

GEORGIA DEPARTMENT OF NATURAL RESOURCES  
ENVIRONMENTAL PROTECTION DIVISION

REVISED MARCH 2011  
APPLICATION FOR A 25-FOOT VEGETATIVE BUFFER ENCROACHMENT  
ON DESIGNATED WARM WATERS OF THE STATE

(Required prior to conducting land disturbing activities within the State-mandated 25-foot buffer in accordance with the Erosion and Sedimentation Act of 1975, as amended, O.C.G.A. 12-7-6(b)(15))

Property Owner's Name (Person): Raquel Clement \_\_\_\_\_

Company Name (if applicable): Georgia State Financing and Investment Commission (GSFIC) \_\_\_\_\_

Current Mailing Address: 270 Washington St., Second Floor, Atlanta, GA 30334 \_\_\_\_\_

Telephone: (404) 798-2149 \_\_\_\_\_ E-Mail: Raquel.clement@gsfic.ga.gov \_\_\_\_\_

Contact Person's Name and Address: Raquel Clement \_\_\_\_\_

Current Mailing Address: 270 Washington St., Second Floor, Atlanta, GA 30334 \_\_\_\_\_

Contact Person's Telephone: 404) 798-2149 \_\_\_\_\_ E-Mail: Raquel.clement@gsfic.ga.gov

Contact Person's Company Name (if applicable): Georgia State Financing and Investment Commission (

Project Name: Modifications and Renovations to the Georgia Academy for the Blind \_\_\_\_\_

Total Project Disturbed Acreage: 1.28 Acres \_\_\_\_\_

Type of Project: Stream Infill \_\_\_\_\_

Buffer Variance Criteria (391-3-7.05(2)(a) – (k)): H \_\_\_\_\_

Location of Buffer Impacts:

City (applicable if the project is located within jurisdictional boundaries of the municipality): Macon \_\_\_\_\_

County: Bibb \_\_\_\_\_

GPS Coordinates: Latitude: 32°50'52.70" N \_\_\_\_\_ Longitude: 83°40'06.23" W \_\_\_\_\_

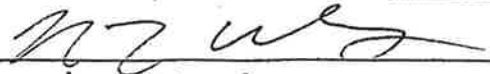
Watershed Name and 8-digit HUC (Hydrologic Unit Code): Upper Ocmulgee, 03070103 \_\_\_\_\_

Detailed Directions to Project (attach location map and USGS quad sheet): Take I-75 to Macon. Take exit 164. Turn onto GA-19N/Hardeman Ave. Continue to follow GA-19 N onto Vineville Ave. The Georgia Academy for the Blind will be on the right, 2895 Vineville Ave. \_\_\_\_\_

Name of State Water(s) Impacted: Bowman Branch of Ocmulgee River \_\_\_\_\_  
(if unnamed, indicate the first named State water that this tributary flows into)

Total Area of Buffer Disturbance (square feet): 18,425 sf \_\_\_\_\_

Total Length of Buffer Disturbance (feet): 368 ft \_\_\_\_\_

Signature:   
(ON OWNER'S BEHALF)

Date: 10/29/2012 \_\_\_\_\_

**(1) Site map that includes locations of all State waters, wetlands, floodplain boundaries and other natural features, as determined by a field survey.**

See Appendix, Figure 5.1 and Figure 5.2

**(2) A description of the shape, size, topography, slope, soils, vegetation and other physical characteristics of the property**

The 21.30 acre Georgia Academy for the Blind (G.A.B.) Campus is roughly rectangular in shape. At its widest points, the property is approximately 1,035 ft. wide (east to west) and 990 ft wide (north to south). The site is bound by Vineville Ave. to the south, and residential developments to the North, East, and West.

The existing G.A.B. campus is fairly heavily developed and consists of approximately twenty buildings, with an extensive network of drives, sidewalks, and parking lots. All major utilities have been previously installed as well. There is a stream, an intermittent headwater reach of Bowman Branch (Bowman Creek) flowing from the East to the Northwest in the northern half of the site. Bowman creek is segmented by two existing culverts. The project area is 1.35 acres of a vegetated swath centered on Bowman Creek. The project area is located south of Cottages 7 and 8, and north of the Health Services building and main drive through campus.

The topography of the site slopes towards Bowman Creek. The property is a fairly heavily developed site, consisting of a combination of mild (2% to 5%) slopes planned for the campus and steep slopes (30% to 50%). A swath of vegetated open space with widths varying from 80 ft. to 200 ft., centered on Bowman Creek, bisects the site on the northern portion of the site. This open space consists of a combination of medium (14%-30%) slopes to steep slopes (30%-100%).

Bowman Creek originates on the eastern property line of the campus and ranges in width from 3 ft. to 10 ft. The stream originates from two off-site storm pipes. A 30" RCP of an unknown length and a 20" clay pipe of an unknown length contribute to Bowman Creek on the eastern property line of the site. Two 15" RCP, two 10" PVC, and one 8" PVC pipes contribute to Bowman creek for the initial 205 linear feet of its origin. At 205 linear feet from its origin, the stream flows into a 48" CMP culvert of 78 linear feet that directs the stream below an existing sidewalk. This pipe is in deteriorating condition and is proposed to be removed as part of the variance request. This culvert daylights the stream at 283 linear feet from its origin into separate section of exposed stream. This section is approximately 169 linear feet and is contributed by two 8" PVC and two 6" PVC pipes. At 452 linear feet from its origin, the stream is directed in another 48" CMP culvert of 58 linear feet that directs the stream below an existing drive. This pipe is undersized and in deteriorating condition and is proposed to be removed as part of the variance request. This culvert daylights the stream at 510 linear feet from its origin. The stream then continues to flow an additional 425 linear feet before it is discharged off-site toward the Ocmulgee River. Overall, the stream travels approximately 935 linear feet through the northern portion of the campus.

