout in the unused north corner of the church's parcel to avoid developed parts of the area. Antioch Rd would be rerouted to Harp Rd and eliminate the skew intersection. But significant Right-of-Way will be necessary to construct the connecting road. It would also create a second intersection with potential traffic issues.

**No-Build Alternative:**

**0009971:** Leave intersection as stop control T-Intersection

**0009972:** Leave intersection as stop control T-Intersection

|                                    |               |                              |                 |
|------------------------------------|---------------|------------------------------|-----------------|
| <b>Estimated Property Impacts:</b> | <b>0</b>      | <b>Estimated Total Cost:</b> | <b>\$0.00</b>   |
| <b>Estimated ROW Cost:</b>         | <b>\$0.00</b> | <b>Estimated CST Time:</b>   | <b>0 Months</b> |

**Rationale:** There is a history of angle crashes at each intersection that needs to be addressed. Intersection improvement is needed to prevent angle crashes while also improving level of service for the minor street.

**LIST OF ATTACHMENTS/SUPPORTING DATA**

1. Concept Layout
2. Typical Sections
3. Detailed Cost Estimates:
  - a. Construction including Engineering and Inspection and Contingencies
  - b. Completed Liquid AC Cost Adjustment Forms
  - c. Right-of-Way
  - d. Utilities
4. Crash Diagrams
5. Traffic Diagrams
6. Capacity Analysis Summary
7. Roundabout Data
  - a. Number of Entry Lanes Analysis
  - b. Fayette County Letters of Support
  - c. Peer Review
8. Concept Level Hydrology Study for MS4 Permit
9. Pavement Design
10. Concept Utility Report
11. Project Team Initiation Process (PTIP) Minutes
12. Concept Meeting Minutes
13. PIOH Response Letter

**APPROVALS**

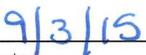
**Concur:**

  
\_\_\_\_\_  
Director of Engineering

  
\_\_\_\_\_  
Date

**Approve:**

  
\_\_\_\_\_  
Chief Engineer

  
\_\_\_\_\_  
Date

Project Concept Report  
Fayette County  
PI Numbers: 0009971  
0009972

# **Attachment 1**

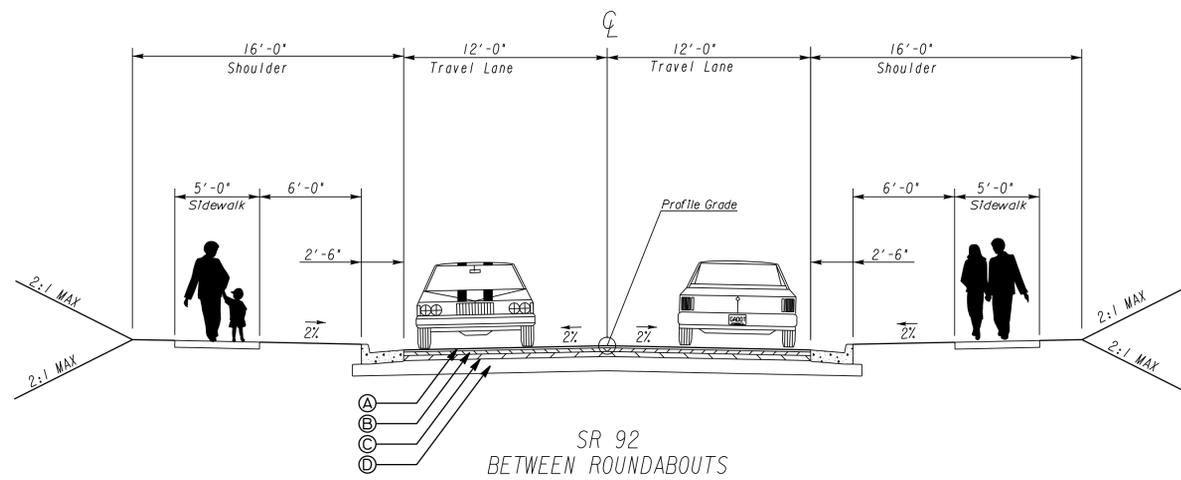
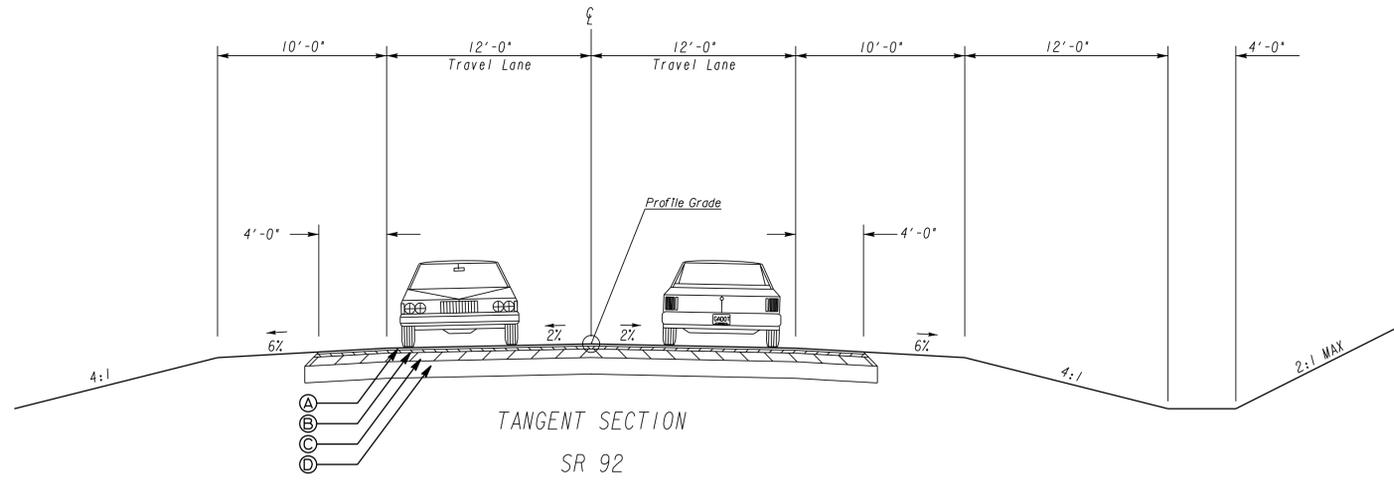
## Concept Layout



Project Concept Report  
Fayette County  
PI Numbers: 0009971  
0009972

# **Attachment 2**

## Typical Sections



- Ⓐ RECYCLED ASPH CONC 12.5 MM SUPERPAVE, INCL BITUM MATL & H LIME (165 LB/SY)
- Ⓑ RECYCLED ASPH CONC 19 MM SUPERPAVE, INCL BITUM MATL & H LIME (220 LB/SY)
- Ⓒ RECYCLED ASPH CONC 25 MM SUPERPAVE, INCL BITUM MATL & H LIME (330 LB/SY)
- Ⓓ GRADED AGGREGATE BASE CRS, INCL MATL, 12 IN

**GEORGIA**  
DEPARTMENT  
OF  
TRANSPORTATION

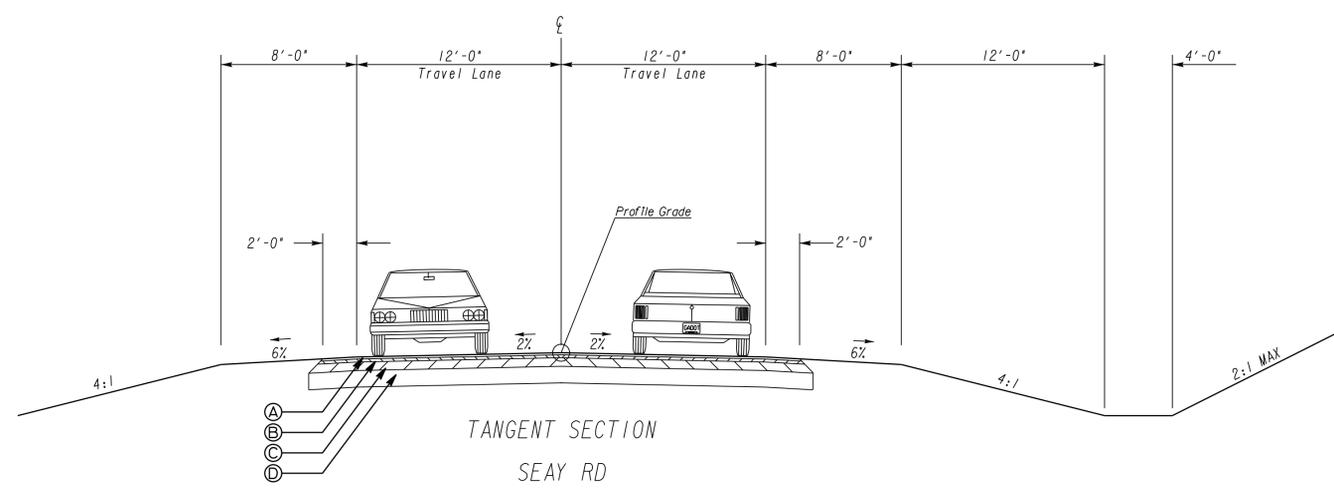
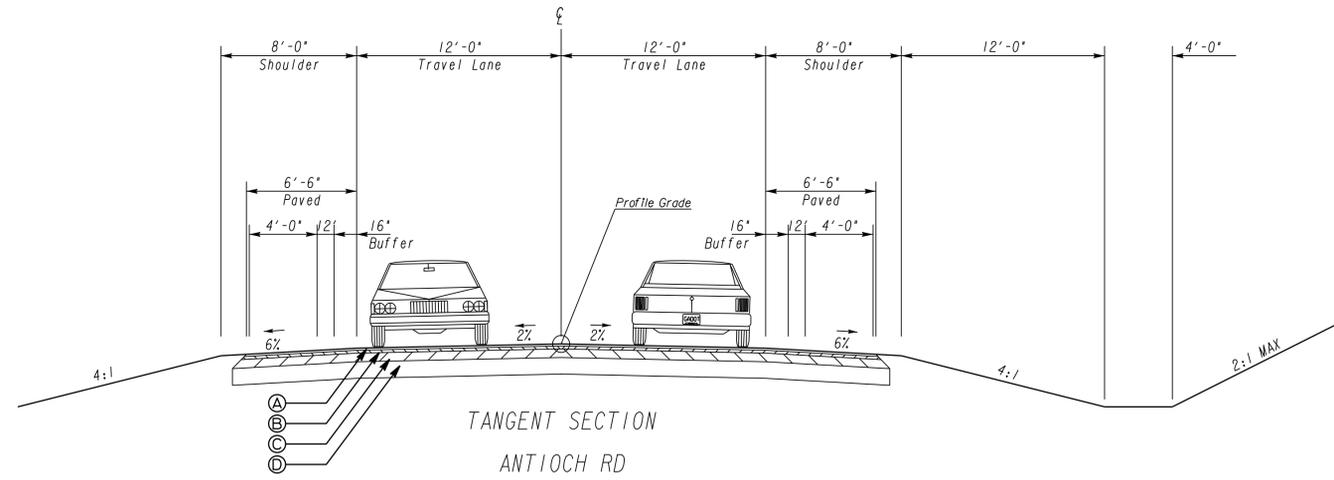
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STATE OF GEORGIA  
DEPARTMENT OF TRANSPORTATION  
OFFICE: DISTRICT 3 DESIGN  
**TYPICAL SECTIONS**

SR92 AT ANTIOCH RD/LOCKWOOD  
RD & SEAY RD/HARP RD

DRAWING No.  
**05-01**



- Ⓐ RECYCLED ASPH CONC 12.5 MM SUPERPAVE, INCL BITUM MATL & H LIME (165 LB/SY)
- Ⓑ RECYCLED ASPH CONC 19 MM SUPERPAVE, INCL BITUM MATL & H LIME (220 LB/SY)
- Ⓒ RECYCLED ASPH CONC 25 MM SUPERPAVE, INCL BITUM MATL & H LIME (330 LB/SY)
- Ⓓ GRADED AGGREGATE BASE CRS, INCL MATL, 12 IN

**GEORGIA**  
DEPARTMENT  
OF  
TRANSPORTATION

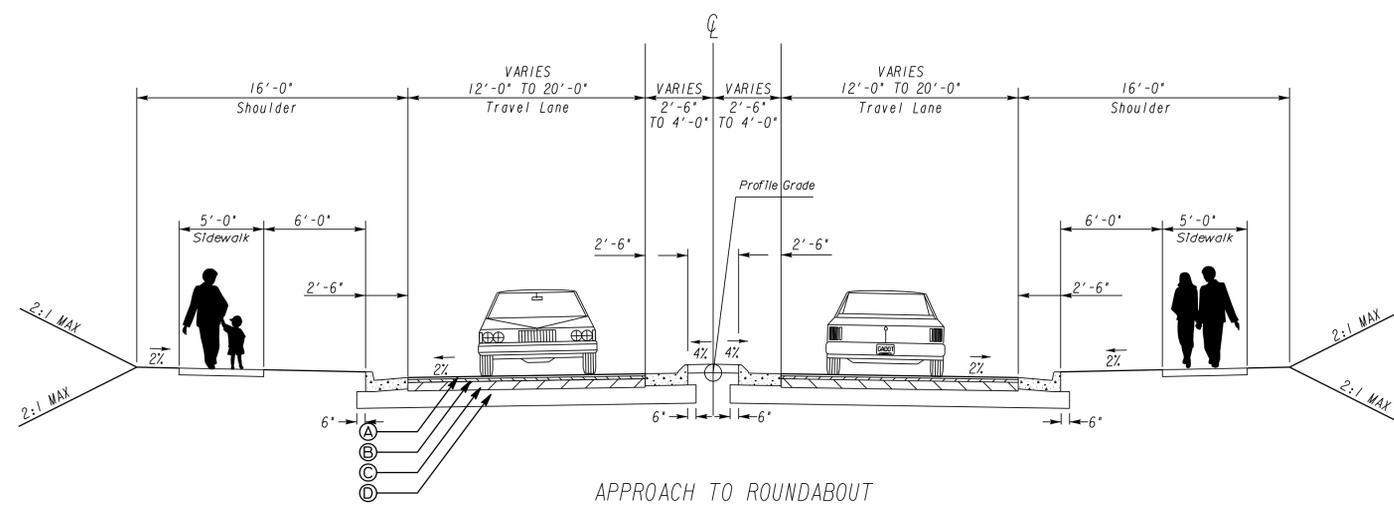
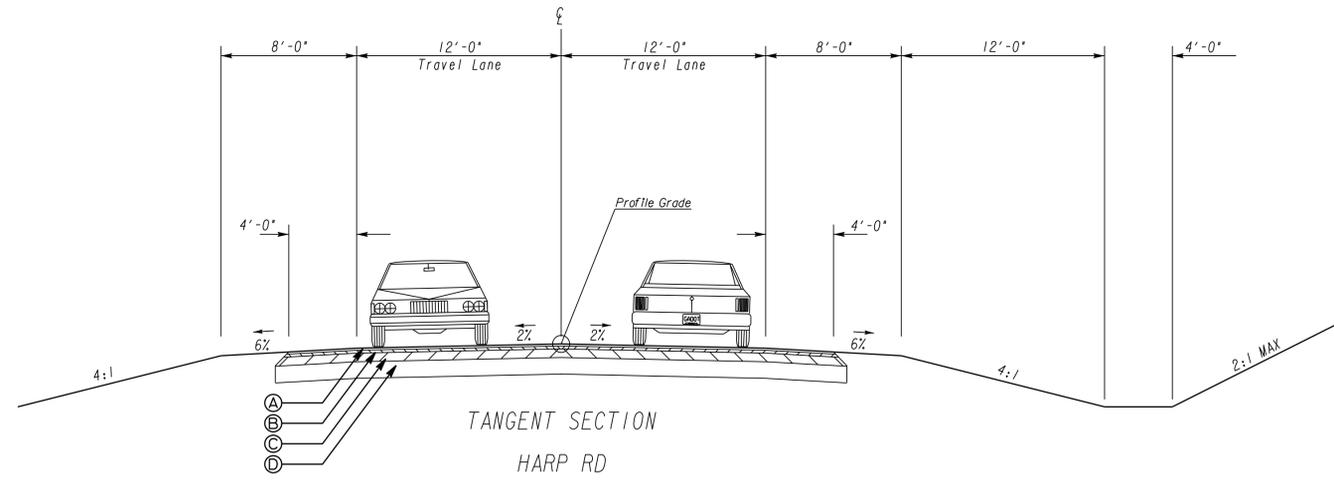
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STATE OF GEORGIA  
DEPARTMENT OF TRANSPORTATION  
OFFICE: DISTRICT 3 DESIGN  
**TYPICAL SECTIONS**

SR92 AT ANTIOCH RD/LOCKWOOD  
RD & SEAY RD/HARP RD

DRAWING No.  
**05-02**



- Ⓐ RECYCLED ASPH CONC 12.5 MM SUPERPAVE, INCL BITUM MATL & H LIME (165 LB/SY)
- Ⓑ RECYCLED ASPH CONC 19 MM SUPERPAVE, INCL BITUM MATL & H LIME (220 LB/SY)
- Ⓒ RECYCLED ASPH CONC 25 MM SUPERPAVE, INCL BITUM MATL & H LIME (330 LB/SY)
- Ⓓ GRADED AGGREGATE BASE CRS, INCL MATL, 12 IN

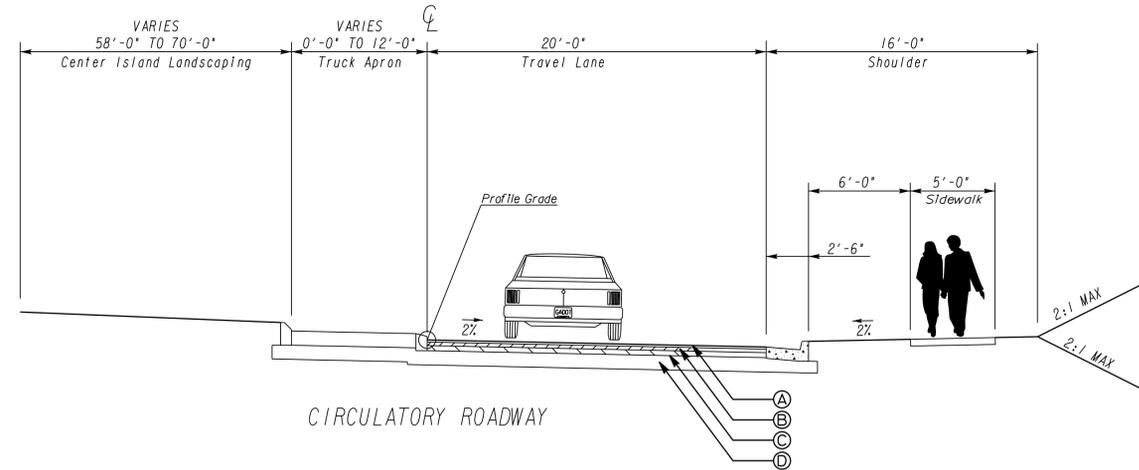
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DEPARTMENT  
OF  
TRANSPORTATION

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STATE OF GEORGIA  
DEPARTMENT OF TRANSPORTATION  
OFFICE: DISTRICT 3 DESIGN  
**TYPICAL SECTIONS**

SR92 AT ANTIOCH RD/LOCKWOOD  
RD & SEAY RD/HARP RD

DRAWING No.  
**05-03**



- Ⓐ RECYCLED ASPH CONC 12.5 MM SUPERPAVE, INCL BITUM MATL & H LIME (165 LB/SY)
- Ⓑ RECYCLED ASPH CONC 19 MM SUPERPAVE, INCL BITUM MATL & H LIME (220 LB/SY)
- Ⓒ RECYCLED ASPH CONC 25 MM SUPERPAVE, INCL BITUM MATL & H LIME (330 LB/SY)
- Ⓓ GRADED AGGREGATE BASE CRS, INCL MATL, 12 IN

**GEORGIA**  
DEPARTMENT  
OF  
TRANSPORTATION

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STATE OF GEORGIA  
DEPARTMENT OF TRANSPORTATION  
OFFICE: DISTRICT 3 DESIGN  
**TYPICAL SECTIONS**

SR92 AT ANTIOCH RD/LOCKWOOD  
RD & SEAY RD/HARP RD

DRAWING No.  
**05-04**

Project Concept Report  
Fayette County  
PI Numbers: 0009971  
0009972

# **Attachment 3**

## Detailed Cost Estimates

# DETAILED COST ESTIMATE



**Job: 0009971**

**JOB NUMBER** 0009971

**FED/STATE PROJECT NUMBER**

**SPEC YEAR:** 01

**DESCRIPTION:** SR 92 @ ANTIOCH RD/LOCKWOOD ROAD

**ITEMS FOR JOB 0009971**

**0010 - ROADWAY**

| Line Number                  | ITEM     | QUANTITY | UNITS | PRICE           | DESCRIPTION                              | AMOUNT                |
|------------------------------|----------|----------|-------|-----------------|--|-----------------------|
| 0005                         | 150-1000 | 1.000    | LS    | \$75,000.00000  | TRAFFIC CONTROL - 0009971                | \$75,000.00           |
| 0105                         | 210-0100 | 1.000    | LS    | \$350,000.00000 | GRADING COMPLETE - 0009971               | \$350,000.00          |
| 0110                         | 310-1101 | 9000.000 | TN    | \$21.80302      | GR AGGR BASE CRS, INCL MATL              | \$196,227.18          |
| 0115                         | 318-3000 | 800.000  | TN    | \$20.71701      | AGGR SURF CRS                            | \$16,573.61           |
| 0120                         | 402-1812 | 2500.000 | TN    | \$77.80724      | RECYL AC LEVELING,INC BM&HL              | \$194,518.10          |
| 0125                         | 402-3103 | 1300.000 | TN    | \$77.03423      | REC AC 9.5 MM SP,TPII,GP2, INCL BM & H L | \$100,144.50          |
| 0130                         | 402-3121 | 2300.000 | TN    | \$70.39060      | RECYL AC 25MM SP,GP1/2,BM&HL             | \$161,898.38          |
| 0135                         | 402-3190 | 1600.000 | TN    | \$78.08338      | RECYL AC 19 MM SP,GP 1 OR 2 ,INC BM&HL   | \$124,933.41          |
| 0140                         | 413-1000 | 1000.000 | GL    | \$3.87519       | BITUM TACK COAT                          | \$3,875.19            |
| 0145                         | 429-1000 | 6.000    | EA    | \$582.69729     | RUMBLE STRIPS                            | \$3,496.18            |
| 0150                         | 430-0200 | 330.000  | SY    | \$1,200.00000   | PLN PC CONC PVMT/CL1C/ 10" TK            | \$396,000.00          |
| 0155                         | 432-5010 | 1400.000 | SY    | \$10.00000      | MILL ASPH CONC PVMT,VARB DEPTH           | \$14,000.00           |
| 0160                         | 441-0016 | 40.000   | SY    | \$36.92382      | DRIVEWAY CONCRETE, 6 IN TK               | \$1,476.95            |
| 0165                         | 441-0050 | 50.000   | SY    | \$68.11355      | CONC SLOPE DRAIN                         | \$3,405.68            |
| 0170                         | 441-0104 | 3000.000 | SY    | \$29.46277      | CONC SIDEWALK, 4 IN                      | \$88,388.31           |
| 0175                         | 441-0108 | 80.000   | SY    | \$58.65104      | CONC SIDEWALK, 8 IN                      | \$4,692.08            |
| 0180                         | 441-0303 | 8.000    | EA    | \$1,690.75775   | CONC SPILLWAY, TP 3                      | \$13,526.06           |
| 0185                         | 441-0748 | 790.000  | SY    | \$46.65909      | CONC MEDIAN, 6 IN                        | \$36,860.68           |
| 0190                         | 441-4030 | 20.000   | SY    | \$51.62981      | CONC VALLEY GUTTER, 8 IN                 | \$1,032.60            |
| 0195                         | 441-5002 | 924.000  | LF    | \$13.21187      | CONC HEADER CURB, 6", TP 2               | \$12,207.77           |
| 0200                         | 441-5008 | 354.000  | LF    | \$18.00000      | CONC HEADER CURB, 6 IN, TP 7             | \$6,372.00            |
| 0205                         | 441-5025 | 350.000  | LF    | \$17.00000      | CONC HEADER CURB, 4", TP 9               | \$5,950.00            |
| 0210                         | 441-6222 | 3274.000 | LF    | \$17.56768      | CONC CURB & GUTTER/ 8"X30"TP2            | \$57,516.58           |
| 0215                         | 446-1100 | 3700.000 | LF    | \$5.04705       | PVMT REF FAB STRIPS, TP2,18 INCH WIDTH   | \$18,674.09           |
| 0220                         | 456-2015 | 1.000    | GLM   | \$4,794.69720   | INDENT. RUMB. STRIPS - GRND-IN-PL (SKIP) | \$4,794.70            |
| 0235                         | 500-3201 | 25.000   | CY    | \$695.89312     | CL B CONC, RET WALL                      | \$17,397.33           |
| 0240                         | 500-9999 | 32.000   | CY    | \$174.95304     | CL B CONC,BASE OR PVMT WIDEN             | \$5,598.50            |
| 0250                         | 550-1180 | 2057.000 | LF    | \$42.24004      | STM DR PIPE 18",H 1-10                   | \$86,887.76           |
| 0255                         | 550-1240 | 200.000  | LF    | \$53.68765      | STM DR PIPE 24",H 1-10                   | \$10,737.53           |
| 0260                         | 550-2180 | 300.000  | LF    | \$32.25879      | SIDE DR PIPE 18",H 1-10                  | \$9,677.64            |
| 0265                         | 550-3618 | 6.000    | EA    | \$539.84620     | SAFETY END SECTION 18",SD,6:1            | \$3,239.08            |
| 0270                         | 550-4218 | 2.000    | EA    | \$576.91792     | FLARED END SECT 18 IN, ST DR             | \$1,153.84            |
| 0290                         | 632-0003 | 3.000    | EA    | \$7,608.05088   | CHANGEABLE MESS SIGN,PORT,TP 3           | \$22,824.15           |
| 0295                         | 634-1200 | 25.000   | EA    | \$121.31121     | RIGHT OF WAY MARKERS                     | \$3,032.78            |
| 0340                         | 643-8200 | 200.000  | LF    | \$1.45173       | BARRIER FENCE (ORANGE), 4 FT             | \$290.35              |
| 0385                         | 668-1100 | 18.000   | EA    | \$2,124.95956   | CATCH BASIN, GP 1                        | \$38,249.27           |
| 0390                         | 668-2100 | 3.000    | EA    | \$1,913.71670   | DROP INLET, GP 1                         | \$5,741.15            |
| 0395                         | 668-2110 | 2.000    | LF    | \$179.21932     | DROP INLET, GP 1, ADDL DEPTH             | \$358.44              |
| <b>SUBTOTAL FOR ROADWAY:</b> |          |          |       |                 |  | <b>\$2,096,751.87</b> |

# DETAILED COST ESTIMATE



**Job: 0009971**

## 0020 - EROSION CONTROL

| Line Number                          | ITEM     | QUANTITY | UNITS | PRICE         | DESCRIPTION                              | AMOUNT              |
|--------------------------------------|----------|----------|-------|---------------|--|---------------------|
| 0010                                 | 163-0232 | 2.000    | AC    | \$500.00000   | TEMPORARY GRASSING                       | \$1,000.00          |
| 0015                                 | 163-0240 | 60.000   | TN    | \$250.00000   | MULCH                                    | \$15,000.00         |
| 0020                                 | 163-0300 | 4.000    | EA    | \$1,350.14257 | CONSTRUCTION EXIT                        | \$5,400.57          |
| 0025                                 | 163-0527 | 20.000   | EA    | \$262.46650   | CNST/REM RIP RAP CKDM,STN P RIPRAP/SN BG | \$5,249.33          |
| 0030                                 | 163-0528 | 1200.000 | LF    | \$4.22317     | CONSTR AND REM FAB CK DAM -TP C SLT FN   | \$5,067.80          |
| 0035                                 | 163-0529 | 500.000  | LF    | \$4.67550     | CNST/REM TEMP SED BAR OR BLD STRW CK DM  | \$2,337.75          |
| 0040                                 | 163-0539 | 10.000   | EA    | \$1,300.00000 | CONST AND REM RETROFIT-SL BD DM/W STN FL | \$13,000.00         |
| 0045                                 | 163-0541 | 3.000    | EA    | \$774.09080   | CONSTR & REM ROCK FILTER DAMS            | \$2,322.27          |
| 0050                                 | 163-0550 | 10.000   | EA    | \$137.09148   | CONS & REM INLET SEDIMENT TRAP           | \$1,370.91          |
| 0055                                 | 165-0030 | 2500.000 | LF    | \$1.00000     | MAINT OF TEMP SILT FENCE, TP C           | \$2,500.00          |
| 0060                                 | 165-0041 | 800.000  | LF    | \$1.00000     | MAINT OF CHECK DAMS - ALL TYPES          | \$800.00            |
| 0065                                 | 165-0071 | 250.000  | LF    | \$1.28866     | MAINT OF SEDIMENT BARRIER - BALED STRAW  | \$322.17            |
| 0070                                 | 165-0096 | 31.000   | EA    | \$1,300.00000 | MAINT OF RETROFIT-SLOT BD DAM/W ST FLT   | \$40,300.00         |
| 0075                                 | 165-0101 | 4.000    | EA    | \$1,000.00000 | MAINT OF CONST EXIT                      | \$4,000.00          |
| 0080                                 | 165-0105 | 19.000   | EA    | \$41.61520    | MAINT OF INLET SEDIMENT TRAP             | \$790.69            |
| 0085                                 | 165-0110 | 4.000    | EA    | \$244.53381   | MAINT OF ROCK FILTER DAM                 | \$978.14            |
| 0090                                 | 167-1000 | 4.000    | EA    | \$247.08378   | WATER QUALITY MONITORING AND SAMPLING    | \$988.34            |
| 0095                                 | 167-1500 | 18.000   | MO    | \$500.16291   | WATER QUALITY INSPECTIONS                | \$9,002.93          |
| 0100                                 | 171-0030 | 7700.000 | LF    | \$3.19967     | TEMPORARY SILT FENCE, TYPE C             | \$24,637.46         |
| 0275                                 | 603-2024 | 10.000   | SY    | \$64.61399    | STN DUMPED RIP RAP, TP 1, 24"            | \$646.14            |
| 0280                                 | 603-2182 | 200.000  | SY    | \$48.38441    | STN DUMPED RIP RAP, TP 3, 24"            | \$9,676.88          |
| 0285                                 | 603-7000 | 210.000  | SY    | \$3.85027     | PLASTIC FILTER FABRIC                    | \$808.56            |
| 0485                                 | 700-6910 | 4.000    | AC    | \$848.68176   | PERMANENT GRASSING                       | \$3,394.73          |
| 0490                                 | 700-7000 | 24.000   | TN    | \$180.81822   | AGRICULTURAL LIME                        | \$4,339.64          |
| 0495                                 | 700-8000 | 6.000    | TN    | \$539.25635   | FERTILIZER MIXED GRADE                   | \$3,235.54          |
| 0500                                 | 700-8100 | 400.000  | LB    | \$3.27770     | FERTILIZER NITROGEN CONTENT              | \$1,311.08          |
| 0530                                 | 716-1000 | 2000.000 | SY    | \$1.89333     | EROSION CONTROL MATS,WATERWAYS           | \$3,786.66          |
| 0535                                 | 716-2000 | 3000.000 | SY    | \$1.23268     | EROSION CONTROL MATS, SLOPES             | \$3,698.04          |
| <b>SUBTOTAL FOR EROSION CONTROL:</b> |          |          |       |               |  | <b>\$165,965.63</b> |

## 0030 - SIGNING AND MARKING

| Line Number                              | ITEM     | QUANTITY  | UNITS | PRICE       | DESCRIPTION                        | AMOUNT             |
|--|----------|-----------|-------|-------------|------------------------------------|--------------------|
| 0230                                     | 500-3104 | 12.000    | CY    | \$410.49780 | CL A CONC, SIGNS                   | \$4,925.97         |
| 0300                                     | 636-1020 | 170.000   | SF    | \$14.15489  | HWY SGN,TP1MAT,REFL SH TP3         | \$2,406.33         |
| 0310                                     | 636-1033 | 200.000   | SF    | \$19.47224  | HWY SIGNS, TP1MAT,REFL SH TP 9     | \$3,894.45         |
| 0315                                     | 636-1072 | 510.000   | SF    | \$20.78149  | HWY SIGNS,ALUM EXTRD PNLS, RS TP 3 | \$10,598.56        |
| 0320                                     | 636-2070 | 570.000   | LF    | \$6.37258   | GALV STEEL POSTS, TP 7             | \$3,632.37         |
| 0325                                     | 636-2090 | 216.000   | LF    | \$7.50974   | GALV STEEL POSTS, TP 9             | \$1,622.10         |
| 0330                                     | 636-3000 | 3500.000  | LB    | \$4.46097   | GALV STEEL STR SHAPE POST          | \$15,613.40        |
| 0335                                     | 636-9094 | 120.000   | LF    | \$79.29554  | P-IN-PL,SIGNS,STL H,HP 12 X 53     | \$9,515.46         |
| 0345                                     | 653-1501 | 11000.000 | LF    | \$0.45425   | THERMO SOLID TRAF ST 5 IN, WHI     | \$4,996.75         |
| 0350                                     | 653-1502 | 11000.000 | LF    | \$0.43774   | THERMO SOLID TRAF ST, 5 IN YEL     | \$4,815.14         |
| 0355                                     | 653-1804 | 1700.000  | LF    | \$2.26430   | THERM SOLID TRAF STRIPE, 8",WH     | \$3,849.31         |
| 0360                                     | 653-3501 | 100.000   | GLF   | \$2.50000   | THERMO SKIP TRAF ST, 5 IN, WHI     | \$250.00           |
| 0365                                     | 653-4830 | 240.000   | GLF   | \$1.50000   | THER SKIP TRAF ST, 18 IN, WHT      | \$360.00           |
| 0370                                     | 653-6004 | 270.000   | SY    | \$3.66868   | THERM TRAF STRIPING, WHITE         | \$990.54           |
| 0375                                     | 653-6006 | 990.000   | SY    | \$3.85786   | THERM TRAF STRIPING, YELLOW        | \$3,819.28         |
| 0380                                     | 654-1001 | 110.000   | EA    | \$4.50223   | RAISED PVMT MARKERS TP 1           | \$495.25           |
| <b>SUBTOTAL FOR SIGNING AND MARKING:</b> |          |           |       |             |                                    | <b>\$71,784.91</b> |

