



April 05, 2024

**Addendum No. 2  
BL037-24  
Hopkins Mill Subdivision Water Main Replacement**

*The following addition/changes modify the Bid No. BL037-24 "Hopkins Mill Subdivision Water Main Replacement" Contract Documents, dated March 2024, as first advertised on March 20, 2024.*

**I. Questions:**

**Q1. Please provide a plan holders list.**

A1. Please see attachment A1. Contractors can request updated plan holders list directly from AECOM, [Zahid.Bashir@AECOM.com](mailto:Zahid.Bashir@AECOM.com).

**Q2. Would Gwinnett County consider adding a line item for speed table/hump removal and replacement?**

A2. No, cost should be included in road resurfacing.

**Q3. Where mainline is the grass area shall all landscaping in kind such as trees and bushes be replaced or just the sod?**

A3. Areas disturbed by construction activities shall be landscaped in kind.

**Q4. Please provide Detail S1 as referred to G-103 / Note #49?**

A4. Please see attachment A2, Detail S1.

**Q5. Would Gwinnett County consider adding a line item for Meter Replacement to allocate cost for ( Water Notes ) G-103 / Note #6?**

A5. No, all costs associated with water meter replacement shall be included in applicable bid item.

**Q6. In the plans it is noted of soil borings completed. Please provide these as it is hard to find them in the documents provided?**

A6. Please see attachment A3, Report of SUE and Geotechnical Services.

**Q7. Please provide the pre-bid sign-in sheet.**

A7. Please see attachment A4.

**II. Attachments:**

- A1. Plan holders List
- A2. Detail S1
- A3. Report of SUE and Geotechnical Services
- A4. Pre-Bid Sign-In Sheet

Acknowledge receipt of this addendum on the firm information page of the request for proposal.  
Sincerely,

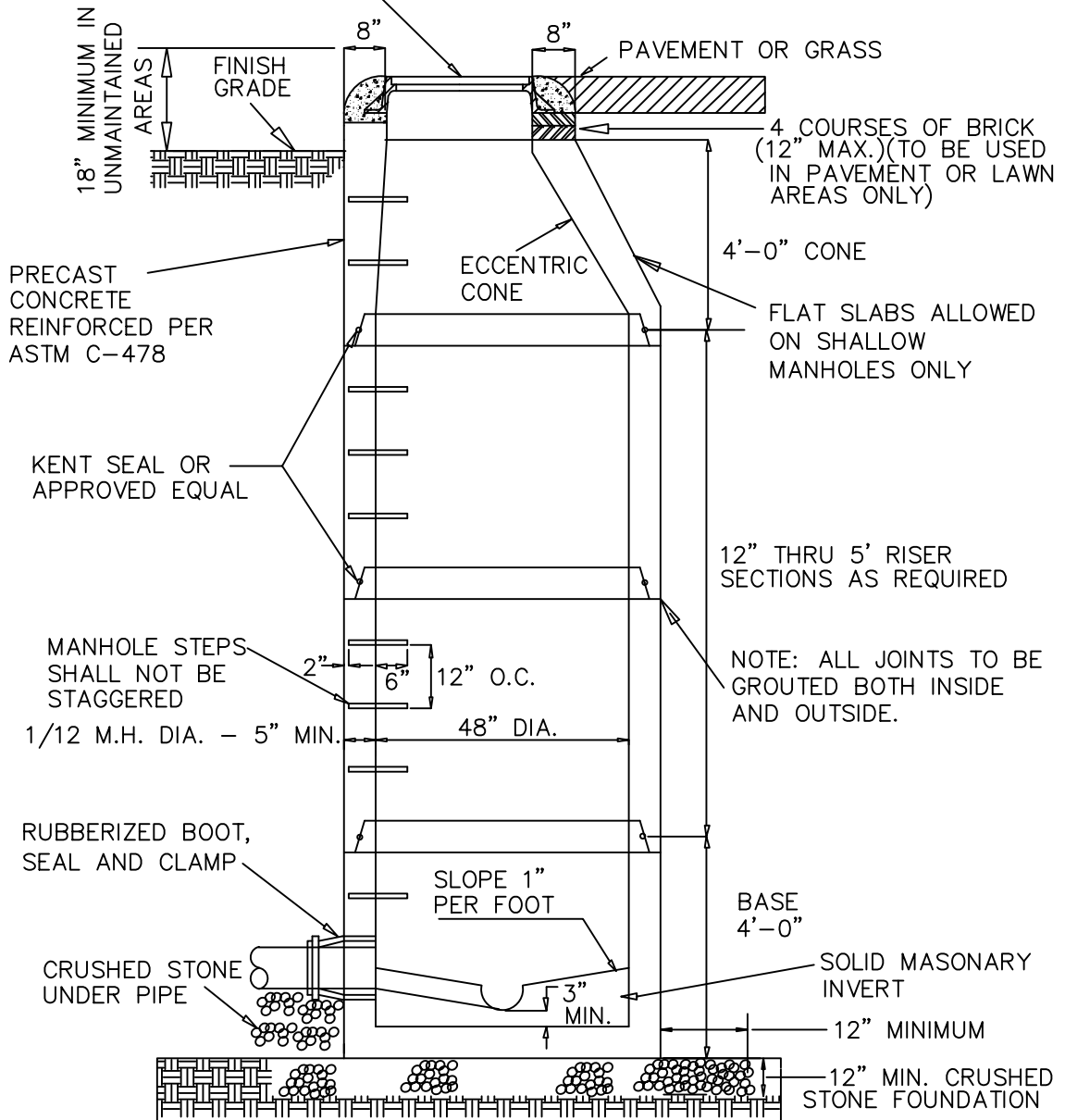
Brittany Bryant, CPPB  
Purchasing Associate III

HOPKIN MILLS - BL037-24 - GWINNETTE COUNTY - BID TENDER PACKAGE - PLAN TAKERS LIST AS OF APRIL 4, 2024

No.	Name	Contact	Email	Address	Telephone #	Plans Status
1	Site Engineering Inc	Tamara L Isbell	<a href="mailto:tamara@siteengineeringinc.com">tamara@siteengineeringinc.com</a>	7025 Best Friend Rd., Atlanta , GA 30340	770-263-7234 x 228	\$200 received and docs sent on 03/28/2024
2	D&H Construction	Angie Hackney	<a href="mailto:angie.hackney@outlook.com">angie.hackney@outlook.com</a>	1915 James Jackson Parkway, Atlanta GA, 30318	404-792-1941 Cell 770-480-2050	\$200 received and docs sent on 03/25/2024
3	Cleary Construction Inc.	Leigh Bryant	<a href="mailto:leighbryant@clearyconst.com">leighbryant@clearyconst.com</a>	<a href="#">Cleary Construction Inc.</a> <a href="#">2006 Edmonton Road,</a> <a href="#">Tompkinsville, KY</a> <a href="#">42167</a>	270-487-1784 270-819-7362	Paid \$200 and sent the bid package on 03/27/24
4	Civil Construction & Utilities LLC	Scott King	<a href="mailto:scott@cc-u.net">scott@cc-u.net</a> ; <a href="mailto:jason@cc-u.net">jason@cc-u.net</a>		770-377-1438	Paid \$200 and plans sent on 03/28/24
5	JDS Inc.	Melissa Montgomery	<a href="mailto:mmontgomery@jdspipe.com">mmontgomery@jdspipe.com</a>	272 Hurricane Shoals Rd. NE, Lawrenceville GA, 30046	678-244-5629	
6	The Dickerson Group, Inc	Michael Garveigh	<a href="mailto:michael.garveigh@dickersongroup.net">michael.garveigh@dickersongroup.net</a>		770-513-4558 Cell : 678-925-0780	Paid \$200 and plans sent on 04/02/2024
7	Summit Construction & Development	Ajay Naidu	<a href="mailto:scdestimator@summitcd.com">scdestimator@summitcd.com</a>	2108 Bentley Dr. Stone Mountain, GA, 30087	770-413-0093 Cell 470-427-5304	Paid \$200 and plans sent on 04/02/2024
8	GS Construction Inc.	Hillary Croft (Quinn)	<a href="mailto:hcroft@gsconstruction.net">hcroft@gsconstruction.net</a>	526 Lyle Cir, Lawrenceville, GA 30046	404-295-3770	Paid \$200 and plans sent on 04/03/2024
9	Construct Connect	Jamaica Bejagan	<a href="mailto:jamaica.bejagan@ConstructConnect.com">jamaica.bejagan@ConstructConnect.com</a>	3825 Edwards Road, Suite 700, Cincinnati, OH 45209	732-602-5078 x 75316	Paid \$200 and plans sent on 04/02/2024

DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
 REVISION: \_\_\_\_\_ REVISION: \_\_\_\_\_  
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 BY: \_\_\_\_\_ BY: \_\_\_\_\_  
 REVISION: \_\_\_\_\_ ORIGINAL ISSUE: 4-05-16

STANDARD C.I. FRAME & COVER



NOTES:

1. TABLES ARE TO BE GENTLY SLOPED AND TROWELED SMOOTH FROM M.H. WALL TO INVERT WALL AND CONSTRUCTED OF SOLID MASONRY.
2. BASES LARGER THAN 48" (INCH) MUST USE TRANSITION SLAB AND 48" (INCH) RISER SECTIONS.
3. CONES WITH CAST IN PLACE FRAMES ARE REQUIRED ON OUTFALL SEWERS IN UNMAINTAINED AREAS.
4. BOLT DOWN RING & COVER REQUIRED OUTSIDE OF PAVEMENT.
5. ALL MANHOLES RECEIVING A FORCE MAIN DISCHARGE SHALL BE POLYMER CONCRETE MANHOLES AS MANUFACTURED BY US COMPOSITE PIPE, INC. OR GCDWR APPROVED EQUAL.
6. USE OF T-BASE MANHOLES IS PROHIBITED.

GWINNETT COUNTY DEPARTMENT OF WATER RESOURCES

DESIGN BY: STD. COMMITTEE
DRAWN BY: DWR
CHECKED BY: PSB
APPROVED BY: ARS
SCALE: NONE

**STANDARD PRECAST MANHOLE  
(PIPE SIZES LESS THAN 36")**

DRAWING NO.
<b>S1</b>



Report of SUE and Geotechnical  
Services  
Hopkins Mill Water Main Replacement  
Hopkins Mill Road, Duluth, Georgia  
S&ME Project No. 22800360

PREPARED FOR:

**Gwinnett County Department of Water Resources**  
**684 Winder Highway**  
**Lawrenceville, Georgia 30045**

PREPARED BY:

**S&ME, Inc.**  
**4350 River Green Parkway, Suite 200**  
**Duluth, GA 30096**

**February 17, 2023**





February 17, 2023

Gwinnett County Department of Water Resources  
684 Winder Highway  
Lawrenceville, Georgia 30045

Attention: Mr. Manoj Bhimani

Reference: **Report of SUE and Geotechnical Services  
Hopkins Mill Water Main Replacement**  
Hopkins Mill Road, Duluth, Georgia  
S&ME Project No. 22800360

Dear Mr. Bhimani:

S&ME has completed the requested Quality Level A Subsurface Utility Engineering (SUE) and geotechnical exploration services for the referenced project. Our services were performed in general accordance with our *Proposal for Quality Level A SUE and Geotechnical Services* (S&ME Proposal No. 22800360), dated November 22, 2022. Our proposal was authorized via Gwinnett County Purchase Order Number 2000421650 dated December 8, 2022.

This report describes our understanding of the project and the subsurface utility and conditions encountered and presents our geotechnical recommendations for this portion of the planned water line replacement. We appreciate the opportunity to serve as the geotechnical consultant during this phase of the project. Please contact us if you have questions about this report or if we may be of further service.

Sincerely,

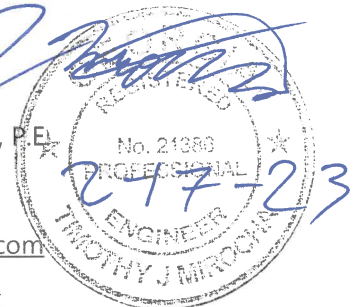
**S&ME, Inc.**

A handwritten signature in blue ink, appearing to read 'Justin Cox'.

Justin Cox  
Geotechnical Operations Manager  
jhcox@smeinc.com

A handwritten signature in blue ink, appearing to read 'Timothy J. Mirocha'.

Timothy J. Mirocha, P.E.  
Principal Engineer  
Ga Reg. No. 21386  
[tmirocha@smeinc.com](mailto:tmirocha@smeinc.com)





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## Appendix



## 1.0 Project Understanding

Our understanding of the project is based on the following:

- Hopkins Mill WMR 30% SUE A Scope, dated August 26<sup>th</sup>, 2022
- Hopkins Mill WMR SUE A Scope, dated October 24<sup>th</sup>, 2022
- Hopkins Mill WMR GeoTech Scope, dated October 25<sup>th</sup>, 2022
- Hopkins Mill WMR SUE A Scope, dated November 7<sup>th</sup>, 2022

Based on the provided information, we understand that a new 8-inch water main and associated water vaults will be installed along Hopkins Lake Drive, Creek Ford Drive and intersecting streets in Duluth, Georgia. The new water line will also cross Hopkins Mill Road at three locations. The approximate site location is depicted on the appended Site Location Plan (Figure No. 1).

The requested Quality Level A (QLA) SUE scope of work was for the completion of QLA SUE at five (5) total areas: three (3) areas (with 8 test locations) along Hopkins Mill Road, one (1) area (with 2 test locations) along Hopkins Lake Drive and one (1) area (with 4 test locations) along Creek Ford Drive. The scope included locating the existing water line and other utilities (including fiber optic, gas, electricity, telephone, and/or gas lines) at the fourteen (14) requested locations chosen by Gwinnett County Department of Water Resources (DWR).

The requested geotechnical scope of work included pavement coring and shallow subsurface profiling at three (3) locations: one (1) on Hopkins Lake Drive, one (1) on Creek Ford Trace, and one (1) on Hopkins Run Drive. The requested geotechnical scope also included two soil test borings in a fourth area. The soil test borings were requested on each side of Hopkins Mill Road (at the intersection with Creek Ford Trace) at the sending and receiving pit areas for the possible jack and bore crossing beneath Hopkins Mill Road.

## 2.0 Purpose

The purpose of this SUE and geotechnical exploration was to obtain subsurface data and assess the characteristics relative to the planned water line installation. This report provides the following:

- A summary of the project and provided information.
- A summary of current site conditions, topography.
- A summary of the site access conditions.
- A summary of the field exploration methods.
- A summary of the subsurface conditions revealed in the SUE excavations.
- A summary of the subsurface conditions encountered in the soil test borings and hand auger borings at each pavement core location.
- Tables with the identified utilities/depth information.
- Recommendations relating to jack and bore construction.
- Recommendations for pavement section thicknesses and design parameters.
- An Appendix with Site Location Plan, Test Location Plan, Test Hole Reports, photographs of exposed subsurface utilities, and soil boring logs.



## 3.0 Exploratory and Testing Procedures

### 3.1 Quality Level A SUE Vacuum Truck Rig Exploration

On January 2, 2023, we mobilized a vacuum truck rig to the site. We began excavating the test hole locations along Hopkins Lake Drive and proceeded to each of the fourteen (14) planned locations and two additional locations. The approximate SUE Test Hole locations are indicated on the appended Test Location Plans (Figure Nos. 2 thru 5). Using the vacuum truck with hose attachment and air lance, the field crew excavated approximate 2-foot by 2-foot test holes to locate the targeted utility. Once the underground utility was visibly located, its depth below ground surface was measured, and three "swing tie" measurements were made to record horizontal distances from three fixed objects along the roadway or shoulder. Examples of swing tie fixed objects are manholes, utility poles, traffic light control cabinets, etc. Depths and distances from swing tie fixed objects are included in the individual test hole field reports attached to this report.

### 3.2 Soil Test Borings

The locations of the two soil test boring locations, identified as B-01 and B-02 were established by overlaying the provided project plans into Google Earth™ and by transferring the data into a hand-held GPS unit which was used in the field to guide us to the approximate soil test boring locations. The locations were adjusted in the field to avoid conflicts with indicated underground and observed overhead utilities. The approximate boring locations are shown on the appended Test Location Plan (Figure NO. 8).

The subsurface conditions at the two test boring locations were explored on January 6, 2023 using a CME 55 drill rig equipped with hollow stem augers and an automatic hammer.

The soil test borings were performed in general accordance with ASTM D6151, the *Standard Practice for Using Hollow-Stem Augers for Geotechnical Exploration and Soil Sampling* by mechanically twisting augers into the ground. Four standard penetration tests (SPT) with split-spoon sampling were performed at approximate 2 ½ foot intervals in the upper 10 feet of each boring. The split-spoon sampler was first seated 6 inches and then driven an additional foot with blows of a 140-pound hammer falling 30 inches. The number of hammer blows required to drive the sampler the final foot was recorded and is designated as the "standard penetration resistance" (N-value) with units of blows per foot (bpf). The N-value provides an indication of the in-situ soil consistency and has been correlated with certain engineering properties of soils.

After the field exploration, the soils were transported to our lab and were visually classified by a member of our engineering staff in general accordance with ASTM D2488, the *Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)*. No quantitative laboratory testing was performed on the soil samples. Individual Boring Logs are included in the Appendix. The stratification lines shown on the appended boring logs represent the approximate boundaries between soil types, but the transitions may be more gradual than shown.

The borings were drilled to their planned termination depth. Subsurface water level readings were attempted in each boring promptly after completion of the soil drilling process. Due to the location of the borings along active roads, delayed groundwater readings were not attempted. Upon completion of drilling and sampling, the



boreholes were backfilled with soil cuttings and the surface was patched with bagged cold-mix asphalt patch. The patches should not be considered permanent.

### **3.3 Pavement Coring and Subgrade Exploration**

The locations of the three pavement coring locations, identified as PC-01 through PC-03, were established by overlaying the provided project plans into Google Earth™ and by transferring the data into a hand-held GPS unit which was used in the field to guide us to the pavement coring locations. The core locations were adjusted in the field as needed to avoid indicated underground utilities. The approximate pavement core locations are shown on the attached Test Location Plans (Figure Nos. 6 thru 8). At each coring location, we cored the asphaltic pavement utilizing a portable rotary coring machine equipped with a 4-inch (nominal diameter), diamond-tipped circular core barrel. The cores were performed to determine the thickness of the asphalt pavement section (and observe the condition and thicknesses of individual pavement layers), and to expose the underlying stone base and/or soil subgrade.

We transported the extracted asphalt core specimens to our laboratory to measure, photograph, and visually assess the pavement layers. The measured pavement section thicknesses are summarized on the Pavement Coring Summary Table in the Appendix. Our observations of the individual pavement layers of three cores are also described in the Pavement Coring Summary Table. Photographs of each of the three cores are also included in the Appendix.

After removing the asphalt pavement core, we performed Kessler Dynamic Cone Penetrometer (DCP) testing of the shallow soil subgrade. The Kessler DCP is a device used to help evaluate the consistency of the subgrade soils and the data can be used to provide a correlated California Bearing Ratio (CBR) for use in pavement design. Following Kessler DCP testing, our representatives performed shallow hand auger borings at the cored locations to obtain representative samples of the subgrade soils. The samples were visually classified by our representative in the field in general accordance with ASTM D2488, the *Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)*. Following completion of the field testing at each location, the borings were backfilled with soil, and then the cored hole was patched using bagged cold-patch asphalt mix.

## **4.0 Site, Geologic, and Subsurface Conditions**

### **4.1 Site Conditions**

As previously discussed, the new 8-inch water main and associated water vaults will be installed along Hopkins Lake Drive, Creek Ford Drive and intersecting streets in Duluth, Georgia. The new water line will also cross Hopkins Mill Road at three locations. The site area is generally a residential developed area with golf course located to the north and west.

### **4.2 Quality Level A SUE Findings**

The requested subsurface utilities were located at 13 of the 14 locations. The water line at Test Hole location 3 (Figure 5) was unable to be found. The excavation crew opened a 3-foot by 3-foot hole down to 6-feet in depth to explore for the water line, but it could not be located. The crew used Ground Penetrating Radar (GPR), as well



as connecting to the fire hydrant and scanning the area with an Electromagnetic (EM) Wand and no water line was indicated in the area. As no utility was found, there was not a field report created for Test Hole Location 3, however, the approximate location is identified on the Test Location Plan (Figure No. 5). Our subcontractor measured and photographed the located utilities per Quality Level A SUE standards. The Test Hole Reports are attached in the Appendix.

### **4.3 Test Hole Closure**

Following the completion of the test hole activities, the excavated areas in the pavement areas were backfilled with soil, compacted in lifts, and patched with asphalt pavement patching materials. Test hole locations in the pavement areas were marked with a survey nail and paint. The excavated areas within the grass shoulder areas were backfilled with soil and left in conditions similar to those prior to excavation. The test hole locations on the grass shoulders were marked with a labeled stake.

### **4.4 Geologic Conditions**

#### *4.4.1 Fill Materials*

Fill materials, likely placed in conjunction with previous roadway construction, were encountered in each of the mechanically drilled soil test borings and hand auger borings. Fill can be composed of different soil types from various sources and can also contain, debris, organics, topsoil, and/or deleterious materials. The engineering properties of fill depend primarily on its composition, density, and moisture content. We have not been provided with documentation of engineering control or density testing during placement of the fill materials at this site.

#### *4.4.2 Residual Materials*

The project site is in Georgia's Piedmont physiographic province. The soil overburden of this area was formed by in-place weathering of the parent metamorphic and igneous rocks. Published geologic mapping indicates that the site is underlain by granitic gneiss. A typical upland Piedmont soil profile consists of a thin layer of topsoil underlain by a clayey soil stratum that transitions with increasing depth into less clayey, coarser grained soils with varying mica content. Separating the completely weathered soil overburden from the unaltered parent rock is a transition zone of very high consistency materials locally referred to as *Partially Weathered Rock (PWR)*. Partially weathered rock retains much of the appearance and fabric of the parent rock formation and may consist of alternating layers of high consistency soil and rock. PWR exhibits standard penetration resistances in excess of 100 blows per foot (bpf).