Kendall & Associates completed a routine wetland and stream delineation of the project site on November 10, 2011. There are no jurisdictional wetlands on site. The data from this study also confirms the absence of wetland hydrology, hydrophytic vegetation and hyric soil adjacent to the stream channel.

The site contains two soil classifications. Soils in the majority of the site (95%) are classified as urban land (UD) due to existing development on site. However, the site also contains a small portion of land in the northwest corner of the site which contains soil classified as (VuD) Vacluse-Urban land complex, 8 to 15 percent slopes.

The project site is part of an urban landscape that has been developed for over 100 years and is presently maintained in manicured landscaping. The existing onsite vegetation consists of mostly turfgrass and ornamental plantings designed for the campus and an assortment of various overstory tree species including pine, sweetgum, and poplar. In most cases, a natural riparian buffer is absent along Bowman Creek. The stream buffer consists of turfgrass, pine trees, understory brush, and some invasive plant species.

The stream buffer areas make up approximately 5% of the total site area. The proposed buffer disturbance accounts for 41% of the stream buffer. The total area of buffer disturbance is 18,425 square feet and 368 linear feet.

**(3) Dated and numbered detailed site plan that shows the locations of all structures, impervious surfaces, and the boundaries of the area of soil disturbance, both inside and outside of the buffer.**

See Appendix, Figure 6

**(4) A description of the project, with details of the buffer disturbance, including estimated length of time for the disturbance and justification for why the disturbance is necessary.**

The Georgia Academy for the Blind is operated by the Georgia Department of Education as a day school and boarding school for blind students in Grades 1-12. Numerous other programs for the blind and multi-disabled students are also administered at the facility. The facility has been in operation at the current location since 1906.

For several years, the campus administration has expressed interest in piped a segment of Bowman Creek that crosses the property to property to provide open play space and to reduce the risk of injury to student on the campus. A second reason for piping the stream segment is to protect the foundation of the Health Services Building that has been damaged in the past due to settlement caused by stream erosion of the building pad fill slope.

The Applicant proposes to permanently pipe and fill two segments of the intermittent headwater reach of Bowman Creek where it enters the project site. The two stream segments to be piped are bounded both up- and down-stream by existing culverts. The culverts currently on the Academy campus are undersized to pass the 100-year storm and will be replaced. The culvert to be installed for this project is 72 in diameter. The proposed culvert is designed to pass the 100-year storm and to prevent flooding

upstream from backwater effects. The culvert will be embedded 20 percent into the existing stream bed to allow natural stream substrate to fill the bottom. The two stream segments that will be piped total 297 feet in length and 1,485 square feet (0.03 acre) in area. The project site will be planted with sod to expand the playing fields and eliminate the need for railings to keep students from falling into the creek channel.

A basic alternative analysis was performed prior to undertaking the design of the proposed stream piping project. Two of the project objectives can only be satisfied by the project as proposed: 1) improving safety for blind students on campus and 2) protecting the Health Services Building foundation from further erosion. One project objective – providing open play area for students – is best served by the project. The proposed play area is adjacent to the cottage where boarding students live and this proximity is very important because of the especial needs of blind students. There is no other suitable location on campus for the proposed playing areas.

**(5) A calculation of the total area and length of buffer disturbance.**

Approximately 368 linear feet of stream buffer and 297 linear feet of stream channel will be permanently disturbed. The construction within this area would result in 18,425 square feet (0.42 acre) of permanent stream disturbance.

**(6) Letter from the Local Issuing Authority (LIA), when applicable, stating that the LIA has visited the site and determined the presence of State waters that require a buffer, and has documented that a stream buffer variance is required as per the local erosion and sedimentation control ordinance.**

See Appendix, Figure 1

**(7) Erosion, Sedimentation and Pollution Control Plan, where applicable.**

See Appendix, Figure 7.1, Figure 7.2, and Figure 7.3.

**(8) Proposed mitigation, if any, for the buffer disturbance and a restoration and re-vegetation plan, if applicable.**

The project will mitigate buffer disturbances through the use of water quality practices (BMP), re-vegetation, and with the purchase of stream mitigation credits.

The water quality BMPs consist of overland flow and infiltration designed in accordance 3.2.5 of the Georgia Stormwater Management Manual. The infiltration trench is designed to treat an area equivalent to the disturbed buffer (0.51 AC). This post development BMP will remove 80% of the total suspended solids (TSS), 60% total phosphorus and total nitrogen, 90% metals, and 90% of the pathogens from the stormwater runoff before it enters the stream. The infiltration trench will provide 113 cubic feet of storage volume. Refer to Appendix, Figure 2.2 for the infiltration trench sizing calculations.