# DETAILED COST ESTIMATE



**Job: 0009971**

**0040 - LIGHTING**

| Line Number                   | ITEM     | QUANTITY  | UNITS | PRICE          | DESCRIPTION                     | AMOUNT              |
|-------------------------------|----------|-----------|-------|----------------|---------------------------------|---------------------|
| 0225                          | 500-3101 | 17.000    | CY    | \$666.29923    | CLASS A CONCRETE                | \$11,327.09         |
| 0245                          | 511-1000 | 4200.000  | LB    | \$1.10927      | BAR REINF STEEL                 | \$4,658.93          |
| 0400                          | 681-4277 | 17.000    | EA    | \$5,000.00000  | LT STD, 25' MH, 6' ARM          | \$85,000.00         |
| 0405                          | 681-4300 | 4.000     | EA    | \$5,200.00000  | LT STD, 30' MH, 6' ARM          | \$20,800.00         |
| 0410                          | 681-6295 | 5.000     | EA    | \$850.00000    | LUMINAIRE, TP 3, 40 W, LED      | \$4,250.00          |
| 0415                          | 681-6310 | 2.000     | EA    | \$950.00000    | LUMINAIRE, TP 3, 90 W, LED      | \$1,900.00          |
| 0420                          | 681-6315 | 3.000     | EA    | \$1,100.00000  | LUMINAIRE, TP 3, 105 W, LED     | \$3,300.00          |
| 0425                          | 681-6316 | 2.000     | EA    | \$1,300.00000  | LUMINAIRE, TP 3, 130 W, LED     | \$2,600.00          |
| 0430                          | 681-6410 | 9.000     | EA    | \$1,300.00000  | LUMINAIRE, TP 4, 105 W, LED     | \$11,700.00         |
| 0435                          | 682-1405 | 4400.000  | LF    | \$1.75000      | CABLE, TP XHHW, AWG NO 8        | \$7,700.00          |
| 0445                          | 682-1406 | 2011.000  | LF    | \$2.00000      | CABLE, TP XHHW, AWG NO 6        | \$4,022.00          |
| 0450                          | 682-1504 | 10937.000 | LF    | \$1.10000      | CABLE, TP RHH/RHW, AWG NO 10    | \$12,030.70         |
| 0455                          | 682-1505 | 2400.000  | LF    | \$1.50000      | CABLE, TP RHH/RHW, AWG NO 8     | \$3,600.00          |
| 0460                          | 682-1506 | 2030.000  | LF    | \$1.65000      | CABLE, TP RHH/RHW, AWG NO 6     | \$3,349.50          |
| 0465                          | 682-6110 | 370.000   | LF    | \$12.00000     | CONDUIT, RIGID, 1 IN            | \$4,440.00          |
| 0470                          | 682-6219 | 2600.000  | LF    | \$4.47350      | CONDUIT, NONMETL, TP 2, 1 IN    | \$11,631.10         |
| 0475                          | 682-9000 | 1.000     | LS    | \$10,000.00000 | MAIN SVC PICK UP POINT          | \$10,000.00         |
| 0480                          | 682-9022 | 5.000     | EA    | \$1,200.00000  | ELEC JCT BX, REF PLASTIC MORTAR | \$6,000.00          |
| <b>SUBTOTAL FOR LIGHTING:</b> |          |           |       |                |                                 | <b>\$208,309.32</b> |

**0050 - LANDSCAPING**

| Line Number                      | ITEM     | QUANTITY | UNITS | PRICE       | DESCRIPTION                   | AMOUNT             |
|----------------------------------|----------|----------|-------|-------------|-------------------------------|--------------------|
| 0505                             | 700-9300 | 600.000  | SY    | \$6.18502   | SOD                           | \$3,711.01         |
| 0510                             | 702-0212 | 3.000    | EA    | \$950.00000 | CRATAEGUS VIRIDIS - 0009971   | \$2,850.00         |
| 0515                             | 702-0470 | 240.000  | EA    | \$65.00000  | ILEX VOMITORIA NANA - 0009971 | \$15,600.00        |
| 0520                             | 702-9005 | 700.000  | LB    | \$1.25000   | SPRING APPLICATION FERTILIZER | \$875.00           |
| 0525                             | 702-9025 | 4300.000 | SY    | \$3.95000   | LANDSCAPE MULCH               | \$16,985.00        |
| <b>SUBTOTAL FOR LANDSCAPING:</b> |          |          |       |             |                               | <b>\$40,021.01</b> |

**TOTALS FOR JOB 0009971**

|   |                       |
|---|-----------------------|
| <b>ITEMS COST:</b>                                  | <b>\$2,582,832.74</b> |
| <b>COST GROUP COST:</b>                             | <b>\$0.00</b>         |
| <b>ESTIMATED COST:</b>                              | <b>\$2,582,832.74</b> |
| <b>CONTINGENCY PERCENT:</b>                         | <b>\$0.00</b>         |
| <b>ENGINEERING AND INSPECTION:</b>                  | <b>\$129,141.64</b>   |
| <b>ESTIMATED COST WITH CONTINGENCY AND E&amp;I:</b> | <b>\$2,711,974.38</b> |
| <b>LIQUID AC COST ADJUSTMENT:</b>                   | <b>\$121,620.54</b>   |
| <b>TOTAL COST:</b>                                  | <b>\$2,833,594.92</b> |

# DETAILED COST ESTIMATE



**Job: 0009972**

**JOB NUMBER** 0009972

**FED/STATE PROJECT NUMBER**

**SPEC YEAR:** 01

**DESCRIPTION:** SR 92 @ HARP RD/SEAY ROAD

**ITEMS FOR JOB 0009972**

**0010 - ROADWAY**

| Line Number                  | ITEM     | QUANTITY | UNITS | PRICE           | DESCRIPTION                              | AMOUNT                |
|------------------------------|----------|----------|-------|-----------------|--|-----------------------|
| 0005                         | 150-1000 | 1.000    | LS    | \$75,000.00000  | TRAFFIC CONTROL - 0009971                | \$75,000.00           |
| 0105                         | 210-0100 | 1.000    | LS    | \$350,000.00000 | GRADING COMPLETE - 0009971               | \$350,000.00          |
| 0110                         | 310-1101 | 8200.000 | TN    | \$21.98415      | GR AGGR BASE CRS, INCL MATL              | \$180,270.03          |
| 0115                         | 318-3000 | 800.000  | TN    | \$20.71701      | AGGR SURF CRS                            | \$16,573.61           |
| 0120                         | 402-1812 | 2500.000 | TN    | \$80.00000      | RECYL AC LEVELING,INC BM&HL              | \$200,000.00          |
| 0125                         | 402-3103 | 789.000  | TN    | \$79.00000      | REC AC 9.5 MM SP,TPII,GP2, INCL BM & H L | \$62,331.00           |
| 0130                         | 402-3121 | 1367.000 | TN    | \$75.00000      | RECYL AC 25MM SP,GP1/2,BM&HL             | \$102,525.00          |
| 0135                         | 402-3190 | 2100.000 | TN    | \$78.00000      | RECYL AC 19 MM SP,GP 1 OR 2 ,INC BM&HL   | \$163,800.00          |
| 0140                         | 413-1000 | 1000.000 | GL    | \$3.87519       | BITUM TACK COAT                          | \$3,875.19            |
| 0145                         | 429-1000 | 6.000    | EA    | \$582.69729     | RUMBLE STRIPS                            | \$3,496.18            |
| 0150                         | 430-0200 | 330.000  | SY    | \$90.00000      | PLN PC CONC PVMT/CL1C/ 10" TK            | \$29,700.00           |
| 0155                         | 432-5010 | 1400.000 | SY    | \$10.00000      | MILL ASPH CONC PVMT,VARB DEPTH           | \$14,000.00           |
| 0160                         | 441-0016 | 404.000  | SY    | \$35.09764      | DRIVEWAY CONCRETE, 6 IN TK               | \$14,179.45           |
| 0165                         | 441-0018 | 367.000  | SY    | \$40.10659      | DRIVEWAY CONCRETE, 8 IN TK               | \$14,719.12           |
| 0170                         | 441-0050 | 50.000   | SY    | \$68.11355      | CONC SLOPE DRAIN                         | \$3,405.68            |
| 0175                         | 441-0104 | 2164.000 | SY    | \$30.82313      | CONC SIDEWALK, 4 IN                      | \$66,701.25           |
| 0180                         | 441-0108 | 80.000   | SY    | \$58.65104      | CONC SIDEWALK, 8 IN                      | \$4,692.08            |
| 0185                         | 441-0303 | 8.000    | EA    | \$1,690.75775   | CONC SPILLWAY, TP 3                      | \$13,526.06           |
| 0190                         | 441-0748 | 790.000  | SY    | \$46.65909      | CONC MEDIAN, 6 IN                        | \$36,860.68           |
| 0195                         | 441-4030 | 109.000  | SY    | \$48.45858      | CONC VALLEY GUTTER, 8 IN                 | \$5,281.99            |
| 0200                         | 441-5002 | 924.000  | LF    | \$13.21187      | CONC HEADER CURB, 6", TP 2               | \$12,207.77           |
| 0205                         | 441-5008 | 354.000  | LF    | \$17.00000      | CONC HEADER CURB, 6 IN, TP 7             | \$6,018.00            |
| 0210                         | 441-5025 | 350.000  | LF    | \$19.00000      | CONC HEADER CURB, 4", TP 9               | \$6,650.00            |
| 0215                         | 441-6222 | 3274.000 | LF    | \$17.56768      | CONC CURB & GUTTER/ 8"X30"TP2            | \$57,516.58           |
| 0220                         | 446-1100 | 3700.000 | LF    | \$5.04705       | PVMT REF FAB STRIPS, TP2,18 INCH WIDTH   | \$18,674.09           |
| 0225                         | 456-2015 | 1.000    | GLM   | \$4,794.69720   | INDENT. RUMB. STRIPS - GRND-IN-PL (SKIP) | \$4,794.70            |
| 0240                         | 500-3201 | 25.000   | CY    | \$695.89312     | CL B CONC, RET WALL                      | \$17,397.33           |
| 0245                         | 500-9999 | 32.000   | CY    | \$174.95304     | CL B CONC,BASE OR PVMT WIDEN             | \$5,598.50            |
| 0255                         | 550-1180 | 2057.000 | LF    | \$42.24004      | STM DR PIPE 18",H 1-10                   | \$86,887.76           |
| 0260                         | 550-1240 | 200.000  | LF    | \$53.68765      | STM DR PIPE 24",H 1-10                   | \$10,737.53           |
| 0265                         | 550-2180 | 530.000  | LF    | \$31.12153      | SIDE DR PIPE 18",H 1-10                  | \$16,494.41           |
| 0270                         | 550-3618 | 6.000    | EA    | \$539.84620     | SAFETY END SECTION 18",SD,6:1            | \$3,239.08            |
| 0275                         | 550-4218 | 2.000    | EA    | \$576.91792     | FLARED END SECT 18 IN, ST DR             | \$1,153.84            |
| 0295                         | 632-0003 | 3.000    | EA    | \$7,608.05088   | CHANGEABLE MESS SIGN,PORT,TP 3           | \$22,824.15           |
| 0300                         | 634-1200 | 32.000   | EA    | \$119.44402     | RIGHT OF WAY MARKERS                     | \$3,822.21            |
| 0345                         | 643-8200 | 200.000  | LF    | \$1.45173       | BARRIER FENCE (ORANGE), 4 FT             | \$290.35              |
| 0390                         | 668-1100 | 18.000   | EA    | \$2,124.95956   | CATCH BASIN, GP 1                        | \$38,249.27           |
| 0395                         | 668-2100 | 3.000    | EA    | \$1,913.71670   | DROP INLET, GP 1                         | \$5,741.15            |
| 0400                         | 668-2110 | 1.000    | LF    | \$182.58289     | DROP INLET, GP 1, ADDL DEPTH             | \$182.58              |
| <b>SUBTOTAL FOR ROADWAY:</b> |          |          |       |                 |  | <b>\$1,679,416.62</b> |

# DETAILED COST ESTIMATE



**Job: 0009972**

## 0020 - EROSION CONTROL

| Line Number                          | ITEM     | QUANTITY | UNITS | PRICE         | DESCRIPTION                              | AMOUNT              |
|--------------------------------------|----------|----------|-------|---------------|--|---------------------|
| 0010                                 | 163-0232 | 2.000    | AC    | \$322.09156   | TEMPORARY GRASSING                       | \$644.18            |
| 0015                                 | 163-0240 | 60.000   | TN    | \$234.50595   | MULCH                                    | \$14,070.36         |
| 0020                                 | 163-0300 | 4.000    | EA    | \$1,350.14257 | CONSTRUCTION EXIT                        | \$5,400.57          |
| 0025                                 | 163-0527 | 20.000   | EA    | \$262.46650   | CNST/REM RIP RAP CKDM,STN P RIPRAP/SN BG | \$5,249.33          |
| 0030                                 | 163-0528 | 1200.000 | LF    | \$4.22317     | CONSTR AND REM FAB CK DAM -TP C SLT FN   | \$5,067.80          |
| 0035                                 | 163-0529 | 500.000  | LF    | \$4.67550     | CNST/REM TEMP SED BAR OR BLD STRW CK DM  | \$2,337.75          |
| 0040                                 | 163-0539 | 10.000   | EA    | \$1,300.00000 | CONST AND REM RETROFIT-SL BD DM/W STN FL | \$13,000.00         |
| 0045                                 | 163-0541 | 3.000    | EA    | \$774.09080   | CONSTR & REM ROCK FILTER DAMS            | \$2,322.27          |
| 0050                                 | 163-0550 | 10.000   | EA    | \$137.09148   | CONS & REM INLET SEDIMENT TRAP           | \$1,370.91          |
| 0055                                 | 165-0030 | 2500.000 | LF    | \$0.65553     | MAINT OF TEMP SILT FENCE, TP C           | \$1,638.83          |
| 0060                                 | 165-0041 | 800.000  | LF    | \$0.85637     | MAINT OF CHECK DAMS - ALL TYPES          | \$685.10            |
| 0065                                 | 165-0071 | 250.000  | LF    | \$1.28866     | MAINT OF SEDIMENT BARRIER - BALED STRAW  | \$322.17            |
| 0070                                 | 165-0096 | 31.000   | EA    | \$1,300.00000 | MAINT OF RETROFIT-SLOT BD DAM/W ST FLT   | \$40,300.00         |
| 0075                                 | 165-0101 | 4.000    | EA    | \$1,000.00000 | MAINT OF CONST EXIT                      | \$4,000.00          |
| 0080                                 | 165-0105 | 19.000   | EA    | \$41.61520    | MAINT OF INLET SEDIMENT TRAP             | \$790.69            |
| 0085                                 | 165-0110 | 4.000    | EA    | \$244.53381   | MAINT OF ROCK FILTER DAM                 | \$978.14            |
| 0090                                 | 167-1000 | 4.000    | EA    | \$500.00000   | WATER QUALITY MONITORING AND SAMPLING    | \$2,000.00          |
| 0095                                 | 167-1500 | 18.000   | MO    | \$500.16291   | WATER QUALITY INSPECTIONS                | \$9,002.93          |
| 0100                                 | 171-0030 | 7700.000 | LF    | \$3.19967     | TEMPORARY SILT FENCE, TYPE C             | \$24,637.46         |
| 0280                                 | 603-2024 | 10.000   | SY    | \$64.61399    | STN DUMPED RIP RAP, TP 1, 24"            | \$646.14            |
| 0285                                 | 603-2182 | 200.000  | SY    | \$48.38441    | STN DUMPED RIP RAP, TP 3, 24"            | \$9,676.88          |
| 0290                                 | 603-7000 | 210.000  | SY    | \$3.85027     | PLASTIC FILTER FABRIC                    | \$808.56            |
| 0485                                 | 700-6910 | 4.000    | AC    | \$848.68176   | PERMANENT GRASSING                       | \$3,394.73          |
| 0490                                 | 700-7000 | 24.000   | TN    | \$180.81822   | AGRICULTURAL LIME                        | \$4,339.64          |
| 0495                                 | 700-8000 | 6.000    | TN    | \$539.25635   | FERTILIZER MIXED GRADE                   | \$3,235.54          |
| 0500                                 | 700-8100 | 400.000  | LB    | \$3.27770     | FERTILIZER NITROGEN CONTENT              | \$1,311.08          |
| 0530                                 | 716-1000 | 2000.000 | SY    | \$1.89333     | EROSION CONTROL MATS,WATERWAYS           | \$3,786.66          |
| 0535                                 | 716-2000 | 3000.000 | SY    | \$1.23268     | EROSION CONTROL MATS, SLOPES             | \$3,698.04          |
| <b>SUBTOTAL FOR EROSION CONTROL:</b> |          |          |       |               |  | <b>\$164,715.76</b> |

## 0030 - SIGNING AND MARKING

| Line Number                              | ITEM     | QUANTITY  | UNITS | PRICE       | DESCRIPTION                        | AMOUNT             |
|--|----------|-----------|-------|-------------|------------------------------------|--------------------|
| 0235                                     | 500-3104 | 12.000    | CY    | \$410.49780 | CL A CONC, SIGNS                   | \$4,925.97         |
| 0305                                     | 636-1020 | 170.000   | SF    | \$14.15489  | HWY SGN,TP1MAT,REFL SH TP3         | \$2,406.33         |
| 0315                                     | 636-1033 | 200.000   | SF    | \$19.47224  | HWY SIGNS, TP1MAT,REFL SH TP 9     | \$3,894.45         |
| 0320                                     | 636-1072 | 630.000   | SF    | \$20.78149  | HWY SIGNS,ALUM EXTRD PNLS, RS TP 3 | \$13,092.34        |
| 0325                                     | 636-2070 | 570.000   | LF    | \$6.37258   | GALV STEEL POSTS, TP 7             | \$3,632.37         |
| 0330                                     | 636-2090 | 216.000   | LF    | \$7.50974   | GALV STEEL POSTS, TP 9             | \$1,622.10         |
| 0335                                     | 636-3000 | 3500.000  | LB    | \$4.46097   | GALV STEEL STR SHAPE POST          | \$15,613.40        |
| 0340                                     | 636-9094 | 150.000   | LF    | \$79.29554  | P-IN-PL,SIGNS,STL H,HP 12 X 53     | \$11,894.33        |
| 0350                                     | 653-1501 | 10560.000 | LF    | \$0.45757   | THERMO SOLID TRAF ST 5 IN, WHI     | \$4,831.94         |
| 0355                                     | 653-1502 | 10560.000 | LF    | \$0.44046   | THERMO SOLID TRAF ST, 5 IN YEL     | \$4,651.26         |
| 0360                                     | 653-1804 | 1700.000  | LF    | \$2.26430   | THERM SOLID TRAF STRIPE, 8",WH     | \$3,849.31         |
| 0365                                     | 653-3501 | 100.000   | GLF   | \$1.00000   | THERMO SKIP TRAF ST, 5 IN, WHI     | \$100.00           |
| 0370                                     | 653-4830 | 240.000   | GLF   | \$5.00000   | THER SKIP TRAF ST, 18 IN, WHT      | \$1,200.00         |
| 0375                                     | 653-6004 | 270.000   | SY    | \$4.00000   | THERM TRAF STRIPING, WHITE         | \$1,080.00         |
| 0380                                     | 653-6006 | 990.000   | SY    | \$3.85786   | THERM TRAF STRIPING, YELLOW        | \$3,819.28         |
| 0385                                     | 654-1001 | 142.000   | EA    | \$4.33990   | RAISED PVMT MARKERS TP 1           | \$616.27           |
| <b>SUBTOTAL FOR SIGNING AND MARKING:</b> |          |           |       |             |                                    | <b>\$77,229.35</b> |

# DETAILED COST ESTIMATE



**Job: 0009972**

**0040 - LIGHTING**

| Line Number                   | ITEM     | QUANTITY  | UNITS | PRICE          | DESCRIPTION                     | AMOUNT              |
|-------------------------------|----------|-----------|-------|----------------|---------------------------------|---------------------|
| 0230                          | 500-3101 | 17.000    | CY    | \$666.29923    | CLASS A CONCRETE                | \$11,327.09         |
| 0250                          | 511-1000 | 4200.000  | LB    | \$1.10927      | BAR REINF STEEL                 | \$4,658.93          |
| 0405                          | 681-4277 | 17.000    | EA    | \$5,000.00000  | LT STD, 25' MH, 6' ARM          | \$85,000.00         |
| 0410                          | 681-4300 | 4.000     | EA    | \$6,500.00000  | LT STD, 30' MH, 6' ARM          | \$26,000.00         |
| 0415                          | 681-6295 | 5.000     | EA    | \$750.00000    | LUMINAIRE, TP 3, 40 W, LED      | \$3,750.00          |
| 0420                          | 681-6310 | 2.000     | EA    | \$850.00000    | LUMINAIRE, TP 3, 90 W, LED      | \$1,700.00          |
| 0425                          | 681-6315 | 3.000     | EA    | \$950.00000    | LUMINAIRE, TP 3, 105 W, LED     | \$2,850.00          |
| 0430                          | 681-6316 | 2.000     | EA    | \$1,150.00000  | LUMINAIRE, TP 3, 130 W, LED     | \$2,300.00          |
| 0435                          | 681-6410 | 9.000     | EA    | \$900.00000    | LUMINAIRE, TP 4, 105 W, LED     | \$8,100.00          |
| 0440                          | 682-1405 | 4400.000  | LF    | \$1.25000      | CABLE, TP XHHW, AWG NO 8        | \$5,500.00          |
| 0445                          | 682-1406 | 2011.000  | LF    | \$1.10000      | CABLE, TP XHHW, AWG NO 6        | \$2,212.10          |
| 0450                          | 682-1504 | 10937.000 | LF    | \$0.95000      | CABLE, TP RHH/RHW, AWG NO 10    | \$10,390.15         |
| 0455                          | 682-1505 | 2400.000  | LF    | \$1.15000      | CABLE, TP RHH/RHW, AWG NO 8     | \$2,760.00          |
| 0460                          | 682-1506 | 2030.000  | LF    | \$1.15000      | CABLE, TP RHH/RHW, AWG NO 6     | \$2,334.50          |
| 0465                          | 682-6110 | 370.000   | LF    | \$9.50000      | CONDUIT, RIGID, 1 IN            | \$3,515.00          |
| 0470                          | 682-6219 | 2600.000  | LF    | \$4.47350      | CONDUIT, NONMETL, TP 2, 1 IN    | \$11,631.10         |
| 0475                          | 682-9000 | 1.000     | LS    | \$11,000.00000 | MAIN SVC PICK UP POINT          | \$11,000.00         |
| 0480                          | 682-9022 | 5.000     | EA    | \$750.00000    | ELEC JCT BX, REF PLASTIC MORTAR | \$3,750.00          |
| <b>SUBTOTAL FOR LIGHTING:</b> |          |           |       |                |                                 | <b>\$198,778.87</b> |

**0050 - LANDSCAPING**

| Line Number                      | ITEM     | QUANTITY | UNITS | PRICE       | DESCRIPTION                   | AMOUNT             |
|----------------------------------|----------|----------|-------|-------------|-------------------------------|--------------------|
| 0505                             | 700-9300 | 1800.000 | SY    | \$5.59231   | SOD                           | \$10,066.16        |
| 0510                             | 702-0212 | 3.000    | EA    | \$400.00000 | CRATAEGUS VIRIDIS - 0009971   | \$1,200.00         |
| 0515                             | 702-0470 | 240.000  | EA    | \$30.00000  | ILEX VOMITORIA NANA - 0009971 | \$7,200.00         |
| 0520                             | 702-9005 | 700.000  | LB    | \$2.25000   | SPRING APPLICATION FERTILIZER | \$1,575.00         |
| 0525                             | 702-9025 | 4300.000 | SY    | \$5.00000   | LANDSCAPE MULCH               | \$21,500.00        |
| <b>SUBTOTAL FOR LANDSCAPING:</b> |          |          |       |             |                               | <b>\$41,541.16</b> |

**TOTALS FOR JOB 0009972**

|   |                       |
|---|-----------------------|
| <b>ITEMS COST:</b>                                  | <b>\$2,161,681.76</b> |
| <b>COST GROUP COST:</b>                             | <b>\$0.00</b>         |
| <b>ESTIMATED COST:</b>                              | <b>\$2,161,681.76</b> |
| <b>CONTINGENCY PERCENT:</b>                         | <b>\$0.00</b>         |
| <b>ENGINEERING AND INSPECTION:</b>                  | <b>\$108,084.09</b>   |
| <b>ESTIMATED COST WITH CONTINGENCY AND E&amp;I:</b> | <b>\$2,269,765.85</b> |
| <b>LIQUID AC COST ADJUSTMENT:</b>                   | <b>\$121,620.54</b>   |
| <b>TOTAL COST:</b>                                  | <b>\$2,391,386.39</b> |

PROJ. NO. [ ]  
P.I. NO. 0009971  
DATE 7/21/2014

CALL NO. 9/29/2009

| INDEX (TYPE)  | DATE   | INDEX     |
|---------------|--------|-----------|
| REG. UNLEADED | Jul-14 | \$ 3.589  |
| DIESEL        |        | \$ 3.867  |
| LIQUID AC     |        | \$ 596.00 |

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)                                |          |     |    | <b>120797.28</b> | \$ | <b>120,797.28</b> |
| Monthly Asphalt Cement Price month placed (APM)      | Max. Cap | 60% | \$ | 953.60           |    |                   |
| Monthly Asphalt Cement Price month project let (APL) |          |     | \$ | 596.00           |    |                   |
| Total Monthly Tonnage of asphalt cement (TMT)        |          |     |    | 337.8            |    |                   |

| ASPHALT   | Tons        | %AC  | AC ton       |
|-----------|-------------|------|--------------|
| Leveling  | 2500        | 5.0% | 125          |
| 12.5 OGFC |             | 5.0% | 0            |
| 12.5 mm   |             | 5.0% | 0            |
| 9.5 mm SP | 789         | 5.0% | 39.45        |
| 25 mm SP  | 1367        | 5.0% | 68.35        |
| 19 mm SP  | 2100        | 5.0% | 105          |
|           | <b>6756</b> |      | <b>337.8</b> |

**BITUMINOUS TACK COAT**

|  |          |     |    |             |               |    |               |
|--|----------|-----|----|-------------|---------------|----|---------------|
| Price Adjustment (PA)                                |          |     |    | \$          | <b>823.26</b> | \$ | <b>823.26</b> |
| Monthly Asphalt Cement Price month placed (APM)      | Max. Cap | 60% | \$ | 953.60      |               |    |               |
| Monthly Asphalt Cement Price month project let (APL) |          |     | \$ | 596.00      |               |    |               |
| Total Monthly Tonnage of asphalt cement (TMT)        |          |     |    | 2.302174094 |               |    |               |

Bitum Tack

| Gals | gals/ton | tons       |
|------|----------|------------|
| 536  | 232.8234 | 2.30217409 |

**BITUMINOUS TACK COAT (surface treatment)**

|  |          |     |    |        |    |   |
|--|----------|-----|----|--------|----|---|
| Price Adjustment (PA)                                |          |     |    |        | \$ | - |
| Monthly Asphalt Cement Price month placed (APM)      | Max. Cap | 60% | \$ | 953.60 |    |   |
| Monthly Asphalt Cement Price month project let (APL) |          |     | \$ | 596.00 |    |   |
| 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    |

**TOTAL LIQUID AC ADJUSTMENT \$ 121,620.54**

**PROJ. NO.** [ ]  
**P.I. NO.** 0009972  
**DATE** 7/21/2014

CALL NO. 9/29/2009

| INDEX (TYPE)  | DATE   | INDEX     |
|---------------|--------|-----------|
| REG. UNLEADED | Jul-14 | \$ 3.589  |
| DIESEL        |        | \$ 3.867  |
| LIQUID AC     |        | \$ 596.00 |

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)                                |          |     |    | <b>120797.28</b> | \$ | <b>120,797.28</b> |
| Monthly Asphalt Cement Price month placed (APM)      | Max. Cap | 60% | \$ | 953.60           |    |                   |
| Monthly Asphalt Cement Price month project let (APL) |          |     | \$ | 596.00           |    |                   |
| Total Monthly Tonnage of asphalt cement (TMT)        |          |     |    | 337.8            |    |                   |

| ASPHALT   | Tons        | %AC  | AC ton       |
|-----------|-------------|------|--------------|
| Leveling  | 2500        | 5.0% | 125          |
| 12.5 OGFC |             | 5.0% | 0            |
| 12.5 mm   |             | 5.0% | 0            |
| 9.5 mm SP | 789         | 5.0% | 39.45        |
| 25 mm SP  | 1367        | 5.0% | 68.35        |
| 19 mm SP  | 2100        | 5.0% | 105          |
|           | <b>6756</b> |      | <b>337.8</b> |

**BITUMINOUS TACK COAT**

|  |          |     |    |             |               |    |               |
|--|----------|-----|----|-------------|---------------|----|---------------|
| Price Adjustment (PA)                                |          |     |    | \$          | <b>823.26</b> | \$ | <b>823.26</b> |
| Monthly Asphalt Cement Price month placed (APM)      | Max. Cap | 60% | \$ | 953.60      |               |    |               |
| Monthly Asphalt Cement Price month project let (APL) |          |     | \$ | 596.00      |               |    |               |
| Total Monthly Tonnage of asphalt cement (TMT)        |          |     |    | 2.302174094 |               |    |               |

Bitum Tack

| Gals | gals/ton | tons       |
|------|----------|------------|
| 536  | 232.8234 | 2.30217409 |

**BITUMINOUS TACK COAT (surface treatment)**

|  |          |     |    |        |    |          |
|--|----------|-----|----|--------|----|----------|
| Price Adjustment (PA)                                |          |     |    |        | \$ | <b>0</b> |
| Monthly Asphalt Cement Price month placed (APM)      | Max. Cap | 60% | \$ | 953.60 |    |          |
| Monthly Asphalt Cement Price month project let (APL) |          |     | \$ | 596.00 |    |          |
| 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    |

**TOTAL LIQUID AC ADJUSTMENT** \$ **121,620.54**

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

Date: 5/15/2015 Project: 0009971  
 Revised: 6/18/2015 County: Fayette  
 PI: 0009971

Description: SR 92 @ CR 149/Antioch Rd & CR 308 Lockwood Rd  
 Project Termini: Interesection Improvement Roundabout

Existing ROW: varies  
 Required ROW: 120 ft  
 Parcels: 6

Land and Improvements \_\_\_\_\_ \$1,200,000.00

|                      |              |
|----------------------|--------------|
| Proximity Damage     | \$125,000.00 |
| Consequential Damage | \$25,000.00  |
| Cost to Cures        | \$125,000.00 |
| Trade Fixtures       | \$0.00       |
| Improvements         | \$300,000.00 |

Valuation Services \_\_\_\_\_ \$22,500.00

Legal Services \_\_\_\_\_ \$41,550.00

Relocation \_\_\_\_\_ \$12,000.00

Demolition \_\_\_\_\_ \$17,500.00

Administrative \_\_\_\_\_ \$52,000.00

TOTAL ESTIMATED COSTS \_\_\_\_\_ \$1,345,550.00

**TOTAL ESTIMATED COSTS (ROUNDED) \_\_\_\_\_ \$1,346,000.00**

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

Prepared By: Dashone Alexander CG#:286999 06/18/2015 (DATE)

Approved By: Dashone Alexander CG#: 286999 06/18/2015 (DATE)

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

GEORGIA DEPARTMENT OF TRANSPORTATION  
PRELIMINARY ROW COST ESTIMATE SUMMARY

Date: 5/15/2015                      Project: 0009972  
 Revised: 6/18/2015                  County: Fayette  
    PI: 0009972

Description: SR 92 @ CR 138 & CR 129/Harp Road  
 Project Termini: Interesection Improvement Roundabout

Existing ROW: varies  
 Required ROW: 120 ft  
 Parcels: 6

Land and Improvements \_\_\_\_\_ \$1,312,500.00

|   |
|---|
| <i>Proximity Damage</i> \$125,000.00    |
| <i>Consequential Damage</i> \$25,000.00 |
| <i>Cost to Cures</i> \$125,000.00       |
| <i>Trade Fixtures</i> \$0.00            |
| <i>Improvements</i> \$300,000.00        |

Valuation Services \_\_\_\_\_ \$22,500.00

Legal Services \_\_\_\_\_ \$41,550.00

Relocation \_\_\_\_\_ \$12,000.00

Demolition \_\_\_\_\_ \$17,500.00

Administrative \_\_\_\_\_ \$52,000.00

TOTAL ESTIMATED COSTS \_\_\_\_\_ \$1,458,050.00

**TOTAL ESTIMATED COSTS (ROUNDED) \_\_\_\_\_ \$1,459,000.00**

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

Prepared By:     Deshone Alexander     CG#: 286999 06/18/2015 (DATE)  
 Approved By:     Deshone Alexander     CG#: 286999 06/18/2015 (DATE)

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

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

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**INTERDEPARTMENT CORRESPONDENCE**

FILE **N/A, Fayette County, P.I. # 0009971/0009972** OFFICE Thomaston  
*SR 92 @ CR 149/Antioch Road & CR 308/Lockwood Road*  
*SR 92 @ CR 138/Seay Road & CR 129/Harp Road*

FROM Kerry Gore, District Utilities Engineer DATE January 22, 2015

TO Justin Banks, 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.

| <b>FACILITY OWNER</b> | <b>NON-REIMBURSABLE</b> | <b>REIMBURSABLE</b> |
|-----------------------|-------------------------|---------------------|
| Atlanta Gas Light     | 55,000                  |                     |
| BellSouth d/b/a AT&T* | 68,000                  |                     |
| Comcast               | 57,000                  |                     |
| Coweta-Fayette EMC    | 216,000                 | 54,000              |
| Fayette County Water  | 200,000                 | 45,000              |
| <b>TOTALS</b>         | <b>\$ 596,000</b>       | <b>\$ 99,000</b>    |

\*Cost for BellSouth will increase \$100,000 if cross box on Seay Road is disturbed.

Total Preliminary Utility Cost Estimate **695,000**.

If you have any questions, please contact Tyler Peek at 706-646-7605.