The weathering processes that formed the overburden soils and partially weathered rock were extremely variable, depending on such factors as rock mineralogy, past groundwater conditions, and the tectonic history (joints, faults, igneous intrusions, etc.) of the specific area. Differential weathering of the rock mass has resulted in erratically varying subsurface conditions, evidenced by abrupt changes in soil type and consistency in relatively short horizontal and vertical distances. Furthermore, depths to rock can be irregular and isolated boulders, discontinuous rock layers, or rock pinnacles can be present within the overburden and transition zones.

## 4.5 Subsurface Conditions

### 4.5.1 *Mechanically Drilled Borings*

The Boring Logs included in the Appendix should be reviewed for specific information at the individual boring locations. The depth and thickness of the subsurface strata indicated on the Boring Logs were generalized and the transition between materials may be more gradual than indicated. Information on actual subsurface conditions exists only at the specific test locations and is relevant to the time the exploration was performed. Variations may occur and should be expected between and away from the boring locations. The stratification lines were used for our analytical purposes and, unless specifically stated otherwise, should not be used as the basis for design or construction cost estimates.

#### 4.5.1.1 Surface Cover

The measured asphalt thicknesses at Boring B-01 and B-02 were 8 inches and 4 inches, respectively. The asphalt was underlain by about 8 inches of base course stone at Boring B-01. No stone was encountered beneath the pavement at Boring B-02.

#### 4.5.1.2 Fill Materials

Soils interpreted to be previously placed fill materials were encountered beneath the surface cover at both boring locations. The fill soils extended to a depth of about 3 feet in each of the borings. The fill soils were visually classified as multi-colored silty sands (SM), had SPT N-values ranging from 2 to 10 bpf (implying very loose to loose consistency) and were judged to be moist.

#### 4.5.1.3 Residual Materials

Residual soils were encountered in the borings underlying the previously discussed materials. The residual soils were generally described as brown, orange, and black sandy silts (ML). SPT N-values in the residual materials ranged from 6 bpf to 16 bpf (implying firm to very stiff consistency) and were judged to be moist.

#### 4.5.1.4 Groundwater

Groundwater was not encountered in the borings after the drilling tools were removed. As the borings were located in active roadways, they were not left open for delayed water level readings. The assessed moisture conditions did not imply the presence of groundwater within the depth drilled at the time of this exploration. We note that groundwater levels can fluctuate several feet with seasonal and yearly rainfall variations and other factors; therefore, groundwater levels could rise to within the depths of this exploration in the future.

### 4.5.2 *Pavement Coring and Subgrade Exploration Test Borings*

In summary, the total asphalt thickness for the three cores ranged from approximately 3 ¾ to 5 ½ inches. Stone base materials were not encountered at the three cored locations. Picture of the pavement cores are included in the appendix as Figure Nos. 9, 10 & 11.





Kessler DCP testing was done at each of the cored locations and extended to depths of approximately 10 to 36 inches below the pavement surface. The CBR values correlated from the DCP data were typically 9 or higher. The Dual Mass Dynamic Cone Penetrometer Test Data sheets are included in the appendix.

After the DCP testing, our representatives then performed shallow hand auger borings at the cored locations to obtain representative samples of the subgrade soils. In general, the majority of the encountered subgrade soils were assessed to be previously placed fills classified as sandy silts with varying amounts of gravels (ML) and sandy lean clays (CL).

## **5.0 Conclusions and Recommendations**

### **5.1 SUE Test Holes**

We recommend that the SUE Test Holes be located by a registered land surveyor.

### **5.2 Jack and Bore (Hopkins Mill Road Crossing)**

Part of the alignment (approximate STA 00+00 to 1+00) is located beneath Hopkins Mill Road. The Hopkins Mill Road crossing may be made using Jack and Bore methods. We completed a mechanized soil test boring to a depth of 10' beneath current grades near either end of the jack and bore crossing.

Assuming that the jack and bore sending and receiving pits will be excavated to a depth of about 4 feet below the planned pipe invert elevation, we expect that the sending and receiving pits for the jack and bore process will require excavations on the order of 6 to 10 feet deep. The data collected in Boring B-01 and B-02 indicate that achieving those depths will not require excavation into high consistency soils, partially weathered rock, or rock. Based on the boring data, we would not expect casing installation for the jack and bore to encounter difficult excavation materials or groundwater.

Pit sidewall stability will be a consideration on both sides of Hopkins Mill Road. Once the pit depths and locations are finalized, the pit excavation bracing or shoring should be designed by a registered Professional Engineer specializing in design of such systems in similar conditions. Excavation Safety should be the sole responsibility of the contractor. Excavations should be made and maintained in accordance with OSHA regulations.

If groundwater is encountered during the jack and bore process, dewatering measures will need to be implemented in order to maintain the groundwater level below the bottom of the pit excavations until pipe installation is complete. The contractor should be prepared to address groundwater if it is encountered. Selection and design of the dewatering method is the responsibility of the contractor; however, we note that dewatering should remain in place until pit and/or trench backfill has been placed and compacted.

Pit and trench backfills beneath and within 5 feet of pavements, utility poles or other structures should be compacted to at least 95 percent of the soils standard Proctor maximum dry density (ASTM D698).



### 5.3 Pavement Recommendations

The pavements for roadway cuts made in Hopkins Mill Road, Hopkins Lake Drive, Creek Ford Drive, Creek Ford Trace, and Hopkins Run Drive should be reconstructed per Gwinnett County Department of Water Resources Perpendicular Roadway Cut – Final Backfill (Drawing No. G4) Standard Detail. The roadway cuts should be backfilled as following: the trench backfill should be compacted to 95% standard Proctor (ASTM D698) followed by two lifts of compacted sub-base with suitable material placed in 6 inch layers and compacted to 98% Standard Proctor, 10 inches of compacted aggregate base to 95% of maximum dry density as determined by Modified Proctor (ASTM D1557), 8 inches of 3,000 PSI concrete, and 1 ½ inches of 9.5mm Superpave type II asphalt.

## 6.0 Limitations of Report

This report has been prepared in accordance with generally accepted geotechnical engineering practice for specific application to this project. The conclusions and recommendations contained in this report are based upon applicable standards of our practice in this geographic area at the time this report was prepared. No other representation or warranty, either express or implied, is made.

We relied on project information given to us to develop our conclusions and recommendations. If project information described in this report is not accurate, or if it changes during project development, we should be notified of the changes so that we can modify our recommendations based on this additional information if appropriate.

Our conclusions and recommendations are based on limited data from a field exploration program. Subsurface conditions can vary widely between explored areas. Some variations may not become evident until construction. If conditions are encountered which appear different than those described in our report, we should be notified. This report should not be construed to represent subsurface conditions for the entire site.

Unless specifically noted otherwise, our field exploration program did not include an assessment of regulatory compliance, environmental conditions or pollutants or presence of any biological materials (mold, fungi, and bacteria). If there is a concern about these items, other studies should be performed. S&ME can provide a proposal and perform these services if requested.

S&ME should be retained to review the final plans and specifications to confirm that earthwork and other recommendations are properly interpreted and implemented. The recommendations in this report are contingent on S&ME's review of final plans and specifications followed by our observation and monitoring of earthwork and construction activities.

For additional information regarding the use and limitations of this report, please read the *Important Information about your Geotechnical Engineering Report* document located at the end of this report.

## Appendix





**SITE LOCATION PLAN**

HOPKINS MILL WATER MAIN REPLACEMENT  
 HOPKINS MILL ROAD  
 DULUTH, GEORGIA

SCALE:  
 NOT TO SCALE

DATE:  
 1-16-2023

PROJECT NUMBER  
 22800360

FIGURE NO.

**1**

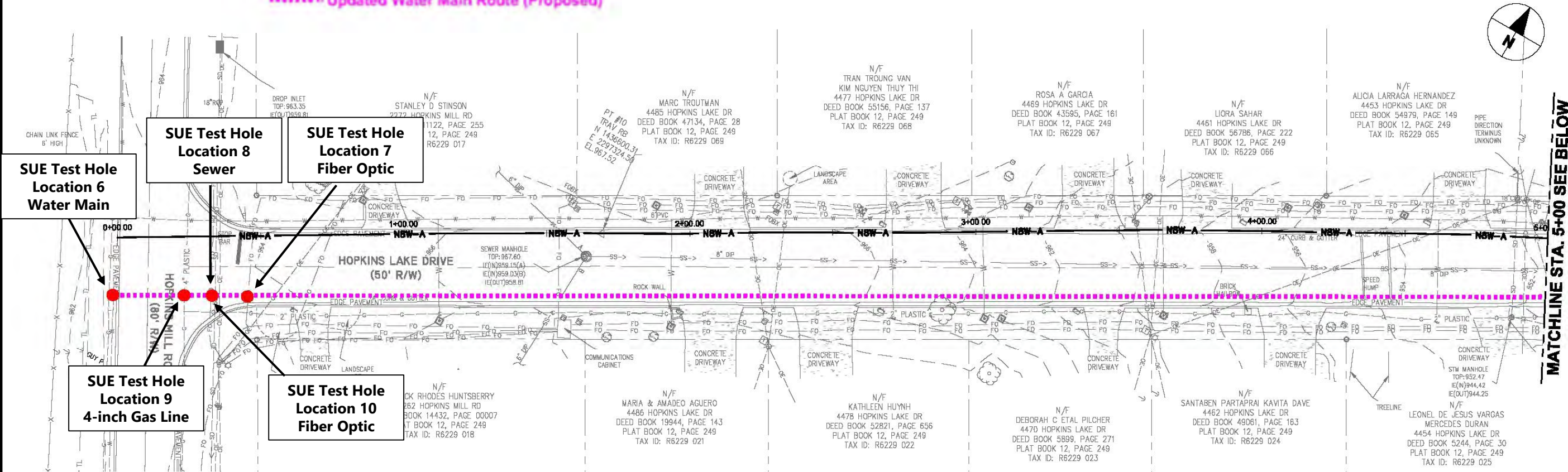
REFERENCE:  
 Google Earth

DRAWING FOR INFORMATION PURPOSES ONLY





\*\*\*\*\* Updated Water Main Route (Proposed)



MATCHLINE STA. 5+00 SEE BELOW

TEST LOCATION PLAN

HOPKINS MILL WATER MAIN REPLACEMENT  
HOPKINS MILL ROAD  
DULUTH, GEORGIA

SCALE:  
NOT TO SCALE

DATE:  
1-16-2023

PROJECT NUMBER  
22800360

FIGURE NO.

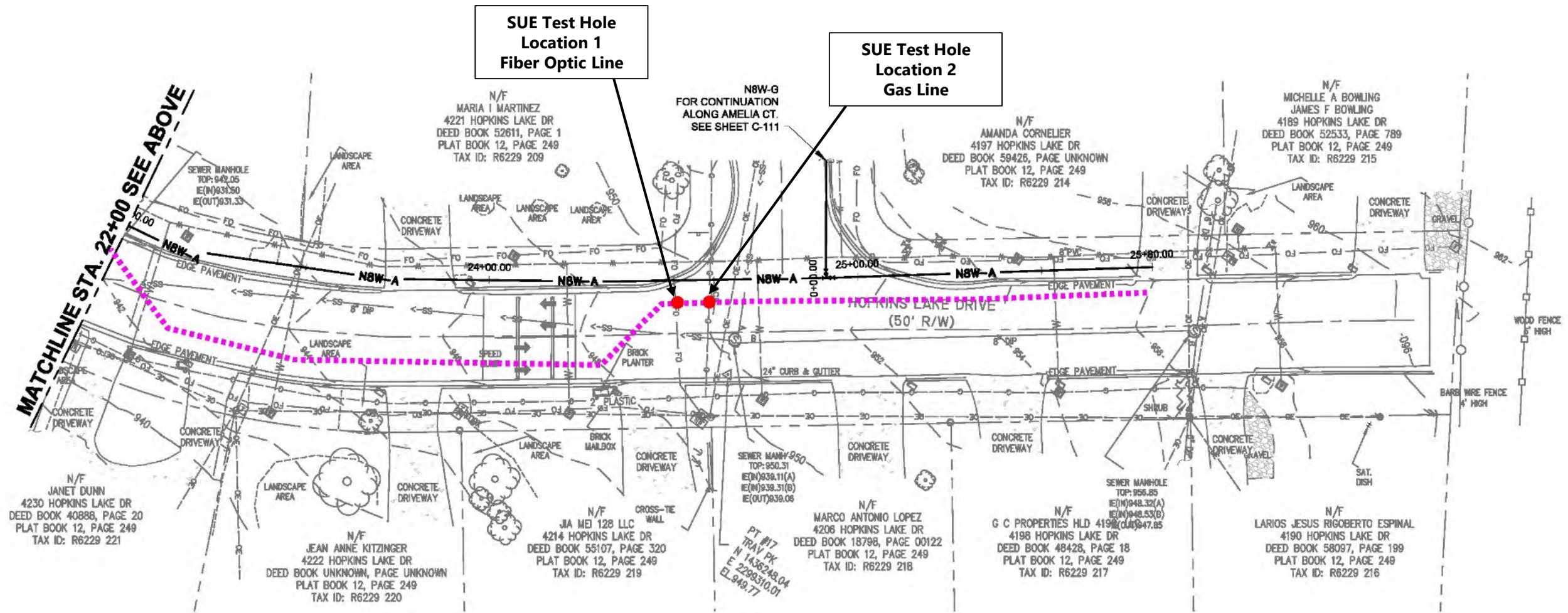
2

REFERENCE:  
Hopkins Mill Water Main Replacement – Line A STA. 0+00 to STA. 9+00 (Sheet No. C-102), dated September 26, 2022, prepared by AECOM.

DRAWING FOR ILLUSTRATION PURPOSES ONLY

LEGEND:  
 APPROXIMATE SUE TEST HOLE LOCATION

\*\*\*\*\* Updated Water Main Route (Proposed)



TEST LOCATION PLAN

HOPKINS MILL WATER MAIN REPLACEMENT  
HOPKINS MILL ROAD  
DULUTH, GEORGIA

SCALE:  
NOT TO SCALE

DATE:  
1-16-2023

PROJECT NUMBER  
22800360

FIGURE NO.

3

REFERENCE:  
Hopkins Mill Water Main Replacement – Line A STA. 18+00 to STA. 26+58.12 (Sheet No. C-104), dated September 26, 2022, prepared by AECOM.

DRAWING FOR ILLUSTRATION PURPOSES ONLY

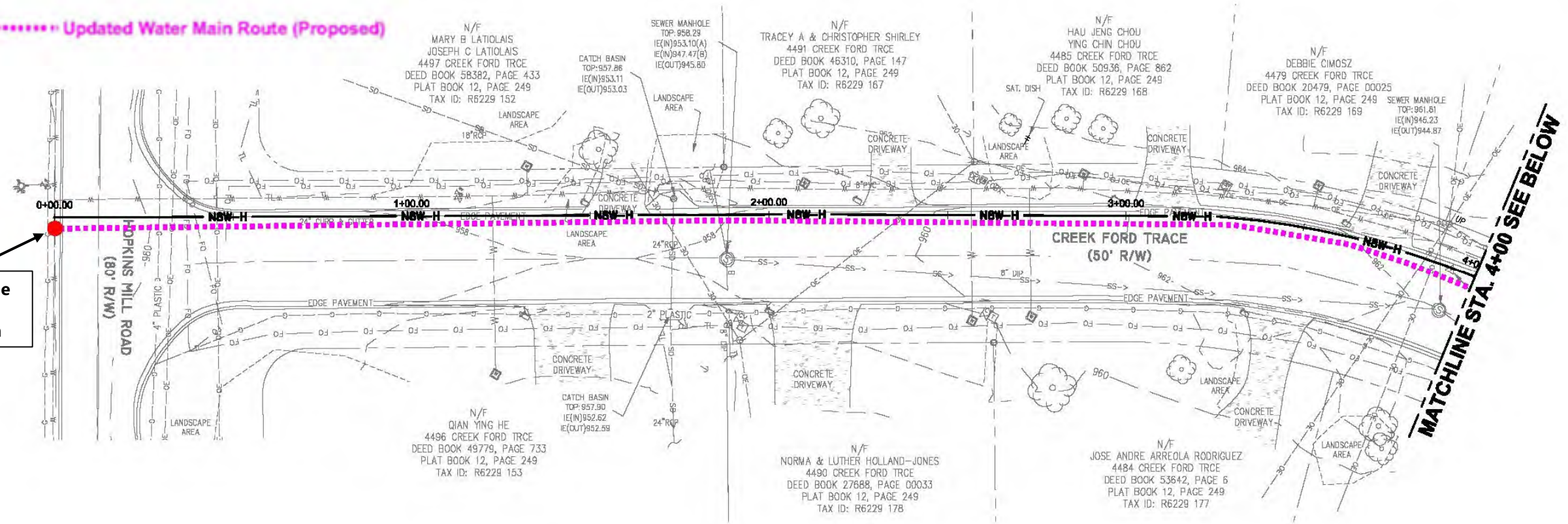
LEGEND:  
 APPROXIMATE SUE TEST HOLE LOCATION





\*\*\*\*\* Updated Water Main Route (Proposed)

SUE Test Hole Location 5 Water Main



TEST LOCATION PLAN

HOPKINS MILL WATER MAIN REPLACEMENT  
HOPKINS MILL ROAD  
DULUTH, GEORGIA

SCALE:  
NOT TO SCALE

DATE:  
1-16-2023

PROJECT NUMBER  
22800360

FIGURE NO.

4

REFERENCE:  
Hopkins Mill Water Main Replacement – Line G STA. 0+00 to STA. 8+00 (Sheet No. C-110), dated September 26, 2022, prepared by AECOM.

DRAWING FOR ILLUSTRATION PURPOSES ONLY

LEGEND:  
 APPROXIMATE SUE TEST HOLE LOCATION



TEST LOCATION PLAN

HOPKINS MILL WATER MAIN REPLACEMENT  
HOPKINS MILL ROAD  
DULUTH, GEORGIA

SCALE:  
NOT TO SCALE

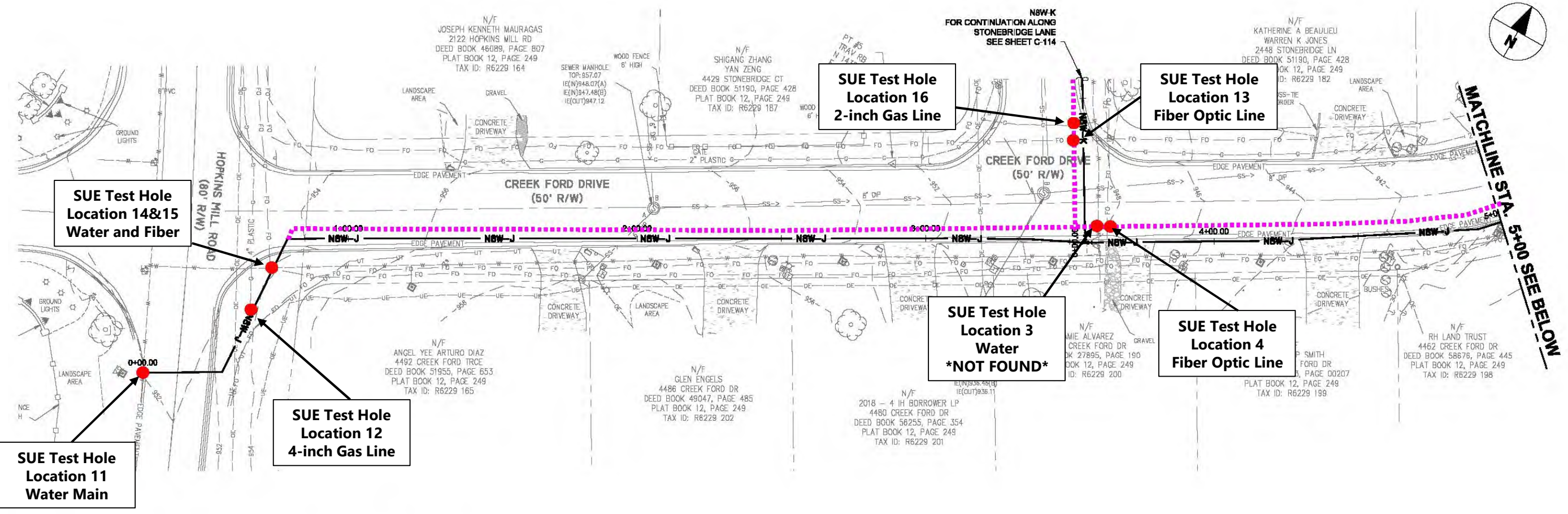
DATE:  
1-16-2023

PROJECT NUMBER  
22800360

FIGURE NO.