The area will be re-vegetated with grass, shrubs and trees. No additional impervious surfaces are to be constructed within the disturbed buffer.

A Nationwide Permit No. 39 (Section 404 permit) for impacts to the stream has been obtained from the U.S. Army Corps of Engineers. Calculations of required stream mitigation credits are presented in the Appendix on the standard USACE Worksheet#1. The proposed project requires 1,233 stream credits be purchased to mitigate the stream impact. Mitigation for the stream impacts at the Project Site will be provided by purchasing credits from the Legacy Farms Stream Mitigation Bank managed by The Wetlands Group. The primary service area for this bank is the Upper Ocmulgee River basin (HUC 03070103).

**(9) Any other reasonable information related to the project that EPD may deem necessary to effectively evaluate the variance request.**

See Appendix, Figure 3.

**(10) Applications must be on the most current forms provided by EPD.**

The application forms are the most current provided by EPD.

**(11) For projects within the buffer of or upstream and within ten linear miles of impaired stream segments on Georgia's "305(b)/303(d) List Documents (Final)," documentation that the project will have no adverse impacts relative to the pollutants of concern and if applicable, documentation that the project will be in compliance with the TMDL Implementation Plan(s).**

The project site is within ten linear miles of the impaired stream segment of the Ocmulgee River from Beaverdam Creek to Walnut Creek. However, according to the EPD's "List of Stream Reaches with TMDLs and TMDL Implementation Plans –June 2011", the Georgia EPD has delisted this impaired stream segment. Therefore, it is our understanding that this project is not within ten linear miles of an impaired stream segment.

**(12) Plan for stormwater control once site stabilization is achieved, where applicable.**

See Appendix, Figure 8.1 and Figure 8.2

**(13) For variance requests under DNR Rule 391-3-7.05(2)(h), a copy of the permit application and supporting documentation as submitted to the United States Army Corps of Engineers (USACE) under Section 404 of the federal Water Pollution Control Act Amendment of 1972, 33 U.S.C. Section 1344.**

See Appendix, Figure 4.1 and Figure 4.2

**(14) For variance requests under DNR Rule 391-3-7.05(2)(h), (i), (j), and (k), the application must include documentation that the project will mitigate buffer disturbances based on the EPD guidance document, *Stream Buffer Mitigation Guidance*, addressing hydrologic, water quality and aquatic/buffer habitat protection.**

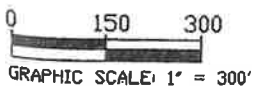
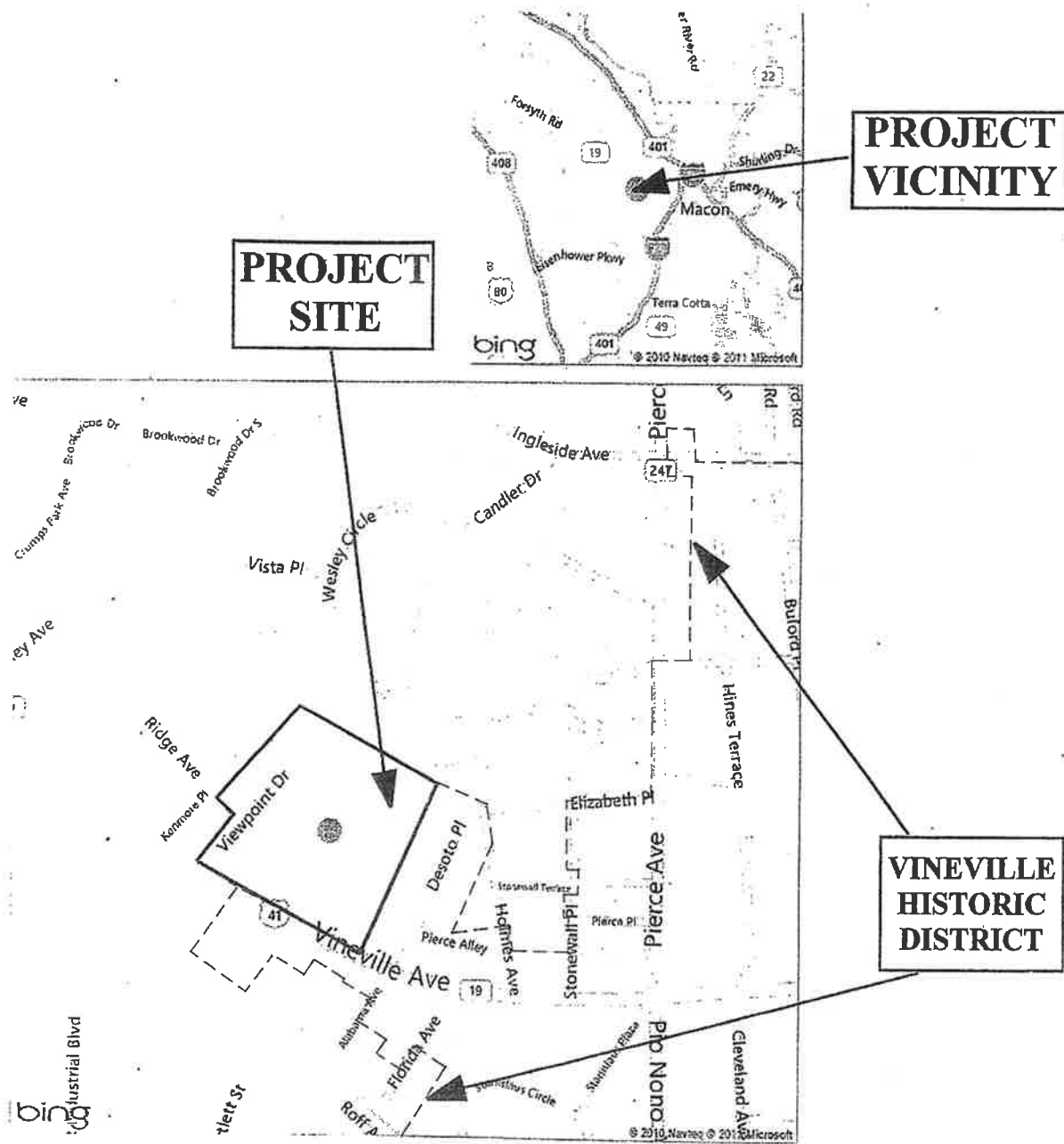
Buffer disturbances are mitigated based on *Stream Buffer Mitigation Guidance* for hydrologic, water quality and aquatic/buffer habitat protection. For hydrologic protection, mitigation is achieved through standards that conform to guidance established in Section 1.3 of the Georgia Stormwater Management Manual (Blue Book). According to Section 1.3.2.2 (Channel Protection), channel protection control is not required for post development discharges less than 2.0 CFS for the 1 year, 24 hour rainfall event. This project post development discharge from the buffer disturbance is 0.381 CFS (refer to Appendix, Figure 2.1), which is less than 2.0 CFS. Therefore, hydrologic protection is not required for this disturbance.