KG/TP

cc: Mike Bolden, State Utilities Engineer (*via: e-mail*)  
Angela Robinson, Office of Financial Management (*via: e-mail*)  
David Neighbors, Area Engineer (*via: e-mail*)

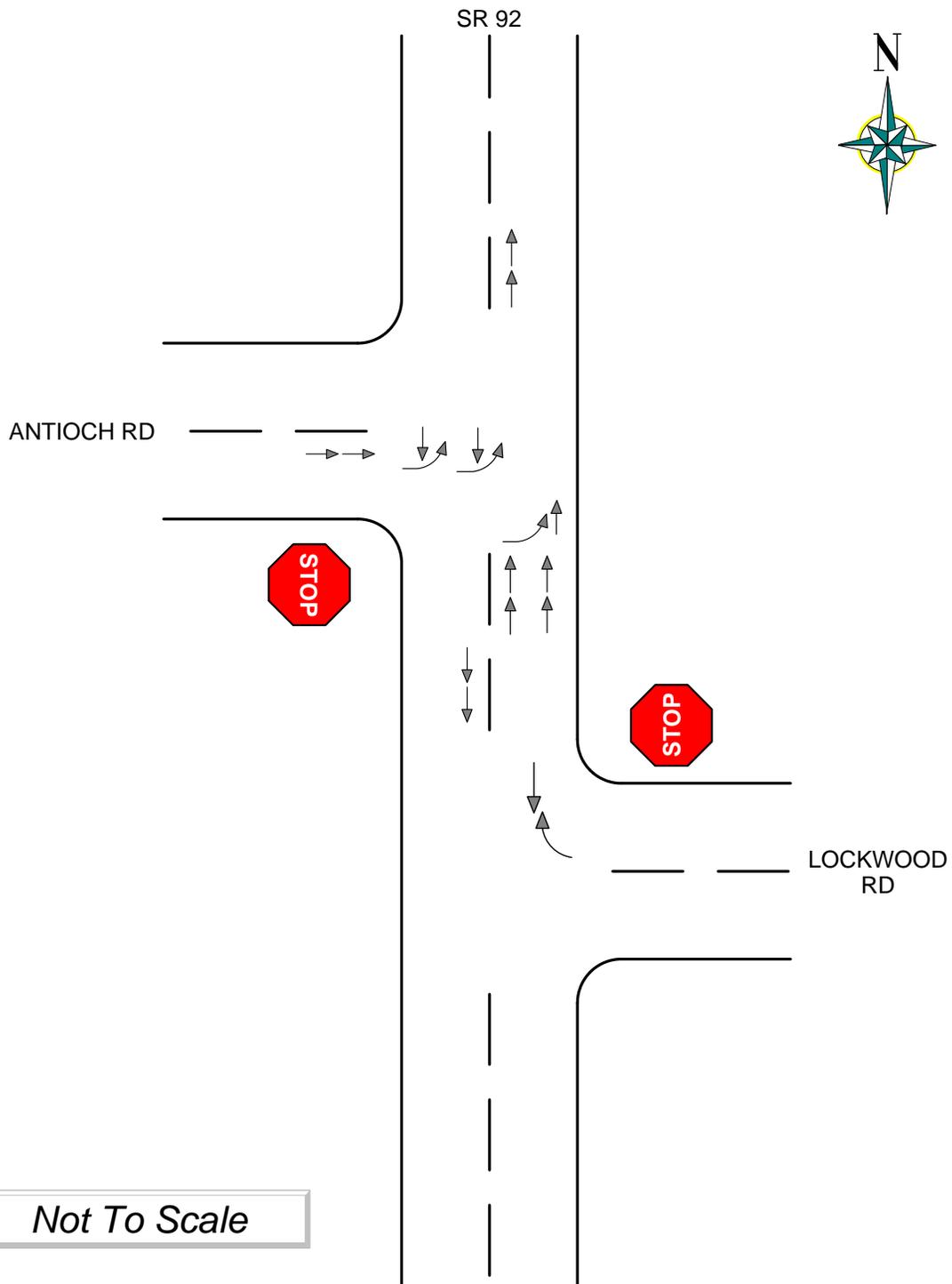
Project Concept Report  
Fayette County  
PI Numbers: 0009971  
0009972

# **Attachment 4**

## Crash Diagrams

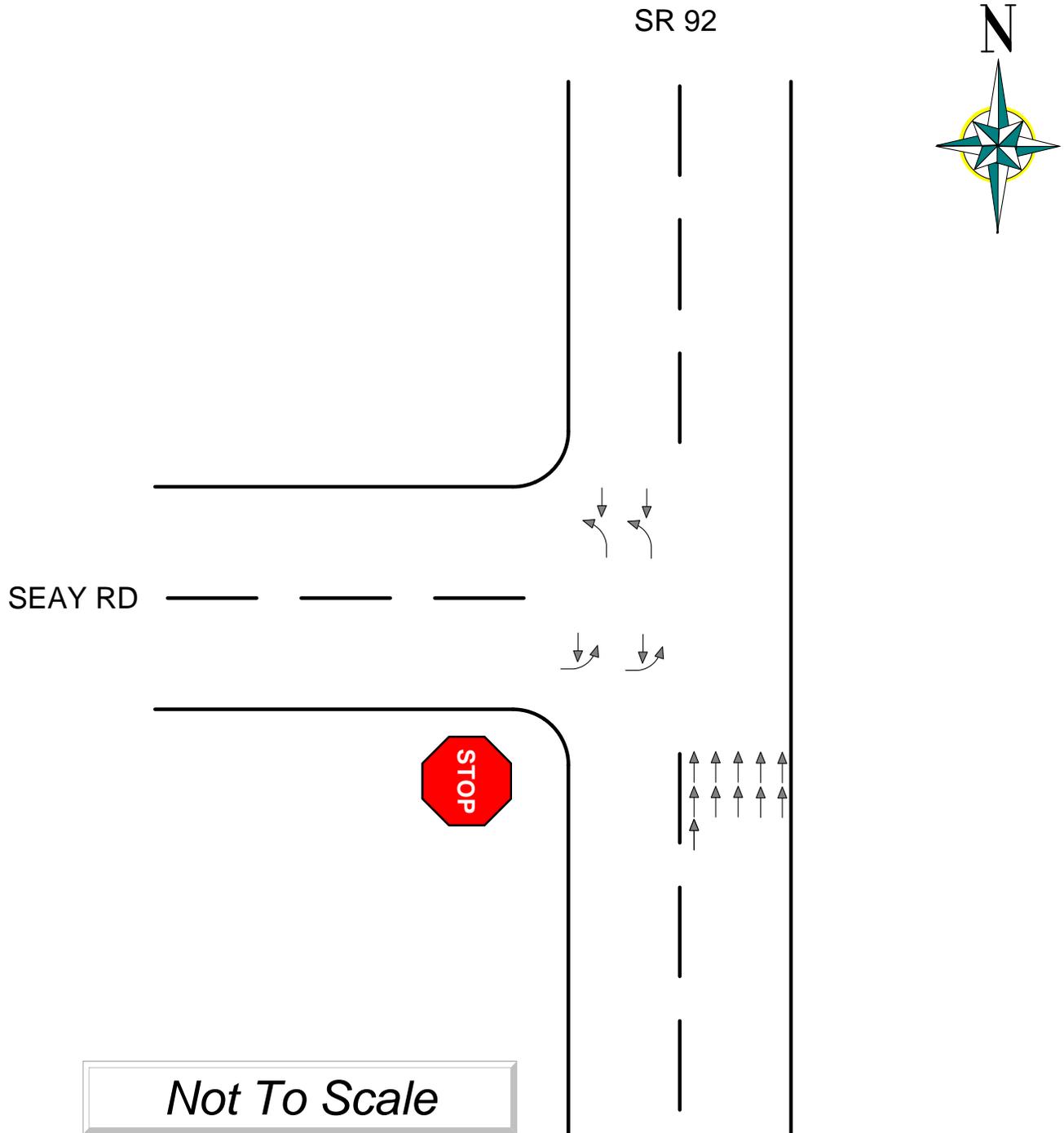
Location: Fayette County

Description:  
SR 92 at Antioch Rd/Lockwood Rd - Diagram of crashes from 2009 to 2013.



Location: Fayette County

Description:  
SR 92 at Seay Rd - Diagram of crashes from 2009 to 2013.



Project Concept Report  
Fayette County  
PI Numbers: 0009971  
0009972

# **Attachment 5**

## Traffic Diagrams

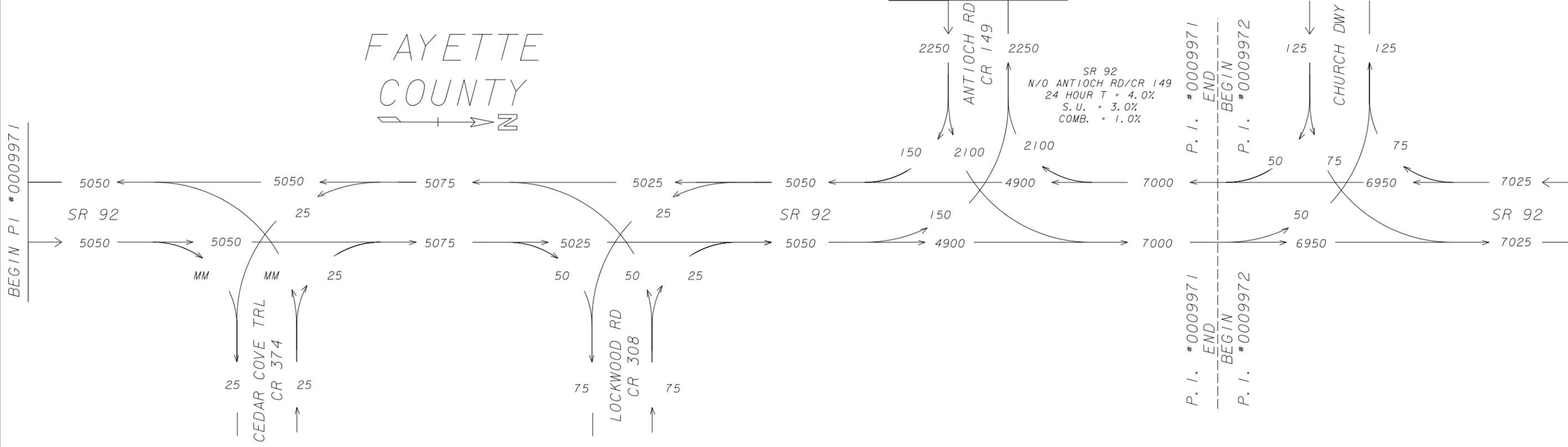
# FAYETTE COUNTY

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MATCH LINE B SHEET 2

BEGIN PI #0009971

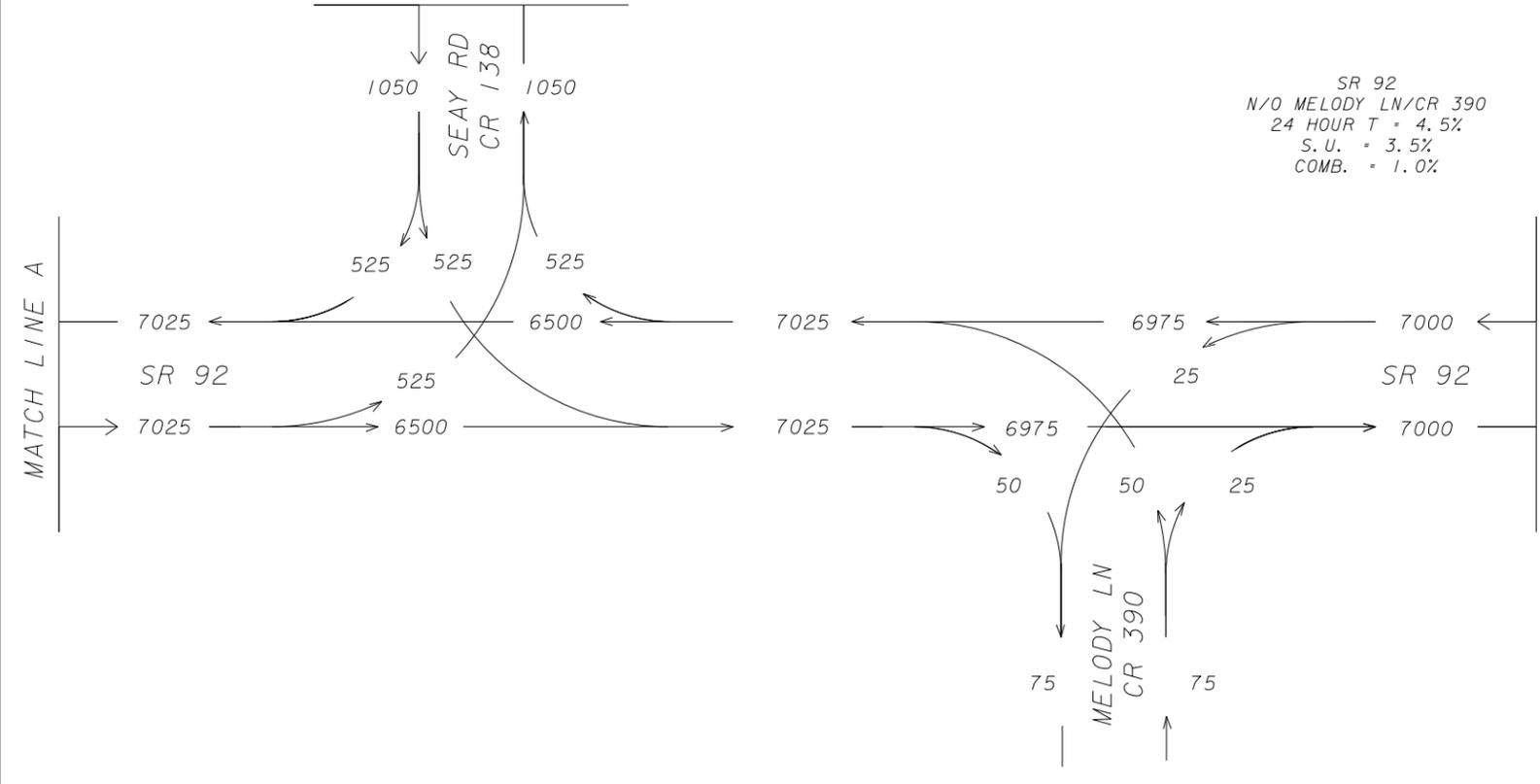
MATCH LINE A



MATCH LINE C SHEET 2

MATCH LINE A

END PI #0009972



P. I. #0009971  
SR 92 @ CR 149/ANTIOCH RD  
& CR 308/LOCKWOOD RD  
P. I. #0009972  
SR 92 @ CR 138/SEAY RD  
& CR 129/HARP RD

2014 ADT  
EXISTING  
(WEEKDAY)



| REVISION DATES |  |  |
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STATE OF GEORGIA  
DEPARTMENT OF TRANSPORTATION  
OFFICE: PLANNING  
TRAFFIC DIAGRAM

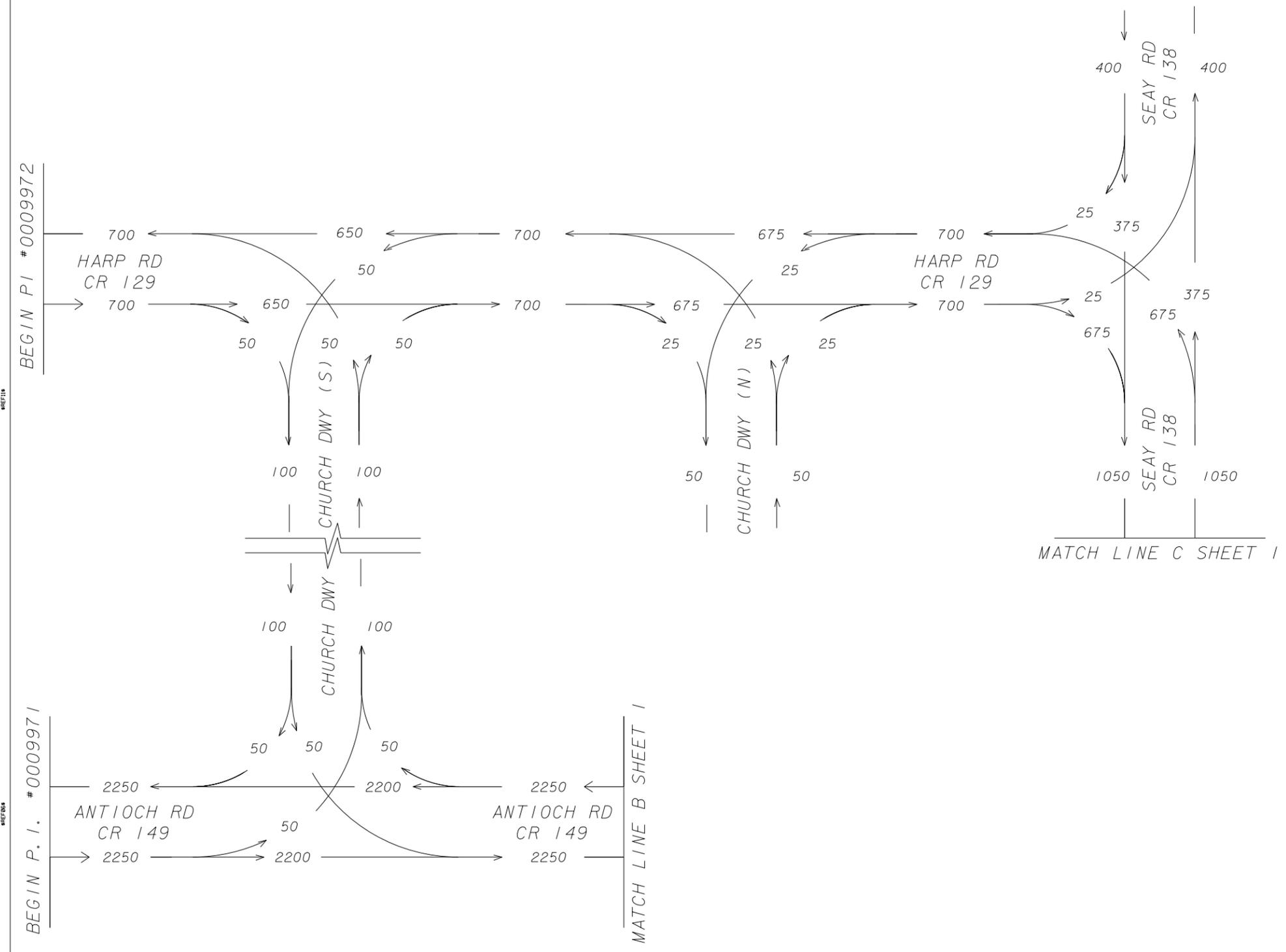
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P. I. #0009971  
SR 92 @ CR 149/ANTIOCH RD  
& CR 308/LOCKWOOD RD  
P. I. #0009972  
SR 92 @ CR 138/SEAY RD  
& CR 129/HARP RD

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EXISTING  
(WEEKDAY)



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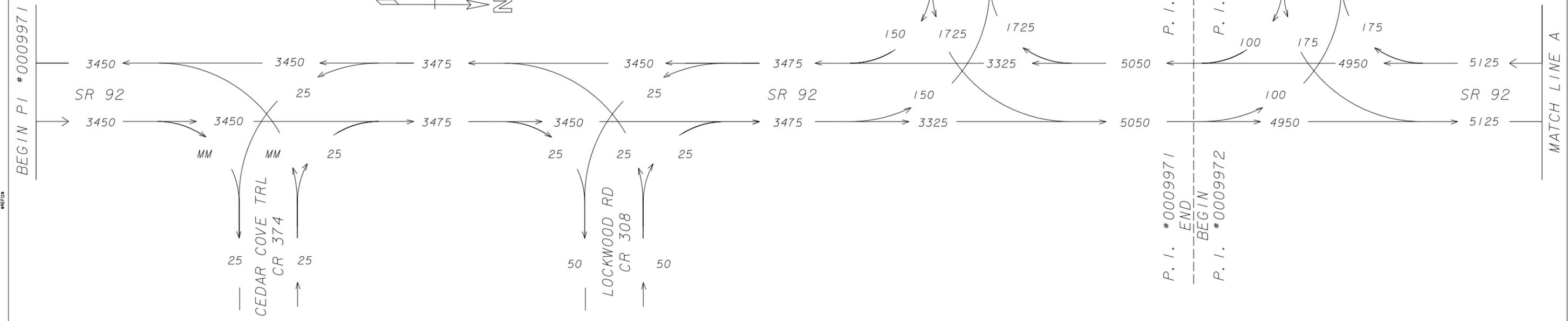
STATE OF GEORGIA  
DEPARTMENT OF TRANSPORTATION  
OFFICE: PLANNING  
TRAFFIC DIAGRAM

DRAWING No.  
10-2

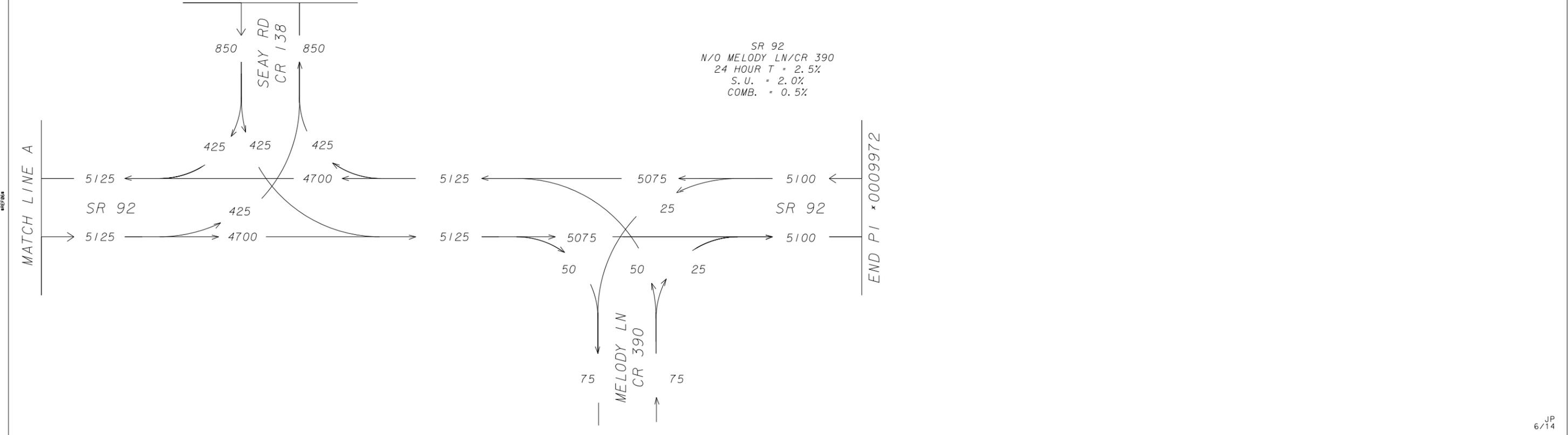
# FAYETTE COUNTY

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MATCH LINE B SHEET 2



MATCH LINE C SHEET 2



P. I. #0009971  
SR 92 @ CR 149/ANTIOCH RD  
& CR 308/LOCKWOOD RD  
P. I. #0009972  
SR 92 @ CR 138/SEAY RD  
& CR 129/HARP RD

2014 ADT  
EXISTING  
(SUNDAY)



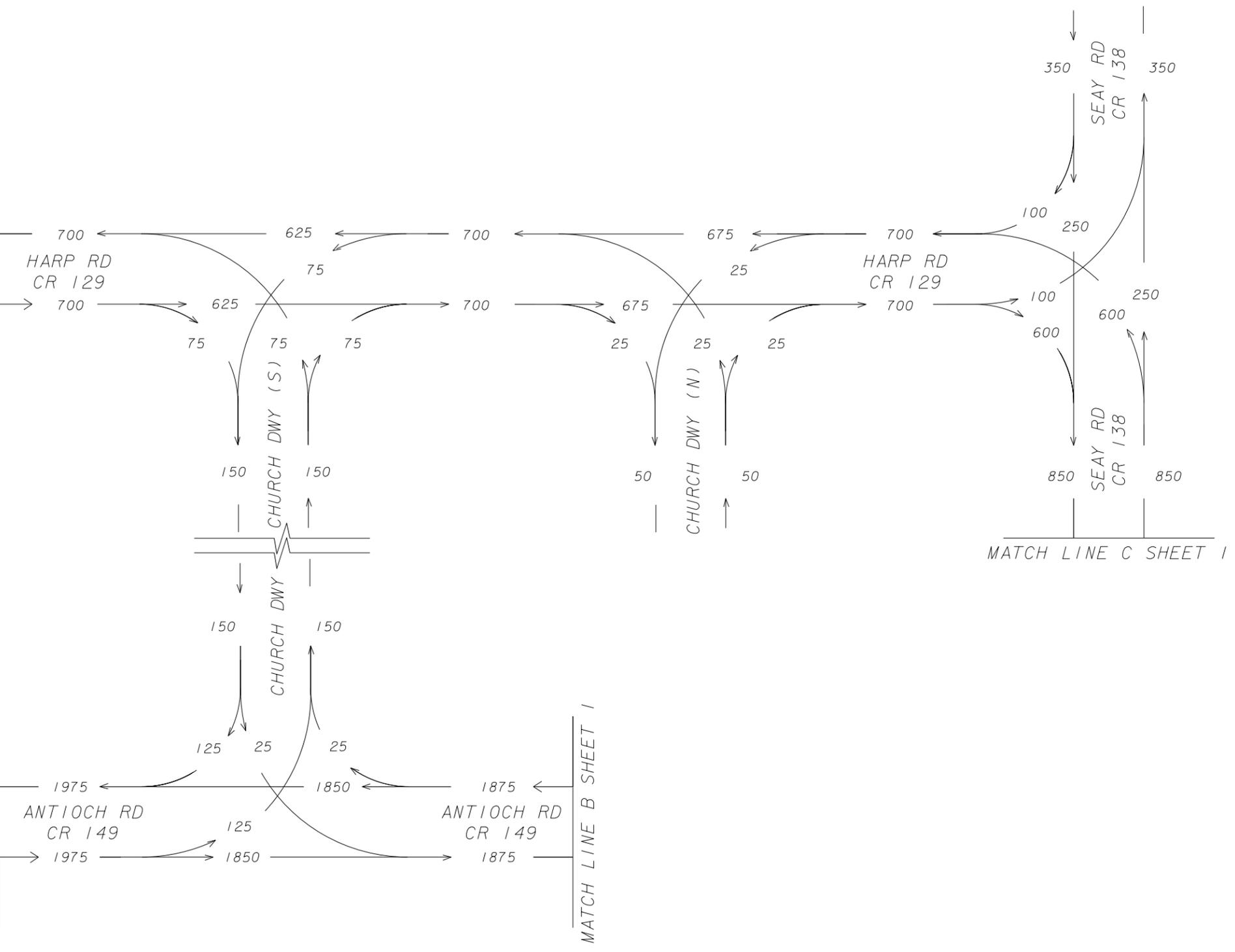
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STATE OF GEORGIA  
DEPARTMENT OF TRANSPORTATION  
OFFICE: PLANNING  
TRAFFIC DIAGRAM

FAYETTE  
COUNTY  
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BEGIN P.I. # 0009972

BEGIN P. I. # 0009971



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P. I. #0009971  
SR 92 @ CR 149/ANTIOCH RD  
& CR 308/LOCKWOOD RD  
P. I. #0009972  
SR 92 @ CR 138/SEAY RD  
& CR 129/HARP RD

2014 ADT  
EXISTING  
(SUNDAY)



| REVISION DATES |  |  |
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STATE OF GEORGIA  
DEPARTMENT OF TRANSPORTATION  
OFFICE: PLANNING  
TRAFFIC DIAGRAM



# FAYETTE COUNTY

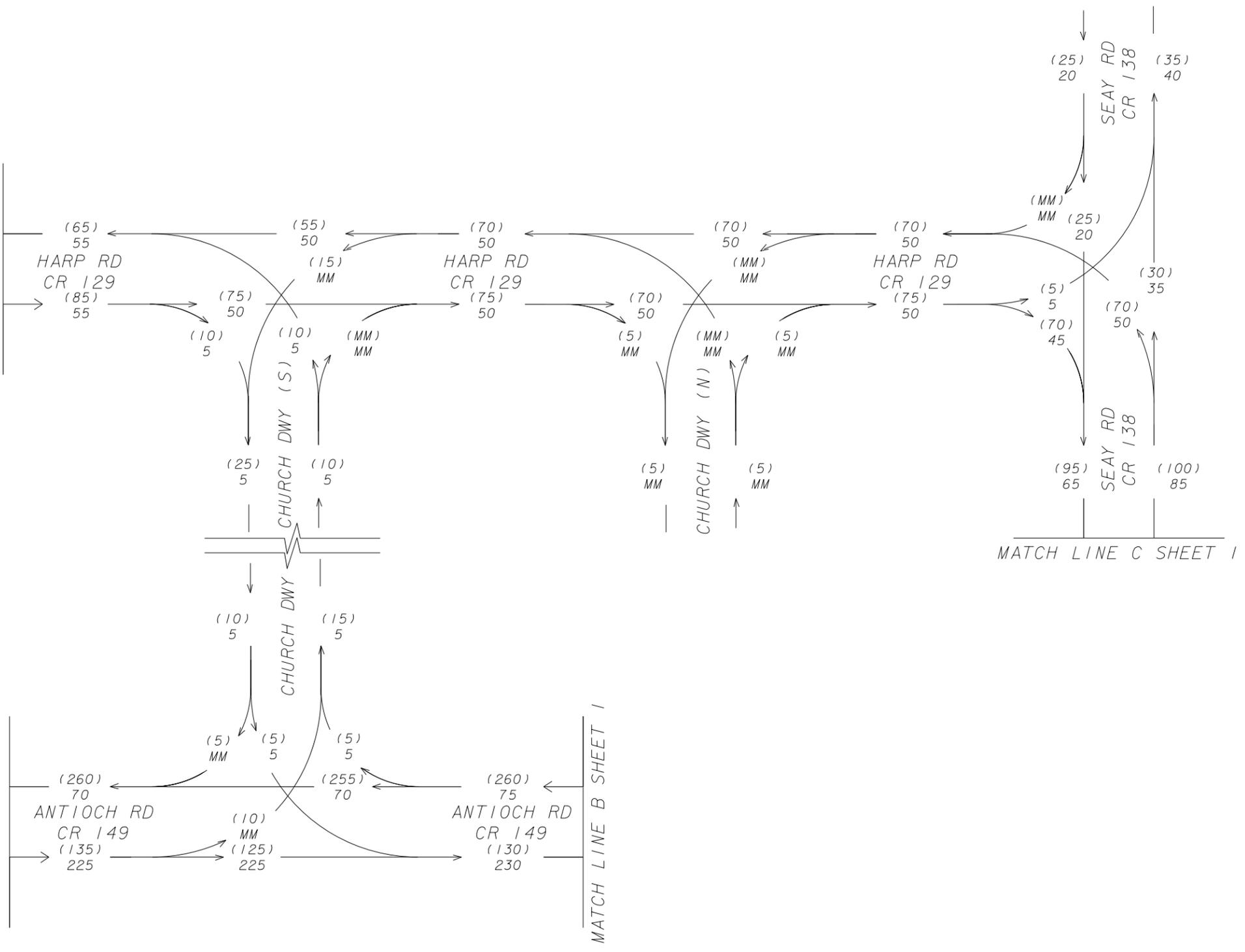


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BEGIN P. I. # 0009971

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JP  
6/14

P. I. #0009971  
SR 92 @ CR 149/ANTIOCH RD  
& CR 308/LOCKWOOD RD  
P. I. #0009972  
SR 92 @ CR 138/SEAY RD  
& CR 129/HARP RD

2014 PM DHV = (000)  
2014 AM DHV = 000  
EXISTING  
(WEEKDAY)



| REVISION DATES |  |  |
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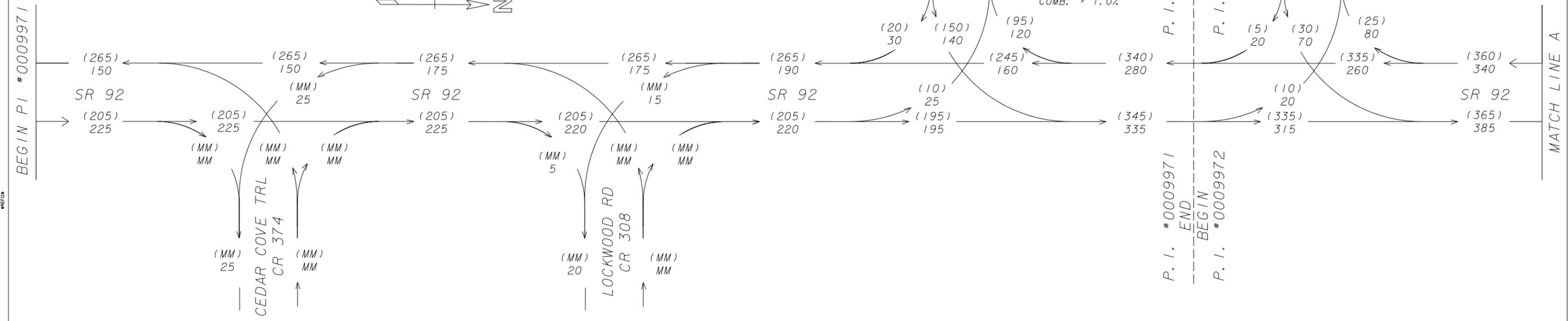
STATE OF GEORGIA  
DEPARTMENT OF TRANSPORTATION  
OFFICE: PLANNING  
TRAFFIC DIAGRAM

