

# BLUE LAKE AREA STUDY



## VESTAVIA HILLS

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Submitted By:



**GONZALEZ-STRENGTH & ASSOCIATES, INC.**  
2176 Parkway Lake Drive  
Hoover, AL 35244

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## *INTRODUCTION*

The purpose of the Blue Lake Area Study is to provide a document to assist the City of Vestavia Hills public officials and staff as an engineering guideline in their planning efforts to prepare for future growth and development for the area. This report is a supplementary engineering document to the Cahaba Heights Community Plan dated November 13, 2008, and may be used as a guide for the redevelopment of the study area. There are five (5) sections to the study: Sanitary Sewer, Domestic Water, Roadway Improvements, Sidewalks, and Storm Water Management.

The area of study is approximately 40 acres. Colonnade Parkway is located to the north, and Cahaba River Road is located to the southwest. Exiting roadways within the study area include Blue Lake Drive, Timberlake Drive, Pine Tree Drive and Pine Tree Circle. Blue Lake Drive bisects the property running north to south. A traffic signal is located at the intersection of Blue Lake Drive and Cahaba River Road. Timberlake Drive and Colonnade Parkway are un-signalized.

Currently most of the property is being used for single family residential. As demand for property within this rapidly growing redeveloping area persists, the residential properties are being developed to professional office, and light commercial / retail. Existing infrastructure, servicing the Timberlake Drive, Pine Tree Drive and Pine Tree Circle is minimal and was originally designed to support a residential community. The existing infrastructure was adequate when originally built but is inadequate to support future development. The current pattern of infrastructure upgrading has been opportunistic, in that as a



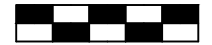
property has been redeveloped, that property has improved the infrastructure to meet the needs of the proposed development. This type of infrastructure improvement leads to poorly thought out and inconsistent implementation of infrastructure. For example, Blue Lake Drive has improved infrastructure which supports those properties immediately adjacent to the extent that redevelopment has taken place. The remainder of Blue Lake Drive, Timberlake Drive, Pine Tree Drive and Pine Tree Circle lack adequate infrastructure and require action to facilitate the growth of the area as a whole.

The City of Vestavia Hills has expressed a concern that the random redevelopment of the area may result in inadequate infrastructure or unfairly burden certain lands. This study is to address the global infrastructure needs within the overall area such that an orderly implementation of infrastructure may take place that meets the needs of all the properties within the Blue Lake area.

Refer to appendix “A” for cost estimates on certain proposed improvements.

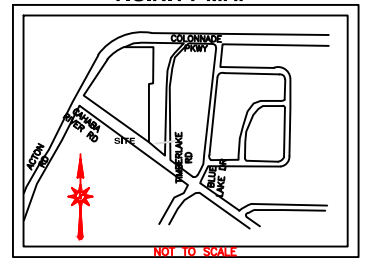


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SCALE IN FEET

VICINITY MAP



**OVERALL STUDY AREA**

## SANITARY SEWER:

Sanitary Sewer service is provided by Jefferson County Department of Environmental Services. Sewer mains are currently available within the Cahaba River Road and the Blue Lake Drive rights of way. Properties abutting these rights of way may make service connections to the existing mains. Timberlake Drive, Pine Tree Circle and Pine Tree Drive lack sanitary sewer service availability. The study area indicates proposed sanitary sewer main extensions required to serve the properties currently without public sanitary sewer. Sanitary sewer easements would be required where proposed public infrastructure crosses private properties.

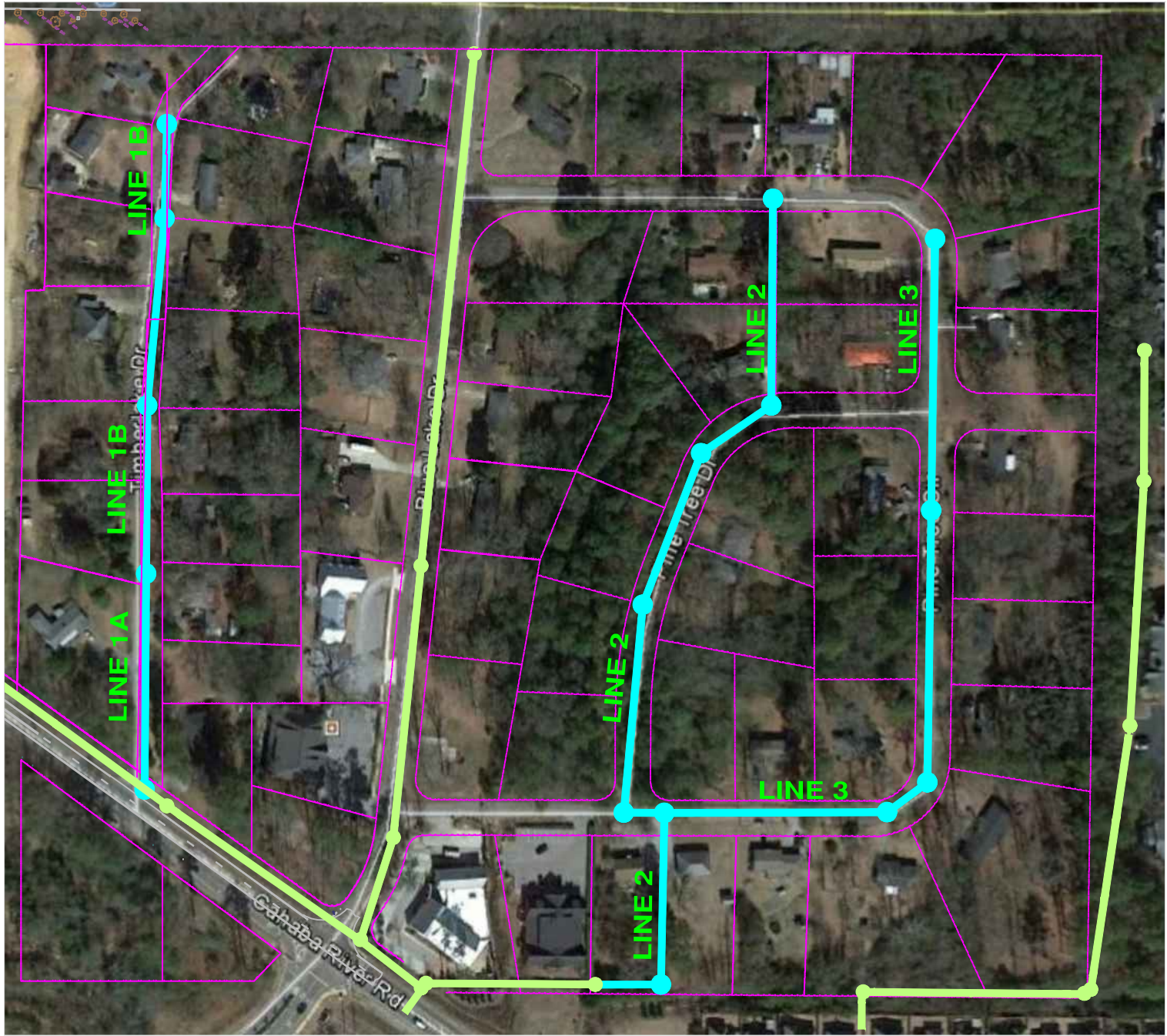
Line 1A: Is required to provide service to Timberlake Drive. The two (2) corner lots abutting Timberlake Drive and Cahaba River Road may service these lots with a service connection to the main within the Cahaba River Road. Thus the need to extend the main north and beyond these properties to service the remainder of the properties along Timberlake Drive.