5

\*\*\*\*\* Updated Water Main Route (Proposed)

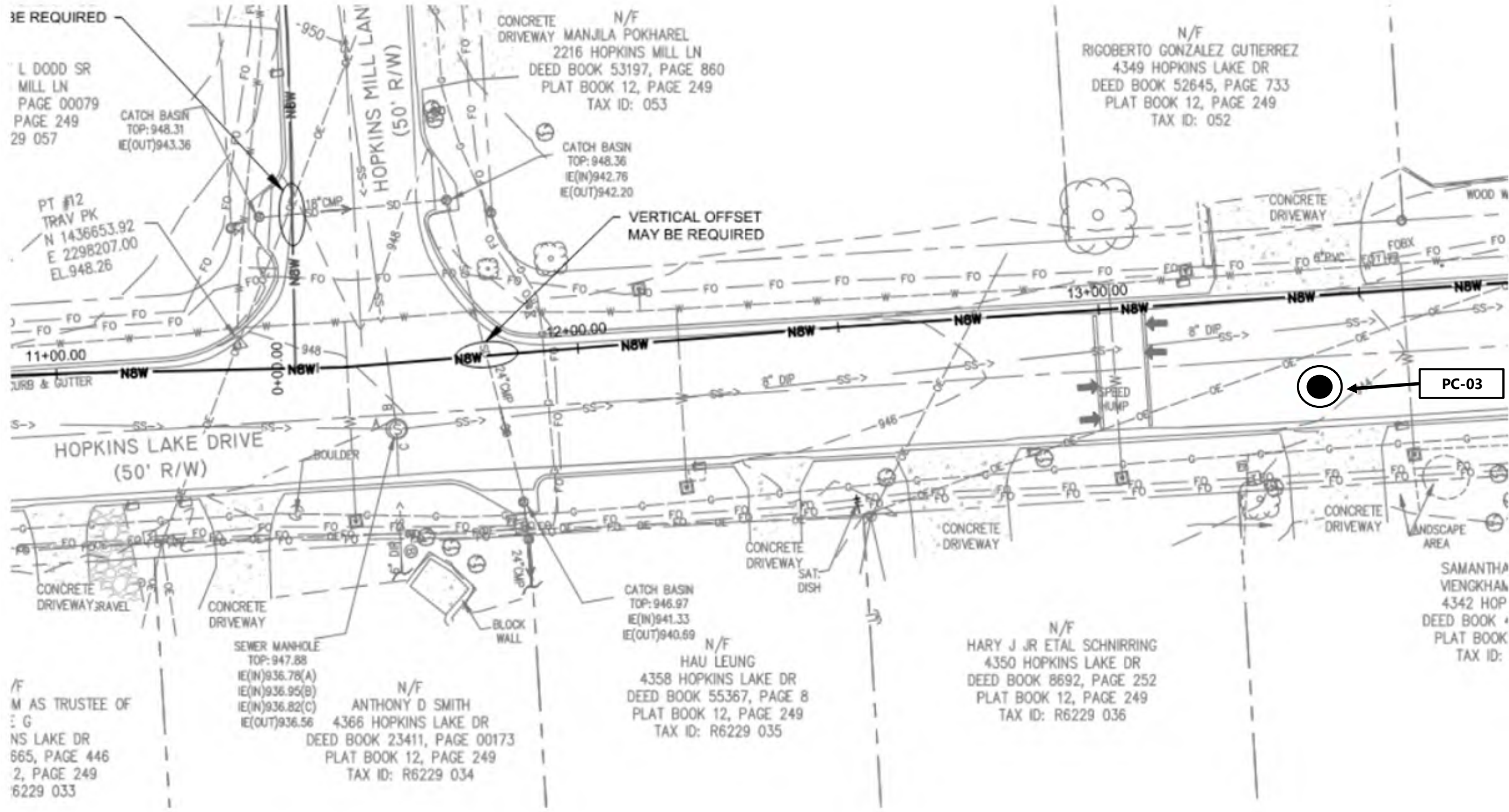


REFERENCE:  
Hopkins Mill Water Main Replacement – Line J STA. 0+00 to STA. 9+00 (Sheet No. C-112), dated September 26, 2022, prepared by AECOM.

DRAWING FOR ILLUSTRATION PURPOSES ONLY

LEGEND:  
 APPROXIMATE SUE TEST HOLE LOCATION





TEST LOCATION PLAN

HOPKINS MILL WATER MAIN REPLACEMENT  
HOPKINS MILL ROAD  
DULUTH, GEORGIA

SCALE:  
NOT TO SCALE

DATE:  
1-16-2023

PROJECT NUMBER  
22800360

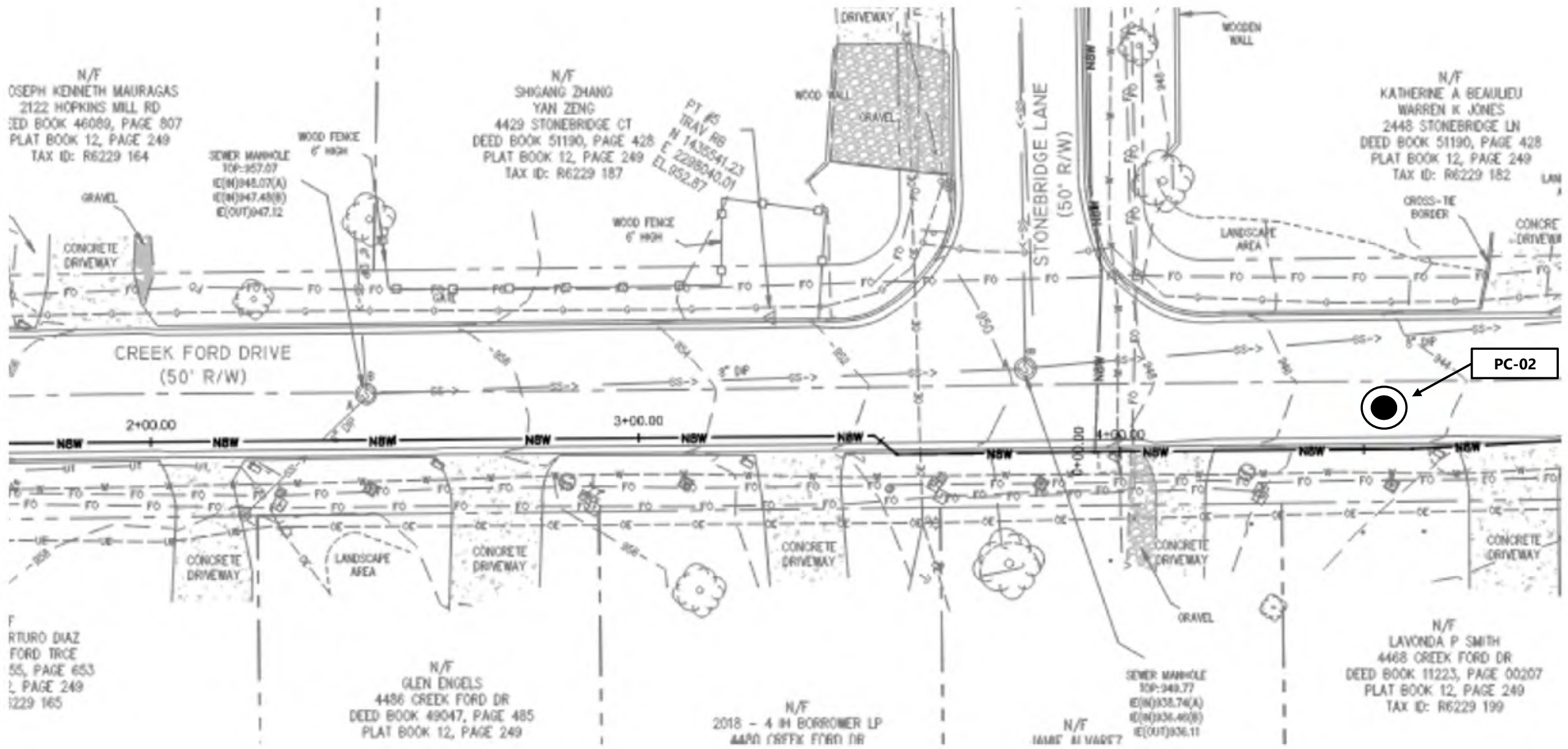
FIGURE NO.

6

REFERENCE:  
Hopkins Mill Water Main Replacement – Line A STA. 0+00 to STA. 9+00 (Sheet No. C-102), dated September 26, 2022, prepared by AECOM.

DRAWING FOR ILLUSTRATION PURPOSES ONLY

LEGEND:  
● APPROXIMATE PAVEMENT CORE LOCATION



**TEST LOCATION PLAN**

HOPKINS MILL WATER MAIN REPLACEMENT  
HOPKINS MILL ROAD  
DULUTH, GEORGIA

SCALE:  
NOT TO SCALE

DATE:  
1-16-2023

PROJECT NUMBER  
22800360

FIGURE NO.

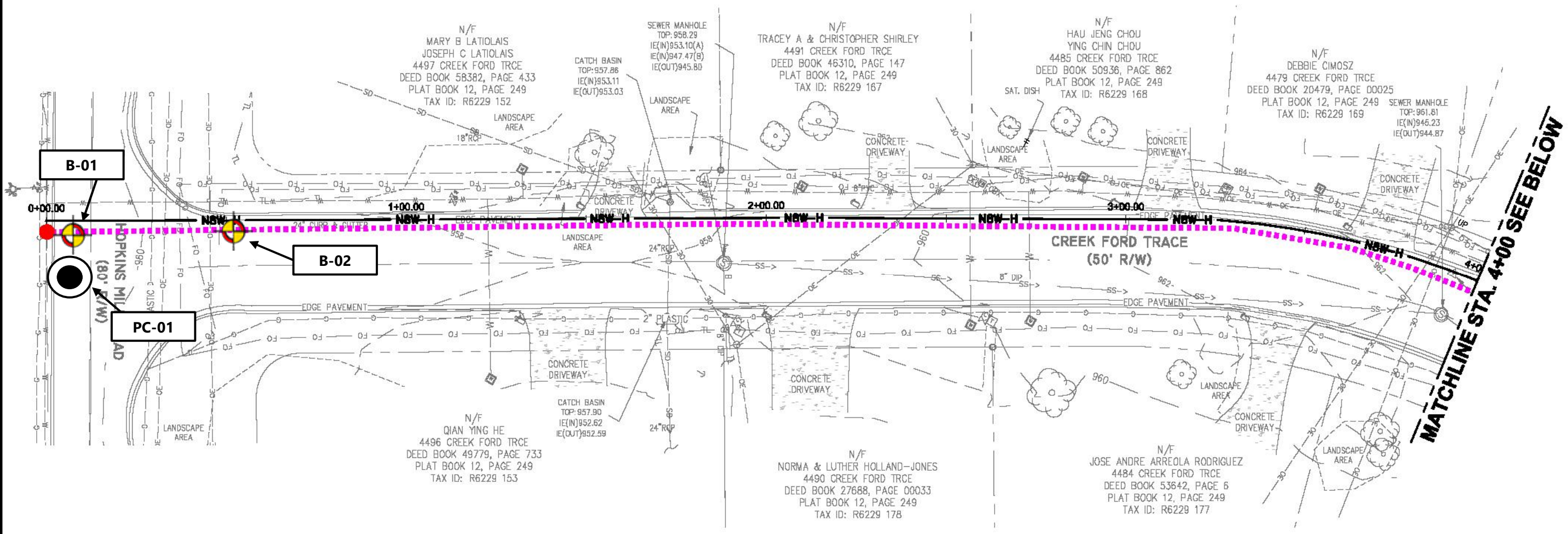
**7**

REFERENCE:  
Hopkins Mill Water Main Replacement – Line J STA. 0+00 to STA. 9+00 (Sheet No. C-112), dated September 26, 2022, prepared by AECOM.

DRAWING FOR ILLUSTRATION PURPOSES ONLY

LEGEND:  
● APPROXIMATE PAVEMENT CORE LOCATION





TEST LOCATION PLAN

HOPKINS MILL WATER MAIN REPLACEMENT  
 HOPKINS MILL ROAD  
 DULUTH, GEORGIA

SCALE:  
 NOT TO SCALE

DATE:  
 1-16-2023



PROJECT NUMBER  
 22800360

FIGURE NO.

8

REFERENCE:  
 Hopkins Mill Water Main Replacement – Line G STA. 0+00 to STA. 8+00 (Sheet No. C-110), dated September 26, 2022, prepared by AECOM.

DRAWING FOR ILLUSTRATION PURPOSES ONLY

- LEGEND:
-  APPROXIMATE PAVEMENT CORE LOCATION
  -  APPROXIMATE TEST BORING LOCATION

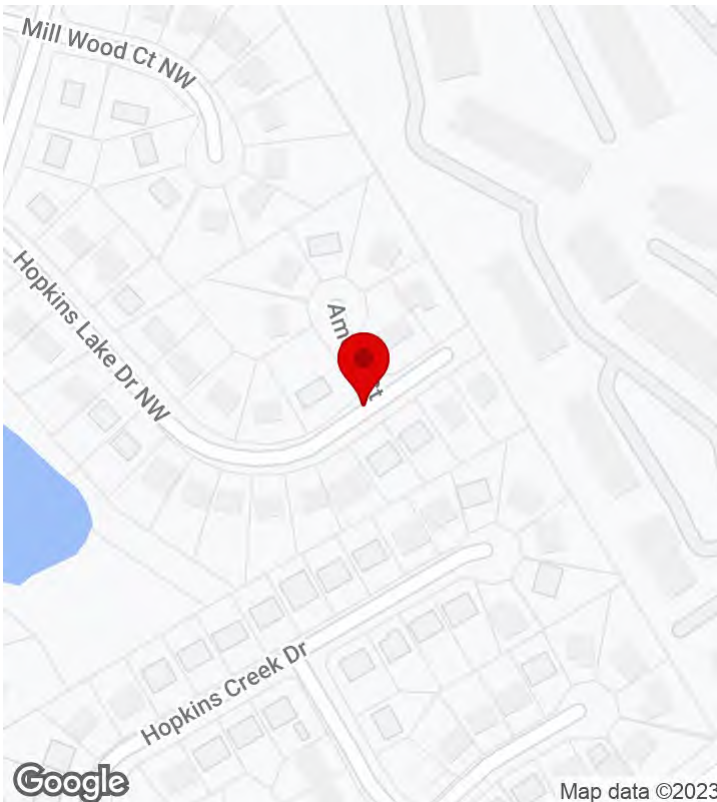
# 22011799A\_Hopkins Mill WMR\_S&ME



Utilize to document test hole field data for project.

## W Barbour, J Dearman, 1

1/20/2023, 1:12:33 PM EST



### CREATED

🕒 1/5/2023, 10:17:36 AM EST  
👤 by William Barbour

### UPDATED

🕒 1/20/2023, 1:12:33 PM EST  
👤 by Hethe Hyder

### STATUS

🟠 Communications

### LOCATION

📍 33.948322, -84.157765

Start Time | 10:17

## Site Data

Test Hole Number | 1

Utility Owner | AT&T

Client Name | S&ME

## Before

Date of Work | January 5, 2023

SUE Crew | W Barbour, J Dearman

Vehicle Number | Truck 1

Before Photos





## Address/ Nearest Address

Address

4221 Hopkins Lake Dr  
Duluth GA 30096  
US

## Hole Data

Surface Type

Asphalt

Surface Thickness	8 ▶ 0"
Soil Conditions	Hard, Wet Dirt, Clay, Rocky
Type of Utility	Fiber
Diameter of Utility	1
Material of Utility	DBF
Type of Marker	Nail & Disc
Hand Measurement Top	

## Grade Rod without Auto Level Measurement

Test Hole Measurement	
Bottom of utility Measurement	

## Top of Pipe Measurements

Rod A ( Cap) Ribbon	6.39
Rod B	6.39
Rod ( Top of Utility)	8.41
Calculated Utility Depth	2.0200000000000005

## Bottom of Utility Measurements

Bottom of Utility Rod A (Cap) Ribbon	
Bottom of Utility Rod B	
Rod ( Bottom of Utility)_2	
Calculated Utility Depth_2	

### Board Photos



### Down Hole Photos









## Site Tasks

### Swing Tie 'A'

Swing Tie 'A' Type	Sign
Swing Tie 'A' Measurement	12' ▶ 2"
Swing Tie 'A' Photos	



## Swing Tie 'B'

Swing Tie 'B' Type | Back Of Curb

Swing Tie 'B' Measurement | 6' ▶ 1"

Swing Tie 'B' Photos





## Swing Tie 'C'

Swing Tie 'C' Type | Back Of Curb

Swing Tie 'C' Measurement | 22' ▶ 5"

Swing Tie 'C' Photos

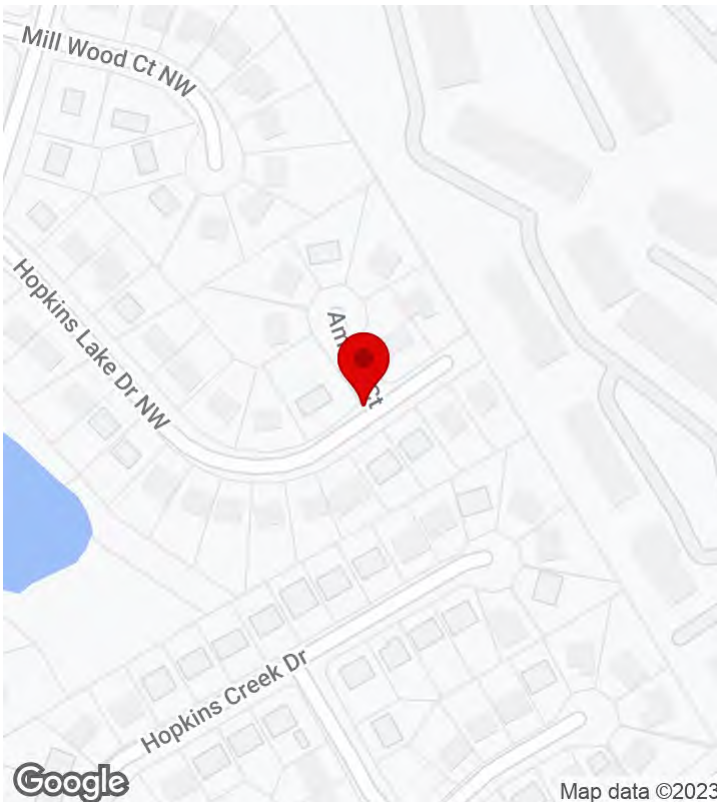
# 22011799A\_Hopkins Mill WMR\_S&ME



Utilize to document test hole field data for project.

## W Barbour, J Dearman, 2

1/20/2023, 1:10:20 PM EST



### CREATED

🕒 1/5/2023, 10:20:35 AM EST  
👤 by William Barbour

### UPDATED

🕒 1/20/2023, 1:10:20 PM EST  
👤 by Hethe Hyder

### STATUS

🟡 Gas

### LOCATION

📍 33.948356, -84.157763



Map data ©2023

Start Time | 10:20

## Site Data

Test Hole Number | 2

Utility Owner | AGL

Client Name | S&ME

## Before

Date of Work | January 5, 2023

SUE Crew | W Barbour, J Dearman

Vehicle Number | Truck 1

Before Photos





## Address/ Nearest Address

Address

4221 Hopkins Lake Dr  
Duluth GA 30096  
US

## Hole Data

Surface Type

Asphalt

Surface Thickness	8 ▶ 0"
Soil Conditions	Hard, Rocky, Clay, Brick
Type of Utility	Gas
Diameter of Utility	2
Material of Utility	HDPE
Type of Marker	Nail & Disc
Hand Measurement Top	

## Grade Rod without Auto Level Measurement

Test Hole Measurement	
Bottom of utility Measurement	

## Top of Pipe Measurements

Rod A ( Cap) Ribbon	5.87
Rod B	5.87
Rod ( Top of Utility)	9.06
Calculated Utility Depth	3.1900000000000004

## Bottom of Utility Measurements

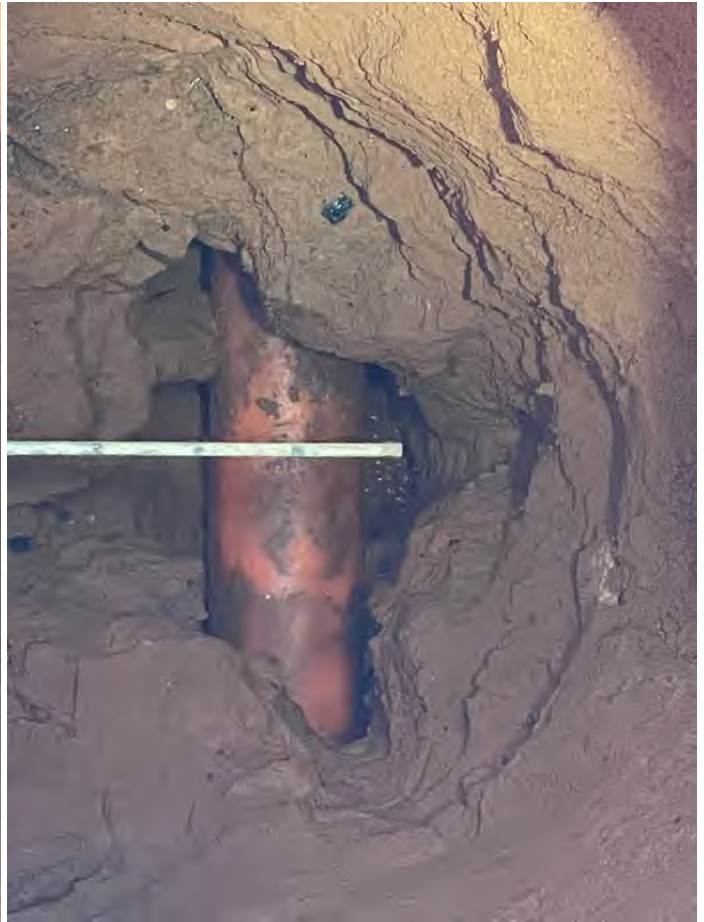
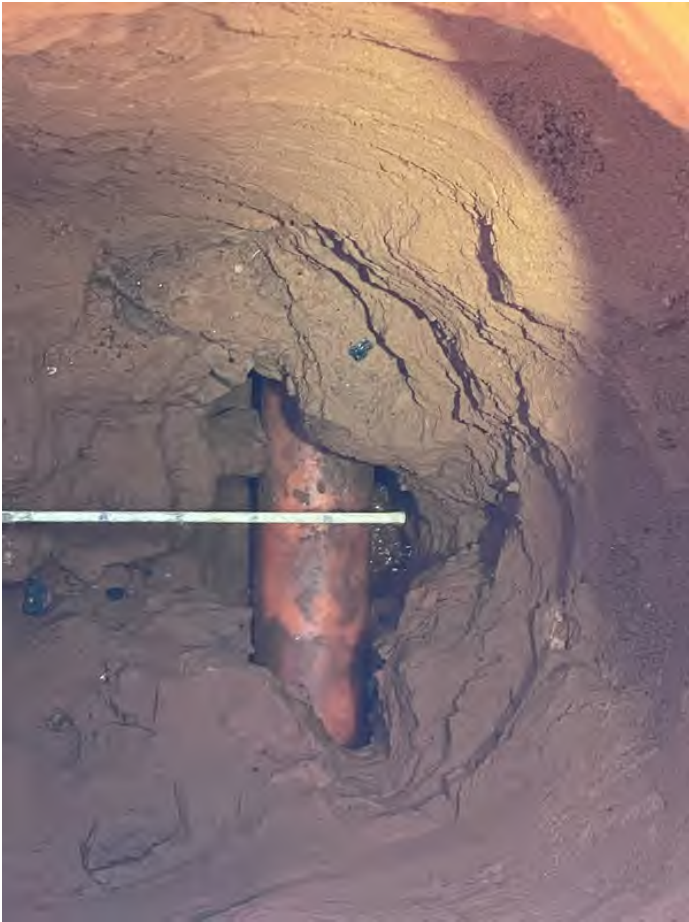
Bottom of Utility Rod A (Cap) Ribbon	
Bottom of Utility Rod B	
Rod ( Bottom of Utility)_2	
Calculated Utility Depth_2	

### Board Photos



### Down Hole Photos







## Site Tasks

### Swing Tie 'A'

Swing Tie 'A' Type | Gas Vent Pipe

Swing Tie 'A' Measurement | 12' ▶ 0"

#### Swing Tie 'A' Photos





## Swing Tie 'B'

Swing Tie 'B' Type | Back Of Curb

Swing Tie 'B' Measurement | 8' ▶ 3"

### Swing Tie 'B' Photos



## Swing Tie 'C'

Swing Tie 'C' Type | Back Of Curb

Swing Tie 'C' Measurement

23' ▶ 4"

Swing Tie 'C' Photos



After

After Photos





Time Completed | 12:52

Colliers Engineering & Design

, NJ 07701

Signature

A handwritten signature in black ink, consisting of several overlapping loops and strokes, positioned within a vertical rectangular frame.