For water quality protection, the project will mitigate buffer disturbances through the use of overland flow and an infiltration trench designed in accordance 3.2.5 of the Georgia Stormwater Management Manual. The infiltration trench is designed to treat an area equivalent to the disturbed buffer (0.51 AC). This post development BMP will remove 80% of the total suspended solids (TSS), 60% total phosphorus and total nitrogen, 90% metals, and 90% of the pathogens from the stormwater runoff before it enters the stream. The infiltration trench will provide 113 cubic feet of storage volume. Refer to Appendix, Figure 2.2 for the infiltration trench sizing calculations.

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**(15) N/A**

**(16) N/A**



**FIGURE 1**  
**PROJECT VICINITY**  
**GEORGIA ACADEMY FOR THE BLIND**  
**MACON, GEORGIA**



**KENDALL & ASSOCIATES, INC.**

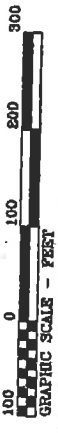
Soil and Ecological Consultants

2443 Powder Springs Road Marietta Georgia 30066 (Ph) 770.430.8974

Figure 4.2

**SURVEY FOR  
GEORGIA DEPARTMENT OF EDUCATION  
GEORGIA ACADEMY FOR THE BLIND**

LOCATED IN LAND LOTS 3, 4, 12, & 13, MACON RESERVE WEST OF THE OCMULGEE RIVER, BIBB COUNTY, CITY OF MACON, GEORGIA



**INTERMITTENT STREAM SEGMENTS TO BE PIPED**

**EXISTING CULVERT**

**EXISTING CULVERT**

**PERENNIAL REACH  
BOWMAN CREEK**

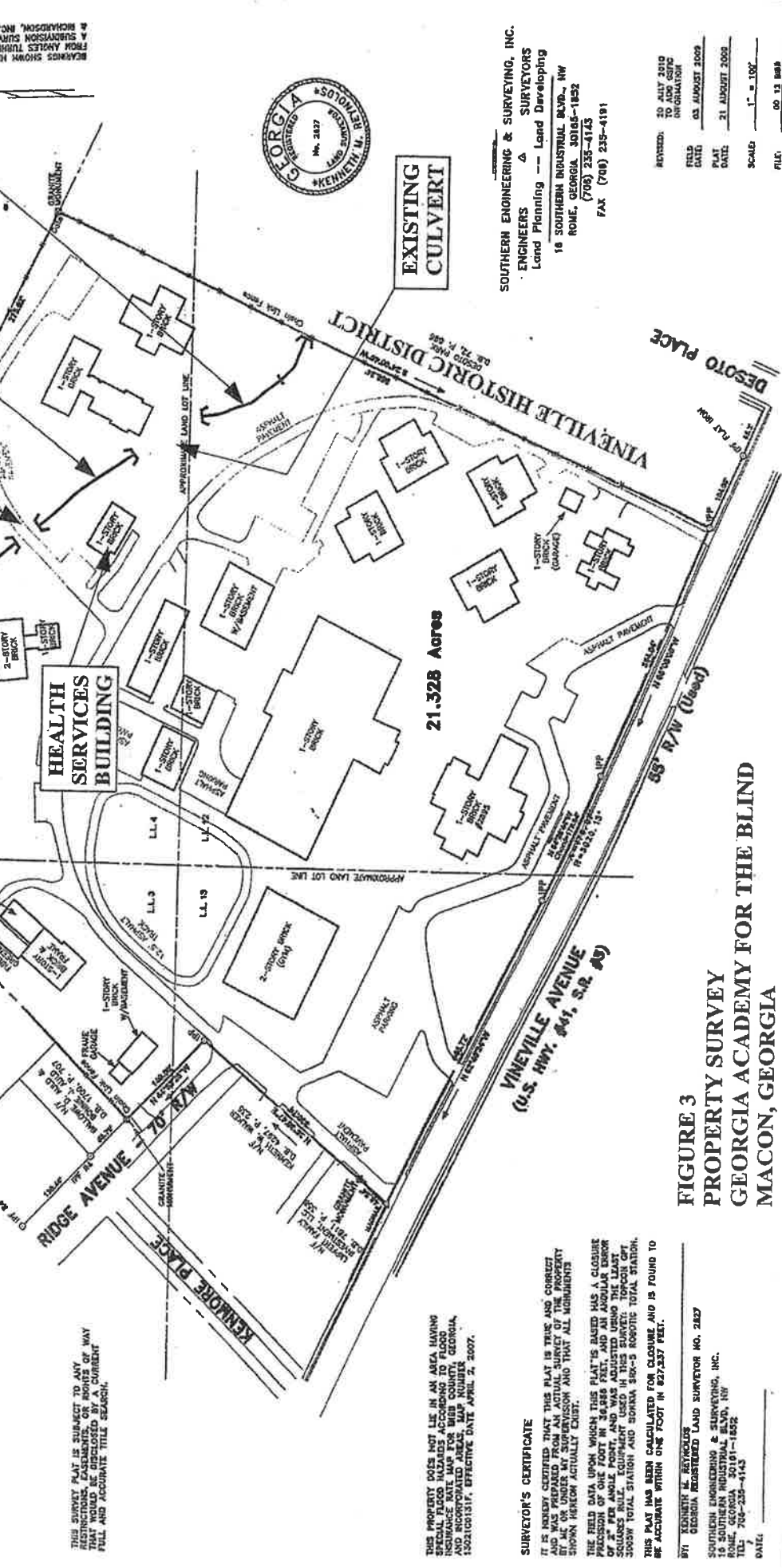
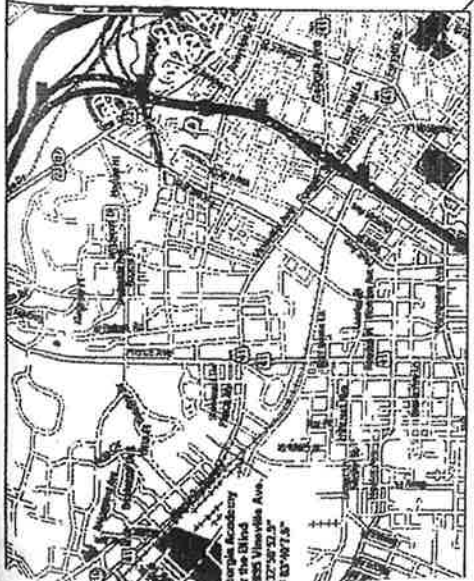
- NOTES:
1. 17' DEOTES FROM 8TH FOUND.
  2. 84' DEOTES BY IRON PIN PLACED W/CAP.
  3. 84' DEOTES BY...
  4. THIS BOUNDARY SURVEY IS GEORGIA STATE FINANCING AND INVESTMENT BOARD (SIFIB) PROJECT NUMBER 2005-13. GEORGIA ACADEMY FOR THE BLIND.

BEARINGS SHOWN HEREON HAVE BEEN CALCULATED FROM ANGLES TURNED AND ARE REFERENCED TO RICHARDSON, INC., DATED 07 AUGUST 1998



**SOUTHERN ENGINEERING & SURVEYING, INC.**  
ENGINEERS & SURVEYORS  
Land Planning -- Land Developing  
16 SOUTHERN INDUSTRIAL BLVD., NW  
ROME, GEORGIA 30165-1852  
(706) 235-4143  
FAX (706) 235-4191

REVISED:	20 JULY 2010
FIELD DATE:	03 AUGUST 2009
PLAN DATE:	21 AUGUST 2009
SCALE:	1" = 100'
FILE:	00 13 MBS



THIS PROPERTY DOES NOT LIE IN AN AREA HAVING INSURANCE RATE MAPS, ACCORDING TO FLOOD AND INCORPORATED AREAS MAP NUMBER 1502100131F, EFFECTIVE DATE APRIL 2, 2007.