Line 1B: When the remainder of the properties develop to the north, the main may either be extended to serve each parcel as needed, or alternatively, the main may be extended the full length of Timberlake Drive.





Line 2: This main would be to service the Pine Tree Drive and a limited portion of Pine Tree Circle. A sanitary sewer easement across private property would be required to extend the main to the Pine Tree Circle right of way.



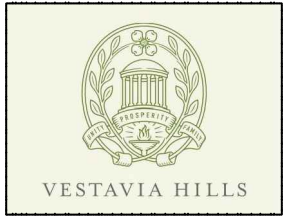
Line 3: This main would service the Pine Tree Circle properties. A portion of Line 2 (350 LF) may be incorporated into this line if the properties along Pine Tree Circle are developed ahead of the Pine Tree Drive parcels.



0' 200'  
  
 SCALE IN FEET

-  PROPOSED SANITARY SEWER
-  EXISTING SANITARY SEWER
-  PROPOSED SANITARY SEWER MANHOLE
-  EXISTING SANITARY SEWER MANHOLE

## SANITARY SEWER PLAN



CONCEPT PLAN - FOR PLANNING PURPOSES ONLY



## DOMESTIC WATER:

Domestic water service is provided by the Birmingham Water Works Board. Water mains are currently available within the Cahaba River Road, Blue Lake Drive, Timberlake Drive, Pine Tree Circle and Pine Tree Drive rights of way.

Line 1: Is required to “Loop” the water mains from Timberlake Drive to Blue Lake Drive. Timberlake Drive has an existing 6” water main which “dead ends” at the north end of the properties. Upgrading the existing watermain to provide a loop system would increase system flows, pressures and future fire supply needs for the existing Timberlake Drive.

Line 2: Is to upgrade and loop the main from the intersecting streets of Pine Tree Drive and Pine Tree Circle. Pine Tree Drive has an existing 2” main which “dead ends” approximately at the mid-section of Pine Tree Drive.



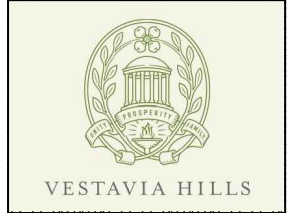
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SCALE IN FEET

- 8" PROPOSED WATER MAIN
- 8" EXISTING WATER MAIN

## WATER SERVICE PLAN



CONCEPT PLAN - FOR PLANNING PURPOSES ONLY



## ROADWAY IMPROVEMENTS:

Timberlake Drive, Blue Lake Drive, Pine Tree Circle and Pine Tree Drive are City of Vestavia Hills public roads. Blue Lake Drive, Pine Tree Drive and Pine Tree Circle are platted right of ways. Timberlake Drive is a prescriptive right of way, single lane road (approximately 12' wide) and a “dead end” road. Significant improvements to Timberlake Drive are required to bring this road to a city design standard. Right of way acquisition is required to provide a uniform width and alignment for Timberlake Drive. The Timberlake Drive connection to Cahaba River Road is un-signalized. The alignment of Timberlake Drive and Cahaba River Road shall be corrected as a part of the required improvements. Pine Tree Drive and Pine Tree Circle have variable pavement widths ranging from 19 feet to 20 feet. These two roads may either be widened to 24 feet to meet city design standards or as an option an aggregate shoulder may be added to each side of the existing lanes to provide additional room to maneuver. A traffic impact analysis should be performed based on the intensity of each development proposed within the study area. The traffic impact study should include existing and proposed improvements to adjacent roadways, traffic signalization, and roadways outside the Vestavia Hills jurisdiction. The proposed study area has a two (2) option scenario depending upon how the property may develop.

**STUDY AREA OPTION 1:** Provides for improvements to Timberlake Drive to upgrade the road to city standards, utilizing the current route, and including a connection to Blue Lake Drive.



Section 1: Currently, Timberlake Drive this is the only point of access to 16 properties located along this corridor. Timberlake Drive and Cahaba River Road improvements are required to bring this intersection up to city design standards.

Section 2: When the remainder of the properties develop, the road may either be extended to service each parcel as needed, or alternatively the road may be extended the full length of Timberlake Drive.

Section 3: The connection from Timberlake Drive to Blue Lake Drive is essential to traffic flow. The intersection of Blue Lake Drive and Cahaba River Road is a signalized intersection. Connecting Timberlake Drive to Blue Lake Drive would allow an alternate route for traffic to access the signal.

Section 4: Blue Lake Drive is being used as a “cut thru” to avoid congestion at the Colonnade Parkway / Cahaba River Road intersection. Therefore, and in an effort to calm traffic using Blue Lake Drive, a roundabout may be considered.

AREA STUDY OPTION 2: Provides for improvements to Timberlake Drive to upgrade the road to city standards, utilizing the current route, and including a connection to Blue Lake Drive.