Signed 1/5/2023, 5:12:55 PM EST



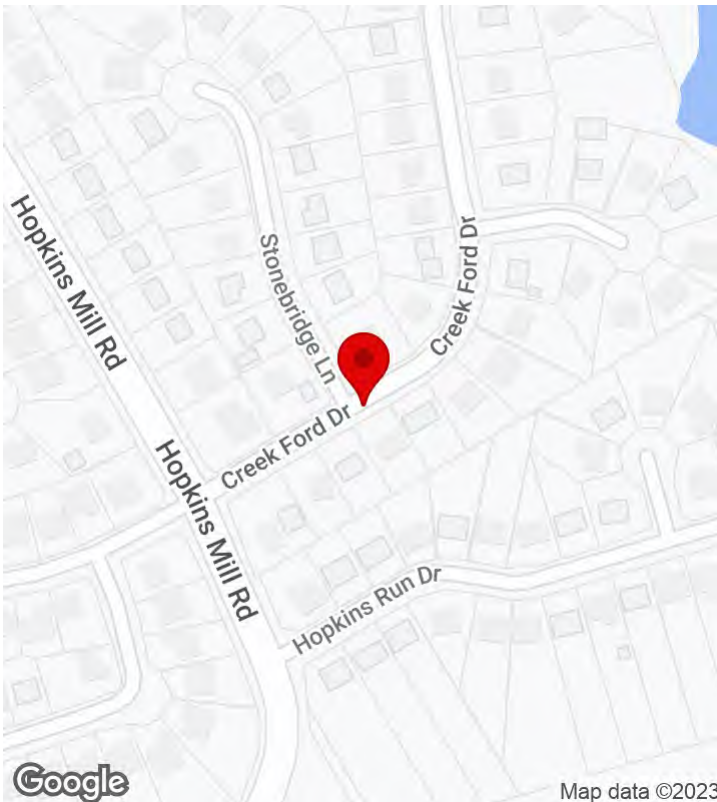
# 22011799A\_Hopkins Mill WMR\_S&ME



Utilize to document test hole field data for project.

## J Dearman, W Barbour, 4

1/20/2023, 1:14:59 PM EST



### CREATED

🕒 1/5/2023, 4:04:47 PM EST  
👤 by William Barbour

### UPDATED

🕒 1/20/2023, 1:14:59 PM EST  
👤 by Hethe Hyder

### STATUS

🟠 Communications

### LOCATION

📍 33.946397, -84.161632



Map data ©2023

Start Time | 16:04

## Site Data

Test Hole Number | 4

Utility Owner | AT&T

Client Name | S&ME

## Before

Date of Work | January 5, 2023

SUE Crew | J Dearman, W Barbour

Vehicle Number | Truck 1

### Before Photos



## Address/ Nearest Address

Address | 4474 Creek Ford Dr  
Duluth GA 30096  
US

## Hole Data

Surface Type	Asphalt
Surface Thickness	8 ▶ 0"
Soil Conditions	Clay, Rocky, Hard, Brick
Type of Utility	Fiber
Diameter of Utility	1
Material of Utility	DBF
Type of Marker	Nail & Disc
Hand Measurement Top	

## Grade Rod without Auto Level Measurement

Test Hole Measurement	
Bottom of utility Measurement	

## Top of Pipe Measurements

Rod A ( Cap) Ribbon	4.57
Rod B	4.57
Rod ( Top of Utility)	6.65
Calculated Utility Depth	2.08

## Bottom of Utility Measurements

Bottom of Utility Rod A (Cap) Ribbon	
Bottom of Utility Rod B	
Rod ( Bottom of Utility)_2	
Calculated Utility Depth_2	

Board Photos





**Down Hole Photos**







## Site Tasks

### Swing Tie 'A'

Swing Tie 'A' Type | Back Of Curb

Swing Tie 'A' Measurement | 23' ▶ 3"

Swing Tie 'A' Photos



## Swing Tie 'B'

Swing Tie 'B' Type | Back Of Curb

Swing Tie 'B' Measurement | 5' ▶ 2"

Swing Tie 'B' Photos







## Swing Tie 'C'

Swing Tie 'C' Type | Fiber Ped

Swing Tie 'C' Measurement | 25' ▶ 6"

### Swing Tie 'C' Photos



## After

### After Photos



**Time Completed**

| 17:02



**Signature**

A handwritten signature in black ink, consisting of several overlapping loops and strokes, positioned in the center of the page.

Signed 1/5/2023, 9:14:11 PM EST

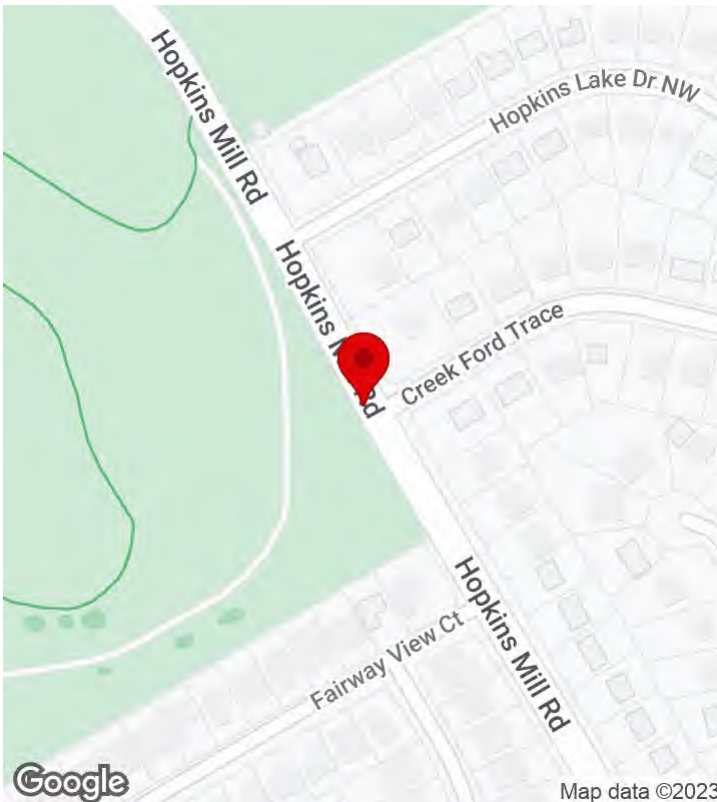
# 22011799A\_Hopkins Mill WMR\_S&ME



Utilize to document test hole field data for project.

## W Barbour, J Dearman, 5

1/20/2023, 1:19:39 PM EST



### CREATED

1/6/2023, 10:38:05 AM EST  
by William Barbour

### UPDATED

1/20/2023, 1:19:39 PM EST  
by Hethe Hyder

### STATUS

Water

### LOCATION

33.948309, -84.164231

Start Time | 10:38

## Site Data

Test Hole Number | 5

Utility Owner | Gwinnett

Client Name | S&ME

## Before

Date of Work | January 6, 2023

SUE Crew | W Barbour, J Dearman

Vehicle Number | Truck 1

### Before Photos



## Address/ Nearest Address

Address | Duluth GA 30096  
US



## Hole Data

Surface Type	Natural Ground
Surface Thickness	
Soil Conditions	Gravel, Hard, Wet Dirt, Rocky, Clay
Type of Utility	Water
Diameter of Utility	16
Material of Utility	Ductile Iron
Type of Marker	Rod & Cap
Hand Measurement Top	

## Grade Rod without Auto Level Measurement

Test Hole Measurement	
Bottom of utility Measurement	

## Top of Pipe Measurements

Rod A ( Cap) Ribbon	4.94
Rod B	4.94
Rod ( Top of Utility)	9.2
Calculated Utility Depth	4.2599999999999999

## Bottom of Utility Measurements

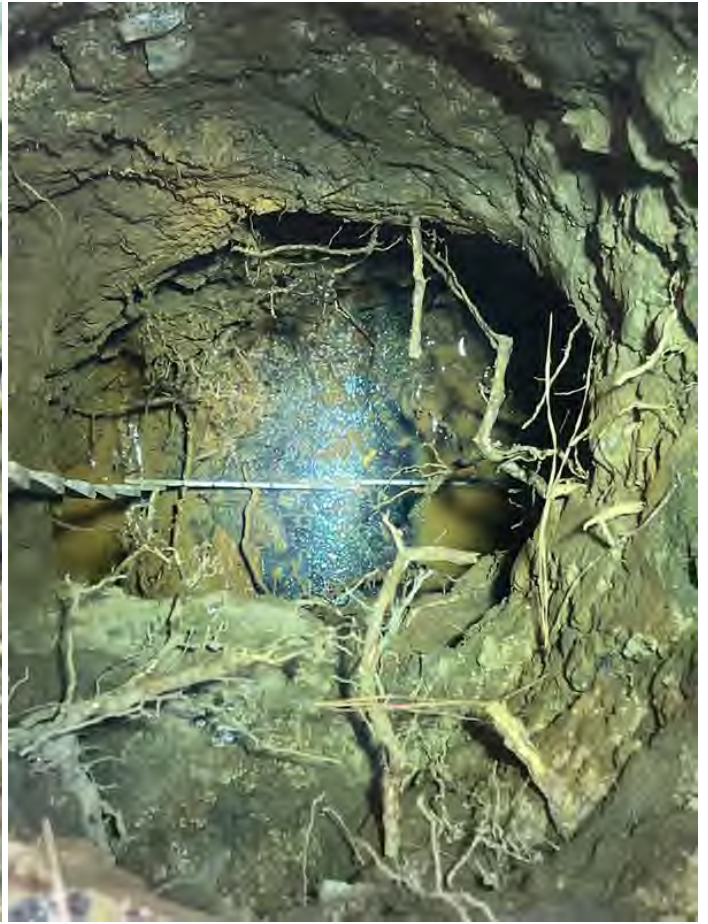
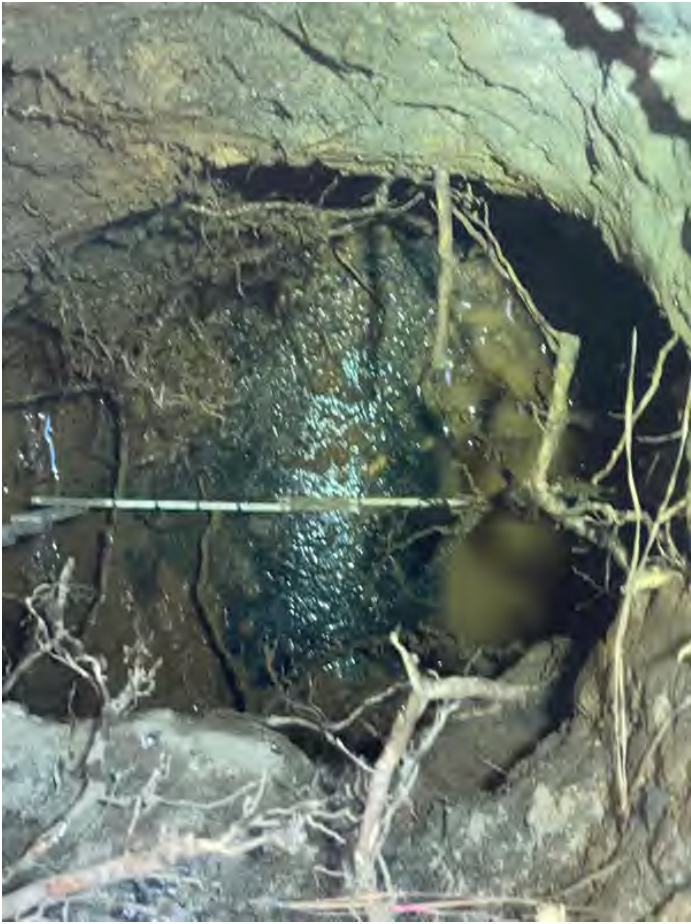
Bottom of Utility Rod A (Cap) Ribbon	
Bottom of Utility Rod B	
Rod ( Bottom of Utility)_2	
Calculated Utility Depth_2	

### Board Photos



**Down Hole Photos**









## Site Tasks

### Swing Tie 'A'

Swing Tie 'A' Type | Back Of Curb

Swing Tie 'A' Measurement | 6' ▶ 3"

Swing Tie 'A' Photos



## Swing Tie 'B'

Swing Tie 'B' Type	Valve
Swing Tie 'B' Measurement	13' ▶ 5"
Swing Tie 'B' Photos	





## Swing Tie 'C'

Swing Tie 'C' Type | Hydrant

Swing Tie 'C' Measurement | 16' ▶ 2"

Swing Tie 'C' Photos





## After

### After Photos





**Time Completed**

| 10:48

**Signature**

A handwritten signature in black ink, consisting of several overlapping loops and strokes, positioned within a vertical line.

Signed 1/6/2023, 3:42:17 PM EST



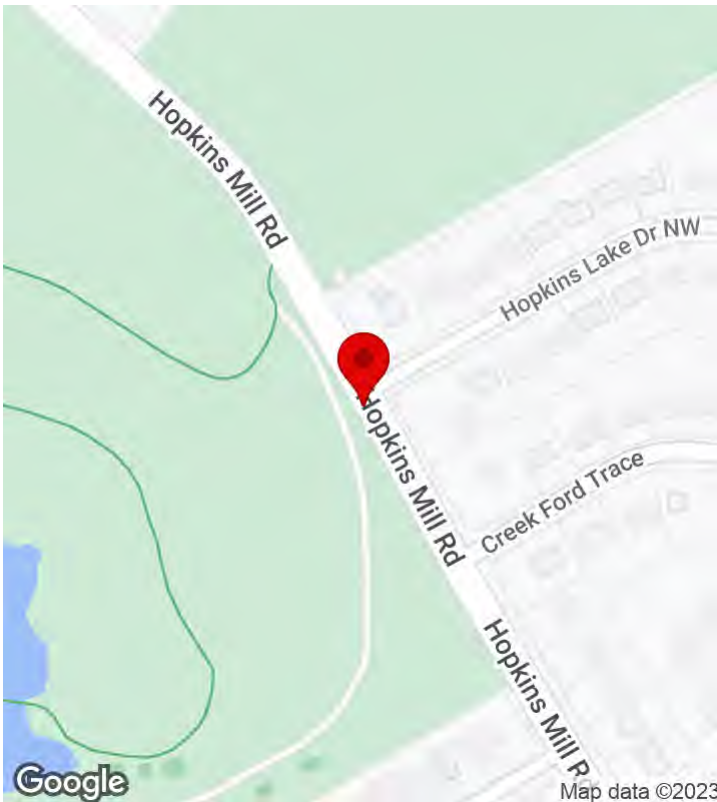
# 22011799A\_Hopkins Mill WMR\_S&ME



Utilize to document test hole field data for project.

## W Barbour, J Dearman, 6

1/20/2023, 1:19:10 PM EST



### CREATED

🕒 1/6/2023, 12:43:58 PM EST  
👤 by William Barbour

### UPDATED

🕒 1/20/2023, 1:19:10 PM EST  
👤 by Hethe Hyder

### STATUS

🟦 Water

### LOCATION

📍 33.948967, -84.164663

Start Time | 12:43

## Site Data

Test Hole Number | 6  
Utility Owner | Gwinnett  
Client Name | S&ME

## Before

Date of Work | January 6, 2023  
SUE Crew | W Barbour, J Dearman  
Vehicle Number | Truck 1

### Before Photos



## Address/ Nearest Address

Address | 2235–2255 Hopkins Mill Rd  
Duluth GA 30096  
US



## Hole Data

Surface Type	Natural Ground
Surface Thickness	
Soil Conditions	Hard, Rocky, Wet Dirt, Clay, Gravel
Type of Utility	Water
Diameter of Utility	16
Material of Utility	Ductile Iron
Type of Marker	Rod & Cap
Hand Measurement Top	

## Grade Rod without Auto Level Measurement

Test Hole Measurement	
Bottom of utility Measurement	

## Top of Pipe Measurements

Rod A ( Cap) Ribbon	5.39
Rod B	5.39
Rod ( Top of Utility)	9.79
Calculated Utility Depth	4.3999999999999995

## Bottom of Utility Measurements

Bottom of Utility Rod A (Cap) Ribbon	
Bottom of Utility Rod B	
Rod ( Bottom of Utility)_2	
Calculated Utility Depth_2	

### Board Photos



**Down Hole Photos**









## Site Tasks

## Swing Tie 'A'

Swing Tie 'A' Type | Valve

Swing Tie 'A' Measurement | 31' ▶ 5"

Swing Tie 'A' Photos





## Swing Tie 'B'

Swing Tie 'B' Type | Utility Pole

Swing Tie 'B' Measurement | 21' ▶ 9"

Swing Tie 'B' Photos





## Swing Tie 'C'

Swing Tie 'C' Type | Back Of Curb

Swing Tie 'C' Measurement | 21' ▶ 7"

Swing Tie 'C' Photos





## After

### After Photos



**Time Completed**

| 13:25



**Signature**

A handwritten signature in black ink, consisting of several overlapping loops and strokes, positioned within a vertical rectangular box.

Signed 1/6/2023, 5:45:27 PM EST

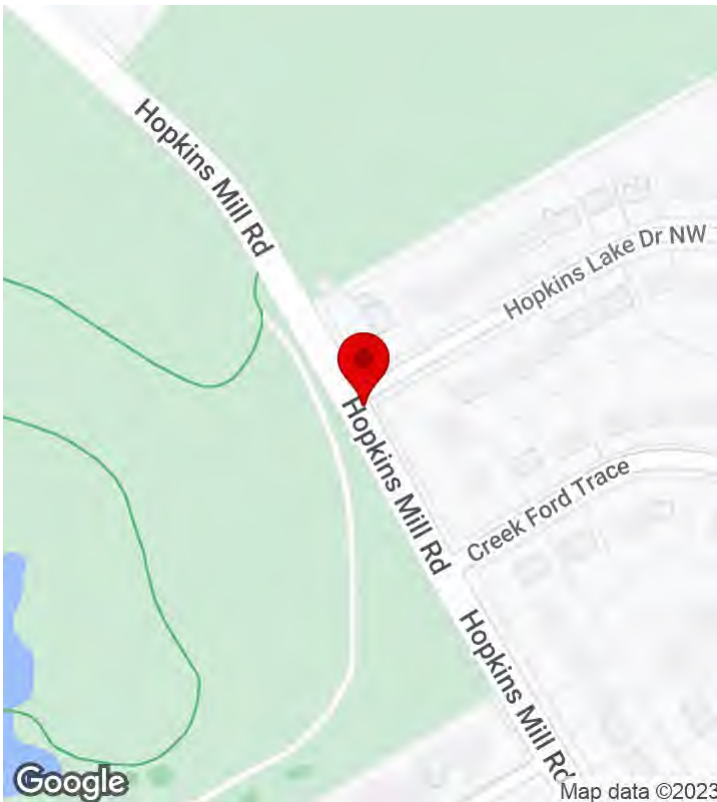
# 22011799A\_Hopkins Mill WMR\_S&ME



Utilize to document test hole field data for project.