**SURVEYOR'S CERTIFICATE**

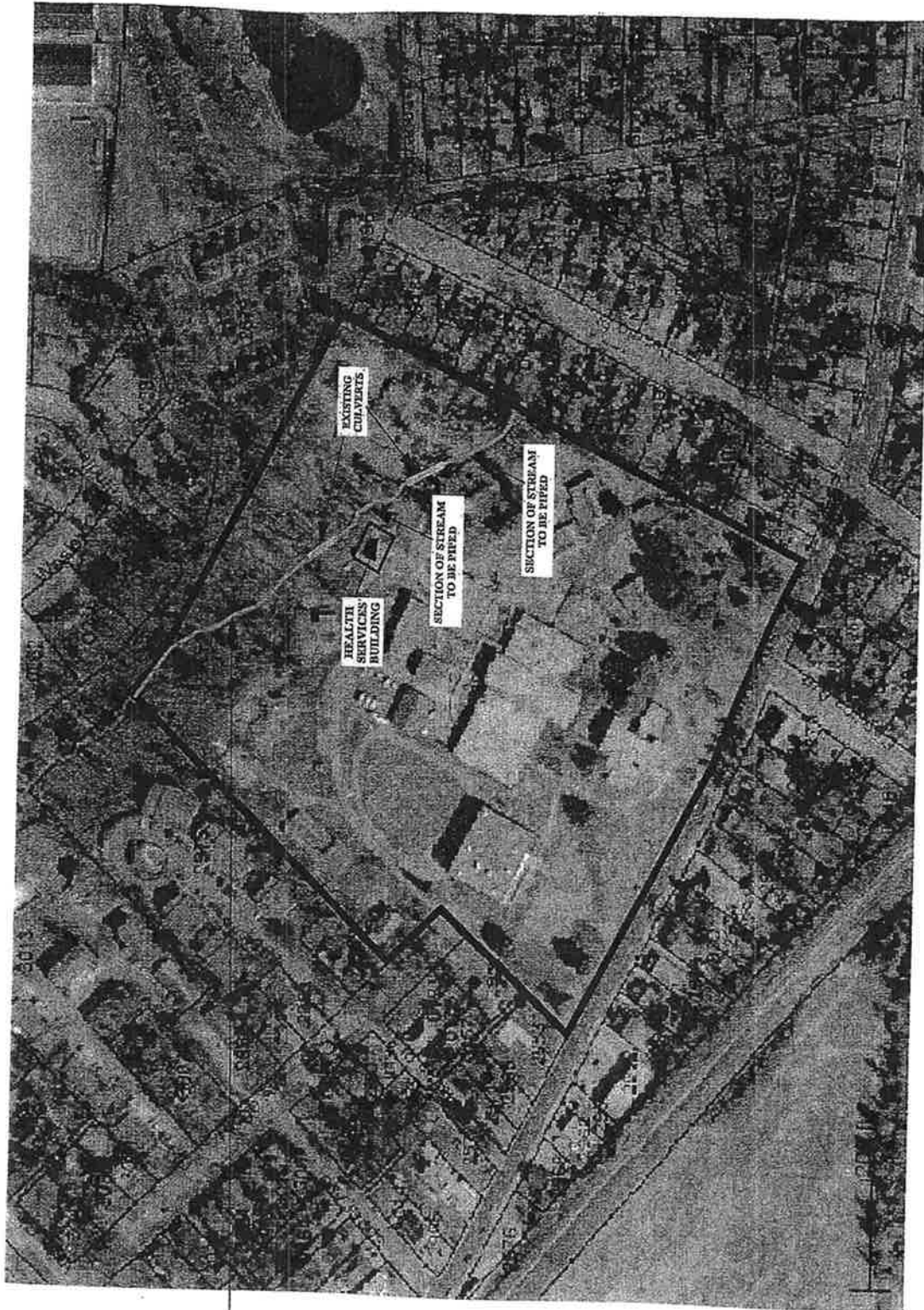
IT IS HEREBY CERTIFIED THAT THIS PLAN IS TRUE AND CORRECT BY ME OR UNDER MY SUPERVISION AND THAT ALL INSTRUMENTS SHOWN HEREON ACTUALLY EXIST.  
THE FIELD DATA UPON WHICH THIS PLAN IS BASED HAS A CLOSURE PROVISION OF ONE FOOT IN 34,884 FEET AND AN ADJUSTMENT OF 2" PER ANGLE POINT, AND WAS ADJUSTED USING THE LEAST SQUARES FULL EQUIPMENT USED IN THIS SURVEY: TOPCON OPT 5000 TOTAL STATION AND SOKKIA SR0-C5 ROBOTIC TOTAL STATION. THIS PLAN HAS BEEN CALCULATED FOR CLOSURE AND IS FOUND TO BE ACCURATE WITHIN ONE FOOT IN 827,337 FEET.

BY: **KENNETH W. REYNOLDS**  
GEORGIA REGISTERED LAND SURVEYOR NO. 2827  
SOUTHERN ENGINEERING & SURVEYING, INC.  
16 SOUTHERN INDUSTRIAL BLVD., NW  
ROME, GEORGIA 30165-1852  
TEL: 706-235-4143

DATE:

**FIGURE 3  
PROPERTY SURVEY  
GEORGIA ACADEMY FOR THE BLIND  
MACON, GEORGIA**





BOWMAN  
CREEK

0 150 300  
 GRAPHIC SCALE: 1" = 300'