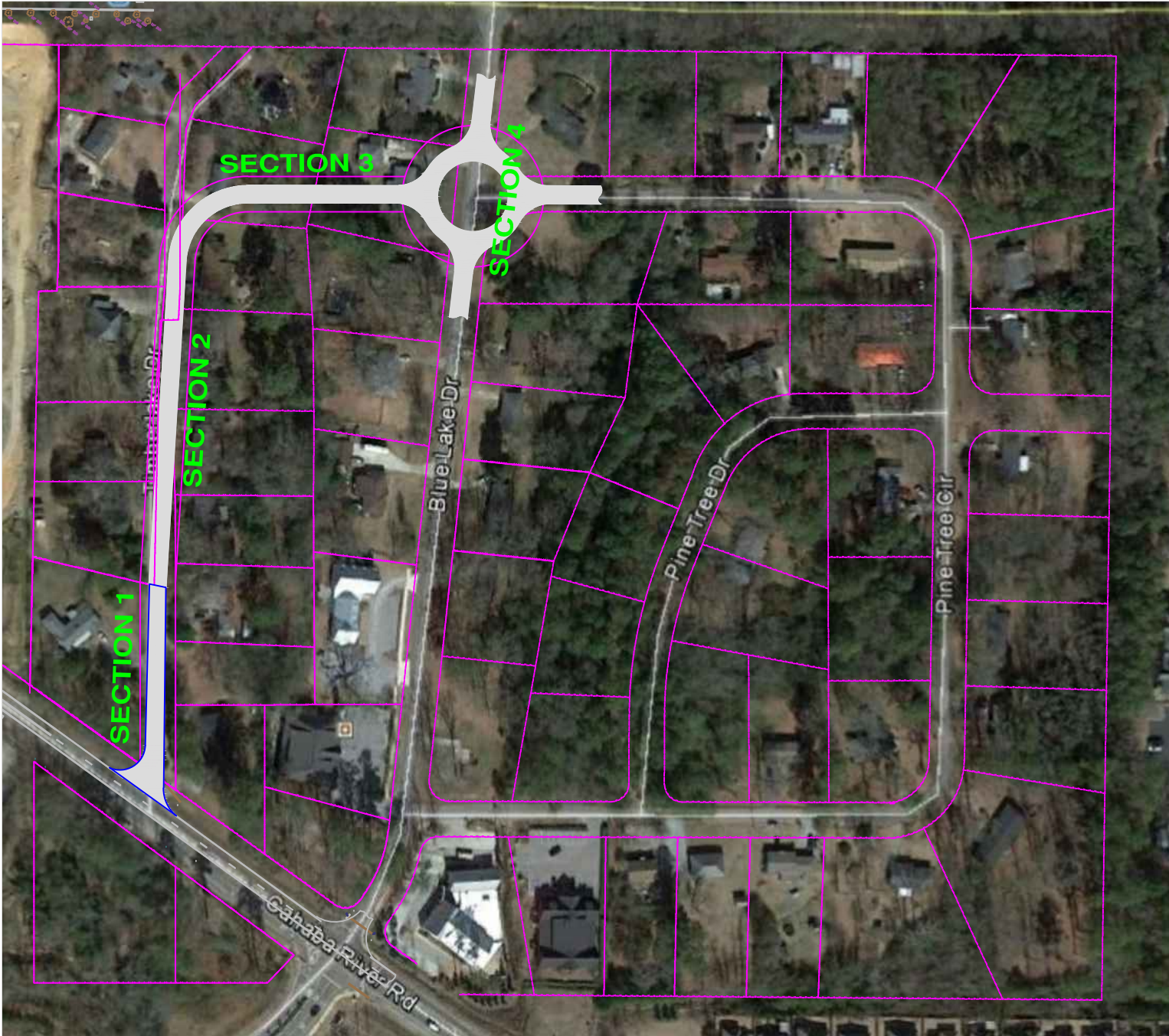
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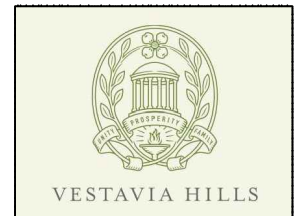
Section 3: The connection from Timberlake Drive to Blue Lake Drive is essential to traffic flow. The intersection of Blue Lake Drive and Cahaba River Road is a signalized intersection. Connecting Timberlake Drive to Blue Lake Drive would allow for an alternate route for traffic to access the signal. Depending on how the properties develop at the north end of Timberlake Drive, it may be necessary to locate the proposed connection in a different location.

Section 4: Blue Lake Drive is being used as a “cut thru” to avoid congestion at the Colonnade Parkway / Cahaba River Road intersection. Therefore, and in an effort to calm traffic using Blue Lake Drive, a roundabout may be considered.

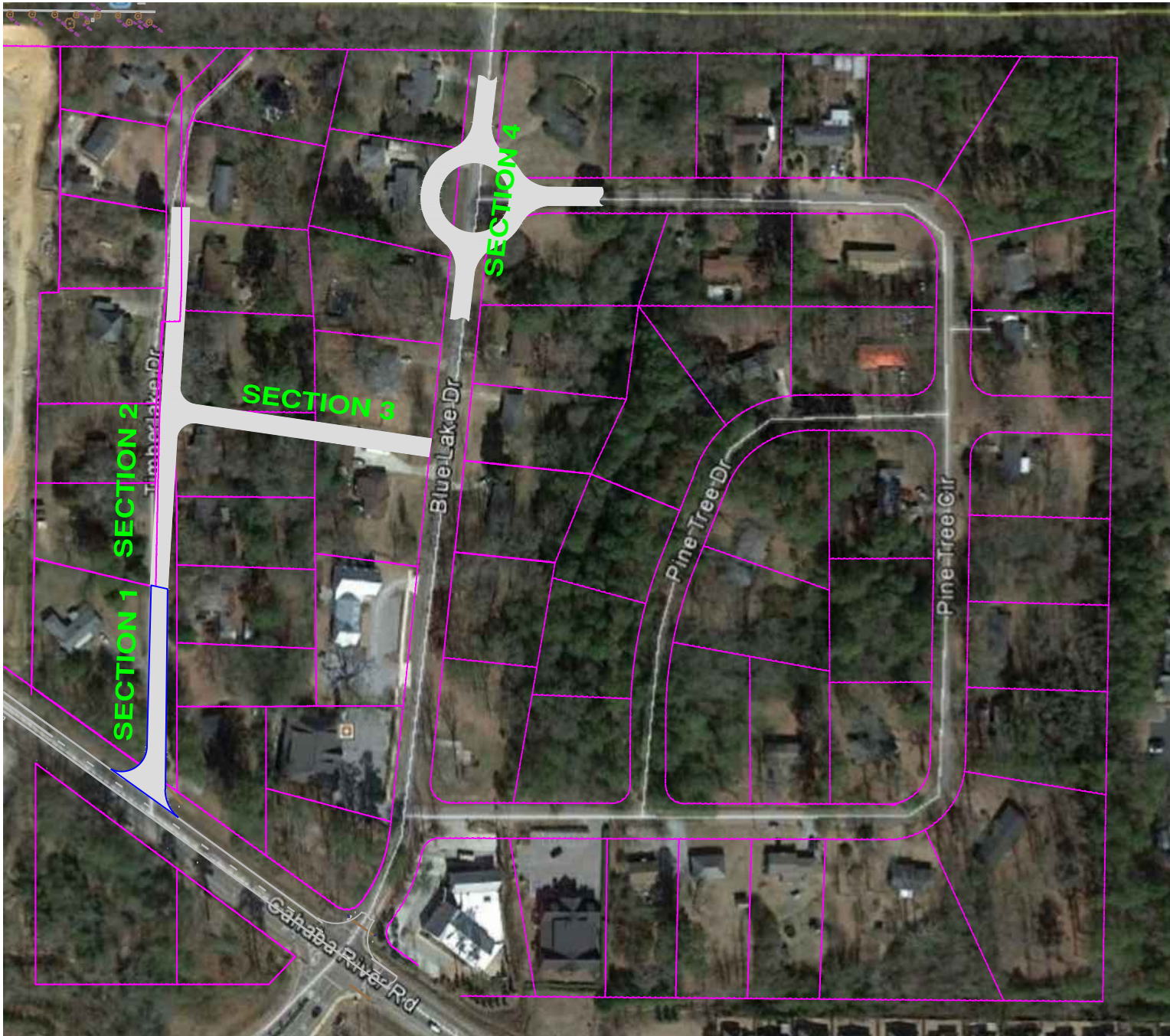


 PROPOSED TIMBERLAKE DRIVE EXTENSION

**ROADWAY  
IMPROVEMENT  
PLAN  
OPTION 1**

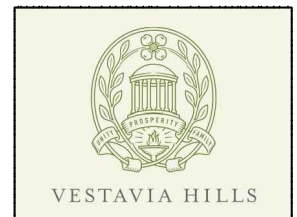


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**PROPOSED TIMBERLAKE DRIVE EXTENSION**