DRAWING No.  
**10-6**

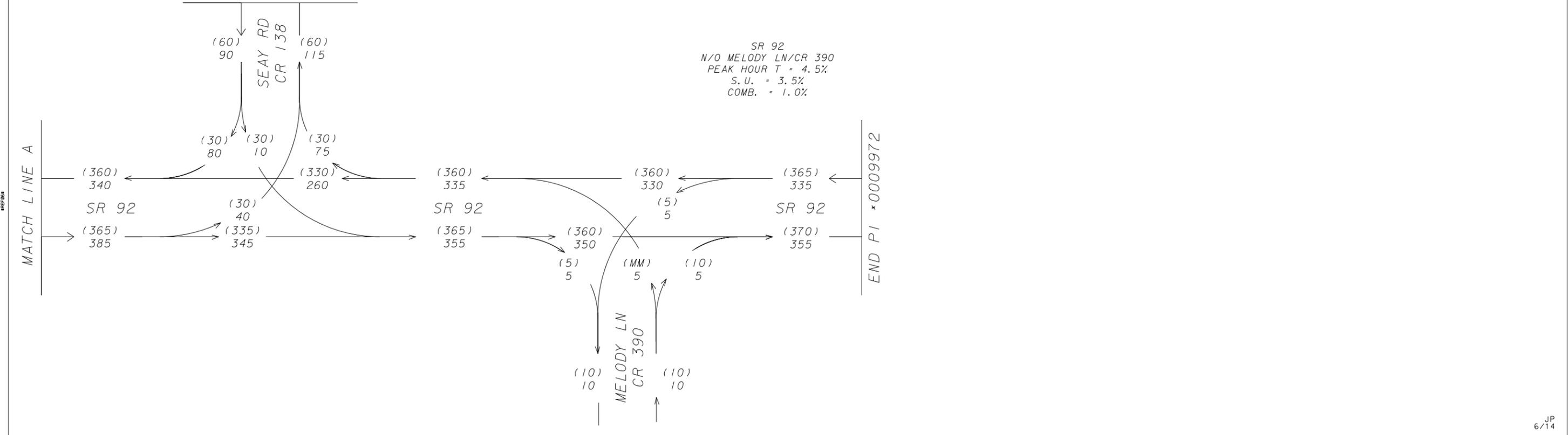
# FAYETTE COUNTY

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## MATCH LINE B SHEET 2



## MATCH LINE C SHEET 2



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REFLECTOR

JP  
6/14

P. I. #0009971  
SR 92 @ CR 149/ANTIOCH RD  
& CR 308/LOCKWOOD RD  
P. I. #0009972  
SR 92 @ CR 138/SEAY RD  
& CR 129/HARP RD

2014 PM DHV = (000)  
2014 AM DHV = 000  
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(SUNDAY)



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STATE OF GEORGIA  
DEPARTMENT OF TRANSPORTATION  
OFFICE: PLANNING  
TRAFFIC DIAGRAM

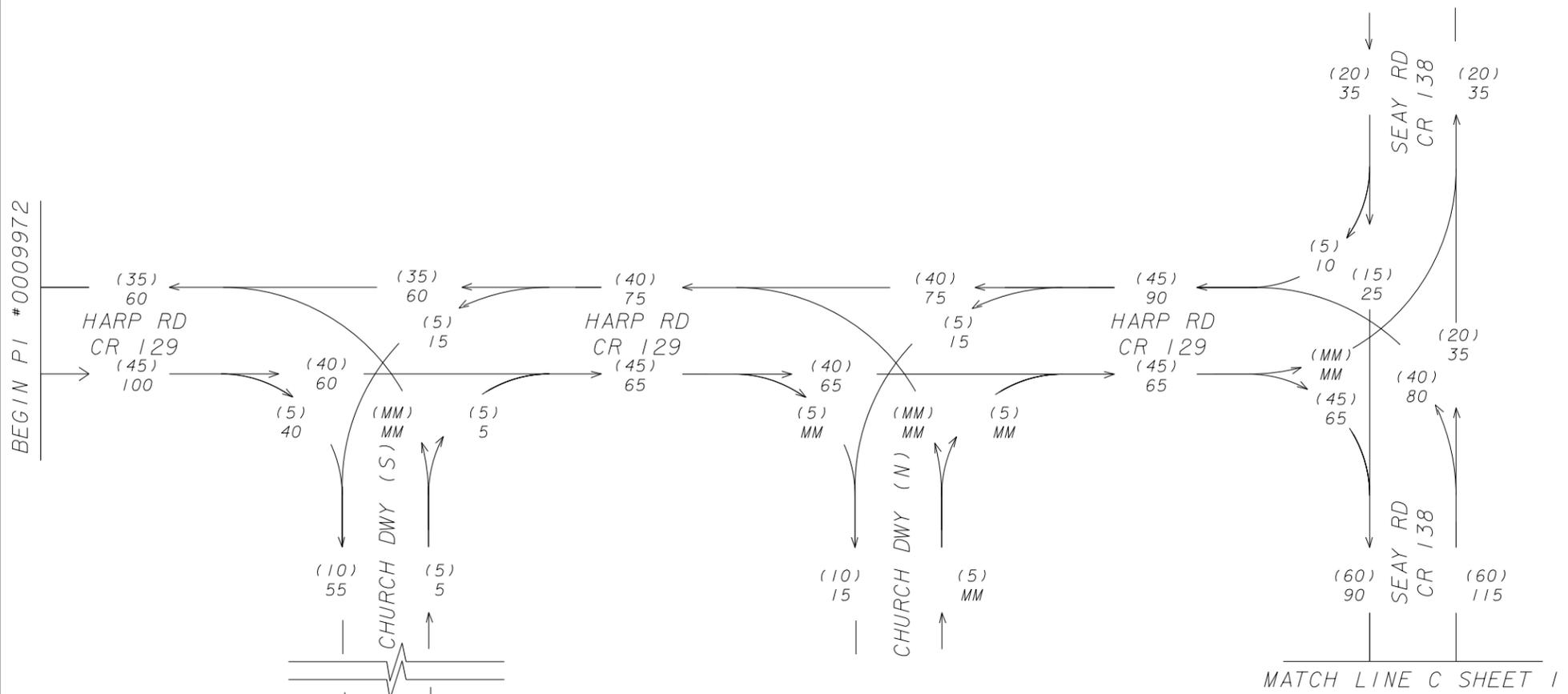
DRAWING No.  
10-7

# FAYETTE COUNTY



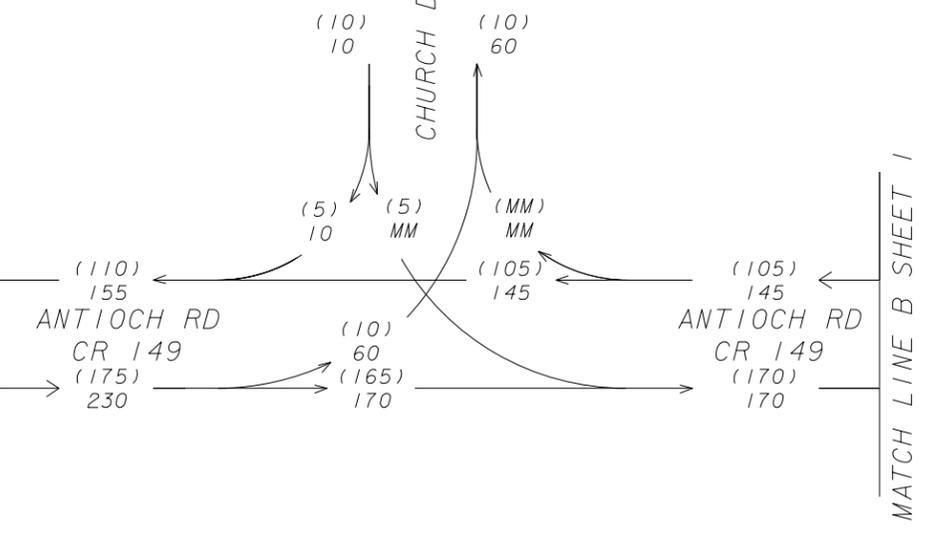
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BEGIN P. I. # 0009971

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P. I. #0009971  
SR 92 @ CR 149/ANTIOCH RD  
& CR 308/LOCKWOOD RD  
P. I. #0009972  
SR 92 @ CR 138/SEAY RD  
& CR 129/HARP RD

2014 PM DHV = (000)  
2014 AM DHV = 000  
EXISTING  
(SUNDAY)



| REVISION DATES |  |  |
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STATE OF GEORGIA  
DEPARTMENT OF TRANSPORTATION  
OFFICE: PLANNING  
TRAFFIC DIAGRAM

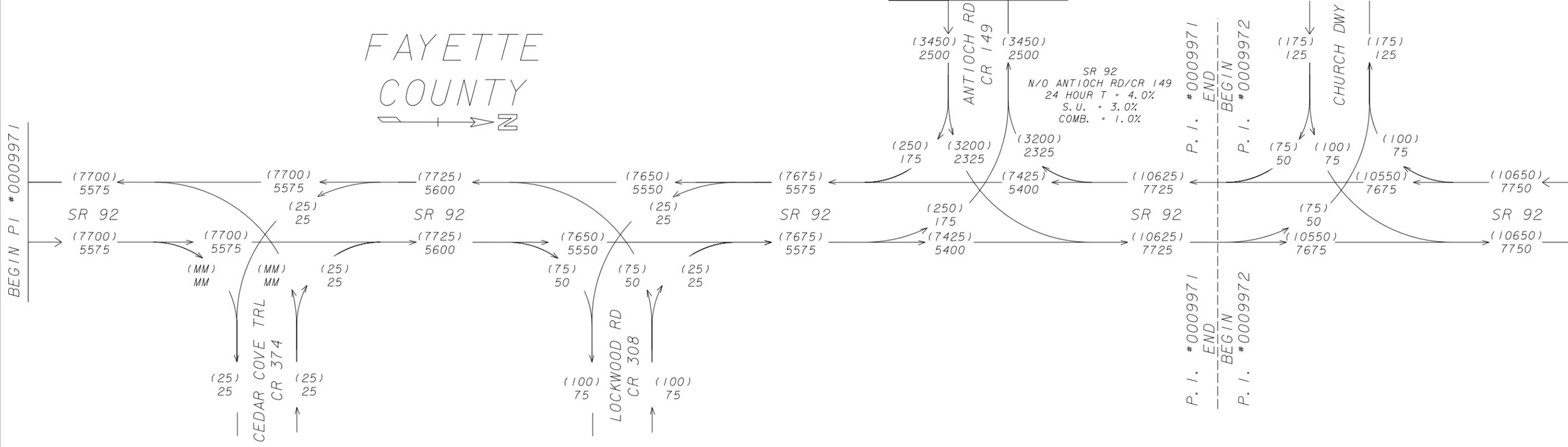
DRAWING No.  
10-8

MATCH LINE B SHEET 2

FAYETTE COUNTY  
N

BEGIN PI #0009971

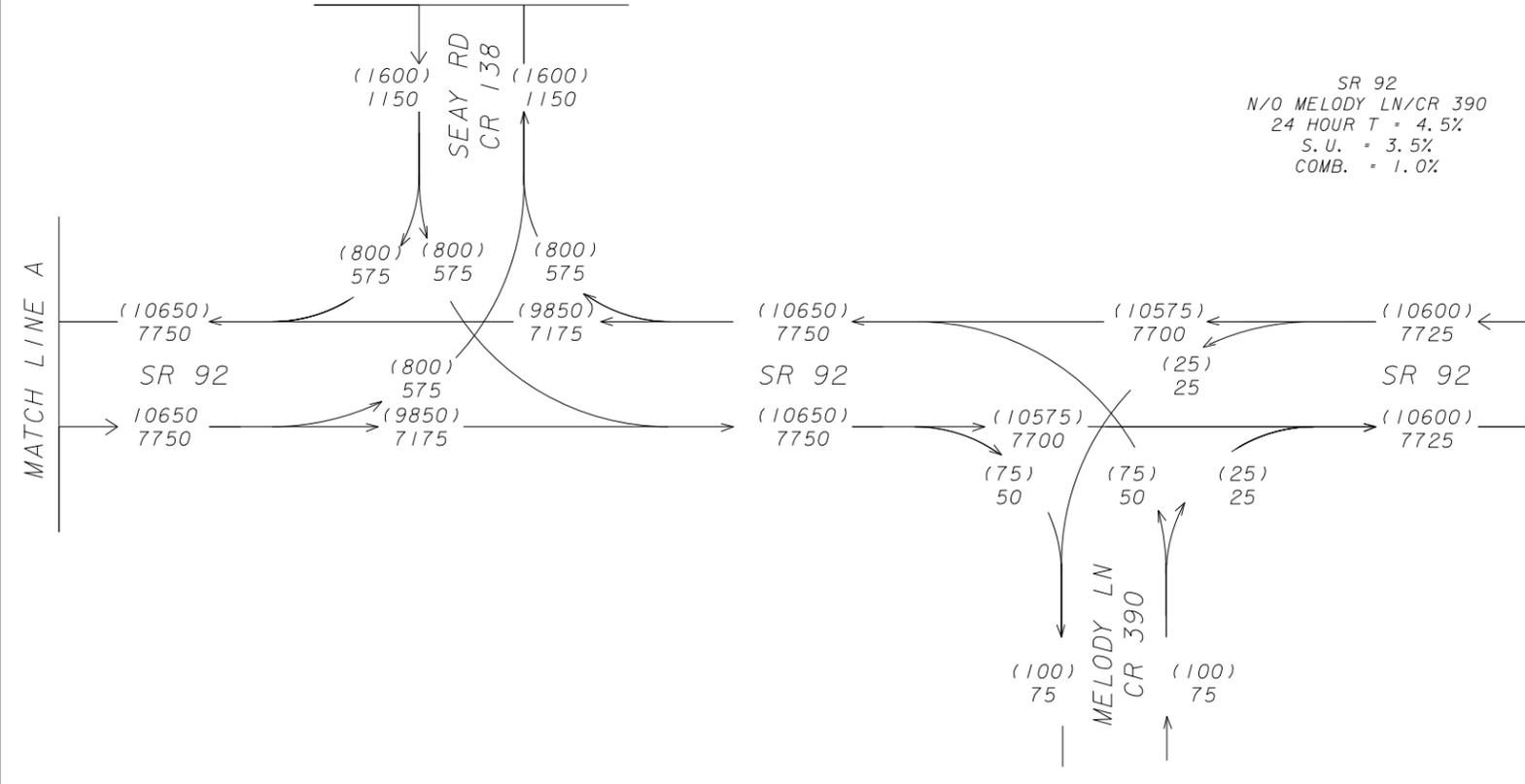
MATCH LINE A



MATCH LINE C SHEET 2

MATCH LINE A

END PI #0009972



P. I. #0009971  
SR 92 @ CR 149/ANTIOCH RD  
& CR 308/LOCKWOOD RD  
P. I. #0009972  
SR 92 @ CR 138/SEAY RD  
& CR 129/HARP RD

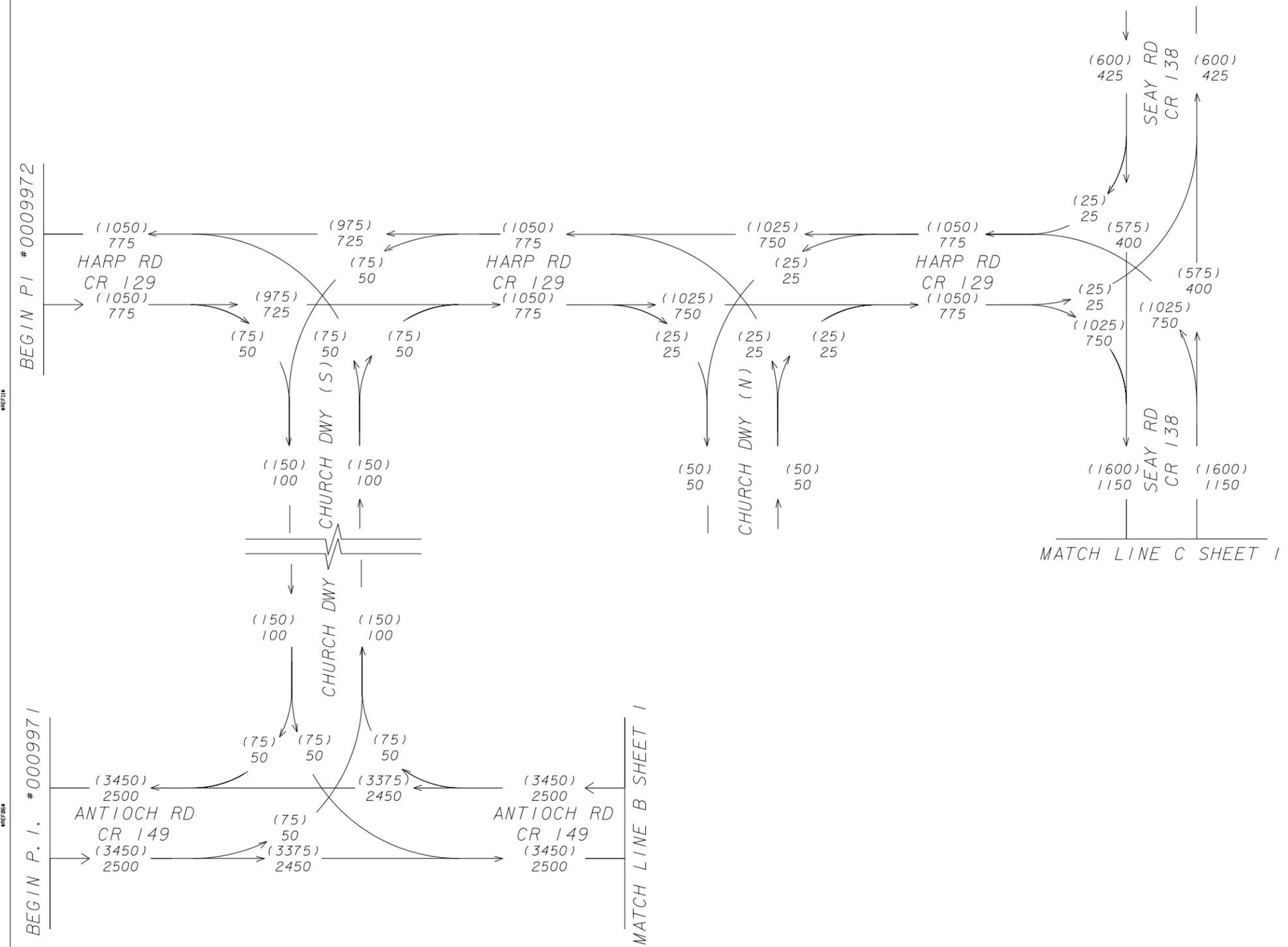
2039 ADT = (000)  
2019 ADT = 000  
NO BUILD



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STATE OF GEORGIA  
DEPARTMENT OF TRANSPORTATION  
OFFICE: PLANNING  
TRAFFIC DIAGRAM

# FAYETTE COUNTY

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P. I. #0009971  
SR 92 @ CR 149/ANTIOCH RD  
& CR 308/LOCKWOOD RD  
P. I. #0009972  
SR 92 @ CR 138/SEAY RD  
& CR 129/HARP RD

2039 ADT = (000)  
2019 ADT = 000  
NO BUILD

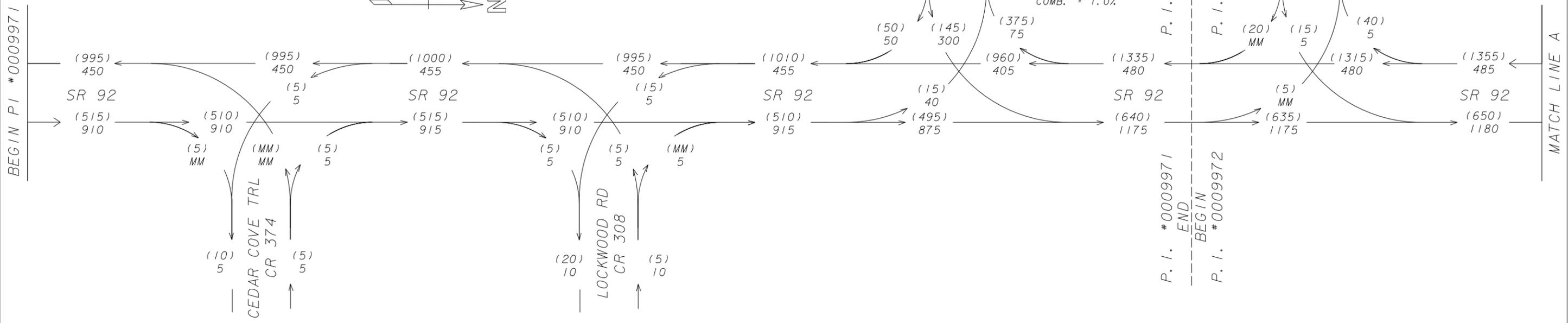


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STATE OF GEORGIA  
DEPARTMENT OF TRANSPORTATION  
OFFICE: PLANNING  
TRAFFIC DIAGRAM

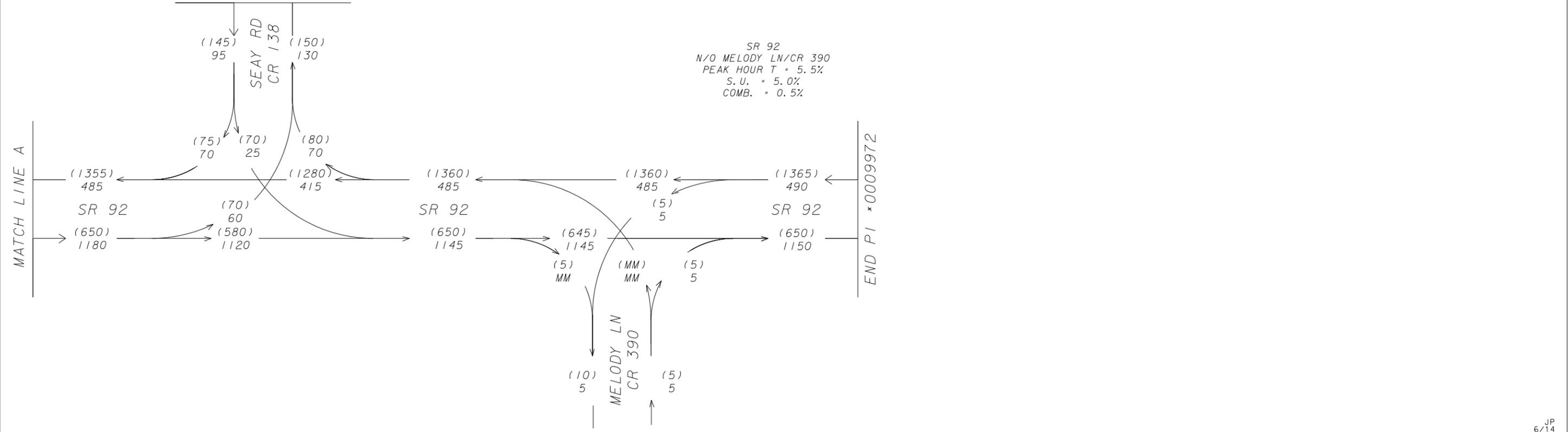
MATCH LINE B SHEET 2

FAYETTE COUNTY  

MATCH LINE C SHEET 2

SR 92  
 N/O MELODY LN/CR 390  
 PEAK HOUR T = 5.5%  
 S.U. = 5.0%  
 COMB. = 0.5%



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P. I. #0009971  
 SR 92 @ CR 149/ANTIOCH RD  
 & CR 308/LOCKWOOD RD  
 P. I. #0009972  
 SR 92 @ CR 138/SEAY RD  
 & CR 129/HARP RD

2039 PM DHV = (000)  
 2039 AM DHV = 000  
 NO BUILD



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STATE OF GEORGIA  
 DEPARTMENT OF TRANSPORTATION  
 OFFICE: PLANNING  
 TRAFFIC DIAGRAM

DRAWING No.  
 10-11

# FAYETTE COUNTY

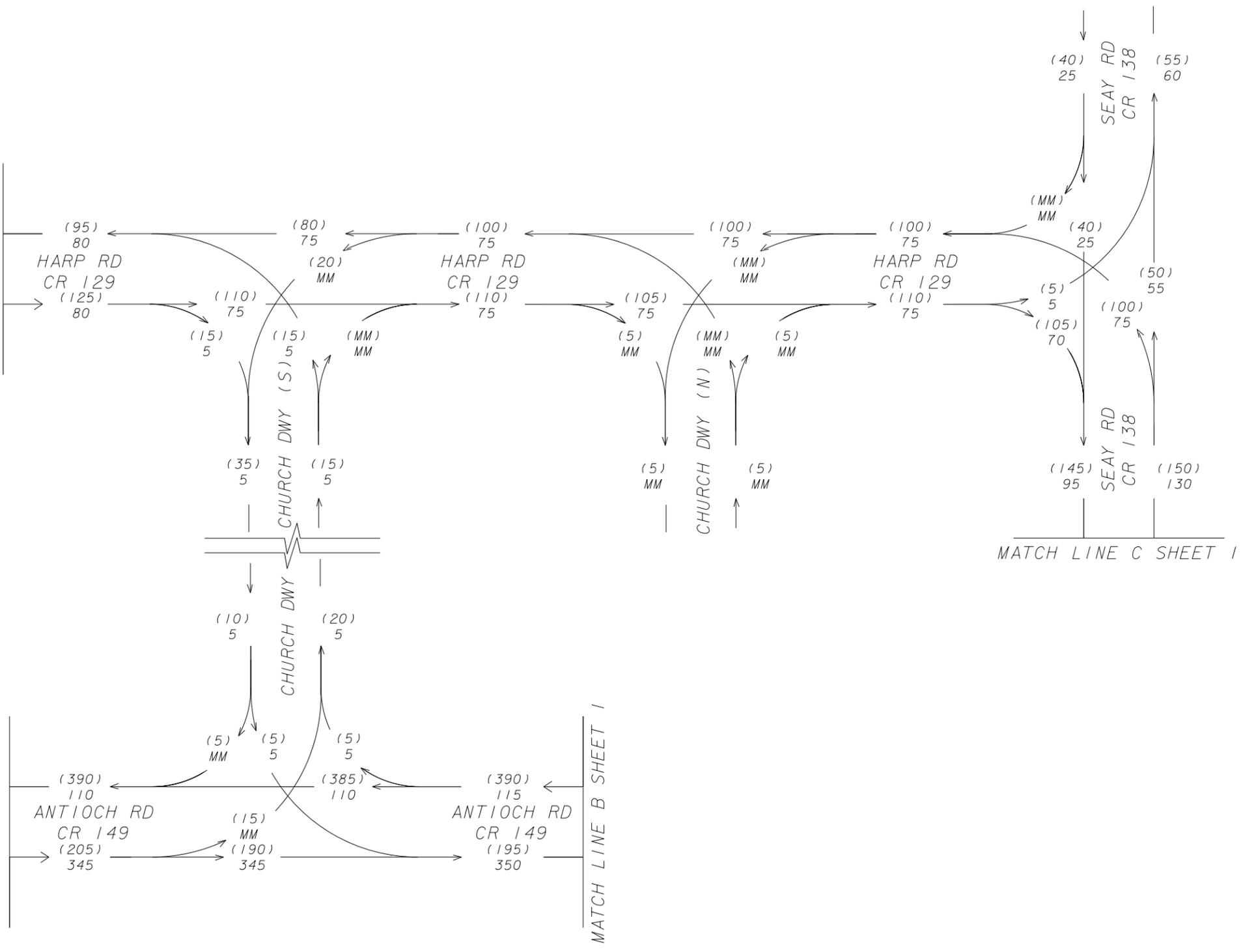


BEGIN P.I. # 0009972

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6/14

P. I. #0009971  
SR 92 @ CR 149/ANTIOCH RD  
& CR 308/LOCKWOOD RD  
P. I. #0009972  
SR 92 @ CR 138/SEAY RD  
& CR 129/HARP RD

2039 PM DHV = (000)  
2039 AM DHV = 000  
NO BUILD



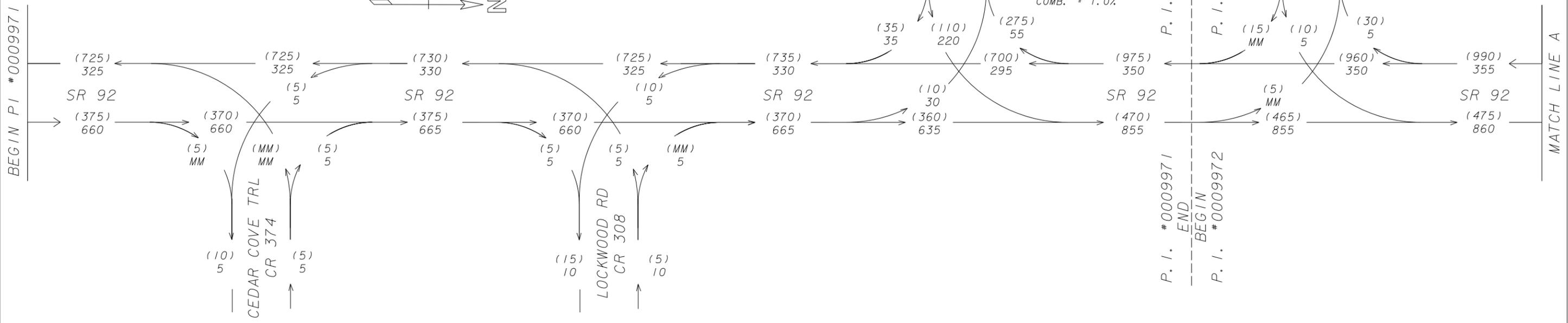
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STATE OF GEORGIA  
DEPARTMENT OF TRANSPORTATION  
OFFICE: PLANNING  
TRAFFIC DIAGRAM

DRAWING No.  
10-12

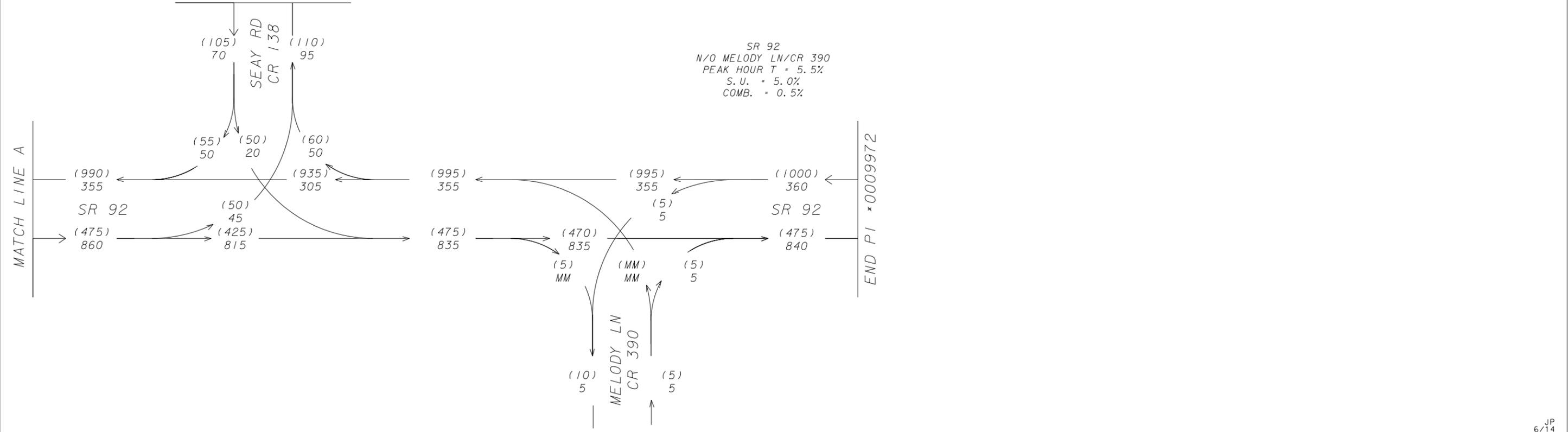
MATCH LINE B SHEET 2

FAYETTE COUNTY  
N



MATCH LINE C SHEET 2

SR 92  
N/O MELODY LN/CR 390  
PEAK HOUR T = 5.5%  
S.U. = 5.0%  
COMB. = 0.5%



P. I. #0009971  
SR 92 @ CR 149/ANTIOCH RD  
& CR 308/LOCKWOOD RD  
P. I. #0009972  
SR 92 @ CR 138/SEAY RD  
& CR 129/HARP RD

2019 PM DHV = (000)  
2019 AM DHV = 000  
NO BUILD



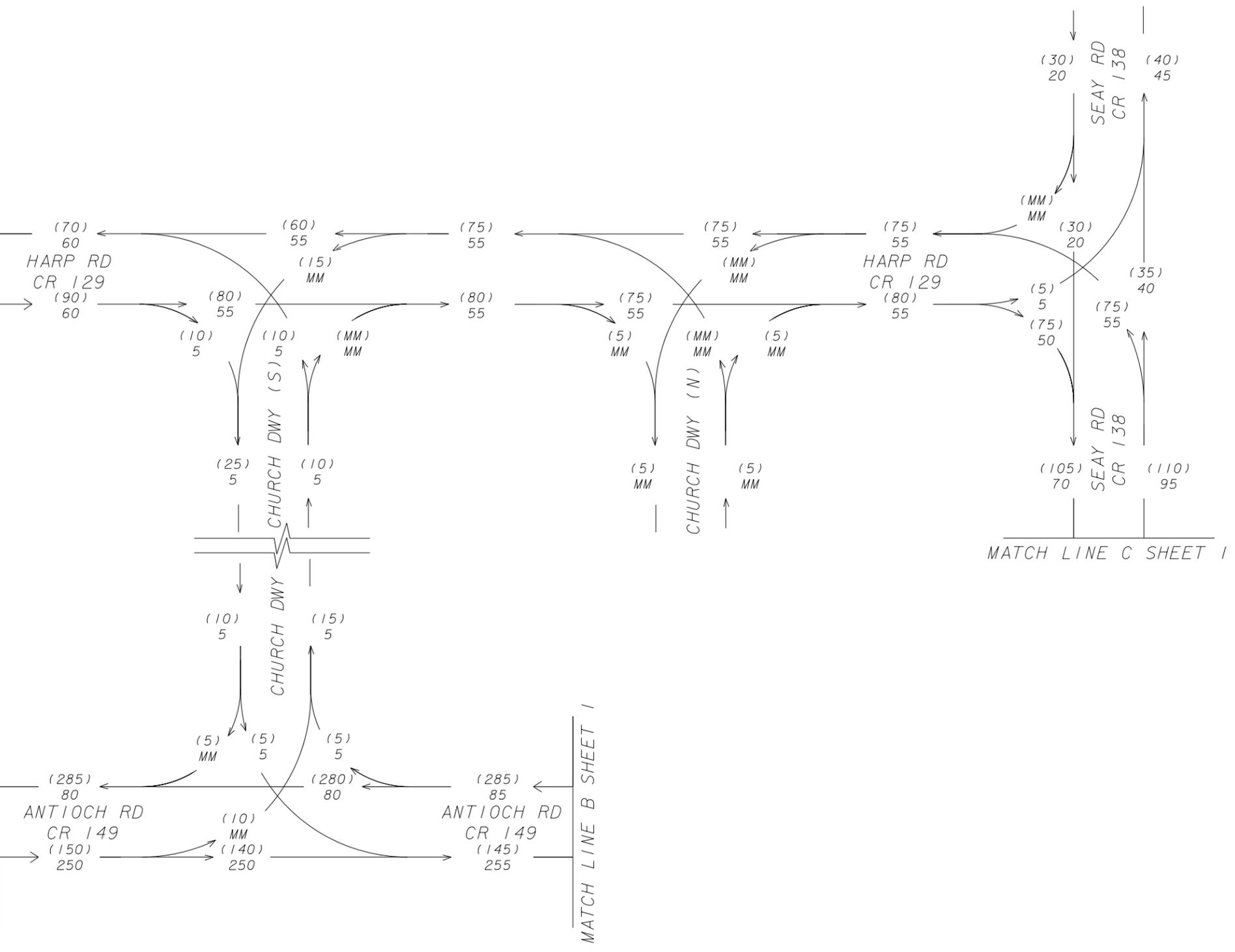
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STATE OF GEORGIA  
DEPARTMENT OF TRANSPORTATION  
OFFICE: PLANNING  
TRAFFIC DIAGRAM