## W Barbour, J Dearman, 7

1/20/2023, 1:11:28 PM EST



### CREATED

1/6/2023, 3:57:30 PM EST  
by William Barbour

### UPDATED

1/20/2023, 1:11:28 PM EST  
by Hethe Hyder

### STATUS

Communications

### LOCATION

33.949010, -84.164578



Start Time | 15:57

## Site Data

Test Hole Number | 7

Utility Owner | AT&T

Client Name | S&ME

## Before

Date of Work | January 6, 2023

SUE Crew | W Barbour, J Dearman

Vehicle Number | Truck 1

### Before Photos



## Address/ Nearest Address

Address | 4362-4498 Hopkins Lake Dr  
Duluth GA 30096  
US

## Hole Data

Surface Type	Asphalt
Surface Thickness	8 ▶ 0"
Soil Conditions	Clay, Gravel, Hard, Rocky, Wet Dirt, Brick
Type of Utility	Fiber
Diameter of Utility	2
Material of Utility	PE
Type of Marker	Nail & Disc
Hand Measurement Top	

## Grade Rod without Auto Level Measurement

Test Hole Measurement	
Bottom of utility Measurement	

## Top of Pipe Measurements

Rod A ( Cap) Ribbon	5.3
Rod B	5.7
Rod ( Top of Utility)	8.61
Calculated Utility Depth	3.1099999999999994

## Bottom of Utility Measurements

Bottom of Utility Rod A (Cap) Ribbon	
Bottom of Utility Rod B	
Rod ( Bottom of Utility)_2	
Calculated Utility Depth_2	

Board Photos





**Down Hole Photos**









## Site Tasks

## Swing Tie 'A'

Swing Tie 'A' Type | Gas Vent Pipe

Swing Tie 'A' Measurement | 18' ▶ 4"

Swing Tie 'A' Photos



## Swing Tie 'B'

Swing Tie 'B' Type | Back Of Curb

Swing Tie 'B' Measurement | 16' ▶ 2"

Swing Tie 'B' Photos





## Swing Tie 'C'

Swing Tie 'C' Type | Back Of Curb

Swing Tie 'C' Measurement | 11' ▶ 3"

Swing Tie 'C' Photos



## After

### After Photos





Time Completed

16:46

**Signature**

A handwritten signature in black ink, consisting of several overlapping loops and lines, positioned within a vertical rectangular box.

Signed 1/6/2023, 9:02:41 PM EST



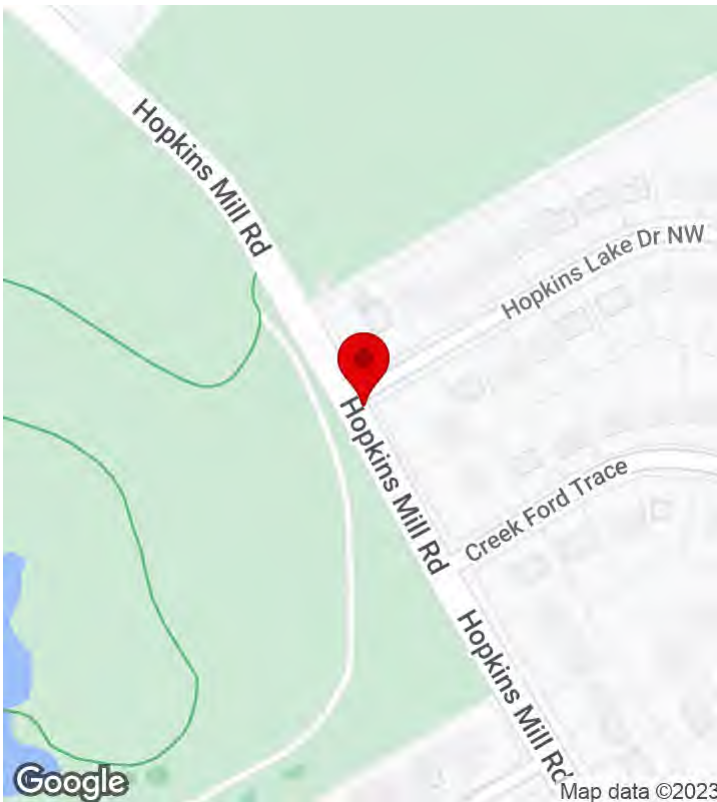
# 22011799A\_Hopkins Mill WMR\_S&ME



Utilize to document test hole field data for project.

## W Barbour, J Dearman, 8

1/20/2023, 1:14:22 PM EST



### CREATED

1/6/2023, 4:02:49 PM EST  
by William Barbour

### UPDATED

1/20/2023, 1:14:22 PM EST  
by Hethe Hyder

### STATUS

Storm

### LOCATION

33.949011, -84.164575

Start Time | 16:02

## Site Data

Test Hole Number | 8

Utility Owner | Gwinnett

Client Name | S&ME

## Before

Date of Work | January 6, 2023

SUE Crew | W Barbour, J Dearman

Vehicle Number | Truck 1

### Before Photos



## Address/ Nearest Address

Address | 4362-4498 Hopkins Lake Dr  
Duluth GA 30096  
US



## Hole Data

Surface Type	Asphalt
Surface Thickness	8 ▶ 0"
Soil Conditions	Rocky, Wet Dirt, Hard, Gravel, Clay
Type of Utility	Storm
Diameter of Utility	16
Material of Utility	Steel
Type of Marker	Nail & Disc
Hand Measurement Top	

## Grade Rod without Auto Level Measurement

Test Hole Measurement	
Bottom of utility Measurement	

## Top of Pipe Measurements

Rod A ( Cap) Ribbon	5.43
Rod B	5.43
Rod ( Top of Utility)	8.54
Calculated Utility Depth	3.1099999999999994

## Bottom of Utility Measurements

Bottom of Utility Rod A (Cap) Ribbon	
Bottom of Utility Rod B	
Rod ( Bottom of Utility)_2	
Calculated Utility Depth_2	

Board Photos



**Down Hole Photos**







## Site Tasks

### Swing Tie 'A'

Swing Tie 'A' Type | Utility Pole

Swing Tie 'A' Measurement | 18' ▶ 5"

#### Swing Tie 'A' Photos



### Swing Tie 'B'

Swing Tie 'B' Type | Back Of Curb

Swing Tie 'B' Measurement | 28' ▶ 3"

#### Swing Tie 'B' Photos





## Swing Tie 'C'

Swing Tie 'C' Type | Back Of Curb

Swing Tie 'C' Measurement | 13' ▶ 2"

Swing Tie 'C' Photos



## After

### After Photos





Time Completed

16:48

**Signature**

A handwritten signature in black ink, consisting of several overlapping loops and a long, sweeping tail that curves to the right.

Signed 1/6/2023, 9:47:50 PM EST



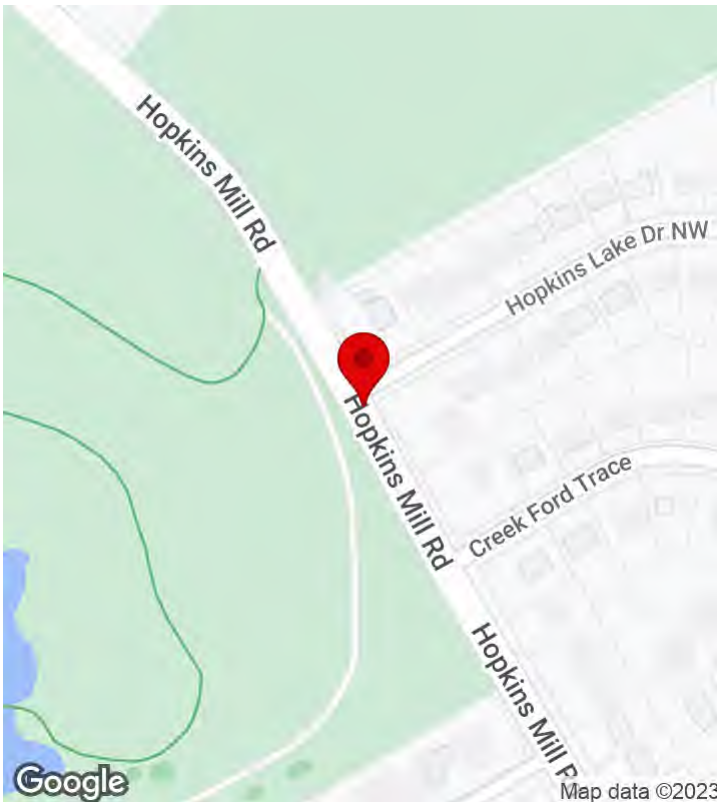
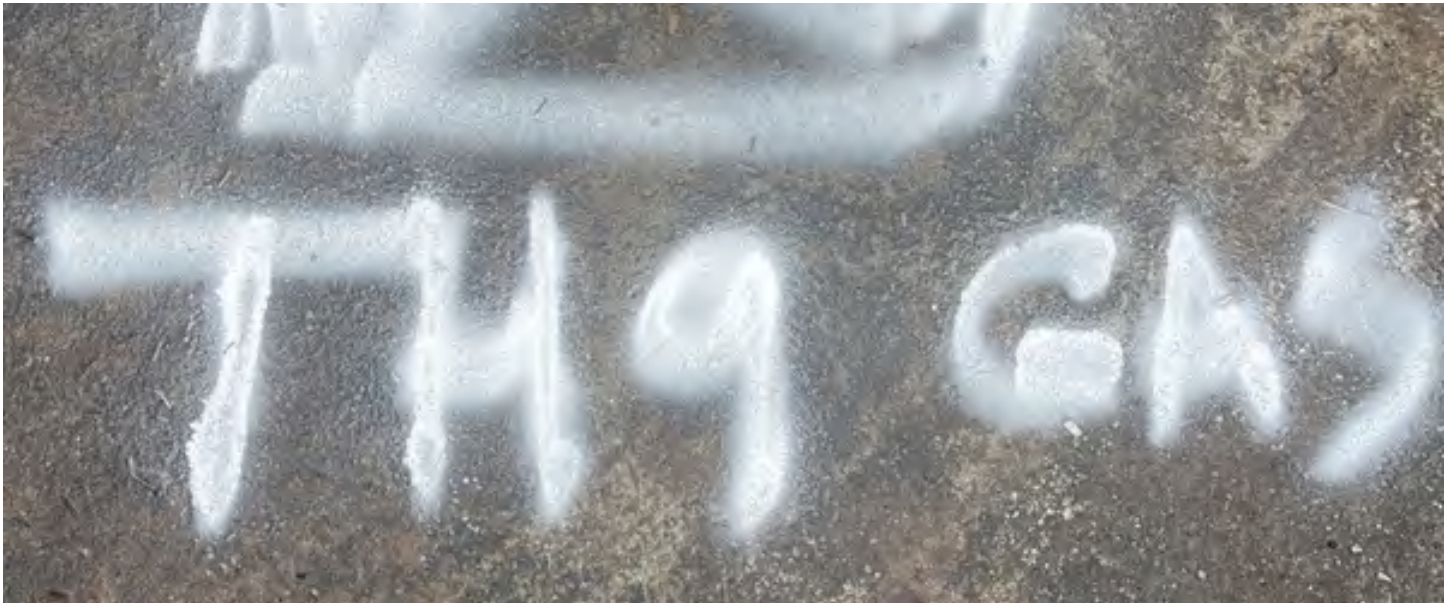
# 22011799A\_Hopkins Mill WMR\_S&ME



Utilize to document test hole field data for project.

## W Barbour, J Dearman, 9

1/20/2023, 1:11:47 PM EST



### CREATED

🕒 1/9/2023, 9:55:57 AM EST  
👤 by William Barbour

### UPDATED

🕒 1/20/2023, 1:11:47 PM EST  
👤 by Hethe Hyder

### STATUS

🟡 Gas

### LOCATION

📍 33.948988, -84.164591

Start Time | 09:55

## Site Data

Test Hole Number | 9

Utility Owner | AGL

Client Name | S&ME

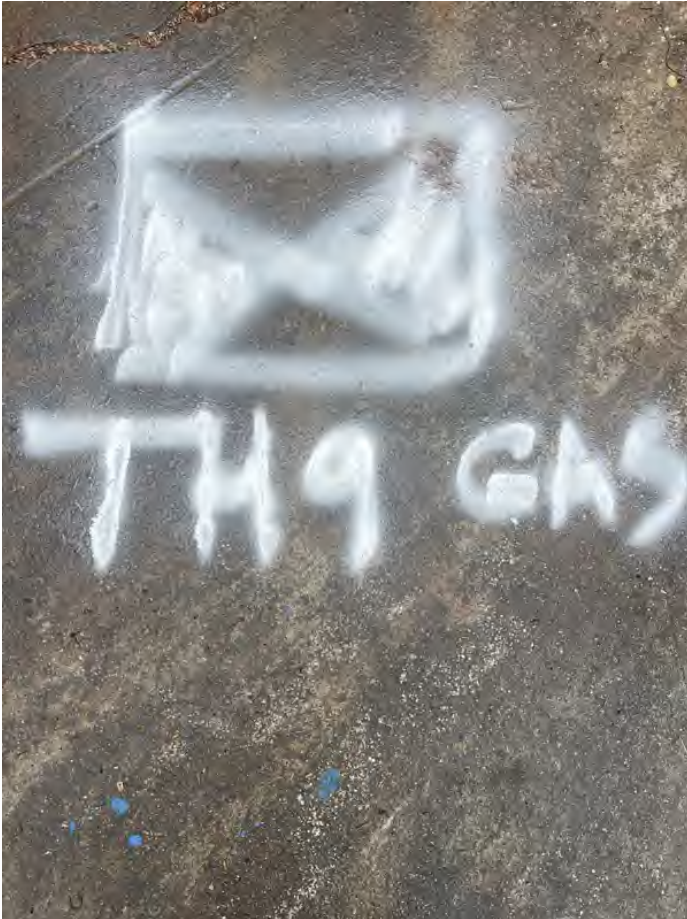
## Before

Date of Work | January 9, 2023

SUE Crew | W Barbour, J Dearman

Vehicle Number | Truck 1

### Before Photos



## Address/ Nearest Address

Address | 2262 Hopkins Mill Rd  
Duluth GA 30096  
US



## Hole Data

Surface Type	Asphalt
Surface Thickness	8 ▶ 0"
Soil Conditions	Rocky, Wet Dirt, Hard, Gravel, Clay
Type of Utility	Gas
Diameter of Utility	4
Material of Utility	HDPE
Type of Marker	Nail & Disc
Hand Measurement Top	

## Grade Rod without Auto Level Measurement

Test Hole Measurement	
Bottom of utility Measurement	

## Top of Pipe Measurements

Rod A ( Cap) Ribbon	4.72
Rod B	4.72
Rod ( Top of Utility)	8.21
Calculated Utility Depth	3.4900000000000001

## Bottom of Utility Measurements

Bottom of Utility Rod A (Cap) Ribbon	
Bottom of Utility Rod B	
Rod ( Bottom of Utility)_2	
Calculated Utility Depth_2	

Board Photos



**Down Hole Photos**







## Site Tasks

## Swing Tie 'A'

Swing Tie 'A' Type | Utility Pole

Swing Tie 'A' Measurement | 25' ▶ 3"

Swing Tie 'A' Photos





## Swing Tie 'B'

Swing Tie 'B' Type | Back Of Curb

Swing Tie 'B' Measurement | 19' ▶ 4"

Swing Tie 'B' Photos





## Swing Tie 'C'

Swing Tie 'C' Type | Back Of Curb

Swing Tie 'C' Measurement | 11' ▶ 2"

Swing Tie 'C' Photos





## After

### After Photos



Time Completed

15:51



**Signature**

A handwritten signature in black ink, consisting of several overlapping loops and strokes, positioned in the center of the page.

Signed 1/9/2023, 3:00:22 PM EST

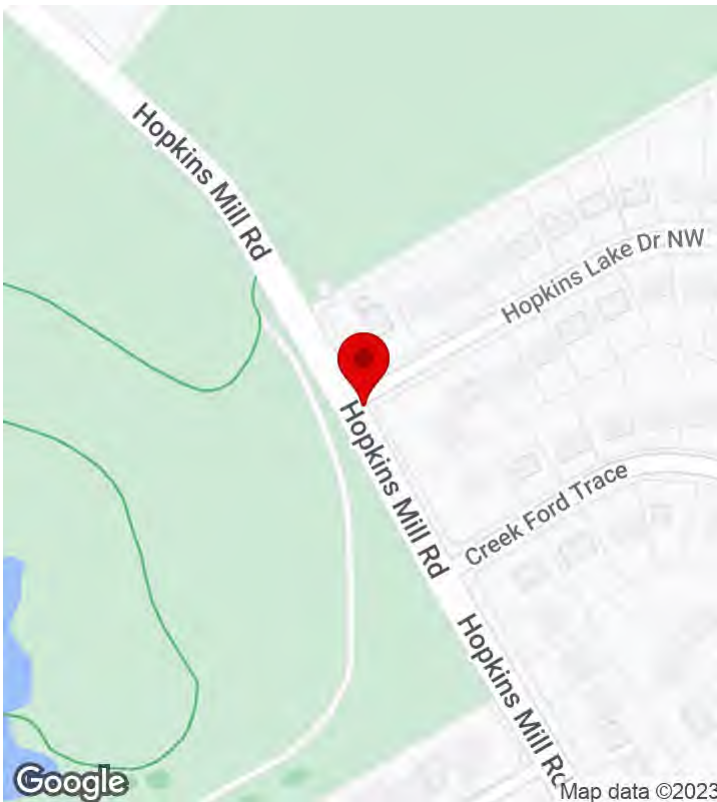
# 22011799A\_Hopkins Mill WMR\_S&ME



Utilize to document test hole field data for project.

## W Barbour, J Dearman, 10

1/20/2023, 1:20:45 PM EST



### CREATED

1/9/2023, 10:38:23 AM EST  
by William Barbour

### UPDATED

1/20/2023, 1:20:45 PM EST  
by Hethe Hyder

### STATUS

Communications

### LOCATION

33.949022, -84.164572



Start Time | 10:38

## Site Data

Test Hole Number | 10  
Utility Owner | AT&T  
Client Name | S&ME

## Before

Date of Work | January 9, 2023  
SUE Crew | W Barbour, J Dearman  
Vehicle Number | Truck 1

### Before Photos



## Address/ Nearest Address

Address | 4362-4498 Hopkins Lake Dr  
Duluth GA 30096  
US

## Hole Data

Surface Type	Asphalt
Surface Thickness	8 ▶ 0"
Soil Conditions	Rocky, Soft, Gravel, Clay
Type of Utility	Fiber
Diameter of Utility	2
Material of Utility	PE
Type of Marker	Nail & Disc
Hand Measurement Top	

## Grade Rod without Auto Level Measurement

Test Hole Measurement	
Bottom of utility Measurement	

## Top of Pipe Measurements

Rod A ( Cap) Ribbon	4.1
Rod B	4.3
Rod ( Top of Utility)	6.69
Calculated Utility Depth	2.4900000000000001

## Bottom of Utility Measurements

Bottom of Utility Rod A (Cap) Ribbon	
Bottom of Utility Rod B	
Rod ( Bottom of Utility)_2	
Calculated Utility Depth_2	

### Board Photos





**Down Hole Photos**











## Site Tasks

### Swing Tie 'A'

Swing Tie 'A' Type | Utility Pole

Swing Tie 'A' Measurement | 22' ► 1"

#### Swing Tie 'A' Photos



### Swing Tie 'B'

Swing Tie 'B' Type | Back Of Curb

Swing Tie 'B' Measurement | 23' ► 4"

#### Swing Tie 'B' Photos





## Swing Tie 'C'

Swing Tie 'C' Type | Back Of Curb

Swing Tie 'C' Measurement | 23' ▶ 1"

Swing Tie 'C' Photos





## After

### After Photos





Time Completed

11:35

**Signature**

A handwritten signature in black ink, consisting of several overlapping loops and strokes, positioned within a vertical line.

Signed 1/9/2023, 3:43:43 PM EST



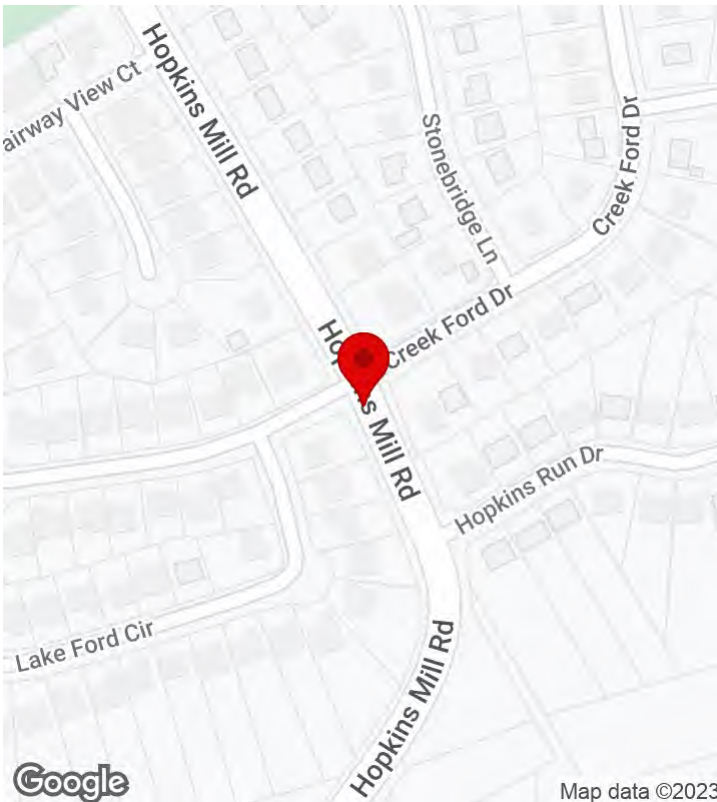
# 22011799A\_Hopkins Mill WMR\_S&ME



Utilize to document test hole field data for project.