**ROADWAY  
IMPROVEMENT  
PLAN  
OPTION 2**



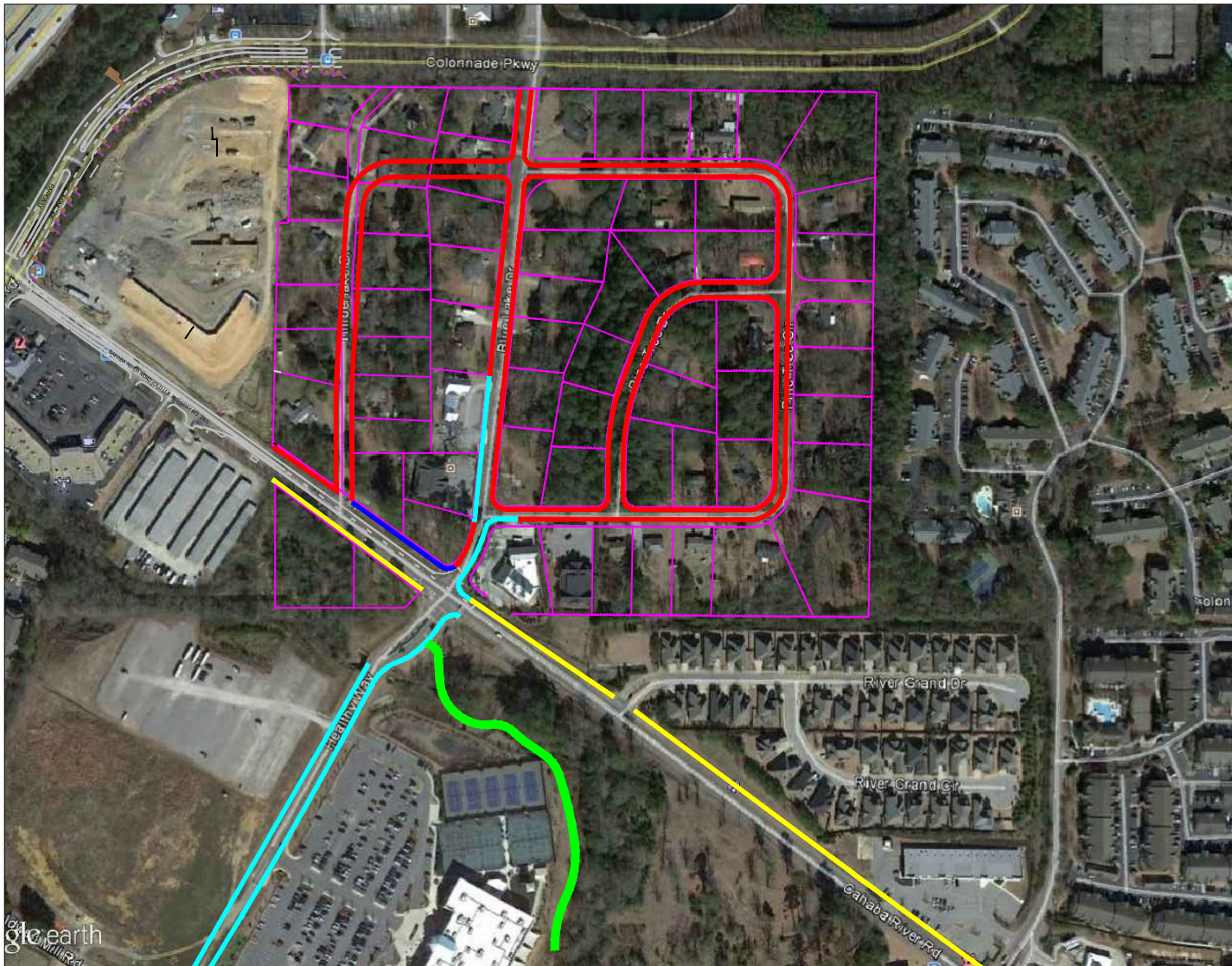


## SIDEWALK IMPROVEMENTS

The City of Vestavia Hills is committed to enhancing the connectivity within the city. Current zoning ordinances provide for the establishment of sidewalks along public rights of way for new developments. However, existing properties which were developed prior to annexation, or properties located in different municipalities may not have provided for connectivity. Therefore “gaps” in connectivity have occurred. The proposed sidewalk plan for the Blue Lake area has identified some of the gap areas which lack existing public infrastructure connectivity and the developer required sidewalks.

Phase I: Connecting the new Healthy Way Fitness / Publix Shopping Center to the Blue Lake Drive study area is critical for connectivity. Sidewalks are existing along the south end of Blue Lake Drive. A connection to the Timberlake Drive is needed. This proposed connection would be parallel to Cahaba River road running along the north side.

Phase II: Connecting sidewalks from intersection of Colonnade Parkway to Timberlake Drive and from Blue Lake Drive to River Grand Drive extending down to Colony Park Drive is needed for further connectivity. This proposed connection would be parallel to Cahaba River road running along the north side.

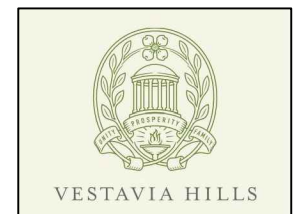


CONCEPT PLAN - FOR PLANNING PURPOSES ONLY



- DEVELOPER INSTALL SIDEWALK
- PUBLIC INFRASTRUCTURE SIDEWALK - PHASE I
- PUBLIC INFRASTRUCTURE SIDEWALK - PHASE II
- EXISTING SIDEWALK
- EXISTING NATURE TRAIL