**FIGURE 4**  
**AERIAL PHOTO OF PROJECT SITE**  
**GEORGIA ACADEMY FOR THE BLIND**  
**MACON, GEORGIA**

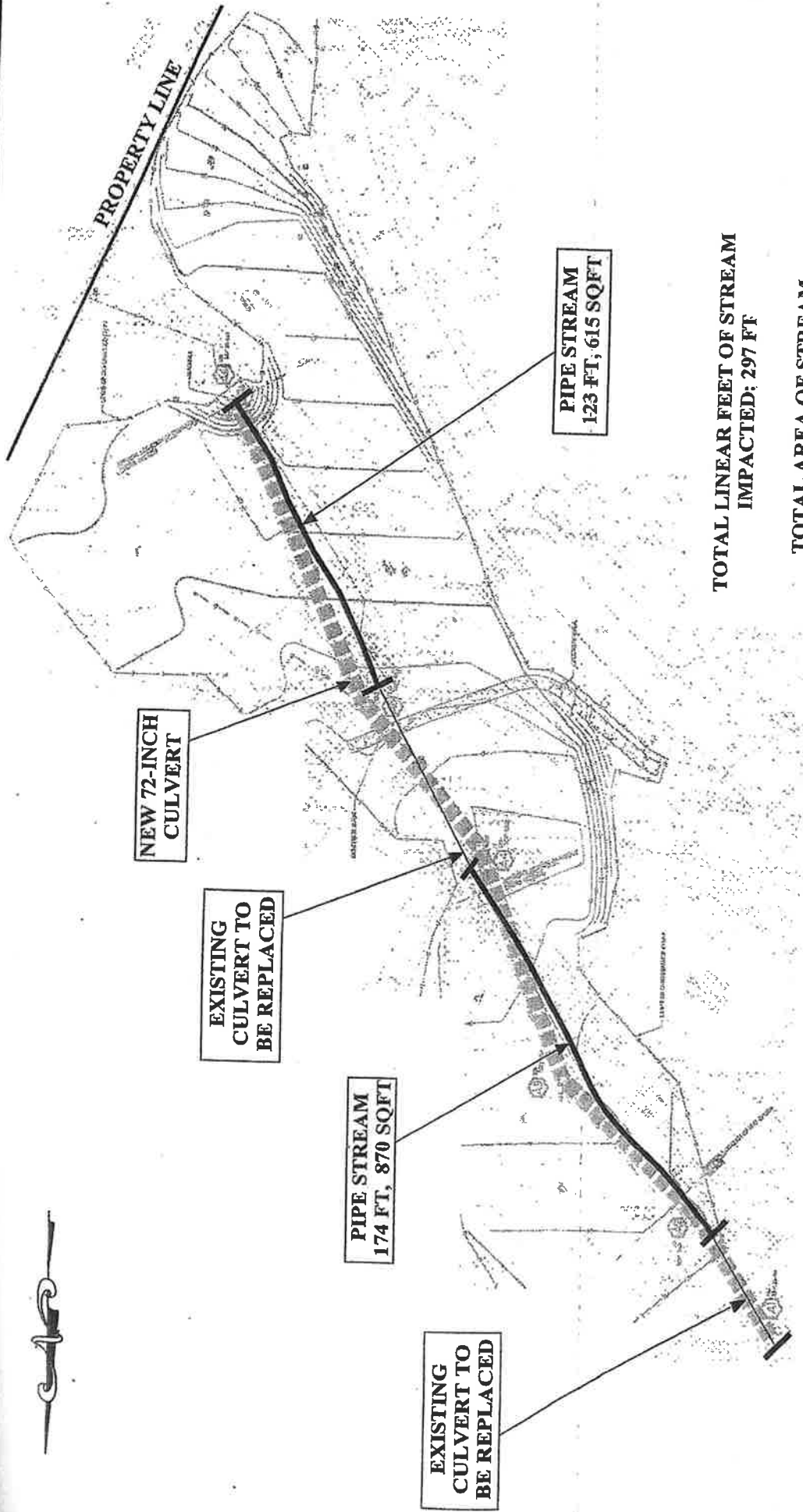


**KENDALL &  
 ASSOCIATES, INC.**

Soil and Ecological Consultants

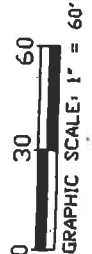
2443 Powder Springs Road Marietta, Georgia 30064, (Ph.) 770-439-8824

Figure 4.2



TOTAL LINEAR FEET OF STREAM IMPACTED: 297 FT

TOTAL AREA OF STREAM IMPACTED: 1485 SQFT



**FIGURE 6**  
**STREAM IMPACT PLAN**  
**GEORGIA ACADEMY FOR THE BLIND**  
**MACON, GEORGIA**

**KENDALL & ASSOCIATES, INC.**  
 Soil and Ecological Consultants  
 2443 Powder Springs Road Marietta, Georgia 30064, (Ph.) 770-439-8824

123  
170

SBE-22B  
Renovations and  
Modifications,  
Georgia Academy  
for the Blind  
2695 Vineville Avenue  
Macon, Georgia 31204