## W Barbour, J Dearman, 11

1/20/2023, 1:17:29 PM EST



### CREATED

1/9/2023, 1:40:14 PM EST  
by William Barbour

### UPDATED

1/20/2023, 1:17:29 PM EST  
by Hethe Hyder

### STATUS

Water

### LOCATION

33.945863, -84.162501

Start Time | 13:40

## Site Data

Test Hole Number | 11

Utility Owner | Gwinnett

Client Name | S&ME

## Before

Date of Work | January 9, 2023

SUE Crew | W Barbour, J Dearman

Vehicle Number | Truck 1

### Before Photos



## Address/ Nearest Address

Address | 2100–2120 Hopkins Mill Rd  
Duluth GA 30096  
US



## Hole Data

Surface Type	Asphalt
Surface Thickness	8 ▶ 4/8"
Soil Conditions	Clay, Gravel, Hard, Rocky, Wet Dirt
Type of Utility	Water
Diameter of Utility	16
Material of Utility	Ductile Iron
Type of Marker	Nail & Disc
Hand Measurement Top	

## Grade Rod without Auto Level Measurement

Test Hole Measurement	
Bottom of utility Measurement	

## Top of Pipe Measurements

Rod A ( Cap) Ribbon	5.48
Rod B	5.48
Rod ( Top of Utility)	9.8
Calculated Utility Depth	4.32

## Bottom of Utility Measurements

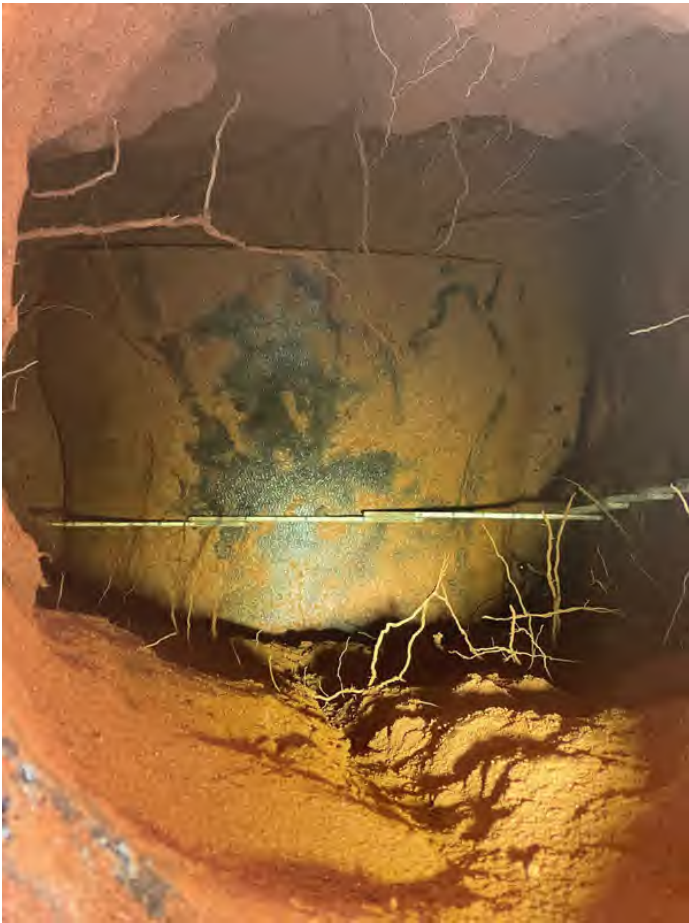
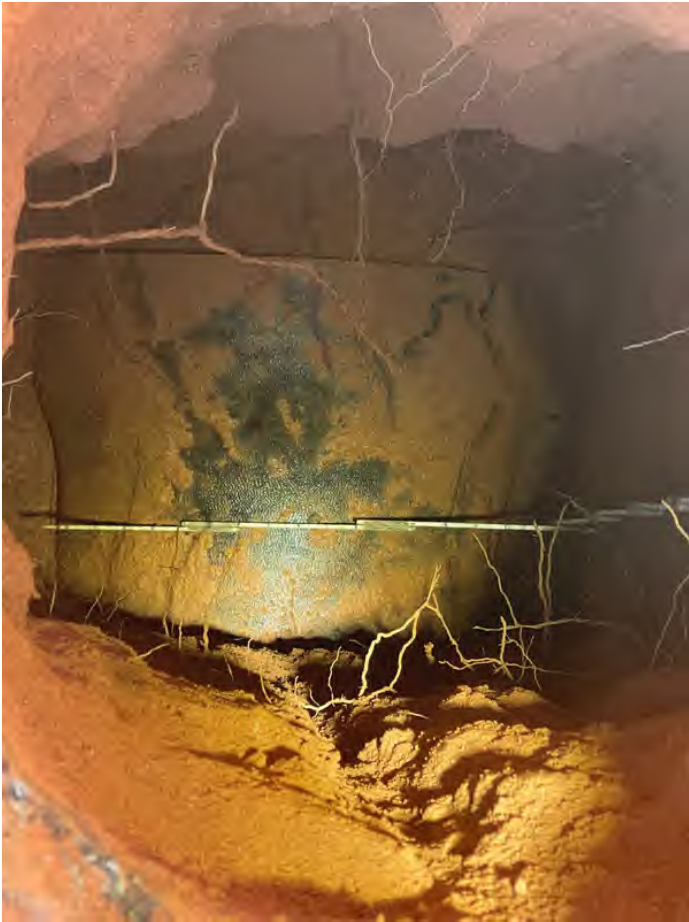
Bottom of Utility Rod A (Cap) Ribbon	
Bottom of Utility Rod B	
Rod ( Bottom of Utility)_2	
Calculated Utility Depth_2	

Board Photos

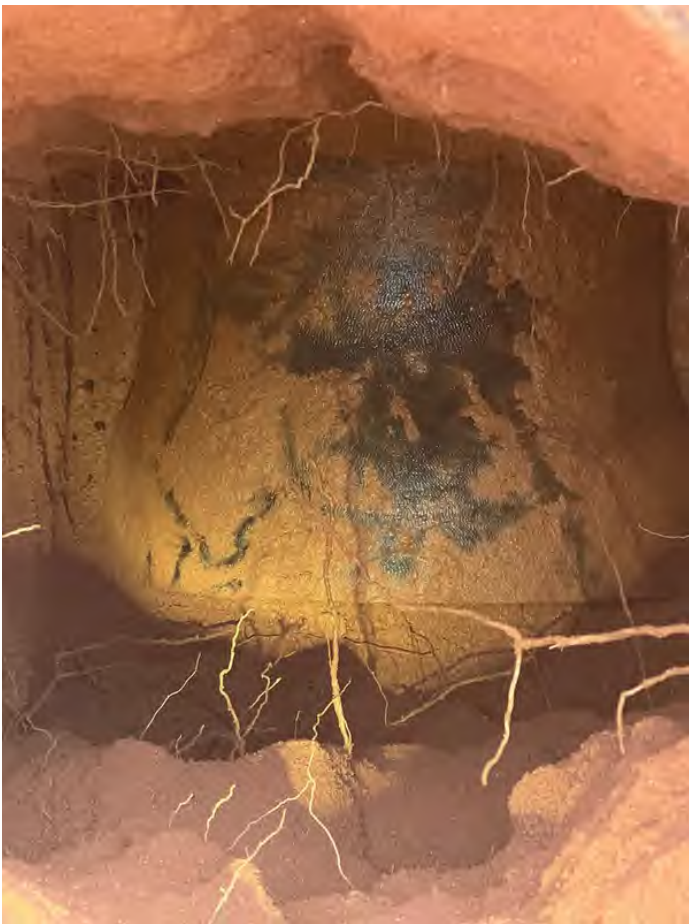


**Down Hole Photos**











## Site Tasks

### Swing Tie 'A'

Swing Tie 'A' Type | Back Of Curb

Swing Tie 'A' Measurement | 9' ▶ 2"

#### Swing Tie 'A' Photos



### Swing Tie 'B'

Swing Tie 'B' Type | Water valve

Swing Tie 'B' Measurement | 24' ▶ 3"

#### Swing Tie 'B' Photos



## Swing Tie 'C'

Swing Tie 'C' Type | Utility Marker

Swing Tie 'C' Measurement | 26' ▶ 6"

Swing Tie 'C' Photos





## After

### After Photos



Time Completed

16:03



**Signature**

A handwritten signature in black ink, consisting of several large, overlapping loops and strokes, positioned within a vertical rectangular box.

Signed 1/9/2023, 6:41:44 PM EST

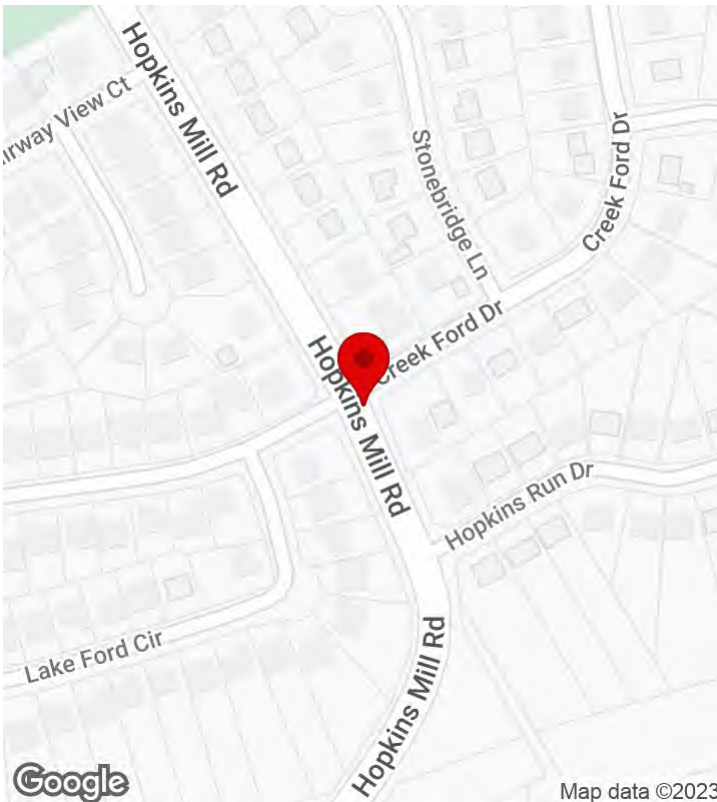
# 22011799A\_Hopkins Mill WMR\_S&ME



Utilize to document test hole field data for project.

## W Barbour, J Dearman, 12

1/20/2023, 1:18:50 PM EST



### CREATED

1/9/2023, 3:30:11 PM EST  
by William Barbour

### UPDATED

1/20/2023, 1:18:50 PM EST  
by Hethe Hyder

### STATUS

Gas

### LOCATION

33.945932, -84.162454



Map data ©2023



Start Time | 15:30

## Site Data

Test Hole Number | 12  
Utility Owner | AGL  
Client Name | S&ME

## Before

Date of Work | January 9, 2023  
SUE Crew | W Barbour, J Dearman  
Vehicle Number | Truck 1

### Before Photos



## Address/ Nearest Address

Address | 2102 Hopkins Mill Rd  
Duluth GA 30096  
US

## Hole Data

Surface Type | Natural Ground  
Surface Thickness |  
Soil Conditions | Clay, Gravel, Rocky, Soft  
Type of Utility | Gas  
Diameter of Utility | 4  
Material of Utility | HDPE

Type of Marker | Rod & Cap

Hand Measurement Top

### Grade Rod without Auto Level Measurement

Test Hole Measurement

Bottom of utility Measurement

### Top of Pipe Measurements

Rod A ( Cap) Ribbon

6

Rod B

6.1

Rod ( Top of Utility)

9.9

Calculated Utility Depth

3.8500000000000005

### Bottom of Utility Measurements

Bottom of Utility Rod A (Cap) Ribbon

Bottom of Utility Rod B

Rod ( Bottom of Utility)\_2

Calculated Utility Depth\_2

### Board Photos



### Down Hole Photos







## Site Tasks

### Swing Tie 'A'

Swing Tie 'A' Type | Back Of Curb

Swing Tie 'A' Measurement | 5' ▶ 3"

#### Swing Tie 'A' Photos



### Swing Tie 'B'

Swing Tie 'B' Type | Back Of Curb

Swing Tie 'B' Measurement | 29' ▶ 3"

#### Swing Tie 'B' Photos





## Swing Tie 'C'

Swing Tie 'C' Type	Sign
Swing Tie 'C' Measurement	30' ▶ 4"
Swing Tie 'C' Photos	





## After

### After Photos





**Time Completed**

| 15:32

**Signature**

A handwritten signature in black ink, consisting of several overlapping loops and strokes, positioned within a vertical rectangular box.

Signed 1/9/2023, 8:32:08 PM EST



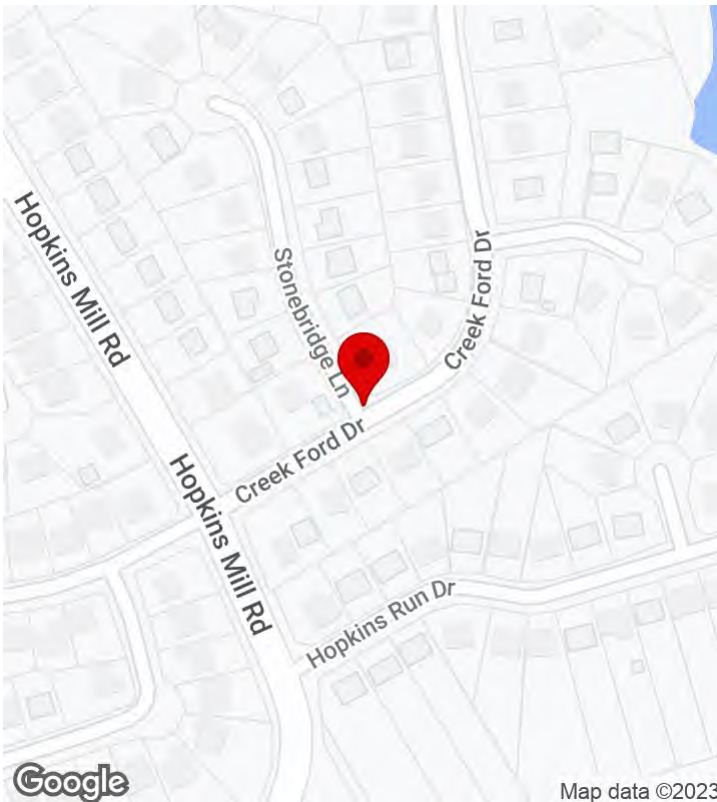
# 22011799A\_Hopkins Mill WMR\_S&ME



Utilize to document test hole field data for project.

## W Barbour, J Dearman, 13

1/20/2023, 1:21:53 PM EST



### CREATED

1/10/2023, 2:41:07 PM EST  
by William Barbour

### UPDATED

1/20/2023, 1:21:53 PM EST  
by Hethe Hyder

### STATUS

Communications

### LOCATION

33.946461, -84.161712

Start Time | 14:41

## Site Data

Test Hole Number | 13

Utility Owner | AT&T

Client Name | S&ME

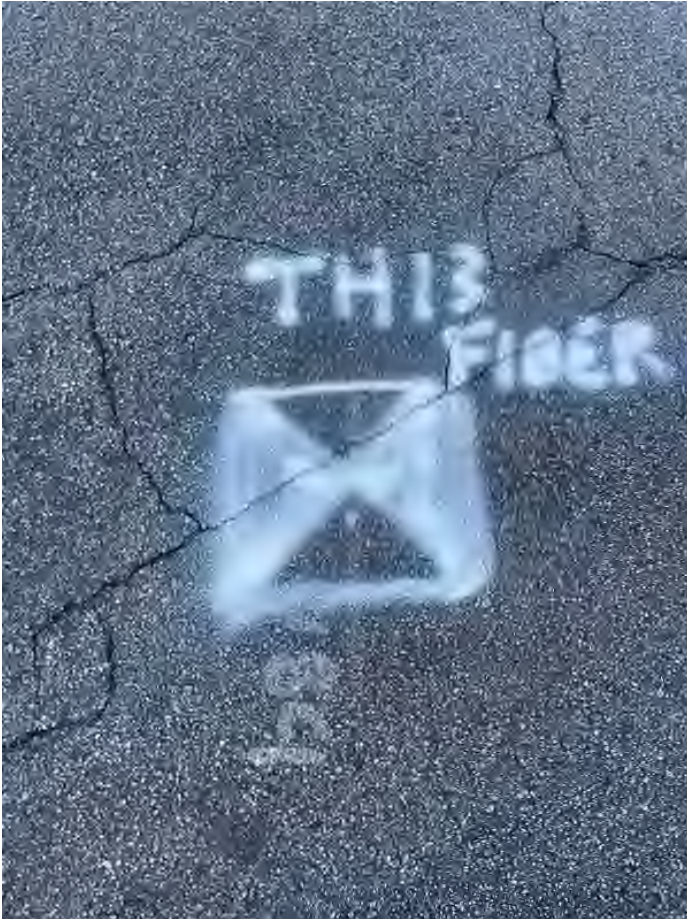
## Before

Date of Work | January 10, 2023

SUE Crew | W Barbour, J Dearman

Vehicle Number | Truck 1

### Before Photos



## Address/ Nearest Address

Address | 2448 Stonebridge Ln  
Duluth GA 30096  
US



## Hole Data

Surface Type	Asphalt
Surface Thickness	8 ▶ 0"
Soil Conditions	Clay, Hard, Rocky, Brick
Type of Utility	Fiber
Diameter of Utility	1
Material of Utility	DBF
Type of Marker	Nail & Disc
Hand Measurement Top	

## Grade Rod without Auto Level Measurement

Test Hole Measurement	
Bottom of utility Measurement	

## Top of Pipe Measurements

Rod A ( Cap) Ribbon	4.45
Rod B	4.45
Rod ( Top of Utility)	7.99
Calculated Utility Depth	3.54

## Bottom of Utility Measurements

Bottom of Utility Rod A (Cap) Ribbon	
Bottom of Utility Rod B	
Rod ( Bottom of Utility)_2	
Calculated Utility Depth_2	

Board Photos



**Down Hole Photos**









## Site Tasks

### Swing Tie 'A'

Swing Tie 'A' Type | Back Of Curb

Swing Tie 'A' Measurement | 23' ▶ 3"

Swing Tie 'A' Photos





## Swing Tie 'B'

Swing Tie 'B' Type | Manhole

Swing Tie 'B' Measurement | 18' ▶ 2"

Swing Tie 'B' Photos



## Swing Tie 'C'

Swing Tie 'C' Type | Back Of Curb

Swing Tie 'C' Measurement | 17' ▶ 2"

Swing Tie 'C' Photos





## After

### After Photos





Time Completed

15:38



**Signature**

A handwritten signature in black ink, consisting of several overlapping loops and strokes, positioned in the center of the page.

Signed 1/10/2023, 8:38:39 PM EST

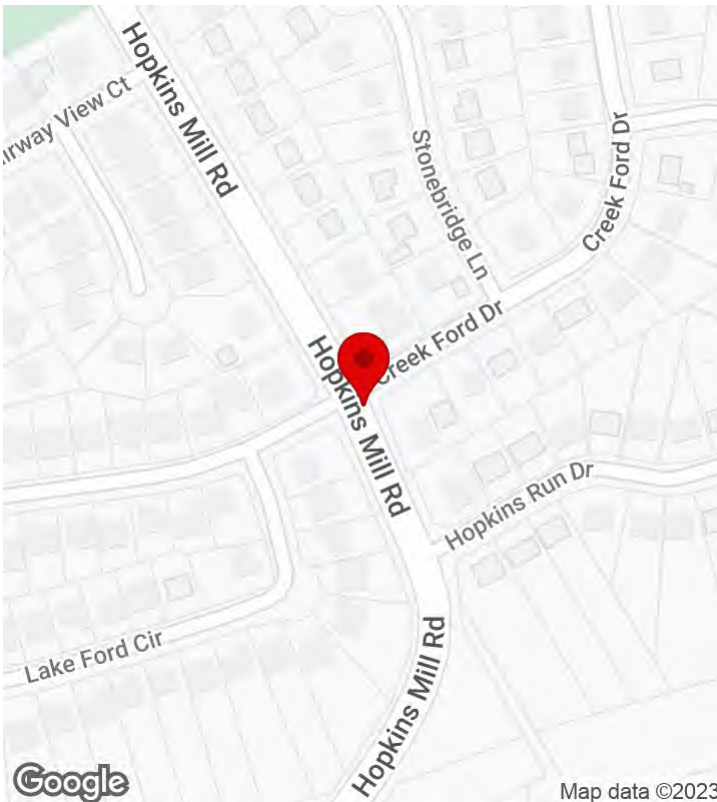
# 22011799A\_Hopkins Mill WMR\_S&ME



Utilize to document test hole field data for project.