## SIDEWALK PLAN



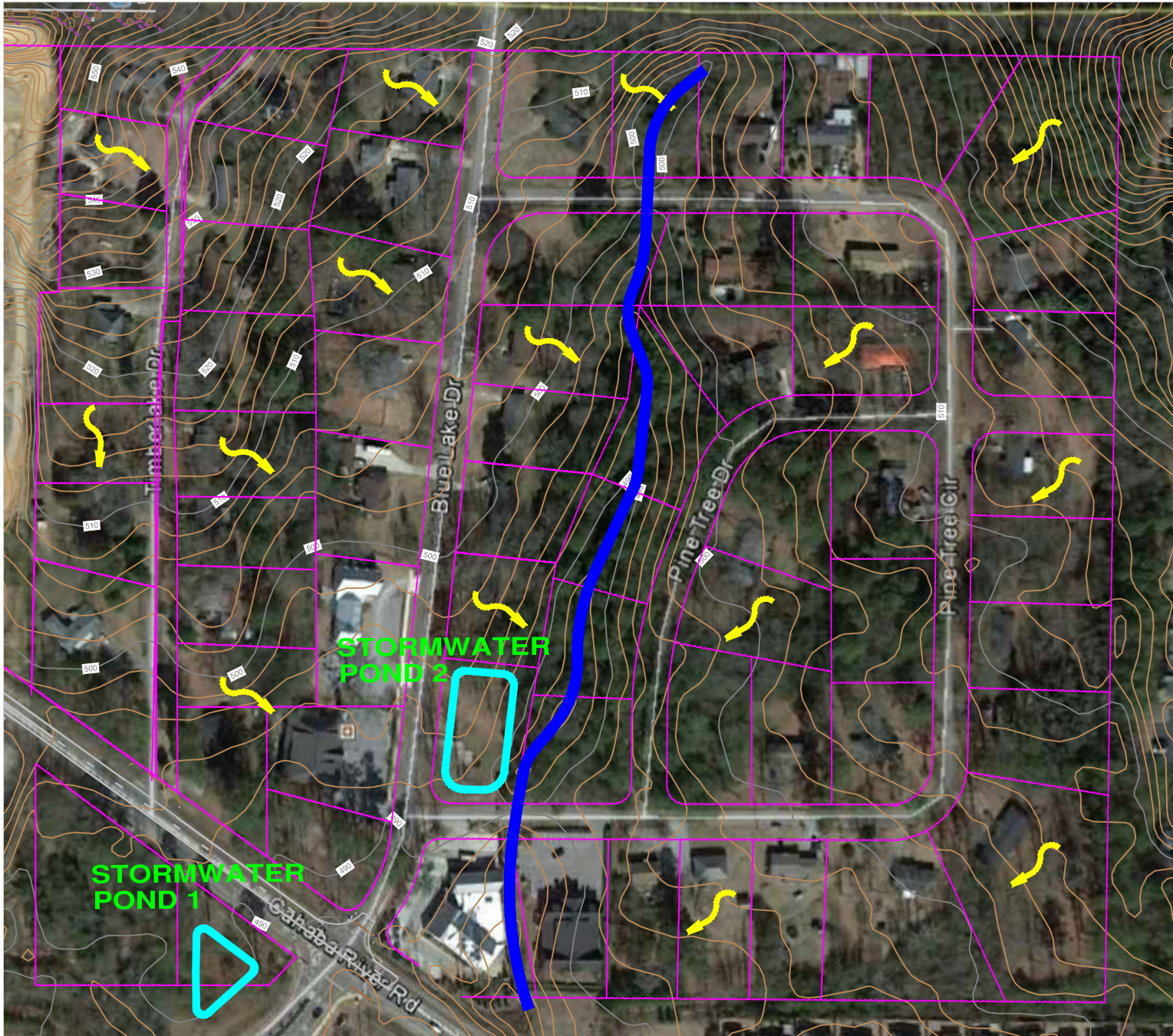


## STORM WATER MANAGEMENT

The City of Vestavia Hills has a storm water management ordinance regulating storm water run-off. This ordinance is to protect natural water flow and flood prone areas to minimize flood damage. Master storm water management facilities have been proposed for consideration only. It is recommended that developments be of low density / impact, utilizing on site detention to protect property and the environment from the impacts from storm water run-off. However, regional storm water management areas have been studied and are conceptual, based on future development within the study area.

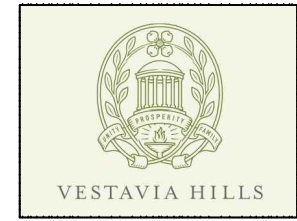
Storm Management Area1: Proposed master storm pond located on city owned property. Drainage area to this pond is approximately 10 acres. This proposed area would require significant storm drainage improvements under Cahaba River Road.

Storm Management Area2: Proposed master storm water pond located on private property. Drainage to this pond is approximately 26 acres.



- DRAINAGE FLOW ARROW
- EXISTING CREEK
- MASTER STORMWATER DETENTION FACILITY

## STORM DRAINAGE PLAN



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LOW IMPACT DEVELOPMENT IS ENCOURAGED WITHIN THE STUDY AREA.

CONCEPT PLAN - FOR PLANNING PURPOSES ONLY



## REPORT LIMITATIONS

- 1) This report does not examine the costs of land associated with improvement which would require additional right of way or dedication of public lands.
- 2) This report assumes that the character development will remain consistent with the current development trends in type and size of development as currently exhibited by recent developments within the study area.
- 3) Engineering estimates are based on current date pricing and subject to change.



## APPENDIX A

**TIMBER LAKE DRIVE - SANITARY SEWER - LINE 1A**

|   | <b>Quantity</b> | <b>Unit</b> | <b>Unit Cost</b> | <b>Total</b> |
|---|-----------------|-------------|------------------|--------------|
| <b>Timberlake Drive - Sanitary Sewer - 310 lf</b> |                 |             |                  |              |
| Mobilization                                      | 1               | LS          | \$4,000.00       | \$4,000.00   |
| Earthwork - Haul off                              | 115             | CYD         | \$25.00          | \$2,875.00   |
| Erosion and Sediment Control                      | 1               | LS          | \$2,000.00       | \$2,000.00   |
| Sanitary sewer                                    | 310             | LF          | \$30.00          | \$9,300.00   |
| Sanitary sewer - Manholes                         | 2               | EA          | \$3,000.00       | \$6,000.00   |
| Bedding and backfill                              | 150             | TNS         | \$40.00          | \$6,000.00   |
| Testing / Inspection / Video                      | 1               | LS          | \$1,200.00       | \$1,200.00   |
| Traffic Control                                   | 1               | LS          | \$2,000.00       | \$2,000.00   |
| Surveying / Engineering                           | 1               | LS          | \$5,000.00       | \$5,000.00   |
| Sub-total   |                 |             |                  | \$38,375.00  |
| Contingency (25%)                                 |                 |             |                  | \$9,593.75   |

|                                     |                    |
|-------------------------------------|--------------------|
| <b>TOTAL Sanitary Sewer Line 1A</b> | <b>\$47,968.75</b> |
|-------------------------------------|--------------------|

**Additional items not included above:**

Right of way acquisition costs.

Rock Excavation

This is preliminary estimate ONLY. Final costs will be determined upon completed engineering plans.

**TIMBER LAKE DRIVE - SANITARY SEWER - LINE 1B**

|   | <b>Quantity</b> | <b>Unit</b> | <b>Unit Cost</b> | <b>Total</b> |
|---|-----------------|-------------|------------------|--------------|
| <b>Timberlake Drive - Sanitary Sewer - 640 lf</b> |                 |             |                  |              |
| Mobilization                                      | 1               | LS          | \$4,000.00       | \$4,000.00   |
| Earthwork - Haul off                              | 250             | CYD         | \$25.00          | \$6,250.00   |
| Erosion and Sediment Control                      | 1               | LS          | \$2,000.00       | \$2,000.00   |
| Sanitary sewer                                    | 640             | LF          | \$30.00          | \$19,200.00  |
| Sanitary sewer - Manholes                         | 3               | EA          | \$3,000.00       | \$9,000.00   |
| Bedding and backfill                              | 425             | TNS         | \$30.00          | \$12,750.00  |
| Testing / Inspections / Video                     | 1               | LS          | \$2,000.00       | \$2,000.00   |
| Traffic Control                                   | 1               | LS          | \$2,000.00       | \$2,000.00   |
| Surveying / Engineering                           | 1               | LS          | \$10,000.00      | \$10,000.00  |
| Sub-total   |                 |             |                  | \$67,200.00  |
| Contingency (25%)                                 |                 |             |                  | \$16,800.00  |

|                                     |                    |
|-------------------------------------|--------------------|
| <b>TOTAL Sanitary Sewer Line 1B</b> | <b>\$84,000.00</b> |
|-------------------------------------|--------------------|

**Additional items not included above:**

Right of way acquisition costs.