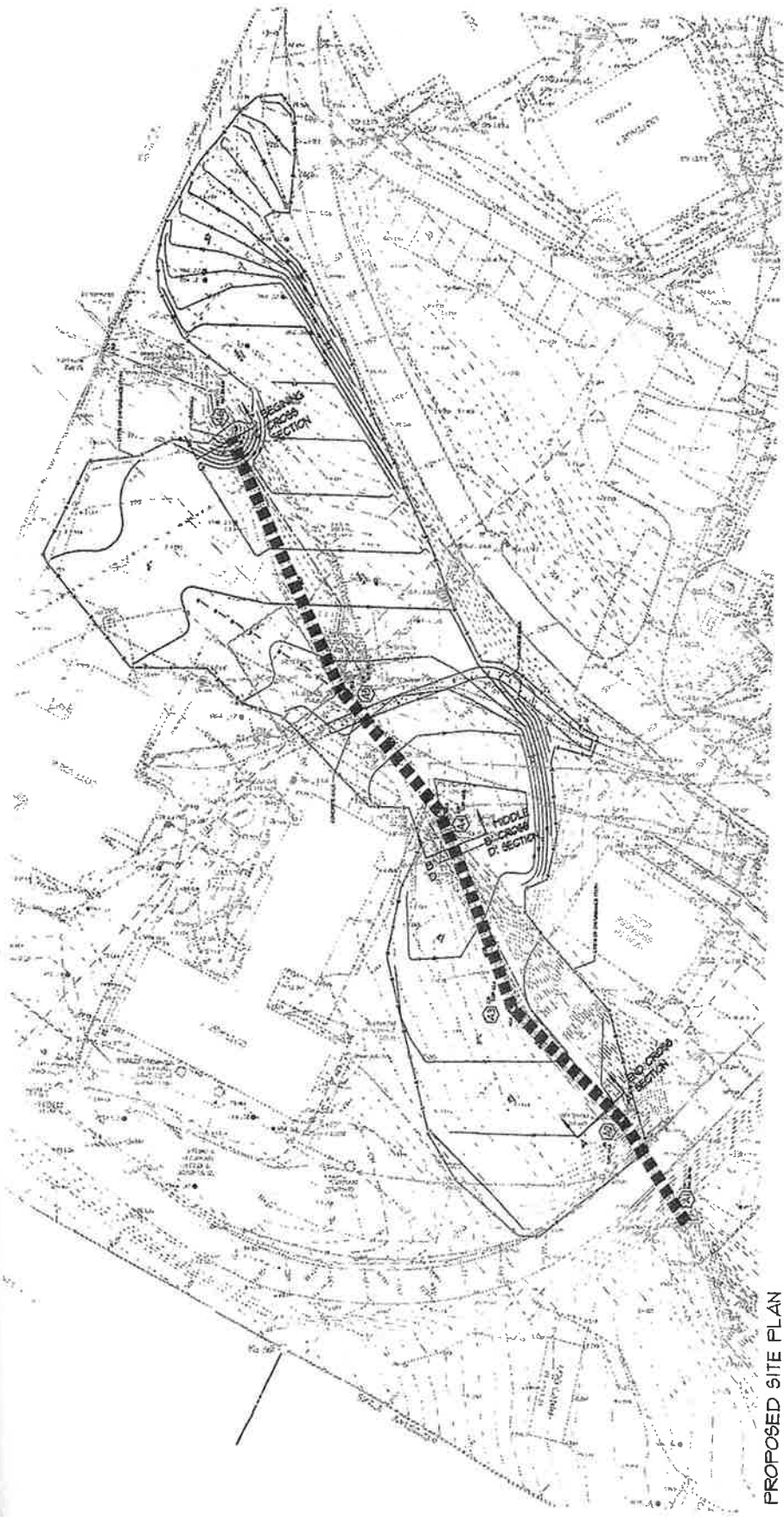
PROJECT NO.	SBE-22B
DATE	11/11/11
SCALE	AS SHOWN
DESIGNER	W. J. GARDNER
CHECKER	W. J. GARDNER
DATE	11/11/11

Gardner  
Spencer  
Smith &  
Tench &  
Jarbeau  
A Professional Corporation  
187 Peachtree St., NE  
Suite 1020  
Atlanta, Georgia 30303  
404.622.9125  
404.621.2118 (F)  
www.gstj.com

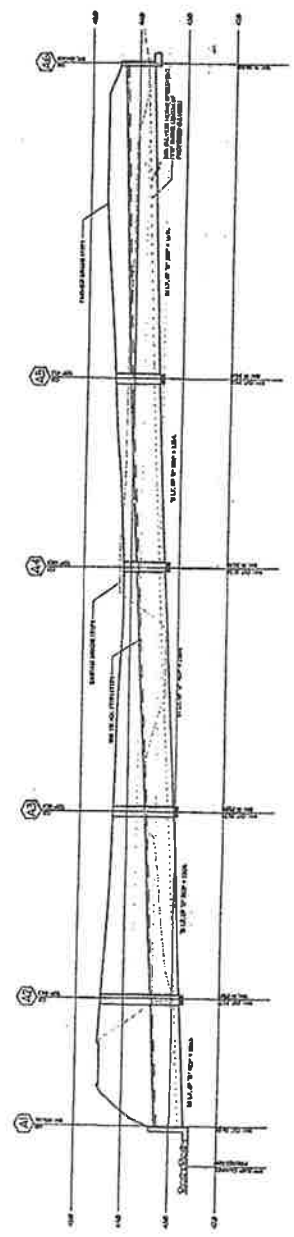
Figure 4

PROJECT NO.	SBE-22B
DATE	11/11/11
SCALE	AS SHOWN
DESIGNER	W. J. GARDNER
CHECKER	W. J. GARDNER
DATE	11/11/11

SD-01



PROPOSED SITE PLAN



PROPOSED STORM CULVERT  
PIPE PROFILE  
SCALE: H: 1" = 20'  
V: 1" = 10'