## W Barbour, J Dearman, 14

1/20/2023, 1:07:47 PM EST



### CREATED

1/9/2023, 3:51:01 PM EST  
by William Barbour

### UPDATED

1/20/2023, 1:07:47 PM EST  
by Hethe Hyder

### STATUS

Water

### LOCATION

33.945939, -84.162452



Map data ©2023



Start Time | 15:51

## Site Data

Test Hole Number | 14

Utility Owner | Gwinnett

Client Name | S&ME

## Before

Date of Work | January 9, 2023

SUE Crew | W Barbour, J Dearman

Vehicle Number | Truck 1

### Before Photos



## Address/ Nearest Address

Address | 2102 Hopkins Mill Rd  
Duluth GA 30096  
US

## Hole Data

Surface Type	Natural Ground
Surface Thickness	
Soil Conditions	Clay, Gravel, Hard, Wet Dirt
Type of Utility	Water
Diameter of Utility	3
Material of Utility	Ductile Iron
Type of Marker	Rod & Cap
Hand Measurement Top	

## Grade Rod without Auto Level Measurement

Test Hole Measurement	
Bottom of utility Measurement	

## Top of Pipe Measurements

Rod A ( Cap) Ribbon	5.94
Rod B	5.94
Rod ( Top of Utility)	10.79
Calculated Utility Depth	4.849999999999999

## Bottom of Utility Measurements

Bottom of Utility Rod A (Cap) Ribbon	
Bottom of Utility Rod B	
Rod ( Bottom of Utility)_2	
Calculated Utility Depth_2	

### Board Photos





**Down Hole Photos**







## Site Tasks

### Swing Tie 'A'

Swing Tie 'A' Type | Back Of Curb

Swing Tie 'A' Measurement | 3' ▶ 1"

#### Swing Tie 'A' Photos



### Swing Tie 'B'

Swing Tie 'B' Type | Back Of Curb

Swing Tie 'B' Measurement | 29' ▶ 3"

#### Swing Tie 'B' Photos



## Swing Tie 'C'

Swing Tie 'C' Type	Sign
Swing Tie 'C' Measurement	30' ▶ 4"
Swing Tie 'C' Photos	





## After

### After Photos



**Time Completed**

| 17:01

**Signature**

|



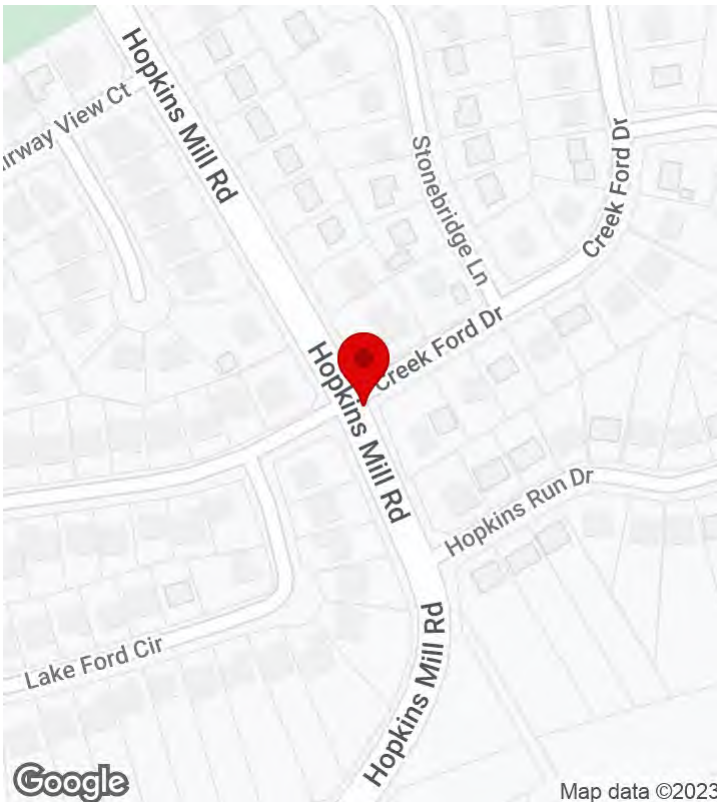
# 22011799A\_Hopkins Mill WMR\_S&ME



Utilize to document test hole field data for project.

## W Barbour, J Dearman, 15

1/20/2023, 1:20:11 PM EST



### CREATED

1/9/2023, 3:52:04 PM EST  
by William Barbour

### UPDATED

1/20/2023, 1:20:11 PM EST  
by Hethe Hyder

### STATUS

Communications

### LOCATION

33.945965, -84.162445



Map data ©2023

Start Time | 15:52

## Site Data

Test Hole Number | 15

Utility Owner | AT&T

Client Name | S&ME

## Before

Date of Work | January 9, 2023

SUE Crew | W Barbour, J Dearman

Vehicle Number | Truck 1

### Before Photos



## Address/ Nearest Address

Address | 2102 Hopkins Mill Rd  
Duluth GA 30096  
US



## Hole Data

Surface Type	Natural Ground
Surface Thickness	
Soil Conditions	Clay, Wet Dirt, Rocky, Hard
Type of Utility	Fiber
Diameter of Utility	1
Material of Utility	DBF
Type of Marker	Rod & Cap
Hand Measurement Top	

## Grade Rod without Auto Level Measurement

Test Hole Measurement	
Bottom of utility Measurement	

## Top of Pipe Measurements

Rod A ( Cap) Ribbon	5.88
Rod B	5.88
Rod ( Top of Utility)	8.98
Calculated Utility Depth	3.1000000000000005

## Bottom of Utility Measurements

Bottom of Utility Rod A (Cap) Ribbon	
Bottom of Utility Rod B	
Rod ( Bottom of Utility)_2	
Calculated Utility Depth_2	

Board Photos



**Down Hole Photos**







## Site Tasks

### Swing Tie 'A'

Swing Tie 'A' Type | Back Of Curb

Swing Tie 'A' Measurement | 5' ▶ 1"

#### Swing Tie 'A' Photos



### Swing Tie 'B'

Swing Tie 'B' Type | Back Of Curb

Swing Tie 'B' Measurement | 29' ▶ 4"

#### Swing Tie 'B' Photos





## Swing Tie 'C'

Swing Tie 'C' Type	Sign
Swing Tie 'C' Measurement	29' ▶ 2"
Swing Tie 'C' Photos	





## After

### After Photos





**Time Completed**

| 17:04

**Signature**

A handwritten signature in black ink, consisting of several overlapping loops and strokes, positioned within a vertical rectangular box.

Signed 1/9/2023, 10:05:12 PM EST



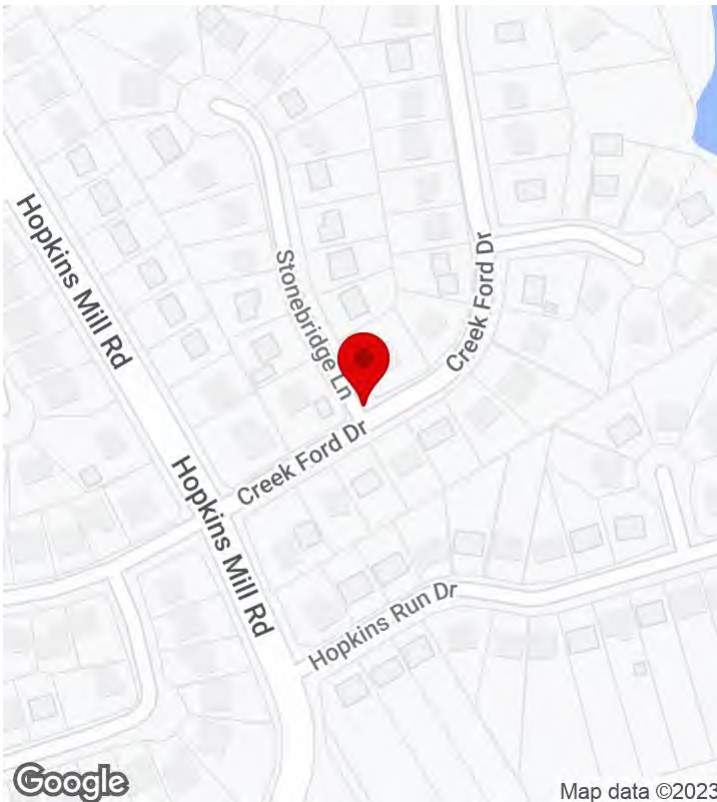
# 22011799A\_Hopkins Mill WMR\_S&ME



Utilize to document test hole field data for project.

## J Dearman, W Barbour, 16

1/20/2023, 1:18:07 PM EST



### CREATED

1/10/2023, 12:25:30 PM EST  
by William Barbour

### UPDATED

1/20/2023, 1:18:07 PM EST  
by Hethe Hyder

### STATUS

Gas

### LOCATION

33.946467, -84.161723

Start Time | 08:31

## Site Data

Test Hole Number | 16  
Utility Owner | AGL  
Client Name | S&ME

## Before

Date of Work | January 10, 2023  
SUE Crew | J Dearman, W Barbour  
Vehicle Number | Truck 1

### Before Photos



## Address/ Nearest Address

Address | 2448 Stonebridge Ln  
Duluth GA 30096  
US



## Hole Data

Surface Type	Asphalt
Surface Thickness	8 ▶ 0"
Soil Conditions	Clay, Hard, Rocky, Brick
Type of Utility	Gas
Diameter of Utility	2
Material of Utility	HDPE
Type of Marker	Nail & Disc
Hand Measurement Top	

## Grade Rod without Auto Level Measurement

Test Hole Measurement	
Bottom of utility Measurement	

## Top of Pipe Measurements

Rod A ( Cap) Ribbon	4.86
Rod B	4.86
Rod ( Top of Utility)	7.65
Calculated Utility Depth	2.79

## Bottom of Utility Measurements

Bottom of Utility Rod A (Cap) Ribbon	
Bottom of Utility Rod B	
Rod ( Bottom of Utility)_2	
Calculated Utility Depth_2	

Board Photos



**Down Hole Photos**









## Site Tasks

### Swing Tie 'A'

Swing Tie 'A' Type | Back Of Curb

Swing Tie 'A' Measurement | 22' ▶ 3"

Swing Tie 'A' Photos





## Swing Tie 'B'

Swing Tie 'B' Type | Manhole

Swing Tie 'B' Measurement | 24' ▶ 5"

Swing Tie 'B' Photos



## Swing Tie 'C'

Swing Tie 'C' Type | Back Of Curb

Swing Tie 'C' Measurement | 19' ▶ 1"

Swing Tie 'C' Photos





## After

After Photos





Time Completed

| 12:31



**Signature**

A handwritten signature in black ink, consisting of several overlapping loops and strokes, positioned in the center of the page.

Signed 1/10/2023, 5:32:17 PM EST



## After

### After Photos





Time Completed

12:50

**Signature**

A handwritten signature in black ink, consisting of several large, overlapping loops and strokes, positioned within a vertical rectangular box.

Signed 1/5/2023, 3:20:24 PM EST



<b>PROJECT:</b> Hopkins Mill Water Main Replacement Hopkins Mill Road, Duluth, Georgia S&ME Project No. 22800360		<b>BORING LOG: B-01</b> Sheet 1 of 1	
<b>DATE DRILLED:</b> 01/06/2022		<b>ELEVATION:</b> 960 ft	
<b>DRILL RIG:</b> CME-55 (Track)		<b>DATUM:</b>	
<b>DRILLER:</b> Piedmont Env. Drilling		<b>BORING DEPTH:</b> 10.0 ft	
<b>HAMMER TYPE:</b> Auto Hammer (140 lb)		<b>CLOSURE:</b> Cuttings with Asphalt Patch	
<b>DRILLING METHOD:</b> 3-1/4" HSA		<b>LOGGED BY:</b> Ethan Fraser	
<b>SAMPLING METHOD:</b> SS		<b>LATITUDE:</b>	
		<b>LONGITUDE:</b>	
<b>PROJECT COORDINATE SYSTEM - NAD 1983 StatePlane Georgia West FIPS 1002 Feet</b>			

DEPTH (feet)	NOTES	Origin/Identifier	GRAPHIC	SAMPLE NO. (RECOVERY)	MATERIAL DESCRIPTION	BLOW COUNT DATA (SPT N-value)	STANDARD PENETRATION TEST DATA				ELEVATION	
							20	40	60	80		
0					ASPHALT, 8 inches						960	
0.7					GRAVEL BASE, 8 inches							
1.3		Fill		S-01	SILTY SAND (SM), trace mica, very loose, dark brown black and tan, fine to coarse grained, moist	1-1-1 N = 2	●					
3.0				S-02	SANDY SILT (ML), trace mica, firm to stiff, brown black and orange, moist	1-2-4 N = 6	●					
5		Residuum		S-03		4-5-5 N = 10	●					
10	Hole Cave at 6.0 feet			S-04		5-6-7 N = 13	●					
10.0							Borehole terminated at 10.0 feet					
15											945	
20											940	
25											935	
30											930	

GROUNDWATER	DATE	DEPTH (FT)	REMARKS
ATD			
END OF DRILLING	01/06/2023		Not encountered
AFTER DRILLING			
AFTER DRILLING			



GROUNDWATER DEPTHS ARE NOT EXACT AND MAY VARY SUBSTANTIALLY FROM THOSE INDICATED. ATD = AT TIME OF DRILLING  
 LL=Liquid Limit, PL = Plastic Limit, NMC = Natural Moisture Content, PPV = Pocket Penetrometer (tsf), PTV = Pocket Torvane (tsf),  
 AR = Auger Refusal

<b>PROJECT:</b> Hopkins Mill Water Main Replacement Hopkins Mill Road, Duluth, Georgia S&ME Project No. 22800360		<b>BORING LOG: B-02</b> <i>Sheet 1 of 1</i>	
<b>DATE DRILLED:</b> 01/06/2023		<b>ELEVATION:</b> 960 ft	
<b>DRILL RIG:</b> CME-55 (Track)		<b>DATUM:</b>	
<b>DRILLER:</b> Piedmont Env. Drilling		<b>BORING DEPTH:</b> 10.0 ft	
<b>HAMMER TYPE:</b> Auto Hammer (140 lb)		<b>CLOSURE:</b> Cuttings with Asphalt Patch	
<b>DRILLING METHOD:</b> 3-1/4" HSA		<b>LOGGED BY:</b> Ethan Fraser	
<b>SAMPLING METHOD:</b> SS		<b>LATITUDE:</b>	
		<b>LONGITUDE:</b>	
<b>PROJECT COORDINATE SYSTEM - NAD 1983 StatePlane Georgia West FIPS 1002 Feet</b>			

DEPTH (feet)	NOTES	Origin/Identifier	GRAPHIC	SAMPLE NO. (RECOVERY)	MATERIAL DESCRIPTION	BLOW COUNT DATA (SPT N-value)	STANDARD PENETRATION TEST DATA				ELEVATION	
							20	40	60	80		
0											960	
0.3		Fill		S-01	ASPHALT, 4 inches	2-4-6 N = 10	●					
3.0		Residuum		S-02	SANDY SILT (ML), trace mica, stiff to very stiff, brown black and orange, moist	4-5-6 N = 11	●					
5	Hole Cave at 6.0 feet			S-03		5-7-9 N = 16	●					
10				S-04		5-6-8 N = 14	●					
10.0							Borehole terminated at 10.0 feet					
15											945	
20											940	
25											935	
30											930	

GROUNDWATER	DATE	DEPTH (FT)	REMARKS
ATD	∅		
END OF DRILLING	∇ 01/06/2023		Not encountered
AFTER DRILLING	∇		
AFTER DRILLING	∇		



GROUNDWATER DEPTHS ARE NOT EXACT AND MAY VARY SUBSTANTIALLY FROM THOSE INDICATED. ATD = AT TIME OF DRILLING  
 LL=Liquid Limit, PL = Plastic Limit, NMC = Natural Moisture Content, PPV = Pocket Penetrometer (tsf), PTV = Pocket Torvane (tsf),  
 AR = Auger Refusal

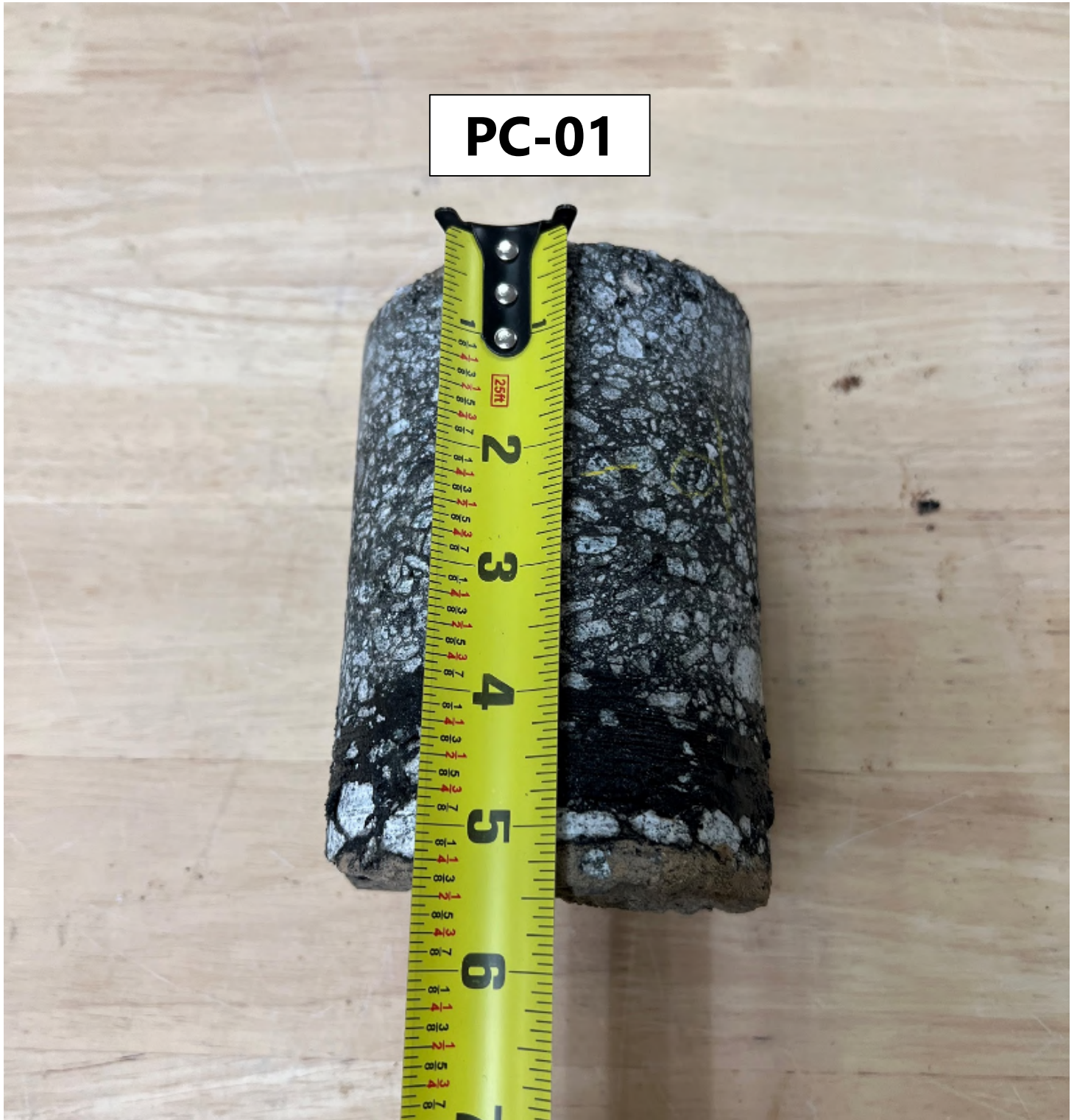




**Pavement Coring Summary Table**  
**Hopkins Mill Water Main Replacement**  
Hopkins Mill Road, Duluth, Georgia  
S&ME Project No. 22800360

Label / ID	Core / Test Location	Asphalt Pavement Thickness (in)	Pavement Section Thickness, Total (in)	Notes (See also Pavement Core Detail Photographs)
PC-01	Hopkins Mill Road	5-1/2"	5-1/2"	No apparent cracks; 4 bonded layers: 1-1/4" upper, 1-3/4" middle, 1" middle, 1-1/2" bottom
PC-02	Creek Ford Drive	4"	4"	No apparent cracks; 3 bonded layers: 1" upper, 1" middle, 2" bottom
PC-03	Hopkins Lake Drive	3-3/4"	3-3/4"	No apparent cracks; 3 bonded layers: 1" upper, 1" middle, 1-3/4" bottom

**PC-01**



DRAWING FOR INFORMATION PURPOSES ONLY



**REPRESENTATIVE PHOTO**

HOPKINS MILL WATER MAIN REPLACEMENT  
HOPKINS MILL ROAD  
DULUTH, GEORGIA

SCALE:  
NOT TO SCALE

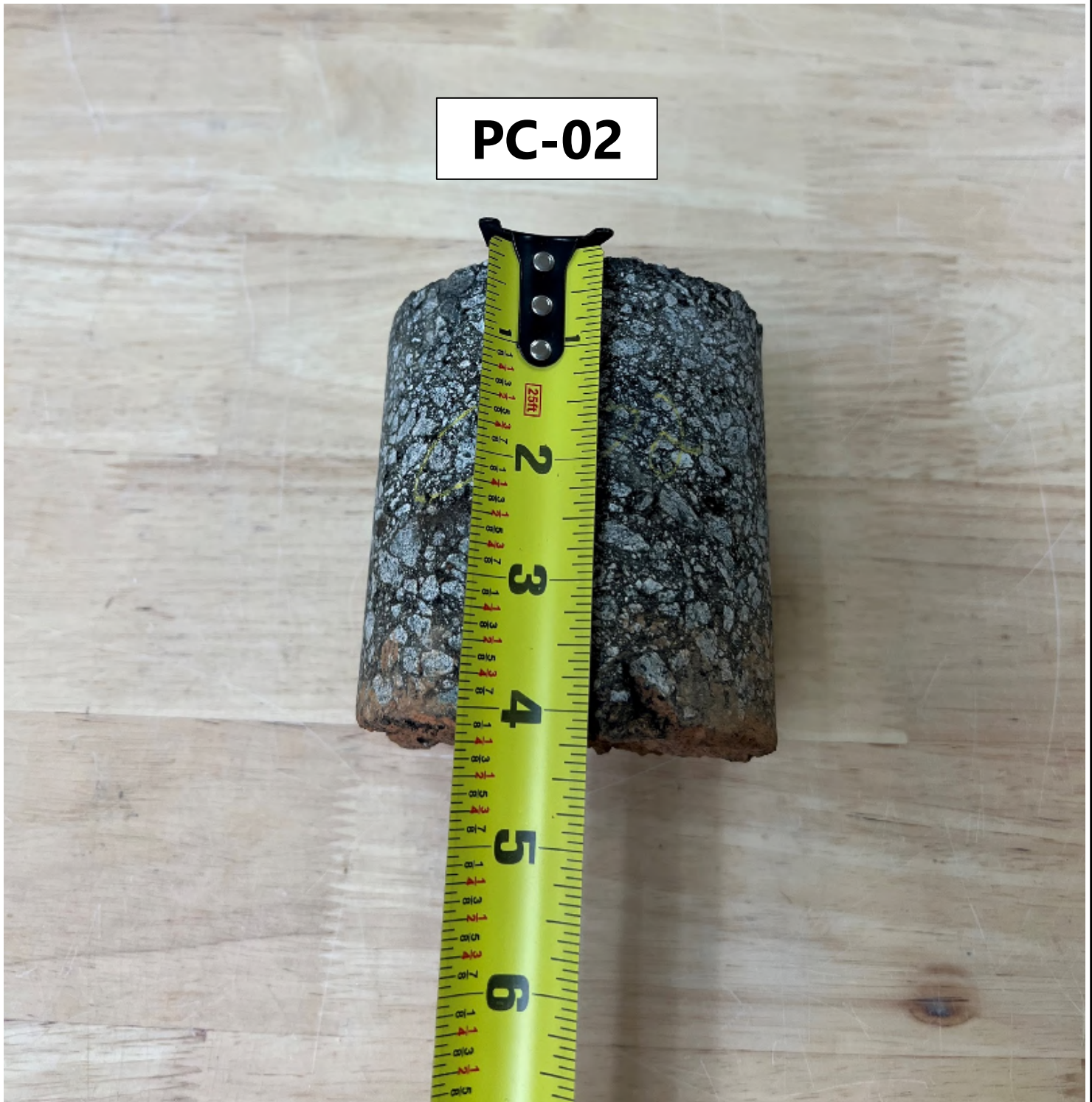
DATE:  
1-17-2023  
PROJECT NUMBER  
22800360

FIGURE NO.