Rock Excavation

This is preliminary estimate ONLY. Final costs will be determined upon completed engineering plans.

**PINE TREE DRIVE - SANITARY SEWER - LINE 2**

**Pinetree Dr. Drive - Sanitary Sewer - 1325 lf**

Mobilization  
 Clear and Grub  
 Earthwork / Haul off  
 Erosion and Sediment Control  
 Sanitary sewer  
  
 Sanitary sewer - Manholes  
 Bedding and backfill  
 Asphalt paving  
 Testing / Inspections / Video  
 Traffic Control  
 Surveying / Engineering

| Quantity | Unit | Unit Cost   | Total       |
|----------|------|-------------|-------------|
| 1        | LS   | \$4,000.00  | \$4,000.00  |
| 0.5      | AC   | \$6,000.00  | \$3,000.00  |
| 490      | CYD  | \$25.00     | \$12,250.00 |
| 1        | LS   | \$2,000.00  | \$2,000.00  |
| 1325     | LF   | \$30.00     | \$39,750.00 |
| 7        | EA   | \$3,000.00  | \$21,000.00 |
| 860      | TNS  | \$30.00     | \$25,800.00 |
| 322      | SYD  | \$35.00     | \$11,270.00 |
| 1        | LS   | \$2,500.00  | \$2,500.00  |
| 1        | LS   | \$2,000.00  | \$2,000.00  |
| 1        | LS   | \$10,000.00 | \$10,000.00 |

Sub-total \$133,570.00  
 Contingency (25%) \$33,392.50

|                                    |                     |
|------------------------------------|---------------------|
| <b>TOTAL Sanitary Sewer Line 2</b> | <b>\$166,962.50</b> |
|------------------------------------|---------------------|

**Additional items not included above:**

Right of way acquisition costs.

Rock Excavation

This is preliminary estimate ONLY. Final costs will be determined upon completed engineering plans.

**PINE TREE CIRCLE - SANITARY SEWER - LINE 3**

**Pinetree Cr. - Sanitary Sewer - 1160 lf**

Mobilization  
 Earthwork / Haul off  
 Erosion and Sediment Control  
 Sanitary sewer  
 Sanitary sewer - Manholes  
 Bedding and backfill  
 Asphalt paving  
 Testing / Inspections / Video  
 Traffic Control  
 Surveying / Engineering

| Quantity | Unit | Unit Cost   | Total       |
|----------|------|-------------|-------------|
| 1        | LS   | \$4,000.00  | \$4,000.00  |
| 450      | CYD  | \$25.00     | \$11,250.00 |
| 1        | LS   | \$2,000.00  | \$2,000.00  |
| 1160     | LF   | \$30.00     | \$34,800.00 |
| 4        | EA   | \$3,000.00  | \$12,000.00 |
| 750      | TNS  | \$30.00     | \$22,500.00 |
| 515      | SYD  | \$35.00     | \$18,025.00 |
| 1        | LS   | \$2,500.00  | \$2,500.00  |
| 1        | LS   | \$2,000.00  | \$2,000.00  |
| 1        | LS   | \$10,000.00 | \$10,000.00 |

Sub-total \$119,075.00  
 Contingency (25%) \$29,768.75

|                                    |                     |
|------------------------------------|---------------------|
| <b>TOTAL Sanitary Sewer Line 3</b> | <b>\$148,843.75</b> |
|------------------------------------|---------------------|

**Additional items not included above:**

Right of Way acquisition costs.

Rock Excavation

This is preliminary estimate ONLY. Final costs will be determined upon completed engineering plans.

**TIMBER LAKE DRIVE - DOMESTIC WATER - LINE 1**

**Timberlake Drive to Blue Lake Dr - Domestic Water - 425 lf**

Mobilization

Clear and Grub

Earthwork / Trenching / Grading

Erosion and Sediment Control

Domestic water

Fire Hydrants

Test / Chlorinate / Disinfect

Surveying / Engineering

Surveying / Engineering

| Quantity | Unit | Unit Cost  | Total       |
|----------|------|------------|-------------|
| 1        | LS   | \$2,000.00 | \$2,000.00  |
| 0.5      | AC   | \$6,000.00 | \$3,000.00  |
| 125      | CYD  | \$10.00    | \$1,250.00  |
| 1        | LS   | \$2,000.00 | \$2,000.00  |
| 425      | LF   | \$30.00    | \$12,750.00 |
| 2        | EA   | \$3,000.00 | \$6,000.00  |
| 1        | LS   | \$1,000.00 | \$1,000.00  |
| 1        | LS   | \$2,000.00 | \$2,000.00  |
| 1        | LS   | \$5,000.00 | \$5,000.00  |

Sub-total

\$35,000.00

Contingency (25%)

\$8,750.00

|                                    |                    |
|------------------------------------|--------------------|
| <b>TOTAL Domestic Water Line 1</b> | <b>\$43,750.00</b> |
|------------------------------------|--------------------|

**Additional items not included above:**

Right of way acquisition costs.

Rock Excavation

This is preliminary estimate ONLY. Final costs will be determined upon completed engineering plans.

**PINE TREE DRIVE - DOMESTIC WATER - LINE 2**

|   | <b>Quantity</b> | <b>Unit</b> | <b>Unit Cost</b> | <b>Total</b> |
|---|-----------------|-------------|------------------|--------------|
| <b>Pine Tree Dr - Domestic Water - 875 lf</b> |                 |             |                  |              |
| Mobilization                                  | 1               | LS          | \$4,000.00       | \$4,000.00   |
| Clear and Grub                                | 0.5             | AC          | \$6,000.00       | \$3,000.00   |
| Earthwork / Trenching / Grading               | 250             | CYD         | \$10.00          | \$2,500.00   |
| Erosion and Sediment Control                  | 1               | LS          | \$2,000.00       | \$2,000.00   |
| Domestic water                                | 875             | LF          | \$30.00          | \$26,250.00  |
| Fire Hydrants                                 | 2               | EA          | \$3,000.00       | \$6,000.00   |
| Test / Chlorinate / Disinfect                 | 1               | LS          | \$2,000.00       | \$2,000.00   |
| Traffic Control                               | 1               | LS          | \$2,000.00       | \$2,000.00   |
| Surveying / Engineering                       | 1               | LS          | \$5,000.00       | \$5,000.00   |
| Sub-total                                     |                 |             |                  | \$52,750.00  |
| Contingency (25%)                             |                 |             |                  | \$13,187.50  |

|                                    |                    |
|------------------------------------|--------------------|
| <b>TOTAL Domestic Water Line 2</b> | <b>\$65,937.50</b> |
|------------------------------------|--------------------|

**Additional items not included above:**

Right of way acquisition costs.