# FAYETTE COUNTY

BEGIN P.I. # 0009972

BEGIN P. I. # 0009971



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P. I. #0009971  
SR 92 @ CR 149/ANTIOCH RD  
& CR 308/LOCKWOOD RD  
P. I. #0009972  
SR 92 @ CR 138/SEAY RD  
& CR 129/HARP RD

2019 PM DHV = (000)  
2019 AM DHV = 000  
NO BUILD



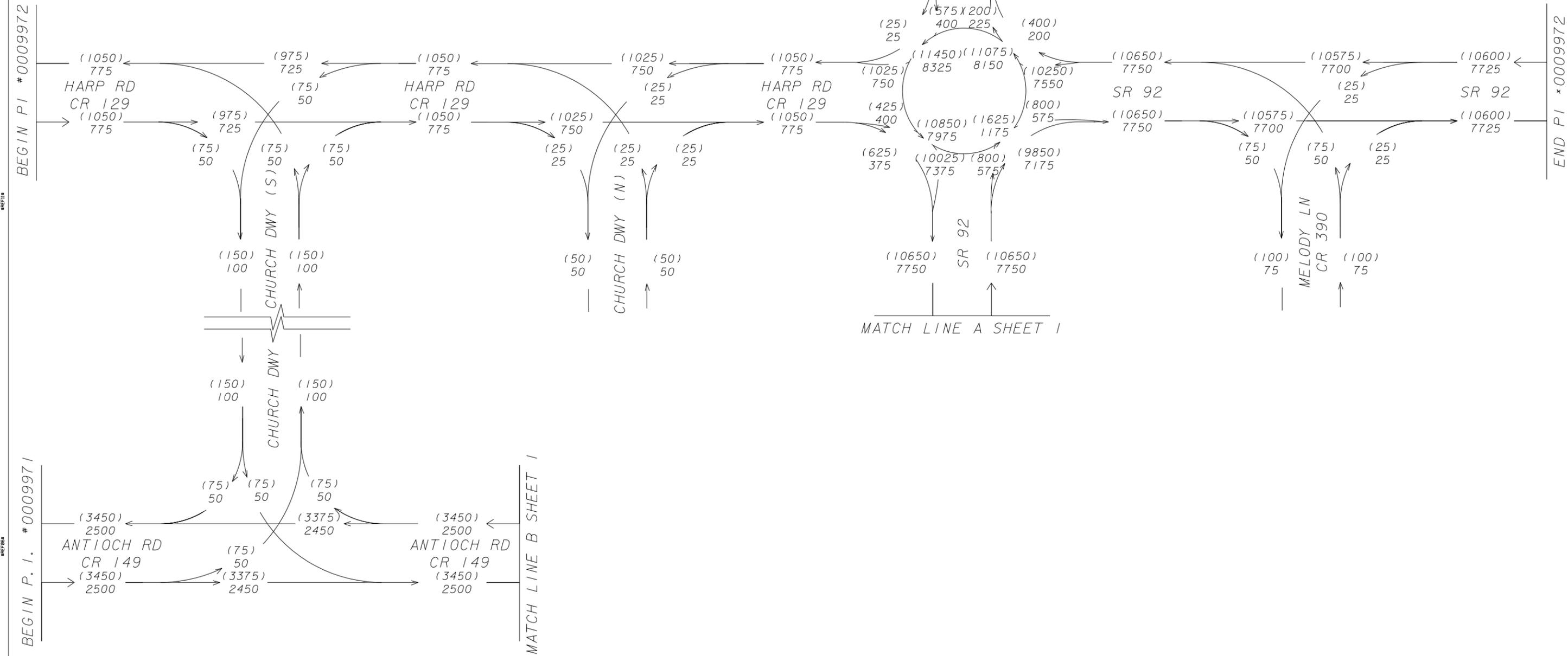
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STATE OF GEORGIA  
DEPARTMENT OF TRANSPORTATION  
OFFICE: PLANNING  
TRAFFIC DIAGRAM



# FAYETTE COUNTY

SR 92  
N/O MELODY LN/CR 390  
24 HOUR T = 4.5%  
S. U. = 3.5%  
COMB. = 1.0%



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P. I. #0009971  
SR 92 @ CR 149/ANTIOCH RD  
& CR 308/LOCKWOOD RD  
P. I. #0009972  
SR 92 @ CR 138/SEAY RD  
& CR 129/HARP RD

2039 ADT = (000)  
2019 ADT = 000  
BUILD



| REVISION DATES |  |  |
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STATE OF GEORGIA  
DEPARTMENT OF TRANSPORTATION  
OFFICE: PLANNING  
TRAFFIC DIAGRAM

DRAWING No.  
10-16

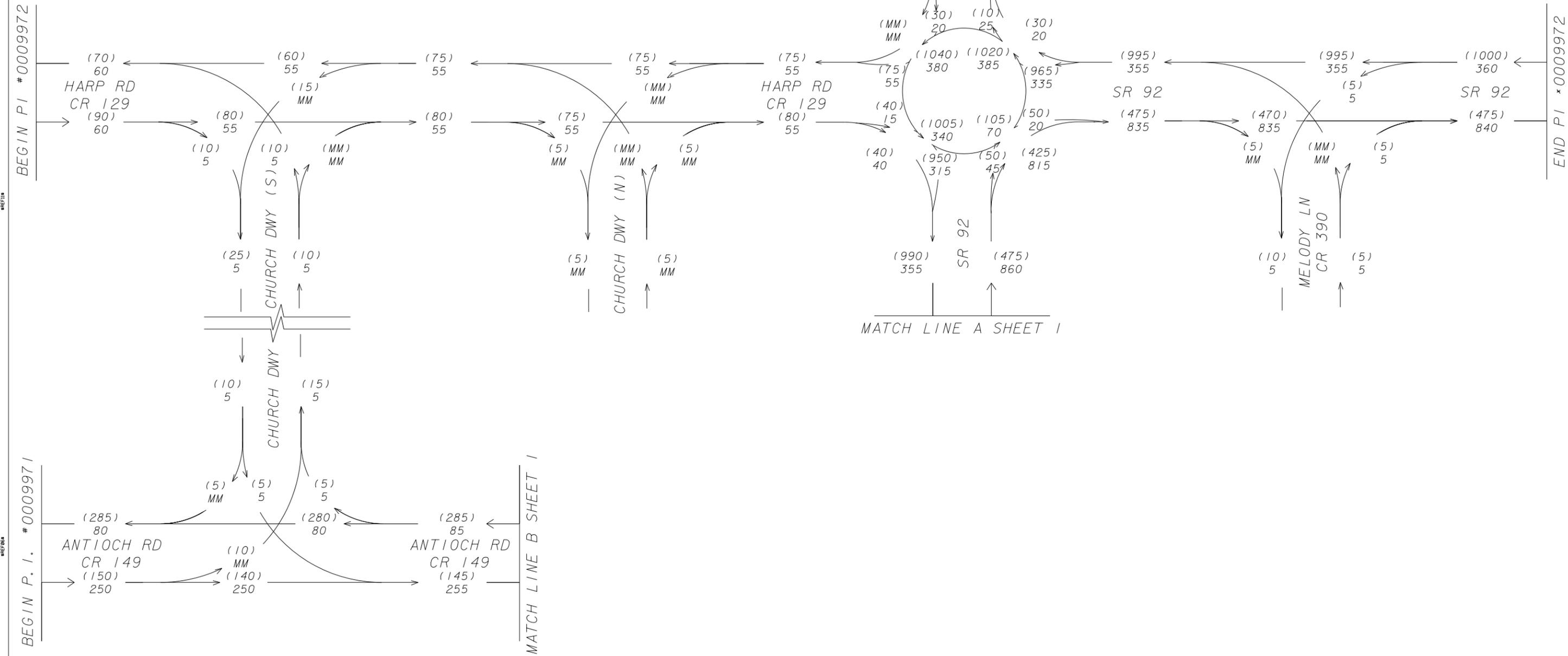






# FAYETTE COUNTY

SR 92  
N/O MELODY LN/CR 390  
24 HOUR T = 5.5%  
S. U. = 5.0%  
COMB. = 0.5%



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BEGIN P.I. #0009972

BEGIN P.I. #0009971

END P.I. #0009972

MATCH LINE B SHEET 1

MATCH LINE A SHEET 1

JP  
6/14

P. I. #0009971  
SR 92 @ CR 149/ANTIOCH RD  
& CR 308/LOCKWOOD RD  
P. I. #0009972  
SR 92 @ CR 138/SEAY RD  
& CR 129/HARP RD

2019 PM DHV = (000)  
2019 AM DHV = 000  
BUILD



| REVISION DATES |  |  |
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STATE OF GEORGIA  
DEPARTMENT OF TRANSPORTATION  
OFFICE: PLANNING  
TRAFFIC DIAGRAM

DRAWING No.  
10-20

Project Concept Report  
Fayette County  
PI Numbers: 0009971  
0009972

# **Attachment 6**

## Capacity Analysis Summary

# Capacity Summary

PI Number: 0009971

County: Fayette

Intersection: SR 92 at Antioch Rd

Model: Single-Lane Roundabout

## Base Year - 2019

|  |                    | AM  |                    |      |                   | PM  |                    |      |                   |
|--|--------------------|-----|--------------------|------|-------------------|-----|--------------------|------|-------------------|
|  |                    | LOS | Delay<br>(sec/veh) | V/C  | 95% Queue<br>(ft) | LOS | Delay<br>(sec/veh) | V/C  | 95% Queue<br>(ft) |
| <b>Sidra</b>   | <b>SR 92 NB</b>    | B   | 19.7               | 0.77 | 293.5             | B   | 14.0               | 0.38 | 76.5              |
|  | <b>SR 92 SB</b>    | B   | 13.2               | 0.29 | 58.3              | B   | 13.3               | 0.71 | 263.7             |
|  | <b>Antioch Rd</b>  | B   | 18.0               | 0.33 | 54.0              | C   | 22.0               | 0.30 | 46.8              |
|  | <b>Lockwood Rd</b> | B   | 18.6               | 0.03 | 5.2               | B   | 14.7               | 0.01 | 1.4               |
| <b>GDOT<br/>Roundabout<br/>Tool<br/>(HCM 2010)</b>   | <b>SR 92 NB</b>    | D   | 29.0               | 0.86 | 282.0             | A   | 9.0                | 0.43 | 58.0              |
|  | <b>SR 92 SB</b>    | A   | 7.0                | 0.37 | 44.0              | E   | 47.0               | 1.00 | 515.0             |
|  | <b>Antioch Rd</b>  | A   | 9.0                | 0.36 | 43.0              | B   | 13.0               | 0.32 | 36.0              |
|  | <b>Lockwood Rd</b> | A   | 9.0                | 0.03 | 2.0               | A   | 6.0                | 0.01 | 1.0               |
| <b>GDOT<br/>Roundabout<br/>Tool<br/>(Calibrated)</b> | <b>SR 92 NB</b>    | C   | 16.0               | 0.73 | 175.0             | A   | 7.0                | 0.37 | 46.0              |
|  | <b>SR 92 SB</b>    | A   | 6.0                | 0.32 | 37.0              | C   | 23.0               | 0.88 | 340.0             |
|  | <b>Antioch Rd</b>  | A   | 7.0                | 0.30 | 33.0              | A   | 8.0                | 0.24 | 25.0              |
|  | <b>Lockwood Rd</b> | A   | 6.0                | 0.02 | 1.0               | A   | 4.0                | 0.01 | 0.0               |

## Design Year - 2039

|  |                    | AM  |                    |      |                   | PM  |                    |      |                   |
|--|--------------------|-----|--------------------|------|-------------------|-----|--------------------|------|-------------------|
|  |                    | LOS | Delay<br>(sec/veh) | V/C  | 95% Queue<br>(ft) | LOS | Delay<br>(sec/veh) | V/C  | 95% Queue<br>(ft) |
| <b>Sidra</b>   | <b>SR 92 NB</b>    | C   | 28.2               | 0.92 | 621.5             | B   | 14.2               | 0.45 | 101.8             |
|  | <b>SR 92 SB</b>    | B   | 13.3               | 0.40 | 86.0              | B   | 16.8               | 0.97 | 2,174.5           |
|  | <b>Antioch Rd</b>  | C   | 20.9               | 0.52 | 106.8             | E   | 69.6               | 0.87 | 274.9             |
|  | <b>Lockwood Rd</b> | C   | 23.1               | 0.05 | 7.0               | B   | 15.7               | 0.01 | 1.6               |
| <b>GDOT<br/>Roundabout<br/>Tool<br/>(HCM 2010)</b>   | <b>SR 92 NB</b>    | F   | 163.0              | 1.30 | 10,004.0          | B   | 13.0               | 0.62 | 116.0             |
|  | <b>SR 92 SB</b>    | A   | 10.0               | 0.51 | 77.0              | F   | 188.0              | 1.37 | 1,529.0           |
|  | <b>Antioch Rd</b>  | B   | 15.0               | 0.56 | 91.0              | D   | 26.0               | 0.59 | 93.0              |
|  | <b>Lockwood Rd</b> | B   | 13.0               | 0.04 | 3.0               | A   | 7.0                | 0.01 | 1.0               |
| <b>GDOT<br/>Roundabout<br/>Tool<br/>(Calibrated)</b> | <b>SR 92 NB</b>    | F   | 71.0               | 1.07 | 648.0             | A   | 10.0               | 0.53 | 84.0              |
|  | <b>SR 92 SB</b>    | A   | 8.0                | 0.45 | 61.0              | F   | 117.0              | 1.21 | 1,187.0           |
|  | <b>Antioch Rd</b>  | A   | 10.0               | 0.45 | 62.0              | B   | 14.0               | 0.42 | 53.0              |
|  | <b>Lockwood Rd</b> | A   | 8.0                | 0.02 | 2.0               | A   | 5.0                | 0.01 | 1.0               |

Note: Additional traffic analyses have shown a single-lane roundabout will provide acceptable service at this intersection for 8-10 years. The roundabout will be designed so additional lanes can be added when necessary.

# Capacity Summary

PI Number: 0009971

County: Fayette

Intersection: SR 92 at Antioch Rd

Model: No Build

## Base Year - 2019

|                | AM  |                 |      |                 | PM  |                 |      |                 |
|----------------|-----|-----------------|------|-----------------|-----|-----------------|------|-----------------|
|                | LOS | Delay (sec/veh) | V/C  | 95% Queue (veh) | LOS | Delay (sec/veh) | V/C  | 95% Queue (veh) |
| SR 92 NB       | A   | 8.2             | 0.03 | 0.1             | B   | 10.7            | 0.02 | 0.1             |
| HCS SR 92 SB   | n/a | n/a             | n/a  | n/a             | n/a | n/a             | n/a  | n/a             |
| Antioch Rd     | F   | 136.9           | 1.12 | 12.2            | F   | 77.5            | 0.83 | 5.9             |
| SR 92 NB       | A   | 4.1             | 0.41 | 5.6             | A   | 7.7             | 0.24 | 3.5             |
| Sidra SR 92 SB | A   | 0.0             | 0.22 | 0.0             | A   | 0.3             | 0.61 | 0.0             |
| Antioch Rd     | F   | 443.4           | 1.81 | 48.2            | F   | 357.5           | 1.52 | 24.1            |

## Design Year - 2039

|                | AM  |                 |      |                 | PM  |                 |      |                 |
|----------------|-----|-----------------|------|-----------------|-----|-----------------|------|-----------------|
|                | LOS | Delay (sec/veh) | V/C  | 95% Queue (veh) | LOS | Delay (sec/veh) | V/C  | 95% Queue (veh) |
| SR 92 NB       | A   | 8.6             | 0.04 | 0.1             | B   | 13.1            | 0.03 | 0.1             |
| HCS SR 92 SB   | n/a | n/a             | n/a  | n/a             | n/a | n/a             | n/a  | n/a             |
| Antioch Rd     | F   | 840.9           | 2.71 | 34.2            | F   | 643.3           | 2.20 | 18.6            |
| SR 92 NB       | A   | 8.4             | 0.57 | 14.3            | B   | 14.7            | 0.34 | 7.5             |
| Sidra SR 92 SB | A   | 0.1             | 0.30 | 0.0             | A   | 0.9             | 0.84 | 0.0             |
| Antioch Rd     | F   | 1,982.5         | 5.14 | 113.5           | F   | 1,109.1         | 3.17 | 55.4            |

# Capacity Summary

PI Number: 0009972

County: Fayette

Intersection: SR 92 at Seay Rd

Model: Single-Lane Roundabout

## Base Year - 2019

|  |                 | AM  |                    |      |                   | PM  |                    |      |                   |
|--|-----------------|-----|--------------------|------|-------------------|-----|--------------------|------|-------------------|
|  |                 | LOS | Delay<br>(sec/veh) | V/C  | 95% Queue<br>(ft) | LOS | Delay<br>(sec/veh) | V/C  | 95% Queue<br>(ft) |
| <b>Sidra</b>   | <b>SR 92 NB</b> | A   | 6.4                | 0.65 | 193.4             | A   | 7.0                | 0.41 | 85.6              |
|  | <b>SR 92 SB</b> | A   | 6.1                | 0.31 | 50.4              | A   | 6.8                | 0.81 | 344.4             |
|  | <b>Seay Rd</b>  | B   | 12.4               | 0.03 | 3.6               | C   | 23.0               | 0.11 | 17.8              |
|  | <b>Harp Rd</b>  | B   | 11.4               | 0.07 | 9.3               | C   | 22.3               | 0.26 | 43.8              |
| <b>GDOT<br/>Roundabout<br/>Tool<br/>(HCM 2010)</b>   | <b>SR 92 NB</b> | D   | 28.0               | 0.89 | 335.0             | A   | 10.0               | 0.51 | 77.0              |
|  | <b>SR 92 SB</b> | A   | 8.0                | 0.38 | 47.0              | F   | 67.0               | 1.06 | 644.0             |
|  | <b>Seay Rd</b>  | A   | 5.0                | 0.03 | 2.0               | B   | 12.0               | 0.09 | 8.0               |
|  | <b>Harp Rd</b>  | A   | 6.0                | 0.08 | 7.0               | B   | 14.0               | 0.24 | 24.0              |
| <b>GDOT<br/>Roundabout<br/>Tool<br/>(Calibrated)</b> | <b>SR 92 NB</b> | C   | 16.0               | 0.78 | 226.0             | A   | 8.0                | 0.44 | 61.0              |
|  | <b>SR 92 SB</b> | A   | 6.0                | 0.33 | 38.0              | D   | 31.0               | 0.93 | 419.0             |
|  | <b>Seay Rd</b>  | A   | 4.0                | 0.02 | 2.0               | A   | 8.0                | 0.07 | 6.0               |
|  | <b>Harp Rd</b>  | A   | 4.0                | 0.07 | 6.0               | A   | 9.0                | 0.17 | 16.0              |

## Design Year - 2039

|  |                 | AM  |                    |      |                   | PM  |                    |      |                   |
|--|-----------------|-----|--------------------|------|-------------------|-----|--------------------|------|-------------------|
|  |                 | LOS | Delay<br>(sec/veh) | V/C  | 95% Queue<br>(ft) | LOS | Delay<br>(sec/veh) | V/C  | 95% Queue<br>(ft) |
| <b>Sidra</b>   | <b>SR 92 NB</b> | A   | 7.0                | 0.89 | 650.6             | A   | 7.4                | 0.57 | 146.5             |
|  | <b>SR 92 SB</b> | A   | 6.7                | 0.20 | 32.7              | A   | 6.4                | 0.55 | 130.3             |
|  | <b>Seay Rd</b>  | B   | 11.8               | 0.04 | 3.9               | B   | 16.2               | 0.12 | 12.1              |
|  | <b>Harp Rd</b>  | B   | 11.7               | 0.12 | 11.6              | B   | 18.1               | 0.31 | 33.4              |
| <b>GDOT<br/>Roundabout<br/>Tool<br/>(HCM 2010)</b>   | <b>SR 92 NB</b> | F   | 127.0              | 1.23 | 1,080.0           | C   | 16.0               | 0.71 | 164.0             |
|  | <b>SR 92 SB</b> | B   | 10.0               | 0.52 | 82.0              | F   | 239.0              | 1.49 | 1,795.0           |
|  | <b>Seay Rd</b>  | A   | 6.0                | 0.04 | 4.0               | C   | 21.0               | 0.19 | 18.0              |
|  | <b>Harp Rd</b>  | A   | 7.0                | 0.12 | 11.0              | D   | 31.0               | 0.50 | 66.0              |
| <b>GDOT<br/>Roundabout<br/>Tool<br/>(Calibrated)</b> | <b>SR 92 NB</b> | F   | 67.0               | 1.08 | 769.0             | B   | 11.0               | 0.62 | 118.0             |
|  | <b>SR 92 SB</b> | A   | 8.0                | 0.46 | 64.0              | F   | 154.0              | 1.30 | 1,430.0           |
|  | <b>Seay Rd</b>  | A   | 5.0                | 0.03 | 3.0               | B   | 12.0               | 0.12 | 11.0              |
|  | <b>Harp Rd</b>  | A   | 5.0                | 0.10 | 9.0               | C   | 15.0               | 0.33 | 36.0              |

Note: Additional traffic analyses have shown a single-lane roundabout will provide acceptable service at this intersection for 8-10 years. The roundabout will be designed so additional lanes can be added when necessary.

# Capacity Summary

PI Number: 0009972

County: Fayette

Intersection: SR 92 at Seay Rd

Model: No Build

## Base Year - 2019

|                       | AM  |                    |      |                    | PM  |                    |      |                    |
|-----------------------|-----|--------------------|------|--------------------|-----|--------------------|------|--------------------|
|                       | LOS | Delay<br>(sec/veh) | V/C  | 95% Queue<br>(veh) | LOS | Delay<br>(sec/veh) | V/C  | 95% Queue<br>(veh) |
| <b>SR 92 NB</b>       | A   | 8.1                | 0.04 | 0.1                | B   | 10.5               | 0.07 | 0.2                |
| <b>HCS SR 92 SB</b>   | n/a | n/a                | n/a  | n/a                | n/a | n/a                | n/a  | n/a                |
| <b>Seay Rd</b>        | C   | 15.9               | 0.17 | 0.6                | E   | 47.3               | 0.57 | 3.0                |
| <b>SR 92 NB</b>       | A   | 6.0                | 0.55 | 11.1               | A   | 9.5                | 0.36 | 5.7                |
| <b>Sidra SR 92 SB</b> | A   | 0.0                | 0.22 | 0.0                | A   | 0.2                | 0.60 | 0.0                |
| <b>Seay Rd</b>        | C   | 23.8               | 0.34 | 1.5                | F   | 300.2              | 1.32 | 15.0               |

## Design Year - 2039

|                       | AM  |                    |      |                    | PM  |                    |      |                    |
|-----------------------|-----|--------------------|------|--------------------|-----|--------------------|------|--------------------|
|                       | LOS | Delay<br>(sec/veh) | V/C  | 95% Queue<br>(veh) | LOS | Delay<br>(sec/veh) | V/C  | 95% Queue<br>(veh) |
| <b>SR 92 NB</b>       | A   | 8.5                | 0.06 | 0.2                | B   | 13.1               | 0.14 | 0.5                |
| <b>HCS SR 92 SB</b>   | n/a | n/a                | n/a  | n/a                | n/a | n/a                | n/a  | n/a                |
| <b>Seay Rd</b>        | D   | 27.0               | 0.37 | 1.6                | F   | 437.0              | 1.69 | 11.9               |
| <b>SR 92 NB</b>       | C   | 17.5               | 0.74 | 24.1               | C   | 20.1               | 0.55 | 11.7               |
| <b>Sidra SR 92 SB</b> | A   | 0.0                | 0.30 | 0.0                | A   | 0.5                | 0.82 | 0.0                |
| <b>Seay Rd</b>        | F   | 127.1              | 0.90 | 6.7                | F   | 673.8              | 2.20 | 34.0               |

Project Concept Report  
Fayette County  
PI Numbers: 0009971  
0009972

# **Attachment 7**

## Roundabout Data

## Analysis for Number of Entry Lanes Based on Sum of Entering and Conflicting Traffic Volumes

SR 92 at Antioch/  
Lockwood (2019)

|             | AM (veh/h) | PM (veh/h) |
|-------------|------------|------------|
| SR 92 NB    | 890        | 495        |
| Lockwood Rd | 890        | 485        |
| SR 92 SB    | 385        | 990        |
| Antioch Rd  | 555        | 850        |

SR 92 at Harp/Seay (2019)

|          | AM (veh/h) | PM (veh/h) |
|----------|------------|------------|
| Harp Rd  | 380        | 1,045      |
| SR 92 NB | 885        | 530        |
| SR 92 SB | 405        | 1,050      |
| Seay Rd  | 380        | 1,040      |

SR 92 at Antioch/  
Lockwood (2039)

|             | AM (veh/h) | PM (veh/h) |
|-------------|------------|------------|
| SR 92 NB    | 1,220      | 675        |
| Lockwood Rd | 1,220      | 660        |
| SR 92 SB    | 525        | 1,355      |
| Antioch Rd  | 760        | 1,160      |

SR 92 at Harp/Seay (2039)

|          | AM (veh/h) | PM (veh/h) |
|----------|------------|------------|
| Harp Rd  | 515        | 1,430      |
| SR 92 NB | 1,210      | 725        |
| SR 92 SB | 550        | 1,435      |
| Seay Rd  | 515        | 1,420      |

**Volume Range**  
(sum of entering and  
conflicting volumes)

**Number of Lanes Required**

---

|                      |   |
|----------------------|---|
| 0 to 1,000 veh/h     | Single-lane entry likely to be sufficient   |
| 1,000 to 1,300 veh/h | Two-lane entry may be needed<br>Single-lane may be sufficient based upon more detailed analysis   |
| 1,300 to 1,800 veh/h | Two-lane entry likely to be sufficient  |
| Above 1,800 veh/h    | More than two entering lanes may be required<br>A more detailed capacity evaluation should be conducted to verify lane numbers and arrangements |

Source: NCHRP Report 672 Roundabouts: An Informational Guide 2nd Edition



# Fayette COUNTY

"WHERE QUALITY  
IS A LIFESTYLE"

## PUBLIC WORKS DEPARTMENT

115 McDONOUGH ROAD  
FAYETTEVILLE, GEORGIA 30214  
PHONE: 770-320-6010  
www.fayettecountyga.gov

January 10, 2014

Mr. Michael Presley  
District Traffic Engineer  
Georgia Department of Transportation, District 3  
115 Transportation Boulevard  
Thomaston, GA 30286

**RE: Fayette County – Support for consideration of a roundabout at SR 92 and Antioch Road**

Dear Mr. Presley:

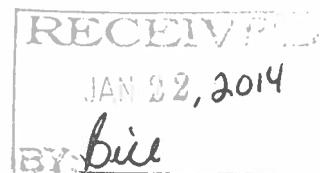
Thank you for identifying the intersection of SR 92 and Antioch Road as a potential safety project.

Through this intersection safety program, we understand that, if determined feasible, the Georgia Department of Transportation would fund all costs associated with project design and construction (i.e., traditional PE, ROW, UTL and CST phases) and Fayette County would be responsible for two specific items:

- The full and entire cost of the electric energy used for any lighting installed as part of the project; and
- Any maintenance costs associated with landscaping of the intersection, post-construction.

Fayette County supports the consideration of a roundabout for this intersection and agrees to the above terms but requests additional information, as it becomes available, to quantify the impacts to traffic on SR 92 and the surrounding properties. The following types of questions related to the feasibility of the project were raised during our consideration of this project:

- What is the project footprint with respect to surrounding buildings and infrastructure;
- What peak-hour delay is expected on SR 92 at the roundabout;
- Will southbound traffic back-up to the Seay Road intersection, causing an access problem;
- Can the Seay/Harp Road intersection be included as part of the project;

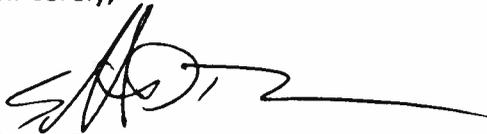


- How does the roundabout capacity meet future traffic projections on SR 92; and
- What will happen if SR 92 is widen to four lanes in the future?

I understand the answers to these questions are not currently available but should be addressed as part of the preliminary engineering process. We look forward to working with you as this project advances. We would like to present the results of the study at one of our meetings for public comment and stakeholder property owner comment. If the results of the feasibility study prove there is no merit to using a roundabout at the site, we can suspend the project.

Please contact Mr. Phil Mallon (770-320-6009) if there is anything County staff can do to assist with this project.

Sincerely,

A handwritten signature in black ink, appearing to read 'S. Brown', with a long horizontal line extending to the right.

**Steve Brown**  
Chairman

**Cc: Board of Commissioners**  
**County Administrator**  
**Director, Public Works**



# Fayette COUNTY

"WHERE QUALITY  
IS A LIFESTYLE"

## PUBLIC WORKS DEPARTMENT

115 McDONOUGH ROAD  
FAYETTEVILLE, GEORGIA 30214  
PHONE: 770-320-6010  
[www.fayettecountyga.gov](http://www.fayettecountyga.gov)

May 9, 2014

Mr. Michael Presley  
District Traffic Engineer  
Georgia Department of Transportation, District 3  
115 Transportation Boulevard  
Thomaston, GA 30286

RE: Fayette County – Project Support for Safety Improvement at SR 92, Seay Road and Harp Road (GDOT PI 0009972)

Dear Mr. Presley,

Thank you for identifying the intersection of SR 92, Seay Road and Harp Road as a potential safety project.

Through this intersection safety program, we understand that, if determined feasible, the Georgia Department of Transportation would fund all costs associated with project design and construction (i.e., PE, ROW, UTL and CST phases) and Fayette County would be responsible for two specific items:

- The full and entire cost of the electric energy used for any lighting installed as part of the project; and
- Any maintenance costs associated with landscaping of the intersection, post-construction.

Fayette County supports the consideration of various safety and operational improvements, including a roundabout, at this location as well as the adjacent intersection of Antioch Road and SR 92 (GDOT PI 0009971). We understand the two projects are being evaluated together to explore comprehensive solutions for the area. Similar to the concerns expressed in previous correspondence, Fayette County asks that the following types of information be provided for local consideration and input before final decisions are made.

- What is the project footprint with respect to surrounding buildings and infrastructure;
- What peak-hour delays are expected with and without the improvements; and
- What will happen if SR 92 is widen to four lanes?



I understand the answers to these questions are not currently available but should be addressed as part of the preliminary engineering process. We look forward to working with you as this project advances. Please contact Mr. Phil Mallon (770-320-6010) if there is anything County staff can do to assist with this project.

Sincerely,

A handwritten signature in black ink, appearing to be 'S. Brown', with a long horizontal line extending to the right.

Steve Brown

*Chairman, Fayette County Board of Commissioners*

# Record of Conversation No. 1

RE: PI 0009971 & 0009972, Fayette County  
SR 92 at Antioch Rd and SR 92 at Harp/Seay Rd  
Peer Review Meeting

Date & Time: March 30, 2015; 1:15 to 2:15 p.m.

Meeting: via webex

Attendees:

|                |              |
|----------------|--------------|
| Thao Truong    | 678-280-2107 |
| David Low      | 678-280-2105 |
| Patrick Weaver | 706-646-7575 |
| Jason Mobley   | 706-646-7571 |

Purpose:

Get the Roundabout Peer Reviewer up to speed on what the Dept. has done so far with the project. Review alternatives and which alternatives have been discarded.

Minutes:

The PIOH will be the last Tuesday in April, April 28<sup>th</sup>.

To date there has been no participation in the project by the Environmental office and no input from them on the alternatives.

Patrick presented each alternative as currently labeled, asking for suggestions. Once the alternatives are better set, they will need help with layouts. The capacity analysis has already been done at the TMC. They suggested a hybrid with multilane entries for SR 92 for the design year.

At the Monthly Project meeting on Thursday, April 2<sup>nd</sup> we are not expected to present.

Look at alternatives, especially variations. Tie in other roads. Are there any fatal flaws? Comments?

Alternative 1A-Roundabout at existing Antioch intersection

David and Thao reviewed the 2009-2013 accident patterns. Of the 9 crashes, 5 are northbound rear-ends which will be resolved by the proposed NB left turn lane.

David asked if it was necessary to prohibit left turns onto SR 92 from Seay Road and require everyone to make a right turn, and to make a U turn at the Antioch roundabout. Three of the nine accidents involved right angles.

There is a slight vertical curve on SR 92 between Seay and the Baptist Church that restricts sight distance. Perhaps the Seay/SR 92 intersection could be raised slightly. The northbound approach to the Seay intersection is in a curve, and drivers can sometimes misperceive the speed of approaching vehicles.

Alternative 1B-Roundabout between churches and realign Antioch

Alternative 2A-Alt. 1A with Harp intersecting Antioch

Alternative 2B-Alt. 1B with Harp intersecting Antioch

David said that cul-de-sacs limit connectivity. Instead could realign Harp to intersect Seay a few hundred feet further west.

Alternative 3-2 roundabouts

Alternative 4-Roundabout at Harp/Seay Rd with Antioch intersecting Harp

Current Schedule:

Antioch, PI 0009971, is the lead project. Plan to hold all meetings for both projects together.  
PM to submit the Concept on Friday, June 5, 2015. Concept to obtain approval August 11, 2015.  
Request PFPR may 4, 2016. Hold PFPR June 2, 2016.

So far there has been no environmental input, which could affect the schedule.

Action Items:

Patrick:

- Send Concept Team Meeting Minutes to GHD.
- Forward response on Episcopal Church inquiry about driveway.
- Verify that the crash data includes the Harp Rd at Seay Rd intersection.
- Send capacity analysis to GHD.
- Send Planning Level Assessment.
- Send Concept Report.
- Forward any relevant emails from Phil Mallon at Fayette County.

GHD to review draft concept to the point GDOT has it right now. There is still an opportunity for input.

Reserve conference and other arrangements for Mark and Thao to attend the team meeting on Thursday, April 2<sup>nd</sup>.