**9**



**PC-02**



DRAWING FOR INFORMATION PURPOSES ONLY



**REPRESENTATIVE PHOTO**

HOPKINS MILL WATER MAIN REPLACEMENT  
HOPKINS MILL ROAD  
DULUTH, GEORGIA

SCALE:  
NOT TO SCALE  
DATE:  
1-17-2023  
PROJECT NUMBER  
22800360

FIGURE NO.  
**10**

**PC-03**



DRAWING FOR INFORMATION PURPOSES ONLY



**REPRESENTATIVE PHOTO**

HOPKINS MILL WATER MAIN REPLACEMENT  
HOPKINS MILL ROAD  
DULUTH, GEORGIA

SCALE:  
NOT TO SCALE

DATE:  
1-17-2023  
PROJECT NUMBER  
22800360

FIGURE NO.

**11**

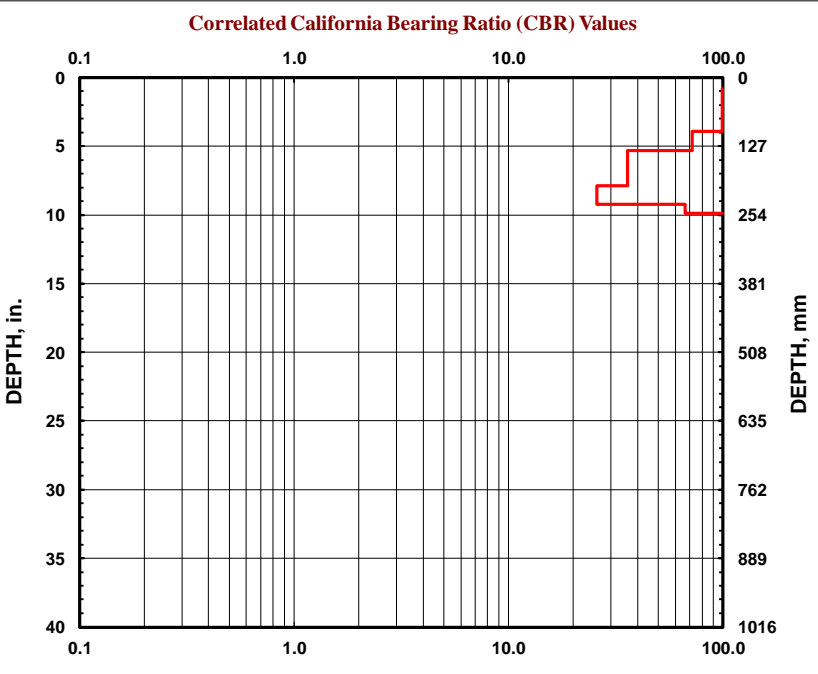


# DUAL MASS DYNAMIC CONE PENETROMETER TEST DATA

Project Name: Hopkins Mill Road Water Main Replacement  
 S&ME Project No: 22800360  
 Test No: PC-01  
 Date: 1/6/2023



No. of Blows	Accumulative Penetration (mm)	Type of Hammer
4	20	1
4	30	1
4	35	1
6	40	1
10	55	1
10	75	1
10	100	1
10	135	1
10	200	1
4	235	1
4	250	1
25	250	1

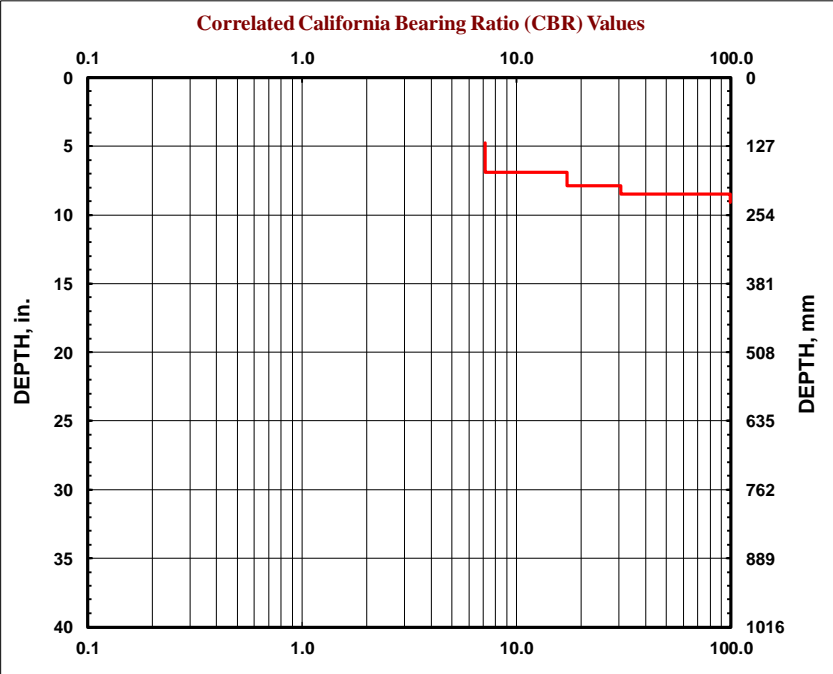


## DUAL MASS DYNAMIC CONE PENETROMETER TEST DATA

Project Name: Hopkins Mill Road Water Main Replacement  
 S&ME Project No: 22800360  
 Test No: PC-01A  
 Date: 1/6/2023



No. of Blows	Accumulative Penetration (mm)	Type of Hammer
	120	1
2	175	1
2	200	1
2	215	1
4	225	1
10	230	1
10	230	1





# DUAL MASS DYNAMIC CONE PENETROMETER TEST DATA

Project Name: Hopkins Mill Road Water Main Replacement

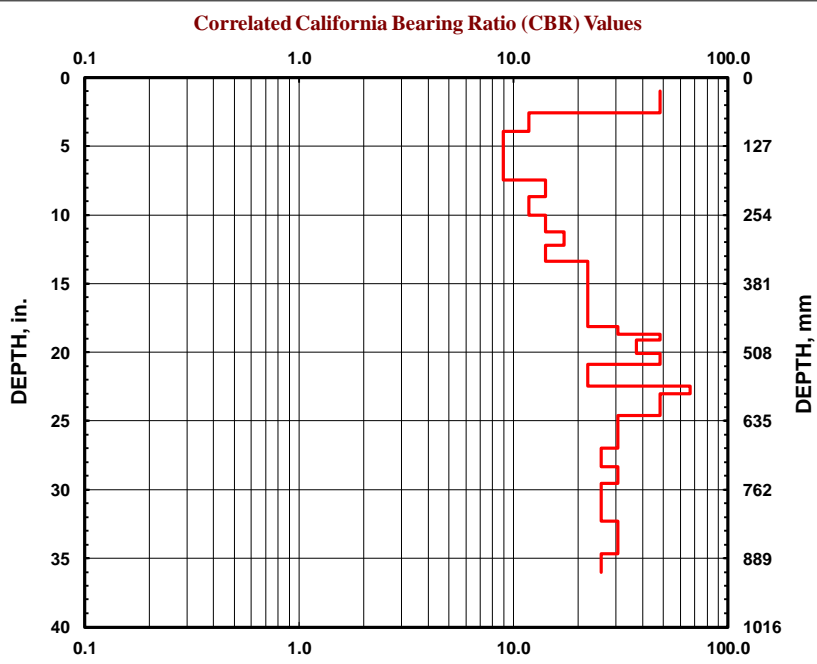
S&ME Project No: 22800360

Test No: PC-02

Date: 1/6/2023



No. of Blows	Accumulative Penetration (mm)	Type of Hammer
2	25	1
2	35	1
2	45	1
2	55	1
2	65	1
2	100	1
2	145	1
2	190	1
2	220	1
2	255	1
2	285	1
2	310	1
2	340	1
2	360	1
2	380	1
2	400	1
2	420	1
2	440	1
2	460	1
2	475	1
2	485	1
4	510	1
4	530	1
4	570	1
4	585	1
4	605	1
4	625	1
4	655	1
4	685	1
4	720	1
4	750	1
4	785	1
4	820	1
4	850	1
4	880	1
4	915	1

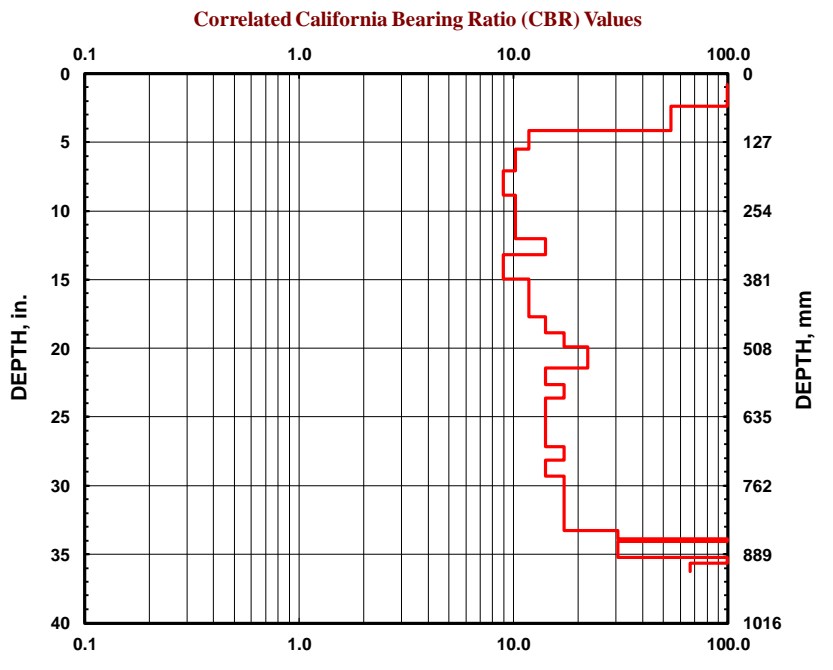


## DUAL MASS DYNAMIC CONE PENETROMETER TEST DATA

Project Name: Hopkins Mill Road Water Main Replacement  
 S&ME Project No: 22800360  
 Test No: PC-03  
 Date: 1/6/2023



No. of Blows	Accumulative Penetration (mm)	Type of Hammer
4	20	1
4	30	1
4	35	1
10	40	1
10	60	1
10	105	1
2	140	1
2	180	1
2	225	1
2	265	1
2	305	1
2	335	1
2	380	1
2	415	1
2	450	1
2	480	1
2	505	1
2	525	1
2	545	1
2	575	1
2	600	1
2	630	1
2	660	1
2	690	1
2	715	1
2	745	1
2	770	1
2	795	1
2	820	1
2	845	1
2	860	1
2	865	1
4	895	1
4	905	1
4	920	1





<b>PROJECT:</b> Hopkins Mill Water Main Replacement Hopkins Mill Road, Duluth, Georgia S&ME Project No. 22800360		<b>HAND AUGER LOG: PC-01</b> <i>Sheet 1 of 1</i>	
<b>DATE:</b> 01/06/2023	<b>ELEVATION:</b> 960 ft	<b>NOTES:</b> Hand auger terminated at 18 inches due to encountering hand auger refusal on rocky materials.	
<b>EQUIPMENT:</b> Hand Auger	<b>DATUM:</b>		
<b>OPERATOR:</b> S&ME	<b>DEPTH:</b> 1.5 ft		
<b>HAMMER TYPE:</b>	<b>CLOSURE:</b> Cuttings with Asphalt Patch		
<b>DRILLING METHOD:</b> Hand Auger	<b>LOGGED BY:</b> Ethan Fraser	<b>LATITUDE:</b>	<b>LONGITUDE:</b>
<b>SAMPLING METHOD:</b>		<b>PROJECT COORDINATE SYSTEM - NAD 1983 StatePlane Georgia West FIPS 1002 Feet</b>	

Depth (feet)	NOTES	DEPOSITIONAL ENVIRONMENT	GRAPHIC	SAMPLE NO. (RECOVERY)	MATERIAL DESCRIPTION	ELEVATION
0		Surface			ASPHALT - 5.5 INCHES	960
0.5		Fill			SANDY SILT WITH GRAVEL (ML), trace mica, brown and gray, fine to coarse grained, slightly moist	959
1						Borehole terminated at 1.5 feet
2						958
3						957
4						956
5						955
6						954
7						953
8						952
9						951
10						

GROUNDWATER		DATE	DEPTH (FT)	REMARKS
ATD	☒			
END OF DRILLING	☒	01/06/2023		Not encountered
AFTER DRILLING	☒			
AFTER DRILLING	☒			



GROUNDWATER DEPTHS ARE NOT EXACT AND MAY VARY SUBSTANTIALLY FROM THOSE INDICATED. ATD = AT TIME OF DRILLING  
 LL=Liquid Limit, PL = Plastic Limit, NMC = Natural Moisture Content, PPV = Pocket Penetrometer (tsf), PTV = Pocket Torvane (tsf)

**PROJECT:** Hopkins Mill Water Main Replacement  
Hopkins Mill Road, Duluth, Georgia  
S&ME Project No. 22800360

**HAND AUGER LOG: PC-02**  
Sheet 1 of 1

**DATE:** 01/06/2023      **ELEVATION:** 944 ft

**EQUIPMENT:** Hand Auger      **DATUM:**

**OPERATOR:** S&ME      **DEPTH:** 3.0 ft

**HAMMER TYPE:**      **CLOSURE:** Cuttings with Asphalt Patch

**DRILLING METHOD:** Hand Auger      **LOGGED BY:** Ethan Fraser      **LATITUDE:**      **LONGITUDE:**

**SAMPLING METHOD:**      **PROJECT COORDINATE SYSTEM -** NAD 1983 StatePlane Georgia West FIPS 1002 Feet

Depth (feet)	NOTES	DEPOSITIONAL ENVIRONMENT	GRAPHIC	SAMPLE NO. (RECOVERY)	MATERIAL DESCRIPTION	ELEVATION
0		0.3 Surface			ASPHALT 4 INCHES	944
1		Fill			SANDY LEAN CLAY (CL), trace organics, trace mica, red brown, moist	943
2				942		
3				3.0		Borehole terminated at 3.0 feet
4						940
5						939
6						938
7						937
8						936
9						935
10						

GROUNDWATER	DATE	DEPTH (FT)	REMARKS
ATD			
END OF DRILLING	01/06/2023		Not encountered
AFTER DRILLING			
AFTER DRILLING			



GROUNDWATER DEPTHS ARE NOT EXACT AND MAY VARY SUBSTANTIALLY FROM THOSE INDICATED. ATD = AT TIME OF DRILLING  
LL=Liquid Limit, PL = Plastic Limit, NMC = Natural Moisture Content, PPV = Pocket Penetrometer (tsf), PTV = Pocket Torvane (tsf)



**PROJECT:** Hopkins Mill Water Main Replacement  
Hopkins Mill Road, Duluth, Georgia  
S&ME Project No. 22800360

**HAND AUGER LOG: PC-03**  
Sheet 1 of 1

**DATE:** 01/06/2023      **ELEVATION:** 945 ft

**EQUIPMENT:** Hand Auger      **DATUM:**

**OPERATOR:** S&ME      **DEPTH:** 3.0 ft

**HAMMER TYPE:**      **CLOSURE:** Cuttings with Asphalt Patch

**DRILLING METHOD:** Hand Auger      **LOGGED BY:** Ethan Fraser      **LATITUDE:**      **LONGITUDE:**

**SAMPLING METHOD:**      **PROJECT COORDINATE SYSTEM -** NAD 1983 StatePlane Georgia West FIPS 1002 Feet

Depth (feet)	NOTES	DEPOSITIONAL ENVIRONMENT	GRAPHIC	SAMPLE NO. (RECOVERY)	MATERIAL DESCRIPTION	ELEVATION
0		Surface			ASPHALT - 3.75 INCHES	945
0.5		Fill			SANDY SILT (ML), trace rock fragments, trace mica, orange brown, slightly moist	944
1						
2						
3					Borehole terminated at 3.0 feet	942
4						941
5						940
6						939
7						938
8						937
9						936
10						

GROUNDWATER	DATE	DEPTH (FT)	REMARKS
ATD			
END OF DRILLING	01/06/2023		Not encountered
AFTER DRILLING			
AFTER DRILLING			



GROUNDWATER DEPTHS ARE NOT EXACT AND MAY VARY SUBSTANTIALLY FROM THOSE INDICATED. ATD = AT TIME OF DRILLING  
LL=Liquid Limit, PL = Plastic Limit, NMC = Natural Moisture Content, PPV = Pocket Penetrometer (tsf), PTV = Pocket Torvane (tsf)



**BUILT FOR  
VERSATILITY**

# Important Information About Your Geotechnical Engineering Report

*Variations in subsurface conditions can be a principal cause of construction delays, cost overruns and claims. The following information is provided to assist you in understanding and managing the risk of these variations.*

## **Geotechnical Findings Are Professional Opinions**

Geotechnical engineers cannot specify material properties as other design engineers do. Geotechnical material properties have a far broader range on a given site than any manufactured construction material, and some geotechnical material properties may change over time because of exposure to air and water, or human activity.

Site exploration identifies subsurface conditions at the time of exploration and only at the points where subsurface tests are performed or samples obtained. Geotechnical engineers review field and laboratory data and then apply their judgment to render professional opinions about site subsurface conditions. Their recommendations rely upon these professional opinions. Variations in the vertical and lateral extent of subsurface materials may be encountered during construction that significantly impact construction schedules, methods and material volumes. While higher levels of subsurface exploration can mitigate the risk of encountering unanticipated subsurface conditions, no level of subsurface exploration can eliminate this risk.

## **Scope of Geotechnical Services**

Professional geotechnical engineering judgment is required to develop a geotechnical exploration scope to obtain information necessary to support design and construction. A number of unique project factors are considered in developing the scope of geotechnical services, such as the exploration objective; the location, type, size and weight of the proposed structure; proposed site grades and improvements; the construction schedule and sequence; and the site geology.

Geotechnical engineers apply their experience with construction methods, subsurface conditions and exploration methods to develop the exploration scope. The scope of each exploration is unique based on available project and site information. Incomplete project information or constraints on the scope of exploration increases the risk of variations in subsurface conditions not being identified and addressed in the geotechnical report.

## **Services Are Performed for Specific Projects**

Because the scope of each geotechnical exploration is unique, each geotechnical report is unique. Subsurface conditions are explored and recommendations are made for a specific project. Subsurface information and recommendations may not be adequate for other uses. Changes in a proposed structure location, foundation loads, grades, schedule, etc. may require additional geotechnical exploration, analyses, and consultation. The geotechnical engineer should be consulted to determine if additional services are required in response to changes in proposed construction, location, loads, grades, schedule, etc.

## **Geo-Environmental Issues**

The equipment, techniques, and personnel used to perform a geo-environmental study differ significantly from those used for a geotechnical exploration. Indications of environmental contamination may be encountered incidental to performance of a geotechnical exploration but go unrecognized. Determination of the presence, type or extent of environmental contamination is beyond the scope of a geotechnical exploration.

## **Geotechnical Recommendations Are Not Final**

Recommendations are developed based on the geotechnical engineer's understanding of the proposed construction and professional opinion of site subsurface conditions. Observations and tests must be performed during construction to confirm subsurface conditions exposed by construction excavations are consistent with those assumed in development of recommendations. It is advisable to retain the geotechnical engineer that performed the exploration and developed the geotechnical recommendations to conduct tests and observations during construction. This may reduce the risk that variations in subsurface conditions will not be addressed as recommended in the geotechnical report.



PRE-BID CONFERENCE

April 4, 2024  
@ 10:00AM

BL# 037-24

Representative Name                      Company Name                      Phone #                      E-Mail Address  
(DEPARTMENT REPRESENTATIVES SIGN-IN AT BOTTOM)

1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
7.	_____	_____	_____	_____
8.	_____	_____	_____	_____
9.	_____	_____	_____	_____
10.	_____	_____	_____	_____
11.	_____	_____	_____	_____
12.	_____	_____	_____	_____
13.	_____	_____	_____	_____

<u>Department Representative Name</u>	<u>Department</u>	<u>Department Representative Name</u>	<u>Department</u>
Brittany Bryant	Purchasing-DOFS	David Hunt	Aecom
Manoj Bhimani	DWR	_____	_____
Zahid Bashir	Aecom.	_____	_____