Rock Excavation

This is preliminary estimate ONLY. Final costs will be determined upon completed engineering plans.

**TIMBERLAKE DRIVE EXTENSION - SECTION 1**

|   | <b>Quantity</b> | <b>Unit</b> | <b>Unit Cost</b> | <b>Total</b> |
|---|-----------------|-------------|------------------|--------------|
| <b>Timberlake Drive Improvements - 300 lf</b> |                 |             |                  |              |
| Mobilization                                  | 1               | LS          | \$5,000.00       | \$5,000.00   |
| Clear and Grub                                | 1               | AC          | \$6,000.00       | \$6,000.00   |
| Earthwork                                     | 800             | CYD         | \$25.00          | \$20,000.00  |
| Erosion and Sediment Control                  | 1               | LS          | \$4,000.00       | \$4,000.00   |
| Asphalt Paving                                | 275             | SYD         | \$35.00          | \$9,625.00   |
| 2" Asphalt Overlay                            | 60              | TNS         | \$125.00         | \$7,500.00   |
| Striping and Signage                          | 1               | LS          | \$3,000.00       | \$3,000.00   |
| Storm Drainage                                | 1               | LS          | \$5,000.00       | \$5,000.00   |
| Surveying / Engineering                       | 1               | LS          | \$5,000.00       | \$5,000.00   |
| Sub-total                                     |                 |             |                  | \$65,125.00  |
| Contingency (25%)                             |                 |             |                  | \$16,281.25  |

|  |                    |
|--|--------------------|
| <b>TOTAL Drive Extension - Section 1</b> | <b>\$81,406.25</b> |
|--|--------------------|

**Additional items not included above:**

Right of way acquisition costs.

Rock Excavation

This is preliminary estimate ONLY. Final costs will be determined upon completed engineering plans.

**TIMBERLAKE DRIVE EXTENSION - SECTION 2**

|   | Quantity | Unit | Unit Cost   | Total        |
|---|----------|------|-------------|--------------|
| <b>Timberlake Drive Improvements - 625 lf</b> |          |      |             |              |
| Mobilization                                  | 1        | LS   | \$5,000.00  | \$5,000.00   |
| Clear and Grub                                | 1        | AC   | \$6,000.00  | \$6,000.00   |
| Earthwork                                     | 1700     | CYD  | \$25.00     | \$42,500.00  |
| Erosion and Sediment Control                  | 1        | LS   | \$6,000.00  | \$6,000.00   |
| Asphalt Paving                                | 575      | SYD  | \$35.00     | \$20,125.00  |
| 2" Asphalt Overlay                            | 120      | TNS  | \$125.00    | \$15,000.00  |
| Striping and Signage                          | 1        | LS   | \$3,000.00  | \$3,000.00   |
| Storm Drainage                                | 1        | LS   | \$15,000.00 | \$15,000.00  |
| Surveying / Engineering                       | 1        | LS   | \$15,000.00 | \$15,000.00  |
| Sub-total                                     |          |      |             | \$127,625.00 |
| Contingency (25%)                             |          |      |             | \$31,906.25  |

|  |                     |
|--|---------------------|
| <b>TOTAL Drive Extension - Section 2</b> | <b>\$159,531.25</b> |
|--|---------------------|

**Additional items not included above:**

Right of way acquisition costs.

Rock Excavation

This is preliminary estimate ONLY. Final costs will be determined upon completed engineering plans.

**TIMBERLAKE DRIVE CONNECTION TO BLUE LAKE - SECTION 3**

|   | <b>Quantity</b> | <b>Unit</b> | <b>Unit Cost</b> | <b>Total</b> |
|---|-----------------|-------------|------------------|--------------|
| <b>Timberlake Drive Connection - 375 lf</b> |                 |             |                  |              |
| Mobilization                                | 1               | LS          | \$10,000.00      | \$10,000.00  |
| Clear and Grub                              | 1               | AC          | \$6,000.00       | \$6,000.00   |
| Earthwork                                   | 1000            | CYD         | \$25.00          | \$25,000.00  |
| Erosion and Sediment Control                | 1               | LS          | \$10,000.00      | \$10,000.00  |
| Asphalt Paving                              | 1050            | LF          | \$35.00          | \$36,750.00  |
| Striping and signage                        | 1               | LS          | \$1,500.00       | \$1,500.00   |
| Storm Drainage                              | 1               | LS          | \$10,000.00      | \$10,000.00  |
| Surveying / Engineering                     | 1               | LS          | \$15,000.00      | \$15,000.00  |
| Sub-total                                   |                 |             |                  | \$114,250.00 |
| Contingency (25%)                           |                 |             |                  | \$28,562.50  |

|   |                     |
|---|---------------------|
| <b>TOTAL Drive Connection Section 3</b> | <b>\$142,812.50</b> |
|---|---------------------|

**Additional items not included above:**

Right of way acquisition costs.

Rock Excavation

This is preliminary estimate ONLY. Final costs will be determined upon completed engineering plans.

## BLUE LAKE DRIVE ROUNDABOUT - SECTION 4

|   | Quantity | Unit | Unit Cost   | Total        |
|---|----------|------|-------------|--------------|
| <b>Bluelake Drive Roundabout - 640 lf</b> |          |      |             |              |
| Mobilization                              | 1        | LS   | \$15,000.00 | \$15,000.00  |
| Clear and Grub                            | 1        | AC   | \$6,000.00  | \$6,000.00   |
| Earthwork                                 | 2000     | CYD  | \$25.00     | \$50,000.00  |
| Erosion and Sediment Control              | 1        | LS   | \$15,000.00 | \$15,000.00  |
| Asphalt Paving                            | 2100     | SYD  | \$35.00     | \$73,500.00  |
| Striping and signage                      | 1        | LS   | \$3,000.00  | \$3,000.00   |
| Storm Drainage                            | 1        | LS   | \$10,000.00 | \$10,000.00  |
| Surveying / Engineering                   | 1        | LS   | \$15,000.00 | \$15,000.00  |
| Sub-total                                 |          |      |             | \$187,500.00 |
| Contingency (25%)                         |          |      |             | \$46,875.00  |

|                                   |                     |
|-----------------------------------|---------------------|
| <b>TOTAL Roundabout Section 4</b> | <b>\$234,375.00</b> |
|-----------------------------------|---------------------|

**Additional items not included above:**

Right of way acquisition costs.

Rock Excavation

This is preliminary estimate ONLY. Final costs will be determined upon completed engineering plans.