**Roundabout Peer Review:**

**PI# 0009971 Fayette County, SR 92 at Antioch Road**

**PI# 0009972 Fayette County, SR 92 at Harp Road/Seay Road**

## **Alternatives Evaluation Criteria Definitions and Details**

### **Improve Intersection Safety (30%)**

1. Addresses correctable accident patterns
2. Reduces the severity of accidents (reduce speeds if possible)
3. Minimizes conflict points
4. Provides near 90 degree angle of intersection
5. Provides adequate intersection sight distance
6. Adequate spacing between adjacent intersections (for queuing and driver expectancy)

### **Cost and Complexity (20%)**

1. Cost of construction
2. Staging complexity
3. Right of Way Cost
4. Utility Relocation Cost

### **Environmental & Community Support (20%)**

1. Avoids historic and cultural resources
2. Minimizes effect on streams and wetlands
3. Supports community values; has community support; not controversial

### **Connectivity & Mobility (15%)**

1. Main roads used in the project are the roads that carry the highest AADT
2. Connects Antioch Road and Harp Road directly to SR 92
3. Route connectivity and continuity
  - a. Minimizes traffic diversions onto local road network or cutting through properties
  - b. Good EMS access (minimize cul-de-sacs or dead ends) to minimize response times
  - c. Easy way-finding
4. Includes bike/ped features along Antioch, Harp & SR 92 (Fayette Co. Transportation Plan)
5. Minimizes congestion
6. Accommodates trucks and their turning path demands

### **Property Access / Business Impacts (15%)**

1. Impact on driveways and access
2. Minimal Right of Way acquisition
3. Compatibility with local land use plans



**Roundabout Peer Review:**

**PI# 0009971 Fayette County, SR 92 at Antioch Road**

**PI# 0009972 Fayette County, SR 92 at Harp Road/Seay Road**



**Qualitative Comparison of Alternative Roundabout Concepts**

| Evaluation Criteria<br>(Importance scaled 1 to 5)                | Option 1a<br>Antioch Rbt near Lockwood<br>(with Lt Turn Lane at Seay)  | Option 2a<br>Antioch Rbt near Lockwood;<br>Swing Harp into Antioch   | Option 3<br>Two Rbts on SR 92<br>(at Harp and Antioch)   |
|--|--|--|--|
| <b>Improve Intersection Safety</b><br>1 2 3 <u>4</u> 5           | Roundabout at Antioch will improve safety, but causes Seay traffic to go out of their way. Doesn't address intersection spacing, sight distance or reduce speeds at Seay.              | Roundabout at Antioch will improve safety, but causes Seay traffic to go out of their way. Doesn't address intersection spacing, sight distance or reduce speeds at Seay.                  | Roundabouts will address correctable accident patterns, reduce accident severity and minimize conflict points.                                   |
| <b>Cost and Complexity</b><br>1 2 <u>3</u> 4 5                   | Construct roundabout utilizing staged construction unless short term detours are an option. Involves no road relocation. Least cost of all options (constructing only one roundabout). | Construct roundabout utilizing staged construction unless short term detours are an option. More expensive than 1a because of relocating Harp.   | Even though there is a higher construction cost for two roundabouts, there is a lower cost per roundabout to design and construct them together. |
| <b>Environmental &amp; Community Support</b><br>1 2 <u>3</u> 4 5 | Consensus that something needs to be done at Antioch/SR 92 intersection. There is some community support for roundabouts.  | Relocation of Harp passes through Baptist church septic drain field.   | Roundabouts fit road network with less road relocations and may have more support than traditional intersections.                                |
| <b>Connectivity &amp; Mobility</b><br>1 <u>2</u> 3 4 5           | Doesn't connect Harp directly to SR 92, and Harp carries more traffic than Seay.   | It makes sense to T Harp in because Antioch carries more traffic than Harp. Cul-de-sacing N end of Harp may increase emergency response times. Harp could connect to Seay further from 92. | Excellent connectivity. Connects Antioch and Harp directly to SR 92.   |
| <b>Property Access/Business Impacts</b><br>1 <u>2</u> 3 4 5      | Option 1a creates less impact than Options 1b or 4.  | Relocation of Harp passes through Baptist church septic drain field. Find new location for drain field.  | Good access. Few impacts.  |

**Roundabout Peer Review:**

**PI# 0009971 Fayette County, SR 92 at Antioch Road**

**PI# 0009972 Fayette County, SR 92 at Harp Road/Seay Road**



**Qualitative Comparison of Alternative Roundabout Concepts**

| Evaluation Criteria<br>(Importance scaled 1 to 5)                | Option 3a<br>Two Rbts on SR 92<br>(at Seay and Antioch);<br>Separate Harp further from 92   | Option 3b<br>Two Rbts on SR 92<br>(at Harp and Antioch);<br>Swing Harp into SR 92 &<br>Separate Seay further from 92  | Option 3c<br>Two Rbts on SR 92<br>(at Harp/Seay and Antioch)  |
|--|---|---|---|
| <b>Improve Intersection Safety</b><br>1 2 3 <u>4</u> 5           | Roundabouts will address correctable accident patterns, reduce accident severity and minimize conflict points.  | Roundabouts will address correctable accident patterns, reduce accident severity and minimize conflict points.  | Roundabouts will address correctable accident patterns, reduce accident severity and minimize conflict points.                            |
| <b>Cost and Complexity</b><br>1 2 <u>3</u> 4 5                   | Construct roundabout utilizing staged construction unless short term detours are an option. Higher construction cost for two roundabouts and relocating Harp. | Construct roundabout utilizing staged construction unless short term detours are an option. Higher construction cost for two roundabouts and relocating Seay. | Construct roundabout utilizing staged construction unless short term detours are an option. Higher construction cost for two roundabouts. |
| <b>Environmental &amp; Community Support</b><br>1 2 <u>3</u> 4 5 | Roundabouts fit road network with less road relocations and may have more support than traditional intersections.   | Roundabouts fit road network with less road relocations and may have more support than traditional intersections.   | Roundabouts fit road network with less road relocations and may have more support than traditional intersections.                         |
| <b>Connectivity &amp; Mobility</b><br>1 <u>2</u> 3 4 5           | Connects Antioch directly to SR 92.   | Connects Antioch and Harp directly to SR 92.  | Connects Antioch and Harp directly to SR 92.  |
| <b>Property Access/Business Impacts</b><br>1 2 <u>3</u> 4 5      | Relocation of Harp affects properties.  |   |   |



GHD, Inc.  
 5325 Wall Street, Suite 2305  
 608 249 4545 F 608 249 4402  
 E madison@ghd.com W www.ghd.com

SR 92 AT ANTIOCH AND HARP  
 FAYETTE COUNTY

HORIZONTAL LAYOUT (Ellipse 2)





**GHD**  
 GHD, Inc.  
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 E madison@ghd.com W www.ghd.com

SR 92 AT ANTIOCH AND HARP  
 FAYETTE COUNTY

**HORIZONTAL LAYOUT 3c**

SCALE  
 0 100 200

**APPENDIX B**  
**FAYETTE COUNTY, GEORGIA**  
**Seay Road/Harp Road and SR 92**

*ARCADY OPERATIONAL ANALYSIS DOCUMENTATION*

A.1 2029 AM Peaks.....A.1.1  
A.2 2029 PM Peaks.....A.2.1

ARCADY OPERATIONAL ANALYSIS DOCUMENTATION  
STANDARD ROUNDABOUT CAPACITY MODEL  
SEAY ROAD/HARP ROAD AND SR 92

**2029 – AM Peak Period**

*Volumes*

| From \ To | 1st exit | 2nd exit | 3rd exit | U-Turn | Total   |
|-----------|----------|----------|----------|--------|---------|
| SR 92 SB  | 26.000   | 34.000   | 360.000  | 0.000  | 420.00  |
| Seay EB   | 0.000    | 20.000   | 3.000    | 0.000  | 23.00   |
| Harp NB   | 40.000   | 18.000   | 7.000    | 0.000  | 65.00   |
| SR 92 WB  | 969.000  | 20.000   | 31.000   | 0.000  | 1020.00 |
| Total     | 1035.00  | 92.00    | 401.00   | 0.00   | -       |

*Truck Percentages*

| From \ To | 1st exit | 2nd exit | 3rd exit | U-Turn | Average |
|-----------|----------|----------|----------|--------|---------|
| SR 92 SB  | 5.5      | 5.5      | 5.5      | 5.5    | 5.50    |
| Seay EB   | 5.5      | 5.5      | 5.5      | 5.5    | 5.50    |
| Harp NB   | 5.5      | 5.5      | 5.5      | 5.5    | 5.50    |
| SR 92 WB  | 5.5      | 5.5      | 5.5      | 5.5    | 5.50    |
| Average   | 5.50     | 5.50     | 5.50     | 5.50   | -       |

*Geometry and Analysis Results*

| Leg                                 | SR 92 SB                 | Seay EB                  | Harp NB                             | SR 92 WB                 |
|-------------------------------------|--------------------------|--------------------------|-------------------------------------|--------------------------|
| V - Approach road half-width (ft)   | 12.00                    | 12.00                    | 12.00                               | 12.00                    |
| E - Entry width (ft)                | 14.00                    | 14.00                    | 14.00                               | 14.00                    |
| l' - Effective flare length (ft)    | 130.00                   | 130.00                   | 130.00                              | 130.00                   |
| R - Entry radius (ft)               | 75.00                    | 75.00                    | 75.00                               | 75.00                    |
| D - Inscribed circle diameter (ft)  | 145.00                   | 145.00                   | 145.00                              | 145.00                   |
| PHI - Conflict (entry) angle (deg)  | 20.00                    | 20.00                    | 20.00                               | 20.00                    |
| Exit Only                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> |
| Leg Has Bypass                      | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Percentage Intercept Adjustment (%) | 90.00                    | 90.00                    | 90.00                               | 90.00                    |
| Average Demand (Veh/hr)             | 420.00                   | 23.00                    | 65.00                               | 1020.00                  |
| Max V/C Ratio                       | 0.42                     | 0.03                     | 0.03                                | 1.00                     |
| Max Delay (s)                       | 5.60                     | 4.24                     | 4.13                                | 76.39                    |
| Max LOS                             | A                        | A                        | A                                   | F                        |
| Max 95th percentile Queue (Veh)     | 1.00                     | ~1                       | ~1                                  | 82.00                    |

ARCADY OPERATIONAL ANALYSIS DOCUMENTATION  
STANDARD ROUNDABOUT CAPACITY MODEL  
SEAY ROAD/HARP ROAD AND SR 92

**2029 – PM Peak Period**

*Volumes*

| From \ To | 1st exit | 2nd exit | 3rd exit | U-Turn | Total   |
|-----------|----------|----------|----------|--------|---------|
| SR 92 SB  | 24.000   | 47.000   | 1107.000 | 0.000  | 1178.00 |
| Seay EB   | 0.000    | 19.000   | 16.000   | 0.000  | 35.00   |
| Harp NB   | 47.000   | 42.000   | 7.000    | 0.000  | 96.00   |
| SR 92 WB  | 507.000  | 17.000   | 39.000   | 0.000  | 563.00  |
| Total     | 578.00   | 125.00   | 1169.00  | 0.00   | -       |

*Truck Percentages*

| From \ To | 1st exit | 2nd exit | 3rd exit | U-Turn | Average |
|-----------|----------|----------|----------|--------|---------|
| SR 92 SB  | 5.5      | 5.5      | 5.5      | 5.5    | 5.50    |
| Seay EB   | 5.5      | 5.5      | 5.5      | 5.5    | 5.50    |
| Harp NB   | 5.5      | 5.5      | 5.5      | 5.5    | 5.50    |
| SR 92 WB  | 5.5      | 5.5      | 5.5      | 5.5    | 5.50    |
| Average   | 5.50     | 5.50     | 5.50     | 5.50   | -       |

*Geometry and Analysis Results*

| Leg                                 | SR 92 SB                 | Seay EB                  | Harp NB                             | SR 92 WB                 |
|-------------------------------------|--------------------------|--------------------------|-------------------------------------|--------------------------|
| V - Approach road half-width (ft)   | 12.00                    | 12.00                    | 12.00                               | 12.00                    |
| E - Entry width (ft)                | 14.00                    | 14.00                    | 14.00                               | 14.00                    |
| l' - Effective flare length (ft)    | 130.00                   | 130.00                   | 130.00                              | 130.00                   |
| R - Entry radius (ft)               | 75.00                    | 75.00                    | 75.00                               | 75.00                    |
| D - Inscribed circle diameter (ft)  | 145.00                   | 145.00                   | 145.00                              | 145.00                   |
| PHI - Conflict (entry) angle (deg)  | 20.00                    | 20.00                    | 20.00                               | 20.00                    |
| Exit Only                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> |
| Leg Has Bypass                      | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Percentage Intercept Adjustment (%) | 90.00                    | 90.00                    | 90.00                               | 90.00                    |
| Average Demand (Veh/hr)             | 1178.00                  | 35.00                    | 96.00                               | 563.00                   |
| Max V/C Ratio                       | 1.18                     | 0.08                     | 0.10                                | 0.56                     |
| Max Delay (s)                       | 348.32                   | 7.80                     | 7.59                                | 7.51                     |
| Max LOS                             | F                        | A                        | A                                   | A                        |
| Max 95th percentile Queue (Veh)     | 173.00                   | ~1                       | ~1                                  | 1.00                     |

**APPENDIX A**  
**FAYETTE COUNTY, GEORGIA**  
**Antioch Road and SR 92**

*ARCADY OPERATIONAL ANALYSIS DOCUMENTATION*

A.1 2029 AM Peaks.....A.1.1  
A.2 2029 PM Peaks.....A.2.1

ARCADY OPERATIONAL ANALYSIS DOCUMENTATION  
STANDARD ROUNDABOUT CAPACITY MODEL  
ANTIOCH ROAD AND SR 92

**2029 – AM Peak Period**

*Volumes*

| From \ To | 1st exit | 2nd exit | 3rd exit | U-Turn | Total  |
|-----------|----------|----------|----------|--------|--------|
| SR 92 SB  | 65.000   | 345.000  | 5.000    | 0.000  | 415.00 |
| Antioch   | 43.000   | 0.000    | 260.000  | 0.000  | 303.00 |
| SR 92 NB  | 5.000    | 750.000  | 35.000   | 0.000  | 790.00 |
| Lockwood  | 5.000    | 0.000    | 5.000    | 0.000  | 10.00  |
| Total     | 118.00   | 1095.00  | 305.00   | 0.00   | -      |

*Truck Percentages*

| From \ To | 1st exit | 2nd exit | 3rd exit | U-Turn | Average |
|-----------|----------|----------|----------|--------|---------|
| SR 92 SB  | 4.5      | 4.5      | 4.5      | 4.5    | 4.50    |
| Antioch   | 4.5      | 4.5      | 4.5      | 4.5    | 4.50    |
| SR 92 NB  | 4.5      | 4.5      | 4.5      | 4.5    | 4.50    |
| Lockwood  | 4.5      | 4.5      | 4.5      | 4.5    | 4.50    |
| Average   | 4.50     | 4.50     | 4.50     | 4.50   | -       |

*Geometry and Analysis Results*

| Leg                                 | SR 92 SB                 | Antioch                  | SR 92 NB                 | Lockwood                 |
|-------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| V - Approach road half-width (ft)   | 12.00                    | 12.00                    | 12.00                    | 12.00                    |
| E - Entry width (ft)                | 14.00                    | 14.00                    | 14.00                    | 14.00                    |
| l' - Effective flare length (ft)    | 130.00                   | 130.00                   | 130.00                   | 130.00                   |
| R - Entry radius (ft)               | 75.00                    | 75.00                    | 75.00                    | 75.00                    |
| D - Inscribed circle diameter (ft)  | 145.00                   | 145.00                   | 145.00                   | 145.00                   |
| PHI - Conflict (entry) angle (deg)  | 20.00                    | 20.00                    | 20.00                    | 20.00                    |
| Exit Only                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Leg Has Bypass                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Percentage Intercept Adjustment (%) | 90.00                    | 90.00                    | 90.00                    | 90.00                    |
| Average Demand (Veh/hr)             | 415.00                   | 303.00                   | 790.00                   | 10.00                    |
| Max V/C Ratio                       | 0.41                     | 0.36                     | 0.88                     | 0.02                     |
| Max Delay (s)                       | 5.38                     | 6.06                     | 29.45                    | 7.43                     |
| Max LOS                             | A                        | A                        | D                        | A                        |
| Max 95th percentile Queue (Veh)     | 1.00                     | 1.00                     | 25.00                    | ~1                       |

ARCADY OPERATIONAL ANALYSIS DOCUMENTATION  
STANDARD ROUNDABOUT CAPACITY MODEL  
ANTIOCH ROAD AND SR 92

**2029 – PM Peak Period**

*Volumes*

| From \ To | 1st exit | 2nd exit | 3rd exit | U-Turn | Total   |
|-----------|----------|----------|----------|--------|---------|
| SR 92 SB  | 325.000  | 817.000  | 13.000   | 0.000  | 1155.00 |
| Antioch   | 43.000   | 0.000    | 128.000  | 0.000  | 171.00  |
| SR 92 NB  | 5.000    | 427.000  | 13.000   | 0.000  | 445.00  |
| Lockwood  | 0.000    | 0.000    | 5.000    | 0.000  | 5.00    |
| Total     | 373.00   | 1244.00  | 159.00   | 0.00   | -       |

*Truck Percentages*

| From \ To | 1st exit | 2nd exit | 3rd exit | U-Turn | Average |
|-----------|----------|----------|----------|--------|---------|
| SR 92 SB  | 4.5      | 4.5      | 4.5      | 4.5    | 4.50    |
| Antioch   | 4.5      | 4.5      | 4.5      | 4.5    | 4.50    |
| SR 92 NB  | 4.5      | 4.5      | 4.5      | 4.5    | 4.50    |
| Lockwood  | 4.5      | 4.5      | 4.5      | 4.5    | 4.50    |
| Average   | 4.50     | 4.50     | 4.50     | 4.50   | -       |

*Geometry and Analysis Results*

| Leg                                 | SR 92 SB                 | Antioch                  | SR 92 NB                 | Lockwood                 |
|-------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| V - Approach road half-width (ft)   | 12.00                    | 12.00                    | 12.00                    | 12.00                    |
| E - Entry width (ft)                | 14.00                    | 14.00                    | 14.00                    | 14.00                    |
| I' - Effective flare length (ft)    | 130.00                   | 130.00                   | 130.00                   | 130.00                   |
| R - Entry radius (ft)               | 75.00                    | 75.00                    | 75.00                    | 75.00                    |
| D - Inscribed circle diameter (ft)  | 145.00                   | 145.00                   | 145.00                   | 145.00                   |
| PHI - Conflict (entry) angle (deg)  | 20.00                    | 20.00                    | 20.00                    | 20.00                    |
| Exit Only                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Leg Has Bypass                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Percentage Intercept Adjustment (%) | 90.00                    | 90.00                    | 90.00                    | 90.00                    |
| Average Demand (Veh/hr)             | 1155.00                  | 171.00                   | 445.00                   | 5.00                     |
| Max V/C Ratio                       | 1.12                     | 0.28                     | 0.46                     | 0.01                     |
| Max Delay (s)                       | 212.88                   | 7.30                     | 6.28                     | 4.56                     |
| Max LOS                             | F                        | A                        | A                        | A                        |
| Max 95th percentile Queue (Veh)     | 137.00                   | ~1                       | 200.00                   | 200.00                   |

Project Concept Report  
Fayette County  
PI Numbers: 0009971  
0009972

# **Attachment 8**

## Concept Level Hydrology Study for MS4 Permit

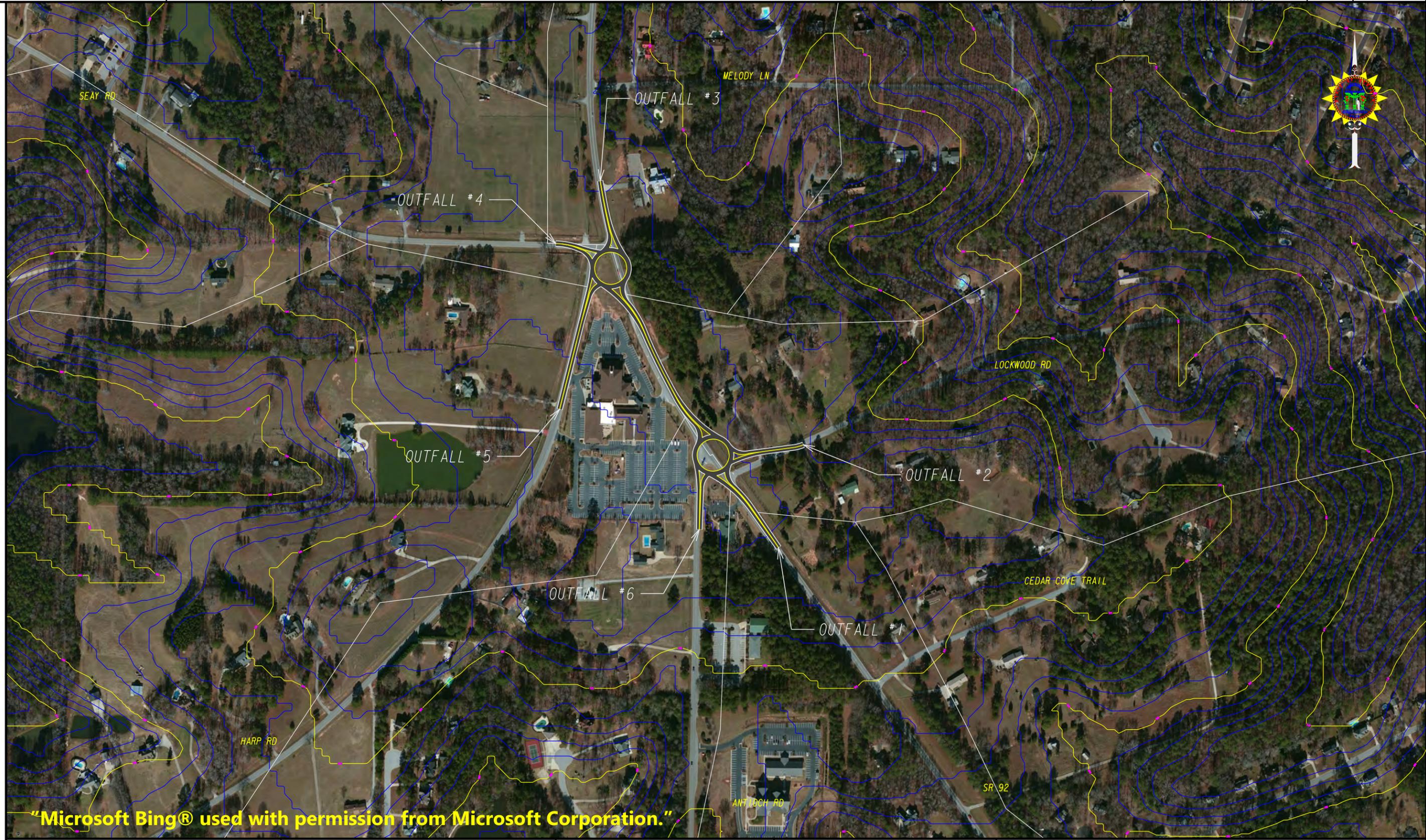
## Municipal Separate Storm Sewer System (MS4) Evaluation Form

|   |  |           |
|---|--|-----------|
| <b>Project:</b>   |  |           |
| <b>P.I. No.:</b>  | 0009971 & 0009972  |           |
| <b>County:</b>  | Fayette  |           |
| <b>Description:</b>   | SR 92 at Antioch Rd/Lockwood Rd & SR 92 at Harp Rd/Seay Rd |           |
|   | <b>Yes</b>   | <b>No</b> |
| 1. Does the project lie in a Phase I or Phase II MS4 County/Municipality?<br>(if yes, then continue with the check list questions)<br>(if no, then project <b>does not require</b> MS4 Post Construction BMP's)   | Yes  |           |
| 2. Does the project lie on a State Route facility?<br>(if yes, then project <b>does require</b> MS4 Post Construction BMP's)  | Yes  |           |
| 3. Does Project disturb less than 1 acre?<br>(if yes, then project <b>does not require</b> MS4 Post Construction BMP's)   |  | No        |
| 4. Does the project discharge water solely as sheet flow?<br>(if yes, then project <b>does not require</b> MS4 Post Construction BMP's)   |  | No        |
| 5. Does the area of impervious surface decrease or remain unchanged?<br>(if yes, then project <b>does not require</b> MS4 Post Construction BMP's)  |  | No        |
| 6. Was the environmental document approved prior to June 30, 2012?<br>(if yes, then project <b>does not require</b> MS4 Post Construction BMP's)  |  | No        |
| 7. Were the R/W plans approved prior to June 30, 2012?<br>(if yes, then project <b>does not require</b> MS4 Post Construction BMP's)  |  | No        |
| <b>Summary:</b><br>This project does not meet any of the project level exclusions and will required BMPs. Water quality is the most critical stormwater criteria with the increase in impervious area for most of the drainage areas. Only Drainage Area 1 has a post construction runoff greater than 2 ft <sup>3</sup> /s and will require channel protection. Drainage Area 4 has a negligible increase in impervious area of 0.02 acres and will not require any BMPs. Much of the shoulder is changing from rural to curb and gutter, eliminating BMPs such as a filter strip and bioslope. To minimize cost and avoid relocations, either a grass channel or dry enhanced swale along SR 92 will be used to treat runoff. |  |           |
| <a href="#">Link to MS4 Implementation Letter</a><br><br><a href="#">Link to MS4 Supplemental Guidelines Letter</a><br><br><a href="#">Link to MS4 Guidelines</a>   |  |           |
| <b>Notes:</b>   |  |           |

## Municipal Separate Storm Sewer System (MS4) Evaluation Form

|                     |  |
|---------------------|--|
| <b>Project:</b>     |  |
| <b>P.I. No.:</b>    | 0009971 & 0009972  |
| <b>County:</b>      | Fayette  |
| <b>Description:</b> | SR 92 at Antioch Rd/Lockwood Rd & SR 92 at Harp Rd/Seay Rd |

| Symbol                                 | WQ <sub>v</sub> | C <sub>p<sub>v</sub></sub> = V <sub>s</sub> | Q <sub>P25</sub> | Q <sub>f</sub>                              |
|--|-----------------|---|------------------|---|
| Storm                                  |                 | (1-Year)                                    | (25-Year)        | (100-Year)                                  |
| <b><u>Outfall 1</u></b>                |                 |   |                  |   |
| <b>Pre-developed</b>                   |                 | 0.21  | 13.50            | 6.91  |
| <b>Post-developed</b>                  | 0.02            | 0.20  | 13.15            | 6.77  |
| <b><u>Outfall 2</u></b>                |                 |   |                  |   |
| <b>Pre-developed</b>                   |                 | 0.19  | 13.83            | 6.04  |
| <b>Post-developed</b>                  | 0.03            | 0.17  | 12.92            | 5.77  |
| <b><u>Outfall 3</u></b>                |                 |   |                  |   |
| <b>Pre-developed</b>                   |                 | 0.31  | 19.86            | 6.88  |
| <b>Post-developed</b>                  | 0.02            | 0.25  | 17.43            | 6.31  |
| <b><u>Outfall 4</u></b>                |                 |   |                  |   |
| <b>Pre-developed</b>                   |                 | 0.03  | 2.24             | 6.74  |
| <b>Post-developed</b>                  | 0.00            | 0.02  | 1.75             | 5.71  |
| <b><u>Outfall 5</u></b>                |                 |   |                  |   |
| <b>Pre-developed</b>                   |                 | 0.15  | 10.24            | 6.37  |
| <b>Post-developed</b>                  | 0.05            | 0.13  | 9.21             | 5.91  |
| <b><u>Outfall 6</u></b>                |                 |   |                  |   |
| <b>Pre-developed</b>                   |                 | 0.11  | 7.22             | 6.61  |
| <b>Post-developed</b>                  | 0.02            | 0.08  | 5.91             | 5.78  |
| <b><u>Description</u></b>              |                 |   |                  | <b><u>Symbol</u></b>                        |
| Water Quality Volume (acre-feet)       |                 |   |                  | WQ <sub>v</sub>                             |
| Channel Protection Storage (acre-feet) |                 |   |                  | C <sub>p<sub>v</sub></sub> = V <sub>s</sub> |
| Overbank Flood Protection (acre-feet)  |                 |   |                  | Q <sub>P25</sub>                            |
| Extreme Flood Protection (acre-feet)   |                 |   |                  | Q <sub>f</sub>                              |



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**GEORGIA**  
 DEPARTMENT  
 OF  
 TRANSPORTATION



| REVISION DATES |  |
|----------------|--|
|                |  |
|                |  |
|                |  |
|                |  |
|                |  |

STATE OF GEORGIA  
 DEPARTMENT OF TRANSPORTATION  
 OFFICE: DISTRICT 3 DESIGN

**OUTFALLS**

SR92 AT ANTIUCH RD/LOCKWOOD RD & SEAY RD/HARP RD

DRAWING No.

Project Concept Report  
Fayette County  
PI Numbers: 0009971  
0009972

# **Attachment 9**

## Pavement Design

## Flexible Pavement Design Analysis

|                            |   |                    |         |
|----------------------------|---|--------------------|---------|
| <b>PI Number</b>           | 0009971                                     | <b>County(s)</b>   | Fayette |
| <b>Project Number</b>      | 0009972                                     | <b>Design Name</b> | SR 92   |
| <b>Project Description</b> | SR 92 @ Antioch Rd and SR 92 @ Seay/Harp Rd |                    |         |

| Traffic Data (AADTs are one-way) |      |                          |        |                        | Miscellaneous Data |                                  |    |
|----------------------------------|------|--------------------------|--------|------------------------|--------------------|----------------------------------|----|
| <b>Initial Design Year</b>       | 2019 | <b>Initial AADT, VPD</b> | 7,725  | <b>24 Hour Truck %</b> | 4.00               | <b>Lanes in one direction</b>    | 2  |
| <b>Final Design Year</b>         | 2039 | <b>Final AADT, VPD</b>   | 10,625 | <b>SU Truck %</b>      | 3.00               | <b>Curb &amp; Gutter/Barrier</b> | No |
|                                  |      | <b>Mean AADT, VPD</b>    | 9,175  | <b>MU Truck %</b>      | 1.00               |                                  |    |

| Design Data                          |       |                                 |      |                               |      |
|--------------------------------------|-------|---------------------------------|------|-------------------------------|------|
| <b>Lane Distribution Factor (%)</b>  | 70.00 | <b>Soil Support Value</b>       | 2.50 | <b>Single Unit ESAL</b>       | 0.40 |
| <b>Terminal Serviceability Index</b> | 2.50  | <b>Regional Factor</b>          | 1.60 | <b>Multiple Unit ESAL</b>     | 1.50 |
|                                      |       | <b>User Defined 18-KIP ESAL</b> | 0.84 | <b>Calculated 18-KIP ESAL</b> | 0.68 |
| <b>Non-Standard Value Comment</b>    |       |                                 |      |                               |      |

| Design Loading (Calculated 18-KIP ESAL) |                |                     |                   |                    |                   |
|---|----------------|---------------------|-------------------|--------------------|-------------------|
| <b>Mean AADT, VPD</b>                   | <b>LDF (%)</b> | <b>Vehicle Type</b> | <b>Volume (%)</b> | <b>ESAL Factor</b> | <b>Daily ESAL</b> |
| 9,175                                   | 70.00          | Single Unit Truck   | 3.00              | 0.40               | 78                |
|   |                | Multi Unit Truck    | 1.00              | 1.50               | 97                |
| <b>Total Daily ESALs</b>                |                |                     |                   |                    | 175               |
| <b>Total Design Period ESALs</b>        |                |                     |                   |                    | 1,277,500         |

| Proposed Flexible Full Depth Pavement Structure |                       |   |                               |                         |
|---|-----------------------|---|-------------------------------|-------------------------|
| <b>Course</b>                                   | <b>Material</b>       | <b>Thickness (inches)</b>                       | <b>Structural Coefficient</b> | <b>Structural Value</b> |
| Course 1  | 12.5 mm Superpave     | 1.50  | 0.4400                        | 0.66                    |
| Course 2  | 19 mm Superpave       | 2.00  | 0.4400                        | 0.88                    |
| Course 3  | 25 mm Superpave       | 1.00  | 0.4400                        | 0.44                    |
|   |                       | 2.00  | 0.3000                        | 0.60                    |
| Course 4  | Graded Aggregate Base | 12.00   | 0.1600                        | 1.92                    |
| <b>Required SN</b>                              | 4.71                  | <b>Proposed pavement is 4.38% Underdesigned</b> |                               | <b>Proposed SN</b>      |
|   |                       |   |                               | 4.50                    |

|                       |  |
|-----------------------|--|
| <b>Design Remarks</b> |  |
|-----------------------|--|

|                       |                                      |                   |
|-----------------------|--------------------------------------|-------------------|
| <b>Prepared By</b>    | Patrick Weaver, EIT Civil Engineer 2 | 6/12/2015 1:20 PM |
|                       | Date                                 |                   |
| <b>Recommended By</b> | State Roadway Design Engineer        | Date              |
|                       | Date                                 |                   |
| <b>Approved By</b>    | State Pavement Engineer              | Date              |
|                       | Date                                 |                   |