**PUBLIC INFRASTRUCTURE - CAHABA RIVER ROAD - SIDEWALKS - PHASE I**

|   | <b>Quantity</b> | <b>Unit</b> | <b>Unit Cost</b> | <b>Total</b> |
|---|-----------------|-------------|------------------|--------------|
| <b>Cahaba River Road - Sidewalks - 350 lf</b> |                 |             |                  |              |
| Mobilization                                  | 1               | LS          | \$5,000.00       | \$5,000.00   |
| Clear and Grub                                | 0.5             | AC          | \$6,000.00       | \$3,000.00   |
| Grading                                       | 150             | CYD         | \$20.00          | \$3,000.00   |
| Erosion and Sediment Control                  | 1               | LS          | \$2,500.00       | \$2,500.00   |
| Sidewalks                                     | 1750            | SF          | \$5.00           | \$8,750.00   |
| Handicapped ramps                             | 2               | EA          | \$2,000.00       | \$4,000.00   |
| Signage / Striping                            | 1               | LS          | \$1,500.00       | \$1,500.00   |
| Ped Crossing signs                            | 1               | LS          | \$25,000.00      | \$25,000.00  |
| Storm Drainage                                | 1               | LS          | \$7,500.00       | \$7,500.00   |
| Traffic Control                               | 1               | LS          | \$2,000.00       | \$2,000.00   |
| Surveying / Engineering                       | 1               | LS          | \$15,000.00      | \$15,000.00  |
| Sub-total                                     |                 |             |                  | \$77,250.00  |
| Contingency (25%)                             |                 |             |                  | \$19,312.50  |

|  |                    |
|--|--------------------|
| <b>TOTAL Cahaba River Road Sidewalks - PHASE I</b> | <b>\$96,562.50</b> |
|--|--------------------|

**Additional items not included above:**

Right of way acquisition costs.

Rock Excavation

This is preliminary estimate ONLY. Final costs will be determined upon completed engineering plans.

**PUBLIC INFRASTRUCTURE - CAHABA RIVER ROAD - SIDEWALKS - PHASE II**

|  | Quantity | Unit | Unit Cost   | Total        |
|--|----------|------|-------------|--------------|
| <b>Cahaba River Road - Sidewalks - 2050 lf</b> |          |      |             |              |
| Mobilization                                   | 1        | LS   | \$5,000.00  | \$5,000.00   |
| Clear and Grub                                 | 1        | AC   | \$6,000.00  | \$6,000.00   |
| Grading  | 500      | CYD  | \$20.00     | \$10,000.00  |
| Erosion and Sediment Control                   | 1        | LS   | \$4,000.00  | \$4,000.00   |
| Sidewalks                                      | 10250    | SF   | \$5.00      | \$51,250.00  |
| Handicapped ramps                              | 6        | EA   | \$2,000.00  | \$12,000.00  |
| Signage / Striping                             | 1        | LS   | \$1,500.00  | \$1,500.00   |
| Traffic Control                                | 1        | LS   | \$2,000.00  | \$2,000.00   |
| Storm Drainage                                 | 1        | LS   | \$15,000.00 | \$15,000.00  |
| Surveying / Engineering                        | 1        | LS   | \$15,000.00 | \$15,000.00  |
| Sub-total                                      |          |      |             | \$121,750.00 |
| Contingency (25%)                              |          |      |             | \$30,437.50  |

|   |                     |
|---|---------------------|
| <b>TOTAL Cahaba River Road Sidewalks - PHASE II</b> | <b>\$152,187.50</b> |
|---|---------------------|

**Additional items not included above:**

Right of way acquisition costs.

Rock Excavation

This is preliminary estimate ONLY. Final costs will be determined upon completed engineering plans.

**PUBLIC INFRASTRUCTURE - MASTER STORM POND 1**

**Master Stormwater Detention Pond 1**

Mobilization  
 Clear and Grub  
 Grading / excavation / haul off  
 Erosion and Sediment Control  
 Storm outlet control structure  
 Storm pipe  
 Storm structures - Headwalls  
 Cut / patch and overlay Cahaba River Rd.  
 Chain Link Fence and Gates  
 Concrete Spillway  
 Traffic Control  
 Surveying / Engineering

| Quantity | Unit | Unit Cost   | Total       |
|----------|------|-------------|-------------|
| 1        | LS   | \$5,000.00  | \$5,000.00  |
| 1        | AC   | \$6,000.00  | \$6,000.00  |
| 1500     | CYD  | \$20.00     | \$30,000.00 |
| 1        | LS   | \$10,000.00 | \$10,000.00 |
| 1        | LS   | \$7,500.00  | \$7,500.00  |
| 265      | LF   | \$95.00     | \$25,175.00 |
| 4        | EA   | \$1,500.00  | \$6,000.00  |
| 1        | LS   | \$25,000.00 | \$25,000.00 |
| 350      | LF   | \$28.00     | \$9,800.00  |
| 1        | LS   | \$5,000.00  | \$5,000.00  |
| 1        | LS   | \$4,000.00  | \$4,000.00  |
| 1        | LS   | \$15,000.00 | \$15,000.00 |

Sub-total \$148,475.00  
 Contingency (25%) \$37,118.75

|                                |                     |
|--------------------------------|---------------------|
| <b>TOTAL Stormwater Pond 1</b> | <b>\$185,593.75</b> |
|--------------------------------|---------------------|

**Additional items not included above:**

Right of way acquisition Costs.

Rock Excavation

This is preliminary estimate ONLY. Final costs will be determined upon completed engineering plans.

**PUBLIC INFRASTRUCTURE - MASTER STORM POND 2**

|   | <b>Quantity</b> | <b>Unit</b> | <b>Unit Cost</b> | <b>Total</b> |
|---|-----------------|-------------|------------------|--------------|
| <b>Master Stormwater Detention Pond 1</b> |                 |             |                  |              |
| Mobilization                              | 1               | LS          | \$5,000.00       | \$5,000.00   |
| Clear and Grub                            | 1               | AC          | \$6,000.00       | \$6,000.00   |
| Grading / Excavation                      | 1500            | CYD         | \$20.00          | \$30,000.00  |
| Erosion and Sediment Control              | 1               | LS          | \$10,000.00      | \$10,000.00  |
| Storm outlet control structure            | 1               | LS          | \$7,500.00       | \$7,500.00   |
| Storm pipe                                | 75              | LF          | \$95.00          | \$7,125.00   |
| Strom structures - Headwalls              | 2               | EA          | \$1,500.00       | \$3,000.00   |
|   | 465             | 350 LF      | \$28.00          | \$9,800.00   |
| Concrete spillway                         | 1               | LS          | \$5,000.00       | \$5,000.00   |
| Surveying / Engineering                   | 1               | LS          | \$15,000.00      | \$15,000.00  |
| Sub-total                                 |                 |             |                  | \$98,425.00  |
| Contingency (25%)                         |                 |             |                  | \$24,606.25  |

|                                |                     |
|--------------------------------|---------------------|
| <b>TOTAL Stormwater Pond 2</b> | <b>\$123,031.25</b> |
|--------------------------------|---------------------|

**Additional items not included above:**

Right of way acquisition Costs.

Rock Excavation

This is preliminary estimate ONLY. Final costs will be determined upon completed engineering plans.