## Flexible Pavement Design Analysis

|                            |   |                    |            |
|----------------------------|---|--------------------|------------|
| <b>PI Number</b>           | 0009971                                     | <b>County(s)</b>   | Fayette    |
| <b>Project Number</b>      | 0009972                                     | <b>Design Name</b> | Antioch Rd |
| <b>Project Description</b> | SR 92 @ Antioch Rd and SR 92 @ Seay/Harp Rd |                    |            |

| Traffic Data (AADTs are one-way) |      |                          |       |                        | Miscellaneous Data |                                  |    |
|----------------------------------|------|--------------------------|-------|------------------------|--------------------|----------------------------------|----|
| <b>Initial Design Year</b>       | 2019 | <b>Initial AADT, VPD</b> | 2,500 | <b>24 Hour Truck %</b> | 4.00               | <b>Lanes in one direction</b>    | 1  |
| <b>Final Design Year</b>         | 2039 | <b>Final AADT, VPD</b>   | 3,450 | <b>SU Truck %</b>      | 3.00               | <b>Curb &amp; Gutter/Barrier</b> | No |
|                                  |      | <b>Mean AADT, VPD</b>    | 2,975 | <b>MU Truck %</b>      | 1.00               |                                  |    |

| Design Data                          |        |                                 |      |                               |      |
|--------------------------------------|--------|---------------------------------|------|-------------------------------|------|
| <b>Lane Distribution Factor (%)</b>  | 100.00 | <b>Soil Support Value</b>       | 2.50 | <b>Single Unit ESAL</b>       | 0.40 |
| <b>Terminal Serviceability Index</b> | 2.50   | <b>Regional Factor</b>          | 1.60 | <b>Multiple Unit ESAL</b>     | 1.50 |
|                                      |        | <b>User Defined 18-KIP ESAL</b> | 0.73 | <b>Calculated 18-KIP ESAL</b> | 0.68 |
| <b>Non-Standard Value Comment</b>    |        |                                 |      |                               |      |

| Design Loading (Calculated 18-KIP ESAL) |                |                     |                   |                    |                   |
|---|----------------|---------------------|-------------------|--------------------|-------------------|
| <b>Mean AADT, VPD</b>                   | <b>LDF (%)</b> | <b>Vehicle Type</b> | <b>Volume (%)</b> | <b>ESAL Factor</b> | <b>Daily ESAL</b> |
| 2,975                                   | 100.00         | Single Unit Truck   | 3.00              | 0.40               | 36                |
|   |                | Multi Unit Truck    | 1.00              | 1.50               | 45                |
| <b>Total Daily ESALs</b>                |                |                     |                   |                    | 81                |
| <b>Total Design Period ESALs</b>        |                |                     |                   |                    | 591,300           |

| Proposed Flexible Full Depth Pavement Structure |                       |   |                               |                         |
|---|-----------------------|---|-------------------------------|-------------------------|
| <b>Course</b>                                   | <b>Material</b>       | <b>Thickness (inches)</b>                       | <b>Structural Coefficient</b> | <b>Structural Value</b> |
| Course 1  | 12.5 mm Superpave     | 1.50  | 0.4400                        | 0.66                    |
| Course 2  | 19 mm Superpave       | 2.00  | 0.4400                        | 0.88                    |
| Course 3  | 25 mm Superpave       | 1.00  | 0.4400                        | 0.44                    |
|   |                       | 2.00  | 0.3000                        | 0.60                    |
| Course 4  | Graded Aggregate Base | 10.00   | 0.1600                        | 1.60                    |
| <b>Required SN</b>                              | 4.19                  | <b>Proposed pavement is 0.28% Underdesigned</b> |                               | <b>Proposed SN</b>      |
|   |                       |   |                               | 4.18                    |

|                       |  |
|-----------------------|--|
| <b>Design Remarks</b> |  |
|-----------------------|--|

|                       |                                      |                   |
|-----------------------|--------------------------------------|-------------------|
| <b>Prepared By</b>    | Patrick Weaver, EIT Civil Engineer 2 | 6/12/2015 1:21 PM |
|                       | Date                                 |                   |
| <b>Recommended By</b> | State Roadway Design Engineer        | Date              |
|                       | Date                                 |                   |
| <b>Approved By</b>    | State Pavement Engineer              | Date              |
|                       | Date                                 |                   |

## Flexible Pavement Design Analysis

|                            |   |                    |         |
|----------------------------|---|--------------------|---------|
| <b>PI Number</b>           | 0009971                                     | <b>County(s)</b>   | Fayette |
| <b>Project Number</b>      | 0009972                                     | <b>Design Name</b> | Seay Rd |
| <b>Project Description</b> | SR 92 @ Antioch Rd and SR 92 @ Seay/Harp Rd |                    |         |

| Traffic Data (AADTs are one-way) |      |                          |       |                        | Miscellaneous Data |                                  |    |
|----------------------------------|------|--------------------------|-------|------------------------|--------------------|----------------------------------|----|
| <b>Initial Design Year</b>       | 2019 | <b>Initial AADT, VPD</b> | 1,150 | <b>24 Hour Truck %</b> | 4.00               | <b>Lanes in one direction</b>    | 1  |
| <b>Final Design Year</b>         | 2039 | <b>Final AADT, VPD</b>   | 1,600 | <b>SU Truck %</b>      | 3.00               | <b>Curb &amp; Gutter/Barrier</b> | No |
|                                  |      | <b>Mean AADT, VPD</b>    | 1,375 | <b>MU Truck %</b>      | 1.00               |                                  |    |

| Design Data                          |        |                                 |      |                               |      |
|--------------------------------------|--------|---------------------------------|------|-------------------------------|------|
| <b>Lane Distribution Factor (%)</b>  | 100.00 | <b>Soil Support Value</b>       | 2.50 | <b>Single Unit ESAL</b>       | 0.40 |
| <b>Terminal Serviceability Index</b> | 2.50   | <b>Regional Factor</b>          | 1.60 | <b>Multiple Unit ESAL</b>     | 1.50 |
|                                      |        | <b>User Defined 18-KIP ESAL</b> | 0.73 | <b>Calculated 18-KIP ESAL</b> | 0.68 |
| <b>Non-Standard Value Comment</b>    |        |                                 |      |                               |      |

| Design Loading (User Provided 18-KIP ESAL Factor) |                |                     |                   |                    |                   |
|---|----------------|---------------------|-------------------|--------------------|-------------------|
| <b>Mean AADT, VPD</b>                             | <b>LDF (%)</b> | <b>Vehicle Type</b> | <b>Volume (%)</b> | <b>ESAL Factor</b> | <b>Daily ESAL</b> |
| 1,375   | 100.00         | 24 Hour Truck       | 4.00              | 0.73               | 41                |
| <b>Total Design Period ESALs</b>                  |                |                     |                   |                    | 299,300           |

| Proposed Flexible Full Depth Pavement Structure |                          |   |                        |                    |
|---|--------------------------|---|------------------------|--------------------|
| Course  | Material                 | Thickness (inches)                              | Structural Coefficient | Structural Value   |
| Course 1  | 9.5 mm Type II Superpave | 1.25  | 0.4400                 | 0.55               |
| Course 2  | 12.5 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    | 6.00  | 0.1600                 | 0.96               |
| <b>Required SN</b>                              | 3.76                     | <b>Proposed pavement is 7.75% Underdesigned</b> |                        | <b>Proposed SN</b> |
|   |                          |   |                        | 3.47               |

|                       |  |
|-----------------------|--|
| <b>Design Remarks</b> |  |
|-----------------------|--|

**Prepared By** \_\_\_\_\_ 6/12/2015 1:24 PM  
Patrick Weaver, EIT Civil Engineer 2 **Date**

**Recommended By** \_\_\_\_\_  
State Roadway Design Engineer **Date**

**Approved By** \_\_\_\_\_  
State Pavement Engineer **Date**

## Flexible Pavement Design Analysis

|                            |   |                    |         |
|----------------------------|---|--------------------|---------|
| <b>PI Number</b>           | 0009971                                     | <b>County(s)</b>   | Fayette |
| <b>Project Number</b>      | 0009972                                     | <b>Design Name</b> | Harp Rd |
| <b>Project Description</b> | SR 92 @ Antioch Rd and SR 92 @ Seay/Harp Rd |                    |         |

| Traffic Data (AADTs are one-way) |      |                          |       |                        | Miscellaneous Data |                                  |    |
|----------------------------------|------|--------------------------|-------|------------------------|--------------------|----------------------------------|----|
| <b>Initial Design Year</b>       | 2019 | <b>Initial AADT, VPD</b> | 775   | <b>24 Hour Truck %</b> | 4.00               | <b>Lanes in one direction</b>    | 1  |
| <b>Final Design Year</b>         | 2039 | <b>Final AADT, VPD</b>   | 1,050 | <b>SU Truck %</b>      | 3.00               | <b>Curb &amp; Gutter/Barrier</b> | No |
|                                  |      | <b>Mean AADT, VPD</b>    | 913   | <b>MU Truck %</b>      | 1.00               |                                  |    |

| Design Data                          |        |                                 |      |                               |      |
|--------------------------------------|--------|---------------------------------|------|-------------------------------|------|
| <b>Lane Distribution Factor (%)</b>  | 100.00 | <b>Soil Support Value</b>       | 2.50 | <b>Single Unit ESAL</b>       | 0.40 |
| <b>Terminal Serviceability Index</b> | 2.50   | <b>Regional Factor</b>          | 1.60 | <b>Multiple Unit ESAL</b>     | 1.50 |
|                                      |        | <b>User Defined 18-KIP ESAL</b> | 0.73 | <b>Calculated 18-KIP ESAL</b> | 0.68 |
| <b>Non-Standard Value Comment</b>    |        |                                 |      |                               |      |

| Design Loading (User Provided 18-KIP ESAL Factor) |                |                     |                   |                    |                   |
|---|----------------|---------------------|-------------------|--------------------|-------------------|
| <b>Mean AADT, VPD</b>                             | <b>LDF (%)</b> | <b>Vehicle Type</b> | <b>Volume (%)</b> | <b>ESAL Factor</b> | <b>Daily ESAL</b> |
| 913   | 100.00         | 24 Hour Truck       | 4.00              | 0.73               | 27                |
| <b>Total Design Period ESALs</b>                  |                |                     |                   |                    | 197,100           |

| 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   | 6.00  | 0.1600                 | 0.96               |
| <b>Required SN</b>                              | 3.51                    | <b>Proposed pavement is 1.41% Underdesigned</b> |                        | <b>Proposed SN</b> |
|   |                         |   |                        | 3.47               |

|                       |  |
|-----------------------|--|
| <b>Design Remarks</b> |  |
|-----------------------|--|

**Prepared By** \_\_\_\_\_ 6/12/2015 1:21 PM  
Patrick Weaver, EIT Civil Engineer 2 **Date**

**Recommended By** \_\_\_\_\_  
State Roadway Design Engineer **Date**

**Approved By** \_\_\_\_\_  
State Pavement Engineer **Date**

## Flexible Pavement Design Analysis

|                            |   |                    |             |
|----------------------------|---|--------------------|-------------|
| <b>PI Number</b>           | 0009971                                     | <b>County(s)</b>   | Fayette     |
| <b>Project Number</b>      | 0009972                                     | <b>Design Name</b> | Lockwood Rd |
| <b>Project Description</b> | SR 92 @ Antioch Rd and SR 92 @ Seay/Harp Rd |                    |             |

| Traffic Data (AADTs are one-way) |      |                          |     |                        | Miscellaneous Data |                                  |    |
|----------------------------------|------|--------------------------|-----|------------------------|--------------------|----------------------------------|----|
| <b>Initial Design Year</b>       | 2019 | <b>Initial AADT, VPD</b> | 75  | <b>24 Hour Truck %</b> | 4.00               | <b>Lanes in one direction</b>    | 1  |
| <b>Final Design Year</b>         | 2039 | <b>Final AADT, VPD</b>   | 100 | <b>SU Truck %</b>      | 3.00               | <b>Curb &amp; Gutter/Barrier</b> | No |
|                                  |      | <b>Mean AADT, VPD</b>    | 88  | <b>MU Truck %</b>      | 1.00               |                                  |    |

| Design Data                          |        |                                 |      |                               |      |
|--------------------------------------|--------|---------------------------------|------|-------------------------------|------|
| <b>Lane Distribution Factor (%)</b>  | 100.00 | <b>Soil Support Value</b>       | 2.50 | <b>Single Unit ESAL</b>       | 0.40 |
| <b>Terminal Serviceability Index</b> | 2.50   | <b>Regional Factor</b>          | 1.60 | <b>Multiple Unit ESAL</b>     | 1.50 |
|                                      |        | <b>User Defined 18-KIP ESAL</b> | 0.51 | <b>Calculated 18-KIP ESAL</b> | 0.68 |
| <b>Non-Standard Value Comment</b>    |        |                                 |      |                               |      |

| Design Loading (Calculated 18-KIP ESAL) |         |                   |            |             |            |
|---|---------|-------------------|------------|-------------|------------|
| Mean AADT, VPD                          | LDF (%) | Vehicle Type      | Volume (%) | ESAL Factor | Daily ESAL |
| 88                                      | 100.00  | Single Unit Truck | 3.00       | 0.40        | 2          |
|   |         | Multi Unit Truck  | 1.00       | 1.50        | 2          |
| <b>Total Daily ESALs</b>                |         |                   |            |             | 4          |
| <b>Total Design Period ESALs</b>        |         |                   |            |             | 29,200     |

| Proposed Flexible Full Depth Pavement Structure |                       |   |                        |                         |
|---|-----------------------|---|------------------------|-------------------------|
| Course  | Material              | Thickness (inches)                              | Structural Coefficient | Structural Value        |
| Course 1  | 12.5 mm Superpave     | 1.50  | 0.4400                 | 0.66                    |
| Course 2  | 19 mm Superpave       | 2.00  | 0.4400                 | 0.88                    |
| Course 3  | Graded Aggregate Base | 6.00  | 0.1600                 | 0.96                    |
| <b>Required SN</b>                              | 2.56                  | <b>Proposed pavement is 2.17% Underdesigned</b> |                        | <b>Proposed SN</b> 2.50 |

|                       |  |
|-----------------------|--|
| <b>Design Remarks</b> |  |
|-----------------------|--|

|                       |                                      |                   |
|-----------------------|--------------------------------------|-------------------|
| <b>Prepared By</b>    | Patrick Weaver, EIT Civil Engineer 2 | 6/12/2015 1:31 PM |
|                       | Date                                 |                   |
| <b>Recommended By</b> | State Roadway Design Engineer        | Date              |
|                       | Date                                 |                   |
| <b>Approved By</b>    | State Pavement Engineer              | Date              |
|                       | Date                                 |                   |

Project Concept Report  
Fayette County  
PI Numbers: 0009971  
0009972

# **Attachment 10**

## Concept Utility Report

## Concept Utility Report

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**Project Number:** N/A

**District:** 3

**County:** Fayette

**Prepared by:** Tyler Peek

**P.I. #** 0009971/0009971

**Date:** January 23, 2015

**Project Description:** SR 92 @ CR 149/Antioch Road & CR 308/Lockwood Road; SR 92 @ CR 138/Seay Road & CR 129/Harp Road

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*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 1<sup>st</sup> Submission or SUE.*

**Are SUE services recommended?** Yes 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:** Coweta-Fayette EMC, Comcast, BellSouth, Atlanta Gas Light, Fayette County Water

**Potential Project (Schedule/Budget) Impacts:** Impacts to the BellSouth cross box will cause additional time for relocation and adjustment in construction; additionally, it will cause additional reimbursable cost if the facility is located outside the R/W.

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

**Project Specific Recommendations for Avoidance/Mitigation:** Recommend avoiding BellSouth cross box on the north side of Seay Road (across from Harp Road intersection). Recommend avoiding water vault at the church, just north of the driveway at SR 92 - this would be a reimbursable cost.

**Right of Way Coordination:** Purchase permanent easements with the right to place utilities. Power lines will require 30' of clearing width - which may likely cause power company to obtain easements behind the State Route R/W or permanent easement.

**Environmental Coordination:** Account for utility relocations in the environmental document and ensure that such activities are permitted within ESAs if necessary.

The following utilities have facilities within the project limits. Utilities have been located using Georgia811 and/or field visits.

| Utility Owner                   | Existing Facilities/Appurtenances             | Approximate Limits (Station/Offset) | Reimbursable cost (est.) | Non-reimbursable cost (est.) | Facilities to Avoid (Station/Offset)     | Facility Retention Recommended | Comments |
|---------------------------------|---|-------------------------------------|--------------------------|------------------------------|--|--------------------------------|----------|
| <u>Coweta-Fayette EMC</u>       | Overhead power lines/poles                    | Entire project                      | \$54,000.00              | \$216,000.00                 |  |                                |          |
| <u>BellSouth d/b/a AT&amp;T</u> | Overhead and underground fiber and cable      | Entire project                      |                          | \$68,000.00                  | Cross box on north side of Seay Road     |                                |          |
| <u>Comcast</u>                  | Overhead cable                                | Entire project                      |                          | \$57,000.00                  |  |                                |          |
| <u>Atlanta Gas Light</u>        | Underground natural gas line                  | Entire project                      |                          | \$55,000.00                  |  |                                |          |
| <u>Fayette County Water</u>     | Underground water line, water vault at church | Entire project                      | \$45,000.00              | \$200,000.00                 | Vault at church, north of drive at SR 92 |                                |          |

Project Concept Report  
Fayette County  
PI Numbers: 0009971  
0009972

# **Attachment 11**

Project Team Initiation Process (PTIP) Minutes



**SUBJECT: SR 92 @ CR 149/Antioch Rd & CR 308/ Lockwood Rd**

**MEETING DATE: March 26, 2014**

**LOCATION: G.O. 24<sup>th</sup> Floor Conference Room**

**P.I.: 0009971**

| Name                  | Organization                               | Phone No.    | Email Address  |
|-----------------------|--|--------------|--|
| Justin A. Banks       | GDOT – Office of Program Delivery          | 404-631-1153 | <a href="mailto:jubanks@dot.ga.gov">jubanks@dot.ga.gov</a>               |
| Jason Mobley          | GDOT – District 3 Design                   | 706-646-7571 | <a href="mailto:jmobley@dot.ga.gov">jmobley@dot.ga.gov</a>               |
| Michael Turpeau Jr    | GDOT – Office of Traffic Operations        | 404-635-2831 | <a href="mailto:mturpeau@dot.ga.gov">mturpeau@dot.ga.gov</a>             |
| Joshua Waddell        | GDOT – District 3 Design                   | 706-646-7571 | <a href="mailto:jowaddell@dot.ga.gov">jowaddell@dot.ga.gov</a>           |
| Rich Cobb             | GDOT – Survey                              | 404-805-7849 | <a href="mailto:rcobb@dot.ga.gov">rcobb@dot.ga.gov</a>                   |
| Lakeshia Osborn       | GDOT – Office of Traffic Operations        | 404-635-2464 | <a href="mailto:losborn@dot.ga.gov">losborn@dot.ga.gov</a>               |
| Eric Duff             | GDOT – Office of Environmental Services    | 404-631-1071 | <a href="mailto:eduff@dot.ga.gov">eduff@dot.ga.gov</a>                   |
| Rhonda Barnett        | GDOT – Office of Right of Way              | 404-347-0196 | <a href="mailto:rbarnett@dot.ga.gov">rbarnett@dot.ga.gov</a>             |
| Keith Posey           | GDOT – Office of Design Policy and Support | 404-631-1219 | <a href="mailto:kposey@dot.ga.gov">kposey@dot.ga.gov</a>                 |
| Glenn Bowman          | GDOT –Engineering                          | 404-631-1519 | <a href="mailto:gbowman@dot.ga.gov">gbowman@dot.ga.gov</a>               |
| Krystal Stovall-Dixon | GDOT – Office of Program Delivery          | 404-631-1572 | <a href="mailto:kstovall-dixon@dot.ga.gov">kstovall-dixon@dot.ga.gov</a> |
| Dan Pass              | GDOT – District 3 Preconstruction          | 706-646-6987 | <a href="mailto:dpass@dot.ga.gov">dpass@dot.ga.gov</a>                   |
| Michael Presley       | GDOT – District 3 Traffic Operations       | 706-646-6676 | <a href="mailto:mpresley@dot.ga.gov">mpresley@dot.ga.gov</a>             |
| Tyler Peek            | GDOT – District 3 Utilities                | 706-646-7605 | <a href="mailto:tpeek@dot.ga.gov">tpeek@dot.ga.gov</a>                   |
| Greg Smith            | GDOT – District 3 Location                 | 706-646-7582 | <a href="mailto:grsmith@dot.ga.gov">grsmith@dot.ga.gov</a>               |

## MEETING MINUTES

- The Project Manager welcomed all the attendees in the room and video conference.
- The Project Manager initiated attendees to Introduce themselves
- Project Scope - Each office will discuss the major tasks associated with the scope of services and any additional scope required.

### Roadway Design (D3)

The financial building will be in conflict of the design, the business is concerned It would be good to evaluate this project with 0009972. Improving one intersection, could improve the other.  
Peer review will be required for the roundabout

### Environmental

In NHARGIS, there is a historical property located south of the intersection and if so the building could place Env on the critical path.  
It is dated 1912 and needs to be evaluated.  
Need to speak with the property owners to see if they restored the building, hopefully it will be no adverse effects.

### Right-of-Way

If there are approximately 4 parcels, acquisition time should take 12 months  
A ROW phase needs to be added to the project

### Survey

A request letter needs to be sent  
A decision needs to be made to see if this project and 0009972 will be done together. This will allow the crew to only go out once.

### Traffic Operations

Local support documentation is available for the project.  
A roundabout feasibility study will need to be completed

### Utilities

There are approximately 7 utilities at the intersection  
Durations for 1st/2nd Submission are appropriate for this type of project.  
We would recommend SUE on this project  
Approximately 8 weeks prior to the PFPR and concurrent with SUE confirmation, we will be requesting a preliminary routing plan from the utilities – not sure if this can be added to the schedule template but that would be preferred.

We would recommend more time (30 days) between 2nd Submission end date and FFPR request date to allow for incorporation of utility files into the FFPR plans.

As it relates to lighting, the 2nd Submission plans must include – at a minimum – proposed lighting pole locations and service points.

Please advise if this project is twinned/let together with PI 0009972. It may be that we could do SUE, preliminary routing, and 2nd Submission on both projects at the same time.

- Initial Recommendations for Consultant/In-House Resources
  - Roadway Design – In-House
  - Environmental - In-House
  - Survey - In-House
  - Right of Way - In-House (could change by acquisition time though)
  - Lighting Plans – consultant
  - Roundabout Peer Review - consultant
  
- Comments on the Schedule
  - PFPR could be moved up on the schedule to be held before the Environmental Document would be complete.
  - Lighting Plan review time will be needed.
  - A peer review tasks will run concurrent with other tasks. Some items may need to be added.
  
- Additional Comments & Concerns from Attendees
  - No lighting development of lighting plans have been added to the budget (PE) should be around 30k-40k for one intersection and 50k-60k for both
  - Peak hour counts should take place on Sundays because of the amount of churches located in the area.
  - Traffic Ops was concerned if the projects would still be done in-house if PI 0009972 was twinned with this project. All participants said that it would.
  - Traffic Ops will need Local support for 0009972 since funds are available.
  
- Expected Deliverables and Timeframe for Receipt
  - Schedule Comments and Man-hours should be received within 3 weeks



**SUBJECT: SR 92 @ CR 138/Seay Rd & CR 129/Harp Rd**

**MEETING DATE: June 24, 2014**

**LOCATION: G.O. 24<sup>th</sup> Floor Conference Room**

**P.I.: 0009972**

| Name             | Organization                               | Phone No.    | Email Address  |
|------------------|--|--------------|--|
| Justin A. Banks  | GDOT – Office of Program Delivery          | 404-631-1153 | <a href="mailto:jubanks@dot.ga.gov">jubanks@dot.ga.gov</a>       |
| Jason Mobley     | GDOT – District 3 Design                   | 706-646-7571 | <a href="mailto:jmobley@dot.ga.gov">jmobley@dot.ga.gov</a>       |
| Patrick Weaver   | GDOT – District 3 Design                   | 706-646-7575 | <a href="mailto:pweaver@dot.ga.gov">pweaver@dot.ga.gov</a>       |
| Ernest L. Howell | GDOT – Survey                              | 404-290-6806 | <a href="mailto:ehowell@dot.ga.gov">ehowell@dot.ga.gov</a>       |
| Eric Duff        | GDOT – Office of Environmental Services    | 404-631-1071 | <a href="mailto:eduff@dot.ga.gov">eduff@dot.ga.gov</a>           |
| Ricardo Maxwell  | GDOT – Office of Right of Way              | 404-347-0208 | <a href="mailto:rmaxwell@dot.ga.gov">rmaxwell@dot.ga.gov</a>     |
| Kim Phillips     | GDOT – Office of Design Policy and Support | 404-631-1775 | <a href="mailto:kiphillips@dot.ga.gov">kiphillips@dot.ga.gov</a> |
| Tyler Peek       | GDOT – District 3 Utilities                | 706-646-7605 | <a href="mailto:tpeek@dot.ga.gov">tpeek@dot.ga.gov</a>           |
| Jack Reed        | GDOT – District 3 Programming and Planning | 706-646-7566 | <a href="mailto:jreed@dot.ga.gov">jreed@dot.ga.gov</a>           |
| Katrina Anderson | GDOT – Office of Right of Way              | 404-347-0197 | <a href="mailto:kanderson@dot.ga.gov">kanderson@dot.ga.gov</a>   |

### MEETING MINUTES

- The Project Manager welcomed all the attendees in the room and video conference.
- The Project Manager initiated attendees to Introduce themselves

- Project Scope - Each office will discuss the major tasks associated with the scope of services and any additional scope required.

Roadway Design (D3)

District has begun working on this project and 0009971.  
Site visits and preliminary data have been collected.

Environmental

No issues.

Right-of-Way

If there are approximately 6 parcels, acquisition time should take 12 months  
Concern is a fence located at intersection of SR 92 and Seay Rd

Survey

Survey has been completed for this project and 0009971 previously.  
Not sure if property was included in the data.

Utilities(comments similar to 0009971)

There are approximately 7 utilities at the intersection  
Durations for 1st/2nd Submission are appropriate for this type of project.  
We would recommend SUE on this project  
Approximately 8 weeks prior to the FFPR and concurrent with SUE confirmation,  
we will be requesting a preliminary routing plan from the utilities – not sure if  
this can be added to the schedule template but that would be preferred.  
We would recommend more time (30 days) between 2nd Submission end date  
and FFPR request date to allow for incorporation of utility files into the FFPR  
plans.  
As it relates to lighting, the 2nd Submission plans must include – at a minimum –  
proposed lighting pole locations and service points.  
Please advise if this project is twinned/let together with PI 0009971. It may be  
that we could do SUE, preliminary routing, and 2nd Submission on both projects  
at the same time.

- Initial Recommendations for Consultant/In-House Resources
  - Roadway Design – In-House
  - Environmental - In-House
  - Survey - In-House
  - Right of Way - In-House (could change by acquisition time though)
  - Lighting Plans – consultant
  - Roundabout Peer Review - consultant

- Comments on the Schedule
  - Match 0009971 so projects could be twinned
  - PFPR could be moved up on the schedule to be held before the Environmental Document would be complete.
  - 4F, Public Hearing, 404 Permit and Buffer Variance needs to come out of schedule per OES
  - Lighting Plan review time will be needed.
  - A peer review tasks will run concurrent with other tasks. Some items may need to be added.
  - Survey schedule is good, if additional survey is needed
  
- Additional Comments & Concerns from Attendees
  - No lighting development of lighting plans have been added to the budget (PE) should be around 30k-40k for one intersection and 50k-60k for both
  - Funds are available for both projects if twinned per Traffic Ops in PTIP minutes for 0009971
  
- Expected Deliverables and Timeframe for Receipt
  - Schedule Comments and Man-hours should be received within 3 weeks

Project Concept Report  
Fayette County  
PI Numbers: 0009971  
0009972

# **Attachment 12**

## Concept Meeting Minutes

## Concept Team Meeting Minutes

Fayette 0009971

January 27, 2015

District 3 Office-Thomaston, GA

Justin Banks welcomed everyone to the meeting and had everyone introduce themselves. He stated the purpose of the meeting is to review the concept report and alternatives and answer any questions as they arise. Dan Pass stated that our goal should be to agree on one or two preferred alternatives by the end of the meeting, and eliminate alternatives that are not feasible.

Ken Werho asked if the traffic volumes were counted. He mentioned transportation data shows volumes much higher for Seay Rd than what is in the report, about 2,000 vehicles per day. Dan responded the traffic was counted and Patrick Weaver added that could be the volume for Harp and Seay Rd together. Phil Mallon agreed 2,000 cars seems high from his personal experience. Kerry Gore mentioned the county has a project to install a traffic signal at the intersection of SR 85 and Harp Rd.

Ken mentioned the design vehicle for SR 92 should be a WB-67 for the roundabout.<sup>1</sup> Fayette County raised concern of a bus traveling through the roundabout. Dan responded a bus will be able to stay in its own lane without using the truck apron.

Tyler Peek stated that the alternatives had approximately equal impacts on utilities. Patrick pointed out the utility box north of Seay Rd, which is avoided by all alternatives. Matt Bergen stated there are 4 water mains in the vicinity of the SR 92 and Seay Rd intersection. The cover for the pipes varies from 3 to 6 ft. He added there are two water lines at the intersection of SR 92 and Antioch Rd. Patrick added that SUE is anticipated for the project.

Ken asked if there has been a peer review or if one is planned. Dan responded there is one with GHD but currently waiting on the contract to be approved. Michael Turpeau asked if the feasibility study would be separate from the concept report. Dan answered that in accordance with the GDOT Design Policy Manual (Chapter 8), no separate feasibility study is required as long as components of the study are included in the concept report – this is the plan.

Jason Mobley stated there should be no expected ecology issues but there is no survey to confirm this statement. He added there is a cemetery behind the Episcopal Church. Dan added that environmental resources need to be identified prior to the PIOH to ensure that impacts are avoided and the best overall alternative presented to the public. Phil mentioned the cemetery was for spreading ashes and may not have permitting issues. Ken pointed out the cemetery may eliminate Alternatives 1B and 2B.

**Alternate 1A:** He also asked what the options are for minor improvements in Alternative 1A. Dan answered the option is to add a left turn lane on SR 92 and prohibiting left turns from Seay Rd. Phil added that emergency services could have issues with this option. Ken stated to remove “No Build” from the description. He also added Lockwood should be tied directly into the roundabout. Phil asked how

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<sup>1</sup> The fastest path of the roundabout should be limited to 25 mph, not the same as the design speed of the highway shown in the design table.

likely is the roundabout going to avoid the parking lot of Prime Financial. Patrick answered we should be able to avoid it. Ken added the driveway to SR 92 may need to be relocated.

**Alternate 1B:** Phil asked if the utilities impacts for Alternative 1B were similar to Alternative 1A and Tyler confirmed. Dan mentions that if Alternative 1B is selected, a roundabout may be needed at SR 92 and Seay Rd. Kerry asked if left turns would be restricted at this intersection. Patrick responded that left turns would need to be allowed because of the greater distance to the roundabout. Jason mentioned he and Phil met with the two churches between SR 92 and Antioch Rd, and both churches weren't against relocating Antioch Rd since it increased their visibility to SR 92. GDOT also has communicated with Harp's Crossing Baptist Church about a connecting road but they were not in favor of losing their property. Phil asked if the smallest curve was used for Antioch Rd. Patrick answered the radius is the smallest for the design speed. Dan suggested that the radius could be reduced if it's located in the deceleration zone for entry to the roundabout. Jason checked the distance on Google Earth and it is outside this zone.

**Alternate 2A:** Ken pointed out Alternative 2A would still require improvements at SR 92 and Seay Rd intersection and Dan agreed. Scott Parker mentioned that Alternative 2A does remove most of the traffic from the Seay Rd intersection. Dan said maybe a left turn lane on SR 92 is needed. Tyler added a right turn lane should be included too.

**Alternate 2B:** Jon Blanchard pointed out emergency services would have issues with Alternative 2B removing the access between Harp and Seay Rd, forcing vehicles to travel through the roundabout. Dan asked for cost comparison of Alternatives 2A and 2B and stated there is no benefit for Alternative 2B. Kerry asked if moving the connecting road south was an option. Patrick answered that would be a variation to explore. Ken pointed out there might be sight distance issues with the new intersections on Harp Rd. Jason said sight distance will be analyzed for that location. Kerry asked if a right turn lane for emergency vehicles only could be provided between Seay and Harp Rd. George Davis and Patrick responded other drivers would use it, and so this would not be advisable.

**Alternate 3:** Patrick mentioned that Alternative 3 may be difficult to sell to the public. George suggested tying Seay Rd directly into the roundabout. Dan suggested moving the roundabout north. Kerry points out that is a church to the north that could be impacted. He added that BellSouth can be impacted if necessary. Phil pointed out Whitewater Church does not have any development next to road. Dan said Alternative 3 may not be most favorable because it is most expensive, if another least costly alternative is found to adequately meet the project need. Tyler responded this alternative is construction of 2 roundabouts and price per roundabout is similar to other alternatives with one roundabout. Ken gives multiple cases where multiple roundabouts on a corridor are in use with success and reiterates Lockwood and Seay Rd need to tie into roundabout.

Ken also suggested adding sidewalks between the roundabouts, could get the public involved. Tyler asked if sidewalks were required and Ken responded no but that pedestrian traffic would increase. Phil pointed out that bicyclist would utilize sidewalks. Ken adds to allow bicyclist it would need to be a multi-use path. Tyler asked if this would be outside scope of project. Dan answered it would be within

Complete Streets policy. Ken noticed the land owner north of Seay Rd shares the same name as the church and area and concerned property may be historic. It was reemphasized that a survey for historic resources must be completed as soon as possible for this project to proceed on schedule.

**Alternative 4:** Patrick pointed out potential conflicts for Alternative 4 with the FAA tower and septic field. Ken mentioned this alternative is not preferred by traffic operations and may create more problems. He also added to ensure cul-de-sacs are 47' in radius.

Ken informed Fayette County that GDOT has increased the advanced warning for roundabouts with rubble strips and warning signs. Rumble strips would last 12-18 months, enough time for locals to adjust to the roundabout.

Justin recapped the meeting, down to three potential alternatives - Alternative 1A, 2A, and 3 - although there are concerns with Alternative 1A and 2A with respect to emergency vehicle access. Jim Hoskins commented that the environmental survey is needed before PIOH and asked if April was feasible. Justin planned to meet with them next week. Phil will contact the county's emergency services for their response to the alternatives. Ken recommended twinning the projects. Currently the projects are twinned but could be let at different points or joined later according to Justin.

#### **Action Items**

- Verify traffic counts
- Request SUE
- Request environmental survey
- Contact Fayette County Emergency Services for their response to alternatives

## Attendees

|                       |                                 |                          |                                   |
|-----------------------|---------------------------------|--------------------------|-----------------------------------|
| Justin Banks          | GDOT/OPD                        | 404-631-1153             | jubanks@dot.ga.gov                |
| Krystal Stovall-Dixon | GDOT/OPD                        | 404-631-1572             | Kstovall-dixon@dot.ga.gov         |
| Daniel Trevorrow      | GDOT/D3 Design                  | 706-646-7538             | dtrevorrow@dot.ga.gov             |
| Jim Hoskins           | GDOT/D3 Design                  | 706-646-7574             | jhoskins@dot.ga.gov               |
| Matt Bergen           | Fayette Co. Water               | 706-320-6020             | mbergen@fayettecountyga.gov       |
| Phil Mallon           | Fayette Co.<br>Public Works     | 706-320-6010             | pmallon@fayettecountyga.gov       |
| Charles Oddo          | Fayette Co.<br>Commissioner     | 770-843-4034             | codd@fayettecountyga.gov          |
| Lea Ward              | GDOT                            | 706-646-6690             | lward@dot.ga.gov                  |
| Kerry Gore            | GDOT                            | 706-646-7603             | kgore@dot.ga.gov                  |
| Guy Blanchard         | Coweta Fayette EMC              | 770-596-0405             | gblanchard@utility.org            |
| Curtis Camp           | CF EMC                          | 770-252-7425             | ccamp@utility.org                 |
| Scott Parker          | GDOT/Traffic Ops                | 706-646-7589             | sparker@dot.ga.gov                |
| Daniel Pass           | GDOT/D3                         | 706-646-6987             | dpass@dot.ga.gov                  |
| Jason Mobley          | GDOT                            | 706-646-7571             | jmobley@dot.ga.gov                |
| Tyler Peek            | GDOT/Utilities                  | 706-646-7605             | tpeek@dot.ga.gov                  |
| Lashone Alexander     | GDOT/RW GO<br>Cost Estimator    | 478-232-4045             | laalexander@dot.ga.gov            |
| Milton Floyd          | AGL Resources                   | 404-584-3598             | mfloyd@aglresources.com           |
| Ken Werho             | GDOT/TO TMC                     | 404-635-2859             | kwerho@dot.ga.gov                 |
| Chris Raymond         | GDOT/TMC                        |                          | cdraymond@dot.ga.gov              |
| Patrick Weaver        | GDOT/D3 Design                  | 706-646-7575             | pweaver@dot.ga.gov                |
| Jon Blanchard         | GDOT/Design<br>Policy & Support | 404-631-1534             | jblanchard@dot.ga.gov             |
| Gary Farr             | Fayette Co.<br>Sheriff's Office | 770-716-4824             | gfarr@fayettecountyga.gov         |
| Roxane Owen           | FCBOE                           | 770-460-3520<br>ext. 107 | owen.roxane@mail.fcboe.org        |
| George Davis          | FCBOE                           | 770-460-3521<br>Ext. 155 | davis.george@mail.fcboe.org       |
| Danny Miller          | GDOT                            | 706-845-4115             | dmiller@dot.ga.gov                |
| Ken Robinson          | GDOT                            | 706-646-7508             | krobinson@dot.ga.gov              |
| Hugh Hutchinson       | Comcast                         | 770-559-2455             | hugh_hutchinson@cable.comcast.com |
| Jack Reed             | GDOT                            | 706-646-7566             | jreed@dot.ga.gov                  |
| Michael Turpeau       | GDOT/TMC                        | 404-635-2831             | mturpeau@dot.ga.gov               |

Project Concept Report  
Fayette County  
PI Numbers: 0009971  
0009972

# **Attachment 13**

## PIOH Response Letter



May 27, 2015

«AddressBlock»

Re: Responses to Open House Comments for PI#: 0009971, Fayette County, State Route (SR) 92 @ County Road (CR) 149/Antioch Road and CR 308/Lockwood Road and PI#: 0009972, Fayette County, SR 92 @ CR 138/Seay Road and CR 129/Harp Road  
Project Number: ...

«GreetingLine»

Thank you for your comments concerning the proposed project referenced above. We appreciate your participation and all of the input that was received as a result of the *April 28, 2015 Public Information Open House*. Every written comment received and verbal comment given to the court reporter will be made part of the project's official record.

A total of ... people attended the open house. Of the **one hundred and thirty six** respondents who formally commented, **fourteen** were in **support** of the project, **eighty** were **opposed**, **nine** were **uncommitted**, and **thirty three** expressed **conditional support**.

The attendees of the open house and those persons sending in comments within the comment period raised the following questions and concerns. The Georgia Department of Transportation (GDOT) has prepared this one response letter that addresses all comments received so that everyone can be aware of the concerns raised and the responses given. Please find the comments summarized below (in *italics*) followed by our response.

- *Concerned that this project was brought to Fayette County Commissioners to look at, and then be discussed and analyzed by GDOT, but the next thing I am seeing are the plans and we are moving forward. I don't understand why it went from a discussion of whether to do a roundabout or a stop sign to a discussion of which roundabout to do. The County Commissioners don't have a say in this.*

GDOT has been in close contact with Fayette County and the Board of Commissioners since the beginning of this project as the alternatives have been studied and explored. The Board gave GDOT a conditional letter of support in 2014 for consideration of a roundabout. The Chairman of the Board of Commissioners attended the Concept Team Meeting on January 27, 2015, as did representatives from Fayette County Public Works, Board of Education and Sheriff's Office. At this meeting the alternatives were narrowed down after much discussion from all present.

GDOT studied, simulated and analyzed various alternatives and found that the most favorable alternatives were roundabouts. The recommended solution was developed and displayed at the public meeting so that the public could bring things to the attention of GDOT that they may not have known about previously. A final decision on the solution will not be made until after the concept report has been approved.

- *Roundabouts are unsafe and will cause crashes here. The roundabouts may reduce the severity of crashes but will increase the number of them, especially with the age of the immediate population. People will think they can drive at 55mph through them (need signage for at least a mile in both directions). It will be very unsafe for bicyclists who now have to navigate two roundabouts with traffic and large vehicles instead of just navigating a shoulder area. It will also be unsafe for our children as school buses stop between where the two roundabouts are proposed.*

The frequency of crashes at these intersections is related to the number of conflict points. Roundabouts greatly reduce the number of conflict points in comparison to conventional intersections, specifically crossing points, and, therefore, reduce the frequency of crashes. They also significantly reduce the severity of crashes by eliminating right-angle (due to geometry) and left-turn head-on collisions all together, these are the most likely to involve injuries and fatalities.

The roundabout geometry will not allow vehicles to travel through at 55 mph, but instead force them to travel through at a much lower speed. This will allow more time for drivers to react to potential conflicts. Signage will be included well before the roundabouts to warn drivers they need to slow down. Other features, such as landscaping, curb, and lighting, will also indicate drivers to an intersection ahead. Reducing the speed of vehicles in the roundabouts to below 25 mph would allow bicyclists to travel with the flow of traffic through the intersections.

Thank you for informing us of the school bus stops, we will certainly take this into account when further considering 4-lanes. Concrete islands will be installed at every entrance/exit to the roundabouts, allowing pedestrians to concentrate on vehicles coming from one direction at a time as they cross the street.

- *Why not use traffic lights instead like at SR 92 @ Hilo Road? 99% of the time they work better in high traffic areas, they are significantly cheaper and less traumatic. Lower the speed limit and put light at one intersection. This light could be standard during high traffic periods and flashing yellow rest of time.*

Traffic signals were considered initially as improvements to these intersections, but it does not address the safety concern and objective of the project. Traffic signals do not eliminate crossing movements nor force drivers to slow down through the intersection, leaving the potential for high speed, angle crashes. A roundabout eliminates all crossing paths and restricts speeds of traffic to address the safety concerns at these intersections. And the total cost of a roundabout is similar if not less than a traffic signal. For SR 92 and Antioch Rd, the total cost of a roundabout at this location, \$2.9 million, is less than the cost of a traffic signal \$3.4 million.

Speed limit on state highways is based on a traffic study conducted periodically. The study determines what speed the majority of traffic travels at and sets the speed limit accordingly. Additionally, a speed study would analyze crash data and geometric characteristics of the corridor to ensure that the posted speed was appropriate. Artificially changing the speed limit could result in a range of travel speeds on the highway and increase difficulty for drivers to merge with traffic.

Using a traffic signal for a flashing light would not match driver's expectancy and would create confusion, especially for out-of-town travelers. Drivers could interpret the flashing light differently, either as normal operation or faulty signal, and lead to unexpected reactions like a sudden stop. GDOT will not alternate a signal between flash and no flash as part of normal operations.

- *Why not lower the speed limit and use speed traps? Or hire a cop for 3 hours on Sundays? Or have additional lighting and a ticketing machine to help slow people down instead of roundabouts? These are quicker, cheaper and safer solutions than the proposed project and would generate money that would pay for the county. SR 85 and Harp Road is a more dangerous intersection and needs the improvements more than this project.*

All of these alternatives do not alleviate the safety concerns because they do not reduce/eliminate conflict points nor force drivers to slow down. GDOT also discourages the use of speed traps on highways. Fayette County has requested and received a permit from GDOT to improve the SR 85 and Harp Road intersection. The project, sponsored by Fayette County, is currently under construction.

- *The AM and PM rush hour traffic and Sunday traffic is too heavy for roundabouts. They will require the speed limit to be lowered and there will be large back-ups and delays. People do not always give and take during heavy volume traffic and so it will be especially difficult for people getting out of subdivisions and churches. Emergency services (fire/police) will have significant delays responding to calls south on SR 92.*

Roundabouts create fewer delays than traffic signals, due to the reduced number of stops and so are a viable solution for both peak and non-peak hours. Drivers will be required to drive slower through them, but lowering the speed limit doesn't cause congestion. Instead it creates a more stable traffic flow, and GDOT modelling and analysis shows that the proposed solution operates efficiently. This slow speed environment will be friendlier for bicyclists and pedestrians and will make it easier for drivers to enter/exit the parking lots and subdivisions. Drivers are ultimately responsibly however for yielding correctly to vehicles in the roundabouts.

- *Concerned about large trucks (logging trucks and 18 wheelers) being so close to cars in such a small area. It is nearly impossible for them to maintain their lane all the way around the circle, and with the roundabouts being so close together it will cause road rage. Side swipes will occur, especially because people will use the second roundabout lane as a passing lane.*

The roundabouts will be designed with all the vehicles that travel SR 92 in mind. A truck apron will be included to ensure they can make the turns. Modelling and analysis will be run specifically for logging-trucks, 18-wheelers and other large, low-to-the-ground vehicles. The roundabouts will be designed to minimize and eliminate as many collisions as possible. This includes wider lanes in the roundabout, 16 to 20 feet in width. If necessary, trucks may straddle both lanes to travel through the roundabout. Drivers would handle this similar to trucks completing a wide right turn at an intersection.

- *Concerned about the loss of Harp's Crossing Baptist Church property that will prevent future expansion (in the plans for years). Further concerns include a reduction in parking lot, handicapping easy access to and from the property and a reduction in the green out front. This is used for the Harp's Harvest Fall Festival at which there are thousands of attendees annually. Work with Harp's Crossing and other churches to facilitate long-range plans already in place.*

The solution GDOT intends to move forward with, only affects a small part of the grass alongside SR 92 on the east side of the property and part of the green out front on the north side. There will be no reduction of parking lot or access. Previous alternatives affected Harp's Crossing property to the south, but after communicating with Harp's Crossing these suggestions were rejected, so that their ability to

expand in the future is not affected. GDOT will continue to communicate with Harp's Crossing and other churches in the area, and do all it can to minimize the property affected on the north side.

- *Concerned about unnecessary impacts to the Episcopal Church of the Nativity, St Gabriel Catholic Church and the taking of a pastor's house. Most proposals adversely impact the Catholic Church. GDOT has been communicating with the other churches but has only just included the Catholic Church in their communications.*

The solution GDOT intends to move forward with does not affect the property of the Episcopal Church of the Nativity, St Gabriel Catholic Church or the pastor's house. Previous alternatives affected all of these properties, and were presented to and discussed with all those affected before the recommended solution was developed, including the Catholic Church. These discussions led us to the current solution which eliminates and minimizes effects to all local properties.

- *Concerned about driveway access to Prime Financials parking lot. Can vehicles make the RT from SR 92 just south of the roundabout at Antioch Road? GDOT personnel were unsure about driveway access from Antioch Road as well. The proposals show a concrete barrier with no LT access southbound on Antioch Road.*

Yes, vehicles will still be able to make right turns from SR 92 and at all other driveways. There will be a concrete median which will extend from the roundabout on all approaches. It will not be known until the design phase of the project if left turn access will be prohibited or not. Drivers will be able to access the parking lot from all directions by utilizing the roundabout. A driver will exit the roundabout on SR 92 southbound and turn right into Prime Financial. Similarly, drivers will be able to exit onto Antioch Rd and use the roundabout to exit in the desired direction.

- *GDOT should consider the option of purchasing the entire Prime Financial plot, as it would be safer for the employees. Our property is the number one ranked tourist attraction in Fayetteville, so we have a fair amount of traffic coming to that property, and now we have a natural cut through our parking lot because people will avoid the roundabout. They already cut through to avoid that intersection.*

Purchasing this plot would increase the project cost significantly and is unnecessary in the proposed solution. A roundabout would reduce the queue length at the intersection, which should reduce the cut-throughs.

- *Two lane roundabouts are too confusing and having two is excessive. People here don't understand how to use them. They are also too close together, it will cause congestion.*

The roundabout at each location will be constructed initially as single lane roundabout. Implementing two roundabouts within such close proximity will create a slow speed environment, as there won't be enough space for vehicles to reach a significant speed before needing to slow down again. GDOT's analysis indicates that congestion will not be an issue here because the roundabouts operate efficiently.

- *Do not see the need to enlarge and destroy the entrance to Lockwood Road. That road and homes were here long before the church and Antioch Road subdivisions. There are only 15 homes down the street. It does not need to be enlarged.*

It is undesirable to have a left turn access point beyond a roundabout. Vehicles will be accelerating exiting the roundabout and not expecting to stop. It could create a queue that would back into the roundabout and clog the intersection. And the concrete island may block the local street preventing left turns. The entrance would be shift slightly to tie into the roundabout and minimize any enlargement that may occur.

- *GDOT staff said the other options were not completely ruled out. How many times is the design going to change? Is there a section of the website that will promptly show new tweaks or designs? The information was being presented as though a decision has already been made. Why was there so much other information out there prior to this meeting if the one proposed was already in the works?*

The plan presented at the public meeting is the recommended solution. GDOT considered numerous alternatives to reach this recommendation, hence the variety in information available before the meeting. This project is still within the conceptual phase and new information may still influence changes to the solution.

- *Was not shown why roundabouts are the best solution, no statistical analysis was shown, no comparison to other traffic problem sites in Fayette County where roundabouts have been successful either. Have studies been done? Where can I review your research?*

National studies have been conducted and proven significant reduction in severe crashes at intersections where roundabouts are constructed. GDOT reviewed these studies and gave careful consideration of practices in other states before initiating our own roundabout policy. GDOT continues to monitor the success and progress of roundabouts in Georgia and make recommendations accordingly. You can find the results from some of these national studies on the Federal Highway Administration website.

- *What happened to the plan to 4-lane Hwy 92 that was approved 30yrs ago? If it happens, and the traffic increases, are the proposed roundabouts practical and? How will four lanes now affect entry to Harp's Crossing parking lot from Hwy 92 northbound?*

There is no programmed project to expand SR 92 to a four lane highway. Roundabouts have the capability of being expanded to support increases in traffic fairly easily. Access to the Harp's Crossing parking lot will be retained, but whether left-turn movements will be restricted have not been decided and will be worked out during the design phase. If left turns are restricted, drivers could complete a U-turn at the roundabouts to enter the parking lot or travel to Fayetteville from the church.

- *Roundabouts didn't work well in other states (e.g. NJ) and many have been taken out, why try to 'reinvent the wheel' and give it a new name?*

New Jersey has traffic circles, which are not the same as roundabouts. They have larger diameters and allow vehicles to travel at higher speeds. New Jersey is constructing roundabouts with smaller diameters, similar to these intersections, to prevent drivers from travelling through them quickly.

- *The process of the feasibility study was not followed. The vote was taken all at once for the following: 'Perform Operational Analysis', 'Operational Performance Acceptable?', and 'Cost Significantly Higher than Other Alternatives'?*

The process of the Roundabout Feasibility Study is not achieved through voting. It is a study performed by GDOT as part of the roundabout validation process. This is done before the public meeting in order to develop a recommended solution to present to the public.

- *Can the roundabout at Harp Road intersection be shifted north, go underground with 92 and tie Seay and Harp Road in with ramps?*

This alternative would require a vast amount more land than the proposed solution, and would have a much greater effect on a lot more people. This would also require a significant amount more work leading to much greater costs and a much longer construction period.

- *Still not sure what the purpose of this project is. Safety was mentioned – is that the only reason?*

Improving the safety of the two intersections by reducing crash frequency and severity is the primary objective of this project. But the project aims to also improve the operational efficiency by reducing congestion.

- *St Gabriel Church has been asking for a red light at SR 92 @ Antioch Road for 6 years, why start caring about this intersection now?*

This intersection was identified by multiple sources, including local officials and residents, as having safety issues and was programed as a project in 2010. Due to financial and time constraints, the first part of the project, the concept development, is just now being completed.

- *It seems to me that putting one roundabout at Seay and Harp roads would be sufficient to solve 99% of the accidents on Hwy 92 and Antioch Roads.*

While a roundabout at SR 92 and Seay Rd may affect the operations of the SR 92 and Antioch Rd intersection, it does not eliminate the crossing maneuvers that result in angle crashes. These two roundabouts are two separate projects and must address the issues at their respective intersections.

- *Why not move the roundabout at SR 92, Harp Road and Seay Road north, surely Harp Farm could benefit from the sale of a few acres?*

This is an option still being considered at this stage. GDOT will continue to do all it can to minimize the impact to the green on the north side of Harp's Crossing Baptist Church.

- *The additional RH turn lane from Harp Road to SR 92 for 18 wheelers is completely unwarranted. Harp Road is residential. No large truck traffic through there. That extra lane needs to be revised without the modified approach from Harp Road to the roundabout.*

The angle between Harp Rd and SR 92 in the roundabout is too sharp for a car to turn. The right turn lane from Harp Rd to SR 92 is for any vehicle to complete this turn without having to travel around the roundabout.

- *Please put a sign saying Lockwood and Keyland are dead end streets. I've lived there for 37yrs and love the quiet, no traffic atmosphere. Do not want it to change.*

GDOT will consider the dead end sign for Lockwood Rd when the signing and marking plans are developed during the design phase of the project. You would need to make a request to Fayette County for a sign at Keyland.

- *Will Hwy 92 be detoured during construction?*

Construction is estimated to be 30months. GDOT aims to build this project without the use of a detour and retain traffic flow along SR 92.

- *I don't see how Seay Road and Harp Road enter the roundabout north of Harp's Crossing Baptist Church.*

Seay Road and Harp Road will be re-aligned to become legs of the roundabout to the north of Harp's Crossing.

- *The roundabouts need to be tastefully and attractively landscaped and a sidewalk needs to be installed.*

Landscaping will be included in the center of the roundabouts in conjunction with Fayette County. Crosswalks and sidewalk around the roundabout will be included in the design.

Again, thank you for your comments. Should you have further questions, comments or concerns, please call the project manager, Justin Banks, at (404) 631-1153 , or the environmental analyst, ..., at (...) ...-....

Sincerely,

Hiral Patel, P.E.  
State Environmental Administrator

.../...

cc: Justin Banks, GDOT Project Manager (via email)  
PDF for Project File; Hardcopy to General Files



August 10, 2015

Robert McElroy  
120 Dawn Drive  
Fayetteville, GA 30215

Re: Responses to Open House Comments for PI#: 0009971, Fayette County, State Route (SR) 92 at County Road (CR) 149/Antioch Road and CR 308/Lockwood Road and PI#: 0009972, Fayette County, SR 92 at CR 138/Seay Road and CR 129/Harp Road

Dear Robert McElroy,

Thank you for your comments concerning the proposed project referenced above. We appreciate your participation and all of the input that was received as a result of the *April 28, 2015 Public Information Open House*. Every written comment received and verbal comment given to the court reporter will be made part of the project's official record.

A total of **244** people attended the open house. Of the **157** respondents who formally commented, **18** were in **support** of the project, **100** were **opposed**, **4** were **uncommitted**, and **35** expressed **conditional support**.

The attendees of the open house and those persons sending in comments within the comment period raised the following questions and concerns. The Georgia Department of Transportation (GDOT) has prepared this one response letter that addresses all comments received so that everyone can be aware of the concerns raised and the responses given. Please find the comments summarized below (in *italics*) followed by our response.

- *Concerned that this project was brought to Fayette County Commissioners to look at, and then be discussed and analyzed by GDOT, but the next thing I am seeing are the plans and we are moving forward. I don't understand why it went from a discussion of whether to do a roundabout or a stop sign to a discussion of which roundabout to do. The County Commissioners don't have a say in this.*

GDOT has been in close contact with Fayette County and the Board of Commissioners (the Board) since the beginning of this project as the alternatives have been studied and explored. The Board gave GDOT a conditional letter of support in 2014 for consideration of a roundabout. Other alternatives considered were traffic signals, left turn lanes, changes to the road network, and no build. These alternatives were evaluated in December 2014. The Chairman of the Board of Commissioners attended the Concept Team Meeting on January 27, 2015, as did representatives from Fayette County Public Works, Board of Education and Sheriff's Office. At this meeting the alternatives were reviewed and discussed about concerns from GDOT and local officials.

GDOT studied, simulated and analyzed various alternatives and found that the preferred alternative was a roundabout. The roundabout addressed the safety need of both projects. The recommended solution was developed and displayed at the public meeting so that the public could bring things to the attention of GDOT that they may not have known about previously. A final decision on the solution will not be made until after the concept report has been approved and all environmental analysis has been completed.

- *Roundabouts are unsafe and will cause crashes here. The roundabouts may reduce the severity of crashes but will increase the number of them, especially with the age of the immediate population. People will think they can drive at 55mph through them (need signage for at least a mile in both directions). It will be very unsafe for bicyclists who now have to navigate two roundabouts with traffic and large vehicles instead of just navigating a shoulder area. It will also be unsafe for our children as school buses stop between where the two roundabouts are proposed.*
- *Concerned about large trucks and cars being so close in such a small area, side swipes will occur. Concerned about aggressive drivers not being willing to yield to those entering from access roads.*
- *My opinion is that it would be extremely unsafe to construct a roundabout on a state highway let alone two roundabouts so close in proximity. A traffic light would be the most effective and less traumatic choice for the congested traffic in the area.*

The frequency of crashes at these intersections is related to the number of conflict points. Roundabouts greatly reduce the number of conflict points in comparison to conventional intersections, specifically crossing points, and, therefore, reduce the frequency of crashes. They also significantly reduce the severity of crashes by eliminating right-angle (due to geometry) and left-turn head-on collisions all together, these are the most likely to involve injuries and fatalities.

The roundabout geometry will not allow vehicles to travel through at 55 mph, but instead force them to travel through at a much lower speed. This will allow more time for drivers to react to potential conflicts. Signage will be included well before the roundabouts to warn drivers they need to slow down. Other features, such as landscaping, curb, and lighting, will also alert drivers to an intersection ahead. Reducing the speed of vehicles in the roundabouts to below 25 mph would allow bicyclists to travel with the flow of traffic through the intersections.

GDOT will coordinate with Fayette County School Board to address any and all concerns with bus stops with the project limits. Concrete islands will be installed at every entrance/exit to the roundabouts, allowing pedestrians to concentrate on vehicles coming from one direction at a time as they cross the street.

- *Why not use traffic lights instead like at SR 92 at Hilo Road? 99% of the time they work better in high traffic areas, they are significantly cheaper and less traumatic.*
- *Morning and afternoon rush hour will have traffic problems. Both projects/proposals will not solve the problem. The speed limit will have to be lowered, traffic will be backed up as a result. Traffic light just like in Hilo is your best solution-more effective and costs less, much less!*
- *The AM and PM rush hour traffic and Sunday traffic is too heavy for roundabouts. They will require the speed limit to be lowered and there will be large back-ups and delays. People do not always give and take during heavy volume traffic and so it will be especially difficult for people getting out of subdivisions and churches. Emergency services (fire/police) will have significant delays responding to calls south on SR 92.*
- *There is absolutely too much traffic going north and south on Hwy. 92. This will slow or bog down traffic flow. I have never see more than a few cars at either ear Rd. or Antioch backed up.*

Traffic signals were considered initially as improvements to these intersections, but they do not address the safety concern and objective of the project. Traffic signals do not eliminate crossing movements nor force drivers to slow down through the intersection, leaving the potential for high speed, angle crashes.

A roundabout eliminates all crossing paths and restricts speeds of traffic to address the safety concerns at these intersections. Reducing the speed doesn't cause congestion; instead it creates a more stable flow of traffic. Roundabouts create fewer delays than traffic signals due to the reduced number of stops, so they are a viable solution for both peak and non-peak hours. GDOT's modelling and analysis shows that a roundabout will operate efficiently at this location.

The total cost of a roundabout is similar if not less than a traffic signal. The roundabout at SR 92 and Antioch Rd is estimated to cost \$2.9 million compared to an estimated \$3.4 million for a traffic signal in the same location.

- *I don't see the need for this massive roundabout and think a red light might be much cheaper for the county and safer for all. Lower the speed limit and put light at one intersection. This light could be standard during high traffic periods and flashing yellow rest of time.*
- *Why not lower the speed limit and use speed traps? Or hire a cop for 3 hours on Sundays? Or have additional lighting and a ticketing machine to help slow people down instead of roundabouts? These are quicker, cheaper and safer solutions than the proposed project and would generate money that would pay for the county. SR 85 and Harp Road is a more dangerous intersection and needs the improvements more than this project.*

All of these alternatives do not alleviate the safety concerns because they do not reduce/eliminate conflict points nor force drivers to slow down. GDOT also discourages the use of speed traps on highways. Fayette County has requested and received a permit from GDOT to improve the SR 85 and Harp Road intersection. The project, sponsored by Fayette County, is currently under construction.

- *Concerned about large trucks (logging trucks and 18 wheelers) being so close to cars in such a small area. It is nearly impossible for them to maintain their lane all the way around the circle, and with the roundabouts being so close together it will cause road rage. Side swipes will occur, especially because people will use the second roundabout lane as a passing lane.*

The roundabouts will be designed with all the vehicles that travel SR 92 in mind. A truck apron will be included to ensure they can make the turns. Modelling and analysis will be run specifically for logging-trucks, 18-wheelers and other large, low-to-the-ground vehicles. The roundabouts will be designed to minimize and eliminate as many collisions as possible. This includes wider lanes in the roundabout, 16 to 20 feet in width. If necessary, trucks may straddle both lanes to travel through the roundabout. Drivers would handle this similar to trucks completing a wide right turn at an intersection.

- *Concerned about the loss of Harp's Crossing Baptist Church property that will prevent future expansion (in the plans for years). Further concerns include a reduction in parking lot, handicapping easy access to and from the property and a reduction in the green out front. This is used for the Harp's Harvest Fall Festival at which there are thousands of attendees annually. Work with Harp's Crossing and other churches to facilitate long-range plans already in place.*

The proposed alternative only affects a small part of the grass alongside SR 92 on the east side of the property and part of the green out front on the north side. There will be no reduction of parking lot or access. Previous alternatives affected Harp's Crossing property to the south, but after communicating with Harp's Crossing these suggestions were rejected, so that their ability to expand in the future is not affected. GDOT will continue to communicate with Harp's Crossing and other churches in the area, and do all it can to minimize the property affected on the north side.

- *Concerned about unnecessary impacts to the Episcopal Church of the Nativity, St Gabriel Catholic Church and the taking of a pastor's house. Most proposals adversely impact the Catholic Church. GDOT has been communicating with the other churches but has only just included the Catholic Church in their communications.*

The proposed alternative does not affect the property of the Episcopal Church of the Nativity, St Gabriel Catholic Church or the pastor's house. Previous alternatives affected all of these properties, and were presented to and discussed with all those affected before the recommended solution was developed, including the Catholic Church. These discussions led us to the current solution which eliminates and minimizes effects to all local properties.

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Vehicles will still be able to make right turns from SR 92 to enter driveways. There will be a concrete median which will extend from the roundabout on all approaches. It will not be known until the design phase of the project if left turn access will be prohibited or not. Drivers will be able to access the parking lot from all directions by utilizing the roundabout. A driver will exit the roundabout on SR 92 southbound and turn right into Prime Financial.

- *GDOT should consider the option of purchasing the entire Prime Financial plot, as it would be safer for the employees. Our property is the number one ranked tourist attraction in Fayetteville, so we have a fair amount of traffic coming to that property, and now we have a natural cut through our parking lot because people will avoid the roundabout. They already cut through to avoid that intersection.*

Purchasing the Prime Financial plot is unnecessary in the proposed solution. A roundabout would reduce the queue length at the intersection, which should reduce the cut-throughs.

- *Two lane roundabouts are too confusing and having two is excessive. People here don't understand how to use them. They are also too close together, it will cause congestion.*

The roundabout at each location will be constructed as single lane roundabout. Implementing two roundabouts within such close proximity provides a slow speed environment, as there won't be enough space for vehicles to reach high speeds before needing to slow down again. GDOT's analysis indicates that congestion will not be an issue here because the roundabouts operate efficiently.

- *Do not see the need to enlarge and destroy the entrance to Lockwood Road. That road and homes were here long before the church and Antioch Road subdivisions. There are only 15 homes down the street. It does not need to be enlarged.*

It is undesirable to have a left turn access point beyond a roundabout. Vehicles will be accelerating exiting the roundabout and not expecting to stop. It could create a queue that would back into the roundabout and clog the intersection. And the concrete island may block the local street preventing left turns. The entrance would be shift slightly to tie into the roundabout and minimize any enlargement that may occur.

- *GDOT staff said the other options were not completely ruled out. How many times is the design going to change? Is there a section of the website that will promptly show new tweaks or designs? The information was being presented as though a decision has already been made. Why was there so much other information out there prior to this meeting if the one proposed was already in the works?*

The plan presented at the public meeting is the recommended solution. GDOT considered numerous alternatives to reach this recommendation, hence the variety in information available before the meeting. This project is still within the conceptual phase and new information may still influence changes to the solution.

- *Was not shown why roundabouts are the best solution, no statistical analysis was shown, no comparison to other traffic problem sites in Fayette County where roundabouts have been successful either. Have studies been done? Where can I review your research?*

National studies have been conducted and proven significant reduction in crashes at intersections where roundabouts are constructed. GDOT reviewed these studies and gave careful consideration of practices in other states before initiating our own roundabout policy. GDOT continues to monitor the success and progress of roundabouts in Georgia and make recommendations accordingly. These roundabouts will be monitored and studied as part of GDOT's roundabout program. You can find the results from some of these national studies on the Federal Highway Administration website.

- *What happened to the plan to 4-lane Hwy 92 that was approved 30yrs ago? If it happens, and the traffic increases, are the proposed roundabouts practical and? How will four lanes now affect entry to Harp's Crossing parking lot from Hwy 92 northbound?*

There is no programmed project to expand SR 92 to a four lane highway. Roundabouts have the capability of being expanded to support increases in traffic fairly easily. Access to the Harp's Crossing parking lot will be retained, but whether left-turn movements will be restricted have not been decided and will be worked out during the design phase. If left turns are restricted, drivers could complete a U-turn at the roundabouts to enter the parking lot or travel to Fayetteville from the church.

- *Roundabouts didn't work well in other states (e.g. NJ) and many have been taken out, why try to 'reinvent the wheel' and give it a new name?*

New Jersey has traffic circles, which are not the same as roundabouts. They have larger diameters and allow vehicles to travel at higher speeds. New Jersey is constructing roundabouts with smaller diameters, similar to these intersections, to prevent drivers from travelling through them quickly.

- *The process of the feasibility study was not followed. The vote was taken all at once for the following: 'Perform Operational Analysis', 'Operational Performance Acceptable?', and 'Cost Significantly Higher than Other Alternatives'?*

The process of the Roundabout Feasibility Study is not achieved through voting. It is a study performed by GDOT as part of the roundabout validation process. This is done before the public meeting in order to develop a recommended solution to present to the public.

- *Can the roundabout at Harp Road intersection be shifted north, go underground with 92 and tie Seay and Harp Road in with ramps?*

This alternative would require a vast amount more land than the proposed solution, and would have a much greater effect on a lot more people. This would also require a significant amount more work leading to much greater costs and a much longer construction period.

- *Still not sure what the purpose of this project is. Safety was mentioned – is that the only reason?*

Improving the safety of the two intersections by reducing crash frequency and severity is the primary objective of this project. But the project aims to also improve the operational efficiency by reducing congestion.

- *St. Gabriel Church has been asking for a red light at SR 92 at Antioch Road for 6 years, why start caring about this intersection now?*

This intersection was identified by multiple sources, including residents and local officials in the 2004 SPLOST, as having safety issues and was programmed as a GDOT project in 2010. Due to financial and time constraints, the concept development and environmental analysis was delayed.

- *It seems to me that putting one roundabout at Seay and Harp roads would be sufficient to solve 99% of the accidents on Hwy 92 and Antioch Roads.*

There is no data to suggest any improvements at one intersection will reduce the crash frequency at another intersection. Both intersections have a crash history and a roundabout can only address the issue at its respective location.

- *Why not move the roundabout at SR 92, Harp Road and Seay Road north, surely Harp Farm could benefit from the sale of a few acres?*

The exact location and geometric dimensions are not final and the roundabout could shift as the design develops. GDOT will do all it can to minimize the impact to the green on the north side of Harp's Crossing Baptist Church.

- *The additional RH turn lane from Harp Road to SR 92 for 18 wheelers is completely unwarranted. Harp Road is residential. No large truck traffic through there. That extra lane needs to be revised without the modified approach from Harp Road to the roundabout.*

The right turn lane from Harp Rd. to SR 92 is for any vehicle to complete this turn without having to travel around the roundabout.

- *Please put a sign saying Lockwood and Keyland are dead end streets. I've lived there for 37yrs and love the quiet, no traffic atmosphere. Do not want it to change.*

GDOT will consider the dead end sign for Lockwood Rd. when the signing and marking plans are developed. You would need to make a request to Fayette County for a sign at Keyland.

- *Will Hwy 92 be detoured during construction?*

Construction is estimated to be 30 months. GDOT aims to build this project without the use of a detour and retain traffic flow along SR 92.

- *I don't see how Seay Road and Harp Road enter the roundabout north of Harp's Crossing Baptist Church.*

Seay Road and Harp Road will be re-aligned to become legs of the roundabout to the north of Harp's Crossing.

- *The roundabouts need to be tastefully and attractively landscaped and a sidewalk needs to be installed.*

Landscaping will be included in the center of the roundabouts in conjunction with Fayette County. Crosswalks and sidewalk around the roundabout will be included in the design.

Again, thank you for your comments. Should you have further questions, comments or concerns, please call the project manager, Justin Banks, at (404) 631-1153 , or the environmental analyst, Shana Miles, at (404) 631-1155.

Sincerely,



Hiral Patel, P.E.  
State Environmental Administrator

HP/sm 

cc: Justin Banks, GDOT Project Manager (via email)  
PDF for Project File; Hardcopy to General Files

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